ADE User's Guide

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This guide tells how to use the Application Development Environment
(ADE) software. It contains introductory material, including a sample
session, as well as more advanced material and reference information.

SOFTWARE VERSION: ADE V2.1

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PREFACE

Objectives and Audience

This guide describes how to use DIGITAL's Application Development Environment (ADE) to make office work and other tasks easier. The guide has been especially designed for use by nonprogrammers who may also be new computer users. However, both new and experienced ADE users will find it helpful. The guide assumes the reader already knows:

- How to use a terminal

- How to get on and off the host system

For the new ADE user, this guide:

- Describes how to use ADE on a VT100 terminal

- Shows how to perform basic ADE tasks

- Shows how to use the ADE commands

How This Guide Is Organized

Part One is designed for new ADE users. Chapters 1-3 give the new user an overview of ADE, briefly describe ADE terms and concepts, and introduce the basics of using ADE. If you are a new ADE user, read Chapters 1-3 before starting to use ADE. Chapters 4-6 introduce the basic ADE rules and commands and show by example how to use the commands. Read Chapters 4-6 after working through the ADE sample session (Chapter 3) on a terminal.

Part Two is designed for more experienced ADE users. Chapters 7 and 8 describe optional phrases and more powerful commands. Chapters 9 and 10 describe how to work with verbs and reports. Chapter 11 introduces commands for managing tables, verbs, and reports. Read Chapters 7-11 when you are ready to use more powerful commands, verbs, and reports.

Part Three contains reference information for all ADE users. Chapter 12 describes each ADE command, listed in alphabetical order. There are appendixes, a glossary, and an index.

Online Tutorial

ADE also provides an online tutorial which teaches new users how to use ADE. This "hands-on" tutorial explains the basics of ADE, prompts you to type in ADE commands, and displays how the commands work to produce results. Chapter 3 shows you how to use the TRAIN command.

Using the Terminal

ADE utilizes the VT100 capabilities; therefore, all terminal examples show VT100 screens and refer to VT100 keys. The use of ADE on other DIGITAL terminals has been made to appear as much like the VT100 as possible, making this guide practical to use with those terminals. Appendix B, "Terminal Information," has additional information for using ADE on other DIGITAL terminals. You should read it if you are using ADE on other than a VT100 terminal.

Conventions and Symbols

Words inside angle brackets represent one of the following:

- A terminal key, such as <RETURN>.

- A terminal key combination, such as <CTRL/C>. Press the CTRL and C keys at the same time.

- An ADE function, such as <HELP>.

- An ADE default choice, such as <WORKSHEET>. In most cases, you accept the default value by pressing the RETURN key. You can accept the default rather than entering an explicit value.

In command formats and examples, the following conventions are used:

UPPER CASE   (also printed in red) means type words exactly as shown.

lower case   represents ADE's command line prompts.

underlined
lower case   means replace words with a name or expression. For example, replace table with a table name and column with a column name.

All command examples, unless otherwise noted, show how the command line looks after you type the last command input but before you press the RETURN key.

In sample session command examples, the following convention is used:

```
+-------+     +--------+
|       |     |        |      represents the function key  sequence
|  PF1  |     |(down)  |      of the PF1 key  followed by the DOWN-
|  GOLD |     |BOTTOM  |      ARROW key. This is function <BOTTOM>.
+-------+     +--------+
```

PART ONE - BEGINNING TO USE ADE

CHAPTER 1

INTRODUCTION TO ADE

A computer makes office work and other tasks easier by helping you do repetitious and time-consuming jobs. Computers can:

● Store information

● Perform calculations

● Produce reports on selected information

1.1 WHAT IS ADE?

DIGITAL's Application Development Environment (ADE) is a computer tool for people who are not computer programmers but need a computer to make their office tasks easier. Without learning how to program a computer, you can quickly learn to use ADE for record keeping and bookkeeping tasks like keeping and maintaining mailing lists, inventory lists, time sheets and budgets. You can easily produce printed lists of your data. If you want to automate your work further or print more sophisticated reports, you can make and use ADE procedures that are like simple computer programs.

Whether your task is simple or complicated, ADE helps you every step of the way. ADE tells you what kind of input it expects. ADE also has both a HELP key and a HELP command to give you more detailed information on request.

1.2 LEARN BY DOING!

To learn how to use ADE, read and follow the step-by-step instructions in Chapter 3. Chapter 3 also tells you how to use the TRAIN command to get an online tutorial that teaches you the basics of ADE as you follow along on your terminal. As a new user, you should try both these methods of learning ADE.

The rest of this chapter describes some of the tasks you can do
with ADE.

1.3   ENTERING INFORMATION

One task that is sometimes hard for new computer users is how to
enter information (data) into a computer in a form the computer
can work with. ADE makes data entry easy. ADE works with the
computer;   you   work   with   data   that you can understand. ADE
keeps data in tables. Here is a sample table that shows the
data from an inventory of parts:

PN	PNAME	WHOUSE	COLOR	WEIGHT	QTY
P01	NUT	W2	RED	12	135
P02	BOLT	W2	GREEN	17	167
P03	SCREW	W1	BLUE	17	48
P04	SCREW	W2	RED	14	143
P05	CAM	W1	BLUE	12	205
P06	COG	W3	RED	19	215
P07	GEAR	W3	GREY	9	234
P08	BEARING	W2	GREY	25	136
P09	BOLT	W1	WHITE	5	15

Note that columns of data are evenly spaced and the entries for
each column are aligned. ADE puts and keeps your data in this
format; you simply enter data in response to ADE's prompts.
You do not specify column widths because ADE adjusts the column
widths to fit the data you enter. When you ask ADE to show you
your data on the terminal or the printer, it always appears in
table format.

Also note that the data is in order   by part number (the PN
column). ADE puts and keeps the data in this order if you
specify that the PN column is the key column in this table.

1.4 PERFORMING CALCULATIONS

If your ADE table has in it the sample inventory data shown in
Section 1.3, you can tell ADE to total the number of parts. ADE
finds the sum of all the numbers in the QTY column and places
the result at the bottom of the QTY column. Here is how the
data would look after the TOTAL is complete:

PN	PNAME	WHOUSE	COLOR	WEIGHT	QTY	TOTAL
P01	NUT	W2	RED	12	135	
P02	BOLT	W2	GREEN	17	167	
P03	SCREW	W1	BLUE	17	48	
P04	SCREW	W2	RED	14	143	
P05	CAM	W1	BLUE	12	205	
P06	COG	W3	RED	19	215	
P07	GEAR	W3	GREY	9	234	
P08	BEARING	W2	GREY	25	136	
P09	BOLT	W1	WHITE	5	15	
					1298	TOTAL

You can also use ADE to produce subtotals and running totals and
to add, subtract, multiply, and divide columns of numbers.

1.5 PRODUCING REPORTS

Eventually, you can use ADE to produce a report like this:

```
        30-Dec-82 10:11 AM              Page 1

              CURRENT INVENTORY

        ------------------------------------
        ¦  Part   ¦ Warehouse ¦ Quantity ¦  ¦
        ¦ Number  ¦           ¦          ¦  ¦
        ------------------------------------

          P01        W1           128
          P01        W2           135
          P01        W3           142

            Total for P01 is 405

          P02        W1            92
          P02        W2           167
          P02        W3           251

            Total for P02 is 510

          P03        W1            48
          P03        W2            74
          P03        W3            10 *** LOW

            Total for P03 is 132

          P04        W1            65
          P04        W2           143
          P04        W3           202

            Total for P04 is 410


        Total for all parts is   1,457
```

These are just a few examples of what ADE can do to help you.
Use this guide to learn how to use ADE.

CHAPTER 2

TERMS AND CONCEPTS

This chapter describes the basic ADE terms and concepts.

2.1 SUMMARY OF ADE TERMS

The following is a brief list of the basic ADE terms and their meanings. You need to know them to use ADE most effectively. Each term is described in more detail later in this chapter.

Worksheet   A "scratch-pad" that contains data in columns and lines. Most of the ADE commands work on the data in the worksheet.

Table   More permanent place to store data in columns and lines. The worksheet is saved as a table for later use.

Value   A worksheet or table data entry. A value consists of one or more letters, numbers or other characters, including spaces.

Line   A horizontal group of values in the worksheet or a table.

Column   A vertical group of values in the worksheet or a table.

Column Name A name you give to a column. Use it in commands to refer to and to work with a column.

Key Column An optionally specified column that you may use to keep the lines in the worksheet or a table in order.

There are three more ADE terms and their meanings that you should be aware of, although you need not understand them fully to begin to use ADE. These terms are described in more detail in other chapters.

Procedure   A set of ADE commands or other instructions saved and used at a later time. A procedure has the following characteristics:

- It does not perform any operation unless you use its name as you would a command name.

- It can be reused many times.

- It can be changed.

ADE has two types of procedures: verbs and reports.

Verb   A procedure made up of ADE commands. Using the name of a verb as you would a command name causes all the commands in the verb to be used.

Report   A procedure made up of ADE instructions that specify how the data in a worksheet or a table is to be formatted. Using the name of a report as you would a command name causes the data to be formatted as you specified and output.

2.2 PARTS OF AN ADE TABLE

This illustration shows the several parts of the worksheet or a table:

```
                                              +-----+
          PN    PNAME    WHOUSE   COLOR   WEIGHT ¦ QTY ¦ (1)
                                  +-------+      +-----+
          P01   NUT      W2    ¦ RED     ¦   12    135
          P02   BOLT     W2    ¦ GREEN   ¦   17    167
          P03   SCREW    W1    ¦ BLUE    ¦   17     48
          P04   SCREW    W2    ¦ RED     ¦   14    143
       +-------------------------------------------------+
       ¦ P05   CAM      W1    ¦ BLUE    ¦   12    205 ¦ (2)
       +-------------------------------------------------+
          P06   COG      W3    ¦ RED     ¦   19    215
          P07   GEAR     W3    ¦ GREY    ¦    9    234
          P08   BEARING  W2    ¦ GREY    ¦   25    136
                              ¦         ¦      +-----+
          P09   BOLT     W1    ¦ WHITE   ¦    5  ¦ 15 ¦ (3)
                                  +-------+      +-----+
                                    (4)
```

     (1) Column name
     (2) Line
     (3) Value
     (4) Column

2.3 HOW TO TELL ADE WHAT TO DO

ADE does what you tell it to do. You can tell ADE what to do:

- By entering commands

    Entering commands is the main way in which you tell ADE what to do. Each ADE command tells ADE to perform a specific operation. ADE is interactive, which means that after you enter a command, ADE performs the specified operation and tells you when it is finished. You can then enter another command.

    For example, here are three basic ADE commands and what they do:

MAKE	Makes a new worksheet.
ENTER	Enters data into the worksheet.
SAVE	Saves the worksheet as a table.

- By pressing function keys

    Using function keys is another way in which you tell ADE what to do. Most keys on the terminal act like typewriter keys; they produce characters or perform an action such as SHIFT or RETURN. Other terminal keys, however, give ADE special directions. For example:

<HELP>	Displays information.
<ENTER>	Indicates completion of an activity.

    The ADE function keys save time when you are entering and changing data and procedures. Instead of typing words, you simply press a key.

2.4 HOW TO USE ADE IN YOUR WORK

Most office tasks, even the simplest ones, require you to
perform several steps. Consider this example. You keep
employee data (name, address, telephone number) on index cards
in a file box. The cards are kept in alphabetical order by
employee name. When an employee moves, you need to update the
information. First, you get the appropriate index card from the
file box. Then you erase the old address and telephone number
and type in the new address and telephone number. Then you put
the corrected index card back in its place in the file box.
This task requires four steps:

1. Get

2. Erase

3. Type

4. Put

Like you, ADE works one step at a time. Each ADE command
performs one step in a task. To complete a task, you usually
need to use several commands in the correct order. For example,
to change an employee's address and telephone number with ADE,
you use three commands:

1. **GET** to get the employee data

2. **CHANGE** to change the address and telephone number

3. **SAVE** to save the changed employee data

When you work with ADE, you use a computer terminal instead of a
typewriter and keep your information in an ADE table instead of
on index cards. You can still do your work much as you do now,
but use ADE to save time and effort.

At first, work with ADE interactively; that is, enter commands
one at a time. You see the result of each command right away.
If you make a mistake, you can try again. When you are familiar
with the commands, you can start using verbs, which are groups
of commands. However, do not try using verbs when you first
start using ADE.

To help you get started, this guide shows you which ADE commands to use for the basic tasks, like making a new worksheet and saving it as a table. Once you learn how to use ADE for basic tasks, you can decide which commands to use to help you in your work.

2.5 HOW ADE STORES INFORMATION

When you store information in ADE, you use the worksheet and tables. Both are made up of lines and columns and can contain a key column.

A worksheet or table entry is called a value. A value consists of one or more letters, numbers, or other characters, including spaces. Some examples of values are:

● A part number

● A person's name

● A date

Once stored, your data is handled by ADE and access to it outside ADE is normally unnecessary.

2.5.1 The Worksheet

When you first work with data, you begin with the worksheet. The worksheet is like a scratch-pad. You can either make a new worksheet or copy an existing table into the worksheet. You change the data in the worksheet using ADE commands. At any point, you can save a copy of the worksheet or list a copy of the worksheet. When you save the worksheet, you can save it as a new table or replace an existing table with its contents.

2.5.2 Tables

Tables are the more permanent form of data storage in ADE. You save the worksheet in a table, giving it a table name so both you and ADE can identify it. You can ask ADE to list the names of your tables. You copy an existing table into the worksheet to work with the data in it.

2.5.3 Key Column

A key column is a column that you can tell ADE to use to keep all the lines in the worksheet or a table in order. For example:

- Keep employee data in alphabetical order by last name of employee

- Keep inventory data in order by part number

- Keep invoices in order by date received

The worksheet or a table does not have to have a key column, but each can have only one key column. A key column:

- Does not allow duplicate values

- Orders all lines by ascending (increasing) value

Duplicate values are values that ADE considers to be identical. For example, ADE treats upper case and lower case letters the same. GEAR, Gear, and gear are duplicate values. Ascending value in key columns means that characters are kept in alphabetical order, numbers are kept in numeric order, and dates are kept in calendar order.

When you make a worksheet with a key column, you can enter lines of data in any order. ADE automatically orders the lines based on the key column values you enter and keeps you from entering duplicate values into the key column. If you try to enter a duplicate value into a key column, ADE rejects the value and displays an error message.

You can make a worksheet without a key column, but some ADE commands work better with key columns. Therefore, key columns are important when you design tables for most efficient use by ADE.

2.5.4 How ADE Stores Information On The Computer

ADE automatically sets up a storage area for you on your computer's mass storage device, called a disk. This area is your ADE account. In this manual, your ADE account is also called your disk area or simply your area. Your ADE account is part of your system account.

2.5.4.1 Inside ADE -

During an ADE session, you and other ADE users can identify your ADE account by using the name or numeric code for your system account. Your ADE account contains:

● Your ADE directory, which is a list (by name) of your tables and procedures

● Your tables and procedures

Since both your ADE directory and your tables and procedures take up disk space, and disk space is limited, you should erase tables and procedures you no longer need. When using ADE, you can display the names of tables and procedures in your ADE directory at any time.

2.5.4.2 Outside ADE -

Your ADE directory, tables, and procedures are stored in files in your system account. If you display your system directory, you will notice that some file names in your system directory end with ADE. These are your ADE files. Do not work with these files outside of ADE. Especially, do not delete or selectively restore any of these files from your system account. Although your ADE files have special protection, you still could destroy your tables, procedures and/or ADE directory with specific sequences of operating system commands.

2.6 HOW ADE PROTECTS YOUR DATA

Under certain conditions, ADE allows other ADE users to list and get copies of your tables and list and copy your procedures. However, other ADE users cannot change your copies of your tables or your procedures. ADE protects your data from other ADE users by allowing:

1. Only one person at a time to work with ADE in a specific ADE account or area. For someone to use ADE in your area, they must log in to your system account. They can start ADE only if you are not using ADE.

2. Only you can change tables and procedures in your ADE account or area. If other ADE users have access to your tables and procedures, they can list them on their terminal, or they can copy them from your area into their area. They cannot change anything in your area.

NOTE

To allow other ADE users access to your tables and procedures, you must change the access word with the ALLOW command. This command is more fully described in later chapters.

CHAPTER 3

GETTING STARTED - A SAMPLE SESSION

To help you get started, this chapter leads you through a sample
session using the basics of ADE, such as how to enter and use
some ADE commands and how to use the ADE function keys. It also
shows you how to use ADE's online tutorial.

During the sample session, you learn:

- How to start ADE

- Where information appears on the screen

- How to use the terminal keyboard

- How to enter ADE commands

- How to get help from ADE

- How to make and save a copy of the sample ADE table

- How to use the terminal in ADE for data entry

- How to exit ADE

Before you begin the sample session on your terminal, make sure
you have an account on your system and you know its name or
number and password.

This chapter contains both text and examples. Read the text of
each example before you try to type the example on your
terminal. Type all text printed in red UPPER CASE exactly as
shown.

3.1 STARTING ADE

Before you start the terminal session, make sure your terminal is turned on and that the terminal's CAPS LOCK key is locked. This makes your terminal session output match the examples shown in this chapter.

You are now ready to start. Perform these steps:

1. Log in to your host system.

    You may be asked for your user name or account number and your password. This step may not be required on all host systems.

2. Wait for the host system prompt.

    This may be a word, a single character or some form of menu and indicates that the host system is ready to accept input.

3. Type input to start ADE.

    You usually type ADE and press the RETURN key or indicate the ADE menu choice. ADE takes a few moments to start up and may print a message on the screen. Watch for the Ade: prompt to appear near the bottom of the screen. When this occurs, ADE is ready to accept input.

                                NOTE

    If you do not know how to perform a step or cannot complete it using the above instructions, use the following checklist to help identify and correct the problem.

● Do you know how to do what you want to do?

    If not, read the preceding sections of this guide again, your host system user's guide, or talk to an experienced user of your system for help.

● Do you have an account on the system?

  You must identify yourself to the system before you can use ADE. If you do not have an account, talk to your system manager or the person in charge of issuing accounts.

● Are there meaningless characters on your screen?

  If so, talk to an experienced user of your system for help because one of the following may be happening:

  - Your host system may not know the type of terminal you are using

  - Your terminal or system may not be working properly

  - The connection between your terminal and the system may be faulty

● Does nothing at all happen on the VT100 screen when you type on the keyboard?

  If so, you may have pressed the NO SCROLL key without knowing it. Press this key once and type again. If still nothing happens, your terminal or system is not working properly or the connection between your terminal and the system is faulty. Talk to an experienced user of your system for help.

● Is there a line of characters on your VT100 screen just above the line with the Ade: prompt?

  If so, your host system incorrectly expects your terminal to be a VT52. Talk to the system manager or an experienced user of your system for help.

● Have you typed all information correctly?

  If not, perform the step again. Computers need specific instructions.

If you still cannot perform a step, see or talk to a more experienced user of your system or the system manager.

3.2 THE ADE TERMINAL

The ADE terminal will probably be a VT100 that has a display screen and a keyboard with keypad. If it is not a VT100, read Appendix B before you work through this sample session.

GETTING STARTED - A SAMPLE SESSION

3.2.1 The ADE Screen

ADE organizes the screen into three areas:

1. Scrolling area

2. Command area

3. Message area

See Figure 3-1.

```
+--------------------------------------------------------------+
|                                                              |
|                                                              |
|                                                              |
|                  WELCOME    TO    ADE                        |
|                                                              |
|                                                              |
|                                                              |
|                                                              |
|                                                          (1) |
|                                                              |
|                                                              |
|                                                              |
|                                                              |
|                                                              |
|                                                              |
|                                                              |
|------------------------------------------d i g i t a l-|
| Ade: _                                                   (2) |
|   * Enter a command, a Verb or Report name, or type HELP |
|                                                              |
| ADE V2.1 starting at 10-Dec-82 10:15 AM.                 (3) |
|                                                              |
+--------------------------------------------------------------+
```
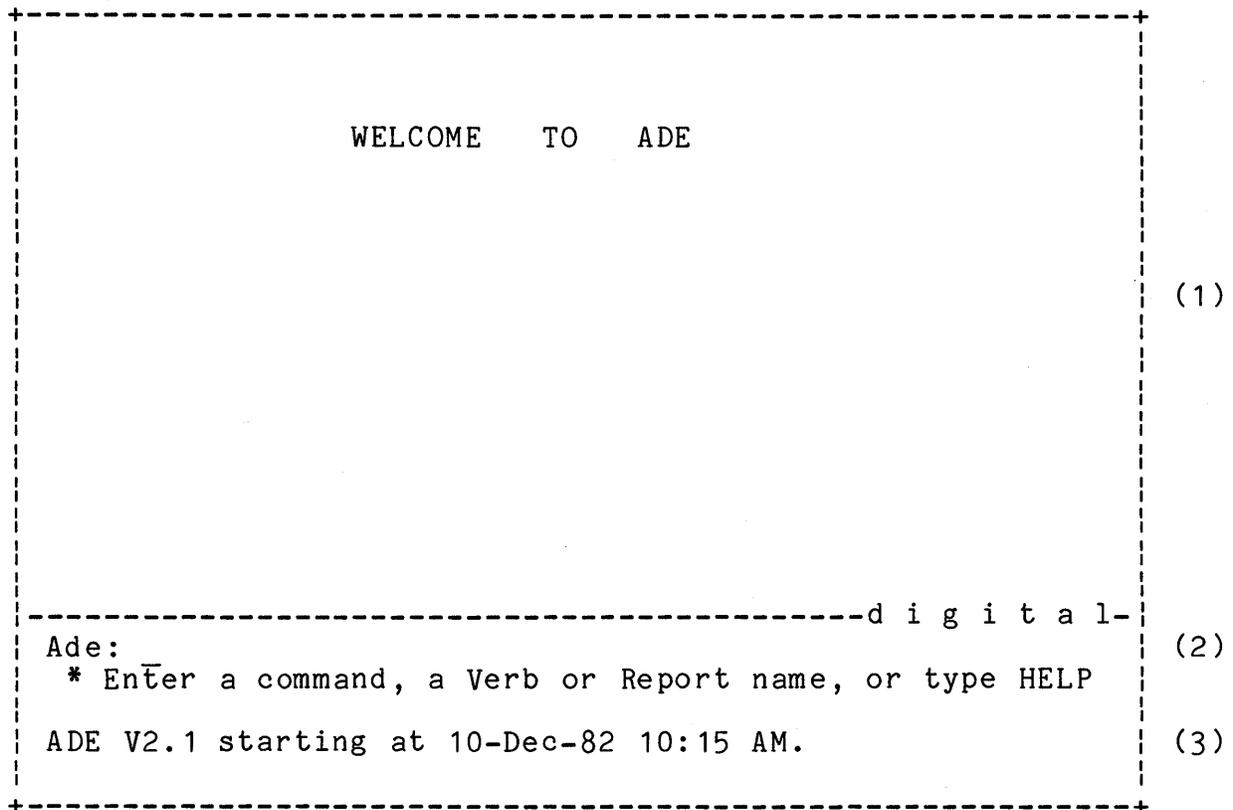
Figure 3-1: ADE Screen Format

3.2.1.1 The Command Area -

Near the bottom of the screen is the Ade: prompt line and a
line beginning with an asterisk below it. These two lines form
the command area.

The Ade: prompt line is the command entry line, where you enter commands. The Ade: prompt means ADE is ready for your input.

The second of these two command lines is the helping prompt line. As you enter a command, this line helps you by displaying what kind of information ADE needs from you. This line's message changes as you enter parts of a command and shows what ADE expects from you. You will see the Working... message, command statistics, and other messages on this line at appropriate times.

3.2.1.2 The Message Area -

The area on the screen immediately below the command area is the message area. When you first start ADE, this area usually contains a message displaying the ADE version number, the date, and the time when ADE was started. When you enter a command, a name, or a value incorrectly, ADE displays an error message in this area. When ADE needs information other than an ADE command from you, it often displays a question in this area that you must answer. ADE also displays other helpful messages in this area.

If ADE ever displays a message that instructs you to contact your system manager, do so. A serious error may have occurred. See Appendix C for a list of some possible messages.

3.2.1.3 The Scrolling Area -

The area above the line separating the command and message areas from the rest of the screen is the scrolling area. In this area, you may see a message welcoming you to ADE or a display of other information. Depending on your system, these lines may also be blank.

The scrolling area is your work area. It is also used for displaying information, for example:

● The data in the worksheet

● The worksheet outline

● The names of your ADE tables

3.2.2 The Terminal Keyboard

Figure 3-2 shows a layout of the VT100 main keyboard. See the
VT100 User Guide for a complete description of the keyboard.

```
 ------                              ----------------
|      |                           |   | ^ |   |   |   |   |
|SETUP |                           |   |   | V |<--|-->|
 ------------------------------------------------------------
|    |   | ! | @ | # | $ | % | ^ | & | * | ( | ) | - | + | ~ |B|B|
|ESC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | - | = | ` |S|K|
 ------------------------------------------------------------
|    |   |   |   |   |   |   |   |   |   |   | { | } |   |   |
|TAB | Q | W | E | R | T | Y | U | I | O | P | [ | ] |   |DEL|
 --------------------------------------------------------  -----
|    |CAPS|   |   |   |   |   |   |   |   | : | " |RET |   |   |
|CTRL|LOCK| A | S | D | F | G | H | J | K | L | ; | ' |    |BSL|
 ------------------------------------------------------------
|NO  |    |   |   |   |   |   |   |   | < | > | ? |     |LINE|
|SCRL|SHIFT| Z | X | C | V | B | N | M | , | . | / |SHIFT|FEED|
 ------------------------------------------------------------
        |            (SPACE BAR)            |
         -----------------------------------
```

Figure 3-2:   VT100 Keyboard

3.2.3 Using The Keyboard

ADE accepts input in either upper case or lower case letters and
treats them both the same. However, while you are learning ADE,
it is best to keep the CAPS LOCK key down.   Keeping the
CAPS LOCK key down has these advantages:

● Your data is consistent when displayed and printed.   All
  table and column names, as well as all other names entered,
  are in upper case.

● ADE's command line prompts appear in lower case;   therefore,
  it is easy to tell your input (printed in red upper case)
  from ADE's prompts.

All command examples in this guide show commands entered with
the CAPS LOCK key down. Your input is shown in red and upper
case; ADE's prompts are shown in lower case.

3.3 ADE'S ONLINE TRAINING

Before you begin this sample session, you'll find it interesting
to use ADE's online training feature, a "hands-on" tutorial
which illustrates, step-by-step, how to use ADE. Here's how to
get started with ADE training:

When you successfully start ADE using the steps in the preceding
section, you see the "Welcome to ADE" screen (Figure 3-3) on
your terminal. The Ade: prompt is at the bottom of the screen.
Type TRAIN, then a carriage return, beside the Ade: prompt,
like this:

Ade: TRAIN <RETURN>

..and watch what happens! ADE's online training is
self-explanatory -- just read and follow the directions on your
terminal screen to learn all about using ADE.

```
+-------------------------------------------------------------+
|                                                             |
|                                                             |
|                            ADE                              |
|                                                             |
|            Application Development Environment              |
|                                                             |
|                                                             |
|             +-----------------------------+                 |
|             |                             |                 |
|             |     Welcome to the ADE      |                 |
|             |                             |                 |
|             |                             |                 |
|             |     Basic User Training     |                 |
|             |                             |                 |
|             |                             |                 |
|             +-----------------------------+                 |
|                                                             |
|                                                             |
|        +---------------------------------------------+      |
|        | Press Return to continue with the introduction. |  |
|        | Or, type ? and Return to skip the introduction. |  |
|        +---------------------------------------------+      |
|                                                             |
+-------------------------------------------------------------+
```

Figure 3-3: TRAIN Introduction Screen

3.4 ENTERING COMMANDS

This section describes:

- Fully prompted command entry

- Defaults in command entry

- Recovering from mistakes

3.4.1 Fully Prompted Command Entry

ADE helps you enter commands by prompting you for each piece of information needed to complete the command. Enter each piece of information and then press the RETURN key. This is called fully prompted command entry.   Some commands are complete after you enter one piece of information; others require you to supply several pieces of information.

To start entering a fully prompted ADE command, type the command name and press the RETURN key. If more input is expected, ADE prompts you by displaying:

- A word or phrase on the command line to indicate the expected input

- The choices you have for the next input in the . helping prompt line immediately below the command line

Type the next input and press the RETURN key. Continue in this way until ADE stops prompting you for more information. If all the inputs you enter are correct, ADE carries out (executes) the command.

During command entry, you can abbreviate command names and most keywords to their first three letters, for example: NAM for NAMES, WOR for WORKSHEET, and MUL for MULTIPLY.

You can correct typing mistakes by using the DELETE key before you press the RETURN key.

If you want to stop entering a command and start the whole command line over, use the CTRL/C combination: hold the CTRL key down and press the C key.

To see how the command line changes as you enter a command, type
NAMES and press the RETURN key:

Ade: NAMES <RETURN>

Ade: NAMES of <ALL>
 * Enter the word TABLES, VERBS, REPORTS, or ALL

ADE is prompting you for a word. Your alternatives are TABLES,
VERBS, REPORTS, and ALL.   The <ALL> is the default value for
this command.   Section 3.4.2 describes defaults.   Now, type
TABLES and press the RETURN key:

Ade: NAMES of <ALL> TABLES <RETURN>

Ade: NAMES of TABLES
 Working...

After the command is completed, the entire command is
redisplayed with your inputs. When you see Working...
displayed under the command line, ADE is now executing the
command.

You see a display listing the names of all tables in your ADE
directory. Since you are a new ADE user, you have no tables.

Now, enter the NAMES command again, abbreviating both NAMES and
TABLES as shown:

Ade: NAM <RETURN>

Ade: NAMES of <ALL> TAB <RETURN>

ADE again displays the complete command and executes it.

3.4.2 Defaults In Command Entry

Many command inputs have a default value. A default value is
the value ADE uses if you do not enter a different value. ADE
always displays its default values in angle brackets (< >).   To
select the default value, press the RETURN key. For example,
the NAMES command displays a list of the names of all tables,
verbs, and reports by default. To enter the default for the
NAMES command, first type NAMES and press the RETURN key:

Ade: NAMES <RETURN>

You see this prompt:

Ade: NAMES of <ALL> _
 * Enter the word TABLES, VERBS, REPORTS, or ALL

Now, to use the default ALL, press the RETURN key:

Ade: NAMES of <ALL> <RETURN>

Ade: NAMES of ALL
 Working...

After you press the RETURN key, you see the command redisplayed
and the Working... message. The names of all tables, verbs,
and reports in your ADE directory are displayed. Since you are
a new ADE user, you have no names to display.

3.4.3 Recovering From Mistakes

You may make two kinds of mistakes during command entry.   You
can make:

● An entry that does not conform to ADE's rules

● An entry (such as a table name) that is correct according to
  ADE's rules, but the named item, such as a table, does not
  exist

When you enter commands one input at a time, ADE checks each
piece of information for both kinds of errors. For example,
type LSIT and press the RETURN key.

Ade: LSIT <RETURN>

ADE erases what you typed and displays this message:

ADE does not understand "LSIT".

ADE moves the cursor back to the Ade: prompt so you can start over and enter the command intended, in this case the LIST command.

If you ask ADE to get a table that does not exist, ADE again recognizes an error. For example, type GET and press the RETURN key:

Ade: GET <RETURN>

ADE displays:

Ade: GET table _
 * Enter an existing Table name

Now, type BUDGET and press the RETURN key:

Ade: GET table BUDGET <RETURN>

The table BUDGET does not exist. ADE erases what you last typed on the command line and displays this message:

Cannot find a Table called "BUDGET".

ADE moves the cursor back so you can enter the name of an existing table. ADE displays:

Ade: GET table _
 * Enter an existing Table name

Since there are no tables to get, press CTRL/C to cancel the partially entered GET command. ADE erases what was on the command line so that you can enter the next command.

3.5 OBTAINING HELP

Besides prompting you for each command input, ADE has two other
methods of helping you to enter valid commands:

● The HELP command

● The HELP key

3.5.1 The HELP Command

The HELP command displays information about ADE. Help is
available on many different subjects. Depending on what you
specify, ADE displays:

● Some general information about ADE and instructions for
  getting more help

● Information on keypad functions

● Information on working with the worksheet

● Information on working with tables

● Information on printing data

● Information on working with verbs and reports

● A list of all ADE help topics

● A list of all ADE commands

● Information on specific ADE commands

Enter the following HELP command in two steps. First, type HELP
and press the RETURN key:

Ade: HELP <RETURN>

ADE displays:

Ade: HELP me with subject <ADE> _
 * Enter a topic, an ADE command, or just press the RETURN key.

To accept the default for HELP, press the RETURN key:

Ade: HELP me with subject <ADE> <RETURN>

ADE displays:

Ade: HELP me with subject ADE

You see this display in the scrolling area:

-------------------- Basic ADE operations --------------------

Type: To find out about this:

TRAIN   - Training exercises if you are new to ADE
HELP TABLES   - Entering new data, or starting from scratch
HELP WORK   - Working with existing data
HELP SHOW   - Printing data
HELP VERBS   - Automating repetitive series of commands
HELP REPORTS   - Printing data using ADE Reports
HELP ?   - List all ADE commands
HELP TOPICS   - List topics you can get HELP about
HELP KEYPAD   - Where special functions are on the keyboard

The display lists other HELP commands that provide more detailed
information. Try some of them. They are listed in unprompted
command entry form. In fully prompted command entry:

1. Type HELP and press the RETURN key.

2. Type the subject listed after HELP and press the RETURN key.

For example, to display HELP text on TABLES:

Ade: HELP <RETURN>

Ade: HELP me with subject <ADE> TABLES <RETURN>
 * Enter a topic, an ADE command, or just press the RETURN key.

ADE displays a list of commands to use in making a new table.

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Now, enter a HELP command for one of the commands listed on the screen. The HELP command displays:

- A paragraph or two about the command, including its purpose and results

- Any optional phrases that can be used with the command

- Other related HELP topics, if any

Continue typing other HELP commands in this way. Be sure to try the HELP commands for GET and SAVE.

You have now tried a number of HELP commands. As you work with ADE in the future, make use of the HELP command.

3.5.2 The HELP Key

ADE has a HELP key that you can press to display additional HELP text. ADE's HELP key is the second key from the left in the top row of the terminal keypad. On the VT100 terminal, the HELP key is the PF2 key. (If you forget which is the HELP key, use the HELP VT100 command.) See Figure 3-4 in Section 3.6.4 for a layout of the VT100 keypad.

Use the HELP key whenever ADE expects input and you are not sure what to enter. Also use the HELP key when the prompts on the command line and the helping prompt line do not give you enough information.

When you press the HELP key after the Ade: prompt, you see the default help display. At all other times when ADE expects input, pressing the HELP key causes the display of more detailed information on what ADE currently expects from you. When you enter a command, for example, you can use the HELP key to get information about each command input. For example, type MAKE and press the RETURN key:

Ade: MAKE <RETURN>

ADE displays:

Ade: MAKE new _
 * Enter the word COLUMN, WORKSHEET, VERB, or REPORT

Now, press the HELP key. This information is displayed in the
scrolling area:

----------------- Keywords for the MAKE command ----------------

COLUMN   - Puts an empty column on the end of the worksheet
WORKSHEET - Leads you thru the making of a new worksheet
VERB   - Lets you put ADE commands into a VERB
REPORT   - Lets you customize the format of a Table

You must tell the MAKE command what you want to MAKE

Now press CTRL/C to cancel this MAKE command.

After you have read the HELP text, you can use the DISPLAY
function to clear the screen and redisplay what was in the
scrolling area before you pressed the HELP key.   (To use the
DISPLAY function, press the PF1 key and then the PF2 key.)

3.6 USING THE TERMINAL IN ADE

If you have been working the examples in this chapter at your
terminal, you already know the basics of using the terminal in
ADE. This section describes how to use the terminal in more
detail and introduces you to data entry. This section
describes:

● Making the Worksheet PARTS

● Saving the Worksheet PARTS

● Entering More Data into the Worksheet PARTS

● Using ADE Function Keys

3.6.1 Making The Worksheet PARTS

To make a sample worksheet called PARTS, follow the instructions
in this section exactly.   Do not be concerned if you do not
fully understand these instructions at this time.   There is a
more detailed description of making a worksheet in Chapter 5.

GETTING STARTED - A SAMPLE SESSION

Type MAKE and press the RETURN key:

Ade: MAKE <RETURN>

ADE displays:

Ade: MAKE new _
 * Enter the word COLUMN, WORKSHEET, VERB, or REPORT

Type WORKSHEET and press the RETURN key:

Ade: MAKE new WORKSHEET <RETURN>

ADE displays:

Ade: MAKE new WORKSHEET called _
 * Enter a Table name   _

Type PARTS and press the RETURN key:

Ade: MAKE new WORKSHEET called PARTS
 Working...

ADE then prompts you for column names:

Type PN and press the RETURN key.

Type PNAME and press the RETURN key.

Type WHOUSE and press the RETURN key.

Type COLOR and press the RETURN key.

Type WEIGHT AS NUM and press the RETURN key.

Type QTY AS NUM and press the RETURN key.

Press the ENTER key on the keypad to end column name inputs.

Type PN and press the RETURN key to name the key column.
(Chapter 4 discusses key columns in detail.)

The worksheet now contains only the columns of the sample PARTS
table.

Now you will enter two kinds of data: character data and numeric data.

3.6.1.1 Entering Characters, Numbers, And Blanks -

To enter characters, use the letter and special character keys on the main terminal keyboard. Do not press the ESCAPE, TAB, BREAK, or BACKSPACE keys.

To enter numbers, use the number keys on the main keyboard. Do not use the number keys on the keypad at this time. The keypad keys are used as special function keys, and are discussed in Section 3.6.4.

To enter blanks into any type of column, press the RETURN key in response to the prompt for the column.

As you type in data, use the DELETE key to correct typing mistakes as they occur. When each column data value is correct and complete, press the RETURN key.

3.6.1.2 Spacing Data -

ADE takes care of spacing data for you as you enter it. ADE also adjusts column widths to fit the values you enter. Do not use the TAB key for spacing your data.

3.6.1.3 Entering The Data -

You are now ready to enter data into the worksheet. The MAKE command issues an implicit ENTER command. The screen displays the worksheet column name prompts. The cursor is at the prompt for the first column, PN:

   This is the last line you entered:
PN   PNAME   WHOUSE COLOR WEIGHT   QTY

PN......? _
PNAME   ?
WHOUSE   ?
COLOR   ?
WEIGHT   ?
QTY   ?

GETTING STARTED - A SAMPLE SESSION

To enter the first value for the PN column, type P01 and press
the RETURN key.

The cursor moves to the next column prompt:


```
PN       ? P01
PNAME...? _
WHOUSE  ?
COLOR   ?
WEIGHT  ?
QTY     ?
```

To enter the first value for the PNAME column, type NUT and
press the RETURN key:


```
PN       ? P01
PNAME...? NUT
WHOUSE  ? _
COLOR   ?
WEIGHT  ?
QTY     ?
```

Type W2 and press the RETURN key:


```
PN       ? P01
PNAME   ? NUT
WHOUSE  ? W2
COLOR...? _
WEIGHT  ?
QTY     ?
```

Type RED and press the RETURN key:


```
PN       ? P01
PNAME   ? NUT
WHOUSE  ? W2
COLOR   ? RED
WEIGHT..? _              (NUMERIC)
QTY     ?
```

The word NUMERIC appearing in parentheses means that only
numbers are allowed in this column. Type 12 and press the
RETURN key:


```
PN        ? P01
PNAME     ? NUT
WHOUSE    ? W2
COLOR     ? RED
WEIGHT    ? 12
QTY.....? _                        (NUMERIC)
```

Type 135 and press the RETURN key. The display before you press
the RETURN key looks like this:


```
PN        ? P01
PNAME     ? NUT
WHOUSE    ? W2
COLOR     ? RED
WEIGHT    ? 12
QTY.....? 135_                     (NUMERIC)
```

You have now entered one line into the worksheet. ADE erases
the display of the values next to the column name prompts,
redisplays them at the top of the screen and prompts you to
enter another line of data.

Now enter in the following column values as shown, ending each
line by pressing the RETURN key:


```
PN        ? P02
PNAME     ? BOLT
WHOUSE    ? W2
COLOR     ? GREEN
WEIGHT    ? 17
QTY.....? 167_                     (NUMERIC)
```


```
PN        ? P03
PNAME     ? SCREW
WHOUSE    ? W1
COLOR     ? BLUE
WEIGHT    ? 17
QTY.....? 48_                      (NUMERIC)
```

```
PN        ? P04
PNAME     ? SCREW
WHOUSE    ? W2
COLOR     ? RED
WEIGHT    ? 14
QTY.....? 143_                    (NUMERIC)


PN        ? P05
PNAME     ? CAM
WHOUSE    ? W1
COLOR     ? BLUE
WEIGHT    ? 12
QTY.....? 205_                    (NUMERIC)


PN        ? P06
PNAME     ? COG
WHOUSE    ? W3
COLOR     ? RED
WEIGHT    ? 19
QTY.....? 215_                    (NUMERIC)


PN        ? P07
PNAME     ? GEAR
WHOUSE    ? W3
COLOR     ? GREY
WEIGHT    ? 9
QTY.....? 234_                    (NUMERIC)


PN        ? P08
PNAME     ? BEARING
WHOUSE    ? W2
COLOR     ? GREY
WEIGHT    ? 25
QTY.....? 136_                    (NUMERIC)


PN        ? P09
PNAME     ? BOLT
WHOUSE    ? W1
COLOR     ? WHITE
WEIGHT    ? 5
QTY.....? 15_                     (NUMERIC)
```

Now press the ENTER key on the keypad to complete the MAKE
WORKSHEET command. You see this message:

9 lines were ENTERED. You have 9 lines in your WORKSHEET.

3.6.2 Saving The Worksheet PARTS

To save the worksheet PARTS after you make it, type SAVE and press the RETURN key:

Ade: SAVE <RETURN>

ADE displays:

Ade: SAVE worksheet as <PARTS>

To accept the default name PARTS, press the RETURN   key.   ADE displays:

Ade: SAVE worksheet as PARTS
      Working...
ADE also displays this message:

Enter a description for the Table:

Press the RETURN key.

ADE displays this message:

The WORKSHEET has been saved as Table "PARTS".

To see the contents of the worksheet, press the RETURN key:

Ade: <RETURN>

ADE displays the worksheet in the scrolling area:


```
        ---

        PN    PNAME    WHOUSE   COLOR  WEIGHT   QTY

        P01   NUT      W2       RED       12    135
        P02   BOLT     W2       GREEN     17    167
        P03   SCREW    W1       BLUE      17     48
        P04   SCREW    W2       RED       14    143
        P05   CAM      W1       BLUE      12    205
        P06   COG      W3       RED       19    215
        P07   GEAR     W3       GREY       9    234
        P08   BEARING  W2       GREY      25    136
        P09   BOLT     W1       WHITE      5     15
```

To see information about the worksheet, type OUTLINE and press the RETURN key twice.

Ade: OUTLINE <RETURN> <RETURN>

ADE displays:

Ade: OUTLINE of table WORKSHEET

Because the worksheet now contains a copy of the PARTS table, the worksheet outline displays the same information that the PARTS table outline does.

        ** OUTLINE OF WORKSHEET PARTS **

        PN   (KEY)
        PNAME
        WHOUSE
        COLOR
        WEIGHT   (NUMERIC)
        QTY   (NUMERIC)

        There are 9 lines and 6 columns.

3.6.3 Entering More Data Into The Worksheet PARTS

In this section, use the ENTER command to enter more data into the worksheet PARTS. Make sure the Ade: prompt is at the bottom of the screen. This tells you that ADE is ready to accept input.

Type ENTER and press the RETURN key:

Ade: ENTER <RETURN>

ADE prompts you for a list of worksheet column names to use for data entry. You want to enter data into all the worksheet columns, so press the RETURN key to accept the default, ALL:

Ade: ENTER new lines in worksheet using columns <ALL> <RETURN>

ADE displays:

Ade: ENTER new lines in worksheet using columns ALL
 Working...

The Working... message shows you that ADE is executing the ENTER command. Shortly, the worksheet column names appear on the screen. At the bottom of the screen, in the message area, you see the function keys that are active during the ENTER command.

When the cursor is next to the first column name, PN, you are ready to enter more data into the existing worksheet:

```
  This is the last line you entered:
PN     PNAME      WHOUSE  COLOR   WEIGHT   QTY

P09   BOLT      W1       WHITE        5    15

PN......?  _
PNAME   ?
WHOUSE  ?
COLOR   ?
WEIGHT  ?
QTY     ?
```

NOTE

You may get this message:

There are NO columns in your WORKSHEET.

You have nothing in the worksheet to enter into (no columns) and need to type the GET PARTS command followed by the ENTER command.

GETTING STARTED - A SAMPLE SESSION

Enter a value for each column. Type P20, LUG NUT, W3,   YELLOW,
11, and 450; remember to press the RETURN key after each data
value entry.

The display before you press the last RETURN key looks like
this:

```
PN        ? P20
PNAME     ? LUG NUT
WHOUSE    ? W3
COLOR     ? YELLOW
WEIGHT    ? 11
QTY.....? 450 _                       (NUMERIC)
```

You have now entered a new line into the worksheet with the
ENTER command.

To complete the ENTER command, press the ENTER key on the
keypad. The following message is displayed in the message area:

1 lines were ENTERED. You have 10 lines in your WORKSHEET.

To display the worksheet, press the RETURN key:

Ade: <RETURN>

ADE displays the new worksheet in the scrolling area. See the
new line you just entered at the end of the worksheet:

```
        ---
```

PN	PNAME	WHOUSE	COLOR	WEIGHT	QTY
P01	NUT	W2	RED	12	135
P02	BOLT	W2	GREEN	17	167
P03	SCREW	W1	BLUE	17	48
P04	SCREW	W2	RED	14	143
P05	CAM	W1	BLUE	12	205
P06	COG	W3	RED	19	215
P07	GEAR	W3	GREY	9	234
P08	BEARING	W2	GREY	25	136
P09	BOLT	W1	WHITE	5	15
P20	LUG NUT	W3	YELLOW	11	450

3.6.4 Using ADE Function Keys

This section introduces the ADE function keys you can use when
you make, enter data into, and change the contents of tables.
You have already used two ADE function keys, the HELP key and
the ENTER key.

Figure 3-4 shows where to find the ADE function keys on the
VT100 terminal keypad and arrow keys. Each key is labeled with
the function or functions it performs. You may make a copy of
this diagram and keep it at your terminal for quick reference,
or use the HELP VT100 command to display a diagram like it on
the screen.

```
                  (up) is the UP-ARROW key.
                  (down) is the DOWN-ARROW key.
                  (left) is the LEFT-ARROW key.
                  (right) is the RIGHT-ARROW key.


      +-------+-------+-------+-------+
      |  UP   | DOWN  |       | RIGHT |
      | (up)  |(down) |(left) |(right)|
      |  TOP  | BOTTOM| D.LEFT| D.RGHT|
      +-------+-------+-------+-------+


      +-------+-------+-------+-------+
      |       | HELP  | UNDEL |       |
      | PF1   | PF2   | PF3   | PF4   |
      | GOLD  | DISPLY| DEL.LN|       |
      +-------+-------+-------+-------+
      | INSERT| SKIP  | FNDNXT|       |
      |  7    |  8    |  9    |   -   |
      |       |       | FIND  |       |
      +-------+-------+-------+-------+
      |       |       |       |       |
      |  4    |  5    |  6    |   ,   |
      |       |       |       |       |
      +-------+-------+-------+-------+
      |       |       |       |       |
      |  1    |  2    |  3    |       |
      |       |       |       |       |
      +-------+-------+-------+ ENTER |
      |       |       |       |       |
      |       0       |   .   |       |
      |       |       |       | NUMS  |
      +-------+-------+-------+-------+
```

        Figure 3-4: ADE Function Keys on VT100 Terminal

3.6.4.1 Standard And Alternate Functions -

Most function keys can perform two functions: a standard function and an alternate function. In Figure 3-4, the standard function name is at the top of the key (such as HELP for the HELP function) and the alternate function name is at the bottom of the key (such as DISPLY for the DISPLAY function). The key's most common keyboard label (such as PF2) is shown in the middle of each key. To use a standard function, press the appropriate key. To use an alternate function, press the GOLD (PF1) key and then press the appropriate key. Release the GOLD key before you press the function key.

3.6.4.2 Active Function Keys -

The standard HELP function key and the alternate DISPLAY function key are always active during an ADE session. However, all other ADE function keys are active only when you use certain commands (MAKE, ENTER, CHANGE, SET). Different keys are active for each of these commands. ADE displays the currently active keys (in the message area) for each command when the command has activated them.

For example, when you enter the MAKE WORKSHEET command, the active function keys for the MAKE command are displayed.

3.6.4.3 Repeating A Function -

You can repeat some functions several times by using the numbers on the main keyboard along with the function keys on the keypad. To repeat a function, press:

1. The GOLD key on the keypad.

2. The number key or keys on the main keyboard to indicate the number of times to repeat the function.

3. The key or keys to perform the function. For a standard function, press the function key. For an alternate function, press the GOLD key and then the function key.

For example, you are actively involved in entering the names of the worksheet columns in the MAKE WORKSHEET command. You have entered five column names and have discovered that you misspelled the second name. Press the GOLD key on the keypad, then the 4 key on the main keyboard. Then press the UP function key on the main keyboard. The cursor moves up four lines and returns to the second column position so that you can now correct the spelling error.

3.6.4.4 Using The Keypad To Enter Numeric Data -

So far, you have entered numeric data into the worksheet by using the number keys on the main keyboard. Sometimes, especially when you need to enter a lot of numeric data, you may want to use the keypad number keys. To do this, you need to turn the keypad number keys "on" so that ADE knows to treat numbers entered on the keypad as numeric values and not as keypad functions. Press the GOLD key on the keypad, then the ENTER key.

You can now use the keypad number keys to enter numeric values in the worksheet. To return to using the keypad number keys as function keys, press the GOLD key, then the ENTER key, again. This turns "off" the keypad number keys for entering numeric data and returns them to function keys.

3.6.4.5 Using Some Functions -

In this section, you use the CHANGE command to change some values in the worksheet. You use the SKIP, DOWN, TOP, BOTTOM, INSERT, FIND, and DELETE LINE function keys and repeat a function.

If you press the wrong function key at any point in a sequence, press CTRL/C to cancel the CHANGE command and start the sequence from the beginning. CTRL/C cancels all changes you made to the worksheet.

You need the worksheet PARTS that contains the sample PARTS table data, including the line added with PN equal to P20. If this data is not in the worksheet, get the sample PARTS table into the worksheet and enter the extra line (see Section 3.6.3). Now, enter the CHANGE WORKSHEET command, working through the example.

Type CHANGE and press the RETURN key. Press the RETURN key again to accept the WORKSHEET default value. Press the RETURN key a third time to accept the ALL columns default value. Finally, press the RETURN key to accept the ALL lines default value.

ADE displays:

Ade: CHANGE existing WORKSHEET columns ALL in lines WHERE ALL

ADE shows you the first line in the worksheet. The active
function keys are displayed and the cursor is at the first
column name, PN:

   This is the line you are changing:
PN   PNAME   WHOUSE   COLOR   WEIGHT   QTY

P01   NUT   W2   RED   12   135

PN......? _
PNAME   ?
WHOUSE   ?
COLOR   ?
WEIGHT   ?
QTY   ?


```
+/\ +- \/ -+- <- -+- -> -+PF1-+-PF2--+-PF3--+- 7 --+ 8 -+- 9 --+
| UP| DOWN |      |      |    | HELP |UNDEL |INSERT|SKIP|FNDNXT|
|TOP|BOTTOM|D.LEFT|D.RGHT|GOLD|DISPLY|DEL.LN|      |    | FIND |
+---+------+------+------+----+------+------+------+----+------+
```


You now have several choices. You can:

● Enter new values to replace one or more of the current
  values in this worksheet line

● Keep one or more of the current values in this line

● Keep all of the current values in this line and move on to
  the next line

● Delete this line from the worksheet

● Insert a new worksheet line before or after this line

You want to keep the current values on this first line and move on to the next line. Press the SKIP function (8) key on the keypad to move to the next line:

```
+-------+
| SKIP  |
|   8   |
|       |
+-------+
```

After you press the SKIP function key, the second worksheet line appears at the top of the screen and below it, the column name prompts:

```
    This is the line you are changing:
PN     PNAME     WHOUSE  COLOR    WEIGHT    QTY

P02    BOLT      W2      GREEN        17    167

PN......?  _
PNAME   ?
WHOUSE  ?
COLOR   ?
WEIGHT  ?
QTY     ?
```

You want to change the value in the COLOR column. Press the DOWN function (DOWN-ARROW) key three times.

```
+-------+   +-------+   +-------+
| DOWN  |   | DOWN  |   | DOWN  |
|(down) |   |(down) |   |(down) |
|       |   |       |   |       |
+-------+   +-------+   +-------+
```

The cursor moves to the COLOR column:

```
PN       ? P02
PNAME    ? BOLT
WHOUSE   ? W2
COLOR...?  _
WEIGHT   ?
QTY      ?
```

You can also move the cursor in another way using function keys.

Return to the original cursor position at the PN column prompt by pressing the GOLD (PF1) key and then the TOP function (UP-ARROW) key.

```
+-------+    +-------+
|       |    |       |
|  PF1  |    | (up)  |
| GOLD  |    | TOP   |
+-------+    +-------+
```

The cursor returns to the PN column:

```
PN......?  _
PNAME   ? BOLT
WHOUSE  ? W2
COLOR   ? GREEN
WEIGHT  ?
QTY     ?
```

Press the GOLD key, the 3 key on the main keyboard, and then the DOWN function (DOWN-ARROW) key:

```
+-------+          +--------+
|       |          | DOWN   |
|  PF1  |   <3>    |(down)  |
| GOLD  |          |        |
+-------+          +--------+
```

The cursor moves to the COLOR column:

```
PN      ? P02
PNAME   ? BOLT
WHOUSE  ? W2
COLOR...?  _
WEIGHT  ?
QTY     ?
```

Now, change the current value in the COLOR column from GREEN to
a blank. Press the SPACE BAR, then the RETURN key:


```
PN        ? P02
PNAME     ? BOLT
WHOUSE    ? W2
COLOR...? <SPACE BAR> <RETURN>
WEIGHT    ?
QTY       ?
```


To change the value in the QTY column, press the GOLD key and
then press the BOTTOM function key:


```
+-------+   +-------+
|       |   |       |
|       |   |       |
| PF1   |   |(down) |
| GOLD  |   |BOTTOM |
+-------+   +-------+
```

The cursor moves to the QTY column:


```
PN        ? P02
PNAME     ? BOLT
WHOUSE    ? W2
COLOR     ?
WEIGHT    ? 17
QTY.....? _                     (NUMERIC)
```


To change the current numeric value in the QTY column from 167
to 176, type 176 and press the RETURN key:


```
PN        ? P02
PNAME     ? BOLT
WHOUSE    ? W2
COLOR     ?
WEIGHT    ? 17
QTY.....? 176 <RETURN>          (NUMERIC)
```


The third worksheet line now appears on the top of the screen,
followed by the column name prompts.

To insert a new worksheet line after the third line, press the
INSERT function (7) key on the keypad:

```
+-------+
| INSERT|
|   7   |
|       |
+-------+
```

ADE asks:

Do you want to INSERT BEFORE this line of the Table?

Type NO and press the RETURN key.

ADE then asks:

Do you want to INSERT AFTER this line of the Table?

Type YES and press the RETURN key.

ADE displays:

This new line will be inserted AFTER this line of the Table.

ADE prompts you for values for each column. Type P03A, SCREW,
W2, BROWN, 6, and 654; remember to press the RETURN key after
each value entry.

Before you press the last RETURN key, the screen looks like
this:

```
PN        ? P03A
PNAME     ? SCREW
WHOUSE    ? W2
COLOR     ? BROWN
WEIGHT    ? 6
QTY.....? 654_                        (NUMERIC)
```

Now, to find the worksheet line that contains the information on cogs, press the GOLD key and then the FIND function (9) key:

```
+-------+       +-------+
|       |       |       |
|  PF1  |       |   9   |
|  GOLD |       |  FIND |
+-------+       +-------+
```

In the message area, ADE prompts you to enter a condition that specifies the line to find:

Find condition <WHERE ALL> ?

Since you want to find the line where the value in the PNAME column is COG, type WHERE PNAME EQ COG and press the RETURN key:

Find condition <WHERE ALL> ?   WHERE PNAME EQ COG <RETURN>

After a short delay, ADE displays the worksheet line you asked for and again prompts you to change column values:

```
PN......?  _
PNAME   ?
WHOUSE  ?
COLOR   ?
WEIGHT  ?
QTY     ?
```

Now erase this line by pressing the GOLD key and then the DELETE LINE function (PF3) key:

```
+-------+       +-------+
|       |       |       |
|  PF1  |       |  PF3  |
|  GOLD |       | DEL.LN|
+-------+       +-------+
```

To complete the CHANGE command, press the ENTER key on the keypad.

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If you want to see the worksheet, wait for the command line to
clear and press the RETURN key:

Ade: <RETURN>

You see the changed worksheet displayed:

         PN   PNAME   WHOUSE   COLOR   WEIGHT   QTY

         P01   NUT   W2   RED   12   135
         P02   BOLT   W2   17   176
         P03   SCREW   W1   BLUE   17   48
         P03A   SCREW   W2   BROWN   6   654
         P04   SCREW   W2   RED   14   143
         P05   CAM   W1   BLUE   12   205
         P07   GEAR   W3   GREY   9   234
         P08   BEARING W2   GREY   25   136
         P09   BOLT   W1   WHITE   5   15
         P20   LUG NUT W3   YELLOW   11   450

3.7 EXITING ADE

To exit from an ADE session, type EXIT and press the RETURN key
after the Ade: prompt on the command line:

Ade: EXIT <RETURN>

ADE asks:

Do you really want to end this session (YES or NO)?

You can type NO or N to cancel the EXIT command or you can type
YES or Y to complete the EXIT command. If you type YES and
changed the current worksheet without saving the worksheet, ADE
asks:

Your Worksheet has not been saved and this command will lose any
changes you made. Should ADE do this command anyway (YES or NO)?

You can type YES or Y to completely exit ADE or you can type NO
or N to cancel the EXIT command at this point and allow you to
save the worksheet and continue using ADE.

Since you are now finished with this sample ADE session, exit
ADE without saving the worksheet.

CHAPTER 4

ADE LANGUAGE RULES

ADE understands a language of words and symbols. The ADE language, although based on English, is simpler and more exact than English. For example, ADE understands MAKE, but not CREATE. In ADE, a word always has the same meaning, and only one meaning is given to each word. For example, combine and merge have similar meanings in English, but in ADE the COMBINE and MERGE commands perform distinctly different operations.

Just as there are rules for speaking and writing English, there are rules for communicating with ADE. These rules are kept as simple as possible.

This chapter contains rules relating to both commands and data.

4.1 RULES FOR NAMING COLUMNS, TABLES, AND WORKSHEETS

1. A column, table, or worksheet name:

   - Can contain only letters, numbers, and periods

   - Can be up to 16 characters long

   - Must start with a letter

   - Cannot end with a period

   - Cannot contain any spaces

2. Each worksheet you save as a table must be given a unique name. Columns must have unique names within each worksheet or table.

4.2 ABBREVIATIONS

Column and table names cannot be abbreviated. However, all commands and keywords used in ADE can be abbreviated.

Abbreviate the following, using the first three letters:

- All commands

- The general keywords WORKSHEET, TABLE, and COLUMN

- The column keywords CHARACTER, NUMERIC, and DATE

- The date keyword TODAY

- The output keywords PRINTER, TERMINAL, DEVICE and PORT

- The sorting keyword DESCENDING

- Other keywords that are introduced in later chapters

Abbreviate YES and NO using only the first letter.

4.3 COLUMNS

The ADE worksheet and ADE tables can contain three types of columns:

- Character columns

- Numeric columns

- Date columns

4.3.1 Character Columns

Character columns are the most flexible type of column. They can contain either character values or numbers on which you can do arithmetic. ADE uses character columns when making a new worksheet or adding a new column to an existing worksheet when you specify only the new column name. Unless you want to do arithmetic on dates, use character columns when you first begin making worksheets.

Values in character columns can be any combination of letters, numbers and other characters. For example, these are valid character column values:

    SMITH
    OUT OF STOCK
    P-5600/A
    359.21
    30-Dec-81

The last two values could be entered into a numeric column and and a date column, in that order. All the other values are valid only in character columns.

4.3.2 Numeric Columns

Numeric columns can contain only numeric values. When you specify a column as numeric, ADE uses a default number format pattern. You can change this format pattern using the SET command; however, we use only the default number format here. For more information on how to change the default number format, see the description of the SET command in Chapter 12.

Numeric values, using the default format for numbers, consist of one or more numbers (the digits 0 through 9) typed from the main keyboard when data is entered. A numeric value can optionally have a leading plus (+) or minus (-) sign and a decimal point. A numeric value cannot contain commas unless you use the SET command to change the default number format (see Chapter 12). You must limit a numeric value to 37 digits. The following examples show what kind of values, using the default format for numbers, can be entered into numeric columns:

    12
    12.00
    1425.00
    -3489
    5600

You could use all of these values in a character column, but none of them are valid in date columns.

4.3.3 Date Columns

Date columns can only contain date values. Date values have three parts: day, month, and year. When you specify a column as date, ADE uses a default date format. You can change this format using the SET command; however, we use only the default date format here. For more information on how to change the default date format, see the description of the SET command in Chapter 12.

Date values, using the default format, should be entered and are displayed in the format dd-Mmm-yy (30-Dec-81). In this format, dd means day, Mmm means month, and yy means year. You must enter a date value in the order day, month, year. You must also enter either a space, a dash (-), or another nonletter and nondigit character between the day and the month name and between the month name and the year. If you do not enter the year, ADE uses the current year in the system date. The following examples show the ways you can enter the day, month, and year:

```
Day      You type:  01      ADE displays:  1
                     1                      1
                     1                      1
                     30                     30

Month    You type:  Dec     ADE displays:  Dec
                     dec                    Dec
                     DEC                    Dec
                     DECEMBER               Dec
                     December               Dec

Year     You type:  1981    ADE displays:  81    stores:  1981
                     81                     81             1981
                     2000                   00             2000
                     (no year)              82 (current)   1982
```

You can also use the keyword TODAY to enter the current date into a date column. When you enter TODAY, ADE enters the current system date in the format dd-Mmm-yy. ADE does check the validity of all dates entered into date columns and rejects a nonexistant date (such as 31-Feb-82).

4.3.4 How To Define The Three Types Of Columns

The worksheet or a table can contain one, two, or all three types of columns. You can restrict a column to numbers or dates when you name a worksheet column using the MAKE WORKSHEET command. The MAKE WORKSHEET command prompts you for column names. When you enter only a column name, ADE automatically defines the column as a character column. To restrict the column to numbers or to dates, type AS NUMERIC or AS DATE after the column name. You can use the same optional phrases when using the MAKE COLUMN command to add a new column to the worksheet.

For example, you want to store the following information for each of your employees in a table called PERSONNEL:

- Employee name

- Employee badge number (as a number)

- Date hired (as a date)

- Department

Enter the following MAKE command:

MAKE new WORKSHEET called PERSONNEL

When ADE prompts for column names, enter these names:

NAME <RETURN>

BADGE.NUMBER AS NUMERIC <RETURN>

DATE.HIRED AS DATE <RETURN>

DEPT <RETURN>

4.3.5 How To Use The Three Types Of Columns

ADE handles the three types of columns somewhat differently in several kinds of operations. Therefore, the column type is important when you:

- Perform arithmetic on data

- Sort and retain data

- Display and print data

After becoming familar with ADE, you should define a column containing only numbers as a numeric column for the following reasons:

● When you enter data into a numeric column, ADE does not let you enter anything but a numeric value, thus avoiding incorrect data.

● Although you can perform arithmetic on numbers in both character and numeric columns, the results are more precise for numeric columns. ADE gives you decimal fractions only in results from numeric columns. When you multiply or divide numbers in character columns, the result is rounded to the nearest whole number.

● When you list a numeric column, all values in the column are right-justified and are consistent in appearance. If you enter any values with decimal points, ADE gives all values in that column decimal points and the same number of decimal places. Numeric values entered into character columns, on the other hand, are left-justified and not aligned by decimal points. For example:

Character	Numeric
12	12.00
12.00	12.00
1425.00	1425.00
-3489	-3489.00
5600	5600.00

If you want to perform arithmetic on dates, sort on dates, or use date data as dates, you must define the column containing dates as a date column. You cannot perform arithmetic on dates in character columns. When you sort or otherwise use dates in a character column, the results may not be what you want.

You can use the RENAME command to change character columns to numeric or date columns without reentering the data.

4.4 RULES FOR WORKING WITH KEY COLUMNS

A key column keeps all the lines in the worksheet or a table in order. A key column has two characteristics:

- It does not allow duplicate values.

- It orders all lines by ascending key column value.

To make sure your key columns have both of these characteristics, you must follow certain rules when you work with key columns:

- A numeric or date key column cannot contain more than one blank entry, nor can a numeric key column contain both a blank and a 0, since both a blank entry and a 0 entry both have the same numeric value.

- The MAKE COLUMN command lets you add a column to the worksheet. You can add a key column to a worksheet that does not already have one and that contains one or no (column names only) lines. However, you cannot add a key column directly to a worksheet that contains more than one line of data, since duplicate key column data values would be present.

- When you change any values in a key column with the CHANGE command, the column is no longer a key column. To change data values in a key column and maintain it as a key column:

  - Use the PICK command to get rid of all lines where you want to change the key column value.

  - Use the ENTER command to reenter these lines.

- If you perform an operation on a worksheet with a key column that reorders the data or introduces duplicate values, the column ceases to be a key column after the operation is complete.

- You can change a nonkey column to a key column or change a key column to a nonkey column with the RENAME command. When you enter the RENAME command, specify the phrase AS KEY or AS NOKEY (or AS NONKEY) after the column name you are changing. Before you use RENAME to change a nonkey column to a key column, however, make sure the column has no duplicate data values and that the data values are in ascending order. Use the SORT command if necessary.

4.5   HOW TO SPECIFY WORKSHEET COLUMNS IN COMMANDS

Several ADE commands ask you to indicate which columns to use.
The commands then act only on these columns.

There are three ways to specify the worksheet columns:

● A list of column names separated by commas

● The keyword ALL

● The keyword OMIT, followed by a list of column names
  separated by commas

The keyword ALL means all columns. ALL is the default value for
most commands that require a column list.

The keyword OMIT followed by a column list causes the command to
act on all columns except those in the column list.

For example, you need a simple inventory listing of the data in
the worksheet that has six columns. However, you want to see
the data in only three of the columns. To limit the data that
you want to see, enter the following command:

LIST existing WORKSHEET columns PN,WHOUSE,QTY

You could also use the command:

LIST existing WORKSHEET columns OMIT PNAME,COLOR,WEIGHT

This example refers to the sample PARTS table with columns
PN,PNAME, WHOUSE,COLOR,WEIGHT and QTY.

4.6   HOW TO SPECIFY WORKSHEET LINES IN COMMANDS

For some ADE commands, you must tell ADE which lines you want to
work on. For other commands, you have the option of specifying
particular worksheet or table lines.

There are three ways to specify the worksheet lines:

- The keyword ALL

- A WHERE phrase

- An EXCEPT phrase

The keyword ALL means all lines. ALL is the default value for most commands that require specified lines.

When a command allows lines to be specified, and most commands do, enter the WHERE or EXCEPT phrase as part of the entry at the end of the command.

A WHERE phrase specifies the worksheet lines to be used. Only lines that satisfy the WHERE phrase are used. An EXCEPT phrase specifies the worksheet lines not to be used. Only lines that do not satisfy the EXCEPT phrase are used.

A WHERE or EXCEPT phrase has four parts that you enter in the following format:

Keyword Column Operator Value

WHERE QTY LT 20 is an example of a WHERE phrase. EXCEPT QTY GE 20 is an example of an equivalent EXCEPT phrase.

Keyword is the keyword WHERE or the keyword EXCEPT.

Column is the name of any column in your worksheet or the keyword LINE. The keyword LINE refers to the line position in the worksheet.

Operator is one of the following:

Operator	Meaning
EQ or =	Is equal to
NE or <>	Is not equal to (or is not)
LT or <	Is less than (or is before)
LE or <=	Is less than or equal to
GT or >	Is greater than (or after)
GE or >=	Is greater than or equal to
BT	Is between the values
BW	Begins with
EW	Ends with
CO	Contains

The BT operator specifies lines that have a value in the column given or the value of the line number that is between the two values given. The BW and EW operators specify lines that have a character value in the column given that begins with and ends with the character values given in that order. The CO operator specifies lines which have a character value in the column given that contains within it the character value given.

The BW, EW and CO operators work best on character columns. For example, you can specify all lines with a character column containing last names where the last name begins with S, ends with SON or contains VON. For numeric columns, however, it is best to use these operators only on numeric data saved in a table. When you enter and change numeric data in the worksheet, it may be displayed somewhat differently from the way you entered it. After you save the worksheet as a table, numeric data is stored and displayed in the same format. The use of these operators on date columns is not fully supported.

<u>Value</u> is a group of characters or a number.

The following examples use the sample PARTS table:

● You want to work with the inventory in Warehouse 2 (W2). To keep these lines in the worksheet, enter the command:

    PICK columns ALL and lines WHERE WHOUSE EQ W2

● Your company has stopped selling bearings. To remove information on bearings from your parts inventory, enter the command:

    PICK columns ALL and lines EXCEPT PNAME EQ BEARING

● You would like to check on the quantity of all parts below the minimum level point, which is 20. Enter the command:

    LIST existing WORKSHEET columns ALL WHERE QTY LT 20

● You would like to see how many green parts and how many grey parts there are. Enter the command:

    LIST existing WORKSHEET columns ALL WHERE COLOR BW GR

● You would like to see the first five lines in the worksheet. Enter the command:

    LIST existing WORKSHEET columns ALL WHERE LINE LE 5

CHAPTER 5

PRODUCING A TABLE

This chapter describes how to make a new ADE worksheet and save it as a table.

To make a new table:

1. Use the MAKE command to name the worksheet and define the new columns.

2. Use the implicit ENTER command to enter data into the worksheet.

3. Use the LIST command to see the worksheet.

4. Use the CHANGE command to correct mistakes made when entering data into the worksheet.

5. Use the ENTER command to enter any new data into the worksheet.

6. Use the SAVE command to save the worksheet as the new table.

The rest of this chapter describes how to perform each of these steps to produce a new table called PERSONNEL that contains this employee information:

*   Name

*   Badge number

*   Date hired

*   Department

The lines in the new table will be alphabetized by employee name.

5.1 MAKING A WORKSHEET AND DEFINING THE COLUMNS

5.1.1 Making A Worksheet

To make a new worksheet, type the MAKE command and press the RETURN key. ADE prompts you for what you want to make, in this case the worksheet. See Chapter 4 for rules on naming the worksheet. There is no default. You must type the keyword WORKSHEET and press the RETURN key. ADE then prompts you to enter a name for the new worksheet. Type the name and press the RETURN key. Use the name PERSONNEL. The following is displayed on the command line:

MAKE new WORKSHEET called PERSONNEL

If you had any information in the worksheet prior to entering the MAKE WORKSHEET command and you have modified it since it was last saved, you will be so informed by ADE and asked whether or not you want to continue with the MAKE command. If not, you can answer NO to cancel the MAKE command. You can then save the worksheet. If you want to continue with the MAKE command, answer YES. If you had no previous information in the worksheet, you are not asked this question.

5.1.2 Naming The Columns

After the MAKE command is entered, ADE prompts you for column names. After each column name you type, press the RETURN key. See Chapter 4 for rules on naming columns. Use the column names of NAME, BADGE.NUMBER, DATE.HIRED, and DEPT. To restrict a column to contain only numeric values or only date values, type AS NUMERIC or AS DATE after the column name. You should do this for the BADGE.NUMBER column and the DATE.HIRED column. When you do not restrict a column by typing an AS phrase, the column is a character column.

When you finish entering column names and the optional AS phrases, press the ENTER key on the keypad after the prompt for the next column.

Your input should be entered like this:

```
Column   1? NAME <RETURN>
Column   2? BADGE.NUMBER AS NUMBER <RETURN>
Column   3? DATE.HIRED AS DATE <RETURN>
Column   4? DEPT <RETURN>
Column   5? <ENTER>
```

5.1.3 Defining The Key Column

After you press the ENTER key on the keypad to indicate that you
are finished entering column names, ADE asks which column you
want to be the key column. NONE is the default. To specify a
key column, type the column name and press the RETURN key. Type
the column name NAME to make the NAME column the key column.

5.2 ENTERING DATA

At this point, the worksheet has columns but no data. The MAKE
WORKSHEET command issues an implicit ENTER command to allow you
to enter data into the worksheet. There is a key column in the
worksheet. Therefore, you can enter lines in any order and they
are ordered by the values entered into the NAME column, which is
the key column. You also cannot enter any duplicate values into
the NAME column, since it is the key column.

ADE clears the screen and displays the worksheet column names.
A question mark follows each column name. A row of dots is at
the first column, between the column name and the question mark.
This row of dots and the cursor always appear at the column
awaiting your data. The cursor waits at the first column for
your data. Here is how the screen looks before you start
entering data:

```
NAME..........?  _
BADGE.NUMBER  ?
DATE.HIRED    ?
DEPT          ?
```

Enter a value for each column. Use the DELETE key to correct
typing mistakes. Press the RETURN key to move to the next
column. If you want to enter a blank value into a column, press
only the RETURN key for that column entry. The row of dots
moves from column to column as you enter values. Here is how
the screen looks as you enter values:

```
NAME          ? JONES
BADGE.NUMBER  ? 4
DATE.HIRED    ? 2-Jan-80
DEPT..........?  _
```

If any of the columns are restricted to numbers or dates, the prompt line includes either the word NUMERIC or the word DATE. You must enter the correct kind of value. If you enter an incorrect value, ADE:

● Erases the incorrect value

● Prints an error message, including the incorrect data

● Moves the cursor back to the beginning of the column so you can reenter the value correctly

When you finish entering values in all the columns, you have entered one line of data into the worksheet. The data just entered is moved from the entry locations to the top of the screen. ADE is ready for the next line of data to be entered. You continue entering data line by line.

Some function keys on the keypad and the arrow keys are active while you enter data. The active function keys are displayed at the bottom of the screen. Besides the HELP function, DISPLAY, SKIP, UP, DOWN, TOP, and BOTTOM are other functions you may find useful.

When you finish entering data into the worksheet, press the ENTER key after the first column prompt the next time the column names are displayed, as shown. This completes the implicit ENTER command and returns you to the **Ade:** command prompt.

```
NAME..........? <ENTER>
BADGE.NUMBER   ?
DATE.HIRED     ?
DEPT           ?
```

5.3 LISTING THE WORKSHEET

Use the short form of the LIST command to display the worksheet in the format of a table. To do this, press the RETURN key at the **Ade:** command prompt. Note that the key column name is underlined. A similar display is shown in the scrolling area:

NAME	BADGE.NUMBER	DATE.HIRED	DEPT
CARTER	2	12-Jun-79	SALES
CLANCY	1	17-Mar-79	SALES
D'ANGELO	3	22-Aug-79	MFG
JONES	4	2-Jan-82	MFG

When the worksheet has many lines, you can use the NO SCROLL key to stop and restart the scrolling of data.

When the worksheet is too wide to fit on the screen, use the long form of the LIST command. Request to see only groups of the columns that will fit on the screen at one time. If you request all columns, the data in a line not fitting on the screen is wrapped to the next line.

5.4 CHANGING DATA

Use the CHANGE command to correct mistakes made in data entry. Specify individual columns and specific lines for selective changes. The specified columns are listed, and only the specified lines are successively presented for change. The CHANGE command format is exactly like the ENTER format, including the display of active function keys at the bottom of the screen. The additional INSERT, DELETE LINE, UNDELETE, FIND, and FIND NEXT functions may be useful when making changes. If no changes are required, do not use the CHANGE command at all.

5.5 ENTERING MORE DATA

You may discover new data that you want to include as part of the worksheet before you save it. In this case, use the ENTER command. The command line displays:

ENTER new lines in worksheet using columns ALL

ADE clears the screen and displays the worksheet column names, as described above. The last line in the worksheet is also displayed at the top of the screen. Enter values for each column for each line that you are prompted to enter, exactly as you entered the original data. When finished, press the ENTER key on the keypad to complete the ENTER command. If no additional data is needed, do not use the ENTER command at all.

5.6 SAVING THE WORKSHEET AS A TABLE

When you have entered all data correctly, use the SAVE command
to save a copy of the worksheet as a table. Since the worksheet
was named PERSONNEL, the default table name for the SAVE command
is PERSONNEL.   After entering the SAVE command, command line
displays:

SAVE worksheet as PERSONNEL

Because SAVE can overwrite existing tables, you get a chance to
stop the command, if a table already exists with the same name.
After you pressed the RETURN key following the table name, if
you already have a table named PERSONNEL, for example, ADE asks
you whether you want to replace the existing PERSONNEL table
with the worksheet. Answer YES if you want to replace the table
with the worksheet; answer NO to stop the SAVE command.

After the SAVE command is complete, ADE displays:

The WORKSHEET has been saved as Table "PERSONNEL".

The table PERSONNEL now contains exactly what the worksheet
PERSONNEL contains, the data you just entered.

CHAPTER 6

WORKING WITH TABLES AND THE WORKSHEET

After you save a table, you can work with it to:

- Enter new data

- Change data

- Reorder data

- Selectively group data

- Perform arithmetic on data

- Graph data

- Prepare data for a report

This chapter describes how to work with tables and the worksheet, as well as how to effectively design tables for use by ADE. Many commands are shown by example. For a complete description of each command, see Chapter 12.

6.1 USING EXISTING TABLES

6.1.1 Displaying The Names And Outlines Of Tables

Use the NAMES command to find out what tables exist in an ADE user area. After you enter the NAMES command specifying table names, the command line displays:

NAMES of TABLES

A list of currently existing table names displays in the scrolling area. You then can use the OUTLINE command to display the outlines of tables. If the table you want is the PARTS table, then use the OUTLINE PARTS command to display its outline. The command line displays:

OUTLINE of table PARTS

You can also use the LIST command to display the tables. For example, use the LIST PARTS command to display the table PARTS. The command line displays:

LIST existing PARTS columns ALL

6.1.2 Getting A Table Into The Worksheet

Before you can work with the data in an ADE table, you must use the GET command to transfer a copy of the table into the worksheet. Remember, the worksheet contains an exact copy of the table, not the table itself. Do not worry about making mistakes or ruining the data in the table because you make changes only to the worksheet. If you make a mistake, you can start over by using GET to copy the table into the worksheet again. If you want to work with the PARTS table data, use the GET PARTS command to get the data into the worksheet:

GET table PARTS

6.1.3 Listing The Worksheet On The Terminal

After you copy a table into the worksheet, you can use the OUTLINE WORKSHEET command to display the outline of the worksheet, as well as use the short form of the LIST command (the RETURN key pressed at the command prompt) to display the worksheet.

Use the short form of the LIST command often during an ADE session to see what the worksheet looks like.

6.1.4 Listing The Worksheet On The Printer

When you want to list the worksheet on paper instead of on the screen, use the LIST WORKSHEET command and add the optional phrase TO PRINTER at the end of the command input. For example:

LIST existing WORKSHEET columns ALL TO PRINTER

6.1.5 Listing Lines In The Worksheet

ADE numbers your worksheet lines in an "invisible" column called LINE. You can display these line numbers, along with your worksheet lines, with the LIST command followed by the keyword LINE. At the end of the LIST command line, type LINE,ALL to see line numbers for lines in all columns. For example:

LIST existing WORKSHEET columns LINE,ALL

You see the line numbers displayed at the left of your worksheet in a column called LINE:

LINE	PN	PNAME	WHOUSE	COLOR	WEIGHT	QTY
1	P01	NUT	W2	RED	12	135
2	P02	BOLT	W2	GREEN	17	167
3	P03	SCREW	W1	BLUE	17	48
4	P04	SCREW	W2	RED	14	143

You can also type LINE followed by a list of column names to see line numbers for lines in only those columns you specify.

6.1.6 Saving The Worksheet As A Table

At any time during an ADE session, you can save a copy of the worksheet as a table with the SAVE command. SAVE copies the worksheet into a table. The table is either a new one with a new name or an update to an existing one.

For example, to save the worksheet with the PARTS table data unchanged in a new table called NEWPARTS, use the SAVE command and enter the new table name after the default <PARTS> prompt and press the RETURN key. The command line displays:

SAVE worksheet as NEWPARTS

To replace the original PARTS table with new PARTS data in the worksheet, use the SAVE command and press the RETURN key after the default <PARTS> prompt. The command line displays:

SAVE worksheet as PARTS

You must confirm that you want to replace the PARTS table with the contents of the worksheet. This confirmation is a built-in protection to keep you from losing important data.

6.2 ENTERING NEW DATA INTO THE WORKSHEET

There are two ways to add new data to the worksheet:

● Add new lines

● Add new columns

6.2.1 Adding New Lines

The simplest way of adding new lines to the worksheet is the ENTER command. A more advanced way of adding new lines to the worksheet is using the MERGE and APPEND commands, which are introduced in Chapter 8. For now, use the ENTER command to add new lines to the worksheet. After typing the ENTER command, the command line displays:

ENTER new lines in worksheet using columns ALL

6.2.2 Adding New Columns

To add a new column to the worksheet, you can:

- Make a new column with the MAKE command and then enter data into the new column with the CHANGE command

- Place a value in every line of a column created with the MOVE command

- Copy all values from one worksheet column into a column created with the MOVE command

- Place the results of an arithmetic command in every line of a column created by the arithmetic command

A more advanced way to add new columns to the worksheet is using the COMBINE command, which is introduced in Chapter 8. For now, use MAKE and CHANGE to add a new column to the worksheet, as shown in the following example:

To add a new column named PRICE to the worksheet, enter the MAKE COLUMN command. ADE displays:

MAKE new COLUMN called PRICE

The column PRICE is now in the worksheet.

Now you need to put data into the PRICE column by using the CHANGE command.   To put data into column PRICE in all lines, enter the CHANGE WORKSHEET command. ADE displays:

CHANGE existing WORKSHEET columns PRICE in lines WHERE ALL

ADE now prompts you for the new values. Enter a value for PRICE and press the RETURN key. ADE then displays the next worksheet line and prompts you for the next value. Use the DELETE key to correct typing mistakes as you enter new values. Remember, the bottom of the screen displays the active function keys.

ADE continues to display lines and to prompt you for new values until you either enter a value for every line in the worksheet or press the ENTER key on the keypad.

When you see the **Ade:** command prompt, press the RETURN key to display the new values just entered. If you entered any values incorrectly, use the CHANGE command to correct them.

The following examples show how to use MOVE and SUBTRACT to add a new column to the worksheet.

Example:

You want to keep track of the date of the latest update of your product to its contracted customers. You sent an update to everyone on 30-Dec-82. Move the given date (30-Dec-82) to a new column called BASE.DATE in the worksheet that contains the list of your customers. Enter the MOVE command. ADE displays:

MOVE from 30-Dec-82 to column BASE.DATE

Assuming BASE.DATE column did not exist in the worksheet before the MOVE command was entered, a new column with that name is now added to the worksheet, and each line contains the specified date. The column is automatically a date column.

Example:

Move the existing values in a column called CURRENT.YEAR to a new column called LAST.YEAR in the same worksheet. Enter the MOVE command. ADE displays:

MOVE from CURRENT.YEAR to column LAST.YEAR

Assuming a column called CURRENT.YEAR does exist in the worksheet and a column called LAST.YEAR does not exist in the worksheet before the MOVE command was entered, a new column with that name is now added to the worksheet, and each line contains the corresponding value from the existing column. The column is the same type as the existing column.

Example:

You need to compute new lowest price limits for a sale with $100 rebates. Subtract 100 from the existing values in a column called LIMIT; put the result in a new column called NEW.LIMIT. Enter the SUBTRACT command. ADE displays:

SUBTRACT item 100 from LIMIT result in column NEW.LIMIT

Assuming a column called LIMIT does exist in the worksheet and a column called NEW.LIMIT does not exist in the worksheet before the SUBTRACT command was entered, a new column with that name is added to the worksheet, and each line contains the result of the subtraction. The new column is a numeric column.

6.3 CHANGING DATA

By using the CHANGE and RENAME commands, data can be changed in the worksheet.

6.3.1 Changing Data Values

The CHANGE command is the basic command to change data values in the worksheet. Use the CHANGE command to change values one by one at specified places in the worksheet.

When you enter the CHANGE command, specify which columns and which lines you want to change. ADE prompts you for each new value that you specified.

6.3.2 Renaming A Column Name Or Type

The RENAME command changes the name or type of a column. (Remember that a column can be character, numeric, or date. A column can also be key or nonkey.) To change a column's type, the column must contain the correct kind of data and, if it is to become a key column, must be in the correct order. To change a column from nonkey to key, the column values must be in ascending order and the column cannot contain duplicate values. To change a character column to a numeric column, the column must contain only numbers. To change a character column to a date column, the column must contain only date values.

WORKING WITH TABLES AND THE WORKSHEET

Example:

You want to rename the worksheet column PN to PARTNO. Enter the
the RENAME command. ADE displays:

RENAME existing PN to column PARTNO

Example:

To change PRICE to a numeric column, enter the RENAME command.
ADE displays:

RENAME existing PRICE to column PRICE AS NUMERIC

6.4   REORDERING DATA

By using the SORT and PICK commands, you can reorder worksheet
lines and worksheet columns.

6.4.1   Reordering Lines

The SORT command reorders lines.   It arranges all worksheet
lines in either ascending or descending order based on the
values in a specified column or a list of columns.

For this example, use the GET PARTS command to get the PARTS
table data into the worksheet again.

In PARTS, all lines are ordered by part number (the PN column).
Suppose you want to reorder the lines by the warehouse (the
WHOUSE column). Enter the SORT command. ADE displays:

SORT by columns WHOUSE

Now list the worksheet:

PN	PNAME	WHOUSE	COLOR	WEIGHT	QTY
P03	SCREW	W1	BLUE	17	48
P05	CAM	W1	BLUE	12	205
P09	BOLT	W1	WHITE	5	15
P01	NUT	W2	RED	12	135
P02	BOLT	W2	GREEN	17	167
P04	SCREW	W2	RED	14	143
P08	BEARING	W2	GREY	25	136
P06	COG	W3	RED	19	215
P07	GEAR	W3	GREY	9	234

Note that:

● All lines are now in order by warehouse number.

● The lines are no longer ordered by part number; therefore, PN is no longer a key column (underlined) if it was one before the sort.

You can sort lines using several columns with one SORT command by specifying the column names separated by commas in the command. You can also sort values in descending order by including the optional keyword DESCENDING as part of the last command entry input. See Chapter 12 for more information.

6.4.2 Reordering Columns

The PICK command reorders columns in the worksheet. PICK prompts you for a list of columns. List the column names from left to right in the order you want them to appear, separated by commas.

Example:

Assume the worksheet columns are now in the order: PN, PNAME, WHOUSE, COLOR, WEIGHT, QTY. Use the PICK command to change the order to PN, WHOUSE, QTY, PNAME, COLOR, WEIGHT. Enter the PICK command. ADE displays:

PICK columns PN,WHOUSE,QTY,PNAME,COLOR,WEIGHT and lines
          WHERE ALL

The worksheet outline shows the new column order, as follows:

        ** OUTLINE OF WORKSHEET PARTS **

        PN
        WHOUSE
        QTY   (NUMERIC)
        PNAME
        COLOR
        WEIGHT   (NUMERIC)

     There are 9 lines and 6 Columns.

6.5 SELECTIVELY GROUPING DATA

The PICK command selectively groups data from the worksheet by
asking you to specify columns and lines. When you use PICK, you
can specify both columns and lines with one command.

Use the PICK command to remove lines and columns that you no
longer want. PICK keeps only the columns and lines you specify
and discards the rest of the worksheet.

The following example shows how to use PICK on the PARTS table
data to produce selectively grouped data in the worksheet.

You want to see the quantity of each part in Warehouse 1.   To
selectively keep this data in the worksheet, enter the PICK
command. ADE displays:

PICK columns PN,WHOUSE,QTY and lines WHERE WHOUSE EQ W1

List the worksheet:


```
           ---

     PN    WHOUSE    QTY

     P03   W1         48
     P05   W1        205
     P09   W1         15
```


6.6 PERFORMING ARITHMETIC ON DATA

This section describes basic arithmetic commands. You can also
do arithmetic with the CALCULATE command, which is introduced in
Chapter 8.

These six ADE commands perform simple arithmetic:

- ADD

- SUBTRACT

- MULTIPLY

- DIVIDE

- TOTAL

- TALLY

These six commands fall into two groups. The first group consists of ADD, SUBTRACT, MULTIPLY and DIVIDE. The second group consists of TOTAL and TALLY.

The first group of four commands performs arithmetic on:

● The corresponding values in two columns

● The values in one column and a given value

● Two given values

When you specify two columns or a column and a value, all four of the commands in the first group place the result of the arithmetic in a new or an existing worksheet column. When you specify two values, the result displays in the scrolling area.

The second group of commands performs arithmetic on the values within vertical columns.

TOTAL adds up all the values within one or more columns. It places the result or results in the column or columns on a new line at the bottom of the worksheet. TOTAL can also produce subtotals on one or more columns. TOTAL places these results in the column or columns on new lines at the points of change.

TALLY produces a running total on a worksheet column, placing the results in a new or an existing column.

In the examples that follow, the MULTIPLY command shows how commands in the first group work. The TOTAL command and the TALLY command show how both commands in the second group work. These simple examples show basic operations only. See Chapter 12 for more detailed information on all six commands.

Example:

Assume this data is in your worksheet:

```
PN      WHOUSE    QTY    PRICE

P03     W1         48    .05
P05     W1        205    .03
P09     W1         15    .01
```

Use the MULTIPLY command to multiply QTY by PRICE to get the total value at the given price for each part. Specify a column named TOTAL.VALUE for the result. Enter the MULTIPLY command. ADE displays:

MULTIPLY item QTY by PRICE result in TOTAL.VALUE

List the worksheet:

```
        ---

    PN    WHOUSE    QTY   PRICE   TOTAL.VALUE

    P03   W1         48    .05          2.40
    P05   W1        205    .03          6.15
    P09   W1         15    .01           .15
```

Example:

Assuming the same data as the previous example, use the TOTAL command to find the total quantity of the parts and the grand total value for all three parts. Enter the TOTAL command. ADE displays:

TOTAL on columns QTY,TOTAL.VALUE subtotal by NONE

List the worksheet:

```
        ---

    PN    WHOUSE    QTY   PRICE   TOTAL.VALUE   TOTAL*

    P03   W1         48    .05          2.40
    P05   W1        205    .03          6.15
    P09   W1         15    .01           .15
                    268                 8.70    TOTAL
```

As you can see, there are 268 parts worth a total of $8.70. The TOTAL* column is useful in making more complex reports, which are introduced in Chapter 10.

Example:

Assuming the same data as in the previous two examples, use the TALLY command to find the running total of the TOTAL.VALUE column. Enter the TALLY command. ADE displays:

TALLY on column TOTAL.VALUE starting at 0 result in column
          RUN.TOTAL

List the worksheet:

```
        ---

    PN     WHOUSE    QTY    PRICE    TOTAL.VALUE    RUN.TOTAL

    P03    W1         48     .05          2.40         2.40
    P05    W1        205     .03          6.15         8.55
    P09    W1         15     .01           .15         8.70
```

As you can see, TALLY produces the same total of $8.70.

6.7 GRAPHING DATA

A graph can be an effective way to present data. With the GRAPH command, you can   produce   simple bar graphs of your worksheet data that show one worksheet column in relation to another.

ADE prompts you for two column names.   The first column you specify must contain numeric values.   This column is the vertical axis of the graph. The second column you specify can contain any kind of data. This column is the horizontal axis of the graph.

You can display the graph on the screen or print the graph on the line printer using the optional phrase TO PRINTER at the end of the command input. Chapter 7 describes how to copy the graph into a file so that you can use the graph in a report.

The following example uses the PARTS data in a graph.

Example:

Suppose you want to produce a graph on the screen to show the relative quantity of each part by graphing the QTY column in relation to the PN column.   Since the QTY column contains numbers and the PN column contains characters, specify QTY as the vertical axis column and PN as the horizontal axis column:

GRAPH vertical column QTY versus horizontal column PN

ADE displays:

```
          Bar graph of QTY versus PN
280!
   !
240!
   !                                 X
200!                      X   X   X
   !                      X   X   X
160!      X               X   X   X
   !      X           X   X   X   X
120!  X   X       -   X   X   X   X   X
   !  X   X           X   X   X   X   X
 80!  X   X           X   X   X   X   X
   !  X   X           X   X   X   X   X
 40!  X   X   X   X   X   X   X   X
   !  X   X   X   X   X   X   X   X   X
      ------------------------------------
      P01 P02 P03 P04 P05 P06 P07 P08 P09
```
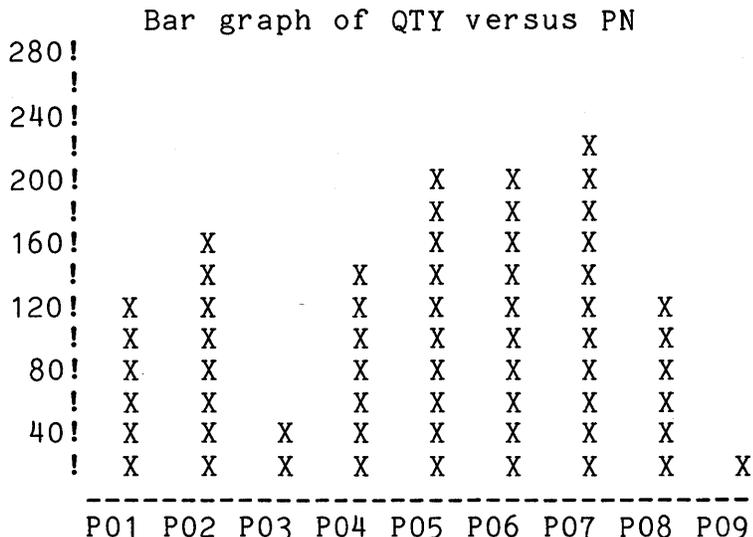
6.8   PREPARING DATA FOR A SIMPLE REPORT

You can produce simple ADE reports using the commands you already know. For example, you can get the data into the worksheet, sort it, or produce totals and tallies. You can then use the LIST command to display or print the worksheet.

The following example shows how to prepare and produce a simple report.

Use the MAKE command to make a new worksheet called INVENTORY that contains the following data:

PN	WHOUSE	QTY
P01	W1	128
P01	W2	135
P01	W3	142
P02	W1	92
P02	W2	167
P02	W3	251
P03	W1	48
P03	W2	74
P03	W3	10
P04	W1	65
P04	W2	143
P04	W3	202

The worksheet now contains:

- Duplicate part numbers in the PN column

- Lines ordered (sorted) by two columns: PN and WHOUSE

Now enter this TOTAL command:

TOTAL on columns QTY subtotal by PN

List the worksheet:

```
        ---

    PN    WHOUSE      QTY   TOTAL*

    P01   W1          128
    P01   W2          135
    P01   W3          142
    P01               405   PN
    P02   W1           92
    P02   W2          167
    P02   W3          251
    P02               510   PN
    P03   W1           48
    P03   W2           74
    P03   W3           10
    P03               132   PN
    P04   W1           65
    P04   W2          143
    P04   W3          202
    P04               410   PN
                     1457   TOTAL
```

The TOTAL command inserts a new worksheet line each time the value of PN changes. TOTAL also:

- Produces subtotals for each part number (PN)

- Produces a column total

- Adds a TOTAL* column to the worksheet

- Puts the subtotal column name PN on each subtotal line in the new TOTAL* column

- Puts the word TOTAL on the total line in the new TOTAL* column

This simple reporting format satisfies many of the simple reporting needs of many users. See Chapter 10 for information on how to produce more complex reports.

6.9 DESIGNING TABLES FOR MOST EFFECTIVE USE BY ADE

ADE works best on small tables. Keep information in small tables instead of large ones because:

- The ADE commands work faster

- You can display all your data on the screen without "wrapping"

This section suggests size limits for ADE tables and describes how you can work within these size limits.

6.9.1 Columns

An ADE table can contain no more than 25 columns, so that most of the time you can list all your data without wrapping. ADE is designed for use mainly on video terminals that display 80 or 132 characters per line. Lines longer than 132 characters result in "wrapped" lines that can be hard to read.

6.9.2 Lines

ADE's speed depends mainly on the number of lines in a table and not on the number of columns. Most ADE commands, especially SORT, work faster on small tables than on large tables. Although ADE can handle tables up to 1,000 lines, limit ADE tables to fewer than 250 lines when working with ADE interactively.

Also consider how you plan to use ADE. Speed is more important when you use ADE interactively than when you use verbs. When you use ADE interactively, you must wait for a command to finish before entering the next command. On the other hand, when you use verbs, you can leave your terminal and do other work while a verb is running. If you plan to use verbs, you can make tables up to 1,000 lines long.

6.9.3 How To Design Tables

Store data in small related tables instead of in large tables with many columns and lines.

Different tables can be related in one of two ways:

- They have exactly the same columns.

- They have one column that is the same, preferably a key column, but the rest of their columns are different.

Having exactly the same columns in tables means that the columns match one for one in name and type, but not necessarily in data values.

When you store data in related tables, you can use the more powerful commands introduced in Chapter 8. These commands can bring data from several tables into the worksheet when you need to work with larger amounts of data.

PART TWO - USING MORE OF ADE

CHAPTER 7

OPTIONAL PHRASES

This chapter describes optional phrases that you can add to ADE commands to make them work differently. For example, most ADE commands you have used so far display their output on your terminal screen; however, the optional TO phrase can send the output of some of these commands to a printer or a file instead.

This chapter describes:

- WHERE and EXCEPT phrases that select worksheet or table lines for a command to work with

- AS phrases that define columns as to type

- TO phrases that send command output to the line printer, a printer attached to the terminal, or a disk file instead of your terminal screen

- IN phrases that access a table or procedure in an ADE directory other than your own or on a disk other than the system disk

- EXTERNAL phrases that access data outside of ADE

Since ADE does not prompt you for these optional phrases, as it does for the required input, you must:

- Enter them when you enter the command

- Use the correct format for the phrase

- Enter them at the correct place on the command line

Although it may take a little time for you to learn and to feel comfortable with optional phrases, they are very useful.

OPTIONAL PHRASES

For each phrase, this chapter tells you:

- When to use it (its purpose)

- How to enter it (its format)

- Where to enter it on the command line

- How it affects each command's action

The examples for each type of optional phrase use only the optional phrase being described, but combinations of the optional phrases are possible and useful.

Some commands mentioned in this chapter have not been introduced before. The command descriptions in Chapter 12 also contain some additional information about optional phrases.

7.1 SPECIFYING LINES - THE WHERE AND EXCEPT PHRASES

Unlike most of the phrases in this chapter, the WHERE and EXCEPT phrases are not completely new to you. In Chapters 4 and 6, you saw how the PICK command uses these phrases.

You can use a WHERE or an EXCEPT phrase to reduce the total number of lines used, and thus save time. The WHERE and EXCEPT phrases are optional for commands that can work with specific lines in the worksheet or a table, instead of the entire worksheet or table.

The format of the phrase is:

    WHERE condition

    EXCEPT condition

Remember, in the PICK command, you specify a WHERE or EXCEPT phrase by typing WHERE or EXCEPT followed by a condition. WHERE tells the command to use all lines that meet the condition; EXCEPT tells the command to use all lines except those that meet the condition. A WHERE or EXCEPT phrase should follow the last required command input.

The format of a condition is:

Column Operator Value.

Column is the name of any column in the worksheet (or the table) or the keyword LINE.

Operator is one of the following:

Operator	*Meaning*
EQ or =	Is equal to
NE or <>	Is not equal to (or is not)
LT or <	Is less than (or is before)
LE or <=	Is less than or equal to
GT or >	Is greater than (or after)
GE or >=	Is greater than or equal to
BT	Is between the values
BW	Begins with
EW	Ends with
CO	Contains

Value is a group of characters, a number, or a date.

Examples:

Instead of doing a GET and then a PICK command, use a WHERE phrase on the GET command to copy into the worksheet only the lines in the table PARTS that have the WHOUSE column value of W1. ADE displays:

GET table PARTS WHERE WHOUSE EQ W1

Instead of doing a PICK and then a SAVE command, use a WHERE phrase on the SAVE command to save in the table NEWPARTS only the worksheet lines where the value in column QTY is greater than 100. ADE displays:

SAVE worksheet as NEWPARTS WHERE QTY GT 100

Instead of listing all the lines in the PARTS table, use an EXCEPT phrase on the LIST command to list all the lines except those where the value in column QTY is less than or equal to 100. ADE displays:

LIST existing PARTS columns ALL EXCEPT QTY LE 100

Use a WHERE phrase to place the word DONE in column STATUS in all lines where the value in column DUE.DATE is 30-Dec-82. ADE displays:

MOVE from "DONE" to column STATUS WHERE DUE.DATE EQ 30-Dec-82

OPTIONAL PHRASES

WHERE and EXCEPT sections of reports also use WHERE and EXCEPT
phrases (see Chapter 10).

7.2 SPECIFYING COLUMN TYPE - THE AS PHRASE

You use an AS phrase with the MAKE COLUMN or RENAME column
command to define or redefine a column type. When numbers are
in numeric columns, date values are in date columns, and ordered
values are in key columns, ADE performs at its best. The AS
phrase:

● Defines the type of data that the column can contain

● Specifies whether or not the column is the key column

The AS phrase takes one of the following forms:

       AS NUMERIC

       AS DATE

       AS CHARACTER

       AS KEY

       AS NOKEY or AS NONKEY

An AS phrase should immediately follow the column name to which
it refers.

If numeric or date values are entered into a CHARACTER column in
the worksheet, you can easily change the type to NUMERIC or
DATE, as appropriate, with a RENAME command using an AS phrase.

AS phrases can also be used when naming the columns in a MAKE
WORKSHEET command.

Examples:

Use an AS phrase to add a new numeric column called PRICE to the worksheet. ADE displays:

MAKE new COLUMN called PRICE AS NUMERIC

Use an AS phrase to specify that the existing column PRICE is the key column in the worksheet. ADE displays:

RENAME existing PRICE to PRICE AS KEY

7.3 SPECIFYING OUTPUT DESTINATION - THE TO PHRASE

You use a TO phrase with a NAMES, OUTLINE, LIST, or GRAPH command to direct output to one of the following options:

● Your system's line printer: TO PRINTER

● A local printer port connected to your terminal: TO PORT

● A file: TO FILE filename

● Any other output device: TO DEVICE devicename

If you do not specify any of these options, output goes to your terminal.

The TO phrase takes one of the following forms:

TO PRINTER

TO PORT

TO FILE filename

TO DEVICE devicename

TO TERMINAL

TO PORT sends output to a hardcopy printer, such as a DECwriter, which may be connected to your terminal. This optional phrase can be used with VT102 and VT125 terminals, with VT100s with Printer Port Option, and certain VT52s. Do not use the TO PORT option if you do not have a printer connected to your terminal.

Filename in TO FILE filename is any valid file name on the host system, such as MYFILE.LST.

Devicename in TO DEVICE devicename is any valid physical or logical output device name on the host system, such as LP1: or LQP:.

You must delete files you create with the TO phrase when you no longer need them. Deleting these files is not automatic; you must do it outside of ADE.

You can also use TO phrases when running reports (see Chapter 10).

If your terminal has a printer connected to it, you must set the terminal characteristics to FORM mode before using the TO PORT phrase. Ask your system manager to help you do this.

If you do not use a TO phrase with a NAMES, OUTLINE, LIST, or GRAPH command, the output is directed to the terminal. The TO TERMINAL phrase is primarily for use with an ASK command used in verbs (see Chapter 9).

Examples:

Use a TO phrase to print a list of your table names on the line printer. ADE displays:

NAMES of TABLES TO PRINTER

Use a TO phrase to put a copy of the worksheet listing in a file called MYFILE.LST. ADE displays:

LIST existing WORKSHEET columns ALL TO FILE MYFILE.LST

7.4 SPECIFYING A DISK AREA - THE IN PHRASE

You use the IN phrase to obtain Read access to tables, directories, verbs, and reports that are stored in other users' areas. For example:

● You can use an IN phrase with an OUTLINE or GET command to access a table stored in another ADE user area or on a disk other than the system disk.

● You can use an IN phrase with a NAMES command to access an ADE directory in another ADE user area.

● You can use an IN phrase with a LIST command to list a table, verb, or report stored in another ADE user area or on a disk other than the system disk.

● You can use an IN phrase with a COPY command to copy a verb or report in another ADE user area or on a disk other than the system disk.

The IN phrase takes one of the following forms:

   IN [Directory]

   IN Device

   IN Device:[Directory]

[Directory] is another ADE user area directory name, such as [11,2].

Device is any valid physical or logical device name on the host system, such as DM1: or MYDISK:.

The IN phrase can contain a device name, a directory name, or both. When you specify a directory but omit a device, ADE uses the system disk. When you specify a physical device but omit a directory, ADE uses your directory on the physical device you specify. When you specify a logical device but omit a directory, ADE uses your directory on the physical device that the logical device represents. If you do not have a directory on the physical device, ADE displays an error message.

You enter an IN phrase after the table, verb, or report name to which it refers. In the case of the NAMES command, enter it right after the keyword ALL, TABLES, VERBS or REPORTS which was entered. In either case, make sure you enter a space between the table, verb, or report name and the IN phrase, or the keyword and the IN phrase.

Before specifying an ADE user area directory name, make sure you have access to the ADE files in that directory. The host system file protection code determines whether or not you have access to a file. The ADE user of the area in question normally has to use the ALLOW command in ADE to grant you access. For more information, see the description of the ALLOW command in Chapter 12.

For information about physical and logical device names, see the host system user's guide.

Before you try to display or copy information from a disk other than the system disk, make sure the disk is available and mounted. To mount a disk, exit ADE and consult an experienced user of your system or the system manager.

Examples:

Use an IN phrase to list the table names in ADE user area [11,2]. ADE displays:

NAMES of TABLES IN [11,2]

Use an IN phrase to list a table called PARTS in ADE user area [11,2]. ADE displays:

LIST existing PARTS IN [11,2] columns ALL

Use an IN phrase to copy a table called PARTS in ADE user area [11,2] into the worksheet. ADE displays:

GET table PARTS IN [11,2]

7.5 CREATING AND USING NON-ADE FILES - THE EXTERNAL PHRASE

You use an EXTERNAL phrase with a SAVE or GET command only if
you need to have:

● ADE table data in Word Processing (WPS) list processing

● WPS list processing data in ADE

● Interchange data normally maintained by a programmer.

The EXTERNAL phrase is more complex than the other optional
phrases. It causes the GET and SAVE commands to deal with files
that are external to ADE but in a format that ADE can use.

SAVE copies the lines in the worksheet to a non-ADE external
format Record Management Services (RMS) sequential file. For
WPS, it translates the data into list processing format.

GET copies data from a non-ADE external format RMS sequential
file into the worksheet. For WPS, it translates the data from
list processing format.

The EXTERNAL phrase takes one of the following forms:

    EXTERNAL WPS

    EXTERNAL BASIC

    EXTERNAL COBOL

    EXTERNAL DATATRIEVE

The host system file protection code determines whether or not
you have proper access to a file. The user of the area in
question normally has to use host system commands to change the
protection on any external files that you want to work with in
your user area. For more information, see your host system
user's guide.

Default file types or extensions when using an EXTERNAL phrase
are:

-   EXTERNAL WPS - creates or looks for one file with .WPS type
    or extension.

-   EXTERNAL BASIC - creates or looks for two files, an RMS
    sequential data file with .TBL type or extension and a map
    statement file with .B2S extension or .BAS type, depending
    on the host system.

OPTIONAL PHRASES

- EXTERNAL COBOL - creates or looks for two files, an RMS sequential data file with .TBL type or extension and a COBOL descriptor file with .CBL extension or .COB type, depending on the host system.

- EXTERNAL DATATRIEVE - creates or looks for two files, an RMS sequential data file with .TBL type or extension and a DATATRIEVE descriptor file with .DTR type or extension.

Before you try to work with information in a non-ADE file, you should understand clearly what you are doing. If not, you could lose the data in the files. See Appendix D for more detailed information on the format of external files that ADE can use and their associated descriptor files.

Examples:

Use an EXTERNAL phrase to create a file external to ADE called MLIST.WPS. The file contains the worksheet data in WPS list processing format. ADE displays:

SAVE worksheet as MLIST EXTERNAL WPS

Use an EXTERNAL phrase to translate a WPS list processing file called DLIST.WPS into an ADE file and copy it into the worksheet. ADE displays:

GET table DLIST EXTERNAL WPS

Use an EXTERNAL phrase to create a copy of the ADE worksheet data in an RMS sequential data file called PARTS.TBL, and generate an associated descriptor file called PARTS.DTR that can be used directly in DATATRIEVE to access the PARTS.TBL data file. ADE displays:

SAVE worksheet as PARTS EXTERNAL DATATRIEVE

CHAPTER 8

MORE POWERFUL COMMANDS

This chapter describes ADE's more powerful commands. You should
have some experience with ADE before using them.

8.1 PERFORMING ARITHMETIC

Use the CALCULATE command to save time in entering and doing
arithmetic operations.   The CALCULATE command lets you combine
arithmetic operations in one command line and places the result
in the column you choose.

For example, suppose your worksheet contains this production
data:

```
        PRODUCT   Q1   Q2   Q3   Q4

           A      23   35   31   29
           B      10   15   13   14
           C      86   75   70   64
```

You want to add the production data for each product and put the
total number of items produced in a column called YTD (Year To
Date). When using the basic ADE commands, you have to add the
value in Q1 to Q2 and put that result in a column called YTD,
add Q3 to column YTD and put that result in YTD, and then add Q4
to column YTD and put that result in YTD. With the CALCULATE
command, you can do this in one step:

CALCULATE expression Q1+Q2+Q3+Q4 result in column YTD

When the CALCULATE command finishes, the worksheet looks like
this:

```
        PRODUCT   Q1   Q2   Q3   Q4     YTD

           A      23   35   31   29     118
           B      10   15   13   14      52
           C      86   75   70   64     295
```

MORE POWERFUL COMMANDS

The CALCULATE command can also handle more complex arithmetic.
For example, suppose your worksheet contains this tool rental
billing data:

```
TOOL   BEGIN        END          RATE

X      12-Jun-82    23-Jun-82    2.00
Y      15-Jun-82    19-Jun-82    3.20
Z      19-Jun-82    29-Jun-82    4.25
```

You want to find the amounts to charge for each tool for each
period of use at the appropriate individual daily rate and put
the results in a column called RENT. When using the basic ADE
commands, you have to subtract the beginning date from the
ending date and put that result in a new column called DAYS, and
then multiply DAYS by RATE and put that result in a new column
called RENT. With the CALCULATE command you can do this in one
step:

CALCULATE expression RATE*(END-BEGIN) result in column RENT

In this example, you used parentheses to group the date columns
into a subexpression. The subtraction operation in the
subexpression takes place before the multiplication. The
subexpression result is now used as a numeric value in the
remaining expression. After the CALCULATE command finishes, the
worksheet looks like this:

```
TOOL   BEGIN        END          RATE     RENT

X      12-Jun-82    23-Jun-82    2.00     22.00
Y      15-Jun-82    19-Jun-82    3.20     12.80
Z      19-Jun-82    29-Jun-82    4.25     42.50
```


For a more complete description of the CALCULATE command, see
Chapter 12.

8.1.1 Rounding/Truncating Results

When you use any of the arithmetic commands (ADD, SUBTRACT, DIVIDE, MULTIPLY, and CALCULATE), you can tell ADE to round or truncate results so that they will be easier to read and use. Use the optional phrases ROUND # or TRUNCATE # (where "#" is the number of decimal places you want rounded or truncated) at the end of the command line:

CALCULATE expression Q1+Q2 result in column YTD ROUND 2

The resulting figures are rounded to the two decimal places normally used for dollar amounts.

When you use the ROUND # phrase, ADE raises the number to the next higher decimal, if the decimal immediately following the number of decimal places specified by "#" is 5 or higher. When you use the TRUNCATE # phrase, ADE cuts off the decimals at the number of decimal places specified by "#", no matter what the next decimal is. For example:

NUMBER	NUMBER ROUNDED TO 2	NUMBER TRUNCATED TO 2
2.358	2.36	2.35
3.403	3.40	3.40
10.395	10.40	10.39
5.000	5.00	5.00

8.2 TABLES WITH THE SAME COLUMNS AS THE WORKSHEET

Use the MERGE and APPEND commands to add lines of data from a table to the lines of data in the worksheet.

The MERGE command does one of these operations:

● Inserts lines from a table into the worksheet by an ordered column value

● Appends lines from a table to the bottom of the worksheet

MORE POWERFUL COMMANDS

For example, suppose your worksheet contains employee data from
a table called EMPLOYEES where the data is ordered by badge
number:

```
        BADGE   NAME    DEPT    START.DATE

          102   SMITH   SALES   11-Feb-82
          104   BAKER   SALES   26-Jan-81
          106   EATON   SALES   14-Jul-80
```

A table called HIRED contains added data that is also ordered by
badge number:

```
        BADGE   NAME    DEPT    SUPERVISOR

          101   ADAMS   MFG     MILLER
          103   MOORE   MFG     MILLER
          105   JONES   MFG     MILLER
```

To merge the lines of data in order by badge number, use the
command:

MERGE worksheet with table HIRED over column BADGE duplicates
       to NOWHERE

Your worksheet now looks like this:

```
        BADGE   NAME    DEPT    START.DATE

          101   ADAMS   MFG
          102   SMITH   SALES   11-Feb-82
          103   MOORE   MFG
          104   BAKER   SALES   26-Jan-81
          105   JONES   MFG
          106   EATON   SALES   14-Jul-80
```

To use the MERGE command, the worksheet columns must match the
table columns in name and type. The table, however, does not
have to contain all of the worksheet columns. If the table does
not contain all of the columns in the worksheet, the command
operates as if there were blank columns supplied for the missing
ones in the table. ADE ignores table columns that have
different names or types than those in the worksheet and
displays a message to that effect.

When you specify the ordered column over which the merge is to
take place, ADE inserts the lines into the worksheet by the
ordered values in this column. The worksheet must be sorted by
this column in ascending order and in most cases this column
should contain no duplicates. Since a key column meets these
requirements, it is ideal for an over column.

If there are duplicates in the over column of the worksheet, ADE treats each set of duplicate values as a single entry and handles any new duplicates from the table as specified in the command.

For another example, suppose your worksheet contains the same employee data as it did in the previous example and that the table HIRED contains the same data as it did in the previous example. To append the lines of data in the table to the bottom of the worksheet, use this command:

APPEND to worksheet the table HIRED

Your worksheet now looks like this:

BADGE	NAME	DEPT	START.DATE
102	SMITH	SALES	11-Feb-82
104	BAKER	SALES	26-Jan-81
106	EATON	SALES	14-Jul-80
101	ADAMS	MFG	
103	MOORE	MFG	
105	JONES	MFG	

To use the APPEND command, all column requirements are the same as for the MERGE command. The APPEND command only adds lines from a table to the bottom of the worksheet and, therefore, does not prompt for an over column or a place to put duplicates. The APPEND command does exactly what the MERGE over NONE command does.

Both the MERGE and APPEND commands can optionally use a WHERE or EXCEPT phrase. In addition, both can use a table specified with an optional IN and/or EXTERNAL phrase.

After using a MERGE or APPEND command, use the SAVE command to save the revised worksheet as a table if you want to keep the data. In the examples, the worksheet is saved as the table EMPLOYEES.

When you store data in tables that have the same column names, you can use the MERGE or APPEND command to bring data from several tables into the worksheet.

For example, suppose you keep a few categories of information on many employees. One table for all your employee information would have few columns, but many lines. In this situation, design your employee tables to take advantage of the MERGE and APPEND commands.

If your company has several departments, keep employee
information in separate tables by department. Set up the tables
so they all have the same columns. Make employee name or badge
number the key column. To produce statistics or a report on all
employees, use several MERGE or APPEND commands to bring
together in the worksheet the information from each table.

When you work with similar information from more than one table:

● Use GET to copy one table into the worksheet

● Use MERGE or APPEND to bring lines from other tables into
  the worksheet

For a more complete description of the MERGE and APPEND
commands, see Chapter 12.

8.3 TABLES WITH A COLUMN IN COMMON WITH THE WORKSHEET

Use the COMBINE command to save time entering data and to avoid
maintaining redundant information. The COMBINE command adds
columns to the worksheet by extending worksheet lines with data
from another table.

For example, suppose you want to compute the weekly state
payroll tax deduction for each employee in an updated EMPLOYEES
table. Besides BADGE, NAME, and DEPT, you need each employee's
gross weekly pay and the appropriate state tax rate.

The employees in the EMPLOYEES table live in only two states,
but the states have different tax rates. While you need to know
the gross pay and state tax rate to compute this deduction, you
do not often need this information on each employee.

Instead of keeping the gross pay and tax rate in the EMPLOYEES
table, keep that information in other tables and use the COMBINE
command to add the gross pay and tax rate data for each employee
to the data in the worksheet from the EMPLOYEES table before
computing the weekly deduction.

Keep the gross pay and state code data for each employee in a related table called PAY. Note that this table has the one column BADGE in common with the EMPLOYEES table. The PAY table looks like this:

BADGE	GROSS	STATE.CODE
101	160	A
102	190	A
103	175	B
104	165	B
105	190	A
106	200	B

Keep the tax rate for each state in a related table called TAX. Note that this table has the one column STATE.CODE in common with the EMPLOYEES table. The TAX table looks like this:

STATE.CODE	RATE
A	.03
B	.05

To combine the data in these tables with the data in the EMPLOYEES table, first use a GET command to copy the table EMPLOYEES into the worksheet:

GET table EMPLOYEES

The worksheet looks like this:

BADGE	NAME	DEPT	START.DATE
101	ADAMS	MFG	21-Dec-81
102	SMITH	SALES	11-Feb-82
103	MOORE	MFG	18-Jan-82
104	BAKER	SALES	26-Jan-81
105	JONES	MFG	22-Feb-82
106	EATON	SALES	14-Jul-80

Now put this information together with the information in PAY:

COMBINE worksheet with table PAY over column BADGE non-matches
        to NOWHERE

The worksheet has new columns GROSS and STATE.CODE.   Note that
every value in the STATE.CODE column is A or B:

BADGE	NAME	DEPT	START.DATE	GROSS	STATE.CODE
101	ADAMS	MFG	21-Dec-81	160	A
102	SMITH	SALES	11-Feb-80	190	A
103	MOORE	MFG	18-Jan-82	175	B
104	BAKER	SALES	26-Jan-81	165	B
105	JONES	MFG	22-Feb-82	190	A
106	EATON	SALES	14-Jul-80	200	B

Now put this information together with the information in TAX:

COMBINE worksheet with table TAX over column STATE.CODE
        non-matches to NOWHERE

The worksheet has a new column RATE. Note that every value in
the RATE column is .03 or .05:

BADGE	NAME	DEPT	START.DATE	GROSS	STATE.CODE	RATE
101	ADAMS	MFG	21-Dec-81	160	A	.03
102	SMITH	SALES	11-Feb-82	190	A	.03
103	MOORE	MFG	18-Jan-82	175	B	.05
104	BAKER	SALES	26-Jan-81	165	B	.05
105	JONES	MFG	22-Feb-82	190	A	.03
106	EATON	SALES	14-Jul-80	200	B	.05

As you see, each worksheet line has a value for RATE that
matches the entry in the STATE.CODE column. If the previous
worksheet has lines where state code is not A or B, they are not
included in the worksheet with the COMBINE command.

To find the state tax deductions, now use the CALCULATE command.

Besides saving time in data entry, the COMBINE command also
makes it easier to maintain data. Using the same example,
suppose state A's tax rate changes. If you keep the state tax
rate in the EMPLOYEES table, you have to change every tax rate
entry for state A. When you keep the tax rates in a separate,
but related, table, you need to change only one entry.

When you store data in tables that have only one column in
common with another table and need to work with the combined
data, use the COMBINE command to put this data together.

For example, you keep many categories of information on each
employee, but you have a small number of employees. One table
for all employee information would have many columns, but only a
few lines.   In this type of situation, design your tables to
take advantage of the COMBINE command.

You could keep employee information in the following set of tables, each of which has the same key column, employee badge number:

- One table for personal information such as name, address, and phone number

- One table for job status information, such as date hired, job title, department, job description, and skills

- One table for financial information, such as gross pay and deductions

When you need to work with this kind of information from more than one table:

- Use GET to copy one table into the worksheet.

- Use COMBINE to bring columns from other tables into the worksheet.

8.4 UPDATING TABLE DATA VALUES

Use the UPDATE command to save time in revising information as a group, rather than one item or one line at a time. The UPDATE command performs a group of updates stored in the worksheet on base data values in a table. The worksheet now contains the updated data values. The table itself does not change in any way due to the UPDATE command. If you want to use the results of the UPDATE command later, you must use the SAVE command to save the updated worksheet either as a new table or as a replacement of the original table.

For example, suppose several employees have been transferred from one state to another. You need to update the records with the correct state tax rate.

Remember from the previous example, the gross pay and state code data for each employee is kept in a related table called PAY:

BADGE	GROSS	STATE.CODE
101	160	A
102	190	A
103	175	B
104	165	B
105	190	A
106	200	B

The following data in the worksheet reflects the changes in state codes of the employees:

```
BADGE   STATE.CODE

  101   B
  102   B
  104   A
  106   A
```

To update the data in the PAY table, enter:

UPDATE worksheet using table PAY over column BADGE duplicates
     to NOWHERE

When the UPDATE command is finished, the worksheet has the revised data in the STATE.CODE column:

```
BADGE   GROSS   STATE.CODE

  101    160    B
  102    190    B
  103    175    B
  104    165    A
  105    190    A
  106    200    A
```

Now, save the revised worksheet as PAY with the SAVE command in order to keep the updated data.

Before using the UPDATE command, get the new values to be used for the update into the worksheet columns with the same names and types as those columns in the table to be updated. The worksheet may contain a subset of table columns, and updates only those columns that are represented in the subset. If the worksheet contains columns that have different names or types than those in the table, ADE ignores them and displays a message to that effect. The over column in the table can be ordered, if desired. The specified over column in the worksheet must be sorted in ascending order and should not contain duplicates. Since a key column meets these requirements, it is ideal for an over column.

When you are faced with updating several hundreds of lines of data in a table on a daily basis, consider gathering and storing your data for updates in tables with groups of common columns.

For example, you keep a moderate amount of information on a moderate number of employees in one table ordered by badge number. The data in this table changes often. This time you have ten changes to make to the table. You could use the CHANGE command, but the UPDATE command may have two advantages. Since you cannot specify all ten changes with one WHERE or EXCEPT phrase, you will have to use multiple CHANGE commands, perhaps as many as ten. Since the table is of moderate size, it is quicker to use the UPDATE command.

When you want to use the UPDATE command for this kind of task:

- Use MAKE to make a new worksheet with one column that is the over column and a column (or columns) for the information.

- Use ENTER to enter the data into the columns of the worksheet.

- Use UPDATE to update the table in question using the worksheet data.

- Use SAVE to save the updated information in the worksheet as a replacement for the original table.

For a more complete description of the UPDATE command, see Chapter 12.

8.5 BREAKING THE WORKSHEET INTO GROUPS OF LINES

Use the BREAK command to insert a new line into the worksheet each time the value in the column (or columns) specified changes. This is similar to the action of subtotalling with the TOTAL command without the actual subtotals being produced. The BREAK command also:

- Adds a BREAK* column to the worksheet

- Puts the break column name on each new break line in the BREAK* column

For example, suppose you want to group the lines by part number
in the worksheet that contains data different from, but similar
to, the PARTS data. The worksheet looks like this:

```
        PN      WHOUSE    QTY

        P01     W1        128
        P01     W2        135
        P01     W3        142
        P02     W1         92
        P02     W2        167
        P02     W3        251
        P03     W1         48
        P03     W2         74
        P03     W3         10
        P04     W1         65
        P04     W2        143
        P04     W3        202
```

Besides having fewer columns than PARTS, this data differs from
the PARTS data in two other ways:

● There are duplicate part numbers in the PN column.

● The lines are ordered (sorted) by two columns: PN   and
  WHOUSE.

Now enter:

BREAK on columns PN

The worksheet looks like this:

```
        PN      WHOUSE    QTY   BREAK*
        P01     W1        128
        P01     W2        135
        P01     W3        142
        P01                     PN
        P02     W1         92
        P02     W2        167
        P02     W3        251
        P02                     PN
        P03     W1         48
        P03     W2         74
        P03     W3         10
        P03                     PN
        P04     W1         65
        P04     W2        143
        P04     W3        202
        P04                     PN
```

The BREAK command inserts a new worksheet line each time the value in column PN changes. The BREAK command also:

- Adds a BREAK* column to the worksheet

- Puts the break column name PN on each break line in the new BREAK* column

The new lines produced by the BREAK command divide the worksheet into groups of lines of data that have some common element, such as part number, when listed.

Both the lines inserted into the worksheet by the BREAK command and by the TOTAL command are especially useful when you start using reports. The values placed in the BREAK* and TOTAL* columns mark places where values change in specified columns. Use WHERE and EXCEPT phrases to specify values in the BREAK* or TOTAL* columns.

See Chapter 10 for more information on how to use the BREAK command to prepare tables to be used in more complex reports, and Chapter 12 for more general information on the BREAK command.

8.6 ALLOWING ACCESS TO OTHER USERS

Use the ALLOW command to grant other ADE users on the system access to your tables, verbs, and reports. You can do this table by table, verb by verb, or report by report. SELF, GROUP, and WORLD are the three classes of access to a table, verb, or report.

SELF access refers to the owner of the table, verb, or report. Tables, verbs, and reports are created with SELF access, so that only the owner (creator) can access them.

GROUP access refers to other ADE users who have accounts in a common group of accounts on the system. The system manager or the person who issues accounts can tell you who, if anyone, is in your group.

WORLD access refers to all ADE users on the system.

For example, suppose you want everyone else on your system to have access to your table called INFO. To do this, enter:

ALLOW access to INFO by WORLD

You can change access by again using the ALLOW command with a more restrictive access class. For example, change WORLD to SELF.

If you do not want other ADE users to read or make copies of
your tables, verbs, and reports, do not use this command.

For a more complete description of the ALLOW command, see
Chapter 12.

8.7   COPYING VERBS AND REPORTS

Use the COPY command to make a copy in your ADE area of a verb
or report (see Chapters 9 and 10) that is currently in your ADE
area or in another ADE user area on the system. In the latter
case, you must have access to the verb or report involved. This
may require the other ADE user to grant you access with the
ALLOW command. You can also use the COPY command to copy the
last several ADE commands issued into a verb in your ADE area.
This verb can then be changed with the CHANGE command.

Examples:

To produce a new copy of an existing verb in your area, enter:

COPY procedure OLD.VERB to NEW.VERB

To copy an existing master report in another area that you have
access to, enter:

COPY procedure MASTER.REPORT IN [1,2] to MY.REPORT

To copy the last ten commands you typed into a verb in your
area, enter:

COPY procedure JOURNAL to MY.VERB

For a more complete description of the COPY command, see Chapter
12.

8.8   SETTING OPERATIONAL PARAMETERS

Use the SET command to change one or more of several operational
parameters (terminal display settings). These changes affect
only your terminal and remain in effect until the EXIT command
ends the ADE session.

Three of the settings are especially useful to you as an ADE
user. They are the display width on VT100 terminals, the format
for displaying dates, and the format for displaying numbers.

ADE's SET WIDTH command sets the display width of your VT100 terminal and informs both the host system and the terminal of the change of width. Do not use the SET-UP key on the keyboard or any host system commands.

Examples:

To change the width from 80 to 132 columns, enter:

SET option WIDTH 132

The display changes from 80 to 132 columns in width.

To change the width from 132 to 80 columns, enter:

SET option WIDTH 80

The display changes from 132 to 80 columns in width.

ADE uses a default display format for dates that uses a standard date pattern. This format is also used on data entered into date columns. To change this date format, use a SET DATE command. You must use the date January 2, 1980 to specify the desired date format.

Example:

To change the date format from the current one to one that involves only two digit numbers separated by slashes with the order month, day, and year, enter:

SET option DATE 01/02/80

The date format changes as a result of this command action. Any subsequent display of or data entry into date columns will be in the new date format.

ADE uses a default display format for both positive and negative numbers. This format is also used when data is entered into numeric columns. To change the negative number format, use a SET NEGATIVE command. Specify the new negative number format by including the negative number -9000 in the desired format in the SET command line.

Example:

To change the negative number format from the current one to one
that uses a leading minus sign with commas setting off every
three digits, enter:

SET option NEGATIVE -9,000

The negative number format changes as a result of the command
action. Any subsequent display of or data entry into numeric
columns will be in the new format.

For more information on the SET command and its options, see
Chapter 12.

8.9 UNPROMPTED COMMAND ENTRY

Once you learn the ADE commands, you do not need to wait for
each command prompt -- you can just enter all command inputs
with a space between each input. You can also abbreviate inputs
where abbreviations are allowed. Use the DELETE key to correct
typing mistakes. Press the RETURN key only when the command is
complete.

To specify each default in an unprompted command entry, type the
default value, its abbreviation, or simply an asterisk in the
correct place in the command line being entered. After you
press the RETURN key, ADE displays the command with all its
prompts and the inputs you specified.

ADE accepts a valid unprompted command entry up to the point of
a complete command or up to the point where an error in the
command is recognized. In the case of an error, ADE prompts for
the next input of those inputs remaining necessary to complete
the command. Remember that you can cancel the command by
pressing CTRL/C at any time before completing your command line
input.

CHAPTER 9

WORKING WITH VERBS

Once you start using ADE, you will find that most of your tasks use several commands and that you must enter the commands in a specific order. Instead of entering the same commands each time, you can make verbs that perform these commands automatically.

You name a verb when you make it. A verb consists of a series of steps specifying an ordered set of operations. The verb may contain one or more ADE commands as well as other verb and/or report names to be used in performing the task.

This chapter discusses:

● Making a verb

● Making verbs that use other verbs and reports

● Using new names as verb steps

● Putting comments in a verb

● Designing one verb to do different tasks

9.1 HOW TO MAKE A VERB

Before making a verb, think about what you want the verb to do.

Working with a verb consists of:

● Designing and naming the verb

● Making the verb with the MAKE command

● Displaying the steps in the verb with the LIST command

● Using the verb and troubleshooting it

● Changing the verb with the CHANGE command

9.1.1 Designing The Verb

Define the tasks for the verb and then list the commands needed
for each task in the order of use.

You can enter all but the following commands in a verb:

● HELP

● NAMES

● OUTLINE

● MAKE (for worksheets, verbs, and reports)

● CHANGE (for verbs and reports)

The HELP, NAMES, and OUTLINE commands produce the immediate
display of information when entered while making a verb.

This example shows how to design a verb. Suppose you have this
information in the table INVENTORY:

```
        PN    WHOUSE    QTY

        P01   W1         128
        P01   W2         135
        P01   W3         142
        P02   W1          92
        P02   W2         167
        P02   W3         251
        P03   W1          48
        P03   W2          74
        P03   W3          10
        P04   W1          65
        P04   W2         143
        P04   W3         202
```

You want a verb to:

● Get a copy of the INVENTORY table into the worksheet

● In the QTY column, produce subtotals by part number and a column total

● List the worksheet at the terminal

The verb needs these commands:

1. GET table INVENTORY

2. TOTAL on columns QTY subtotal by PN

3. LIST existing WORKSHEET columns ALL

Now, decide on a name for this verb.

9.1.2 Rules For Naming A Verb

Here are the rules for naming a verb.

● A verb name:

  - Can contain only letters, numbers, and periods

  - Can be up to 16 characters long

  - Must start with a letter

  - Cannot end with a period

  - Cannot contain any spaces

● Each verb you make must be given a unique name. Do not give a verb the same name as an ADE command or its legal abbreviation, or an already existing verb, report, or table. Also, do not give a verb a name that is the same as an ADE keyword or its legal abbreviation.

● You cannot abbreviate verb names.

9.1.3 Making A Verb With MAKE

Use the MAKE command to make a verb. You have prompts to enter
the commands, one at a time. Enter the commands the same way as
you do on the command line when entering commands interactively.
Each command becomes a step in the verb.

The following example shows you how to make a simple verb called
TASK.

Begin by entering the following command:

MAKE new VERB called TASK

ADE now prompts you to enter commands into the verb, one command
at a time. Here is how the screen looks:

* Enter steps for the Verb "TASK".

Step 1? _
 * Enter a command, a Verb or Report name, or type HELP

Here is how the screen looks after you enter the first command:

* Enter steps for the Verb "TASK".

Step 1 GET table INVENTORY
Step 2? _
 * Enter a command, a Verb or Report name, or type HELP

Here is how the screen looks after you enter the second command:

* Enter steps for the Verb "TASK".

Step 1 GET table INVENTORY
Step 2 TOTAL on columns QTY subtotal by PN
Step 3? _
 * Enter a command, a Verb or Report name, or type HELP

Here is how the screen looks after you enter the third command:

* Enter steps for the Verb "TASK".

Step   1   GET table INVENTORY
Step   2   TOTAL on columns QTY subtotal by PN
Step   3   LIST existing WORKSHEET columns ALL
Step   4? _
 * Enter a command, a Verb or Report name, or type HELP

You have now entered all the commands for this verb. Press the
ENTER key on the keypad to indicate that there are no more
commands.

This message is displayed:

Enter a description for the Verb: _

You can enter a line of up to 32 characters that describes the
verb or just press the RETURN key to enter nothing. The
description is displayed with the name of the verb when you
issue the NAMES of VERBS command. ADE now displays:

The Verb "TASK" has been saved.

At this point, you can use the NAMES command to display the
names of the verbs in your ADE user area, including TASK.

Remember, the HELP, NAMES, and OUTLINE commands can be used to
provide needed information while making a verb. You can also
press the HELP key whenever you need help.

9.1.4 Displaying The Steps In A Verb With LIST

Use the LIST command to display the steps in a verb. Enter the
verb name instead of WORKSHEET or a table name.

For example, to list the verb TASK, enter:

LIST existing TASK

This information is displayed in the scrolling area:

Step   1   GET table INVENTORY
Step   2   TOTAL on columns QTY subtotal by PN
Step   3   LIST existing WORKSHEET columns ALL

The TO PRINTER and TO FILE optional phrases used with the LIST
verb command produce, respectively, a printed listing or a file
of the steps in the verb.

9.1.5 Using A Verb

To use a verb, type the verb name on the command line after the
Ade: command prompt and press the RETURN key. ADE then carries
out each command in the verb in order starting with step one.
Steps are completed one at a time until they all are completed
or until a condition is found that prevents the current step
from completing.   While the verb is running, the step that is
being performed appears on the command line, unless you use the
SET command to turn off the display of the steps.

The commands work the same way they do when you enter them one
by one on the command line. Since the information on the screen
changes quickly, you may need to use the NO SCROLL key to stop
and restart the screen display to see each command result as it
occurs.

For example, type TASK on the command line and press the RETURN
key.   Here is how the command area looks during step one of the
verb:

Step   1: GET table INVENTORY
The Verb TASK is running.

Here is how the command area looks during step two of the verb:

Step   2: TOTAL on columns QTY subtotal by PN
The Verb TASK is running.

Here is how the command area looks during step three of the
verb:

Step   3: LIST table WORKSHEET columns ALL
The Verb TASK is running.

The following is displayed in the scrolling area:

```
---
PN    WHOUSE   QTY   TOTAL*

P01   W1       128
P01   W2       135
P01   W3       142
P01            405   PN
P02   W1        92
P02   W2       167
P02   W3       251
P02            510   PN
P03   W1        48
P03   W2        74
P03   W3        10
P03            132   PN
P04   W1        65
P04   W2       143
P04   W3       202
P04            410   PN
              1457   TOTAL
```

Finally, this message is displayed in the message area:

The Verb "TASK" has finished.

9.1.6 Troubleshooting

The following problems can occur when you run a verb:

● An error in a step.

   Suppose that, when you made the verb TASK, you typed the
   table name INVENTORY incorrectly as INVENTROY. You did not
   notice your mistake. When you run TASK, GET looks for a
   table named INVENTROY.

   When an error like this occurs in a step, the verb stops
   running. The **Ade:** command prompt appears on the command
   line and ADE displays a message that tells you:

   - The step where the error occurred

   - The cause of the error

In the example, the following message is displayed:

The verb "TASK" stopped at step 1.

Cannot find a Table called "INVENTROY".

Solution: Use CHANGE to correct the verb, as described in Section 9.1.7.

● The verb runs without stopping and no errors were recognized, but the results differ from the results you expected.

You designed the verb incorrectly for your task. You entered the commands in the wrong order, or you used one or more commands incorrectly.

Solution: List the verb and check each step. After you find the problem, use CHANGE to correct the verb, as described in Section 9.1.7.

● You need to stop a verb while it is running.

Solution: Press CTRL/C to cancel the verb.

9.1.7 Changing A Verb With CHANGE

To change a verb, you must specify the name of the verb to change in the CHANGE command. After you enter the command, CHANGE displays the steps in the verb on the screen.

You make changes by entering new steps and by pressing function keys. You can enter, delete, and change whole steps, as well as changing a part of a step. To change a whole step, enter a new step and erase the old step. To change part of a step, use the RIGHT function key to position the cursor on the part of the step to be changed and then enter the changed part to replace the original part. The step numbers on the screen change every time you enter or delete a step.

During a CHANGE command, three types of functions are active:

● Functions that display information

● Functions that move the cursor

● Functions that change the contents of the verb

The following functions display information:

<HELP>   Displays more detailed information about what ADE
                 expects as input next.

<DISPLAY>   Rewrites the screen so that you can see the
                 display clearly. Use DISPLAY after using <HELP>.

The following keys move the cursor:

<RETURN>   Moves the cursor down to the next step.

<DOWN>   Moves the cursor down to the next step.

<UP>   Moves the cursor back up to the previous step.

<TOP>   Moves the cursor to the beginning of the verb,
                 keeping changes made so far.

<BOTTOM>   Moves the cursor down to the end of the verb so
                 you can add more steps.

<INSERT>   Moves the cursor so that you can insert
                 additional steps between two existing steps.
                 <INSERT> places the verb in INSERT mode, letting
                 you insert more than one additional line at one
                 time. When you are in INSERT mode, the <RETURN>
                 key moves the cursor to the next line for another
                 step insertion. Press <RETURN> twice to leave
                 INSERT mode.

<RIGHT>   Moves the cursor one command part to the right.

<FIND>   Prompts you to enter a character string and then
                 moves the cursor to the first step containing the
                 string.   The character string you enter   is
                 displayed in brackets the next time you enter
                 <FIND>. To move the cursor to the next step
                 containing this string, enter <FIND NEXT>.

<FIND NEXT>   Moves the cursor to the next step containing the
                 string last entered for <FIND>.

                 You can find the nth step containing an already
                 specified string by combining <FIND NEXT> with
                 the numbers on the main keyboard.

If, for example, you want to find the second GET command, press the following keys, in this order:

● The GOLD key on the keypad

● The number 2 on the main keyboard (to indicate "do two times")

● The <FIND NEXT> function key on the keypad

If the same character string appears more than once in a step, it still counts as one <FIND> or <FIND NEXT>. Like most other ADE functions, <FIND> and <FIND NEXT> work on whole steps only.

The following keys change the contents of the verb:

<DELETE LINE>   Deletes the step that the cursor is on.

<UNDELETE>   Brings back the last step deleted.

<CTRL/C>   Exits CHANGE and deletes all changes you made.

<ENTER>   Exits CHANGE and enters all changes you made.

For example, in the verb TASK make these changes:

● Insert this PICK command after the TOTAL command:

    PICK columns PN,QTY and lines WHERE TOTAL* EQ PN

● Replace the LIST command with the following LIST command:

    LIST existing WORKSHEET TO PRINTER columns ALL

To change the verb, enter the following command:

CHANGE existing TASK

After you press the RETURN key, ADE displays the verb TASK in the scrolling area:

* Enter steps for the Verb "TASK".

Step 1? GET table INVENTORY
 * Enter a command, a Verb or Report name, or type HELP

Step 2 TOTAL on columns QTY subtotal by PN
Step 3 LIST existing WORKSHEET columns ALL

Follow these steps. The display changes after each step.

1. Move the cursor down two lines by pressing the RETURN key twice.

2. Enter the PICK command and press the RETURN key.

3. Enter the new LIST command and press the RETURN key.

4. Press <DELETE LINE> to delete the old LIST command.

5. Press <ENTER> to complete the change.

The changed verb TASK now appears:

```
Step  1  GET table INVENTORY
Step  2  TOTAL on columns QTY subtotal by PN
Step  3  PICK columns PN,QTY and lines WHERE TOTAL* EQ PN
Step  4  LIST existing WORKSHEET TO PRINTER columns ALL
```

9.2 MAKING VERBS THAT USE OTHER VERBS

To make a verb that uses another verb, enter the second verb name as a step in the first verb. The verb name you enter can be an existing verb or a verb not yet made. Any verb can have any number of other verb names as steps.

Placing one verb name inside another is called nesting.   ADE allows up to ten levels of nesting. When you make nested verbs, keep the following rules in mind:

● When a verb containing names of other verbs is run, inner verbs finish before outer verbs.

● A verb cannot run itself.

You can make a verb that runs several other verbs by using one level of nesting, several levels of nesting, or both. MAKE and CHANGE do not check for incorrect nesting. Examples of correct and incorrect nesting are shown in Figures 9-1, 9-2, and 9-3.

Figure 9-1 shows one level of nesting. The verbs are nested correctly.

```
    VERB1
---------------
| VERB2       |     VERB2          VERB3          VERB4
| VERB3       |   ---------      ---------      ---------
| VERB4       |   | ----- |      | ----- |      | ----- |
| ----------- |   | ----- |      | ----- |      | ----- |
| ----------- |   | ----- |      | ----- |      | ----- |
| ----------- |   | ----- |      | ----- |      | ----- |
| ----------- |   ---------      ---------      ---------
---------------
```

Figure 9-1: One Level Verb Nesting

When you run VERB1 as shown in Figure 9-1, VERB2 runs first, VERB3 runs next, and VERB4 runs last. Each verb finishes before the next verb starts. When you use one level of nesting, you can run the same verb several times by entering its name as several steps in the same verb.

Figure 9-2 shows three levels of nesting. The verbs are nested correctly.

```
    VERB1
---------------
| VERB2       | ---> VERB2
| ----------- |      ---------
| ----------- |      | VERB3 | ---> VERB3
| ----------- |      | ----- |      ---------
| ----------- |      | ----- |      | VERB4 | ---> VERB4
| ----------- |      | ----- |      | ----- |      ---------
| ----------- |      | ----- |      | ----- |      | ----- |
| ----------- |      | ----- |      | ----- |      | ----- |
---------------      ---------      ---------      ---------
```

Figure 9-2: Three Level Verb Nesting

In Figure 9-2, VERB2 is a step in VERB1, but none of the other verbs are steps in VERB1. Instead, VERB2 contains VERB3, and VERB3 contains VERB4. All four verbs are running at the same time. Inner verbs finish before outer verbs. Thus:

● VERB4 finishes first.

● VERB3 finishes next.

● VERB2 finishes next.

● VERB1 finishes last.

Figure 9-3 shows incorrect nesting.

```
    VERB1
-----------------
| VERB2         | ---> VERB2
|  ------------ |     ---------
|  ------------ |     | VERB3 | ---> VERB3
|  ------------ |     |  ----- |     ---------
|  ------------ |     |  ----- |     | VERB1 |
|  ------------ |     |  ----- |     |  ----- |
|  ------------ |     |  ----- |     |  ----- |
|  ------------ |     |  ----- |     |  ----- |
-----------------     ---------     ---------
```

Figure 9-3: Incorrect Verb Nesting

When you run VERB1:

● VERB1 starts VERB2.

● VERB2 starts VERB3.

● VERB3 tries to start VERB1.

VERB1 stops running. The following message is displayed in the
message area:

The Verb "VERB1" calls itself at step 1.

9.3 MAKING VERBS THAT USE REPORTS

To make a verb that uses a report, enter the report name as a
step in the verb. Any number of verb steps can be report names.
You can use the same report several times in a verb by entering
its name several times.

For each step, you can enter an existing report or a report you
have not yet made. When you enter an existing report, you are
prompted for the table or worksheet to use with the report.

9.4 USING UNKNOWN NAMES AS VERB STEPS

When you enter the name of a verb or a report that does not yet
exist as a verb step, ADE questions its use in the verb. For
example, if the name entered is NAME, ADE displays:

Will "NAME" be a Verb or Report?

If you answer R for report, you are prompted for a table name or
the worksheet to use with the report.

If you answer V for verb, you are not prompted for anything
else.

If you made an error and do not want this step to be a verb or
report, answer NO and press the RETURN key or just press the
RETURN key.

9.5 PUTTING COMMENTS IN A VERB

A comment is one or more lines of text that describes a step or
a group of steps in a verb. Comments make verbs easier for you
to understand, especially verbs with many steps or verbs that
run other verbs and reports. When changing a verb, comments can
help you to remember what the verb is designed to do.

You enter comments with MAKE or CHANGE the same way you enter
other steps. To enter a comment line, type REMARK and press the
RETURN key. The prompt <message> appears on the command line.
After <message>, type the comment and press the RETURN key. You
must start every comment line with REMARK.

Comments are displayed when you list, change, and run a verb.

For example, suppose you want to enter this comment at the
beginning of the verb TASK:

This verb lists QTY for each PN.

To add this comment to the verb TASK, enter the following
command:

CHANGE existing TASK

CHANGE displays the verb TASK in the scrolling area. Enter the
comment and then press the ENTER key on the keypad to finish.
Only the step you are entering is shown here.

Step 1 REMARK <message> This verb lists QTY for each PN.
 * Enter message text

Now list the verb TASK to see how comments are displayed by entering the following command:

LIST existing TASK

The verb TASK is displayed:

Step 1   REMARK This verb lists QTY for each PN.
Step 2   GET table INVENTORY
Step 3   TOTAL on columns QTY subtotal by PN
Step 4   PICK columns PN,QTY and lines WHERE TOTAL* EQ PN
Step 5   LIST existing WORKSHEET columns ALL

9.6   DESIGNING ONE VERB TO DO DIFFERENT TASKS

ADE has one command, ASK, to use mainly in verbs. By using ASK as a step in a verb and then using the associated response area name in commands in other steps, you can make a verb that performs different tasks based on input from the person running the verb.

ASK gets input by displaying a message and accepting input when a verb is running. The message, defined by the person who makes the verb, can ask for a command line or one or more command inputs such as a table name, a WHERE or EXCEPT phrase, a column list or a device specification. ASK stores the input in the specified response area. They are named RESPONSE1, RESPONSE2, RESPONSE3, RESPONSE4, and RESPONSE5. Depending on the input you enter, the verb can work differently each time it runs.

When you make or change the verb, enter the ASK command as a step. Enter ASK using RESPONSE1 to solicit a table name:

ASK for response number 1 using message WHAT TABLE?

When entering the ASK command in the verb, you must enter the response area number to be used and the message or question for ASK to display when the verb is run. (ASK does not supply the question mark.)

In another step in the verb, make use of the input provided. Instead of entering a specific command input (such as a table name), specify the appropriate response area name where you want the input used as the command input.

When the verb is run, ASK displays the message and accepts input. The person running the verb responds to the message. ADE puts the input into the specified response area. When the verb reaches the step where that response area is referenced, the verb uses the value in that response area as the command input for that step.

For example, suppose you want to change the verb TASK to work on any table with the columns PN and QTY, not just the INVENTORY table. Using the CHANGE command, change the verb TASK to have the following steps:

```
Step  1   ASK for response number 1 using message WHAT TABLE?
Step  2   GET table RESPONSE1
Step  3   TOTAL on columns QTY subtotal by PN
Step  4   PICK columns PN,QTY and lines WHERE TOTAL* EQ PN
Step  5   LIST existing WORKSHEET columns ALL
```

Now run the verb to see how ASK works. Respond to the message by typing the table name INVENTORY.

This is what is displayed in the command area:

```
Step  1   ASK for response number 1 using message WHAT TABLE?
The Verb "TASK" is running.
```

This is what is displayed in the message area:

WHAT TABLE? INVENTORY

This is what is then displayed in the command area:

```
Step  2   GET table INVENTORY
The Verb "TASK" is running.
```

Because you typed INVENTORY, TASK works the same way it did before you added the ASK command and RESPONSE1 in the GET command. The GET command uses whatever table you specify in your input to ASK. For more information on ASK, see Chapter 12.

CHAPTER 10

WORKING WITH REPORTS

Sometimes you need to present information that is organized, easy to read, and easy to understand. While a table is a good way to store and work with information, a table by itself sometimes can be hard to read and understand. This is why you may need a report.

ADE has a tool for making a report from a table or the worksheet. This tool, called a report procedure, is a set of instructions that specifies how to present data already in a table or the worksheet. When you run a report procedure, it produces a report listing. A report listing looks much like a typewritten report.

Here are some possible ways to use a report procedure:

● Change the format of data so it is easier to read

● Add text to explain data

● Highlight important data (such as subtotals and totals)

● Summarize data by printing only subtotals and totals

In ADE you need not make a report procedure from scratch; instead, ADE provides a standard (or default) report procedure. Use the MAKE command to create a standard report procedure on your data. If the standard report procedure does not produce the report you need, use the CHANGE command to change it.

When you have the report procedure you want, you can use it on more than one table or the worksheet.

The rest of this chapter describes how to work with report procedures. It is divided into two main sections:

● Making a standard report from a table

● Changing a report procedure with CHANGE

10.1   MAKING A STANDARD REPORT FROM A TABLE

To produce a standard report:

1.   Prepare your data with the ADE commands.

2.   Use the MAKE command to make a standard report on your data.

3.   Use the standard report procedure to produce the report listing.

10.1.1   Preparing The Data For A Report

You can make a report procedure using the data in the worksheet or a table to specify the basic contents and format of the report. Since the data in the worksheet or table determines to some extent what the standard report looks like, you should review the data and make sure it is in the form you want.

You may want to:

● Use SORT to sort the data

● Use TOTAL to produce totals and subtotals

The following example shows how to prepare some data to be used in making a report.

As an example, suppose you have the following inventory data in
the worksheet:

```
WHOUSE   PN     QTY

W1       P01    128
W1       P02     92
W1       P03     48
W1       P04     65
W2       P01    135
W2       P02    167
W2       P03     74
W2       P04    143
W3       P01    142
W3       P02    251
W3       P03     10
W3       P04    202
```

This data is ordered by warehouse (WHOUSE column), but you want
the report to order the data by part number. To prepare the
data for the report, sort the data by part number:

SORT by columns PN,WHOUSE

After the SORT command finishes, the worksheet looks like this:

```
WHOUSE   PN     QTY

W1       P01    128
W2       P01    135
W3       P01    142
W1       P02     92
W2       P02    167
W3       P02    251
W1       P03     48
W2       P03     74
W3       P03     10
W1       P04     65
W2       P04    143
W3       P04    202
```

The data is now ordered by part number, but the columns are not
in the order you want in the report. However, you do not have
to change the physical order of the columns in the worksheet
because you can reorder the columns in the report listing.

You also want your report to include the total quantity of all
parts, as well as the quantity of each part. Use the following
TOTAL command to produce the desired total and subtotals:

TOTAL on columns QTY subtotal by PN

After the TOTAL command finishes, the worksheet looks like this:

WHOUSE	PN	QTY	TOTAL*
W1	P01	128	
W2	P01	135	
W3	P01	142	
	P01	405	PN
W1	P02	92	
W2	P02	167	
W3	P02	251	
	P02	510	PN
W1	P03	48	
W2	P03	74	
W3	P03	10	
	P03	132	PN
W1	P04	65	
W2	P04	143	
W3	P04	202	
	P04	410	PN
		1457	TOTAL

Now you need to decide on a name for this report.

10.1.2 Rules For Naming A Report

The following are the rules for naming a report:

1. A report name:

    ● Can contain only letters, numbers, and periods

    ● Can be up to 16 characters long

    ● Must start with a letter

    ● Cannot end with a period

    ● Cannot contain any spaces

2. Each report must have a unique name. Do not give a report the same name as an ADE command or its legal abbreviation, or an already existing report, verb, or table. Also, do not give it a name that is the same as an ADE keyword or its legal abbreviation.

3. You cannot abbreviate report names.

10.1.3 Making A Standard Report With MAKE

After you prepare your data, use the MAKE command to make the standard report.

The following example makes a standard report called QUANTITIES using the data in the worksheet described in Section 10.1.1.

Begin by entering the following command:

MAKE new REPORT called QUANTITIES using table WORKSHEET

ADE now makes a standard report procedure using the data in the worksheet as a model. It uses default values wherever it needs them to produce the sections of the report procedure. These sections are described later in this chapter.

After it makes the standard report procedure, ADE performs an implicit CHANGE command. You are prompted for changes to the COLUMNS section. Since you are now concerned only with the standard report procedure without changes, press the ENTER key on the keypad to indicate that no changes are to be made.

The following is displayed in the message area:

Enter a description for the Report: _

You can enter a line (up to 32 characters) that describes the report or just press the RETURN key to enter nothing. The description is displayed with the name of the report when you issue the NAMES of REPORTS command.

When this is done, ADE displays:

The Report "QUANTITIES" has been saved.

At this point you can use the NAMES command to display the names of the reports in your ADE user area, including QUANTITIES.

10.1.4 Displaying Standard Report Sections With LIST

Use the LIST command to display the sections of a report procedure. Enter the report name instead of WORKSHEET or a table or verb name.

For example, to list the report QUANTITIES, enter:

LIST existing QUANTITIES

The sections of the standard report procedure QUANTITIES is displayed in the scrolling area.

You can use the TO PRINTER or TO FILE optional phrases to produce a printer listing or a file of the sections in the report procedure.

10.1.5 Using A Standard Report

To use a standard report procedure, or any report for that matter, you must:

1. Type the report procedure name on the command line after the
       Ade: command prompt

2. Press the RETURN key

3. Type WORKSHEET or the name of the table to be used by the
       report procedure that reflects where the data is located

4. Press the RETURN key

Remember that the data location name can be different from what you provided in the MAKE command that made the standard report procedure. The structure of the tables and the worksheet used with a given report should be similar, if not identical.

Without further input, the report listing will be produced on the terminal. You can add the TO PRINTER or TO FILE optional phrases to the command input to produce a printout of the report listing or a file with the same information in it. When you produce a report listing on the terminal, you can use the NO SCROLL key to stop and restart the screen display.

For example, to use the standard report that was made and listed in the previous examples, enter:

QUANTITIES reporting the table WORKSHEET

The report listing is displayed in the scrolling area:

```
30-Dec-81 10:00 AM              Page 1
              INVENTORY

    -------------------------------------
    | WHOUSE | PN  |  QTY    | TOTAL* |
    -------------------------------------

       W1      P01      128
       W2      P01      135
       W3      P01      142
     ------    ---    ------    ------
               P01      405      PN

       W1      P02       91
       W2      P02      167
       W3      P02      251
     ------    ---    ------    ------
               P02      510      PN

       W1      P03       48
       W2      P03       74
       W3      P03       10
     ------    ---    ------    ------
               P03      132      PN

       W1      P04       65
       W2      P04      143
       W3      P04      202
     ------    ---    ------    ------
               P04      410      PN

     ------    ---    ------    ------
                      1,457     TOTAL
```

A standard report listing differs from a listing of the
worksheet or a table to the printer or to a file using the LIST
command in the following ways:

- The pages are numbered.

- The table or worksheet name is centered over the data.

- Column titles are printed on each report listing page and
  have boxing around them.

- The data is centered under the column titles. With LIST,
  data is not centered in a column. Instead, it is lined up
  at the left-hand or the right-hand side of the column,
  depending on column type.

- Numbers of one thousand or more contain commas.

- If the table or the worksheet reported on has a TOTAL*
  column, new spacing and bars on each column at each total
  and subtotal line are included.

10.2 CHANGING A REPORT WITH CHANGE

When the standard report procedure does not produce the report
you want, you can change the standard report procedure with the
CHANGE command. Then you can run the changed report procedure
to produce a new report listing.

Once you decide to change the standard report procedure, you
need to know more about working with report procedures. In this
section you learn about:

- Defining report procedure sections, which contain
  instructions for producing different parts of a report

- Designing a report based on these report procedure sections

- Changing a report procedure, using the CHANGE command to
  further define and change report procedure sections

You also learn about:

● Listing report procedure sections with LIST

● Using a changed report procedure to see a new report listing

● Using a report procedure on other tables

● Using FILE* to produce more complex reports

10.2.1 Report Sections

A report procedure consists of the following major subdivisions or sections: COLUMNS, LAYOUT, TOP, BOTTOM, and usually one or more WHERE or EXCEPT sections. When you change a report procedure, you make changes to one or more of its sections.

The COLUMNS section controls:

● Which columns from the table to include automatically in the report

● The column order in the report

● The title and its format for each column

The LAYOUT section controls the report's page layout and appearance, such as:

● The number of spaces between columns of data

● The number of lines per page and the page width

● The format of numbers and dates

The TOP section controls what to produce at the top of each report page (page header).

The BOTTOM section controls what to produce at the bottom of each report page (page foot).

WHERE and EXCEPT sections control the output and format of the lines of data being reported on. You specify a condition in WHERE and EXCEPT sections and also what data and in what format it is to appear if the condition is met. If a line of data satisfies the condition, the default output of data does not occur; the WHERE or EXCEPT section controls the output for that line.

The standard report procedure has COLUMNS, LAYOUT, TOP, BOTTOM, and one WHERE section. The BOTTOM section is empty. The WHERE section controls the output only for lines with a nonempty TOTAL column. You can use the CHANGE command to produce a nonempty BOTTOM section or new WHERE or EXCEPT sections or change any existing sections.

10.2.1.1 COLUMNS And LAYOUT Sections -

Both COLUMNS and LAYOUT sections look like charts. You can keep the default entries in the sections or use CHANGE to change the entries.

The COLUMNS section in the standard report procedure is based on the table or the worksheet that you specify when you make the new report procedure. It has the same column names and column order as the table or worksheet specified, and the column titles are the same as the column names.

For example, the following is the COLUMNS section from the standard report procedure produced in Section 10.1.3:

```
@COLUMNS
WHOUSE                  <WHOUSE>
PN                      <PN>
QTY                     <QTY>
TOTAL*                  <TOTAL*>
```

The LAYOUT sections in all standard report procedures are identical. Thus, the following is the LAYOUT section from the standard report procedure produced in Section 10.1.3:

```
@LAYOUT
Title Boxing            <Yes>
Data Boxing             <No>
Vertical   boxing char  <|>
Horizontal boxing char  <->
Spaces between Columns   <2>
Lines after title        <1>
Lines spacing            <0>
Lines per page          <50>
Page width              <data>
Left margin              <0>
Date pattern            < 2-Jan-80>
Number pattern          <-9,000>
```

For a description of each LAYOUT item and a list of all possible values for each item, see Section 10.2.3.3.

10.2.1.2 TOP And BOTTOM Sections -

TOP and BOTTOM sections consist of one or more line formats. A
line format controls how lines in a report listing are
formatted.

The TOP sections in all standard report procedures are
identical. Thus, the following is the TOP section from the
standard report procedure produced in Section 10.1.3:

```
@TOP
TODAY* ' ' TIME* JUSTIFY* ' Page  ' PAGE*
CENTER* TABLE*
BLANK*
```

The standard report TOP section uses the report keywords TODAY*,
TIME*, JUSTIFY*, PAGE*, CENTER*, TABLE*, and BLANK* in three
line formats. It also uses two quoted text strings. These are
all described in this section.

The BOTTOM sections in all standard report procedures are empty:

```
@BOTTOM
```

Except for the TOP section of the standard report procedure,
there are no set line formats. You specify how you want report
listing lines to appear. You define line formats from left to
right. When you run the report procedure, the instructions that
make up the line format are carried out from left to right.

To define a line format, you enter combinations of the following
types of instructions:

● Keywords

● Text

● Response Area Names

● Column Names (BOTTOM section only)

Be sure to enter a space between instructions in a line format.

Keywords

Report keywords are instructions that ADE carries out when you
run a report procedure. Each keyword causes a specific result
in the report listing.

The following is a list of all keywords you can use in TOP and
BOTTOM sections and their actions.   The keywords are listed
according to how you use them in a line format. You can enter
keywords in upper or lower case, but you must type the *.

The following keywords must be the only instruction in a line format:

BLANK*   Inserts one blank line in the report listing.

BLANK*(n)   Inserts n blank lines in the report listing.

HEADINGS*   Causes column headings to be output, if they have not already been output on the report page.

You can use one or more of the following keywords in a line format:

CENTER*   Centers the rest of the line format on the report line.

JUSTIFY*   Right-justifies the rest of the line format and turns off centering.

SQUISH*   Turns off centering without turning on right-justification.

REPORT*   Inserts the name of the report procedure being used.

TABLE*   Inserts the name of the table or worksheet being reported on.

DESCRIPTION*   Inserts the description of the table or worksheet being reported on. For the worksheet, it is blank.

ROUTING*   Inserts the name of the file or output device being used for the report listing.

DATE*   Inserts the date the table or the worksheet was last saved in the report listing. This is the date shown by the NAMES of TABLES command. For the worksheet, it is equivalent to TODAY*.

TODAY*   Inserts the date the report procedure was run in the report listing. The date format will be as specified in the LAYOUT section.

TIME*   Inserts the time the report procedure was run in the report listing.

PAGE*   Inserts the current report page number in the report listing.

LINE*   Inserts the current line number of the table or
                      worksheet being used in the report listing.

SPACE*   Inserts a blank space on the report line.

SPACE*(n)   Inserts n blank spaces on the report line.

FILE*(filespec) Inserts the contents of the specified file in
                      the report listing. The file you specify should
                      fit on the current report page.

Text

To specify text in a line format (such as 'Grand Total'), enter
the text you want inserted. Enter a matched quotation mark ('
or ") before and after the text.

You can also use quotation marks to insert blank spaces or
quotation marks. Enter ' ' or " " to insert a blank space. To
insert quotation marks, enclose a single quotation mark with
double quotation marks ("'") or enclose a double quotation mark
with single quotation marks('"').

Response Area Names

Response area names can be used in both TOP and BOTTOM sections
to insert the contents of the response area used in the report
listing. See Chapter 9 and the ASK command in Chapter 12 for
more information on the use of response areas.

Column Names

Column names can be used in BOTTOM sections, but not in TOP
sections. A column name in a BOTTOM section line format inserts
at the bottom of each report page the column value from the last
line of data on that page.

For example, change the standard report BOTTOM section for the
PARTS table to:

@BOTTOM
TODAY* ' ' TIME* JUSTIFY* 'Page ' PAGE*
CENTER* WHOUSE

If you had run the report procedure that includes the changed
BOTTOM section above on December 30, 1981 at 3:05 PM, these two
line formats would have generated the following two lines at the
bottom of each page of the report listing:

10.2.1.3 WHERE And EXCEPT Sections -

WHERE and EXCEPT sections control the way the lines of data are
output and have many possible uses in reports. For example, you
can use WHERE and EXCEPT sections to label certain data or to
use the new data that BREAK and TOTAL add to the worksheet to
format the body of a report.

A WHERE or EXCEPT section has two parts:

● The word WHERE or EXCEPT followed by a condition

● One or more line formats

When you run the report procedure, the instructions in the line
formats are carried out only for the lines in the table or
worksheet that meet the specified condition.

The lines that meet the condition specified in a WHERE or EXCEPT
section differ from the rest of the lines in the table or
worksheet in that the data on these lines is not automatically
inserted in the report listing. Instead, the line formats in
the WHERE or EXCEPT section control what, if anything, to insert
in the report listing for these lines.

For example, suppose this WHERE section was added to the
QUANTITIES standard report procedure made in Section 10.1.2:

@WHERE QTY LT 20 PRINT* ALL* '*** LOW'

Now, if you run the QUANTITIES report procedure, using the
worksheet that contains the data shown in Section 10.1.1, one
line and only one line satisfies the WHERE condition and
generates this line in the report:

        W3   P03   10 *** LOW

The column values for the line are generated by PRINT* ALL* and
the text string '*** LOW' calls attention to the part numbers
that are running low.

You can insert the data values from the columns anywhere on a
report line by specifying the column names in a line format. If
you want the data on these lines inserted under the correct
column headings in the report, you must specify the keyword
PRINT* in a line format in the WHERE or EXCEPT section.

A given report procedure can have several WHERE and EXCEPT sections. Thus, it is possible for lines in a table or the worksheet to meet more than one condition. In the report listing, lines are inserted as specified for every WHERE and EXCEPT section where the lines meet the condition.

As in BOTTOM sections, line formats in WHERE and EXCEPT sections can consist of four types of instructions:

● Keywords

● Text

● Response Area Names

● Column Names

Be sure to enter a space after each instruction in a line format.

Keywords

In a WHERE or EXCEPT section, you can use all the keywords used in TOP and BOTTOM sections (see Section 10.2.1.2). You can also use the following keywords, which can be entered in either upper or lower case.

The following keywords must be the only instruction in a line format:

NEWPAGE*   Causes a new report page to be started. You can use NEWPAGE* in combination with FILE* to insert the contents of several files in a report listing.

NEWPAGE*(n)   Causes a new report page to be started if fewer than n lines are left on the current report listing page. If, for example, you need five lines to completely insert the lines specified in a WHERE or EXCEPT section, include NEWPAGE*(5) as the first line format of the given WHERE or EXCEPT section.

Use the following keywords only once in a given line format, but other keywords may also be in the same line format with them:

PRINT* <u>columns</u>   Inserts the values in the specified columns under the correct column headings in the report listing. To insert all column values under the correct headings, specify PRINT* ALL*. To insert all column values except one or a few, specify PRINT* OMIT* <u>columns</u>.

BAR* <u>columns</u>   Inserts dashes, instead of values, for the specified columns in the report listing. To insert dashes for all columns, specify BAR* ALL*. To insert dashes for all columns except one or a few, specify BAR* OMIT* <u>columns</u>.

Text

You specify text in a WHERE or EXCEPT section the same way as in the TOP and BOTTOM sections. Enter the text you want inserted into the line format and enter quotation marks before and after the text.

Response Area Names

You can use response area names in both WHERE and EXCEPT sections to insert the contents of the response area used in the report listing. See Chapter 9 and the ASK command in Chapter 12 for more information on the use of response areas.

Column Names

Column names can be used in WHERE and EXCEPT sections, except for WHERE BEGIN* sections, which are described in Section 10.2.3.9. A column name in a WHERE or EXCEPT section line format inserts the column value in the report listing for each line in the table or worksheet that meets the WHERE or EXCEPT condition. Column names used after the BAR* keyword insert underscores, not the column value, in the report listing.

For example, the following is the WHERE section that is included in all standard reports:

@WHERE TOTAL* <> 0
BAR* ALL*
PRINT* ALL*
BLANK*

This WHERE section condition is satisfied only by lines that
have nonempty entries in the TOTAL* column. For each line that
meets the condition, the report includes dashes in each column,
the value for each column, and a blank line. For example, the
lines inserted for the first nonempty TOTAL* column line in the
report listing in Section 10.1.4 are:

```
------    ---    ------    ------
          P01    405    PN
```

10.2.2 Designing A Report

Before using CHANGE to add, delete, or change report procedure
sections, you should design the report listing you want to
produce. Think about the questions that follow when you design
a report. They are listed by report procedure section:

1. TOP Section.

    What information do you want to appear at the top of each
    report page?

2. BOTTOM Section.

    Do you want any information to appear at the bottom of each
    report page? If so, what information?

3. COLUMNS Section.

    Which table or worksheet columns do you want to include in
    the report listing and in what order?

    Do you want to change column names for the report listing?

    Do you want multiple-line column headings for the report
    listing?

4. LAYOUT Section.

    Do you want boxing around column titles in the report
    listing?

    Do you want boxing around the data in the report listing?

    How do you want numbers and dates to appear in the report
    listing?

5. WHERE and EXCEPT Sections.

    Will there be subtotal and/or total lines in the table or worksheet used to produce the report listing?

    If so, how do you want the total and subtotal lines to appear in the report listing?

    Do you want to group lines in the table or worksheet used to produce the report listing?

    If so, is there a column that has values in it that can be used to determine the groups to appear in the report listing?

    Do you want to highlight or label any data?

    If so, do the lines of the data have a column that be described in a condition? If so, what condition?

10.2.3 How To Change A Report

The CHANGE command works on one report procedure section at a time. However, you do not need to enter a separate CHANGE command to change each section. After you enter the CHANGE command, ADE displays the report procedure sections. The cursor is first positioned at the beginning of the COLUMNS section. At this point, you can make changes to the column titles by entering new ones or insert or delete new columns by pressing function keys. Or you can press a function key or keys and move on to another report procedure section that needs changing. Use <SKIP> to do this, for example.

When you add to or change sections that have line formats, you can enter and change whole lines, as well as using <RIGHT> to change parts of lines. For help on line formats, you can press the HELP key.

10.2.3.1 Function Keys -

During a CHANGE command, three types of functions are active:

● Functions that display information

● Functions that move the cursor

● Functions that change the contents of a section

The following function keys display information:

<HELP>   Displays more detailed information about what
                         ADE expects as input next.

<DISPLAY>   Rewrites the screen so that you can see the
                         display clearly. Use the DISPLAY function after
                         using <HELP>.

The following keys move the cursor:

<RETURN>   Moves the cursor down to the next line.

<DOWN>   Moves the cursor down to the next line.

<UP>   Moves the cursor back up to the previous line.

<SKIP>   Moves the cursor down to the beginning of the
                         next section.

<TOP>   Moves the cursor to the beginning of the report
                         procedure, which is the COLUMNS section, keeping
                         changes made so far.

<BOTTOM>   Moves the cursor down to the end of the report
                         procedure, which is after the last WHERE or
                         EXCEPT section. This is where you can add a new
                         WHERE or EXCEPT section or more line formats to
                         the last WHERE or EXCEPT section.

<INSERT>   Moves the cursor so that you can put a line
                         between two existing lines.

<RIGHT>   Moves the cursor right to just after the next
                         line part (after space) so that part can be
                         changed.

<FIND>   Prompts you to enter a character string and then
                         moves the cursor to the first line containing
                         the string. The character string you enter is
                         displayed in brackets the next time you enter
                         <FIND>. To move the cursor to the next line
                         containing this string, enter <FIND NEXT>.

<FIND NEXT>   Moves the cursor to the next line containing the
                         string last entered for <FIND>.

You can find the line containing the nth line containing a specified string by combining <FIND NEXT> with the numbers on the main keyboard. If, for example, you want to find the fifth line format containing the keyword BLANK* previously entered with <FIND>, press the following keys, in this order:

1. The GOLD key on the keypad

2. The number 5 on the main keyboard (to indicate "do five times")

3. The <FIND NEXT> function key on the keypad

If the same character string appears more than once in a line format, it still counts as one <FIND> or <FIND NEXT>. Like most other ADE functions, <FIND> and <FIND NEXT> work on whole lines.

The following keys change the contents of the section you are changing:

<DELETE LINE>   Deletes the current line. When you are changing a COLUMNS or LAYOUT section, the cursor is on the current line. When you are changing a TOP, BOTTOM, or WHERE and EXCEPT section, the question mark and prompt, as well as the cursor, are also on the current line.

<UNDELETE>   Brings back the last line deleted.

<CTRL/C>   Exits CHANGE and deletes all changes you made.

<ENTER>   Exits CHANGE and enters all changes you made.

The examples in the following sections show how to change a standard report procedure in a number of ways. To change any or all report procedure sections, you must enter a CHANGE command. To see the new report listing after you change one or more sections, you can exit the CHANGE command and run the report procedure.

For example, to change any or all of the sections of the standard report procedure made earlier in this chapter, enter the following command:

CHANGE existing QUANTITIES

10.2.3.2 Changing The COLUMNS Section -

After you move the cursor in the standard report procedure to the COLUMNS section, you are now ready to change the COLUMNS section of the report procedure.

The column names and the titles to be used for the column headings are displayed in the scrolling area.

The cursor marks your place in the section. The current line is the line on which the cursor appears.

At this point, you can change column titles, add new column names and titles, delete current column names and titles, as well as change column order. If the change is to occur on other than the current line in the COLUMNS section, move to that line by pressing a function key (such as the RETURN key or the DOWN key).

Changing Column Titles

To change a column title, put the cursor on the line of the column to be changed and enter the new title. When you finish typing the new title, press the RETURN key.

Enter column titles exactly as you want them to appear in the report listing. To enter a column title that will appear on more than one line in the report listing, put a dash (-) between the parts of the column title you want to appear on separate lines. Each part of the column title will be centered. For example, type Part-Number to print Part and Number on two lines.

Adding New Columns

To add a column to the report that exists in the table or worksheet that the report uses, position the cursor on the line of the column before which you want the new column and press <INSERT>. A blank line is inserted in the COLUMNS section. Enter the new column name and press the RETURN key. Then enter the new title (what appears in the report). When you finish typing the new title, press the RETURN key.

Enter new column names that follow the rules for naming columns described in Section 4.1. Enter column titles as described in previous paragraphs in this section.

Deleting Columns

To delete a column, position the cursor on the line of the
column that you want to delete and press <DELETE LINE>. The
information on the line is deleted.

The empty line left from the deletion can be used to add new
column information, as above. This is the easiest way to change
the name of a column in the COLUMNS section. If for any reason
after pressing <DELETE LINE> you want to restore the information
deleted, simply press <UNDELETE> and the last line of
information deleted is restored.

Changing Column Order

To change column order, position the cursor on the line of a
column out of the desired order and press <DELETE LINE>.
Position the cursor on the line of the column before which you
want to insert the column just deleted and press <UNDELETE>.
The last deleted line is inserted in the desired place. Repeat
this for as many columns as necessary.

Suppose you want the column headings on your report pages to
look like this:

          Part   Warehouse   Quantity
          Number

The default COLUMNS section of the standard report produced
earlier is:

@COLUMNS
WHOUSE   <WHOUSE>
PN   <PN>
QTY   <QTY>
TOTAL*   <TOTAL*>

Thus, you need to change the default COLUMNS section to have the
following column names and titles and appear in the following
order:

@COLUMNS
PN   <Part-Number>
WHOUSE   <Warehouse>
QTY   <Quantity>

Compare the default COLUMNS section with the desired COLUMNS
section line by line.

You want to:

1. Keep the first column line but change its title to Warehouse

2. Keep the second column line but change its title to Part-Number

3. Keep the third column line but change its title to Quantity

4. Delete the fourth column line

5. Interchange the first and second column lines

Follow these steps. The screen changes after each step.

1. Keep WHOUSE as the first column name, but change the column title to Warehouse.

   With the cursor next to <WHOUSE>, type Warehouse and press the RETURN key.

   The following is displayed in the scrolling area:

   ```
   @COLUMNS
   WHOUSE              <Warehouse>
   PN                  <PN>
   QTY                 <QTY>
   TOTAL*              <TOTAL*>
   ```

2. Keep PN as the second column name, but change the column title to Part Number, with Part and Number on separate lines.

   With the cursor next to <PN>, type Part-Number and press the RETURN key.

   The following is displayed in the scrolling area:

   ```
   @COLUMNS
   WHOUSE              <Warehouse>
   PN                  <Part-Number>
   QTY                 <QTY>
   TOTAL*              <TOTAL*>
   ```

3. Keep QTY as the third column name, but change the column
    title to Quantity.

    With the cursor next to <QTY>, type Quantity and press the
    RETURN key.

    The following will be displayed in the scrolling area:

    ```
    @COLUMNS
    WHOUSE              <Warehouse>
    PN                  <Part-Number>
    QTY                 <Quantity>
    TOTAL*              <TOTAL*>  _
    ```

4. Delete the TOTAL* column line.

    With the cursor next to <TOTAL*>, press <DELETE LINE>.

    The following will be displayed in the scrolling area:

    ```
    @COLUMNS
    WHOUSE              <Warehouse>
    PN                  <Part-Number>
    QTY                 <Quantity>

    _
    ```

5. Interchange the WHOUSE and PN column lines.

    Press <TOP>. With the cursor next to <Warehouse>, press
    <DELETE LINE> and then press the RETURN key twice. With the
    cursor next to <Quantity>, press <UNDELETE>.

    The following will be displayed in the scrolling area:

    ```
    @COLUMNS
    PN                  <Part-Number>
    WHOUSE              <Warehouse>
    QTY                 <Quantity>  _
    ```

6. You are finished making changes to the COLUMNS section.
    Press the ENTER key on the keypad to exit or position the
    cursor to another section of the report procedure to make
    other changes.

10.2.3.3 Changing The LAYOUT Section -

To change the LAYOUT section, move the cursor to the LAYOUT section in the standard report procedure.

The entries in the default LAYOUT section are displayed in the scrolling area.

The cursor marks your place in the section. The current line is the line on which the cursor appears.

At this point, you can make changes to the entries in the LAYOUT section in a way similar to making changes in the COLUMNS section.

To change an entry in the LAYOUT section:

1. Move the cursor to the line of the entry to be changed.

2. Type the new entry.

3. Press the RETURN key to enter the new entry.

The following is the default LAYOUT section:

```
@LAYOUT
Title Boxing            <Yes>
Data Boxing             <No>
Vertical    boxing char <¦>
Horizontal boxing char  <->
Spaces between Columns   <2>
Lines after title        <1>
Lines spacing            <0>
Lines per page          <50>
Page width            <data>
Left margin              <0>
Date pattern     < 2-Jan-80>
Number pattern     <-9,000>
```

The following list describes what each LAYOUT section entry controls in a report listing and lists the legal inputs for each LAYOUT entry. For all LAYOUT section entries, the number n must be a whole number greater than or equal to zero.

The LAYOUT section entries include:

1. Title Boxing - Yes, No

    Controls the boxing of titles (column headings). Yes causes boxes around titles. No causes no boxes around titles.

2.   Data Boxing - Yes, No, n

     Controls the boxing of data (values). Yes causes boxes
     around the columns of data. No causes no boxes around the
     columns of data. The number n causes boxes around the
     columns of data, as well as additional horizontal boxing
     lines after every n lines of data.

3.   Vertical boxing char - any single printable character

     Controls the character used for vertical boxing lines. A
     character, such as the vertical bar, an exclamation mark, or
     an asterisk, is normally used. This entry has no effect if
     neither title boxing nor data boxing is used.

4.   Horizontal boxing char - any single printable character

     Controls the character used for horizontal boxing lines. A
     character, such as a dash or an asterisk, is normally used.
     This entry has no effect if neither title boxing nor data
     boxing is used.

5.   Spaces between Columns - n

     Controls the number of horizontal spaces between columns. A
     number of one or two is normally used. If data boxing is
     used, zero may be useful.

6.   Lines after title - n

     Controls the number of blank lines inserted after the title
     line. A number of one or two is normally used. If both
     title boxing and data boxing are used, zero may be useful.

7.   Line spacing - n

     Controls the number of blank lines inserted between data
     lines. A number of zero causes single spacing of data. A
     number of one causes double spacing of data. If data boxing
     is used, zero may be useful.

8.   Lines per page - n

     Controls the maximum number of lines on a page. A number
     between 50 and 60 is normal for regular forms, although
     smaller and larger numbers are often useful with other
     forms. When the number is larger than the form can
     accommodate, output will occur across form boundaries.

9. Page width - data, n̲

    Controls the maximum number of characters in a line across
    the page. The word data causes the page width to be
    determined by the actual data. The number n specifies the
    page width directly. In either case, CENTER* and JUSTIFY*
    center and justify text based on page width. This entry has
    no effect on the use of FILE*, which simply inserts a copy
    of the specified file into the report listing.

10. Left margin - n̲

    Controls the placement of the left margin by specifying how
    many horizontal spaces to indent the entire line. A number
    of zero is normally used.

11. Date pattern - any legal date format

    Controls the report listing format of data in date columns
    and the contents of TODAY*. This date pattern may be the
    same or different from the the date pattern used to
    determine nonreport listing display and input format of date
    values. A legal date format is the date January 2, 1980
    typed as you want dates to appear in the report listing.

    ● For days of the month, use 02 to specify leading zero, 2
      preceded by a space to specify leading space, and just 2
      to specify nonleading zero or space.

    ● For months of the year, use 01 to specify leading zero,
      1 preceded by a space to specify leading space, just 1
      to specify nonleading zero or space for numbered months,
      or three or more leading letters of January for named
      months.

    ● For years, use 1980 for four digits or 80 for two
      digits.

    ● For spacing between days, months, and years, use one or
      more nondigit, nonletter printable characters (spaces,
      dashes, slashes, and so on), as desired.

    ● You can use any order of the three date parts you want.

    The following are examples of legal date patterns:

02-Jan-80	02-Jan-1980
2-Jan-80	2-Jan-1980
02-JAN-80	02-JAN-1980
2-JAN-80	2-JAN-1980
02-jan-80	02-jan-1980
2-jan-80	2-jan-1980

```
        02-January-80              02-January-1980
         2-January-80               2-January-1980
        02-JANUARY-80              02-JANUARY-1980
         2-JANUARY-80               2-JANUARY-1980
        02-january-80              02-january-1980
         2-january-80               2-january-1980
```

                    January 2, 1980

```
        01/02/80                   01/02/1980
         1/02/80                    1/02/1980
         1/ 2/80                    1/ 2/1980
         1/2/80                     1/2/1980

        02/01/80                   02/01/1980
         2/01/80                    2/01/1980
         2/ 1/80                    2/ 1/1980
         2/1/80                     2/1/1980
```

12. Number pattern - any legal negative number format

Controls the report listing format of data in numeric columns. This number pattern may be the same or different from the the number pattern used to determine nonreport listing display and input format of numeric values. A legal negative number format is the number -9000 typed as you want negative numbers to appear in the report listing.

- For sign, use leading or trailing minus sign, parentheses, CR (for credit) or any other nondigit printable characters.

- For number separator character, use a comma, space or other nondigit printable character.

The following are examples of legal number patterns:

```
    -9,000          -9 000          -9000
    9,000-          9 000-          9000-
    (9,000)         (9 000)         (9000)
    9,000CR         9 000CR         9000CR
```

Since the default LAYOUT section entries are the ones needed to produce the report listing that is being used for an example, no changes need to be made to the LAYOUT section.

10.2.3.4 Changing The TOP Section -

To change the TOP section, move the cursor to the TOP section in the standard report procedure.

The following is displayed in the scrolling area:

```
        @TOP
Format? TODAY* ' ' TIME* JUSTIFY* ' Page  ' PAGE*
.       CENTER* TABLE*
        BLANK*
```

Like the cursor, the question mark and prompt help to mark your place in the section.   The current line is the line with the question mark and prompt, as well as the cursor.

At this point, you could enter a new line format before the first line format of the TOP section or move to another line of the section by pressing a function key (such as the RETURN key or the DOWN key). When you finish typing a line format, press the RETURN key. Type one line format on each line.

For example, you want the top of your report pages to look like this:

```
        30-Dec-81 10:11 AM        Page 1

                  CURRENT INVENTORY
```

Thus, you need to change the default TOP section to have these line formats:

```
@TOP
TODAY* ' ' TIME* JUSTIFY* ' Page ' PAGE*
BLANK*
CENTER* 'CURRENT INVENTORY'
BLANK*
```

Compare the standard TOP section with the TOP section you specified line by line.

You want to:

1. Keep the first line

2. Insert BLANK* between the first and second lines

3. Replace CENTER* TABLE* with CENTER* 'CURRENT INVENTORY'

4. Keep the last line

Follow these steps to put a new heading in the TOP section. The
screen will change after each step.

1. Press the RETURN key to move to the second line.

    The following is displayed in the scrolling area:

              @TOP
              TODAY* ' ' TIME* JUSTIFY* 'Page ' PAGE*
    Format? CENTER* TABLE*
              BLANK*

2. Type BLANK* after the question mark and press the RETURN
    key.

    The following is displayed in the scrolling area:

              @TOP
              TODAY* ' ' TIME* JUSTIFY* 'Page ' PAGE*
              BLANK*
    Format? CENTER* TABLE*
              BLANK*

3. Type CENTER* 'CURRENT INVENTORY' after the question mark and
    press the RETURN key.

    The following is displayed in the scrolling area:

              @TOP
              TODAY* ' ' TIME* JUSTIFY* 'Page ' PAGE*
              BLANK*
              CENTER* 'CURRENT INVENTORY'
    Format? CENTER* TABLE*
              BLANK*

4. Press <DELETE LINE> to delete the current line.

    The following is displayed in the scrolling area:

              @TOP
              TODAY* ' ' TIME* JUSTIFY* 'Page ' PAGE*
              BLANK*
              CENTER* 'CURRENT INVENTORY'
    Format?
              BLANK*

5. You are finished making changes to the TOP section.   Press
    the ENTER key on the keypad to exit or position the cursor
    at another section.

10.2.3.5 Changing The BOTTOM Section -

To change the BOTTOM section of the report procedure, move the
cursor to the BOTTOM section.

Working with the BOTTOM section of a report procedure is similar
to working with the TOP section.   Since the default BOTTOM
section is empty, you would simply enter new line formats in the
same manner you did in the TOP section. Remember, you can use
column names in addition to keywords, text, and response area
names.

Since no new entries are required in the BOTTOM section to
produce the report listing in this example, no changes need to
be made to that section.

10.2.3.6 Adding A WHERE Or EXCEPT Section -

To add a WHERE or EXCEPT section to the report procedure, move
the cursor past the last section. These conditional sections
are the only sections that are actually added to a report
procedure; the others are always there and can only be changed.

To add a new WHERE section, type @WHERE followed by a valid
condition.   To add a new EXCEPT section, type @EXCEPT followed
by a valid condition. Valid conditions in WHERE and EXCEPT
sections of report procedures are identical to valid conditions
in optional WHERE and EXCEPT phrases, as described in Chapter 7.

Like TOP and BOTTOM sections, WHERE and EXCEPT sections contain
line formats.   Therefore, once you add these sections, working
with them is similar to working with TOP and BOTTOM sections,
including entering line formats.

For example, to decide which WHERE or EXCEPT sections you want
to add to the standard report procedure being used in the
examples so far, compare the table format with the desired
report format.   In the report listing, you want to output
subtotal and total lines differently from the way they appear in
the table.   You also want to highlight and label lines where
there are fewer than 20 items in stock.

Thus, you want to add the following three WHERE sections:

@WHERE TOTAL* = PN, which will control the subtotal lines

@WHERE TOTAL* = TOTAL, which will control the total line

@WHERE QTY < 20, which will control the low quantity lines

Before using CHANGE to add these WHERE sections to the report procedure, you must decide which line formats will make up each of the new WHERE sections.

The following line formats insert the desired subtotal lines in the report procedure:

BLANK*

> Inserts one blank line.

SPACE*(6) 'Total for ' PN ' is ' QTY

> Inserts six spaces, the text "Total for ", the value in the PN column, the text " is ", and the value in the QTY column.

BLANK*

> Inserts one blank line.

The following line formats insert the desired total line in the report procedure:

BLANK*

> Inserts one blank line.

'Total for all parts is' SPACE*(3) QTY

> Inserts the text "Total for all parts is", three spaces, and the value in the QTY column.

The following line format inserts the desired low quantity lines in the report procedure:

PRINT* PN,WHOUSE,QTY ' *** LOW'

> Inserts the values in each column under the correct column headings with the text " *** LOW" added after the value for QTY.

Remember to use the keyword PRINT* in WHERE and EXCEPT sections to line up column values under the correct column headings in the report listing.

The following are the three WHERE sections that must be added to the report procedure:

```
@WHERE TOTAL* = PN
BLANK*
SPACE*(6) 'Total for ' PN ' is ' QTY
BLANK*

@WHERE TOTAL* = TOTAL
BLANK*
'Total for all parts is' SPACE*(3) QTY

@WHERE QTY < 20
PRINT* PN,WHOUSE,QTY ' *** LOW'
```

Make sure you enter these WHERE sections exactly as shown, with one line format to a line. Press the RETURN key after typing each line format. When you are finished, press the ENTER key to exit or position the cursor at another section.

10.2.3.7 Changing A WHERE Or EXCEPT Section -

To change a WHERE or EXCEPT section in the report procedure, move the cursor to the WHERE or EXCEPT section.

Remember that changing WHERE and EXCEPT sections is similar to changing TOP and BOTTOM sections.

When you change the condition in a WHERE or EXCEPT section, remember that the new condition must be a valid one, as described in Chapter 7.

10.2.3.8 Deleting A WHERE Or EXCEPT Section -

To delete WHERE or EXCEPT sections in the report procedure, move
the cursor to the section you want to delete.

The WHERE and EXCEPT sections require the deletion of the
keyword WHERE or EXCEPT and the associated condition if the
WHERE or EXCEPT section is to be completely deleted.

To delete the original WHERE section from the default report
procedure is the last step in producing the desired report
procedure.

To do this, follow these steps. The screen will change after
each step.

1. Move the cursor to the beginning of the WHERE section to be
    deleted.

    The following is displayed in the scrolling area:

    Format? @WHERE TOTAL* <> 0
            BAR* ALL*
            PRINT* ALL*
            BLANK*

2. Press <DELETE LINE> to delete the current line and then
    press the RETURN key to move the cursor to the next line.

    The following will be displayed in the scrolling area:

    Format? BAR* ALL*
            PRINT* ALL*
            BLANK*

3. Press <DELETE LINE> to delete the current line and then
    press the RETURN key to move the cursor to the next line.

    The following will be displayed in the scrolling area:

    Format? PRINT* ALL*
            BLANK*

4. Press <DELETE LINE> to delete the current line and then
    press the RETURN key to move the cursor to the next line.

    The following will be displayed in the scrolling area:

    Format? BLANK*

5. Press <DELETE LINE> to delete the current line.

    The following will be displayed in the scrolling area:

    Format? _

6. You are finished deleting the WHERE section. Press the
    ENTER key on the keypad to exit or move the cursor to
    another section to make other changes.

10.2.3.9 Special WHERE Sections -

Like other WHERE sections, the special WHERE sections have a
condition and one or more line formats. Only the conditions
have special meanings, not the line formats. You specify the
line formats the same way you specify line formats in the other
WHERE sections. There are three special keywords that
constitute valid conditions when used as part of WHERE sections:
BEGIN*, END*, and ALL.

WHERE BEGIN*

A WHERE BEGIN* section specifies that the line formats are to
apply to an insertion in the report listing prior to any other.
This WHERE section can be used to produce a cover sheet for the
main report listing or or any other information you want to
appear before the main report listing.

WHERE BEGIN* sections are useful for report listings with
several pages. Unlike the TOP section, which appears at the top
of every report page, the BEGIN* insertion at the front of a
report appears only once.

You can use WHERE BEGIN* sections to:

● Insert a heading at the top of the first report page

● Insert a title page in a report listing

● Insert introductory text in the front of a report listing

● Insert a graph at the beginning of a report listing

The TOP section does not affect report listing pages produced by
WHERE BEGIN*. The TOP section affects only insertions on report
listing pages where it can start the insertion on the first line
of the page. For example, when you use a WHERE BEGIN* section
to insert a report heading at the top of the first report page,
the TOP section will not insert anything on that page. Instead,
the column titles usually would appear next. The TOP section
does affect insertions, however, on all other report pages,
including those produced by a WHERE END* section.

WHERE END*

A WHERE END* section specifies that the line formats are to
apply to an insertion in the report listing after the BOTTOM
section insertion on the last regular report listing page.

You can use WHERE END* sections to:

● Insert a summary at the end of a report listing

● Insert other text at the end of a report listing

● Insert a graph at the end of a report listing

The END* insertion appears on the same page as the last BOTTOM
section insertion, unless a line format in the WHERE END*
section contains the keyword NEWPAGE* or NEWPAGE*(n).

A column name used in a WHERE END* line format inserts the
column value from the last line in the table or the worksheet
being used.

WHERE ALL

A WHERE ALL section specifies that the line formats are to apply
to all lines in the table or worksheet being used. ALL is a
valid condition as described in Chapter 7. WHERE ALL sections
can be used to present all the lines in a special format.

10.2.4 Seeing Report Sections With LIST

Remember, you can use the LIST command to see the sections in a
report procedure.

For example, to list the report procedure changed in the
previous examples, enter the following command:

LIST existing QUANTITIES

If you use the LIST command, the sections of the report procedure QUANTITIES are displayed in the scrolling area:

! QUANTITIES C:30-Dec-82 04:25 PM M:30-Dec-82 06:25 PM ADE V2.1

```
@COLUMNS
PN                      <Part-Number>
WHOUSE                  <Warehouse>
QTY                     <Quantity>

@LAYOUT
Title Boxing            <Yes>
Data Boxing             <No>
Vertical   boxing char  <¦>
Horizontal boxing char  <->
Spaces between Columns  <2>
Lines after title       <1>
Lines spacing           <0>
Lines per page          <50>
Page width              <data>
Left margin             <0>
Date pattern            < 2-Jan-80>
Number pattern          <-9,000>

@TOP
TODAY* ' ' TIME* JUSTIFY* ' Page ' PAGE*
BLANK*
CENTER* 'CURRENT INVENTORY'
BLANK*

@BOTTOM

@WHERE TOTAL* = PN
BLANK*
SPACE*(6) 'Total for ' PN ' is ' QTY
BLANK*

@WHERE TOTAL* = TOTAL
BLANK*
'Total for all parts is' SPACE*(3) QTY

@WHERE QTY < 20
PRINT* PN,WHOUSE,QTY ' *** LOW'
```

10.2.5 Using A Changed Report

To see the new report listing after a change or a series of changes to the report procedure, follow the same steps as for running the standard report procedure.

For example, to see the report listing produced by the report procedure that was changed in the previous examples of this chapter, enter:

QUANTITIES reporting the table WORKSHEET

If you entered all the changes correctly as described in the previous examples, you will see a report listing similar to the one below.

```
      30-Dec-82 08:11 PM           Page 1

              CURRENT INVENTORY


      ------------------------------------
      | Part   | Warehouse | Quantity |
      | Number |           |          |
      ------------------------------------

         P01        W1           128
         P01        W2           135
         P01        W3           142

          Total for P01 is 405

         P02        W1            92
         P02        W2           167
         P02        W3           251

          Total for P02 is 510

         P03        W1            48
         P03        W2            74
         P03        W3            10 *** LOW

          Total for P03 is 132

         P04        W1            65
         P04        W2           143
         P04        W3           202

          Total for P04 is 410


      Total for all parts is   1,457
```

10.2.6 Using A Report On Other Tables

You can use the same report procedure with any table or worksheet that has all the columns in the COLUMNS section of the report procedure. The table or worksheet can have extra columns that are not in the COLUMNS section, but it cannot be missing any columns that are in the COLUMNS section. The COLUMNS section can be changed to add missing columns.

10.2.7 Using FILE* To Produce More Complex Reports

The following are some ways the keyword FILE* can help you make more complex reports:

- Insert a graph in a report listing.

  Use the GRAPH command to produce the graph and put it into a file using an optional TO FILE phrase. When you make the report procedure, use FILE* to insert the file with the graph in the report listing.

- Produce a report with data from two tables.

  Make two report procedures. When you run the first report procedure, use an optional TO FILE phrase to specify a file for output. Then use FILE* in the second report procedure to insert the first report listing from the file inside the second report.

CHAPTER 11

MANAGING TABLES, VERBS, AND REPORTS

Most, but not all, of the information in this chapter has been introduced previously in separate discussions of working with tables, verbs, and reports. This chapter integrates this information to emphasize what is common in working with tables, verbs, and reports.

This chapter describes:

- Listing names of tables, verbs, and reports

- Outlining the columns in a table

- Making a new table, verb, or report

- Renaming a table, verb, or report

- Erasing a table, verb, or report

The command examples in this chapter use an ADE directory that contains one table named PARTS, one verb named TASK, and one report named QUANTITIES.

11.1 LISTING NAMES OF TABLES, VERBS, AND REPORTS

The NAMES command lists the names of tables, verbs, and reports in an ADE directory. The default form of the NAMES command, which lists the contents of your ADE directory on the terminal, is:

NAMES of ALL

The following information would be displayed in the scrolling area:

```
---
Name                Description              Date Saved  Time   Access

* Tables *
PARTS               Sample Table.            30-Dec-1981 09:30  SELF

* Verbs *
TASK                Sample Verb.             30-Dec-1981 09:45  SELF

* Reports *
QUANTITIES          Sample Report.           30-Dec-1981 10:00  SELF
```

11.1.1 Specifying What To List

By entering TABLES, VERBS, or REPORTS in place of ALL in the NAMES command, you can list tables only, verbs only, or reports only.

For example:

NAMES of TABLES

This NAMES command would list the names of tables only. Verbs and reports would not be listed.

11.1.2 Specifying Where To Send The List

Besides displaying the list of names on the terminal, you can also list them on the line printer or a printer attached to terminal, copy them into a file, or list them on another device.

To specify where to send the list, enter one of the following after ALL, TABLES, VERBS, or REPORTS in the NAMES command:

TO PRINTER   To list the names on the line printer.

TO PORT   To list the names on a printer attached to the terminal.

TO FILE _filename_   To copy the list of names into a file.

TO DEVICE _devicename_ To list the names on the given device.

Examples:

NAMES of ALL TO PRINTER

NAMES of VERBS TO FILE VERB.LST

For more information, see the NAMES commmand in Chapter 12.

11.2 OUTLINING THE COLUMNS IN A TABLE

You can use the OUTLINE command to list the column names in a table or the worksheet.

For example:

OUTLINE of table PARTS

The following information would be displayed in the scrolling area:


```
          ---
          ** OUTLINE OF TABLE PARTS **

          PN                 (KEY)
          PNAME
          WHOUSE
          COLOR
          WEIGHT             (NUMERIC)
          QTY                (NUMERIC)

          There are 9 lines and 6 columns.
```


11.3 MAKING A NEW TABLE, VERB, OR REPORT

Remember, you use the MAKE command to make a new worksheet (to save as a table), a new verb, or a new report. ADE prompts you for a worksheet name, a verb name, or a report name and enters the name you supply into your ADE directory.

Examples:

MAKE new WORKSHEET called PERSONNEL

MAKE new VERB called TASK

MAKE new REPORT called QUANTITIES using table WORKSHEET

NOTE

The MAKE command works differently for worksheets, verbs, and reports. See the following chapters for step-by-step descriptions:

- For worksheets, Chapter 5, "Producing A Table"

- For verbs, Chapter 9, "Working With Verbs"

- For reports, Chapter 10, "Working With Reports"

You can also use the MAKE command to make a new column in the worksheet.

11.4 RENAMING A TABLE, VERB, OR REPORT

You use the RENAME command to rename a table, verb, or report. ADE prompts you for both the existing name and the new name. When you enter the new name, be sure to follow the ADE naming rules for tables, verbs, and reports. The RENAME command changes names only. Your data remains unchanged.

Examples:

To rename the table PARTS to OLD.PARTS, enter the following command:

RENAME existing PARTS to table OLD.PARTS

To rename the verb TASK to OLD.TASK, enter the following command:

RENAME existing TASK to verb OLD.TASK

To rename the report QUANTITIES to OLD.QUANTITIES, enter the following command:

RENAME existing QUANTITIES to report OLD.QUANTITIES

If you now use the NAMES command to list the names of your tables, verbs, and reports, the new names are displayed.

You can also use the RENAME command to rename the worksheet or columns in the worksheet.

11.5 ERASING A TABLE, VERB, OR REPORT

To save disk space, you should always use the ERASE command to delete tables, verbs, and reports that you no longer need. However, after you erase a table, a verb, or a report, you cannot recover it.

To protect your tables, verbs, and reports from being erased by mistake, ADE gives you a chance to reconfirm the ERASE command.

For example, suppose you enter the following command:

ERASE existing PARTS

After you enter the ERASE command, ADE asks you:

Do you want to erase the table PARTS (YES or NO) ?

If you really want to erase the PARTS table, type YES and press the RETURN key. ADE tells you what it has done:

The Table "PARTS" has been erased.

If you do not want to delete the PARTS table, type NO and press the RETURN key. Again, ADE tells you what it has done:

The Table "PARTS" is NOT erased.

PART THREE - REFERENCE INFORMATION

CHAPTER 12

COMMANDS

This chapter lists all ADE commands in alphabetical order. Each command description includes the following information:

Purpose

A brief statement of what the command does.

Formats

Shows both your input and ADE's command prompts, using the following conventions:

UPPER CASE   (also printed in red) means type words exactly as shown.

lower case   represents ADE's command line prompts.

underlined   means replace words with a name or expression.
lower case   For example, replace table with a table name and column with a column name.

All command defaults appear in angle brackets.

Effects

Describes how the command works.

For some commands, the following information is also included:

Examples

Shows examples of the command.

Entering The Command

Lists rules for entering the command.

Using the Command

Describes how to use the command interactively and in a verb.

Function Keys

Lists active function keys.

Table 12-1 gives a summary of the ADE commands grouped by their most important or primary functions.

Table 12-1: Summary of ADE Commands by Function

Command Type	Description	Commands
Management Commands	Perform housekeeping tasks.	MAKE, GET, SAVE, RENAME, ERASE, BACKUP, ALLOW, COPY, SET, EXIT
Input Commands	Let you enter data.	ENTER, CHANGE
Output Commands	Display data and information.	LIST, GRAPH, HELP, NAMES, OUTLINE Reports are also forms of output.
Arithmetic Commands	Perform arithmetic on number data.	ADD, SUBTRACT, MULTIPLY, DIVIDE, CALCULATE, TALLY, TOTAL
Table and Worksheet Commands	Perform various operations on a table and/or the worksheet.	MOVE, PICK, SORT, MERGE, APPEND, COMBINE, UPDATE
Special Verb Commands	Perform special operations in verbs.	REMARK, ASK
Report Preparation Commands	Prepare the worksheet for use by report procedures.	BREAK, TOTAL
Training Command	Performs online training.	TRAIN

12.1 ADD

Purpose

The ADD command adds worksheet columns or values.

Use the ADD command when you want to add two columns, a column
and a value, or two values. To add more than two columns or do
more complex arithmetic, use the CALCULATE command.

Formats

ADD item item to item result in column <SUM>

ADD item item to item result in column <SUM> column

    where item is either a column name or a value
          column is a column name

Entering the ADD Command

You can use a WHERE or EXCEPT phrase to add a subset of
worksheet lines. When you enter the ADD command, place the
WHERE or EXCEPT phrase after the result column name.

Effects

● The ADD command places the result in a new or existing
   worksheet column.

   However, when you specify two values and the worksheet has
   no lines, the ADD command displays the result in the
   scrolling area of the screen.

● You specify the column names and the values you want to add.
   You also specify the column name for the result. When you
   use a new column name for the result, the column is added to
   the worksheet automatically. When you use an existing
   column name for the result, the old values in the column are
   replaced by the results of the addition.

Examples

● Adding two columns

For every line in the worksheet, the ADD command adds the
two column values in the line and places their sum on the
same line in the result column.

```
A  B                                          A  B  SUM

1  1                                          1  1   2
2  2     ADD item A to B result in SUM        2  2   4
3  3                                          3  3   6
4  4                                          4  4   8
```

● Adding a value to a column

The ADD command adds the value to every value in the column
and places each sum in the result column.

```
A                                             A  SUM

1                                             1   2
2        ADD item 1 to A result in SUM        2   3
3                                             3   4
4                                             4   5
```

● Adding two values

When the worksheet contains one or more lines, the ADD
command adds the two values and places their sum in every
line of the result column.

```
A                                             A

1                                             3
2        ADD item 1 to 2 result in A          3
3                                             3
4                                             3
```

If the worksheet has no lines, ADD displays the result in
the scrolling area of the screen.

Using the ADD Command

Arithmetic Rules

● After you add two numbers, the result column is always a numeric column.

● After you add a number to a date column, the result column is always a date column.

● Nonnumeric characters and blanks have the value zero.

● Adding to a blank in a date column results in a blank.

Decimal Places

ADE keeps track of decimal places for numbers in numeric columns. All values in a numeric column have the same number of decimal places. However, ADE does not keep track of decimal places for numbers in character columns.

When you add numeric columns, the number of decimal places in the result column has the larger number of decimal places present in either column or the specified value, or the number explicitly stated in a ROUND or TRUNCATE optional phrase.

Rounding/Truncating

You can round or truncate results of arithmetic commands by using the optional phrases ROUND # or TRUNCATE # at the end of the command line, where "#" is the number of decimal places you want the result to be rounded or truncated to. For example:

ADD item 1 to 2 result in SUM ROUND 2

CALCULATE expression A + B result in column CAL TRUNCATE 3

12.2 ALLOW

Purpose

The ALLOW command assigns the class of user who can access tables, verbs, and reports.

Use the ALLOW command when you want to grant other ADE users read access to your tables, verbs, or reports.

Formats

ALLOW access to table by <SELF>

ALLOW access to table by <SELF> user-class

ALLOW access to verb by <SELF>

ALLOW access to verb by <SELF> user-class

ALLOW access to report by <SELF>

ALLOW access to report by <SELF> user-class

    where table is a table name
          verb is a verb name
          report is a report name
          user-class is SELF, GROUP, or WORLD

Effects

- The table, verb, or report you specify has its access changed.

- If the table, verb, or report already has the specified access, the ALLOW command has no effect.

- ADE directories are created with WORLD access, if host system defaults permit, so that any ADE user can access them with the NAMES command.

- ADE tables, verbs, and reports are created with SELF access, so that only the owner or a privileged user can access them unless you use the ALLOW command.

Examples

To grant everyone access to your INVENTORY table, enter:

ALLOW access to INVENTORY by WORLD

To grant members of your group access to your TASK verb, enter:

ALLOW access to TASK by GROUP

To permit access to your QUANTITIES report procedure only by yourself, enter:

ALLOW access to QUANTITIES by SELF

12.3 APPEND

Purpose

The APPEND command brings lines from a table into the bottom of
the worksheet.

Format

APPEND to worksheet the table table

   where table is a table name

Entering the APPEND Command

The names and types of the worksheet columns must match the
names and types of the columns in the table, although the
worksheet can contain more columns than are in the table.

Effects

The lines in the table you specify are copied into the bottom of
the worksheet. The table remains unchanged.

Example

To append the lines in the table PERSONNEL to the worksheet,
enter:

APPEND to worksheet the table PERSONNEL

The worksheet prior to the APPEND command, the table PERSONNEL,
and the worksheet after the APPEND command are shown:

BADGE	NAME	DEPT	BADGE	NAME	DEPT	BADGE	NAME	DEPT
2	SMITH	SALES	1	ADAMS	MFG	2	SMITH	SALES
4	BAKER	SALES	3	MOORE	MFG	4	BAKER	SALES
6	EATON	SALES	5	JONES	MFG	6	EATON	SALES
						1	ADAMS	MFG
						3	MOORE	MFG
						5	JONES	MFG

| Worksheet | PERSONNEL | New Worksheet |

Using the APPEND Command

● Use both APPEND and UPDATE, along with SORT, to keep records
  (such as employee records) up to date.

  Enter both new employee data and changes for old employees
  (such as pay increases and changes of address) into a small
  table that you keep separate from your large PERSONNEL
  table. Make sure the small table has the same columns as
  PERSONNEL.

  When you need to update PERSONNEL:

  - Use APPEND to append new employee data to PERSONNEL.

  - Use SORT to order PERSONNEL.

  - Use UPDATE to put changes for old employees into
    PERSONNEL.

● Use APPEND to help prepare reports.

  Every day you take orders for parts. Once a week you report
  to your manager on sales for the current month; once a
  month you report total sales for the month and for the
  year-to-date.

  For the best use of ADE, take advantage of APPEND. Keep
  your current orders separate from monthly and year-to-date
  sales. Make sure the tables have the same columns. When
  you need a report for your manager, append your current
  orders with the monthly and year-to-date sales. Sort this
  combined information. Produce new totals and then use LIST
  TO PRINTER or a Report to produce a printed report.

  Hint: If you write reports regularly, make verbs to produce
  the reports for you. To print a report, simply run a verb.

● You can use a WHERE or EXCEPT phrase to append less than all
  of the table lines. When you enter the APPEND command,
  place the WHERE or EXCEPT phrase after the table name.

● You can use an IN phrase to append lines to the worksheet
  from a table in another area. When you enter the APPEND
  command, place the IN phrase after the table name.

12.4 ASK

Purpose

The ASK command prompts the user for a reply and stores the reply in an internal storage area. Other commands can then retrieve that text.

The ASK command is mainly for use in verbs and lets you make verbs that work differently based on user input when the verb is running.

Format

ASK for response number number using message message

   where number is the number of a RESPONSE area (1-5)
          message is the prompting message requesting input

Entering the ASK Command

● Enter the ASK command as a step when you make or change the verb. ASK prompts you for two inputs: a response number and a message.

● For number, enter the number of the response area where you want to store the message. You have five response areas. You do not have to specify response areas in order. You can use RESPONSE3 before RESPONSE1 if you want to.

● For message, enter the prompt or question you want used when the verb is running. The message can be up to 40 characters long. Include a question mark if asking a question. ADE uses only what you provide as the message. The message can ask for a command line or part of a command line, including one or more of the following:

   - A command name

   - A table name

   - A verb name

   - A report procedure name

   - A list of columns

   - A file specification

   - A device specification

● In other steps in the verb, specify RESPONSEn where you want
  the user's answer used as input. The n is the number of the
  response area you used in the associated ASK command.

Effects

● When the verb is running, ASK displays the prompt or
  question for the user to respond to.

● ASK puts the user's input into the specified response area.
  Each response area has the following characteristics:

  - Each response area is one of the five areas that exist.

  - Each response area can contain only one value at a time.
    The value can be up to 132 characters long.

  - Each response area's value can be used many times. When
    a verb uses the value in a response area, it does not
    change the value.

  - The only way to change the values in response areas is
    to respond to other ASK commands.

  - The values in response areas are not saved when the user
    exits ADE.

● When the verb reaches the step where the response area name
  is a command input, the verb uses the text stored in the
  response area in place of the response area name.

Example

Suppose the verb MY.TASK contains the following steps:

Step 1 ASK for response number 2 using message WHAT TABLE?
Step 2 GET table RESPONSE2

Suppose you run the verb MY.TASK and answer the question by
typing the table name INVENTORY.

The first step:

Step 1 ASK for response number 2 using message WHAT TABLE?
The verb MY.TASK is running.

WHAT TABLE? INVENTORY

The next step:

Step 2 GET table INVENTORY
The verb MY.TASK is running.

For more information on how to use ASK and RESPONSE areas in
verbs, see Chapter 9.

12.5 BACKUP

Purpose

The BACKUP command restores the previous version of the worksheet.

The previous version is the current worksheet without the last change you made to it in this ADE session.

Format

BACKUP to previous worksheet

Effects

- ADE keeps one backup copy of the worksheet. Each time you change the worksheet, ADE makes a new backup copy. The BACKUP command makes the backup copy the current worksheet.

- You cannot use BACKUP twice in a row to restore two changes back.

Using the BACKUP Command

The BACKUP command is very useful in undoing the undesired effects of a command that has changed the worksheet dramatically.

12.6 BREAK

Purpose

The BREAK command inserts new lines in the worksheet after lines
in which the specified columns change their values.

Format

BREAK on columns columns

  where columns is a list of columns

Entering the BREAK Command

- You can specify the columns to use as:

    - A list of column names, separated by commas

    - The keyword ALL, which means use all the columns

    - The keyword OMIT, followed by a list of column names,
      separated by commas, which means use all the columns
      except the ones in the list

- While you can use the BREAK command for any number of
  columns, it works best with a small number of columns. When
  you specify many columns, the worksheet changes extensively.
  The new worksheet may be hard to read and use.

- Before you enter the BREAK command, be sure the data is
  sorted in the columns you plan to specify, since a break
  line will be inserted each time the value changes in these
  columns.

Effects

When you specify one column, the BREAK command changes the
worksheet as follows:

- It inserts a new line in the worksheet wherever a value
  changes in the column you specify.

- It adds a new column named BREAK* to the worksheet.

- It places the following data on each new line:

    - In the specified column, the value at each break point

    - In the new BREAK* column, the name of the specified
      column

The command works basically the same way for several columns as
for one column.   However, the order in which you specify the
columns determines how the break lines are arranged.

Examples

Suppose you have a sorted worksheet and want to use the BREAK
command on one column:

BREAK on columns PN

The worksheet before and after the BREAK command is:

PN	WHOUSE	QTY		PN	WHOUSE	QTY	BREAK*
P01	W1	50		P01	W1	50	
P01	W1	78		P01	W1	78	
P01	W2	29		P01	W2	29	
P01	W2	35	--->	P01	W2	35	
P02	W1	40		P01			PN
P02	W1	52		P02	W1	40	
P02	W2	100		P02	W1	52	
P02	W2	67		P02	W2	100	
				P02	W2	67	
				P02			PN

Suppose you have the same sorted worksheet as before and now
want to use the BREAK command on two columns:

BREAK on columns PN,WHOUSE

The worksheet before and after the BREAK command is:

PN	WHOUSE	QTY		PN	WHOUSE	QTY	BREAK*
P01	W1	50		P01	W1	50	
P01	W1	78		P01	W1	78	
P01	W2	29		P01	W1		WHOUSE
P01	W2	35	--->	P01	W2	29	
P02	W1	40		P01	W2	35	
P02	W1	52		P01	W2		WHOUSE
P02	W2	100		P01			PN
P02	W2	67		P02	W1	40	
				P02	W1	52	
				P02	W1		WHOUSE
				P02	W2	100	
				P02	W2	67	
				P02			WHOUSE
				P02			PN

A break occurs each time the part number changes.   Then, for
each part number, a break occurs each time the warehouse
changes.

Using the BREAK Command

The BREAK command helps you prepare data for reports. The new
lines that BREAK inserts in the worksheet "mark" points where
values change in specified columns.

Before using the BREAK command, you have no easy way to specify
the points where the values in a column change. After you use
BREAK, however, you can specify the change points by using a
WHERE phrase that refers to the new break lines.

Producing a Simple Report Listing with ADE Commands

In order to produce a simple report listing that separates the
data in the worksheet by the values in one column:

1.   Sort the data in the column with the SORT command.

2.   Insert break lines using the BREAK command on the column.

3.   Get rid of unneeded lines with the PICK command.

4.   List the worksheet with the LIST command.

Producing a More Complex Report Listing with a Report Procedure

A report procedure, which specifies how to present the data in a
table or the worksheet, gives you more ways to change the format
of data than do the ADE commands by themselves.

A report procedure has several sections. In the WHERE section,
you specify a condition and the action to take for lines that
meet the condition (such as printing some text or starting a new
page of the report).   There is a similar type of section, the
EXCEPT section, in which you specify a condition and the action
to take for lines that do not meet the condition. In these
sections of a report procedure, you can specify the break lines
produced by BREAK the same way you specify break lines in
commands. For more information on report procedures, see
Chapter 10.

You can also produce reports that contain subtotals and column
totals. See the TOTAL command.

12.7 CALCULATE

Purpose

The CALCULATE command evaluates an algebraic expression you supply for each line of the worksheet and places the results in a column.

The CALCULATE command performs arithmetic operations on worksheet columns and values, like the basic arithmetic commands (ADD, SUBTRACT, MULTIPLY, and DIVIDE), but can involve more complex operations. One CALCULATE command can perform the function of several basic arithmetic commands.

Formats

CALCULATE expression <u>expression</u> result in column <CAL>

CALCULATE expression <u>expression</u> result in column <CAL> <u>column</u>

   where <u>expression</u> is the expression to be evaluated
       <u>column</u> is a column name

Entering the CALCULATE Command

- For <u>expression</u>, enter an arithmetic expression composed of:

  - Column names

  - Numbers

  - Arithmetic operators (+, -, *, /)

  - Parentheses ()

- All column names you specify must be in the current worksheet.

- All numbers must be valid ADE numeric values in the default numeric format. See Chapter 4.

- The following chart shows the arithmetic operations that you can perform:

Operation	Symbol	Example	Result
Addition	+	2+1	3
Subtraction	-	2-1	1
Multiplication	*	2*3	6
Division	/	6/2	3

- You cannot use spaces in an arithmetic expression. When an expression contains spaces, CALCULATE evaluates only the portion of the expression before the first space.

- The arithmetic expression supplied must use existing column names, valid numeric values in the default numeric format, and arithmetic operators. Use parentheses to group subexpressions and control the order of evaluation.

- You can use date column names in an arithmetic expression as long as the expression or subexpression that includes date columns is correct and the default date format is in effect. You cannot use actual date values in any format in an arithmetic expression.

Effects

The CALCULATE command evaluates the arithmetic expression you supply for each worksheet line. It places the result in the column you specify. If the worksheet has no lines, the result is displayed in the scrolling area.

Using the CALCULATE Command

- When CALCULATE evaluates an expression, it performs operations in the following order:

  1. It evaluates all expressions inside parentheses from left to right.

  2. It performs multiplications and divisions from left to right.

  3. It performs additions and subtractions from left to right.

  Thus, the format of your arithmetic expression determines the result. Use parentheses to control how expressions are evaluated.

- The CALCULATE command follows the same arithmetic rules and handles decimal places the same way as the four arithmetic commands (ADD, SUBTRACT, MULTIPLY, and DIVIDE).

- You can use a WHERE or EXCEPT phrase to calculate values for a subset of worksheet lines. When you enter the CALCULATE command, place the WHERE or EXCEPT phrase after the result column name.

Examples

CALCULATE expression Q1+Q2+Q3+Q4 result in column YTD.TOTAL

CALCULATE expression (Q1+Q2+Q3+Q4)/4 result in column AVG

CALCULATE expression Q1+Q2+Q3+Q4 result in column YTD.TOTAL
        WHERE COST.CTR EQ 3666

Rounding/Truncating

You can round or truncate results of arithmetic commands by
using the optional phrases ROUND # or TRUNCATE # at the end of
the command line, where "#" is the number of decimal places you
want the result to be rounded or truncated to. For example:

ADD item 1 to 2 result in SUM ROUND 2

CALCULATE expression A + B result in column CAL TRUNCATE 3

12.8 CHANGE

Purpose

The CHANGE command has three functions:

● Changes values at specific locations in the worksheet. You specify these locations by specifying columns and lines.

● Changes steps in a verb.

● Changes sections in a report procedure.

Formats

CHANGE existing <WORKSHEET> columns <ALL> columns
        in lines <ALL> where-except phrase

CHANGE existing <WORKSHEET> verb

CHANGE existing <WORKSHEET> report

    where columns specify the columns to use
          where-except phrase is a valid WHERE or EXCEPT phrase
          verb is a verb name
          report is a report name

Entering the CHANGE Command

● The columns you use can be:

    - A list of column names, separated by commas

    - The keyword ALL, which means use all the columns

    - The keyword OMIT, followed by a list of column names, separated by commas

● You can specify worksheet lines with a WHERE or EXCEPT phrase by entering the keyword WHERE or the keyword EXCEPT followed by a condition.

● You can specify a verb with any existing verb name.

● You can specify a report with any existing report name.

Effects

Worksheet Changes

● After you enter the CHANGE WORKSHEET command:

 - The screen clears.

 - One at a time, the worksheet lines that meet any WHERE or EXCEPT phrase condition you entered are displayed.

 - You are prompted, for each line, to enter new values into the columns you specified.

● The names of the columns to be changed are displayed on the screen. A question mark follows each column name. A row of dots appears at the first column, between the column name and the question mark. This row of dots always appears at the column awaiting your data. The cursor waits at the first column for your data.

The following is an example of this column prompting:

```
NAME..........?  _
BADGE.NUMBER  ?
DATE.HIRED    ?
DEPT          ?
```

● Enter a new value after each question mark and press the RETURN key. Use the DELETE key to correct typing mistakes. To keep the same value in a column, just press the RETURN key. The row of dots moves from column to column as you enter values.

The following is an example after entering several values:

```
NAME          ? SMITH
BADGE.NUMBER  ? 4
DATE.HIRED    ? 5-Jan-81
DEPT..........?  _
```

● If any columns are restricted to numbers or dates, you must enter the correct kind of value. When you enter an incorrect value, the CHANGE command:

 - Deletes the incorrect value

 - Displays an error message in the scrolling area

 - Moves the cursor back to the beginning of the column so you can reenter the value for that column

● After you finish changing values in a worksheet line, the
CHANGE command continues to display lines and prompt you to
enter new values. This process continues automatically
until you have changed values in all the worksheet lines
that meet the WHERE or EXCEPT phrase condition you entered
or until you press the ENTER key or use CTRL/C to exit. You
can press the ENTER key or use CTRL/C at any column, while
working on any worksheet line.

● If you press the ENTER key, the CHANGE command replaces the
old values in the worksheet with the new values you entered.

● If you press CTRL/C, the CHANGE command does not replace the
old values in the worksheet with the new values you entered.

● Remember that the CHANGE command changes data in the
worksheet only. You must use the SAVE command to save the
new data as a table.

Verb and Report Changes

● After you enter the CHANGE VERB or CHANGE REPORT command,
the verb steps or the report sections that you are changing
appear on the screen.

● When you change verb steps, you make changes by entering new
steps and by pressing function keys.

● When you change report sections, you make changes by
entering new line formats or new values and by pressing
function keys.

Function Keys

At any point where CHANGE expects input, the active function
keys are displayed at the bottom of the screen.

Worksheet Changes

The following function keys are active while you use the CHANGE
WORKSHEET command:

<HELP>   Displays more detailed information about what
                ADE expects as input next.

<DISPLAY>   Rewrites the screen so you can see the display
                clearly.

<RETURN>   Moves the cursor down to the next column.

<DOWN>   Moves the cursor down to the next column.

<UP>   Moves the cursor back up to the previous column.

<SKIP>   Moves the cursor to the first column of the next
                     line entry.

<TOP>   Moves the cursor to the top of the column
                     grouping.

<BOTTOM>   Moves the cursor down to the bottom of the
                     column grouping.

<INSERT>   Moves the cursor so that you can put a new line
                     entry between two existing line entries.

<FIND>   Prompts you to enter a WHERE or EXCEPT phrase
                     and then moves the cursor to the first entry
                     satisfying the condition. The WHERE or EXCEPT
                     phrase you enter is displayed in brackets the
                     next time you enter <FIND>. To move the cursor
                     to the next entry satisfying the condition,
                     enter <FIND NEXT> and press the RETURN key.

<FIND NEXT>   Moves the cursor to the first column of the next
                     line entry satisfying the condition last entered
                     as part of the <FIND> function.

<DELETE LINE>   Deletes the entry that the cursor is on.

<UNDELETE>   Brings back the last entry deleted.

<DISPLAY LEFT>   Moves the currently displayed line of data left
                     one column. Can be used to select which part of
                     a line to display that is too long to be
                     completely displayed. Remains in effect for the
                     duration of the command, unless you move the
                     data left or right again.

<DISPLAY RIGHT>   Moves the currently displayed line of data right
                     one column. Can be used to select which part of
                     a line to display that is too long to be
                     completely displayed. Remains in effect for the
                     duration of the command, unless you move the
                     data left or right again.

<CTRL/C>   Exits CHANGE and deletes all changes you made.

<ENTER>   Exits CHANGE and enters all changes you made.

Verb and Report Changes

The following function keys are active while you use the   CHANGE
command for verbs and reports:

<HELP>   Displays more detailed information about what
                    ADE expects as input next.

<DISPLAY>   Rewrites the screen so that you can see the
                    display   clearly.   Use DISPLAY after using
                    <HELP>.

<RETURN>   Moves the cursor down to the next step or line.

<DOWN>   Moves the cursor down to the next step or line.

<UP>   Moves the cursor back up to the previous step or
                    line.

<SKIP>   Moves the cursor down to the beginning of the
                    next section in a report. Used only in changing
                    report procedures.

<TOP>   Moves the cursor to the beginning of the verb or
                    report, keeping changes made so far.

<BOTTOM>   Moves the cursor down to the end of the verb or
                    report.

<INSERT>   Moves the cursor so that you can put a step
                    between two existing steps in a verb or a line
                    between two existing lines in a report.

<RIGHT>   Moves the cursor right to just after the next
                    verb item or the next line part (after space) in
                    the line in a report.

<FIND>   Prompts you to enter a character string and then
                    moves the cursor to the first step or line
                    containing the string. The character string you
                    enter is displayed in brackets the next time you
                    enter <FIND>. To move the cursor to the next
                    step or line containing this string, enter <FIND
                    NEXT>.

<FIND NEXT>   Moves the cursor to the next step or line
                    containing the string last entered as part of
                    the <FIND> function.

You can find the nth step or line containing an already specified string by combining <FIND NEXT> with the numbers on the main keyboard. Press:

1. The GOLD (PF1) key on the keypad

2. The number key(s) on the main keyboard (to indicate "do n times")

3. The <FIND NEXT> function key on the keypad

If the same character string appears more than once in a step or line, it still counts as one <FIND> or <FIND NEXT>. Like most other ADE functions, <FIND> and <FIND NEXT> work on whole steps and lines.

<DELETE LINE>   Deletes the step or line that the cursor is on.

<UNDELETE>   Brings back the last step or line deleted.

<CTRL/C>   Exits CHANGE and deletes all changes you made.

<ENTER>   Exits CHANGE and enters all changes you made.

See the following chapters for more information:

●   Function keys – Chapter 3

●   Changing the worksheet – Chapters 5 and 6

●   Changing verbs – Chapter 9

●   Modifying reports – Chapter 10

Examples

CHANGE existing WORKSHEET columns ALL in lines WHERE PN NE PO9

CHANGE existing TASK

CHANGE existing QUANTITIES

12.9 COMBINE

Purpose

The COMBINE command adds columns to the worksheet by extending worksheet lines with data from another table. Data is copied from the table to matching lines in the worksheet.

Formats

COMBINE worksheet with table table over column column
        non-matches to <WORKSHEET>

COMBINE worksheet with table table over column column
        non-matches to <WORKSHEET> table

COMBINE worksheet with table table over column column
        non-matches to <WORKSHEET> NOWHERE

  where table is a table name
        column is a column name

Entering the COMBINE Command

- Make sure that the worksheet (not the table) has the order of columns and lines you want to keep.

- You must specify a column name that is in both the worksheet and the table.

- In the column specified, some values in the table must match some values in the worksheet. If no values match, the worksheet has no lines after COMBINE is finished. All lines not matched are in the non-matches table specified. NOWHERE can also be specified for the the non-matches.

- To combine the worksheet with a table in another area, enter an optional IN phrase after the table name.

Effects

Command: COMBINE worksheet with table PART.COST over column PN
         non-matches to NOWHERE

PN	QTY		PN	COST		PN	QTY	COST
P01	128		P01	.01		P01	128	.01
P01	135		P02	.03		P01	135	.01
P01	142					P01	142	.01
P02	92					P02	92	.03
P02	167					P02	167	.03
P02	251					P02	251	.03
P03	48							
P03	74							
P03	10							
P04	65							
P04	143							
P04	202							

   Worksheet   PART.COST   New Worksheet

COMBINE creates a new worksheet. The table is not changed.

For each worksheet line where COMBINE finds a matching data
value in the table, COMBINE extends the worksheet line by adding
the rest of the columns in the table.

● When the specified column contains duplicate values, COMBINE
  creates a line in the new worksheet for every possible
  match. The next two examples show the results for duplicate
  values in the worksheet and duplicate values in the table.

  Command: COMBINE worksheet with table A over column TWO
           non-matches to NOWHERE

ONE	TWO		TWO	THREE		ONE	TWO	THREE
A	1		1	L		A	1	L
B	1		2	M		B	1	L
C	1					C	1	L
D	2					D	2	M
E	2					E	2	M

   Worksheet   Table A   New Worksheet

Duplicate Values in Worksheet

Command: COMBINE worksheet with table B over column TWO
           non-matches to NOWHERE

TWO	THREE	ONE	TWO		TWO	THREE	ONE
1	L	A	1		1	L	A
2	M	B	1		1	L	B
		C	1		1	L	C
		D	2		2	M	D
		E	2		2	M	E

Worksheet   Table B   New Worksheet

Duplicate Values in Table

● You must have different column names in the table and the
  worksheet, except for the one common column name required.

● The order of data in the worksheet determines the order of
  data in the new worksheet.

NOTE

COMBINE discards from the worksheet all lines where it
finds no matching data value from the table. COMBINE
puts these lines into the specified non-matches table
and tells you the number of lines that were put there,
unless you specify that the non-matches be thrown away
by specifying NOWHERE for the non-matches or that they
be put in the worksheet by specifying WORKSHEET.

Using the COMBINE Command

In ADE, it is best to store data in small related tables rather than in large tables with many columns and lines.

This approach can save you time in three ways:

● You enter less data.

● You update less data.

● Because ADE commands work faster on smaller tables than on larger tables, you get your work done faster.

For information on designing related tables to take advantage of COMBINE and an example that shows how COMBINE can save time in data entry and update, see Chapter 8.

For information on suggested size limits for ADE tables, see Appendix A.

12.10   COPY

Purpose

The COPY command makes copies of verbs and report procedures.

Formats

COPY procedure procedure to procedure

COPY procedure JOURNAL to procedure

   where procedure is a verb or report procedure name

Entering the COPY Command

- For the first procedure name, enter the name of the verb or
  report procedure you want to copy or the keyword JOURNAL if
  you want to copy the last ten commands used.

- For the second procedure name, enter a name for your copy.
  You must specify a new name.   COPY will not replace an
  existing procedure.

- To copy a procedure from another ADE user's area, enter an
  optional IN phrase after the first procedure name.

- Although you can copy a procedure from another ADE user's
  area into your area, you cannot copy a procedure from your
  area into another ADE user's area.   This is an ADE
  protection feature.

Effects

- COPY places a copy of the specified verb or report procedure
  in your area and enters its name into your ADE directory.

- If the name you entered for the copy already exists, the
  COPY command stops and displays an error message in the
  message area. You do not have to reenter the entire COPY
  command but only a procedure name that does not yet exist
  for COPY to use.

Examples

COPY procedure VERB1 to VERB2

COPY procedure JOURNAL to NEW.REPORT

12.11 DIVIDE

Purpose

The DIVIDE command divides worksheet columns or values.

Use the DIVIDE command when you want to divide two columns, a
column and a value, or two values. To divide multiple times or
do more complex arithmetic, use the CALCULATE command.

Formats

DIVIDE item <u>item</u> by <u>item</u> result in column <QUO>

DIVIDE item <u>item</u> by <u>item</u> result in column <QUO> <u>column</u>

   where <u>item</u> is either a column name or a value
         <u>column</u> is a column name

Entering the DIVIDE Command

You can use a WHERE or EXCEPT phrase to divide a subset of
worksheet lines.   When you enter the DIVIDE command, place the
WHERE or EXCEPT phrase after the result column name.

Effects

●   The DIVIDE command places the result in a new or existing
    worksheet column. However, when you specify two values and
    the worksheet has no lines, the DIVIDE command displays the
    result in the scrolling area of the screen.

●   You specify the column names and the values you want to
    divide.   You also specify the column name for the result.
    When you use a new column name for the result, the column is
    added to the worksheet automatically.   When you use an
    existing column name for the result, the results of the
    division replace the old values in the column.

Examples

● Dividing two columns

For every line in the worksheet, the DIVIDE command divides
the two column values in the line and places their product
on the same line in the result column.

```
A  B                                                  A  B  QUO

2  1                                                  2  1   2
4  2     DIVIDE item A by B result in QUO             4  2   2
6  3                                                  6  3   2
8  4                                                  8  4   2
```


● Dividing a value by a column

The DIVIDE command divides the value by every value in the
column and places each quotient in the result column.

```
A                                                     A   QUO

1                                                     1   12
2        DIVIDE item 12 by A result in QUO            2    6
3                                                     3    4
4                                                     4    3
```


● Dividing two values

When the worksheet contains one or more lines, the DIVIDE
command divides the two values and places their quotient in
every line of the result column.

```
A                                                     A

1                                                     2
2        DIVIDE item 4 by 2 result in A               2
3                                                     2
4                                                     2
```


If the worksheet has no lines, DIVIDE displays the result in
the scrolling area of the screen.

Using the DIVIDE Command

Arithmetic Rules

- After you divide numbers, the result column is always a numeric column.

- Dividing by zero produces "blank" as a result.

- Nonnumeric characters and blanks have the value zero.

Decimal Places

ADE keeps track of decimal places for numbers in numeric columns. All values in a numeric column have the same number of decimal places. However, ADE does not keep track of decimal places for numbers in character columns.

When you divide numeric columns, the number of decimal places in the result column has the larger number of decimal places present in either column or the specified value, or in the number explicitly stated in a ROUND or TRUNCATE optional phrase.

Rounding/Truncating

You can round or truncate results of arithmetic commands by using the optional phrases ROUND # or TRUNCATE # at the end of the command line, where "#" is the number of decimal places you want the result to be rounded or truncated to. For example:

DIVIDE item 10 by 2 result in QUO ROUND 2

CALCULATE expression A/B result in column CAL TRUNCATE 3

12.12 ENTER

Purpose

The ENTER command lets you enter new lines into the worksheet.

Formats

ENTER new lines in worksheet using columns <ALL>

ENTER new lines in worksheet using columns <ALL> columns

  where columns is a list of columns

Entering the ENTER Command

● Before you use the ENTER command, make sure you copy the
  table you want to work with into the worksheet with the GET
  command.

● The worksheet must contain at least one column.

Effects

● ENTER clears the screen, displays the last worksheet line,
  and displays the worksheet column names. A question mark
  follows each column name. A row of dots appears at the
  first column, between the column name and the question mark.
  This row of dots and the cursor always appear at the column
  awaiting your data.

  The following is an example of this column prompting:

  NAME..........? _
  BADGE.NUMBER ? ‾
  DATE.HIRED   ?
  DEPT   ?

  Enter a value for each column.   Use the DELETE key to
  correct typing mistakes.   Press the RETURN key to move to
  the next column. Also press the RETURN key to enter a blank
  value into a column. The row of dots moves from column to
  column as you enter values.

This is how the screen looks after you enter several values:

```
NAME            ? JONES
BADGE.NUMBER    ? 4
DATE.HIRED      ? 2-Jan-80
DEPT..........? _
```

- If any columns are restricted to numbers or dates, you must enter the correct kind of value. If you enter an incorrect value, the ENTER command:

    - Deletes the incorrect value

    - Displays an error message

    - Moves the cursor back to the beginning of the column so you can reenter the value correctly

- When you finish entering values in all the columns, you have entered one worksheet line.

    - When the worksheet has no key column, the ENTER command adds the new line to the end of the worksheet.

    - When the worksheet has a key column, the ENTER command checks the key column value you just entered. If the value is a new key column value, the command puts the new line into the worksheet in order by key column value. If the value already exists in the worksheet's key column, the command rejects the new line and displays an error message.

- When a line of data has been entered, the screen clears and the column names are redisplayed. The ENTER command is ready for the next line of data.

Function Keys

At any point where ENTER expects input, the active function keys
are displayed at the bottom of the screen. The following
function keys are active while you use the ENTER command:

<HELP>   Displays more detailed information about what
                  ADE expects as input next.

<DISPLAY>   Rewrites the screen so that you can see the
                  display clearly.

<RETURN>   Moves the cursor down to the next column.

<DOWN>   Moves the cursor down to the next column.

<UP>   Moves the cursor back up to the previous column.

<SKIP>   Moves the cursor to the first column of the next
                  line entry.

<TOP>   Moves the cursor up to the top of the column
                  grouping.

<BOTTOM>   Moves the cursor down to the bottom of the
                  column grouping.

<DISPLAY LEFT>   Moves the currently displayed line of data left
                  one column. Can be used to select which part of
                  a line to display that is too long to be
                  completely displayed. Remains in effect for the
                  duration of the command, unless you move the
                  data left or right again.

<DISPLAY RIGHT>   Moves the currently displayed line of data right
                  one column. Can be used to select which part of
                  a line to display that is too long to be
                  completely displayed. Remains in effect for the
                  duration of the command, unless you move the
                  data left or right again.

<CTRL/C>   Exits CHANGE and deletes all changes you made.

<ENTER>   Exits CHANGE and enters all changes you made.

For more information on ADE function keys, see Chapter 3.

Example

ENTER new lines in worksheet using columns ALL

12.13 ERASE

Purpose

The ERASE command erases:

- A table

- A verb

- A report

Formats

ERASE existing <u>table</u>

ERASE existing <u>verb</u>

ERASE existing <u>report</u>

   where <u>table</u> is a table name
        <u>verb</u> is a verb name
        <u>report</u> is a report name

Entering the ERASE Command

- To erase a table, verb, or report, enter its name.

- You cannot use the ERASE command to delete columns and lines. Use the PICK command instead.

Effects

- When you erase a table, verb, or report, the ERASE command lets you reconfirm the command. For example:

  Do you want to erase the Table PARTS (YES or NO) ?

  Answering YES erases the table. The following message appears at the bottom of the screen:

  The table "PARTS" has been erased.

  Answering NO stops the ERASE command. The following message appears at the bottom of the screen:

  The table "PARTS" is not erased.

- After you erase a table, a verb or a report, it is gone. You cannot recover it.

Using the ERASE Command

When you use the ERASE command in a verb, you probably want the verb to finish its work automatically. That is, when you run the verb, you don't want the ERASE command to ask if you want to erase an entity, then wait for an answer. You can preanswer the question when you make or change the verb.

When you enter the ERASE command in a verb, you will be prompted as follows:

Step   1? ERASE existing PERSONNEL
        Do you want to erase the item (YES or NO) ?

To accept the default (which is NO), type NO or press the RETURN key.   To specify YES, type YES. These inputs will be used when the verb runs. Press the ENTER key to specify that the question should be asked when the verb runs.

Example

ERASE existing PERSONNEL

Do you want to ERASE the table "PERSONNEL" (YES or NO) ? YES

The table "PERSONNEL" has been erased.

12.14 EXIT

Purpose

The EXIT command ends an ADE session.

Format

EXIT

Effects

- After you type EXIT, the following question is displayed in
  the message area:

  Do you really want to end this session (YES or NO) ?

  Answering NO stops the EXIT command from completing and
  returns to running ADE.

  Answering YES allows the EXIT command to proceed.

- ADE then checks whether your worksheet has changed since you
  entered a GET, SAVE, or MAKE WORKSHEET command. If your
  worksheet has not changed, ADE exits. If your worksheet has
  changed, you see this question:

  Your Worksheet has not been saved, this command will lose
  changes you made. Should ADE do command anyway (YES or NO) ?

  Answering NO stops the EXIT command from completing and
  returns to running ADE.

  Answering YES allows the EXIT command to complete exiting.

- When ADE exits, you return to the host system environment.

- The next time you start an ADE session, the worksheet is
  empty.

12.15 GET

Purpose

The GET command copies a table into the worksheet.

Format

GET table <u>table</u>

  where <u>table</u> is a table name

Entering the GET Command

- To get part of a table into the worksheet, enter an optional WHERE or EXCEPT phrase after the table name.

- To get a table in another area, enter an optional IN phrase after the table name.

- To get a properly formatted file outside of ADE, enter an optional EXTERNAL phrase after the table name. See Chapter 7 for details.

Effects

The GET command:

- Discards your current worksheet

- Makes a new worksheet by copying the table you name into it

12.16   GRAPH

Purpose

The GRAPH command produces a bar graph of the values in one
worksheet column in relation to another worksheet column.

Format

GRAPH vertical column <u>column</u> versus horizontal column <u>column</u>

   where <u>column</u> is a column name

Entering the GRAPH Command

- The first column you specify must contain numbers. This
  column will be the vertical axis of the graph.

- The second column you specify can contain any kind of data.
  This column will be the horizontal axis of the graph.

- You can output the graph to the line printer or to a file as
  well as to the terminal. Enter one of the following after
  the second column name:

  - An optional TO PRINTER phrase

  - An optional TO FILE phrase

- You can graph a subset of the lines in the worksheet. Enter
  an optional WHERE or EXCEPT phrase after the second column
  name.

For more information on the optional phrases, see Chapter 7.

Effects

- A title line is displayed above the bar graph.

- The bar graph is displayed on the screen by default.

- When you use an optional TO PRINTER phrase, the graph is
  printed on the line printer.

- When you use an optional TO FILE phrase, the graph is copied
  to a file or device.

- The GRAPH command does not change the worksheet.

12.17   HELP

Purpose

The HELP command displays:

- Information about ADE subjects

- Information about a specific ADE topic

- Information about a specific ADE command

- All the ADE commands

Formats

HELP me with subject <ADE>

HELP me with subject <ADE> subject

HELP me with subject <ADE> command

HELP me with subject <ADE> ?

   where subject is an ADE subject name
       command is an ADE command name

Entering the HELP Command

- For a list of subjects on which help is available, press the RETURN key after the <ADE> prompt.

- For specific ADE information, after the <ADE> prompt enter a subject or command name like TABLES, VERBS, REPORTS, TOPICS, MAKE, GET, SAVE and so on.

- For a list of ADE command names, enter ? after the <ADE> prompt.

Effects

- The information you ask for is displayed on the screen.

- The HELP command does not change the worksheet.

12.18 LIST

Purpose

The LIST command produces a listing of:

- The worksheet

- A table

- The steps in a verb

- The sections in a report procedure

- The last ten commands entered

Formats

LIST existing <WORKSHEET> columns <ALL>

LIST existing <WORKSHEET> columns <ALL> columns

LIST existing <WORKSHEET> table columns <ALL> columns

LIST existing <WORKSHEET> verb

LIST existing <WORKSHEET> report

LIST existing <WORKSHEET> JOURNAL

    where columns specify the columns to use
        table is a table name
        verb is a verb name
        report is a report name

Entering the LIST Command

- To use the short form of the LIST command to list all columns in the worksheet, just press the RETURN key at the **Ade:** command prompt.

- To list all columns in the worksheet or table, press the RETURN key after the <ALL> prompt.

- To list specific columns in the worksheet or table, replace
  <u>columns</u> with one of the following:

  - A list of column names, separated by commas

  - The keyword ALL, which means use all the columns

  - The keyword OMIT, followed by a list of column names,
    separated by commas

- To list line numbers of lines in the worksheet or table, use
  the keyword LINE with one of the following:

  - The keyword ALL, which means use all the columns

  - A list of column names separated by commas

Using the LIST Command

These optional phrases can be used with the LIST command:

Phrase	Where to Type	Effect
WHERE <u>column</u> <u>operator</u> <u>value</u>	After table name or WORKSHEET.	Lists lines that meet specified condition.
EXCEPT <u>column</u> <u>operator</u> <u>value</u>	After table name or WORKSHEET.	Lists lines that do not meet specified condition.
TO PRINTER	After any parameter.	Lists on line printer.
TO PORT	After any parameter.	Lists on printer connected to terminal.
TO FILE <u>filespec</u>	After any parameter.	Lists to file or device.
TO DEVICE <u>devicename</u>	After any parameter.	Lists to device.
IN <u>dev</u>:[<u>directory</u>]	After table, verb, or report name.	Lists table, verb, or report in other ADE user directory.

Effects

- Use the NO SCROLL key to stop and restart the screen display.

- LIST moves forward only. You cannot redisplay information after it scrolls off the screen.

- The LIST command for the worksheet or a table causes any key column name to be underlined.

- The LIST command with optional phrases lists the worksheet, table, verb, or report procedure you name.

12.19 MAKE

Purpose

The MAKE command makes:

● A worksheet column

● A worksheet

● A verb

● A report

Formats

MAKE new COLUMN called column

MAKE new COLUMN called column AS CHARACTER

MAKE new COLUMN called column AS NUMBER

MAKE new COLUMN called column AS DATE

MAKE new COLUMN called column AS KEY

MAKE new WORKSHEET called table

MAKE new VERB called verb

MAKE new REPORT called report using table <WORKSHEET>

MAKE new REPORT called report using table <WORKSHEET> table

    where column is a column name
           table is a table name
           verb is a verb name
           report is a report

Effects

Making a Worksheet Column

The MAKE command adds the new column to the right side of the worksheet. The new column contains no data. MAKE adds the new column to the worksheet only, not to any table previously copied into the worksheet with the GET command.

See Chapter 6 for more information on making a column.

Making a Worksheet

You use MAKE to name the table and define the columns. You name the table when you enter the command. After you enter the command, ADE prompts you for column names. As in making a column, you can define a key column by typing AS KEY after the column name. After the worksheet is made, an implicit ENTER command is performed to enter data into the new worksheet.

Making a new worksheet discards your old worksheet.

See Chapter 5 for a step-by-step description of making a worksheet and producing a table.

Making a Verb

The MAKE command prompts you to enter the commands, one at a time, that make up the verb. You enter the commands the same way, with the same prompts, as you do on the command line. Each command is a step in the verb. When you finish entering steps, press the ENTER key to complete the command.

See Chapter 9 for a step-by-step description of making a verb.

Making a Report

The MAKE command makes a standard report procedure using the worksheet or a table. The standard report procedure has COLUMNS, LAYOUT, TOP, BOTTOM, and WHERE sections.

See Chapter 10 for a step-by-step description of making a report.

12.20   MERGE

Purpose

The MERGE command performs one of two functions:

- Inserts lines from a table into the worksheet in order by ordered column value

- Appends lines from a table to the bottom of the worksheet

Formats

MERGE worksheet with table table over column <NONE> column
      duplicates to <NOWHERE> table

MERGE worksheet with table table over column <NONE>
      duplicates to <NOWHERE>

  where table is a table name
        column is a column name

Entering the MERGE Command

- To insert lines from the table into the worksheet, you must specify a column that is ordered in both the worksheet and the table.

- To append lines from the table to the bottom of the worksheet, press the RETURN key after <NONE>. Use this form of the MERGE command for tables without an ordered column and use SORT to reorder the data in the worksheet after MERGE is finished. See also the APPEND command.

- For both kinds of MERGE, the names and types of the worksheet columns must match the names and types of the columns in the table, although the worksheet may contain more columns than the table.

Effects

Inserting Worksheet Lines Into a Table

Command: MERGE worksheet with table PERSONNEL over column BADGE
           duplicates to NOWHERE

BADGE	NAME	DEPT	BADGE	NAME	DEPT	BADGE	NAME	DEPT
2	SMITH	SALES	1	ADAMS	MFG	1	ADAMS	MFG
4	BAKER	SALES	3	MOORE	MFG	2	SMITH	SALES
6	EATON	SALES	5	JONES	MFG	3	MOORE	MFG
						4	BAKER	SALES
						5	JONES	MFG
						6	EATON	SALES

          Worksheet   PERSONNEL   New Worksheet

Appending Worksheet Lines Into A Table

Command: MERGE worksheet with table PERSONNEL over column NONE
           duplicates to NOWHERE

BADGE	NAME	DEPT	BADGE	NAME	DEPT	BADGE	NAME	DEPT
2	SMITH	SALES	1	ADAMS	MFG	2	SMITH	SALES
4	BAKER	SALES	3	MOORE	MFG	4	BAKER	SALES
6	EATON	SALES	5	JONES	MFG	6	EATON	SALES
						1	ADAMS	MFG
						3	MOORE	MFG
						5	JONES	MFG

          Worksheet   PERSONNEL   New Worksheet

● When you specify an over column, MERGE inserts lines from
  the table into the worksheet in order by ordered over column
  value. MERGE can also optionally use a specified table to
  contain any duplicates. If you specify WORKSHEET, the
  duplicates are entered into the worksheet anyway.

  - MERGE inserts into the worksheet those lines in the
    table where over column values differ from over column
    values in the worksheet.

- MERGE copies into the duplicates table all lines in the table being merged where over column values match over column values in the worksheet.

- If you have named a duplicates table, any duplicates found are preserved in it for later inspection and potential use.

● When you do not specify an over column in the command, MERGE appends all the lines from the table to the bottom of the worksheet. You can do this more simply with the APPEND command.

Using the MERGE Command

Like COMBINE, MERGE lets you keep information in small separate tables that you merge when necessary. You can often get your work done faster when you use this approach.

12.21 MOVE

Purpose

The MOVE command performs one of two functions:

- Places a single data value in one or more lines of a worksheet column

- Copies one or more of the data values from one worksheet column into another worksheet column

Formats

MOVE from value to column column

MOVE from LINE to column column

MOVE from TODAY to column column

MOVE from column to column column

   where value is a numeric, date, or character value
         column is a column name

Entering the MOVE Command

- To place a data value in every line of a worksheet column:

  - Replace value with a data value. You can specify any kind of value (character, number, or date), but the value cannot contain spaces unless they are surrounded with matching quotation marks.

  - Use the keyword LINE to specify the current worksheet line number.

  - Use the keyword TODAY to specify the current system date.

  - Replace column with the name of an existing worksheet column or a new column.

- To copy all the data from one worksheet column into another worksheet column, replace column with column names in both places in the command format. You can copy data only from an existing column into an existing worksheet column or a new column, but the columns you specify should have different names.

● To move part of the data in either of the cases above, enter
  an optional WHERE or EXCEPT phrase after the destination
  column name.

Effects

Moving a Value

● When you use an existing column, the MOVE command replaces
  the old data in the column with the new value.

● When you use a new column, the MOVE command makes the new
  column in the worksheet and transfers the value into each
  line in the new column. The column type matches the type of
  the value.

Moving a Column

● When you use an existing column, the MOVE command replaces
  the old data in the column with the new data.

● When you use a new column, the MOVE command makes the new
  column in the worksheet and transfers the data into the new
  column.

● Whether you copy data into an existing column or a new
  column, the column receiving the data becomes the same type
  of column as the column being copied.

● After the MOVE command is finished, both columns are still
  in the worksheet. They are both the same type of column and
  contain the same data. Only the column names differ.

Using the MOVE Command

If you try to move a character string that is an exact match of
a column name in your worksheet, the MOVE command moves the data
from the worksheet column instead of moving the character
string.

To avoid this problem, enclose the character string in matching
quotation marks.

12.22 MULTIPLY

Purpose

The MULTIPLY command multiplies worksheet columns or values.

Use the MULTIPLY command when you want to multiply two columns,
a column and a value, or two values. To multiply more than two
columns or do more complex arithmetic, use the CALCULATE
command.

Formats

MULTIPLY item <u>item</u> by <u>item</u> result in column <PRO>

MULTIPLY item <u>item</u> by <u>item</u> result in column <PRO> <u>column</u>

   where <u>item</u> is either a column name or a value
         <u>column</u> is a column name

Entering the MULTIPLY Command

You can use a WHERE or EXCEPT phrase to multiply a subset of
worksheet lines. When you enter the MULTIPLY command, place the
WHERE or EXCEPT phrase after the result column name.

Effects

● The MULTIPLY command places the result in a new or existing
  worksheet column.

  However, when you use two values and the worksheet has no
  lines, the MULTIPLY command displays the result in the
  scrolling area of the screen.

● You specify the column names and the values to multiply.
  You also specify the column name for the result. When you
  use a new column name for the result, the column is added to
  the worksheet automatically.   When you use an existing
  column name for the result, the old values in the column are
  replaced by the results of the multiplication.

Examples

● Multiplying two columns

For every line in the worksheet, the MULTIPLY command multiplies the two column values in the line and places their product on the same line in the result column.

```
A  B                                                  A  B  PRO

1  2                                                  1  2   2
2  4    MULTIPLY item A by B result in PRO            2  4   8
3  6                                                  3  6  18
4  8                                                  4  8  32
```

● Multiplying a value by a column

The MULTIPLY command multiplies the value by every value in the column and places each product in the result column.

```
A                                                     A  PRO

1                                                     1   2
2       MULTIPLY item 2 by A result in PRO            2   4
3                                                     3   6
4                                                     4   8
```

● Multiplying two values

When the worksheet contains one or more lines, the MULTIPLY command multiplies the two values and places their product in every line of the result column.

```
A                                                     A

1                                                     2
2       MULTIPLY item 1 by 2 result in A              2
3                                                     2
4                                                     2
```

If the worksheet has no lines, MULTIPLY displays the result in the scrolling area of the screen.

Using the MULTIPLY Command

Arithmetic Rules

● When you multiply numbers, the result column is always a numeric column.

● Nonnumeric characters and blanks have the value zero.

Decimal Places

ADE keeps track of decimal places for numbers in numeric columns. All values in a numeric column have the same number of decimal places. However, ADE does not keep track of decimal places for numbers in character columns.

When you multiply numeric columns, the number of decimal places in the result column has the larger number of decimal places present in either column or a specified value, or the number explicitly stated in a ROUND or TRUNCATE optional phrase.

Rounding/Truncating

You can round or truncate results of arithmetic commands by using the optional phrases ROUND # or TRUNCATE # at the end of the command line, where "#" is the number of decimal places you want the result to be rounded or truncated to. For example:

MULTIPLY item 1 by 2 result in PRO ROUND 2

CALCULATE expression A*B result in column CAL TRUNCATE 3

12.23 NAMES

Purpose

The NAMES command lists information about:

- Tables

- Verbs

- Reports

Formats

NAMES of <ALL>

NAMES of <ALL> TABLES

NAMES of <ALL> VERBS

NAMES of <ALL> REPORTS

Entering the NAMES Command

- You can send NAMES information to the line printer or to a file as well as to the terminal. Enter one of the following optional phrases at the end of the other command input:

  - TO PRINTER

  - TO PORT

  - TO FILE filename

  - TO FILE dev:filename

  - TO DEVICE devicename:

- For NAMES information on all tables, verbs, and reports in another ADE user area, enter ALL and an optional IN phrase after the <ALL> prompt.

- For NAMES information on either tables, verbs, or reports in another area, enter an optional IN phrase after the keyword TABLES, VERBS, or REPORTS.

  For more information on optional phrases, see Chapter 7.

Effects

- When you specify ALL, the NAMES command lists this information about tables, verbs, and reports:

  - Name

  - Description

  - Date and time last saved

  - Access category

- The NAMES command displays information on the screen by default.

- When you include an optional TO PRINTER phrase in the NAMES command, the information is sent to the line printer. These listing files are automatically deleted from storage after printing.

- When you include an optional TO PORT phrase in the NAMES command and your terminal has a printer attached to it, the information is sent to the attached printer.

- When you enter an optional TO FILE with file specification, the NAMES command copies information into a system file.

- When you enter an optional TO DEVICE with device specification, the NAMES command copies information to the system device.

12.24 OUTLINE

Purpose

The OUTLINE command displays column and line information about
the worksheet or a table.

Formats

OUTLINE of table <WORKSHEET>

OUTLINE of table <WORKSHEET> <u>table</u>

  where <u>table</u> is a table name

Effects

- You can use an optional TO PRINTER phrase to send the
  outline to the line printer.

- You can use an optional TO FILE phrase to send the outline
  to a file or device.

- You can use an optional IN phrase to list the outline of a
  table in another area.

  For more information on the use of the OUTLINE command, see
  Chapter 6.

12.25 PICK

Purpose

The PICK command keeps specific lines and columns in the
worksheet and discards the rest of the lines and columns from
the worksheet.

Formats

PICK columns <ALL> and lines <ALL>

PICK columns <ALL> columns and lines <ALL> where-except phrase

   where columns specify the columns to use
         where-except phrase is a valid WHERE or EXCEPT phrase

Entering the PICK Command

Use one PICK command to select both the columns and the lines
you want to keep in the worksheet.

Picking Columns

PICK columns <ALL> columns ...

● To keep all worksheet columns, press the RETURN key after
  <ALL>.

● To keep specific worksheet columns, replace columns with one
  of the following:

  - The list of column names you want to keep, separated by
    commas

  - The keyword OMIT, followed by the column names you want
    to discard, separated by commas

Picking Lines

... and lines <ALL> where-except phrase

● To keep all worksheet lines, press the RETURN key after
  <ALL>.

● To keep specific worksheet lines, enter a WHERE or EXCEPT
  phrase after <ALL>.

Effects

- After you enter the command, PICK works in two separate steps. First it keeps the lines that meet the condition you entered. Then it keeps the columns you specified.

- When the PICK command is finished, the worksheet contains the lines that meet the condition you specified and the columns you specified.

Using the PICK Command

Use PICK to reorder columns in the worksheet. For columns, list the column names from left to right as you want them to appear. Put commas between the column names.

Use PICK to get rid of a column or columns from the worksheet. Specify either which columns to keep or which ones not to keep.

12.26   REMARK

Purpose

The REMARK command enters a remark (a line of descriptive text)
into a verb.

Format

REMARK message message

  where message is text to be entered

Entering the REMARK Command

- You enter remarks with MAKE or CHANGE the same way you enter
  other verb steps.

- To enter a remark, type REMARK and press the RETURN key.
  After the prompt for message, type the remark text. The
  remark can be only one line long.

- To enter another remark or continue a remark on a second
  line, enter another REMARK command.

Effects

- Remarks are displayed when you run the verb, when you change
  the verb, and when you use the LIST command to display or
  print the steps in the verb.

- Remarks do not change the way a verb works.

  For more information on remarks, see Chapter 9.

12.27   RENAME

Purpose

The RENAME command changes the name of:

- A table

- A verb

- A report

- A column

- A worksheet

Formats

RENAME Command:

RENAME existing <u>table</u> to table <u>table</u>

RENAME existing <u>verb</u> to verb <u>verb</u>

RENAME existing <u>report</u> to report <u>report</u>

RENAME existing <u>column</u> to column <u>column</u>

RENAME existing <u>column</u> to column <u>column</u> AS CHARACTER

RENAME existing <u>column</u> to column <u>column</u> AS NUMERIC

RENAME existing <u>column</u> to column <u>column</u> AS DATE

RENAME existing <u>column</u> to column <u>column</u> AS KEY

RENAME existing <u>column</u> to column <u>column</u> AS NOKEY

RENAME existing <u>column</u> to column <u>column</u> AS NONKEY

RENAME existing WORKSHEET to <u>newname</u>

   where <u>table</u> is a table name
        <u>verb</u> is a verb name
        <u>report</u> is a report name
        <u>column</u> is a column name

Entering the RENAME Command

- When you use RENAME to change the type of a column, use the same column name but enter the new type.

- To change a column's type, the column must contain the correct kind of target type data. For example, date columns must contain dates.

- To change a column from nonkey to key, the column values must be in ascending order and the column cannot contain duplicate values.

Effects

After you rename an item, all ADE commands recognize the new name. However, verbs and reports still contain uses of the old name. Use the CHANGE command to change the old names in verbs and reports.

Using the RENAME Command

The RENAME command changes the name of a worksheet or worksheet column. To save the renamed column or worksheet in a table:

- Use GET to copy the table into the worksheet.

- Use RENAME to rename the worksheet or worksheet column.

- Use SAVE to save the new worksheet or column name.

12.28 SAVE

Purpose

The SAVE command saves a copy of the worksheet as a table.

Format

SAVE worksheet as <worksheet name> table

    where worksheet name is the worksheet name
          table is a table name

Entering the SAVE Command

● You can specify a new table name or an existing table name in your area.

● You can save a part of the worksheet in a table. Enter an optional WHERE or EXCEPT phrase after the table name.

● You can save the worksheet as a defined file outside of ADE. Enter an optional EXTERNAL phrase after the table name. See Chapter 7 for details.

Effects

● When you specify a new table name, SAVE saves a copy of the worksheet with that name.

● When you specify an existing table name, you have a chance to stop the command. SAVE asks a question like:

Do you want to replace the Table "SIX" with the WORKSHEET
                                                (YES or NO) ?

    - Answering YES replaces the table with a copy of the worksheet. The following message is then displayed in the message area:

      The WORKSHEET has been saved as Table "SIX".

      The old table data is now gone and you cannot recall it.

    - Answering NO stops the command. The following message is displayed in the message area:

      The Table SIX is not changed.

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● After you save the worksheet as a table, you still have the worksheet. SAVE copies the worksheet and saves the copy as a table.

Using the SAVE Command

When you use the SAVE command in a verb:

● You must specify a table name.

● You probably want the verb to finish its work automatically. That is, when you run the verb, you don't want the SAVE command to ask if you want to replace the table with the worksheet, then wait for an answer. When entering the SAVE command in a verb, you are asked:

Step 3? SAVE worksheet as SIX
       Do you want to replace the Table with WORKSHEET
                                          (YES or NO) ?

To store an answer to use when the verb runs, enter YES or NO. To have the verb ask for an answer when it runs, press the ENTER key. To have the verb take the default when it runs, press the RETURN key.

12.29 SET

Purpose

The SET command changes a group of ADE parameters called
options. These options control ADE terminal displays.

Formats

SET option <ALL>

SET option <ALL> option

SET option <ALL> option value

Entering the SET Command

● There are two ways to work with the SET command:

   1. You can display all the options on the screen and then
       move through the display with function keys, changing
       whichever options you want.

   2. You can also change one option at a time by entering a
       complete SET command on the command line.

● To display all your options and their default values, press
  the RETURN key after <ALL> on the command line. You can
  also type a specific option name after <ALL> on the command
  line and then press the RETURN key. This also displays all
  the options and their default values and moves the cursor to
  the option you named.

● To set a specific option, type its name after <ALL> on the
  command line. Then type a space, type the new value for the
  option and press the RETURN key.

● The following table shows each option, its name, its
  abbreviation, and its default value. You can use the
  abbreviation when you enter the option name on the command
  line.

OPTION	NAME	ABBREV	DEFAULT
Date display	DATE	DAT	< 2-Jan-80 >
Negative number display	NEGATIVE	NEG	< -9000 >
Trace display	TRACE	TRA	< OFF >
Verb display	VERB	VER	< ON >
Terminal type	TERMINAL	TER	< VT100 >
Width of terminal	WIDTH	WID	< 80 >

Detailed Description of Each Option

This section lists the values you can specify for each option and describes its effect.

Date display - < 2-Jan-80 >

To change the default date display, type DATE after <ALL> on the command line or move the cursor to the Date display option. Then type the date January 2, 1980 in the format you want all dates in date columns to be displayed. The date format determines how dates in date columns and default reports are displayed. Dates in character columns are always displayed exactly as you enter them. A date format has three parts: day, month, and year. The rules for specifying date formats are given in Chapter 10.

Negative number display - < -9000 >

To change the default negative number display, type NEGATIVE after <ALL> on the command line or move the cursor to the Negative number display option. Then type the number -9000 in the format you want all numbers in numeric columns to be displayed; that is, replace -9000 with one of the other formats: 9000-, (9000), or 9000CR. This option affects numeric columns only.

Trace display - < OFF >

ON   ADE displays intermediate results while commands
              are working. This option is primarily for use by
              those who want to shop the system to others. For
              example, the GET command displays each line of a
              table as it copies the table into the worksheet.

OFF   ADE does not display intermediate results while
              commands are working.

Verb display - < ON >

ON   ADE displays each step in a verb as it runs. The
              output of each command in the verb is displayed
              on the screen.

OFF   ADE does not display verb steps when verbs are
              run. However, an error message is displayed if
              an error occurs during a step. In addition, a
              message is displayed when the verb is finished
              running.

Terminal type - < VT100 >

The type of terminal can be VT100, VT52, and ?. The default is what the host system terminal information reflects. This is controlled by the system startup files.

Width of terminal - < 80 >

The VT100 terminal can display either 80 or 132 characters on each line of the screen. The default width is 80. Replace 80 with 132 to change the terminal width to 132 columns. The terminal stays in 132-column mode until you exit ADE.

Working with the Screen Display

To change an option:

- Move the cursor to the option to be changed.

- Type the new value after the brackets.

- Press the RETURN key to enter the new value.

When you finish setting options, press the ENTER key to save the settings.

Function Keys

The active function keys are displayed in the message area during the SET command and can be referenced there.

Effects

- The options you specify take effect as soon as the SET command is finished.

- All options are in effect until you use another SET command or until you end the ADE session.

- Options that you set are not saved from session to session. The next time you start ADE, all the defaults are in effect.

12.30 SORT

Purpose

The SORT command arranges all worksheet lines in ascending or descending order based on the values in one or more worksheet columns.

Formats

SORT by columns columns

SORT by columns columns DESCENDING

  where columns specify the columns to be used

Entering the SORT Command

- When you sort by several columns, you must enter the list of column names in the order you want to get the results you want. For example, if you want the values in column B sorted for each value in column A, enter the column list A,B.

- Unless you add the keyword DESCENDING after the column list in the SORT command, the sorting is in ascending order.

Effects

- The SORT command moves entire lines of data, not just the data in the columns you specify.

- The next three examples show how SORT orders characters, numbers, and combinations of characters and numbers.

Before SORT	After SORT
23	5
5	23
44	44
BARKER	BAKER
CARVER	BARKER
BAKER	CARVER
5	23
BAKER	44
CARVER	5
44	BAKER
23	BARKER
BARKER	CARVER

Using the SORT Command

The following examples show how SORT works for one column and
for several columns.   These examples use the table INVENTORY,
which lists the quantities of four kinds of parts in three
warehouses. The lines are unsorted to begin with.

Using one SORT command to sort one column

Start with the following data:

PN   WHOUSE QTY

P02   W3   251
P03   W3   10
P03   W1   48
P04   W1   65
P03   W2   74
P02   W1   92
P01   W1   128
P01   W3   142
P04   W2   143
P02   W2   167
P01   W2   135
P04   W3   202

Use SORT to reorder the lines by part number only.   Enter the
following commands:

SORT by columns PN

LIST existing WORKSHEET columns ALL

The worksheet lines are in the following order:

PN   WHOUSE QTY

P01   W1   128
P01   W3   142
P01   W2   135
P02   W1   92
P02   W2   167
P02   W3   251
P03   W1   48
P03   W3   10
P03   W2   74
P04   W2   143
P04   W1   65
P04   W3   202

Using one SORT command to sort several columns

Start with the unsorted data you used for the previous example.
Use SORT to reorder the lines by both part number and warehouse
number. You can enter the columns PN,WHOUSE or WHOUSE,PN.   The
next two examples show the result for each column order.

First enter the commands:

SORT by columns PN,WHOUSE

LIST existing WORKSHEET columns ALL

The worksheet lines are now in the following order:

```
PN    WHOUSE QTY

P01   W1      128
P01   W2      135
P01   W3      142
P02   W1       92
P02   W2      167
P02   W3      251
P03   W1       48
P03   W2       74
P03   W3       10
P04   W1       65
P04   W2      143
P04   W3      202
```

Note that:

● The lines are in order by both part number and warehouse
  number

● The warehouses are in order for each kind of part

You get a different result when you enter the columns WHOUSE,PN.

Start again with the unsorted data and enter the following commands:

SORT by columns WHOUSE,PN

LIST existing WORKSHEET columns ALL

The worksheet lines are in the following order:

PN	WHOUSE	QTY
P01	W1	128
P02	W1	92
P03	W1	48
P04	W1	65
P01	W2	135
P02	W2	167
P03	W2	74
P04	W2	143
P01	W3	142
P02	W3	251
P03	W3	10
P04	W3	202

While the lines are still in order by both part number and warehouse number, now the part numbers are in order for each warehouse.

12.31 SUBTRACT

Purpose

The SUBTRACT command subtracts worksheet columns or values.

Use the SUBTRACT command when you want to subtract two columns,
a column and a value, or two values. To subtract more than two
columns or do more complex arithmetic, use the CALCULATE
command.

Formats

SUBTRACT item item from item result in column <DIF>

SUBTRACT item item from item result in column <DIF> column

   where item is either a column name or a value
         column is a column name

Entering the SUBTRACT Command

You can use a WHERE or EXCEPT phrase to subtract a subset of
worksheet lines. When you enter the SUBTRACT command, place the
WHERE or EXCEPT phrase after the result column name.

Effects

● The SUBTRACT command places the result in a new or existing
   worksheet column.

   However, when you specify two values and the worksheet has
   no lines, the SUBTRACT command displays the result in the
   scrolling area of the screen.

● You specify the column names and the values to subtract.
   You also specify the column name for the result. When you
   use a new column name for the result, the column is added to
   the worksheet automatically. When you use an existing
   column name for the result, the old values in the column are
   replaced by the results of the subtraction.

Examples

● Subtracting two columns

For every line in the worksheet, the SUBTRACT command subtracts the two column values in the line and places their difference on the same line in the result column.

```
A  B                                                    A  B  DIF

1  2                                                    1  2   1
2  4    SUBTRACT item A from B result in DIF            2  4   2
3  6                                                    3  6   3
4  8                                                    4  8   4
```

● Subtracting a value from a column

The SUBTRACT command subtracts the value from every value in the column and places each difference in the result column.

```
A                                                       A  DIF

1                                                       1   0
2       SUBTRACT item 1 from A result in DIF            2   1
3                                                       3   2
4                                                       4   3
```

● Subtracting two values

When the worksheet contains one or more lines, the SUBTRACT command subtracts the two values and places their difference in every line of the result column.

```
A                                                       A

1                                                       1
2       SUBTRACT item 1 from 2 result in A              1
3                                                       1
4                                                       1
```

If the worksheet has no lines, SUBTRACT displays the result in the scrolling area of the screen.

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Using the SUBTRACT Command

Arithmetic Rules

- After you subtract numbers, the result column is always a numeric column.

- After you subtract two dates, the result column is always a numeric column.

- After you subtract a number from a date, the result column is always a date column.

- To subtract column values or a value from a column of dates, the dates must be in a date column.

- Nonnumeric characters and blanks have the value zero.

- Subtracting from a blank date results in a blank date.

Decimal Places

ADE keeps track of decimal places for numbers in numeric columns. All values in a numeric column have the same number of decimal places. However, ADE does not keep track of decimal places for numbers in character columns.

When you subtract numeric columns, the number of decimal places in the result column has the larger number of decimal places present in either column or a specified value, or the number explicitly stated in a ROUND or TRUNCATE optional phrase.

Rounding/Truncating

You can round or truncate results of arithmetic commands by using the optional phrases ROUND # or TRUNCATE # at the end of the command line, where "#" is the number of decimal places you want the result to be rounded or truncated to. For example:

SUBTRACT item 10 from 20 result in DIF ROUND 2

CALCULATE expression A - B result in column CAL TRUNCATE 3

12.32 TALLY

Purpose

The TALLY command produces a running total on a worksheet column.

Formats

TALLY on column column starting at <0> result in
      column <TAL>

TALLY on column column starting at <0> number result in
      column <TAL> column

    where column is a column name
          number is a number value

Effects

TALLY on column A starting at 0 result in column TAL

```
    A           A         TAL       A      TAL

    1           1 + 0 =    1        1       1
    2           2 + 1 =    3        2       3
    3           3 + 3 =    6        3       6
    4           4 + 6 =   10        4      10
    5           5                   5      15

Worksheet         TALLY            TALLY
at start          working          finished
```

● You specify the column to tally, the starting value, and the
  column for the result. When you specify <TAL> or another
  new column for the result, the TALLY command makes the new
  column in the worksheet. When you specify an existing
  column for the result, the TALLY commmand replaces the old
  data values in the column with the running total in the
  column.

● The TALLY command works the following way:

  1. It adds the starting value you use to the first value in
      the column you are tallying and places the sum on the
      first line of the result column.

2. It adds the sum from the first line of the result column to the second value in the column you are tallying and places this new sum on the second line of the result column.

3. This process is repeated until there are no more values to tally.

- After the TALLY command is finished, the result column contains the running total. The last line of the result column contains the total of all the values in the column you tallied.

- Characters and blanks have the value of zero.

- You cannot tally on dates.

12.33   TOTAL

Purpose

The TOTAL command produces subtotals and totals in worksheet columns.

Formats

TOTAL on columns <u>columns</u> subtotal by <NONE>

TOTAL on columns <u>columns</u> subtotal by <NONE> <u>columns</u>

  where <u>columns</u> specify the columns to be used

Entering the TOTAL Command

- You can specify <u>columns</u> as:

    o   A list of column names, separated by commas

    o   The keyword ALL, which means use all the columns

    o   The keyword OMIT, followed by a list of column names, separated by commas

- For column totals only, list the columns you want totals for and press the RETURN key after the <NONE> prompt.

- For both subtotals and column totals, specify columns for both command inputs.

    The TOTAL command works differently on the columns to total and the columns to subtotal.

    The subtotal columns are not used for any calculations. Instead, TOTAL uses the data in these columns to determine where to insert break lines and where to put totals. The subtotal columns can contain any kind of data. The columns you want to total must contain numbers. In addition, make sure you sort the data first.

Effects

Total Only

Command: TOTAL on columns QTY subtotal by NONE

```
PN     WHOUSE   QTY           PN     WHOUSE   QTY    TOTAL*

P01    W1       50            P01    W1       50
P01    W1       78            P01    W1       78
P01    W2       29            P01    W2       29
P01    W2       35    --->    P01    W2       35
P02    W1       40            P02    W1       40
P02    W1       52            P02    W1       52
P02    W2       100           P02    W2       100
P02    W2       67            P02    W2       67
                                             451    TOTAL
```

Command: TOTAL on columns QTY,VALUE subtotal by NONE

```
PN     WHOUSE   QTY   VALUE          PN     WHOUSE   QTY   VALUE   TOTAL*

P01    W1       50    .50            P01    W1       50    .50
P01    W1       78    .78            P01    W1       78    .78
P01    W2       29    .29            P01    W2       29    .29
P01    W2       35    .35    --->    P01    W2       35    .35
P02    W1       40    1.20           P02    W1       40    1.20
P02    W1       52    1.56           P02    W1       52    1.56
P02    W2       100   3.00           P02    W2       100   3.00
P02    W2       67    2.01           P02    W2       67    2.01
                                                    451   9.69    TOTAL
```

The command:

● Places the totals for the specified columns on a new line at
  the bottom of the worksheet.

● Adds a new column named TOTAL* to the right side of the
  worksheet and places the word TOTAL on the same line as the
  totals.

Subtotal By One Column

Command: TOTAL on columns QTY subtotal by PN

PN	WHOUSE	QTY		PN	WHOUSE	QTY	TOTAL*
P01	W1	50		P01	W1	50	
P01	W1	78		P01	W1	78	
P01	W2	29		P01	W2	29	
P01	W2	35	--->	P01	W2	35	
P02	W1	40		P01		192	PN
P02	W1	52		P02	W1	40	
P02	W2	100		P02	W1	52	
P02	W2	67		P02	W2	100	
				P02	W2	67	
				P02		259	PN
						451	TOTAL

● The command inserts a new line (a break) in the worksheet wherever a value changes in the columns you subtotal by. It places the following data on each new line:

  - In each column you total, it places the subtotals at each break.

  - In each column you subtotal by, it places the subtotal column value at each break.

● For all columns specified, the command places column totals on a new line at the bottom of the worksheet.

● Finally, the command adds a new column named TOTAL* to the right side of the worksheet. It places the following data in this new column:

  - On the same lines as the subtotals, the names of the columns you are subtotaling by

  - On the same line as the column totals, the word TOTAL

Subtotal By More Than One Column

Command: TOTAL on columns QTY subtotal by PN, WHOUSE

PN	WHOUSE	QTY		PN	WHOUSE	QTY	TOTAL*
P01	W1	50		P01	W1	50	
P01	W1	78		P01	W1	78	
P01	W2	29		P01	W1	128	WHOUSE
P01	W2	35	--->	P01	W2	29	
P02	W1	40		P01	W2	35	
P02	W1	52		P01	W2	64	WHOUSE
P02	W2	100		P01		192	PN
P02	W2	67		P02	W1	40	
				P02	W1	52	
				P02	W1	92	WHOUSE
				P02	W2	100	
				P02	W2	67	
				P02	W2	167	WHOUSE
				P02		259	PN
						451	TOTAL

When you subtotal by several columns, the TOTAL command works
basically the same way as it does when you subtotal by one
column. As in sorting or breaking more than one column,
however, the order in which you specify columns to subtotal by
determines the result. In this example:

● A break occurs each time the part number changes. Subtotals
   are produced at each break.

● For each part number, a break occurs each time the warehouse
   changes. Subtotals are produced at each break.

● Finally, a column total is produced.

● The new worksheet contains:

   - Four subtotals by warehouse inside two subtotals by part
      number

   - A column total

Using The TOTAL Command:

In addition to producing subtotals and column totals, TOTAL
helps you produce reports.

The new subtotal and total lines that TOTAL inserts in the work sheet can be specified with conditions. Look at the following data:

Command: TOTAL on columns QTY subtotal by PN

PN	WHOUSE	QTY		PN	WHOUSE	QTY	TOTAL*
P01	W1	50		P01	W1	50	
P01	W1	78		P01	W1	78	
P01	W2	29		P01	W2	29	
P01	W2	35	--->	P01	W2	35	
P02	W1	40		P01		192	PN
P02	W1	52		P02	W1	40	
P02	W2	100		P02	W1	52	
P02	W2	67		P02	W2	100	
				P02	W2	67	
				P02		259	PN
						451	TOTAL

After TOTAL is finished, you can specify subtotal and total lines with the following WHERE phrases:

● Subtotal lines: WHERE TOTAL* EQ PN

● Total line: WHERE TOTAL* EQ TOTAL

● Both subtotal and total lines:

  WHERE TOTAL* NE 0 or WHERE TOTAL* NE <RETURN>

Because you can specify these lines, you can rearrange your data for reports. You can produce simple reports with ADE commands or more complex reports by making a report procedure. For example, you can:

● Use TOTAL to produce subtotals and column totals. Then use LIST TO PRINTER or a report to print the results.

● Produce a summary report. After producing subtotals and column totals with TOTAL, use PICK to retain the lines that contain subtotals and column totals. Then use LIST TO PRINTER or a report to print the results.

For more information, see the BREAK command discussion and Chapter 6.

12.34 TRAIN

Purpose

The TRAIN command starts ADE's an online tutorial, which teaches
the basics of ADE to new users.

Format

TRAIN

Effects

● When you enter the TRAIN command, ADE displays a "Welcome to
  ADE Basic User Training" screen with instructions on which
  keys to press to continue the training session.

● The tutorial is completely self-explanatory and interactive.
  You follow the instructions on your terminal screen.

● Your system manager may decide not to provide the training
  feature on your system. In that case, the following message
  is displayed when you enter the TRAIN command:

  ADE TRAINING isn't available on this system.

● The TRAIN command works only on VT100 series and VT52
  terminals. If you enter the TRAIN command on any other type
  of terminal, the following message is displayed:

  ADE TRAINING isn't available for this kind of terminal.
  It only works on VT100 series and VT52 terminals.

12.35 UPDATE

Purpose

The UPDATE command copies a table, replaces data in the copy
with data from the worksheet, and places the updated copy back
in the worksheet. UPDATE does not change the table.

Formats

UPDATE table table over column column non-matches
      to <NOWHERE>

UPDATE table table over column column non-matches
      to <NOWHERE> table

  where table is a table name
        column is a column name

Entering the UPDATE Command

● The worksheet does not have to contain all the columns in
  the table, but all the worksheet columns must also be in the
  table. The column name and type of each worksheet column
  must match the column name and type in the table.

● The column you specify in the command must be an ordered
  column, but need not be the key column in both the worksheet
  and the table.

Effects

Command: UPDATE table PERSONNEL over column BADGE non-matches
             to EXTRAS

BADGE	PAY		BADGE	XXX	XXX	XXX	XXX	PAY
16	Y		–					–
24	Y		16					X
70	Y		24					X
105	Y		–					–
			70					X

Worksheet   PERSONNEL

Before UPDATE

BADGE	PAY		BADGE	XXX	XXX	XXX	XXX	PAY
105	Y		-					-
			16					Y
			24					Y
			-					-
			70					Y

EXTRAS   Worksheet

After UPDATE

The UPDATE command copies the table and then uses the data in the common column to determine which lines in the copy to change.

- For lines where an over column value in the worksheet matches an over column value in the copy, the other values in the work sheet line replace corresponding values in the copy.

- UPDATE places the updated copy of the table in the worksheet. The original table is not changed.

- Like the COMBINE command, the UPDATE command can use a table specified for non-matches. This table contains all the columns that were in the worksheet before you entered the UPDATE command. UPDATE copies into this table those worksheet lines where over column values do not match over column values in the table. If all the over column values match in the table and the worksheet, this table contains column names but no lines after UPDATE is completed.

- You can use this non-matches table the same way you use any table.

Using the UPDATE Command

Although UPDATE and CHANGE both change data values, it is better to use UPDATE than CHANGE for some tasks. For example, UPDATE can be faster than CHANGE when there is no condition that identifies the lines you want to change or when you need to change only a small number of values in a large table.

Example

Your company has 300 employees. You keep each employee's name, badge number, address, and pay in a table called PERSONNEL. You keep the data ordered by badge number. The data in PERSONNEL changes often. For example, when an employee moves or receives a pay increase, PERSONNEL must be updated.

This month, five employees receive pay increases. There are two ways to update PERSONNEL. You can use CHANGE, but there are two disadvantages:

1. Because you cannot specify all five employees with one WHERE phrase condition, you must enter more than one (up to five) CHANGE commands.

2. Because PERSONNEL has 300 lines of data, CHANGE may be slow.

You can do the job faster with UPDATE:

● First produce a new worksheet that consists of:

   - Your new data

   - One column of data that matches a column of data in PERSONNEL

   For this example:

   - Use MAKE to make a new worksheet with two columns, BADGE and PAY.

   - Use ENTER to enter the badge number and new pay for each employee who received a pay increase.

● Use UPDATE to update PERSONNEL. Enter the following command:

   UPDATE table PERSONNEL over column BADGE non-matches
          to NOWHERE

● Use SAVE to save the updated PERSONNEL table.

APPENDIX A

ADE SIZE LIMITS

Storing Information

Largest Number of Lines in a Table: 1,000

Largest Number of Columns in a Table: 25

Largest Number of Characters in One Column Value: 60

Largest Number of Digits in a Number: 37

Largest Number of Characters in One Line: 450

Largest Number of Characters in One Response Area: 132

Commands

Largest Number of Characters in One Command Input: 132

Verbs

Largest Number of Characters on a REMARK Line: 132

Maximum Level of Verb Nesting: 10

Reports

Largest Number of Characters in One Line Format: 500

Largest Number of WHERE and EXCEPT Sections: 100

APPENDIX B

TERMINAL INFORMATION

Although ADE has been designed to fully utilize the advanced terminal capabilities of VT100, VT101, VT102, and VT125 terminals, you can also use ADE on a VT52 terminal.

You use ADE in the same way on a VT52 terminal except for:

- Stopping and restarting the terminal display

- Performing ADE special functions

- Using MAKE, ENTER, and CHANGE commands

B.1 STARTING ADE

For ADE to work properly, the host system must have the correct information set up for your terminal, and you must start ADE correctly for your host system. If you start ADE correctly but ADE does not work properly, ask your system manager to check your system terminal information.

Table B-1 contains the host system terminal information that must be set up for different types of terminals. See your host system documentation for more information on terminal information set up.

Table B-1:   Host System Terminal Information

TYPE OF TERMINAL:	RSTS/E:	VMS:

VT100 Series	SET VT100	$ SET TERM/DEVICE=VT100
		    or /DEVICE=VT101
		    or /DEVICE=VT102
		    or /DEVICE=VT125

VT52 with keypad	SET VT52	$ SET TERM/DEVICE=VT52
VT52 without keypad*	SET VT52	$ SET TERM/DEVICE=VT52
All Others*	SET LA36	$ SET TERM/DEVICE=LA36 or /DEVICE=LA120

*In ADE, you must SET TERMINAL ? to tell ADE to
"simulate" the keypad. See Section B.3.2.
Use of ADE is not supported on these terminals.

B.2 STOPPING AND RESTARTING THE TERMINAL DISPLAY

On a video terminal, sometimes you may want to stop the terminal
display, read information on the terminal, and then restart the
terminal display. Two ADE examples are:

● Running a verb

● Running a report with output to the terminal

If you have a VT100 Series terminal, press the NO SCROLL key to
stop the terminal display. To restart it, press the NO SCROLL
key again.

On VT52 terminals, use CTRL/S to stop the terminal display and
CTRL/Q to restart it.

B.3 RESETTING TERMINAL PAGE WIDTH

You may sometimes want to reset your normal terminal page width
(80 characters) to accommodate a 132-character display. You can
only do this if your terminal has Advanced Video Option (AVO)
installed.

- A VT102 terminal always has AVO built in

- VT100 and VT125 terminals may or may not have AVO -- see your system manager if you aren't sure

- VT52, VT101, and all non-video terminals do not have AVO

If your terminal does have AVO, you can set your terminal page width to 132 characters in ADE by typing:

SET WIDTH 132

B.4 USING ADE ON DECMATE I (VT278)

To use ADE on a DECMATE I (VT278) terminal, you must issue the following command as your first command in an ADE session:

SET TERM VT278

B.5 PERFORMING ADE SPECIAL FUNCTIONS

ADE's function keys work differently on a VT52 than on a VT100. Whether or not the VT52 has a keypad also makes a difference.

B.5.1 VT52 Terminal (With Keypad)

Except for the position of the ADE function keys on the keypad and keyboard, performing ADE functions on a VT52 terminal is like performing ADE functions on a VT100 terminal. Figure B-1 shows you where the ADE function keys are located on a VT52. Figure B-2 shows you where the other keys are located on a VT52.

```
+-------+-------+-------+-------+
|       | HELP  | UNDEL |  UP   |
|       |       |       | (up)  |
| GOLD  | DISPLY| DEL.LN|  TOP  |
+-------+-------+-------+-------+
| INSERT| SKIP  | FNDNXT| DOWN  |
|   7   |   8   |   9   |(down) |
|       |       | FIND  | BOTTOM|
+-------+-------+-------+-------+
|       |       |       | RIGHT |
|   4   |   5   |   6   |(right)|
|       |       |       | D.RGHT|
+-------+-------+-------+-------+
|       |       |       |       |
|   1   |   2   |   3   |(left) |
|       |       |       | D.LEFT|
+-------+-------+-------+-------+
|       |       |       | ENTER |
|     0         |   .   |       |
|       |       |       | NUMS  |
+-------+-------+-------+-------+
```

```
(up) is the UP-ARROW key.
(down) is the DOWN-ARROW key.
(right) is the RIGHT-ARROW key.
(left) is the LEFT-ARROW key.
```

Figure B-1: ADE Function Keys on VT52 Terminal

```
-----------------------------------------------------------------------
|    | ! | @ | # | $ | % | ^ | & | * | ( | ) | - | + | ~ |B|B|
|ESC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | - | = | ` |S|K|
-----------------------------------------------------------------------
|    |   |   |   |   |   |   |   |   |   |   | ] |    |LINE|   |
|TAB | Q | W | E | R | T | Y | U | I | O | P | [ |BSL |FEED|DEL|
-----------------------------------------------------------------------
|    |CAPS|   |   |   |   |   |   |   |   | : | " | } |    |   |
|CTRL|LOCK| A | S | D | F | G | H | J | K | L | ; | ' | { |RETN|
-----------------------------------------------------------------------
|    |    |   |   |   |   |   |   |   | < | > | ? |    |   |   |
|SCRL|SHFT| Z | X | C | V | B | N | M | , | . | / |SHFT|REP|CPY|
-----------------------------------------------------------------------
         |          (SPACE BAR)              |
         ------------------------------------------
```

Figure B-2: VT52 Keyboard

B.5.2 Any Terminal Without A Keypad

To use ADE's special functions on a terminal without a keypad, you must first enter the SET TERM ? command in ADE. Then to perform ADE functions, press the @ key followed by the appropriate letter key. To repeat a function, press the @ key followed by the number of times to repeat the function, followed by the appropriate letter key. The case (lower or upper) of the letter keys below is significant.

The following list shows how to perform each ADE function:

FUNCTION	KEYS	FUNCTION	KEYS	FUNCTION	KEYS
BOTTOM	@PB	ENTER	@M	SKIP	@x
DEL.LN	@PR	FIND	@y	TOP	@PA
DISPLY	@PQ	FNDNXT	@Py	UNDEL	@R
DOWN	@B	HELP	@Q	UP	@A
D.LEFT	@PD	INSERT	@w		
D.RGHT	@PC	RIGHT	@C		

To abort a command, use CTRL/C.

B.6 USING MAKE, ENTER, AND CHANGE COMMANDS

When you use MAKE, ENTER, and CHANGE commands on a keypad terminal, all columns of a table, all steps of a verb, or all lines of report sections that fit on the terminal display are presented. When you use these commands on a nonkeypad terminal, however, only the current column, step or line is displayed. To display more lines, use @PQ.

APPENDIX C

ERROR MESSAGES

This appendix lists SERIOUS error messages caused by either a:

● Host system problem

● ADE software problem

In all cases, report errors to your system manager.

Message

ADE found something wrong internally, but recovered.
That command probably didn't complete --- Contact your system
manager.

Result

● The last command you entered could not finish working.

● ADE recovered and logged the error in your error log.

● You may or may not be able to use ADE immediately.

Possible Cause

● Your system directory is full.

● You have used up your quota of disk blocks.

● The disk is full or too fragmented.

● There is a hardware problem on the disk.

● ADE has an internal error.

Message

ADE is unable to continue --- Contact your system manager.

Result

- The last command you entered could not finish working.

- ADE could not recover.

- ADE probably could not log the error.

- ADE terminated the session.

Possible Cause

- The disk is full or too fragmented.

- There is a hardware problem.

- ADE has an internal error.

Message

ADE is unable to initialize --- Contact your system manager.

-OR-

ADE--INIT FAIL-- ...

Result

- ADE could not get started properly.

- ADE probably could not log the error.

- ADE terminated the session.

Possible Cause

- The disk is full or too fragmented.

- There is a hardware problem.

- The ADE task image is partially corrupted.

- Required auxiliary files are missing.

- ADE has an internal error.

Message

```
ADE cannot recover from this problem:
ERN$ AXERRI
ERR=   5 @ ERL= 20020
BP2 STATUS=    8
P...
P...
P...
?ADE SESSION LOST - SORRY
```

Result

- The last command you entered had a problem.

- ADE had an additional problem trying to recover.

- ADE could not recover.

- ADE could not log the error.

- ADE terminated the session.

Possible Cause

- The disk is full or too fragmented.

- There is a hardware problem.

- ADE has an internal error.

If any of these errors occurs, you may need to reset the host system terminal characteristics. In all cases, inform the system manager. Installation/Release Notes for ADE on the host system contain additional information to address these problems.

APPENDIX D

FILE INFORMATION

The most basic logical and physical unit in ADE is the table. Information (or data) is stored in a table, which is structured into lines and columns. A table is maintained at the host system level as two files -- a pure RMS sequential data file and a descriptor file, which contains printable definitions of fields within the data file.

This appendix describes the descriptor and data files for the sample PARTS table, used in examples thoughout this manual and available on each host system. You may notice that the descriptor file format is identical to that of similar files used by DATATRIEVE. This is to enable easy transfer of data back and forth between these two software products.

The descriptor file is named DES001.ADE:

! PARTS C:30-Dec-82 10:27 PM M:30-Dec-82 10:27 PM ADE V2.1

DELETE PARTS;

DELETE PARTS-REC;

DEFINE DOMAIN PARTS USING PARTS-REC ON SY:TBL001.ADE;

DEFINE RECORD PARTS-REC USING

```
     01 PARTS-REC.
           03 PN PIC X(3).
           03 PNAME PIC X(7).
           03 WHOUSE PIC X(2).
           03 COLOR PIC X(5).
           03 WEIGHT PIC S9(2) SIGN LEADING SEPARATE
              EDIT-STRING -(2)9.
           03 QTY PIC S9(3) SIGN LEADING SEPARATE
              EDIT-STRING -(3)9.
  ;
  ! DEFINE FILE FOR PARTS KEY = PN;
```

FILE INFORMATION

The descriptor file DES001.ADE defines and describes the actual
data found in the data file named TBL001.ADE:

```
PO1NUT      W2RED  +12+135
PO2BOLT     W2GREEN+17+167
PO3SCREW    W1BLUE +17+048
PO4SCREW    W2RED  +14+143
PO5CAM      W1BLUE +12+205
PO6COG      W3RED  +19+215
PO7GEAR     W3GREY +09+234
PO8BEARINGW2GREY +25+136
PO9BOLT     W1WHITE+05+015
```


ADE can make its data available to other software product users
in an easy to understand and easy to use way. ADE can save
tables externally for use by other software, providing a copy of
the data file and one of three different types of external
descriptor files.

ADE can also save tables externally in List Processing format
for use by DIGITAL Word Processing software. In this case, only
one file is generated.

The List Processing format file produced from the sample PARTS
table with a SAVE PARTS EXTERNAL WPS command in ADE is named
PARTS.WPS:

! PARTS C:30-Dec-82 03:32 PM M:30-Dec-82 03:32 PM ADE V2.1

```
<PN> PO1
<PNAME> NUT
<WHOUSE> W2
<COLOR> RED
<WEIGHT> 12
<QTY> 135
<>

<PN> PO2
<PNAME> BOLT
<WHOUSE> W2
<COLOR> GREEN
<WEIGHT> 17
<QTY> 167
<>

<PN> PO3
<PNAME> SCREW
<WHOUSE> W1
<COLOR> BLUE
<WEIGHT> 17
<QTY> 48
<>
```

```
<PN> P04
<PNAME> SCREW
<WHOUSE> W2
<COLOR> RED
<WEIGHT> 14
<QTY> 143
<>

<PN> P05
<PNAME> CAM
<WHOUSE> W1
<COLOR> BLUE
<WEIGHT> 12
<QTY> 205
<>

<PN> P06
<PNAME> COG
<WHOUSE> W3
<COLOR> RED
<WEIGHT> 19
<QTY> 215
<>

<PN> P07
<PNAME> GEAR
<WHOUSE> W3
<COLOR> GREY
<WEIGHT> 9
<QTY> 234
<>

<PN> P08
<PNAME> BEARING
<WHOUSE> W2
<COLOR> GREY
<WEIGHT> 25
<QTY> 136
<>

<PN> P09
<PNAME> BOLT
<WHOUSE> W1
<COLOR> WHITE
<WEIGHT> 5
<QTY> 15
<>
```

FILE INFORMATION

The descriptor file ADE produced from the sample PARTS table for
COBOL with a SAVE PARTS EXTERNAL COBOL command in ADE is named
PARTS.COB or PARTS.CBL, depending on the host system:

*PARTS C:30-Dec-82 03:31 PM M:30-Dec-82 03:31 PM ADE V2.1

```
    01 PARTS-REC.
        03 PN PIC X(3).
        03 PNAME PIC X(7).
        03 WHOUSE PIC X(2).
        03 COLOR PIC X(5).
        03 WEIGHT PIC S9(2) SIGN LEADING SEPARATE.
        03 QTY PIC S9(3) SIGN LEADING SEPARATE.
```

*ADE KEY = PN

The descriptor file ADE produced from the sample PARTS table for
DATARIEVE with a SAVE PARTS EXTERNAL DATARIEVE command in ADE is
named PARTS.DTR:

! PARTS C:30-Dec-82 03:30 PM M:30-Dec-82 03:30 PM ADE V2.1

DELETE PARTS;

DELETE PARTS-REC;

DEFINE DOMAIN PARTS USING PARTS-REC ON PARTS.TBL;

DEFINE RECORD PARTS-REC USING

```
    01 PARTS-REC.
        03 PN PIC X(3).
        03 PNAME PIC X(7).
        03 WHOUSE PIC X(2).
        03 COLOR PIC X(5).
        03 WEIGHT PIC S9(2) SIGN LEADING SEPARATE
            EDIT-STRING -(2)9.
        03 QTY PIC S9(3) SIGN LEADING SEPARATE
            EDIT-STRING -(3)9.
;
! DEFINE FILE FOR PARTS KEY = PN;
```

The descriptor (map statement) file ADE produced from the sample
PARTS table for BASIC with a SAVE PARTS EXTERNAL BASIC command
in ADE is named PARTS.BAS or PARTS.B2S, depending on the host
system:

```
800 ! PARTS C:30-Dec-82 03:31 PM M:30-Dec-82 03:31 PM ADE V2.1 &
                                          &
\       MAP (PARTS)                        &
                                          &
        PN$ = 3%,                          &
        PNAME$ = 7%,                       &
        WHOUSE$ = 2%,                      &
        COLOR$ = 5%,                       &
        WEIGHT$ = 3%,  !ADE DECIMAL(-1) &
        QTY$ = 4%      !ADE DECIMAL(-1) &
                                          &
                       !ADE KEY = PN      &
```

The three descriptor files ADE produced from the sample PARTS
table for COBOL, DATATRIEVE, and BASIC (with SAVE PARTS EXTERNAL
commands) each describe the actual data file produced, named
PARTS.TBL:

```
P01NUT      W2RED  +12+135
P02BOLT     W2GREEN+17+167
P03SCREW    W1BLUE +17+048
P04SCREW    W2RED  +14+143
P05CAM      W1BLUE +12+205
P06COG      W3RED  +19+215
P07GEAR     W3GREY +09+234
P08BEARINGW2GREY +25+136
P09BOLT     W1WHITE+05+015
```

ADE data files, descriptor files, verb files, reports files, and
the ADE directory can all be moved from system account to system
account, storage device to storage device, and host system to
host system. Contact your system manager for information on how
to do this.

GLOSSARY

ARITHMETIC EXPRESSION

An expression composed of column names, numeric values, the basic arithmetic symbols for addition (+), subtraction (-), multiplication (*), division (/), and parentheses. Used in the CALCULATE command.

BACKUP WORKSHEET

The previous worksheet, a copy of your current worksheet without the last change you made to it. To replace your current worksheet with the backup worksheet, use the BACKUP command. See also WORKSHEET, CURRENT WORKSHEET, and NEW WORKSHEET.

CHARACTER COLUMN

A column that can contain character values. You can use valid numeric values in a character column for the arithmetic commands if the entire character column contains only valid numeric values.

CHARACTER VALUE

A value that can contain any character.

COLUMN

A vertical group of values in the worksheet or a table. Each column has a name you use to refer to it.

COMMAND

A one-word direction followed by one or more pieces of information that tells ADE to perform a specific operation, such as saving the current worksheet as a table.

CONDITION

An expression that specifies a set of lines in the worksheet or a table that a command is to work with. A condition has three parts: column name, operator, and value. The condition QTY LT 20 specifies the set of lines where the values in the column QTY are less than the value 20.

CURRENT WORKSHEET

The worksheet that you are working with. To display an outline
of   the   current   worksheet, use   the   OUTLINE   command.   To
permanently save the values in the current worksheet in a table,
use the SAVE command. See also WORKSHEET, NEW WORKSHEET, and
BACKUP WORKSHEET.

DATE COLUMN

A column that can contain only date values.

DATE VALUE

A value that can contain only characters that conform to the
current date format.

DATE FORMAT

The format in which the date January 2, 1980 is displayed. The
default date format is 2-Jan-80. To change the date format, use
the SET DATE command and enter the date January 2, 1980 in
whatever valid format you want. The date format determines how
all date values and dates in reports are displayed.

DEFAULT

A value or action that is the most likely to be used and is used
if you do not replace it. Normally refers to values for command
input or standard operations like report making.

EXPRESSION

A sequence of symbols that has a special meaning to ADE, such as
LINE GT 10. See also ARITHMETIC EXPRESSION and CONDITION.

FUNCTION KEY

One of several keys on the keypad of video terminals that tells
ADE to perform a specific action, such as terminating data
entry.

ITEM

An ADE operand that you can use in the arithmetic commands (ADD,
SUBTRACT, MULTIPLY, and DIVIDE).

KEY COLUMN

A column that you designate to keep the lines in the worksheet or a table in order. Lines are always ordered by ascending key column value. The worksheet or a table does not have to have a key column, but, if it does, it can have only one key column. Each value in a key column must be unique.

KEYPAD

A subset of the keys on a video terminal that includes the keys that control ADE's special functions. See also FUNCTION KEY.

LINE

A horizontal group of values in the worksheet or a table. A line may be referred to in commands by its current line number in the worksheet or a table.

LINE FORMAT

A sequence of report instruction keywords, column names, and text strings that specifies how a line in report output should be formatted. The TOP, BOTTOM, WHERE, and EXCEPT sections of a report procedure are made up of line formats.

NAME

A unique identifying string of characters that you use to designate a particular table, verb, report, or a column in the worksheet or a table.

NEGATIVE NUMBER FORMAT

The format for negative numbers. The default format is -9000, with a leading minus sign and no commas. The negative number format determines how all numbers, including negative numbers, appear in tables and reports. Numeric data entry is also controlled by this format. To change the negative number format, use the SET NEGATIVE command.

NEST

To use the name of one verb as a step in another verb.

NEW WORKSHEET

A worksheet that replaces your current worksheet. You can replace your current worksheet with a worksheet made with the MAKE command, with a copy of a table or specified part of a table using the GET command, or with the backup worksheet using the BACKUP command. See also WORKSHEET, CURRENT WORKSHEET, and BACKUP WORKSHEET.

GLOSSARY

NUMERIC COLUMN

A column that can contain only numeric values.

NUMERIC VALUE

A value that can contain only characters that conform to the current negative number format, with the negative indicator being optional.

OPERAND

A column name, a numeric value, or a date value that can be used in the arithmetic commands and the MOVE command. Also includes a group of characters without spaces and a group of characters with or without spaces enclosed in quotes for the MOVE command.

OPERATOR

A part of a condition. Includes the symbols for the comparison operations of equal (EQ or =), not equal (NE or <>), less than (LT or <), less than or equal (LE or <=), greater than (GT or >), greater than or equal (GE or >=), between (BT), begins with (BW), ends with (EW) and contains (CO).

OPTION

An ADE parameter that you can change with the SET command.

OUTLINE

The structure of the current worksheet or a table, especially as displayed with the OUTLINE command. The OUTLINE command displays the names and types of columns, as well as the number of lines, in the current worksheet or a table.

PARAMETER

One of a limited set of operational settings that determine how ADE controls its displays or performs commands.

PROCEDURE

A set of ADE commands or report instructions saved with a name. All the commands in a verb or the report instructions in a report are carried out in order when the procedure is used. To use a procedure, you use its name as you would a command.

REPORT

A procedure made up of report instructions organized in sections
that specify how to list the values in the current worksheet or
a table.

SECTION

A part of a report procedure that specifies how to list a
particular part of report output, such as the top of the page,
or that specifies formats for the entire report output.

STEP

One ADE command, one verb name, or one report name with its
associated worksheet or table name in a verb.

TABLE

The unit of permanent data storage in ADE. A table consists of
one or more values arranged in lines and columns. When
displayed, the column names are also considered to be part of a
table. To make use of a table, you must include its name in a
command. To work with the values in a table, you copy the table
or a specified part of the table into the worksheet with the GET
command. See also WORKSHEET and NEW WORKSHEET.

VALUE

A worksheet or table entry. Also a part of a condition. A
value consists of one or more letters, numbers, or other
characters, including spaces.

VERB

A procedure made up of ADE commands, verb names, or report names
referred to as steps that specify a set of operations for ADE to
perform.

WORKSHEET

A copy of a table or specified part of a table used as a
"scratch-pad." To work with an existing table, you copy the
table or specified part of the table into the worksheet with the
GET command. Changing the worksheet does not in any way affect
any table, including a table copied into the worksheet. To
permanently save the values in the current worksheet in a table,
use the SAVE command. See also BACKUP WORKSHEET, NEW WORKSHEET,
and CURRENT WORKSHEET.

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