



VP DATA CAPTURE

XEROX

VP Series Training Guide
Version 1.0

This publication could contain technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of this publication.

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1. Introduction

Data capture software is used to move data from a host computer database, through a terminal emulation window, to a table. The data can then be used in table form or as source data to create record files or bar charts.

Data capture is one step toward integrating office systems with data processing systems. Data capture replaces the tedious procedure of copying data into a table a field at a time with a more automated one, in which the repetitive copying steps are carried out by the software.

A few uses for data capture are:

- When your company's personnel records, stored on a host computer, are needed in a table. Using data capture, you can define the data needed from the source document and manipulate it in a variety of ways.
- When stock or bond information is needed for a table in a text document. The latest quotes are required, and detailed accuracy is extremely important. With data capture, the information can be used without having to rekey the data, saving a great deal of time, as well as assuring complete accuracy.
- When budget data, which is maintained on a mainframe computer, needs to be distributed in a "readable" table format.

Data capture can be used to transfer any structured data into table format. It can also be applied to folders. The folder of tables created by data capture has the same structure and substructure as the original, with all levels of the folder duplicated.

This self study guide is designed to provide you with the general concepts and practice necessary to convert source data into table form using VP Data Capture software.

After completing this self study guide, you should be able to:

- Activate data capture software
- Use [MAKE DOCUMENT] to create a source document
- Write a preamble for a source document that contains columnar as well as vertical data
- Activate data capture once a source document is prepared
- Evaluate and change properties of a table created by data capture
- Create a table that uses subcolumns and subrows

Getting started

Before you begin this self study guide, you should know how to operate your 6085 or 8010 workstation. Complete the following:

- "VP Training Introduction" tab
- "Xerox ViewPoint" self study guide
- "Document Editor" self study guide
- "VP NetCom," "VP RemoteCom," or "VP StandAlone" self study guide, depending on the configuration of your workstation

Because data capture is usually used with terminal emulation, it is assumed that you are already familiar with the terminal emulation features of your workstation and are able to access a database on a host computer using an emulation package.

Depending on your intended use of data capture, other useful modules include the following:

- "VP List Management" self study guide
- "VP Data-Driven Graphics" self study guide

To complete this self study guide, you need a 6085 Professional Computer System or an 8010 Information System with VP Document Editor software and VP Data Capture software installed and running.

To verify that the software packages are installed and running, open the application loader, which is located in the workstation divider of the directory. If either package is not displayed when you open the application loader, or if its status is set to Idle, refer to the procedures in Chapter 2 of this self study guide.

Because data capture reads spaces, a document with proportional spacing (for example Modern or Classic fonts) should be converted to a structured font style to make it easier to count the characters and spaces in the database.

A typewriter uses a structured font, in that each character and space takes up an equal amount of space on a line. Fonts such as Pica, Elite, Titan, and Terminal are structured font styles. The document made from a terminal emulation window is in a structured font.

NOTE: If your document is in a structured font style which is not loaded into your workstation, all you will see on the screen when you open the document, is a series of unreadable boxes.

Each chapter of this self study guide introduces a number of related concepts. When these concepts involve on-line practice, practice exercises are included. At the end of your training, you review all the skills taught with a final progress check.

When a term that is new or unique is introduced, it is italicized and placed in boldface type. You can find a more detailed explanation of each term in the "Glossary" tab of the VP Series reference library.

To get started, you need the folder labeled VP Data Capture on the VP Training Exercises floppy disk. Within the folder are all the documents necessary to complete this self study guide.

The folder contains two types of documents:

- Data Capture PRactice documents (for example, DC PR 2-1)
- Data Capture Progress Check document (for example, DC PC 9-1)

At this point, you are ready to place the VP Data Capture folder from the VP Training Exercises floppy disk onto your desktop. To review the procedure for loading a floppy disk, refer to the chapter titled "Floppy Utility" in the "Xerox ViewPoint" self study guide. If your system does not have a floppy disk drive, see your System Administrator.

You can copy the VP Data Capture folder and rename it. This allows you to work with a copy of the original documents and to store your completed practices.

Beginning with this introduction, continue through each chapter sequentially, at your own pace, until you have mastered the skills taught. Your training should take approximately five hours.

While you are completing this self study guide, it is advisable that you have the tabs titled "VP Introduction" and "VP Data Capture" in the VP Series reference library available for easy referral.

2. Source documents

Overview

VP Data Capture software needs a source of data before it can do its job. This data is called the source document.

Data capture reads your instructions (preamble) and counts character spaces from the left margin to match the data in the source document, which you have instructed it to capture. Data capture then constructs the necessary table structure and places the captured data in the table.

This chapter is designed to overview the entire data capture process as illustrated in Figure 2-1. The following chapters cover different aspects of data capture in greater detail.

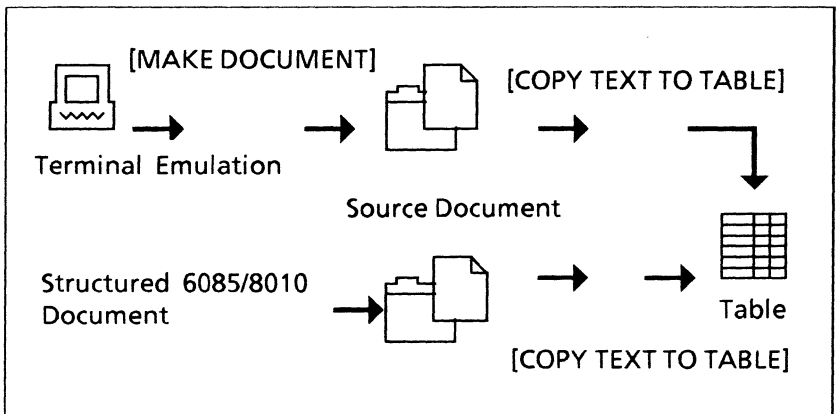


Figure 2-1 The data capture process

After completing this chapter, you should be able to activate VP Data Capture software, make a source document from terminal emulation, and analyze a basic preamble.

Operating data capture

In the following exercise, you activate VP Data Capture software that has been previously loaded in the application loader.

If, after selecting the desktop auxiliary menu, you do not find [COPY TEXT TO TABLE] listed, follow these steps:

1. **Open** the application loader icon to see if the VP Data Capture software is listed.

If VP Data Capture is listed in the loader, but [COPY TEXT TO TABLE] is not in the auxiliary menu, that means that the software is loaded, but not running.

2. **Select** [VP DATA CAPTURE] in the application loader.
3. **Select** [RUN].

To confirm that data capture is now active:

4. **Select** the desktop auxiliary menu again. [COPY TEXT TO TABLE] is now listed.
5. **Close** the application loader.

If VP Data Capture software is not listed in the application loader, it is necessary to load the software from disk. The floppy disk drive is optional hardware for the 6085 workstation. If your system does not have a disk drive, you can obtain the training exercises over the network. See your System Administrator for the location of these files.

In the following exercise, you load VP Data Capture software after retrieving it from a floppy disk.

1. **Insert** the VP Data Capture floppy disk into the disk drive and close the door.
2. **Select** the floppy disk icon.
3. **Press** <OPEN>.

From the listing of the contents of the floppy disk:

4. Select [VP DATA CAPTURE].
5. Copy VP Data Capture onto the application loader icon. The loading process begins.

Once the software is loaded and the message "Done" is displayed:

6. Eject the floppy disk by pressing the button on the floppy disk drive.
7. Close the floppy disk window.

NOTE: If data capture will be used regularly on the workstation, select [AUTO RUN AT STARTUP] in the data capture property sheet. Each time the system is booted, data capture will be running when you log on.

If a structured font style also needs to be loaded from floppy disk, load the font disk in the disk drive, and follow steps 1 through 7 for loading the selected structured font.

Getting a source document

Data capture is usually used with a document resulting from a terminal emulation session. The text contains no tabs or margins. It also is in a structured font, rather than the proportional font (irregular spacing), normally used on the workstation. Data capture uses this structure and spacing to locate and capture specific data into tables.

It is possible to use a structured document created on the workstation with data capture, but it cannot have any tabs or margins.

Although the two sentences which follow have the same number of characters, they are different lengths. One is entered using a proportional or non-structured font (Modern), and the other is a

structured font (Pica), where each character and space uses the same amount of room on the line.

Meeting Night Tonight (non-structured)

Meeting Night Tonight (structured)

VP Terminal Emulation software makes your workstation simulate a computer terminal, which can then communicate with a host mainframe computer.

During an emulation session, information from a database can be accessed. A database is a very structured file in which all similar data is stored in a prescribed pattern.

For example, a telephone book could be considered a database. Each entry in the directory is structured in the same way, normally with the last name listed first, followed by a first name or initial. The street address is placed next, followed by the phone number.

If you wanted to use data capture to make a table from the telephone directory database with only the last name and the phone number, you could do that.

This is how it would work. Let's say the average line in a directory entry is 60 character spaces long. The last eight spaces consist of a seven-digit phone number and a hyphen. Capturing the number would be easy because it is always the same length, it always consists of numbers (except for the hyphen), and it always occupies the last eight spaces on any line.

If data capture were instructed to look for only numbers in those spaces and not letters, only numbers would be captured.

Capturing the names would be more complex. Names are not all the same length; some are followed by initials, some are followed by first names, and some are long enough to take up two lines. But no names include numbers, and usually a space follows the names. Then the street numbers are listed.

The preamble could be written to capture letters from the first character position until, but not including, the first number. These instructions to the data

capture software, along with instructions to capture the phone numbers, could be used to create a name and phone number table.

Making a source document

It is simple to make a source document once you have completed a terminal emulation session with a host computer. You must be on line to a host mainframe computer through terminal emulation to make a source document from a database. Figure 2-2 illustrates a terminal emulation window.

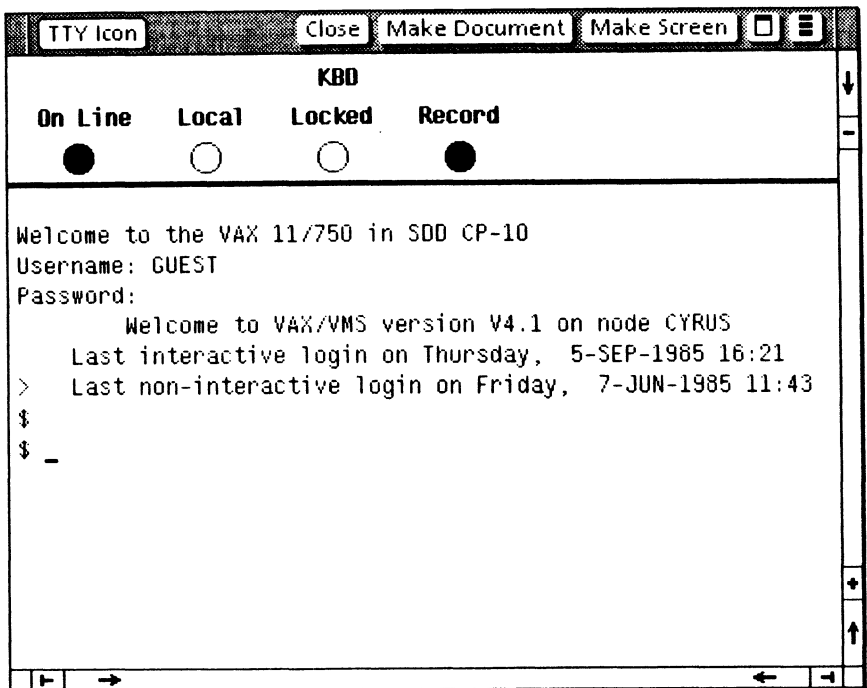


Figure 2-2. Terminal emulation window

In the following exercise, you make a source document from a terminal emulation session while you are still logged on to the host computer.

1. Select [MAKE DOCUMENT] in the terminal emulation window.
2. Indicate a location on the desktop.

NOTE: If you are not able to log on to a host computer at this time, continue through this section to familiarize yourself with the process. You will be using practice source documents throughout the rest of the training. Review this section when you need to capture data from a terminal emulation session.

The resulting document, which appears on the desktop as an icon, has the same name as the original document. If the file name of the terminal emulation document is Records, the source document icon is named as follows: Records of Feb-86 11:45:52PS1. This becomes the source of data to be captured for use in a table.

The sample source document (Figure 2-3) is the result of selecting [MAKE DOCUMENT] in the terminal emulation window. The data is in definite columns and in a structured (Titan) font style. There are no margins and only spaces between columns, not tabs.

PERSONNEL REPORT FOR 12/23/82 MARKETING DEPT.		
EMPLOYEE	HIRED	YTD EARNINGS
Smith, A.	02-11-68	12,778.23
Jones, E.	07-12-82	12,622.11
Price, W.	02-13-68	23,718.23
Liou, D.	12-11-78	26,737.00
Smith, D.	12-21-82	0.00
Anderson, P.	02-11068	22,778.91
Green, F.	05-05-55	27,128.03
Charles, R.	07-23-80	22,778.23
Leary, T.	02-13-68	23,718.23
Fredholm, R.	12-11-78	22,737.00
Abel, C.	12-11-78	22,737.00
Carothers, G.	02-11-68	31,778.12

Figure 2-3 A source document

Figure 2-4 is an example of a table that could be generated by data capture using the data in this source document.

Once the source document icon is created by selecting [MAKE DOCUMENT] in the terminal emulation window:

3. Log off from the host system.
4. Close the terminal emulation window.

Smith, A.	12,778.23
Jones, E.	12,622.11
Price, W.	23,718.23
Liou, D.	26,737.00
Smith, D.	0.00
Anderson, P.	22,778.91
Green, F.	27,128.03
Charles, R.	22,778.23
Leary, T.	23,718.23
Fredholm, R.	22,737.00
Abel, C.	22,737.00
Carothers, G.	31,778.12

Figure 2-4 Table generated by data capture

Adding a preamble to a source document

The preamble is the set of instructions you write to define exactly what data you want to capture from the database and how it is to be placed in the table. The preamble is always placed at the beginning of the source document.

There will be several chapters devoted to the syntax and writing of preambles later, but first follow through with this example. The whole process will make more sense after you have written a few preambles for different source documents.

Figure 2-5 is the preamble to capture data from the source document in Figure 2-3.

(Character 1) (Type text) (Format xxxxxxxxxxxxxx).
(Character 25) (Type amount) (Format bb,bb9.99).
(End of preamble).

Figure 2-5 The preamble

The table generated from the source document (Figure 2-4) does not include all the information that is in the source document. It contains only the employee's name and earnings. This is a line by line breakdown on how this preamble works with this source document:

(Character 1) (Type text) (Format xxxxxxxxxxxxxx).

This line sets up the first column in the table. It states that the information to be captured starts at character one (at the left edge), that it is text rather than numbers, and that it should capture the next thirteen characters (the x's). Thirteen characters, because the longest name (Carothers, G.) is thirteen character spaces.

(Character 25) (Type amount) (Format bb,bb9.99).

This line defines the second column and instructs the software to start 25 character spaces in, and the data to look for will be numeric, and that it must be in a prescribed format that allows for up to 99,999.99. The b's will be explained later.

NOTE: The decimal point is always expected to be at position 31 (thirty-one spaces from the left edge). If the format read (Format bbb,bb9.99), the preamble would not work because the decimal point would be expected at position 32 and the data placement would not match the instructions, because it wouldn't find a decimal at position 31. This is a common error in writing a preamble. You will study this in detail in the chapter on writing preambles.

(End of preamble).

This line ends the preamble and will always end any preamble that you write.

Because writing a precise preamble is the most critical step in using Data Capture, several sections will be devoted to the various aspects of this process.

Inserting a character counter

Something else has been added to the source document in Figure 2-6. Just below the preamble is a row of consecutive numbers. This is a character counter. It makes it easier to count characters and spaces across the document. The software does not pick up these numbers because (format bb,bb9.99) specifies an exact format, which the character counter does not match.

```
(Character 1)(Type text)(Format
xxxxxxxxxxxxxxxx).
(Character 25)(Type amount)(Format
bb,bb9.99).
(End of preamble).
```

12345678901234567890123456789012345

PERSONNEL REPORT FOR 12/23/82
MARKETING DEPT.

EMPLOYEE	HIRED	YTD EARNINGS
Smith, A.	02-11-68	12,778.23
Jones, E.	07-12-82	12,622.11
Price, W.	02-13-68	23,718.23
Liou, D.	12-11-78	26,737.00
Smith, D.	12-21-82	0.00
Anderson, P.	02-11068	22,778.91
Green, F.	05-05-55	27,128.03
Charles, R.	07-23-80	22,778.23
Leary, T.	02-13-68	23,718.23
Fredholm, R.	12-11-78	22,737.00
Abel, C.	12-11-78	22,737.00
Carothers, G.	02-11-68	31,778.12

Figure 2-6 Source document with preamble added

The character counter can be placed anywhere in the source document. An easy way to enter a character counter is to type the numbers 1 to 0 (1234567890) in a structured font. Press <AGAIN> to repeat the number string across the source document.

The character counter is a tool that makes it easier to see exactly in which column each section of data begins and ends. It is not a required part of the source document. After you use it to help write the preamble, you can always delete it from the source document.

In the following exercise, you examine a source document from the VP Data Capture folder with the preamble and character counter added, then use the document to produce a table using data capture.

1. **Open DC PR 2-1.**
2. **Examine the placement of the preamble and the character counter.**

Summary

In this chapter, you studied how to:

- Activate data capture software
- Use [MAKE DOCUMENT] to create a source document
- Analyze a preamble for a source document

If you need more practice, complete the exercises again. To do this, review the practice document for this chapter.

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3. Using data capture

Overview

Once the preamble has been added to the top of the source document, the only thing left to do is to have the software create the table.

After completing this chapter, you should be able to activate the data capture software to create a table. You should also be able to evaluate the table and change its properties.

Activating data capture

In the following exercise, you have the data capture software create a table.

1. Close DC PR 2-1.
2. Select [COPY TEXT TO TABLE] in the desktop auxiliary menu while the source document icon is still highlighted.

The software now takes over. If the preamble is written correctly, the system will begin flashing messages at the top of the screen as it moves through the various steps in creating the table.

Once data capture is finished, a new icon with the same name as the source document is placed and highlighted on the desktop. This document is the table resulting from the data capture operation.

The new icon may be placed under the open folder on the desktop. If this happens:

- 3. Press <MOVE>** and indicate a place on the desktop to relocate the icon.

If the preamble contains an error in syntax, a relevant description of the problem appears in the message area and the process stops. The message specifies the nature of the problem and the place in the preamble where the error occurred. If this happens, check the tab titled "System Messages" in the VP Series reference library.

To correct the preamble error and proceed, open the source document again, make the necessary changes to the preamble, close the document, and select [COPY TEXT TO TABLE] again.

If a table is produced but the fields are empty, there is a problem with the instructions in the preamble. In this case, reopen the source document and closely check each line of the preamble. You will study troubleshooting procedures in Chapter 8.

Evaluating table results

Check the table that data capture produces to be sure it contains the data you intended. It is possible that the preamble contains a counting or format error, or that the table exceeds the capability of the software. (For example, if a resulting table has more than 2000 cells, the software cannot handle it.)

In the following exercise, you evaluate and change table properties.

- 1. Open** the new document icon that contains the table.

The table is at the extreme left of the window. This would be no problem if you were going to incorporate it into another document with margins set. If you want a printed copy of this

table by itself, however, you need to adjust the left margin.

2. **Select [EDIT].**
3. **Select [SHOW STRUCTURE] in the document auxiliary menu.**

NOTE: You may also want to select [SHOW NON-PRINTING CHARACTERS] to make counting spaces easier. Be careful, however, not to misread a period as a space. That could be enough to prevent a preamble from working.

4. **Select the page layout character in the document.**
5. **Press <PROP'S>.**
6. **Set the left margin at 1 inch.**
7. **Close the property sheet.**
8. **Paginate the document.** The table is now adjusted to the right.
9. **Close the document.**

You can now send the table to a printer in the same manner as any other document icon on your desktop.

The table that is produced by data capture can be manipulated in all the ways a standard ViewPoint table can. For example, you can:

- Change page layout by selecting the page format character and pressing <PROP'S> to display the associated property sheet
- Change the properties of the table frame by selecting the frame and pressing <PROP'S> to display the associated property sheet
- Change the properties of the horizontal and vertical ruling lines
- Change column widths, formats or tab settings
- Change row properties

The training included in the "Tables" chapter of "VP Document Editor" self study guide provides a variety of ways to modify the appearance of tables. With data capture, you make these changes after the [COPY TEXT TO TABLE] operation is completed.

Summary

In this chapter, you studied how to:

- Activate data capture once a source document was prepared
- Evaluate and change table properties

There will be more on evaluating tables in Chapter 8 of this self study guide.

If you need more practice, complete the exercises again. To do this, use new copies of the practice document for this chapter.

4. **Writing preambles**

Overview

Because the preamble is the most important element in successfully utilizing data capture, this chapter is an overview of the syntax and properties used in writing a well-defined preamble.

Preamble syntax

A preamble contains one sentence for each column in the table. The preamble in the previous chapter consisted of two sentences (plus the end of preamble sentence), and the resulting table had two columns.

There is no need to limit a sentence to one screen line. The period at the end of the sentence delimits it, and other line breaks don't have an effect.

Each preamble sentence is made up of a series of clauses. Each clause, enclosed in parentheses, represents one property-value set, similar to a subject and verb. Each pair defines one property for a corresponding column in the table. The order of the clauses within a preamble sentence doesn't matter, as long as they're all present. What is included inside the clause parentheses, however, is very rigid and structured.

A preamble can be typed in either uppercase or lowercase, or a mix of both. Case doesn't matter. You can also include spaces or tabs between clauses to help make it more readable. You can also use any font or character size, although this affects the appearance of the table.

(Character 1) (Type text) (Format xxxxxxxxxxxx).
(Character 25) (Type amount) (Format bb,bb9.99).
(End of preamble).

Figure 4-1 The preamble

The properties of a preamble used in Figure 4-1 are character, type, and format.

There is a space after each of these property words, followed by a word or number. The second half of the property-value set is the value assigned to that particular property. There must be one space, and only one space, between the property name and the value in a clause, and each clause contains only one property-value set.

Preamble properties

The following are the properties used in writing data capture preambles:

- Type
- Name
- Format
- Character
- Length
- Line
- Comment
- Language
- End of Group
- Required
- After
- End of Preamble
- Case

These properties are discussed in the tab titled "VP Data Capture" in the VP Series reference library.

In this study guide, you will look at four additional data capture scenarios in which nearly all of these properties will be used and explained for each particular application. In each example, the preamble will be examined line by line and related to the source document and the resulting table.

Format properties

Of all the properties listed above, format is probably the most complex and also the most critical to successfully writing a preamble.

Text properties

The format property is used to define exactly the text, number, or date patterns you wish to match. By defining rigid format properties using specific format characters, you have a great deal of control over getting exactly the data you want into a table.

These format characters are different for text (letters), amount (numbers) and dates. If one of these format characters appears in the format clause, only that specified data from the database is captured.

Text field formatting characters are as follows:

- A This character in a corresponding field can contain a letter or a blank.
- X This character field can contain any character, letter, number, or space.
- Y This character field can contain any character, except a space.

Amount properties

Amount field formatting characters are as follows:

- 9 The corresponding field can contain any digit or a blank.
 - B The corresponding field can contain a digit, unless the digit is an insignificant or leading zero, in which case the position contains a blank. A zero is insignificant if it appears to the left of the last digit in the number. In the number 009.25, for example, the two zeros are insignificant.
 - * The position contains a digit, unless the digit is a leading zero, in which case the position contains an asterisk.
 - + A plus or minus sign appears in the source document, depending on the sign of the field value. This character can only appear as the first character of the format.
 - A minus sign appears only if the field value is less than zero. This character can only appear as the first or last character of a format.
 - () Parentheses (around digits and punctuation) are an alternative way to express negative amounts.
 - ,
 - .
- The corresponding field contains a comma.
- The corresponding field contains a decimal point.

Date properties

Only numerical, fixed-length dates can be used. There are three special formatting characters: M, D, and Y (for month, day, and year, respectively). M and D must appear twice, side by side. Y may appear either twice or four times. The separators between the date

components are specified as *literals* (placed inside single quotes). Literals are explained in Chapter 5.

Date field formatting characters can be configured in various ways. Some acceptable date format examples are:

DD/'MM'/'YY

YYYY'-MM'-'DD

YY' 'MM' 'DD

DD'-'MM'-'YYYY

The default date format is MM/'DD'/'YY.

You may wish to photocopy this listing of format property characters for easy reference.

Case properties

Very often, the data from a terminal emulation is all in capital letters. This is fine for a database, but not necessarily for a table in a document. There is another property for this situation. It is called **case**. By using the case property and a prescribed value, the case of the text in the table can be changed. These property value sets are entered into the preamble sentence where you want the text in the table to be affected. Here are some examples:

(Case S)--This is the default setting. It will result in the text being the same case as the source document.

(Case U)--All text will be uppercase.

(Case L)--All text will be lowercase.

(Case UL)-- The first character of each word will be uppercase, and the rest will be lowercase.

(Case UL LL)--The first character of each field will be uppercase, the rest of the field will be lowercase.

Summary

In this chapter, you studied the requirements for writing legal preambles by looking at the syntax as well as several of the property-value sets available for writing a data capture preamble.



5. Capturing vertical data

Overview

Even though the data in a database is structured, it can be entered in a variety of ways. Some data is in a vertical format, rather than in columns. By writing different property-value sets into a preamble, data capture can be used to capture data entered in this format.

After completing this chapter, you should be able to capture vertical data in a source document and create a table containing that data.

Vertical data format

The data in the source document in Figure 5-1 is in a vertical format. Three rows of data relate to one person or record. Because of this possible format, there are a number of different properties used in the preamble, including line, length, and a *literal*, to produce the desired table (Figure 5-2).

A literal instructs data capture to match a data format with what appears inside single quotes in the Format value in a preamble clause. Literals are also used in date properties for various separators between days, months, and years.

```

Empl:  Smith, A.
Dept:  Marketing
Title: Group Manager

Empl:  Jones, E.
Dept:  Administration
Title: Bookkeeper

Empl:  O'Brien, W.
Dept:  Sales
Title: Customer Representative

Empl:  Liou, D.
Dept:  Sales
Title: Account Manager

Empl:  Smith, D.
Dept:  Sales
Title: Customer Representative

1234567890123456789012345678901

```

Figure 5-1 Vertical format source document

Smith, A.	Group Manager	Marketing
Jones, E.	Bookkeeper	Administration
O'Brien, W.	Customer Representative	Sales
Liou, D.	Account Manager	Sales
Smith, D.	Customer Representative	Sales

Figure 5-1 Table from preamble and source document

Preamble analysis

This preamble (Figure 5-3) is written to place vertical data horizontally in a table. The following is a line-by-line breakdown of the preamble:

```
(Format 'Empl: 'xxxxxxxxxxxx).
(Line 3) (Length 25) (Character 9).
(Line 2) (Length 15) (Character 9).
(End of Preamble).
```

Figure 5-3 Preamble

(Format 'Empl: 'xxxxxxxxxxxx).

This preamble sentence uses a literal to instruct the system to capture the 12 characters which follow 'Empl: '. Data capture will try to match the pattern defined by the literal, then capture the data that follows. In this case, the employee names (the x's), follow 'Empl: ' each time it occurs. There are 12 x's, because the longest employee name (O'Brien, W.) takes 11 spaces, with a space following.

NOTE: The extra spaces in the length count will add a few blank spaces inside the table's field to improve the appearance of the finished table. Spaces count inside the single quotes of a literal.

(Line 3) (Type Text) (Length 25) (Character 9).

This preamble sentence instructs the system to go to the third line of the data record for column 2. In this case, the data starts 9 characters in from the left. The length is 25 because the longest entry (Customer Representative) needs 23 character spaces in the table.

The property set (**Length 25**) eliminates the need for the type property set and counts out 15 x's for the Format property set. By using Length 25, you tell the system that it doesn't matter what type of characters start at space 9. You want them captured regardless of type or format.

NOTE: It is possible to write this preamble sentence using a literal, as in the first line, and have it match 'Dept: '. Data capture works either way.

(Line 2) (Length 15) (Character 9).

The property set (Line 2) instructs data capture to go to the second line in the data record for column 3. In this case, the second line is the department, and the longest entry is 14 characters (Administration). It also begins 9 characters in from the left margin, but the length is different.

Line 2 could have also been written in another, but less efficient, way:

(Line 2) (Type Text) (Format xxxxxxxxxxxxxxxx)
(Character 9).

(End of Preamble).

This preamble sentence ends every preamble.

In the following exercise, you add the preamble used in this chapter to the beginning of DC PR 5-1 and activate data capture to produce the table.

1. **Open** DC PR 5-1.
2. **Move** the preamble to the beginning of the source document.
3. **Close** the source document.
4. **Select** [COPY TEXT TO TABLE] in the desktop auxiliary menu.
5. **Monitor** the system messages as data capture reads the preamble, sets up the table structure, and copies the data to the table.

Once data capture is finished, the new icon is on the desktop and highlighted. This document is the table resulting from the data capture operation.

The new icon may be under the open folder on the desktop. If this happens:

6. Press <MOVE> and indicate a place on the desktop to relocate the icon.
7. Open the icon.
8. Evaluate the table and compare it to Figure 5-3 and the source document.

Summary

In this chapter, you studied how to :

- Capture vertical and out-of-order data in a source document
- Create a table from the captured data

If you need more practice, complete the exercise again. To do this, use a new copy of the practice document for this chapter.

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6. Capturing subrows and subcolumns

Overview

Often the required table needs to have subrows and subcolumns. Data capture is capable of producing tables with these subgroups.

So far, the tables resulting from the preambles have had the same number of columns as there were sentences in the preamble. Now, however, because the requirements for data structure are becoming more complex, the resulting table needs a varying number of subrows and subcolumns.

New properties used in writing the sample preamble are *name* and *required*, and three different *type* property values, including (Type Text), (Type Group), and (Type Amount).

This application of data capture is particularly useful for such items as inventories, parts listings, or purchase orders.

After completing this chapter, you should be able to create a table that uses subcolumns and subrows.

Tables with subrows and subcolumns

The table resulting from the data in Figure 6-1 includes all the data in the document. There are going to be four columns, with the fourth column further subdivided into three subcolumns.

Some of the data records in the source document, however, have more information than others. In Figure 6-1, for example, Louis has three degrees in

four different course areas, while Smith has only one degree in one area. The preamble has to be flexible enough to allow for these differences.

```

123456789112345678921234567893123456789412
Jacobs, M Sales Chicago A.A. 1977
English
B.S. 1980
Economics
Philosophy
Smith, A. Marketing St. Louis B.A. 1980
Business Admin.
Louis, D. Research Detroit B.A. 1955
Philosophy
M.S. 1957
Computer Science
Ph.D. 1962
Computer Science
Linguistics

```

Figure 6-1 Data requiring subrows and subcolumns

The resulting table (Figure 6-3) at the end of this chapter has two subcolumns under SCHOOLING, and a varying number of subrows.

Preamble analysis

The following is a line-by-line breakdown of the preamble in Figure 6-2.

(Name EMPL NAME) (Character 1) (Type Text)
(Format 'yxxxxxxxxx).

The name property lets you place a label at the top of any column. In this case, the first column in the table will be labeled EMPL NAME, and the data for this column will begin at character 1. It requires that text

be entered, that the format have a literal (a blank space) at the beginning, before any data, and that the second space must not be a blank.

```
(Name EMPL NAME)(Character 1)(Type Text)(Format '
yxxxxxxxxx).
(Name DEPT)(Character 13)(Format aaaaaaaaa)(Type text).
(Name CITY)(Type text)(Format xxxxxxxxx)(Character 23).
(Name SCHOOLING)(Type Group)(required no).
    (Name DEGREE)(Character 33)(Type text)(Format axxxxx).
    (Name YEAR)(Type Amount)(Format 9999)(Character 39).
    (Name COURSES)(Type Group)(required no).
        (Character 27)(Type text)(Format yayyyyxxxxxxxxxx).
        (End of group).
    (End of group).
(End of Preamble).
```

Figure 6-2 A preamble using Name and Type Group properties

The y character in the format requires that character position 2 be a text character, and that it must not be a blank space. As you look at the source document, you can see that only the employee names match this pattern.

This line in the preamble is in boldface type. The characters that will appear in the table (font and face) will have the same properties as the first visible character in the preamble. In this case, the parenthesis before Name is the determining character.

(Name DEPT) (Character 13) (Format aaaaaaaaa) (Type text).

Column 2 will be labeled DEPT, it will start at character 13, and it will capture the next 9 characters (Marketing), no matter what they are, as long as they are text (a).

**(Name CITY) (Type text) (Format xxxxxxxxx)
(Character 23).**

Column 3 will be labeled CITY, it will start at character 23, and it can contain any characters or spaces. No other data begins at character 23. The format is for 9 characters (St. Louis).

(Name SCHOOLING) (Type Group) (required no).

Column 4 will be labeled SCHOOLING, and there will be at least two subcolumns. (Type Group) is needed under the heading for the subcolumns. If a match is not found, (Required no) states it is not required data, and the software should go on with the next instruction.

Any time that (Type Group) is used, there will be a preamble sentence for each of the subcolumns within the group.

(Name DEGREE) (Character 33) (Type text) (Format yaaaaa).

The first subcolumn under SCHOOLING will be labeled DEGREE. The data will begin at character 33, and the format will capture 6 characters, but only if the first character (y) is not a blank.

**(Name YEAR) (Type Amount) (Format 9999)
(Character 39).**

The second subcolumn under SCHOOLING will be labeled YEAR, it will match only numbers (Type Amount), and it will accept any four digits starting at character position 39.

(Name COURSES) (Type Group) (Required no).

A new subcolumn will be labeled COURSES, it will contain subrows (Type Group), and data will not be required (Required no) if it is not found. Data capture will continue to search for data even if it doesn't find what you sent it to look for.

**(Character 27) (Type text) (Format yayyyyaaaaaa
aaa).**

The data to be captured for the COURSE subcolumn will begin at character 27, and there can be no spaces in the first seven characters. If you look at the source document closely, you can see that by using the y's, instead of a's or x's, only the course data can be captured. The a in the second position prevents part of the character counter from being captured.

If x's are used, everything, from a section of the character counter to data of cities and degrees, would be captured. If a's are used, the character counter would be eliminated, but data from cities and degrees would be captured.

Using the y's eliminates all lines of text because they all have at least one space between characters 27 and 34. Notice also that character 8 cannot be a y because English is then also ignored.

(End of group).

This line ends the grouping of subrows under the subcolumn COURSES.

(End of group).

This ends the grouping of subcolumns under SCHOOLING.

(End of Preamble).

This line ends the preamble.

This is a rather complex preamble. You should review the steps in developing it and refer to the "VP Data Capture" tab of the VP Series reference library for further explanation on the special formatting characters used with type properties and additional uses of the (Required no) property set.

In the following exercise, you add the preamble used in this chapter to the beginning of DC PR 6-1 and activate data capture to produce a table.

1. **Open DC PR 6-1.**
2. **Type** the preamble into the document, above the data.
3. **Close** the document.
4. **Select** [COPY TEXT TO TABLE] in the desktop auxiliary menu.
5. **Monitor** the system messages as data capture reads the preamble, sets up the table structure, and copies the data to the table.

Once data capture is finished, the new icon is placed on the desktop and highlighted. This document is the table resulting from the data capture operation.

The new icon may be under the open folder on the desktop. If this happens:

6. **Press** <MOVE> and indicate a place on the desktop to relocate the icon.
7. **Open** the icon.
8. **Evaluate** the table and compare it to Figure 6-3. Study the source document and the preamble if there is any problem.

EMPL NAME	DEPT	CITY	SCHOOLING		COURSES
			DEGREE	YEAR	
Jacobs, M..	Sales	Chicago	A.A.	1977	English
			B.S.	1980	Economics
					Philosophy
Smith, A.	Marketing	St. Louis	B.A.	1980	Business Admin.
Louis, D.	Research	Detroit	B.A.	1955	Philosophy
			M.S.	1957	Computer Science
			Ph.D.	1962	Computer Science
Linguistics					

Figure 6-3 Table with subcolumns and subrows

Summary

In this chapter, you studied using:

- The property of (Text group) to create a table with subrows or subcolumns
- The (Required no) property set to instruct data capture to continue if it does not find matching data.

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7. Changing column order

Overview

Very often the order in which the data appears in the source document is not the order in which you might like it to appear in the finished table. Because of this, data capture has the ability to capture data in a variety of ways.

This chapter discusses the **after** property, which captures data out of the order in which it was originally entered; and the **comment** property, which allows you to enter notes in the preamble.

Tables with column order changed

Using data capture and previously written preambles, you have created tables like the one in Figure 7-1.

Eastern	49,118.57
Central	26,737.00
Western	47,267.42

Figure 7-1 Region totals table

With a different preamble, you can create tables that capture employee data lines and ignore the regional data, like the one in Figure 7-2.

EMPLOYEE	HIRED	YTD EARNINGS
Smith, A.	02-11-68	12,778.23
Jones, E.	07-12-82	12,622.11
O'Brien, W.	02-13-68	23,718.23
Liou, D.	12-11-78	26,737.00
Smith, D.	12-21-82	0.00
Leary, T.	02-13-68	23,718.42
Fredholm, R.	12-11-78	22,737.00

Figure 7-2 Employee data table

In the table developed in this chapter (Figure 7-4), the data is going to be captured out of the order in which it appears. In the source document (Figure 7-3), the region totals are listed after the individuals' earnings. The problem this creates is that, in the table, this data is to be on the left and before the employee listings.

You cannot do this with any of the preambles already described because the Region Total fields occur after the data for the employees in that region.

```

(Comment changing column order).
(Name REGION) (Format ' Region: 'xxxxxxx).
(Name REGION TOTAL)(Type amount) (Format bbb,bb9.99)
(Character 25) (After EMPLOYEE LIST).
(Name EMPLOYEE LIST)(Type group).
  (Name EMPL NAME)(Length 13).
  (Name HIRED)(Type date)(Format mm-'dd'-
  'yy)(Character 15).
  (Name YTD EARNINGS)(Type amount)(Format
  bbb,bb9.99) (Character 25).
  (End of group).
(Comment
123456789012345678901234567890123456).
(End of preamble).
  Region:  Eastern
EMPLOYEE      HIRED      YTD EARNINGS
Smith, A.     02-11-68    12,778.23
Jones, E.     07-12-82    12,622.11
O'Brien, W.  02-13-68    23,718.23
Total Eastern
              49,118.57
  Region:  Central
EMPLOYEE      HIRED      YTD EARNINGS
Liou, D.      12-11-78    26,737.00
Smith, D.     12-21-82     0.00
Total Central
              26,737.00
  Region:  Western
EMPLOYEE      HIRED      YTD EARNINGS
Leary, T.     02-13-68    23,718.42
Fredholm, R. 12-11-78    22,737.00
Abel, C.      12-11-82     812.00
Total Western
              47,267.42

```

Figure 7-3 Preamble with data for out-of-order table

In this scenario, the after property makes it possible to assign the name of a group column sometime after the subtotal column appears in the source text.

With this preamble, data capture can construct a table incorporating the tables in Figures 7-1 and 7-2, and it can collect the data out of sequential order.

REGION	REGION TOTAL	EMPLOYEE LIST		
		EMPL NAME	HIRED	YTD EARNINGS
Eastern	49,118.57	Smith, A.	02/11/68	12,778.23
		Jones, E.	07/12/82	12,622.11
		O'Brien, W.	02/13/68	23,718.23
Central	26,737.00	Liou, D.	12/11/78	26,737.00
		Smith, D.	12/21/82	0.00
Western	47,267.42	Leary, T.	02/13/68	23,718.42
		Fredholm, R.	12/11/82	22,737.00
		Abel, C.	12/11/82	812.00

Figure 7-4 Resulting table from source document

Preamble analysis

The following is a line-by-line analysis of this preamble:

(Comment changing column order).

The comment property allows you include notes to the reader. The message is completely ignored by the system. The line will, however, set the properties for the table text.

(Name REGION) (Format ' Region: 'xxxxxxxx).

This sentence labels the first column REGION. It defines the format to be the word Region with one space before it and a colon and two spaces after it. If this pattern is not matched, that line in the data will be ignored.

(Name REGION TOTAL)(Type amount) (Format bbb,bb9.99) (Character 25) (After EMPLOYEE LIST).

This sentence labels the next column REGION TOTAL. The second clause specifies that the data will be numerical. The second one specifies that the format will allow up to 99,999.99, and that the data starts at character 25. The data to look for will follow a group

called EMPLOYEE LIST, and any data that occurs before the group EMPLOYEE LIST will be ignored.

(Name EMPLOYEE LIST) (Type group)

This line labels the next column EMPLOYEE LIST and sets up a subgroup.

(Name EMPL NAME) (Length 13) (Character 1).

This specifies the label of this subcolumn is EMPL NAME, that it is 13 characters long, and it starts at the left margin.

(Name HIRED) (Type date) (Format mm'-dd'-yy) (Character 15).

This sets up another subcolumn labeled HIRED. It is looking for the date characters in the prescribed format. The date starts at character 15.

(Name YTD EARNINGS) (Type amount) (Format bbb,bb9.99) (Character 25).

This third subcolumn is labeled YTD EARNINGS. It is looking for numbers in a prescribed format up to 999,999.99, and it begins at character 25.

(End of group).

This ends the EMPLOYEE LIST group.

You can place the character counter in the preamble as a comment, to avoid capturing parts of the counter when writing a more general preamble.

**(Comment
12345678901234567890123456789012).**

This comment line is entered at the bottom of the preamble just above the End of Preamble sentence, near the data. It has to be entered in a structured font to be of any use as a counter.

(End of preamble).

This ends the preamble.

In the following exercise, you add the preamble used in this chapter to the beginning of DC PR 7-1 and activate data capture to produce a table.

1. **Open** DC PR 7-1.
2. **Type** in the preamble above the source document so it looks like Figure 7-3.
3. **Close** the source document.
4. **Select** [COPY TEXT TO TABLE] in the desktop auxiliary menu.
5. **Monitor** the system messages as data capture reads the preamble, sets up the table structure, and copies the data to the table.

Once data capture is finished, the new icon is placed on the desktop and highlighted. This document is the table resulting from the data capture operation.

The new icon may be under the open folder on the desktop. If this happens:

6. Press <MOVE> and indicate a place on the desktop to relocate the icon.
7. Open the icon.
8. Evaluate the table and compare it to Figure 7-5. Study the source document and the preamble if there is any problem.

REGION	REGION TOTAL	EMPLOYEE LIST		
		EMPL NAME	HIRED	YTD EARNINGS
Eastern	49,118.57	Smith, A.	02/11/68	12,778.23
		Jones, E.	07/12/82	12,622.11
		O'Brien, W.	02/13/68	23,718.23
Central	26,737.00	Liou, D.	12/11/78	26,737.00
		Smith, D.	12/21/82	0.00
Western	47,267.42	Leary, T.	02/13/68	23,718.42
		Fredholm, R.	12/11/82	22,737.00
		Abel, C.	12/11/82	812.00

Figure 7-5 Resulting table from source document

Summary

In this chapter, you used the After property to create a table using data that appears in the source document. You also used the Comment property to add notes or a character counter to a preamble.

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8. Troubleshooting and tips

Overview

Often the table that data capture produces is blank, incomplete, or different from what you wanted. There are a number of things that may go wrong in the process. With a closer look at some of these problem areas and how to handle them, you can make data capture an extremely useful tool.

After completing this chapter, you should be able to set a preamble for multiple document use.

Troubleshooting preambles

When data capture doesn't produce the expected table, it is generally due to one of two things. The first is an unacceptable preamble. This is indicated by an error message displayed by the system. The process stops until the situation is rectified.

The message indicates where in the preamble the syntax error exists. Check the tab titled "System Messages" in the VP Series reference library for a listing of the error messages, along with some tips on making the necessary changes.

The second reason for not having the table produced is common when using data capture. The structure of the table is produced, but all the fields are blank. When this problem occurs, it is because no matches were found as stated in the preamble.

For a match to occur, the source text must match the preamble exactly at each character position. If a field is required but does not match the preamble, not only

will the row of data not be copied to the table, but data capture will stop looking for other matches.

To troubleshoot a preamble in this situation, insert the clause (Required no) for all columns except one. At least one column has to be required.

Insert (Required yes) in the preamble sentence that is the most straightforward and the easiest to match with the data. Remember, when using the property (Required no), if data capture doesn't find the match it is looking for, it will just go on to the next preamble sentence. If a preamble sentence includes (Required yes), which is also the default, and the data pattern is not found, the whole table will be thrown off, resulting in empty fields.

When you activate data capture by selecting [COPY TEXT TO TABLE], evaluate the results and gradually pinpoint the defective preamble sentence. Then remove the (required no) property sets.

A likely problem area is the (Format amount) property set because of the decimal point and the thousand separators (commas) required in certain positions. If possible, change these formats to ones easier to match, like all x's.

If, after (Required no) has been placed in all but one sentence, there is still an error message or blank fields, select [DON'T SHOW NON-PRINTING] in the document auxiliary menu to make sure that none of the spacing dots are periods or decimal points.

Reusing preambles

On some occasions you will have several source documents that can use the same preamble. Rather than going through the process of placing the preamble at the beginning of each of these documents, there is an easy way to have the data capture software do it for you. In the desktop auxiliary menu, there are two other data capture

commands in addition to [COPY TEXT TO TABLE]. These are [SET PREAMBLE] and [DISCARD PREAMBLE].

In the following exercise, you set a preamble for reuse.

1. Select DC PR 7-1 icon from the data capture folder.
2. Select [SET PREAMBLE] in the auxiliary menu.

The preamble from the document is now usable for each document you select to make into a table, until you select [DISCARD PREAMBLE], or until you log off the workstation.

If a preamble is already set, the new one replaces the old. If, however, the new preamble has a syntax error, that preamble is rejected, and the previously set preamble stays in effect.

Summary

In this chapter you studied how to set a preamble for multiple document use.

If you need more practice, complete the exercise again. To do this, use a new copy of the practice document for this chapter.

When you finish the progress check in Chapter 9, you will have completed the training for data capture. Refer to the tab titled "VP Data Capture" in the VP Series reference library for further information on this feature.

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9. Final progress check

Figure 9-1 is a source document to test your understanding of data capture. This source document is also available in the data capture folder.

1. Open DC PC 9-1 on your desktop and select [EDIT].
2. Write the preamble to produce the three column table shown in Figure 9-2.

There are five columns in the document. The only columns of interest for the table are 1, 4, and 5. This means you need three preamble sentences, plus the standard (End of Preamble) statement.

Display non-printing characters so that you can see the spaces. Each dot is a character space. Insert a character counter into the document, or as a comment in the preamble, for a more accurate space counting. Once your preamble is added to the top of the document, activate data capture to produce the table.

The preamble to produce the table, along with the steps to activate data capture, begin on page 9-2.

FISH	2.00	3	7	8.00
HARP	3.00	4	8	9.00
JULY	4.00	5	9	10.00
ROCK	5.00	6	10	11.00
TWIN	6.00	7	11	12.00
LINE	7.00	8	12	13.00
MOVE	8.00	9	13	14.00
TIME	9.00	10	14	15.00
WIND	10.00	11	15	16.00
MAIL	11.00	12	16	17.00
STOP	12.00	13	17	18.00
PART	13.00	14	18	19.00
TEST	14.00	15	19	20.00
RAYS	15.00	16	20	21.00
SLOW	16.00	17	21	22.00

Figure 9-1 Source document for progress check

WORDS	#	AMT.
FISH	7	8.00
HARP	8	9.00
JULY	9	10.00
ROCK	10	11.00
TWIN	11	12.00
LINE	12	13.00
MOVE	13	14.00
TIME	14	15.00
WIND	15	16.00
MAIL	16	17.00
STOP	17	18.00
PART	18	19.00
TEST	19	20.00
RAYS	20	21.00
SLOW	21	22.00

Figure 9-2 Data capture table

Answers to final progress check

To instruct data capture to produce the table :

Open the source document.

Enter a character counter.

Add the following preamble to the beginning of the source document:

(Name WORDS) (Type Text) (Format xxxxxx) (Character 6).
(Name #) (Type Amount) (Character 27) (Format B9).
(Name AMT.) (Type Amount) (Character 37) (Format B9.99).
(End of Preamble).

Figure 9-3 Preamble for final progress check

Here is how the preamble works:

(Name WORDS) (Type Text) (Format xxxxxx) (Character 6).

The column is labeled WORDS. It is looking for any 6 characters of text starting at character 9. It would normally need only 4 characters because there are no words longer than that, but space has to be made for the label WORDS.

This sentence can also be written:

(Name WORDS) (Length 9) (Character 6).

(Name #) (Type Amount) (Character 27) (Format B9).

The second column is labeled #. It will look for numbers up to 99, and will start looking at character 27.

(Name AMT.) (Type Amount) (Character 37) (Format B9.99).

The third column is labeled AMT. It will look for numbers up to 99.99, starting at character 37.

(End of Preamble).

This ends the preamble.

Close the source document.

Select [COPY TEXT TO TABLE] in the auxiliary menu.

Monitor the system messages as data capture reads the preamble, sets up the table structure, and copies the data to the table.

Once data capture is finished, the new icon is on the desktop and highlighted. This document can now be opened and the table can be changed to fit your needs.

Evaluate the table and compare it to Figure 9-2. If there is any problem with producing the table, compare your preamble with the one above, and review Chapter 8.