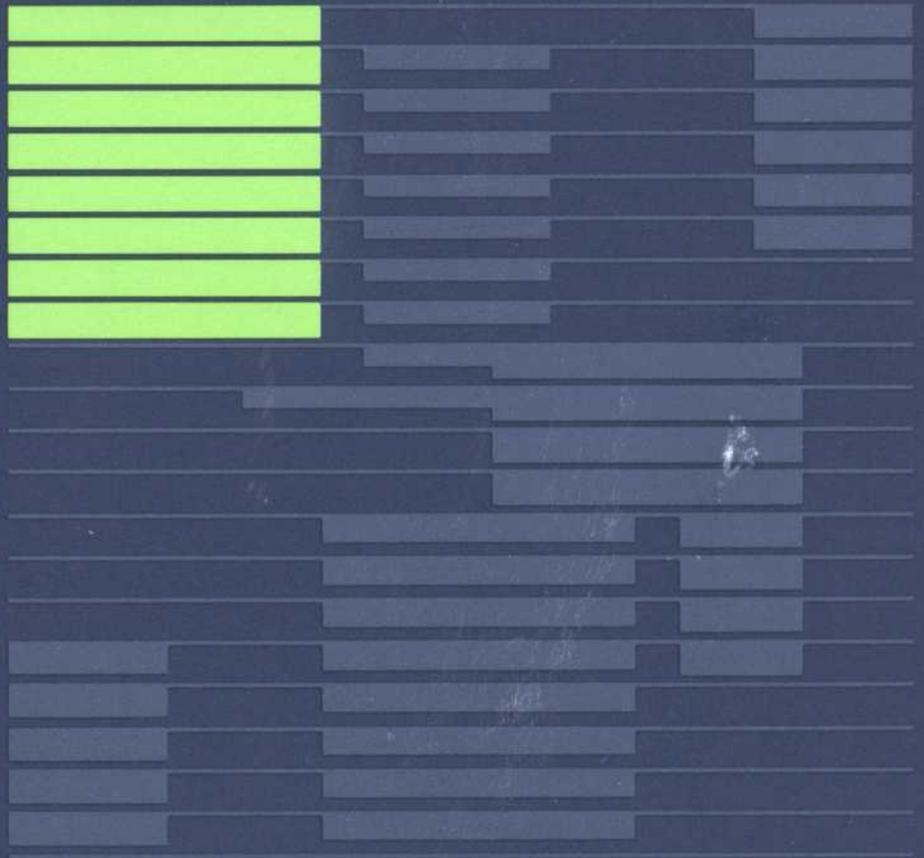




# Visi ON GRAPH™

## User's Guide



VisiCORP™





# VISI ON GRAPH™

## User's Guide

VISICORP™

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# Using this Guide

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## Using this Guide

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This guide contains additional information you may need for using the Visi On Graph™ program to create graphs for your own specific needs, update them, and transfer the information in them to the other Visi On™ programs.

The User's Guide is designed to be used *after* you have learned the basics of the program through the Visi On Graph QuickStart Course™. Figure 1 illustrates the relationships among the learning tools that are available to you.

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## Learning the Basics

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The Visi On Tutorial is an introduction to the Visi On environment. It teaches you, by having you actually use the computer, how to use the Visi On system with any of the Visi On programs. Anyone using the Visi On system should complete this Tutorial before attempting to use any of the Visi On programs.

The *Visi On User's Guide* provides a complete reference to the Visi On system. In addition to supplying a complete overview of the system, each chapter discusses one basic set of functions that you use within the system.

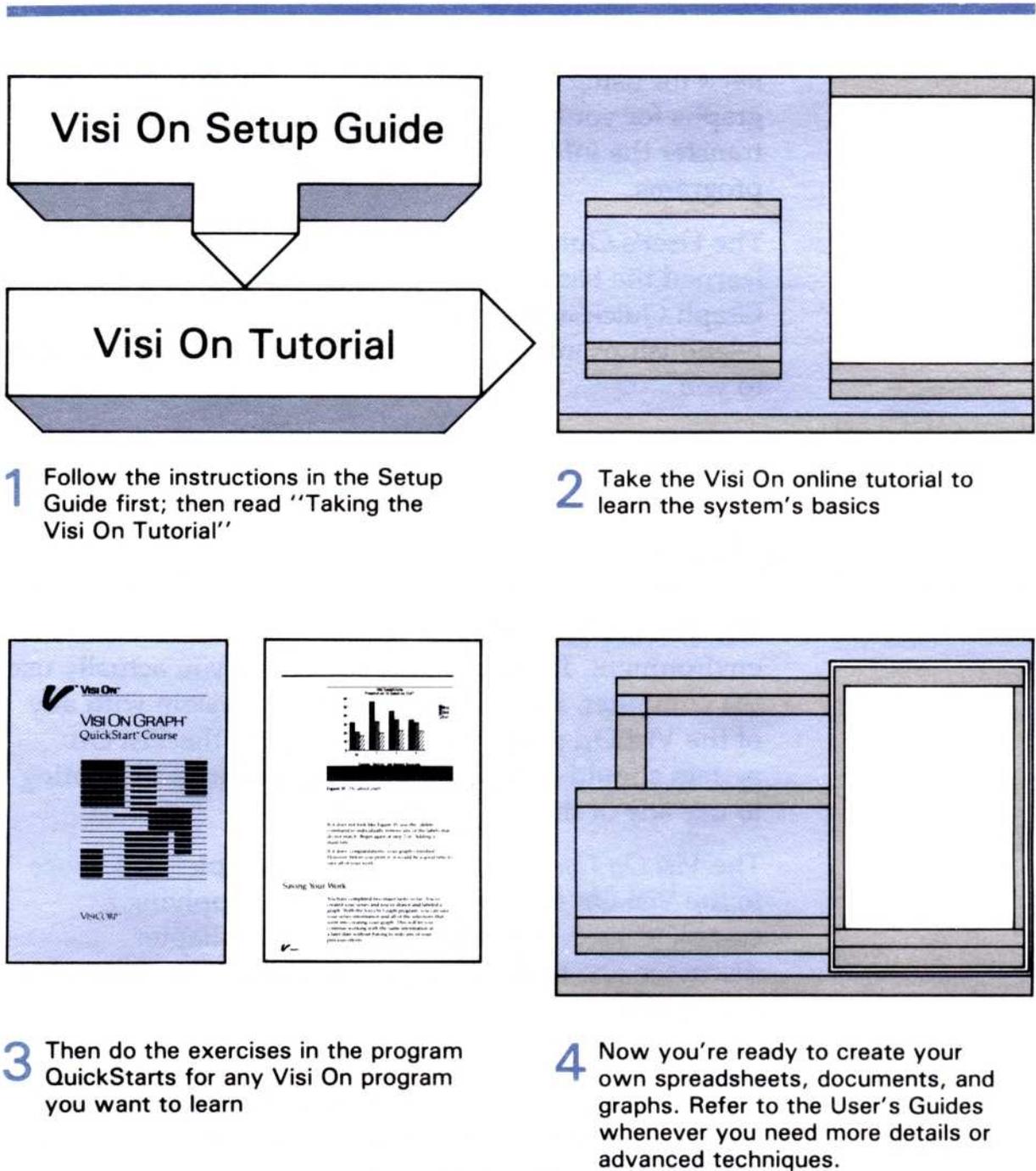
The *Visi On Graph QuickStart Course* teaches you the basic operations of the Visi On Graph program. Its hands-on exercises prepare you for entering data and creating your own graphs. Before you use the Visi On Graph program, you should take this QuickStart Course.

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## After the QuickStart™ Course...

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In this guide, instructions about the types of tasks you can perform with the Visi On Graph program are grouped together in chapters. Each chapter covers one general task within the program, such as entering series information or labeling a graph. All tasks related



**Figure 1.** *The Visi On Learning Tools*

to carrying out that operation (such as entering, moving, and removing labels) are described in detail within that chapter.

After you read Chapter 1, which discusses the program's concepts and terminology, you can go directly to any chapter containing specific information you need to complete a task.

For example, if you feel comfortable with series editing and plotting graphs after completing the QuickStart Course, you can either begin creating simple graphs, or turn to Chapter 5, “Enhancing Your Graphs,” to get more information about changing a graph’s appearance. If, however, you need details on printing, go directly to Chapter 6, where you’ll find examples of the different types of printed displays you can create.

In either case, and at any time, you can go directly to the type of instruction you need.

## Getting Help

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The Visi On Help facility is available to you at any time. Simply selecting “HELP” from the Visi On menu line at the bottom of your screen will provide you with additional instructions that can help you with the task you are doing. You simply point to and select the item you need help with on the screen, and a special Help window opens that contains instructions for that particular item.

## Organization of this Guide

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This guide consists of five major sections:

- **OVERVIEW** contains the terminology and basic concepts used in the program, as well as summaries of program operations, such as starting and quitting the program.
- **BASIC OPERATIONS** consists of eight chapters that contain step-by-step procedures for performing all the tasks related to each program operation. You can select which section of each chapter you need to read or review, depending on the task you want to perform.
- **EXAMPLES** guide you through several applications you may use with the Visi On Graph program.

- **MESSAGES** lists all the error messages the program can give you. Each error message is explained, describing what could have caused the error and giving details what you can do to correct it.
- **GLOSSARY/INDEX** provides both a glossary that defines all the terms used in the Visi On Graph program and an index to the guide. It can be effectively used for learning or reviewing special terms that might be unfamiliar to you. The index lists and cross references all major topics and terms used in this guide, providing a quick reference for locating any program function or command.

**CHAPTER 1: OVERVIEW** introduces the Visi On Graph program and its basic concepts and features.

**CHAPTER 2: SAVING, GETTING, AND ORGANIZING SERIES AND GRAPHS** provides the information you need to know about storing (saving) and retrieving (loading) files. This chapter also discusses saving and loading a complete graph and clearing information from the computer's memory.

**CHAPTER 3: CREATING SERIES** outlines all the steps needed to enter the information you want to turn into a graph. The Visi On Graph program requires you to enter all your data as series values before it can draw your graphs.

**CHAPTER 4: TURNING SERIES INTO GRAPHS** contains all of the steps needed to create bar, line, pie, X-Y, area, and high-low-close graphs.

**CHAPTER 5: ENHANCING YOUR GRAPHS** contains information applicable to all types of graphs. It discusses labeling and removing labels from an existing graph, overlaying graphs, and changing a graph's range and scale and changing graph display options.

**CHAPTER 6: PRINTING** discusses how you print your graphs and series information.

**CHAPTER 7: TRANSFERRING INFORMATION** describes what types of information can be transferred into and out of the Visi On Graph program from other Visi On programs, and how to specify the areas to be transferred.

CHAPTER 8: EXAMPLES provides step-by-step examples for creating samples of each type of graph. This chapter also introduces you to alternate ways of displaying your information.

CHAPTER 9: MESSAGES lists the error messages that might display when you are using the Visi On Graph program. Each message description contains an explanation of what caused the error and what you can do to correct the problem.

APPENDIX A: CONVERTING VISITREND/PLOT® SERIES FOR USE WITH THE VISI ON GRAPH PROGRAM describes the procedures for converting VisiTrend/Plot so you can use them with the Visi On Graph program.

The GLOSSARY gives you definitions of the most commonly used terms in the User's Guide. This serves as a ready reference you can use to become more familiar with terms used in the Visi On program.

An INDEX provides a quick reference to any topic in the manual. You will find the Index particularly useful in locating commands that are used in more than one task.

## When You're Looking at the Screen . . .

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Menu commands, prompts, and messages that you see on your computer screen appear in this guide in "quotation marks."

Characters that you type at your keyboard—to enter data, for example—appear in this guide in **boldface type**.

## While You're Using the Program . . .

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Built-in prompts and messages will guide you through most of the basic operations. For example, the program may ask you to supply information by typing it at the keyboard or selecting an item with your pointer. You can do all of the operations within the Visi On Graph by following the instructions on the screen.

The Visi On system is designed so that you can work with it in a natural way. After you've become used to it, you may need to refer to this guide only rarely to explore some of the more sophisticated applications of the Visi On Graph program. But, if you ever need complete, task-oriented instructions, the *Visi On Graph User's Guide* is your ready reference to the program.





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# 1

# Overview

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## Chapter 1

## Overview

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What Is the Visi On Graph™ Program?	1-1
How Do You Use the Visi On Graph Program?	1-2
Using Visi On Graph Menus	1-4
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This brief chapter introduces you to the basic concepts of the Visi On Graph™ program. You should know how to use the basic Visi On commands, the pointing device, and how to open and close windows as described in the on-screen Visi On Tutorial.

If you have taken the Visi On Graph QuickStart™ Course, you will know the basic concepts discussed in this chapter. You can skim this chapter as a refresher and go directly to any subject in this User's Guide that you want to learn more about.

If you are completely new to the Visi On Graph program, you should read this chapter for a basic understanding of the Visi On Graph program, how it is used, and what steps you should take to get started using the program.

---

## What Is the Visi On Graph™ Program?

---

The Visi On Graph program allows you to create meaningful graphic displays based on your information. A powerful editor lets you enter and manage your numeric information, while the heart of the program takes this information and creates bar, line, area, pie, XY, and high-low-close graphs. You have instant control over display options, deciding whether to add grids, shading, framing, and others. You can easily create, move, and remove labels on your graphs. The files system lets you save all of your work, from your basic numeric information to your completed graphs, for use in a later session.

The Visi On Graph program can accurately plot each specific value and automatically register its horizontal and vertical position. You only need to enter your numbers and choose a graph type; the program does the rest. If your values change, use the program editor to replace the current values with the new figures. Redrawing your graph is simple after that. You can play "what if. . .," trying out different numbers and graph types until you decide on just the right manner of presentation you need.

The Visi On Graph program allows you to work with 24 different sets of information (up to 24,000 values total—one thousand per set) at a time, using up to 12 of them in a graph. You can keep eight graphs ready to print at any time. Through use of the files system, you can keep an almost unlimited number of either, ready at a moment's notice.

With the Visi On Graph program you have an array of commands and design features that make the program easy to use and responsive to your creative needs and, as with all Visi On programs, you simply point at commands and options to make the program do what you want it to do.

## How Do You Use the Visi On Graph™ Program?

---

You use the Visi On Graph program in two basic ways:

- You enter data directly by typing it into the program editor, or import values from other Visi On programs by using the Visi On “TRANSFER” command.
- You then select a graph type and plot the graph, optionally changing or adding display options to enhance and clarify your graph. Each command that you select either leads you through a special sequence of choices or gives you another set of choices that you can pick. You can choose commands quickly with the pointer.

Typing in data (entering it) is generally straightforward. The program offers special ways to enter data in the most efficient manner. Here we will give you an overview of the Visi On Graph basic commands. Each command is discussed in detail in the appropriate chapter of this User's Guide.

When you first open a Visi On Graph window and view the initial screen, you see the main menu at the bottom of the window. The main menu has ten commands that let you do various tasks with the Visi On Graph program. Commands that are spelled with an initial capital letter have an Options sheet that is displayed when you select “OPTIONS” from the Visi On menu line. These options let you set special characteristics for your graphs.

The basic Visi On Graph commands from the main menu are:

- |                 |   |
|-----------------|---|
| <b>data</b>     | The “data” command lets you select information to be plotted as a graph or previously plotted graphs to be displayed.   |
| <b>style</b>    | The “style” command allows you to choose the type of graph that will be plotted.  |
| <b>plot</b>     | The “plot” command draws the graph using the selected information and style of graph.   |
| <b>Annotate</b> | The “Annotate” command lets you add labels to a plotted graph.  |
| <b>Edit</b>     | The “Edit” command lets you enter your information in organized series.   |
| <b>Print</b>    | The “Print” command lets you specify what you want to print and prints it out for you so that you can have a paper copy of your work for reports or presentations.  |
| <b>erase</b>    | The “erase” command clears the currently plotted graph from the display.  |
| <b>rescale</b>  | The “rescale” command lets you change the maximum and minimum heights and widths that will be plotted in the graph.   |
| <b>file</b>     | The “file” command lets you store your series and graphs permanently on hard disk. When you are creating or revising a series or graph, it is only temporarily in computer memory and must be stored permanently if you want to reuse it in the future. |
| <b>quit</b>     | The “quit” command makes it possible for you to remove the Visi On Graph window from the Visi On screen.  |

Commands that begin with an initial capital letter have an options sheet that is displayed when you select "OPTIONS" from the Visi On menu line. These options let you set special characteristics for your graphs that are associated with the command that you chose; for example, Graph options let you alter or enhance the currently displayed graph.

The Visi On Graph commands are grouped in menus so that one menu logically follows another when you do a particular task (see Figure 1-1). Options are displayed in vertical strips, or *sheets*, that are available with each corresponding menu (see Figure 1-2). It's a straightforward, commonsense structure that you will find easy to use as you learn the Visi On Graph program.

## Using Visi On Graph™ Menus

Now that you are familiar with what the commands do, how do you actually use them to do various tasks? You perform tasks in the Visi On Graph program by selecting commands from one or more menus. For example, if you want to select a line graph type to be plotted in your next graph:

1. Select "style" from the Graph main menu.
2. Select "line" from the graph style menu.
3. Select "line" from the line style menu.

Figure 1-3 shows you the menus you would use for this example.

**Figure 1-3.** To select a new graph to display, follow this typical Visi On Graph menu path.

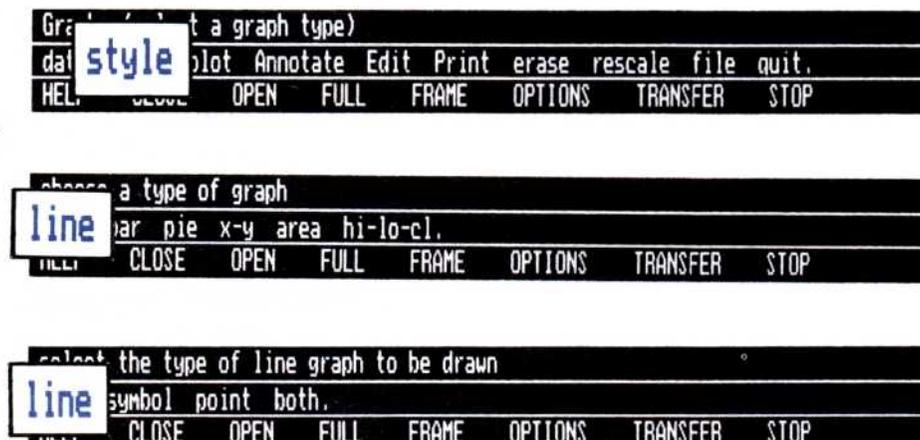
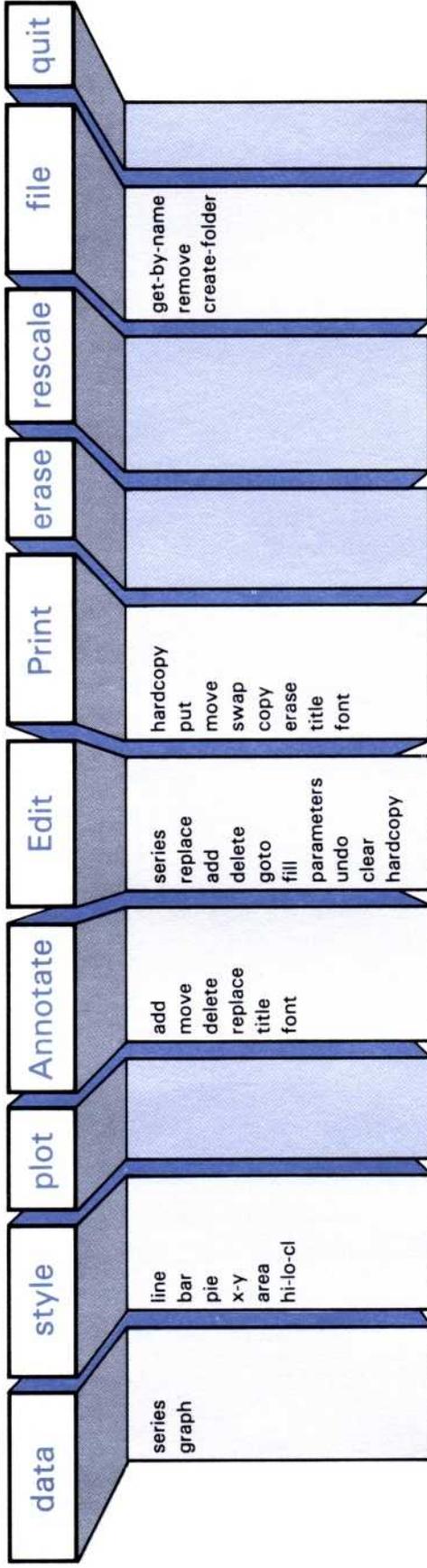


Figure 1-1.



**VISION**<sup>TM</sup>

**VISION GRAPH**<sup>TM</sup>

Command Structure Chart



Figure 1-2.

Edit	Annotate	Graph	Print
<p>Data Display Format  <input checked="" type="checkbox"/> floating point  <input type="checkbox"/> dollars  <input type="checkbox"/> fixed point    2</p> <hr/> <p>CONTROL PRINTING</p> <p>Number of Copies    1</p> <p>Pause After Page?  <input type="checkbox"/> yes    <input checked="" type="checkbox"/> no</p> <hr/> <p>LAYOUT PAPER</p> <p>Length    11.0 in  Width    8.50 in  Top Border    1.0 in  Left Border    1.0 in</p> <hr/> <p>PRINT DOCUMENT ON</p> <hr/> <p>PARTITION DOCUMENT</p> <p>Lines Per Page    55</p> <p>Options</p>	<p>Redraw Mode  <input checked="" type="checkbox"/> automatic  <input type="checkbox"/> manual</p> <hr/> <p>CHART LAYOUT</p> <hr/> <p>Grid Lines  <input type="checkbox"/> both  <input type="checkbox"/> horizontal only  <input type="checkbox"/> vertical only  <input checked="" type="checkbox"/> none</p> <p>Shading    <input type="checkbox"/> yes    <input checked="" type="checkbox"/> no</p> <p>Legend    <input type="checkbox"/> yes    <input checked="" type="checkbox"/> no</p> <p>Framing  <input type="checkbox"/> both  <input type="checkbox"/> inner  <input type="checkbox"/> outer  <input checked="" type="checkbox"/> none</p> <p>Screen Background  <input checked="" type="checkbox"/> black  <input type="checkbox"/> white</p> <p>Size  <input checked="" type="checkbox"/> full window  <input type="checkbox"/> hardcopy size</p> <hr/> <p>X AXIS ATTRIBUTES</p> <p>Tick mark labels  <input checked="" type="checkbox"/> major and minor  <input type="checkbox"/> major only  <input type="checkbox"/> none</p> <p>Tick mark label format  <input checked="" type="checkbox"/> floating point  <input type="checkbox"/> dollars  <input type="checkbox"/> fixed point    1</p> <hr/> <p>Y AXIS ATTRIBUTES</p> <p>Tick mark labels  <input checked="" type="checkbox"/> major  <input type="checkbox"/> none</p> <p>Tick mark label format  <input checked="" type="checkbox"/> floating point  <input type="checkbox"/> dollars  <input type="checkbox"/> fixed point    1</p> <p>Options</p>	<p>Redraw Mode  <input checked="" type="checkbox"/> automatic  <input type="checkbox"/> manual</p> <hr/> <p>CHART LAYOUT</p> <hr/> <p>Grid Lines  <input type="checkbox"/> both  <input type="checkbox"/> horizontal only  <input type="checkbox"/> vertical only  <input checked="" type="checkbox"/> none</p> <p>Shading    <input type="checkbox"/> yes    <input checked="" type="checkbox"/> no</p> <p>Legend    <input type="checkbox"/> yes    <input checked="" type="checkbox"/> no</p> <p>Framing  <input type="checkbox"/> both  <input type="checkbox"/> inner  <input type="checkbox"/> outer  <input checked="" type="checkbox"/> none</p> <p>Screen Background  <input checked="" type="checkbox"/> black  <input type="checkbox"/> white</p> <p>Size  <input checked="" type="checkbox"/> full window  <input type="checkbox"/> hardcopy size</p> <hr/> <p>X AXIS ATTRIBUTES</p> <p>Tick mark labels  <input checked="" type="checkbox"/> major and minor  <input type="checkbox"/> major only  <input type="checkbox"/> none</p> <p>Tick mark label format  <input checked="" type="checkbox"/> floating point  <input type="checkbox"/> dollars  <input type="checkbox"/> fixed point    1</p> <hr/> <p>Y AXIS ATTRIBUTES</p> <p>Tick mark labels  <input checked="" type="checkbox"/> major  <input type="checkbox"/> none</p> <p>Tick mark label format  <input checked="" type="checkbox"/> floating point  <input type="checkbox"/> dollars  <input type="checkbox"/> fixed point    1</p> <p>Options</p>	<p>Partitioning  <input checked="" type="checkbox"/> none  <input type="checkbox"/> vertical  <input type="checkbox"/> horizontal  <input type="checkbox"/> quadrants</p> <hr/> <p>CONTROL PRINTING</p> <p>Number of Copies    1</p> <p>Pause After Page?  <input type="checkbox"/> yes    <input checked="" type="checkbox"/> no</p> <hr/> <p>LAYOUT PAPER</p> <p>Length    11.0 in  Width    8.5 in  Top Border    0.5 in  Left Border    0.5 in</p> <hr/> <p>PRINT GRAPH ON</p> <hr/> <p>Options</p>



**VISI ON™**

**VISI ON GRAPH™**  
Options Sheets



As you use a *menu path* (sequence of menus), notice that it tells you where you are in the program. After the program completes a command, the program returns you to the menu from which you selected that command.

For example, when you finish selecting a new graph to display, you are returned to the Graph main menu. From there you could perform other tasks or leave the Visi On Graph program. You can go from menu to menu by selecting the name of the menu from the menu path line above the command line or by selecting menu items that begin with capital letters.

Figure 1-4 illustrates the general use of the Visi On Graph program.

## Quitting the Program

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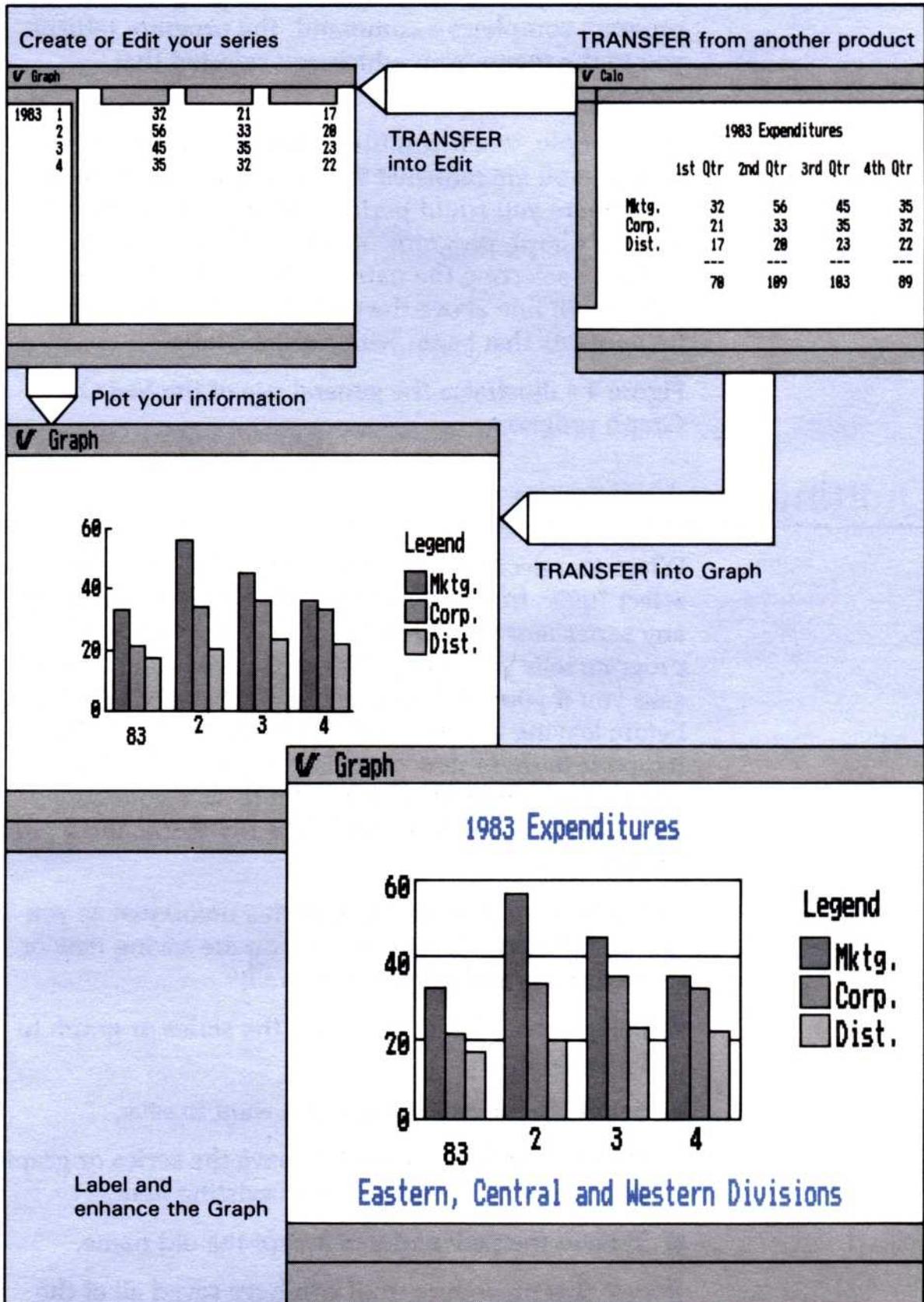
When you decide to leave the Visi On™ Graph program, select “quit” from the Graph main menu. If you have any series and graphs that you have not yet saved, the program tells you that you haven’t saved some files and asks you if you want to save these series and/or graphs before leaving the program. If you do not care what happens to these new or revised series, you select “no” and exit the program. If you want to save your series and graphs, you select “yes” from the menu and a Files display appears.

You save a series or graph from this menu just as you do from the Files display when you are saving new or revised series and graphs. Generally:

- Select which folder you want the series or graph to be saved in.
- Select the series or graph you want to save.
- Decide whether you want to save the series or graph as a new item or to replace an existing item.
- Type in the new name or accept the old name.

Repeat this procedure until you have saved all of the series and graphs you want.

You can then select “done” from the Files display menu to return to the Graph main menu and quit the program.



**Figure 1-4.** The Visi On Graph program can be used in a number of ways, each tailored to your particular needs. Whether you are entering your values directly, or transferring them from another program, the Visi On Graph program lets you manage the information and choose the best way to display and print your graphs.

## Summing up

---

This overview of the Visi On Graph program provides the basic concepts necessary to understand what the Visi On Graph program can do for you and how the program works.

If you have not taken the Visi On Graph QuickStart Course, you should do so before proceeding with the rest of this manual. Use the *Visi On Setup Guide* for instructions on how to get your program ready to be used.

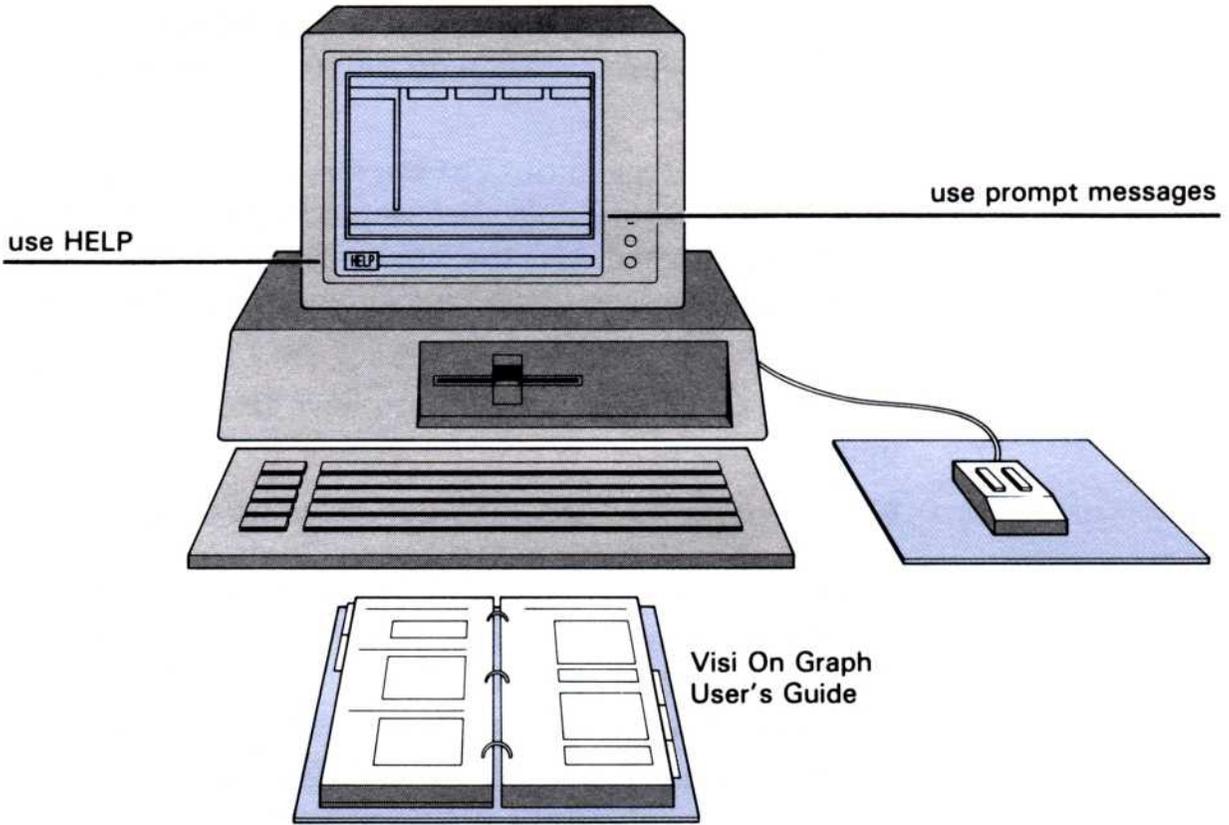
After the QuickStart Course, you have several options open to you:

- Start using the Visi On Graph program on your own immediately. Refer to this User's Guide only when you need help with specific procedures. Otherwise read the prompt messages that guide you through most operations or select "HELP" whenever you need assistance in doing or understanding a task.

This manual was designed for flexible access to information about the program. Each chapter is independent and need not be read in order. Topics related to each other are grouped together and treated in a step-by-step manner. Use this manual as your need arises.

- Go to the Exercises chapter in the manual if you would like more practice creating different types of graphs using the program. There are many types of graphs available to you, however, and you should not feel that you must try them all before proceeding. Most can be learned as you go.

Figure 1-5 illustrates the tools available to you while you learn and use the Visi On Graph program.



**Figure 1-5.** *The Visi On Graph User's Guide, Visi On Graph QuickStart Course, and Visi On "HELP" command are always available to you while you learn and use the program.*





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# 2 Saving, Getting, and Organizing Series and Graphs

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## Introduction

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After you create series and graphs with the Visi On Graph™ program, you'll usually want to use them again at a later time. To do this, you need a permanent copy that you can get easily any time you want it. This chapter shows you how to save series and graphs and get them from the Visi On Graph filing system. In addition, it shows you how you can organize these *files* (saved series and graphs) into folders for efficient use.

## Saving, Getting, and Organizing Series and Graphs: An Overview

---

In this section, we describe the basic concepts of saving, getting, and organizing series and graphs into folders. Later in this chapter, exact instructions are given for each procedure.

You *save* a series or graph when you want to keep a permanent record of it. When you are creating or changing previously saved series or graphs, the new or changed item has not been permanently stored. If you turn off the computer or remove the series or graphs, you lose the information that has not been saved. To save the new or changed series or graph you use the Visi On Graph "file" command.

You *get* a saved series or graph when you want to use it again by selecting "file" from the Graph main menu. When you get a saved graph, all of the series that were originally used to create it are automatically gotten as well.

When you select the "file" command from the Graph main menu to save or get a series or graph, the *Files display* appears (see Figure 2-1). The Files display is the heart of the storage and retrieval system.

The Files display is your view into the Visi On Graph Archives, your personal filing system for series and graphs you create. The Visi On Graph Files display is basically the same as all Visi On Files displays.

Displays the names of saved folders in the current folder

---

Displays the names of saved series and graphs in the current folder

---

Displays series and graphs that are gotten from storage

```

to OPEN a folder, select below
(Archives) CUR
Exercises

to GET a series or graph, select below
NatInc....Ser
Whole.....Gra

WORKING FOLDER: to SAVE a series or graph, select below

Name          Type   Period Major Minor Points
* EuroInc     Series  12 1983   1   12
* Graph83     Graph  hi-lo-cl line

or select one of the following
get-by-name remove create-folder done.
HELP  CLOSE  OPEN  FULL  FRAME  OPTIONS  TRANSFER  STOP
        
```

**Figure 2-1.** The Visi On Graph Files display is where you save series and graphs permanently, get series and graphs to work on (put them in the working folder), and organize series and graphs into folders.

The bottom part of the Files display—the working folder—shows a list of the series and graphs that you put into the working folder by selecting them from the middle part of the Files display, or that you created during your use of the program. An asterisk (\*) next to a series or graph is the program’s way of telling you that a series or graph has not been saved since its creation or last modification. To save it, simply select it from the working folder and follow the prompt messages (exact procedures are described later in this chapter).

The middle part of the Files display is where a saved series or graph is put for permanent storage. It also is where you select a saved series or graph to get it for the working folder so you can work on it. You can, if you want, save all of your series and graphs here without ever using the top part of the Files display. In this case, all of your series and graphs are saved in one central folder called the Archives central folder.

However, the top part of the Files display lets you organize files (saved series and graphs) into folders. A

to GET a series or graph, select below

NatInc....Ser  
Whole....Gra

WORKING FOLDER: to SAVE a series or graph, select below

Name	Type	Period	Major	Minor	Points
* EuroInc	Series	12 1983		1	12
* Graph83	Graph	hi-lo-cl	line		

or select one of the following

Select a name to get it for the working folder

An asterisk (\*) means the series or graph is not saved

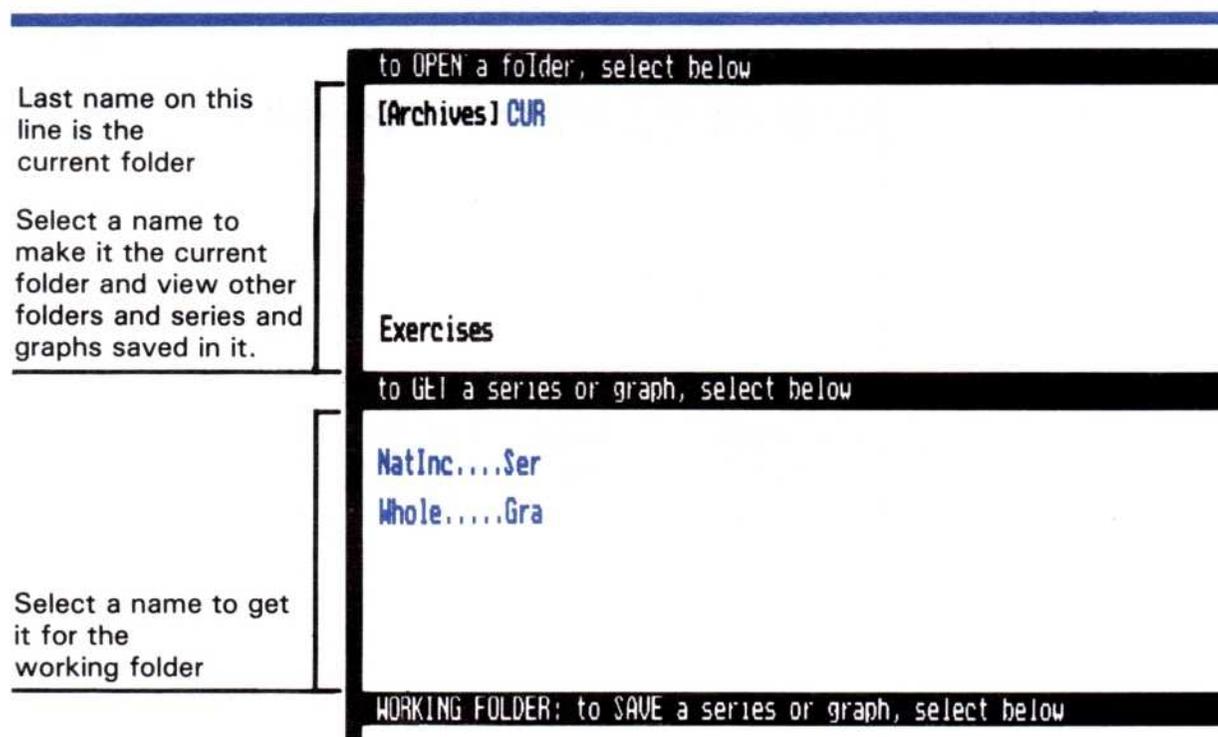
Select a series or graph from this area to save it

**Figure 2-2.** Use the bottom part of the Files display—the working folder—for saving a series or graph that has not been saved (any series or graph with an asterisk) and to hold series and graphs that you want to work with or use.

folder is simply a collection of series and graphs and, if you create them, other folders. You can create a folder, collect related series and graphs in it, and display the name of the folder in the top part of the Files display.

You can see the contents of a folder when you make it the *current folder* by selecting the folder you want from the top part of the Files display. When you select it, the name of the current folder is displayed on the same line as “[Archives].”

Any folders in the current folder are displayed in the top part of the Files display, and any series and graphs in the current folder are displayed in the middle part of the Files display. By selecting folders from the top part to make them the current folder, you can browse through your folders, viewing the series and graphs in them. When you find a series or graph you want to work with, you select it from the middle part, and a copy of it is put in the working folder. The process of organizing your series and graphs into folders is illustrated in Figure 2-3.



**Figure 2-3.** The top part of the Files display is used for creating folders for collecting related series and graphs.

At the bottom of the Files display are the Visi On Graph Files display commands. In brief, these commands let you do the following operations:

- get-by-name** Lets you type in the name of any file you want to get out of storage by its exact name. This lets you get a file that is inside a folder (or several folders) without browsing through all the folders to search for it. However, you must know the folder(s) in which the file is saved and you must type in their names and the file names.
- remove** Lets you select series and graphs that you want to erase from the working folder and from the middle part of the Files display. Removing a series or graph completely erases it from either the working or current folder. The last item that was removed may be retrieved from the *wastebasket* (see “Getting a File out of the Wastebasket” in Chapter 5 of the *Visi On User’s Guide* for exact procedures).

- create-folder** Lets you name a new folder. When you name it, it becomes the current folder and you can put series and graphs into it.
- done** Lets you return to the Graph main menu.

With this overview of the Visi On Graph Files display, we can now describe the specific steps you take to save, get, and organize your series and graphs for easy handling.

## Saving a Visi On Graph™ Series or Graph

---

After you have created a new series or graph, you begin to save it by selecting “file” and viewing the Files display. While you are creating or revising a series or graph, you may want to periodically save it so that your work is not lost, for example, in case of a power failure. The procedures for saving a new series or graph are slightly different from the procedures for saving a revised series or graph that has been saved previously.

When you save a series or graph, you may rename it. The series or graph is filed under this name or the name you gave it when you created it. File names can have up to 12 alphanumeric characters and can contain spaces between characters.

The Files display working folder contains the series or graphs that you have available to work on. The unsaved series and graphs you have created or modified are indicated by an asterisk (\*) beside the name of the series or graph.

The differences in the way you save new and revised series and graphs have to do with naming the series or graph you want to save.

## Saving a New Series or Graph

---

Whenever a new series is created in the Edit display, its name is automatically listed in the working folder. From there it may be permanently saved in the current folder. Graphs, on the other hand, must be *frozen* before they

appear in the working folder and can be permanently saved.

If you are saving series without saving graphs, you can go directly to “Saving series and graphs” later in this section.

### Freezing graphs

Graphs must be *frozen* before they appear in the working folder and can be permanently saved. A frozen graph is more than the picture you have created in the Graph display. Each stored graph keeps a record of the series that were used to create it, the option settings, the annotation, and the scale and range of the graph. Frozen graphs can also be used when you print your graphs on paper. (See Chapter 6, “Printing,” for more information.)

There are two steps in saving a graph. In the first step you freeze the current graph, temporarily saving it in the working folder. In the second step you save the working folder copy of the frozen graph in the current folder. The second step does not have to be done immediately after the first, but must be done before you quit the Visi On Graph program.

Begin this process in the Graph display with the graph you want to freeze showing.

To freeze a graph

1. Select “data” from the Graph main menu.

---

2. Select “graph” from the data menu.

---

3. Select “freeze.”

---

4. Type a name for the frozen graph page, followed by .

---

5. The graph is temporarily saved in the working folder and you are returned to the Graph main menu.

The frozen graph is temporarily saved in the working folder, the contents of which will be lost when you leave the Visi On system. If you want to put the graph into an permanent archives folder, follow the steps in “Saving series and graphs.”

## Saving series and graphs

To save a new series or graph

1. Select from the top part of the Files display the folder that you want the series or graph to be saved in. The folder you select becomes the current folder, and its name displays as the last name on the Archives line. If the folder you want to use is already the current folder you may skip this step.
    - If you want to save your series or graph in a new folder, select “create-folder,” type in the folder name, and press . The series or graph will be saved in this folder.
    - If you have no folders and you don’t want to save the series or graph in a specially named folder, select “[Archives]” from the top part of the Files display. The series or graphs will be saved in the Archives central folder when you complete the following steps.
- 
2. The series and graphs are displayed in the working folder. To save a series or graph, select its name from the working folder.
- 
3. You have two choices for naming your series or graph file:
    - If you want to create a new name for your series or graph file, select “create” from the menu line. (If you wish to use the default name, press , and the name of your file will be default name.)
      - Type up to 12 characters for the new name that you want. You can use the  and  keys to delete single characters or the  key to delete the entire line. Do not type in the name of any file that already exists in the current folder unless you want to replace that file with this new file, as that old file will be removed. (In some cases the old file can be retrieved from the *wastebasket*. See “Getting a File out of the Wastebasket” in Chapter 5 of the *Visi On User’s Guide*.) Press  after you have typed the name.

—Alternatively, you can save a series or graph in a folder that is not the current folder. Type the folder name first, followed by a slash (/), and then the series or graph name you want. If you have created folders within folders, type in all folder names first, separated by slashes, and then the series or graph name you want. See the section “Organizing Your Series and Graphs” for details on creating folders.

- If you want the series or graph to replace a file that is displayed in the middle part of the Files display, select the name you want from the middle part. The file in the middle part will be replaced by the series or graph you selected from the working folder. It is displayed in the middle part, and it retains the name of the file in the middle part.

- 
4. Your series or graph is saved permanently in the current folder. A copy of the same series or graph remains in the working folder. You can now return to the Graph main menu by selecting “done” from the Files display menu. You may also get a saved series or graph in the working folder for revisions. See the appropriate sections under “Getting a Visi On Graph Series or Graph.”

## Saving a Revised Series or Graph

---

After you have saved a series or graph, then later revise it, you will likely want to save it again. The procedure for doing this is similar to saving a new series or graph, but because in this case the series or graph already has a name, the steps you take to name the series or graph can be slightly different, depending on whether you want to completely replace the original or to keep both the original *and* the revised version.

If you want to completely replace the original saved series or graph with the modified series or graph, the steps are simple. Select the “file” command from the Graph main menu; then follow these steps:

To replace a saved series or graph

1. Select from the working folder the name of the series or graph.
2. Select “replace” from the menu line.

---

It is that simple. You do not need to be concerned

about folders. The program finds the original saved series or graph automatically even if it is not in the currently displayed folder and replaces it with the series or graph that you selected from the working folder. The original series or graph is gone, but you can even retrieve the original under some circumstances (see “Getting a File out of the Wastebasket” in Chapter 5 of the *Visi On User’s Guide* for exact procedures). The series or graph that is now saved retains the name of the original.

Your series or graph is saved permanently in its original folder. A copy of the series or graph remains in the working folder. You can now return to the Graph main menu by selecting “done” from the Files display menu. You can keep track of each version of a series or graph that you create by giving each revised series or graph a related but different name; for example, Sales 1, Sales 2, Sales 3. If you want to preserve the original saved series or graph and save the revised version also, follow these steps after you have selected “file” from the Graph main menu:

To save both versions

1. Select from the top part of the Files display the folder that you want the series or graph to be saved in. In this case, you will likely want to select the folder that has in it the original series or graph. The folder you select becomes the current folder, and its name displays as the last name on the Archives line.
    - If you don’t select a folder, the series or graph will be saved in the folder that is currently displayed.
    - If you want to save your series or graph in a new folder, select “create-folder,” type in the folder name, and press . The series or graph will be saved in this folder.
    - If you have no folders and you don’t want to save the series or graph in a specially named folder, select “[Archives]” from the top part of the Files display. The series or graph will be saved in the Archives central folder when you complete the following steps.
- 
2. Select the series or graph from the working folder.
- 
3. To create a new name for your series or graph file, select “create” from the menu line.

(You could have selected a name from the middle part of the Files display, but the series or graph would then be saved under that name. You could have also replaced the original, but in this case, you want to preserve the original and save the revision.)

- 
4. Type up to 12 characters for the new name that you want. You can use the **DEL** and **BKSP** keys to delete single characters or the **END** key to delete the entire line.

Do not use the default name or type in the name of any file that already exists in the current folder unless you want to overwrite that file with the new file. The old file may be lost. (In some cases the old file can be retrieved from the *wastebasket*. See “Getting a File out of the Wastebasket” in Chapter 5 of the *Visi On User’s Guide*.)

You can distinguish this name from the original by simply adding a number or letter to indicate it is a revision. For example, if the original name was Sales, you can name this revision Sales1.

- 
5. Press **↵**.

Your series or graph is saved permanently in the current folder you selected. A copy of the series or graph remains in the working folder.

You can now return to the Graph main menu by selecting “done” from the Files display menu. You may also get a saved series or graph in the working folder for revisions. See the appropriate sections under “Getting a Visi On Graph Series or Graph.”

---

## Saving a Series or Graph When You Quit the Program

---

When you decide to leave the Visi On Graph program, select “quit” from the Graph main menu. If you have any series and graphs that you have not yet saved, the program tells you that you haven’t saved some files and asks you if you want to save these series and/or graphs before leaving the program. If you do not care what happens to these new or revised series, you select “no” and exit the program. If you want to save your series and graphs, you select “yes” from the menu and a Files display appears.

You save a series or graph from this menu just as you do from the Files display when you are saving new or revised series and graphs. Generally:

- Select which folder you want the series or graph to be saved in.
- Select the series or graph you want to save.
- Decide whether you want to save the series or graph as a new item or to replace an existing item.
- Type in the new name or accept the old name.

Repeat this procedure until you have saved all of the series and graphs you want.

You can then select “done” from the Files display menu to return to the Graph main menu and quit the program.

---

## Getting a Visi On Graph™ Series or Graph

---

You *get* a series or graph when you want to use or modify one that has been saved. Getting a series or graph puts it into the working folder. You can only get a series or graph from the current folder. Getting a series or graph does not remove it from storage, but makes a copy of it in the working folder for you to work with.

The general procedure for getting a series or graph is to go to the Files display, browse through the contents of the folders until you find the series or graph you want, select the series or graph from the middle part of the Files display, then select “done” from the Files display menu. You can also get a series or graph directly by using the “get-by-name” command of the Files display. In this case, you must know the series or graph name and the names of any folders it is in.

When you get a graph, the series that were used to create that graph are automatically copied into the current folder along with the graph.

There can be a maximum of 24 series and eight graphs in the working folder. If there are already 24 series or eight graphs in the working folder, you will have to remove some of them before getting more series or graphs.

Sometimes it is handy to get several series and graphs for the working folder before you work on any one of them. The series or graphs that you select are displayed in the working folder, ready to be used.

You can get a series or graph by selecting “file” from the Graph main menu.

## Getting a Series or Graph by Looking through Your Folders

---

When you don't know the exact file name of the series or graph, you get its name by looking through the folders until you see it. From the Files display, you follow these steps:

To browse through the Archives folders

1. If your series or graph is stored in the Archives central folder, select the series or graph you want from the middle part of the Files display. (Scroll the middle part up to view all of the series and graphs that are in the middle part.)
  - If your series or graph is stored in a folder other than the Archives central folder, select that folder from the top part of the Files display. That folder becomes the current folder and displays the series and graphs that are in it in the middle part of the Files display. Select the series or graph you want from the middle part.
  - If you are not sure which folder the series or graph you want is saved in, select “[Archives]” from the top part of the Files display.
    - Select a folder and view its contents in the middle part.
    - Continue to select folders, viewing each folder's series and graphs, until you find the series or graph you want.
    - Select the series or graph.
2. The series or graphs you select are copied into the working folder. You can now continue to get series and graphs in this manner, or select “done” from the Files display menu and return to the Graph main menu.

## Getting a Series or Graph by Name

---

You get a series or graph directly by name when you know the folder names in which the series or graph is saved and the series or graph name. You simply type in the folder names first, then a slash (/), then the series or graph name. Getting by name saves you time by not requiring you to browse through your folders.

Follow these steps to get a series or graph by its name after you have selected “file” from the Graph main menu:

To get a series or graph by name

1. Select “get-by-name” from the Files display menu. The prompt line asks you to enter a series or graph name.

---

2. Type in the folder name (type in all folder names if the series or graph you want is filed inside another folder; separate each folder name with a slash). For example, if the series or graph you want is filed in the folder Sales and in the folder in /Sales named West, you would type in Sales/West. Then type in the series or graph name; for example, if the name of the series or graph is Territory1, the full name that you would type in is /Sales/West/Territory1.

---

3. Press . The series or graph you want is retrieved from the folder and displayed in the working folder.

---

4. Select “done” if you are finished getting series and graphs.  
(Before you select “done” you can also get by name other series and graphs for the working folder or by browsing through your folders. You can also perform other Files display activities such as saving unsaved series and graphs or removing files.)

## Organizing Your Series and Graphs

---

Before long, you will have collected a large number of series and graphs. This section explains how to keep

track of your series and graphs by organizing them within the Visi On Graph filing system. Using the instructions in this section, you can logically group series and graphs so they will be easy to retrieve and use.

## Organizing Your Series and Graphs: An Overview

---

The Visi On Graph filing system allows you to group related series and graphs together as you would in a normal filing system.

In a normal filing system, you might have a folder named Sales. This folder might contain other folders, for example Sales/West and Sales/East. And inside the Sales/West folder, you might have a folder called Territories and a series or graph called Total Sales/West.

The Visi On Graph filing system works the same way. You can create a folder named Sales. You can then place other folders, such as Sales/West, in that folder. And, just as you would in a normal filing system, you can then place other folders and series and graphs in the Sales/West folder. Figure 2-1 illustrates the way you organize series and graphs in the Visi On Graph filing system.

## Creating Folders

---

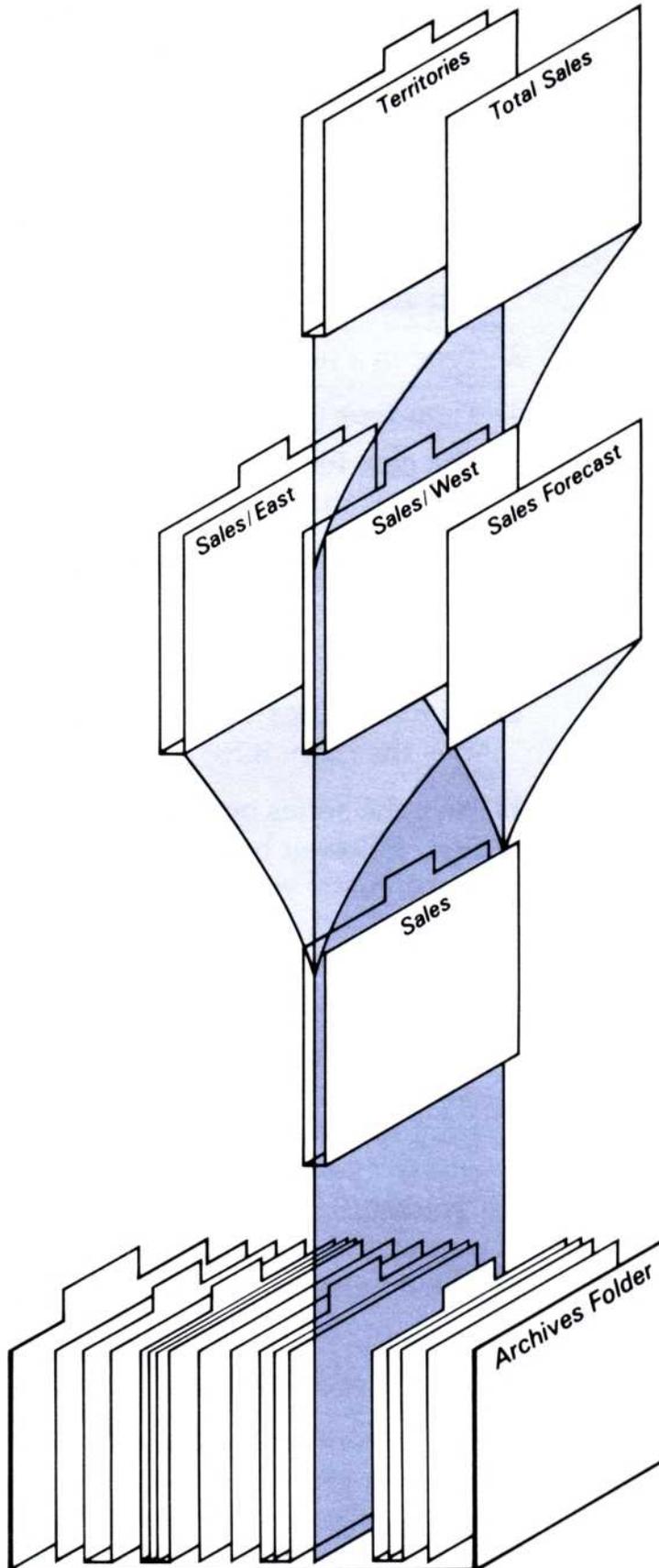
Grouping related series and graphs and folders in a single folder is the best way to organize your files. The “create-folder” command creates the folders you need for this task.

To create a folder

1. Select “file” from the Graph main menu.
2. Then do one of the following:
  - If you want to create a folder in the Archives central folder, the central folder must be the current folder.

To check this, look at the top line of the file display screen. It should contain only the word “[Archives].” If it reads differently—for instance, “[Archives]/Folder1”—then the Archives central folder is not the current folder. To open it, select “[Archives]” from the top part of the Files display before creating your new folder.

**Figure 2-4.** The Visi On Graph filing system lets you organize your files just as you would in a normal filing system. Related series and graphs are collected in folders; related folders, series, and graphs are collected in other folders.



When the Archives central folder is the current folder, select “create-folder” from the File menu.

- If you want to create a new folder within an existing folder, select “create-folder” while that folder is the current folder.

The folder that is currently open is listed after “[Archives]” in the top part of the Files display. For example, if the top line reads “[Archives]/Folder1,” then Folder1 is the current folder.

You are prompted to give the new folder a name.

---

3. Type in a name up to 12 characters long.
- 

4. Then type .

The new folder is created and you are returned to the Files menu.

## Placing Series and Graphs in Folders

---

You can place a series or graph in a folder two ways:

- Save the series or graph while the folder you want it in is the current folder; or
- Save the series or graph by typing the folder name first, followed by a slash (/), and then the series or graph name you want. If you have created folders within folders, type in all folder names first, separated by slashes, and then the series or graph name you want.

For example, if the Files display shows that the Archives central folder is currently open, but you want to save a series or graph called Sales in Folder1, you would create a series or graph called “Folder1/Sales.” If you subsequently opened Folder1, you would see that it now contains a series or graph called Sales.

To move a series or graph from one folder to another

1. Make the folder containing the series or graph you want to move the current folder.
- 
2. Select from the middle part of the Files display the series or graph you want to move. This places that series or graph in the working folder.
- 
3. Select “[Archives].” This makes the Archives central folder the current folder.

4. Browse to and select the folder you want the series or graph moved to.
5. When this folder is the current folder, select the series or graph you want moved from the bottom part of the Files display.
6. You are asked whether you want to create a name for the series or graph you want to move in the current folder, or to replace the series or graph in its original folder. Select “create” to place a copy of the series or graph in the current folder.
7. After you select “create,” you are asked to enter a series or graph name. Type in a new name and press , or simply press  to keep the same name.
8. The current folder now contains a copy of the series or graph. If you want to remove the series or graph from the folder that originally contained it, browse back to that folder and select “remove.” See the section in this chapter on “Removing Series and Graphs” for details.

---

## Removing Folders

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A folder must be removed through the Visi On Archives utility. See Chapter 5 of the *Visi On User's Guide* for instructions on how to do this.

---

## Removing Series and Graphs

---

It is a good idea to get rid of outdated or redundant series and graphs from time to time. Removing series and graphs keeps your file system uncluttered and easy to use.

For a series or graph to be removed, it must be present in either the middle or bottom part of the Files display. You must therefore (1) open the folder containing the series or graph you want removed; then (2) remove (using the following instructions) the series or graph you want removed in the current or working folder.

Remember that the names in the current folder represent series and graphs that you have previously saved. Removing these names from the current folder removes them from permanent storage. The names in the working folder represent series and graphs that

might be lost if they are removed without being saved first in the current folder. (In some cases the removed series or graph can be retrieved from the *wastebasket*. See “Getting a File out of the Wastebasket” in Chapter 5 of the *Visi On User’s Guide*.)

You must begin this process in the Files display with the series and/or graphs you want to remove in the current folder.

To remove series or graphs

1. Select “remove” from the Files menu.

You are prompted to select a series or graph you want to remove or select done.

---

2. Select a series or graph you want removed.

If you selected a series or graph in the middle part of the Files display, you are asked to either select another series or graph from the middle part of the display or select “done.”

If you selected a series or graph from the bottom part of the Files display, you are asked to either select another series or graph from the bottom part of the display or select “done.”

You may not remove series and graphs from both the middle and bottom part of the Files display at one time. Remove series and graphs from one first, then the other.

The series or graph or series and graphs you select are highlighted.

---

3. Select “done” when you have finished selecting series and graphs to be removed.

You are prompted to confirm whether you really want to remove the series and graphs you have selected.

---

4. Select “yes” if you do. If you do not want to remove the highlighted series and graphs, select “no.”

When the series and graphs have been removed, they disappear from the Files display.

The series or graphs are gone. If you have removed a series or graph from the current folder and realize later that you have made a mistake and need it back, you can retrieve it under some circumstances (see “Getting a File out of the Wastebasket” in Chapter 5 of the *Visi On User’s Guide* for exact procedures).

---

# 3

# Creating Series

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## Understanding Series

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The Visi On Graph program allows you to easily convert your information into easily understood graphs. However, before it can be used in a graph, your information must be entered into the program.

The numbers that you use in charts and graphs must first be organized so that the final graph presents meaningful information, not just random numbers. In the Visi On Graph program, such information must be organized into a *series*. A series is a sequence of values that are recorded at regular intervals, all referring to a common subject.

Series values represent relationships between things and events, and are usually expressed in chronological order. For example:

- If total sales are reported for twelve successive months, those twelve totals are a series.
- If rainfall is measured daily for a week, those seven measurements are a series.
- If scores for different golfers in a single tournament are reported, even though there is no reference to time, those scores are a series.

In short, anything that you can measure can generate series values, as long as the measurements are expressed in the same units (dollars, feet, degrees, etc.) These measurements, whether presented as a table of numbers, a written summary of results, or as a graph, can be used as a series.

---

## Periodicity

---

For each value in a series, a “tick mark” is put on the horizontal axis. A tick mark is a mark on the axis that indicates the position and order in which a value is plotted. Tick marks are sequential, starting with the first value, leftmost on the axis, and proceeding to the right with each additional value that is plotted. Under the tick marks are the *tick mark labels*. These labels are generated automatically by the program based on the series *periodicity*.

The periodicity of a series is a number you enter when you first create the series. It explains to the program what time frame is used by the series. Along with the periodicity of the series, you enter beginning dates for the information, called *start dates*. The program uses these numbers to generate the tick mark labels that appear on the horizontal, or X axis.

Series information is often collected over distinct time periods. If you want to display your series information reflecting these time periods, you can use the periodicity to do this automatically in the program.

For example, you can display monthly information that spans several years, starting in March 1983. For this you set your series periodicity at 12. The major start date (year) would be 1983. The minor start date (month) would be 3 (March.) The X axis of your graph would have a one large tick mark for each successive year displayed, with the year directly underneath. Smaller tick marks, each one representing a month, would be found between the yearly marks. A series value would be plotted above both the yearly and monthly marks.

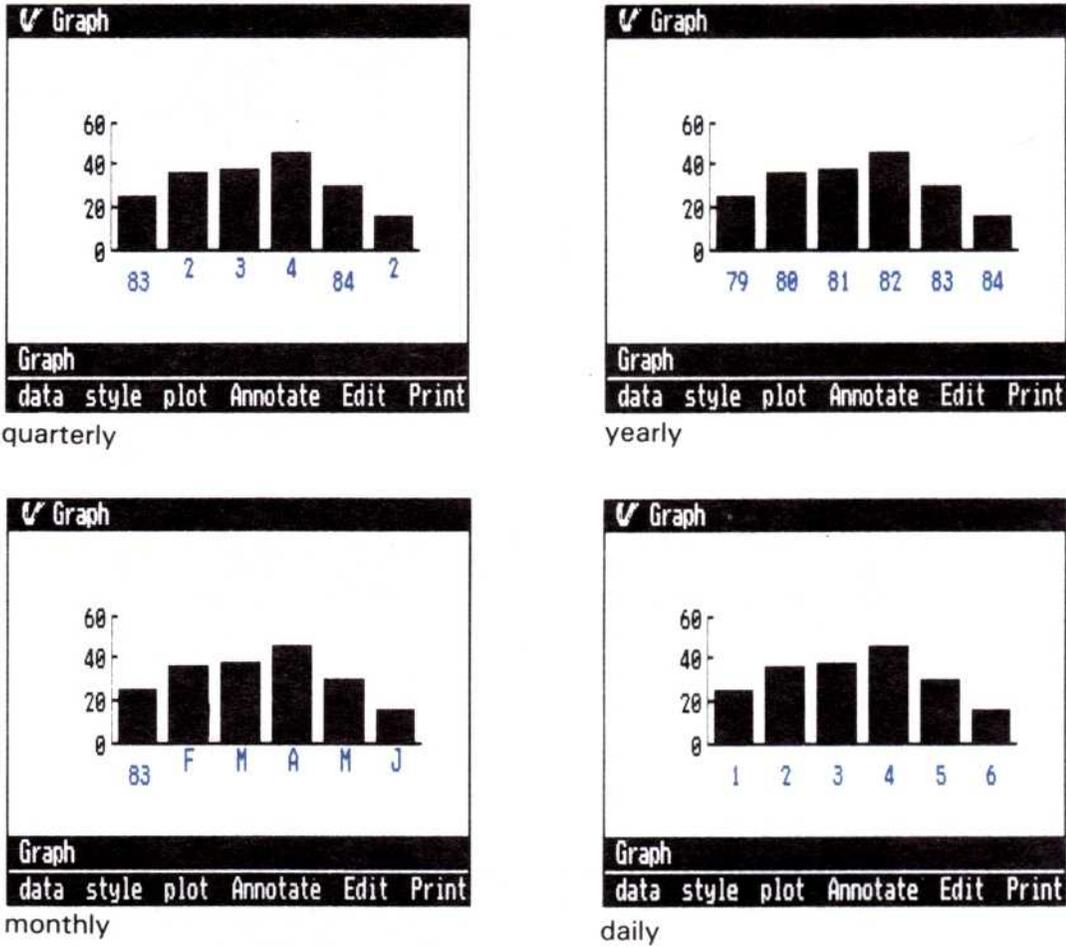
Other common periodicities can also be set. For example, a periodicity of 7 lets you enter values on a daily basis over several weeks. The program displays tick marks for each daily value and marks a new week on each seventh value.

Or, for example, a periodicity of 4 lets you enter series values on a quarterly basis over several years. The program displays tick marks for each quarterly value in the series and marks each new year every fourth mark.

If, however, you do not want to have a distinct time frame reflected in your graph, a periodicity of 1 and a starting date of 1 will give you an evenly incremented count of your plotted values.

The effect of series periodicity is seen in the label of a horizontal axis. For example, the graphs in Figure 3-1 are all based on the same numbers, but have different periodicities and beginning dates.

The *start year* is also important to periodicity. (This number may not necessarily be a year, but the program will request the major time frame using that term.) For instance, yearly periodicity can be 1, but the start year should be the first reported year (1901, 1956, 1983, etc.)



**Figure 3-1.** Different periodicities using the same series values are shown in each of these graphs. Each uses the same values in its series but has a different periodicity and beginning date. (1) With quarterly periodicity, reporting the quarters in a year, the period repeats with every four values. (2) With monthly periodicity, reporting months in a year, the period repeats every 12 values. (The Visi On Graph program generates the first letter of each month instead of a number.) (3) Yearly periodicity uses a periodicity of 1. All years are displayed in the graph truncated to the last two digits.) (4) The same series with daily periodicity as 1, with a start date of 1.

or a number indicative of that year (such as 01, 56, or 83) should be given.

If the periodicity of the series you are editing is other than 1, the program will request a second date for the series, the *start period*. This is necessary because you can begin your series with any period in the cycle.

Series with periodicities other than 1 have 2 distinctive periods associated with them; the *major period* and the *minor period*. The major period is incremented each time the minor period completed its cycle, as is illustrated in Figure 3-2.

SERIES 11			SERIES 22		
major period	minor period	series	major period	minor period	series
1979	1	9.12	9	4	12.9
	2	8.23	10	1	23.8
1980	1	7.34		2	34.7
	2	6.45		3	45.6
1981	1	5.56		4	56.5
	2	4.67	11	1	67.4
1982	1	3.78		2	78.3
	2	2.89		3	89.2
1983	1	1.91		4	90.1

**Figure 3-2.** Both SERIES11 and SERIES22 have periodicities other than 1, and therefore have both major and minor periods. SERIES11 has a periodicity of 2. Each time the minor period completes its cycle, the major period is increased by 1. SERIES22 has a periodicity of 4. Its cycle is twice as long as SERIES11, and its major period does not increment as quickly. Even though the major period in your series may not necessarily represent years (as in SERIES22) the Visi On Graph program will often refer to numbers in the major period as “years.”

Not every series needs to have a distinctive periodicity. For instance, X-Y graphs plot two series against each other. Although they just use the same periodicity to represent meaningful information, the axes of the finished graph do not indicate any periodicity. Still, in such cases, you should try to use the periodicity that makes the most sense in the situation you are describing (monthly, yearly, quarterly, etc).

## Creating and Changing Your Series

Whether you enter your series in at the keyboard or use the Visi On “TRANSFER” command to bring them into Visi On Graph program from another program, you can use the “Edit” command in the main menu to modify and change the series values and periodicity.

The Edit display allows you to add to and modify the series you later plot into graphs. Figure 3-3 shows you the major sections of the Edit display, the place where all of the changes you make to a series take place. You reach the Edit display by selecting “Edit” from the main Visi On Graph menu.

Year	Per	Mktg.	Corp.	Dist.
1983	1	32	21	17
	2	56	33	20
	3	45	35	23
	4	35	32	27
1984	1	42		
	2	53		
	3	57		

Graph/Edit  
series replace add delete goto fill

**Figure 3-3.** The Edit display is composed of: (1) The major period column. This value increases by one each time the minor period column completes its cycle. (2) The minor period column. The range of these numbers is determined by the number you entered as the periodicity. The periodicity used in this example is 4, so the numbers in this column are between 1 and 4. If the periodicity of the series is 1, there is no minor period column. (3) The series being edited. If more than one series are being edited, they must have the same periodicity. (4) The editing cursor determines where the next number is going to be inserted in the series.

## Creating New Series

Unless you are transferring values into the Visi On Graph program using the Visi On "TRANSFER" command, you must enter the numbers you will use in your graph in the Edit display.

This section takes you, step by step, through creating a series.

This procedure begins in the Edit display. (Select "Edit" from the Graph main menu to enter the Edit menu.)

There should not be any series in the Edit display at the beginning of this procedure. If there are series in the display, you must use the "clear" command in the Edit menu to remove them from the display. Instructions on using the "clear" command can be found in "Clearing Series from the Edit Display" later in this chapter.

To create a series 1. Select "series."

Any of your current series names are displayed along with "new series" (see Figure 3-4).



**Figure 3-4.** The select series menu line displays the names of any series in your current folder.

2. Select “new series.”

If you selected something other than “new series” by mistake, you can select “start-over” to cancel the selection. After you select “start-over,” select the “new series” command.

3. Select “done.”

The program asks you how many new series you are entering.

4. If you are entering:

- One series: press  to accept the preset value of one series.
- Several series: Type the number of new series (depending upon window size, up to 12 can be edited at the same time) you are entering and press . The program will repeat steps 6 through 8 below for each of the series you are entering.

The program requests the periodicity for your series. If you are entering more than one series, that periodicity will be used in all of the new series. (See “Periodicity” earlier in this chapter for additional information.)

5. Type the series periodicity followed by , or press  to accept the preset periodicity.

- The periodicity can be any number between 1 and 99.
- The preset periodicity is 1.
- The value you choose is used as the periodicity of all the series you are entering.

The questions in steps 6 through 8 will be repeated for each series.

The program asks you to enter a name for the series series or accept the preset name.

- 
6. Type each value or name followed by , or accept the preset value or name by pressing  alone.

The program asks for a start year for the series.

- 
7. Type the beginning year value or date (1983, 84, etc.) and press , or press  to accept the preset year.

If your periodicity is a number other than 1, the program prompts you for a beginning period. For example, you may be entering numbers for 1983 that begin in March. When the program asks you for the beginning period for your series, you would enter 3 because March is the third month in the year.

- 
8. Type the beginning period value and press , or press  to accept the preset year.

The beginning period value must be between one and the value you entered as your periodicity.

- 
9. Select "add."

The program prompts you to select the location for the new values.

- 
10. Select the word "empty" under the first series you want to fill with numbers.

You are prompted to enter numbers, select a new location, or select "done" when you are finished.

- 
11. Type the first number in your first series and press .

Continue to enter all of your numbers in this first series in this way: type each number and press  to enter the number and advance the cursor down to the next entry position.

If you are editing more than one series:

- You may select, as in step 10, any of the other series at any time. The editing cursor will move to that series and you can begin entering numbers into that series.

Year	Per	Mktg.	Corp.	Dist.
1983	1	<empty>	<empty>	<empty>

Graph/Edit

series replace add delete goto fill param

**Figure 3-5.** Each area of the Edit display provides you with information about the series you are editing. The leftmost column shows the period for each of the corresponding rows. To the right of this column is the series entry area. Each series name heads the series column. If you are editing more than 1 series, additional series are displayed in columns to the right.

- If you want to continue making entries into a series after you have left it, select the row just below the last entry you made in the series. The cursor moves to the bottom of this series and you can continue making your entries.
- If you make a mistake while typing a number, you can use the backspace key to correct it. If you realize that you have made a mistake after you have already pressed , you can correct it by following the procedures in “Replacing Numbers in a Series” and “Removing Numbers from a Series” later in this chapter.

12. When you have finished entering numbers, select “done.”

These complete series are added to your working folder when you leave or clear the edit display. You can now save the series (see Chapter 2, “Saving, Getting, and Organizing Series and Graphs,” for more information about the working folder and saving your series), plot them as a graph (see Chapter 4, “Turning Series into Graphs”), or continue to modify them using any of the techniques discussed in this chapter.

## Adding Numbers to the End of a Series

You can add numbers to a series in two ways: by adding to the end of the series, which is discussed in

Graph				
Name	Period	Major	Minor	Points
Mktg.	4	1983	1	4
Corp.	4	1983	1	4
Dist.	4	1983	1	4
new series				

select one or more series for editing

done start-over

**Figure 3-6.** After you select "series" from the menu the names of all of the series in the working folder are displayed.

this section, and by inserting new numbers between existing numbers. (Inserting numbers into an existing series is discussed in "Inserting Numbers into a Series" later in this chapter.)

This procedure begins in the Edit display. (Select "Edit" from the main menu to enter the Edit display.)

To add numbers to a series

1. Select "series."
2. Select the name of each series to which you want to add numbers, as illustrated in Figure 3-6.

If you are adding numbers to more than one series, the series must have the same periodicity. If the series periodicities do not match, the program will show an error message.

If by mistake you selected a series that you did not want, you can select "start-over" to begin selecting your series again.

3. Select "done."
 

The Edit display shows the series you have selected. Because you are adding numbers to this series, you need to be able to see the last entry.
4. If the series extends below the bottom of the display, select "goto" from the menu line.
 

The program asks you to select the location you want to see in the series.
5. Select "ending."
 

The last entry in all of the series is scrolled to the middle of the Edit display.

---

6. Select “add.”

The program asks you to select the location where you are adding values.

---

7. Select the blank row below your last entry in this series.

---

8. Type each number you wish to add and press  after each. The number is entered into the series and the cursor moves down to the next row.

---

9. When you have finished entering numbers, select “done.”

The changes you have made in the Edit display are made to each of these series in your working folder when you leave or clear the Edit display. You can now save the series (see Chapter 2, “Saving, Getting, and Organizing Series and Graphs,” for more information about the working folder and saving your series), plot them as a graph (see Chapter 4, “Turning Series into Graphs”), or continue to modify them using any of the techniques discussed in this chapter.

---

## Removing Numbers from a Series

---

Occasionally you will find that some of your numbers will need to be removed from a series, or multiple series. The “delete” command allows you to remove numbers from series. If, however, you are going to replace those values with an equal number of new values, you should use the “replace” command, described later in this chapter.

Figure 3-7 illustrates the effect of using the “delete” command.

This procedure begins in the Edit display. (Select “Edit” from the main menu to enter the Edit display.)

---

1. Select “series.”

---

2. Select the names of the series you want to remove numbers from.

If you selected a series that you did not want by mistake, you can select “start-over” to begin selecting your series again.

To remove numbers from a series

Graph		Mktg.	Corp.	Dist.	
1983	1	32	21	17	
	2	56	33	20	
	3	45	35	23	
	4	35	32	22	
1984	1	42	36	25	
	2	53	38	29	
	3	57	42	28	

remove these data values?

yes 70

Graph		Mktg.	Corp.	Dist.	
1983	1	32	21	17	
	2	56	33	20	
	3	53	35	23	
	4	57	32	22	
1984	1		36	25	
	2		38	29	
	3		42	28	

Graph/Edit

series replace add delete goto fill parameters undo

**Figure 3-7.** When numbers are removed from a series using the "delete" command, the numbers that follow are moved up to fill the empty space.

3. Select "done."
4. Select "delete."
5. Select the first number (highest and leftmost) you want to remove.
6. Select the last number (lowest and rightmost) you want to remove. If you are only removing one number, select that number again.

Note: If either number is above or below the rows currently displayed on the screen, scroll that number into the display and select it.

The rectangle of numbers to be deleted is highlighted. The prompt line asks if you want to delete this area.

7. Review the highlighted range and:
  - Select “yes” if the highlighted range is correct. The highlighted numbers are removed.
  - Select “no” if the highlighted range is incorrect. The highlighting is removed and the series is not changed. If you still want to remove numbers from this series, begin again at step 4.

The changes you have made in the Edit display are made to each of these series in your working folder when you leave or clear the Edit display. You can now save the series (see Chapter 2, “Saving, Getting, and Organizing Series and Graphs,” for more information about the working folder and saving your series), plot them as a graph (see Chapter 4, “Turning Series into Graphs”), or continue to modify them using any of the techniques discussed in this chapter.

---

## Replacing Numbers in a Series

---

Occasionally you will find that some of your numbers will need to be replaced with new values. The “replace” command allows you to replace numbers at the beginning, end, or in the middle of a series without moving the rest of the series.

Figure 3-8 illustrates the effect of using the “replace” command.

This procedure begins in the Edit display. (Select “Edit” from the main menu to enter the Edit display.)

To replace numbers in a series

1. Select “series.”

---

2. Select the series in which you wish to replace numbers.

If you selected a series that you did not want by mistake, you can select “start-over” to begin selecting your series again.

---

3. Select “done.”

---

4. Select “replace.”

Graph		Mktg.	Corp.	Dist.	
1983	1	32	21	17	
	2	56	33	20	
	3	45	5	23	
	4	35	32	22	
1984	1	42	36	25	
	2	53	38	29	
	3	57	42	28	

enter data, select another value to replace, or select done  
35

Graph		Mktg.	Corp.	Dist.	
1983	1	32	21	17	
	2	56	33	20	
	3	45	35	23	
	4	35	32	22	
1984	1	42	36	25	
	2	53	38	29	
	3	57	42	28	

enter data, select another value to replace, or select done  
done.

**Figure 3-8.** The "replace" command does not affect numbers in the series other than those that are changed.

5. Select the first number that you are going to replace. The cursor highlights this number and the program asks you for a new number.
6. Type the replacement numbers entering each with . After each  the cursor moves down one row and the program asks you for a new number.
  - If you are replacing numbers in more than one series, you can use the arrow keys to move the cursor to the other series or select any number in the Edit display to move the cursor directly to that position.
  - If you want to keep the current highlighted number, just type . The cursor will leave the current value in that position and move down to the next entry.

7. When you have finished replacing numbers, select "done."

The changes you have made in the Edit display are made to each of these series in your working folder when you leave or clear the Edit display. You can now save the series (see Chapter 2, "Saving, Getting, and Organizing Series and Graphs," for more information about the working folder and saving your series), plot them as a graph (see Chapter 4, "Turning Series into Graphs"), or continue to modify them using any of the techniques discussed in this chapter.

---

## Inserting Numbers into a Series

---

Occasionally you will find that you need to insert numbers into the body of a series. Rather than replace the numbers that exist there, you need to insert numbers before or after them. The existing numbers must be "pushed out" in the series as new numbers are inserted.

Figure 3-9 illustrates the effect of inserting numbers into a series.

This procedure begins in the Edit display. (Select "Edit" from the main menu to enter the Edit display.)

To insert numbers into a series

1. From the menu line, select the name of each series you wish to insert numbers into.

If by mistake you selected a series that you did not want, you can select "start-over" to begin selecting your series again.

- 
2. Select "done."

- 
3. Select "add."

The program asks you to select the location you want to add numbers to.

- 
4. Select the position where you want to begin inserting numbers.

A blank line is inserted at this location for your new entry and the cursor highlights this line.

- 
5. Type each number you wish to insert into the series and press  to enter the number.

As each number is entered, the cursor moves down

**Figure 3-9.** Numbers that are inserted into a series “push” the numbers that follow them out to later periods in the series.

Graph		Mktg.	Corp.	Dist.	
1983	1	32	21	17	
	2	56	33	20	
	3	45	35	23	
	4	35	32	22	
1984	1		36	25	
	2	53	38	29	
	3	57	42	28	

enter data, select a new location, or done when finished  
42

Graph		Mktg.	Corp.	Dist.	
1983	1	32	21	17	
	2	56	33	20	
	3	45	35	23	
	4	35	32	22	
1984	1	42	36	25	
	2	53	38	29	
	3	57	42	28	

Graph/Edit  
series replace add delete goto fill parameters undo

to insert a new row. The number that was there moves down another row.

If you are editing more than one series, you can use the arrow keys to move the cursor to the other series or select any number in the Edit display to move the cursor directly to that position. The cursor always inserts a blank space into the new position and moves the numbers below it down one row.

- When you have finished entering numbers, select “done.”

The editing cursor is removed and the lower numbers move up in the series to fill in the empty location.

The changes you have made in the Edit display are made to each of these series in your working folder when you leave or clear the Edit display. You can now save the series (see Chapter 2, “Saving, Getting, and Organizing Series and Graphs,” for more information about the working folder and saving your series), plot them as a graph (see Chapter 4, “Turning Series into Graphs”), or continue to modify them using any of the techniques discussed in this chapter.

## Moving around in a Series

---

A series can contain more entries than can be shown in the Edit display at one time. If you scroll the display, you will eventually see any number in the series, but you can use the “goto” command to move directly to any point in the series. The “goto” command can immediately move you to the beginning or end of the series, or to any specific period.

To move directly to a new point in a series in the Edit display

1. Select “goto.”

The program asks you to choose the location you want to see. Your choices are “beginning,” “ending,” and “specific-year.”

---

2. Do one of the following:

- Select “beginning” to move the series down until the first number is at the top of the Edit display.
- Select “ending” to display the last number. The last number in the series moves to the middle of the Edit display.
- Select “specific-year.” The program will ask you which point in the series you want to view. The program will ask you for the year (major period) that you want to display.
- Type the year and press .
- If your series has a periodicity other than one, the program asks you for the period to display. Type the period and press .

The period that you have indicated is moved into the Edit display.

## Changing Series Names, Periodicities, and Dates

---

Occasionally you may find that the name, periodicity, or starting date you indicated when you created a series was wrong or does not provide you with the right type of information. If this is the case, you can use the “parameters” command to change it.

This procedure begins in the Edit display. (Select “Edit” from the main menu to enter the Edit display.) You

may, however, use this command at any time to change the name, periodicity, or start date of a series that you are currently editing (you would begin at step 4.) Remember that all of the series in the Edit display must have the same periodicity. The program will not let you change the periodicity of one series while there are other series in the Edit display.

To change the name, periodicity, or start dates of a series

1. Select "series."

2. Select the series you want to change.

3. Select "done."

The series is shown in the Edit display.

4. Select "parameters."

If you are editing more than one series, the program asks you if you want to change all the series or just one. (If you are only editing one series, skip step 5.)

5. If you are editing more than one series, select one of the following:

- "all-series" if you want the changes to names, periodicities, and start dates to affect all of the series in the Edit display.
- "single-series" if you only want to change the name and/or start dates on one of the series in the Edit display.

If you select "single series," the program asks you to select the column of the series you want to change. Select this series.

If you are changing the parameters for "all-series," or if you have only one series in the Edit display, the program asks you to enter the new periodicity. If you have more than one series in the Edit display and selected "single-series" you will skip this step.

6. Do one of the following:

- Type the new periodicity and press .
- Press  to keep the current periodicity.

The program asks you for a new name for the series. (If you are changing "all-series," the program highlights each series individually.) Repeat steps 7 through 9 for each series as it is highlighted.

---

7. Do one of the following:

- Type the new name and press .
- Press  to keep the current name.

The program asks you for a new start year for the highlighted series.

---

8. Do one of the following:

- Type the new start year and press .
- Press  to keep the current start year.

If the series periodicity is any value other than 1, the program asks you for a new start period.

---

9. Do one of the following:

- Type the new start period and press .
- Press  to keep the current start period. (If you changed the start year, the current start period will be 1.)

Again, if you are changing the parameters on more than one series, repeat steps 7 through 9 for each of the highlighted series.

The changes you have made in the Edit display are made to each of these series in your working folder when you leave or clear the Edit display. You can now save the series (see Chapter 2, "Saving, Getting, and Organizing Series and Graphs," for more information about the working folder and saving your series), plot them as a graph (see Chapter 4, "Turning Series into Graphs"), or continue to modify them using any of the techniques discussed in this chapter.

---

## Having the Visi On Graph™ Program Add Numbers to Your Series

---

You may sometimes want the program to generate numbers for your series. The Visi On Graph program calls this process a *fill* and lets you choose from three different methods:

- **Interpolation:** Replaces a range of zero values with new entries that are evenly incremented within the range of zeros.



Keep in mind that:

- If the series of zeros begins or ends the series, the interpolation will increment between the non-zero value and zero; the zero value at the start or end of the range is left unchanged.
- If the two values bordering the zeros are the same number, all of the interpolated values will have that value.

This procedure begins in the Edit display. (Select “Edit” from the main menu to enter the Edit display.)

To interpolate between values in a series

1. Select “series.”

---

2. Select the series you want to interpolate.

---

3. Select “done.”

The series is shown in the Edit display.

---

4. Select “fill.”

---

5. Select “interpolate.”

The program asks you to select the location to replace with interpolated values.

---

6. Select any zero in the range.

The interpolated values replace the range of zeros you have indicated.

If you decide that you have made a mistake and did not really want to interpolate, or decide that you interpolated in the wrong series or place in a series, you can undo your error. See “Undoing Changes Made to a Series” later in this chapter.

When you have finished interpolation you can execute other editing commands in the Edit display, save the series in the File display, or plot a graph based the series in the Graph display.

---

## Adding Numbers to a Series Geometrically

---

Adding numbers to a series geometrically generates new entries based on three numbers that you select. The first number is the number of new values you want to generate. The second number is called the *start value*; it is the number your new values will start with. The last number is called the *factor*; it is multiplied against

the start value, creating a new start value each time. This process continues, the factor being multiplied against the start value, until the number of new entries you indicated has been generated. This process is illustrated in Figure 3-11.

Keep in mind that:

- If the start value selected for the fill has entries following it, those entries will be moved to make room for the new filled values.
- You can fill an empty series geometrically. Select the word “empty” under the series name. The program will ask you to enter a start value. The rest of the fill will proceed as described below.
- You can fill before the first value in a series. Select the first number in the series, and the program will ask you for a start value. The rest of the fill will proceed as described below. The existing numbers in the series will be moved down to make room for the new numbers.

This procedure begins in the Edit display. (Select “Edit” from the main menu to enter the Edit display.)

To fill a series geometrically

1. Select “series.”

---

2. Select the series you want to fill.

---

3. Select “done.”

The series is shown in the Edit display.

---

4. Select “fill.”

(1)	(2)	(3)	(4)	(5)
3	$3 * 3$	$3 * 9$	$3 * 27$	3 9 27 81

**Figure 3-11.** Filling a series geometrically. Three new values are needed in the series, so the factor for the fill is entered as 3. (1) The start value already exists in Series A. The factor, 3, is multiplied against the start value (2) and generates a new start value (3). The new start value of 9 is again multiplied against the factor and a new start value is generated. (4) This process continues until the total number of new filled values has been generated (5).

---

5. Select “geometric-fill.”

The program asks you to select the location you want to fill.

Remember that the start value will be the number before this selected location. If you select the first blank row under a series, the last number in the series will be used as the start value.

---

6. Select the location where you want to begin the geometric fill.

The program asks you for the number of new values you want to generate.

---

7. Type the number of new values and press .

If the series you are filling is empty, or if you are filling before the first number in the series, the program asks for a start value. This start value will be the first new value in the series.

---

8. Enter the start value you want to use for the geometric fill and press .

The program asks you to enter the factor for the geometric fill.

---

9. Type the factor for the fill and press .

The filled values are entered into the series.

If you decide that you have made a mistake and did not really want to fill after all, or decide that you filled in the wrong series or place in a series, you can undo your error. See “Undoing Changes Made to a Series” later in this chapter.

When you have finished filling your series, you can execute other editing commands in the Edit display, save the series in the Files display, or plot a graph with the series in the Graph display.

---

## Adding Numbers to a Series Arithmetically

---

Adding numbers to a series arithmetically lets you generate new entries that are based on three numbers. The first number is the number of new values you want to generate. The second number is called the *start value* and is the value your new numbers will start with. The last number is called the *increment*; it is added to the

start value, creating a new start value. This process continues, the increment being added to the start value, until the number of new entries you indicated has been generated. This process is illustrated in Figure 3-12.

Keep in mind that:

- If the start value selected for the fill has entries following it, those entries will be moved down to make room for the new filled values.
- If the series is empty of numbers, you can still fill it arithmetically. Select the “empty” symbol under the series name. The program will ask you to enter a start value. The rest of the fill will proceed as described below.
- You can fill before the first value in a series. Select the first number in the series, and the program will ask you for a start value. The rest of the fill will proceed as described below. The existing numbers in the series will be moved down to make room for the new numbers.

This procedure begins in the Edit display. (Select “Edit” from the main menu to enter the Edit display.)

To fill a series arithmetically

1. Select “series.”

---

2. Select the series you want to fill.

---

3. Select “done.”

The series appears in the Edit display.

---

4. Select “fill.”

(1)	(2)	(3)	(4)	(5)
3	3 + 3	3	3	3
		3 + 6	6	6
			3 + 9	9
				12

**Figure 3-12.** Filling a series arithmetically: Three new values are needed in the series, so the increment for the fill is entered as 3. (1) The start value already exists in Series A. The increment, 3, is added to the start value (2) and generates a new start value (3). The new start value of 6 is again added to the increment and a new start value is generated (4). This process continues until the total number of new filled values has been generated (5).

---

5. Select "arithmetic-fill."

The program asks you to select the location you want to fill.

Remember that the start value will be the number before this selected location. If you select the first blank row under a series, the last number in the series will be used as the start value.

---

6. Select the location where you want to begin the arithmetic fill.

The program asks you for the number of new values you want to generate.

---

7. Type the number of new values and press .

If the series you are filling is empty, or if you are filling before the first number in the series, the program asks for a start value. This start value will be the first new value in the series.

- Enter the start value you want to use for the arithmetic fill and press .

The program asks you to enter the increment for the arithmetic fill.

---

8. Type the increment for the fill and press .

The filled values are entered into the series.

If you decide that you have made a mistake and did not really want to fill after all, or decide that you filled in the wrong series or place in a series, you can undo your error. See "Undoing Changes Made to a Series" later in this chapter.

When you have finished filling your series, you can execute other editing commands in the Edit display, save the series in the Files display, or plot a graph with the series in the Graph display.

---

## Changing the Way Numbers Are Displayed

---

Occasionally, because you are working with many series or working in a small window, you will want to change the precision (number of decimal places) to which your numbers are displayed.

Changing the precision of your numbers can be done at any time while you are in the Edit display. You must open the Edit options sheet to change the displayed precision of your numbers. For additional information on options sheets, see "How Do You Use the Visi On Graph Program?" in Chapter 1.

Figure 3-13 illustrates the three different types of display formats available in the Edit display.

You can change the display options as many times as you like while you are editing. Changing display options only changes the way your numbers are displayed, not their actual value.

Graph		
Year Per	Series00	Data Display Format
1983 1	4.83213	floating point dollars fixed point <input checked="" type="checkbox"/>
Graph/Edit		Options
series replace add		save restore done

Graph		
Year Per	Series00	Data Display Format
1983 1	4.83	floating point dollars fixed point <input checked="" type="checkbox"/>
Graph/Edit		Options
series replace add		save restore done

Graph		
Year Per	Series00	Data Display Format
1983 1	4.832	floating point dollars fixed point <input checked="" type="checkbox"/>
Graph/Edit		Options
series replace add		save restore done

**Figure 3-13.** Numbers can be displayed in three different ways. The number 4.83213 is in floating point (the current options sheet selection), so as many decimal places as can fit will be shown in the Edit display. It could also be displayed in dollar format, which forces two decimal places, or fixed point, which displays the number of decimal places (up to 6) that you enter.

You should be in the Edit display. If the options sheet is already open for this display, you may begin with step 3.

To change the Edit display format

1. Select "OPTIONS" from the Visi On menu line.  
The program asks you to select the window in which you want to change options.

---

2. Select the Visi On Graph window.  
The Edit options sheet appears to the right of the Edit display.

---

3. Scroll the "Data Display Format" options into view and select either:
  - "floating point" shows as many decimal places as can fit.
  - "dollars" shows values to two decimal places
  - "fixed point" shows value to the number of decimal places shown in the highlighted number to the right.

To change the fixed-point value

1. Select the highlighted number to the right of the "fixed point" selection.

---

2. Press **END**. Type the number of decimal places (between 0 and 6) you want to display, and press **↵**. The display format option automatically changes to "fixed point."  
You can leave the Edit options sheet open while you edit your series or close it as is done in this last step. These last steps are optional.

---

3. Select "done" from the options menu.  
The Edit options sheet disappears from the Edit display.

You can now continue editing your series, changing the display options as often as you wish.

---

## Undoing Changes Made to a Series

---

Everybody makes mistakes, but in the Visi On Graph program they are easily corrected. While you are in the Edit display, you are working with a copy of your previously stored series. Because you work with a series that you have previously saved, you can only damage the copy, not the saved series.

In addition, you have a second level of protection in the Visi On Graph program: the “undo” command. If, for any reason, you feel that the changes you have made to a series should not have been made, the “undo” command will restore your series to the state they were in before you began to edit them.

However, if you leave the Edit display and go to the Graph display or any other section of the program, the changes you have made to your series will be made to the copies of your series in the working folder. If you then realize that you need the series back in their original, pre-edited state, you must reload them in the Files display. For additional information on loading and saving, see Chapter 2, “Saving, Getting, and Organizing Series and Graphs.”

Remember: For the “undo” command to have any effect on your series, you must select it before you exit the Edit display.

To undo changes made to a series

1. Select “undo” from the Edit menu.

The program asks you to confirm that you really want to undo the current editing session.

---

2. Select:

- “Yes” if you want to undo the current editing session.
- “No” if you do not want to undo the current editing session.

Depending upon your confirmation, the session is either undone (returned to their original state) or left as you changed them. You can continue editing the current series, select new series to edit, or continue with any other Visi On Graph function.

## Clearing Series from the Edit Display

---

Occasionally, you will want to remove a series from the Edit display, either to make room for other series, or so that you can edit a series with a different periodicity. The “clear” command makes this procedure quite simple.

Clearing a series from the Edit display does not remove it from the working folder, it merely erases it from the Edit display. When you use the “clear” command

To clear series from the Edit display

you have the option of saving the series you have edited in the working folder or not.

1. Select "clear" from the Edit menu.

The program asks you to select each of the series you want to clear from the Edit display.

---

2. Select the series columns you want to clear from the display.

You may select any of the columns. As you select them, the series are highlighted, indicating that they have been selected. If you select one by mistake, selecting it again removes the highlight, indicating that it is no longer selected.

---

3. When you have finished selecting series, select "done."

The program asks you if you want to save the series you are clearing in the working folder.

---

4. Select:

- "yes" if you want to replace the working folder copies of the series you are clearing from the Edit display with the newly edited versions.
- "no" if you do not want to keep the changes you have made to these series.
- "STOP" from the Visi On menu line if you have decided not to clear these series from the Edit display.

Depending upon your confirmation, the changes you have made to these series are either saved in the working folder or discarded. The highlighted series are cleared from the Edit display. You can select new series to display, continue editing the current series (if any), or continue with any other Visi On Graph function.

---

# 4

## Turning Series into Graphs

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## Chapter 4

## Turning Series into Graphs

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## Making Graphs from Your Information

---

No matter how you entered your numbers into the program—whether directly through the Visi On Graph™ Edit display, from another program with the Visi On “TRANSFER” command, or by some other method—the end result is a graph based on your numbers. This chapter discusses all the steps required to create each of the basic graph types.

With the Visi On Graph program, you can create several versatile types of graphs. With *stacked bar graphs* or *comparative bar graphs* you can show information either cumulatively or side by side for comparison. You can create *line graphs* to graphically track measurements and compare the results of up to 12 sequences of measurements. *Area graphs* track measurements in the same manner that line graphs do, but fill the area below the line with a pattern. X-Y graphs allow you to plot the intersections of two different sequences, using a variety of symbols. *Pie graphs* can illustrate the contribution of the many parts of a cumulative whole. Finally, *high-low* and *high-low-close* graphs, although commonly used for presenting stock price histories, have many other applications as well.

This chapter gives you step-by-step procedures for creating each of these types of graphs.

After you become familiar with the steps used to make the basic graphs, you may want to emphasize certain aspects of your information. Chapter 5, “Enhancing Your Graph,” will tell you how to add detail where you need it.

The steps used in making each type of graph follow the same general pattern:

1. Your series must be in the working folder.

Series are loaded into the working folder by either:

- Copying a stored series from the current folder (see Chapter 2, “Saving, Getting, and Organizing Series and Graphs”).
- Entering series in the Edit display (see Chapter 3, “Creating Series”).

- Transferring series from another program (see Chapter 7, “Transferring Information”).

---

2. Select the series you are plotting.

---

3. Select a graph type:

- Line
  - Bar
  - Pie
  - X-Y
  - Area
  - High-low-close
- 

4. Some graph types require additional information, such as a specific time period. These are discussed in more detail in the following sections.

---

5. Select “plot” to draw the graph.

Whenever you draw a new graph, the program remembers the options you chose last and uses them in the new graph. However, you can change any or all of these options before drawing the new graph.

Say, for instance, that you have selected a line graph for your series. After drawing the line graph, you might wonder what the same series would look like in a bar graph. To see it, simply erase the current graph, select the bar graph type, and redraw. You do not have to reselect the series; your previous selections will be used. Likewise, if you want to see another series in the same type of graph that you just plotted, erase the graph, select that series name, and redraw the graph. The last graph type you selected is used with the new series.

---

## Plotting Line, Area, and Bar Graphs

---

Although you can use the same general steps to create them, bar, area, and line graphs have distinctly different appearances and are generally used for different applications:

- Line graphs are commonly used to keep track of single-point information, such as physical measurements, temperatures, and percentages.

- Bar and area graphs are commonly used to keep track of cumulative or volume information, such as sales, inventory, and population.

The procedures used to plot line, area, and bar graphs are very similar. Multiple-series bar graphs are explained in the following section, "Plotting Bar Graphs with More Than One Series."

Make sure that your series is in your working folder. You must have copied it from the current folder, transferred the series data from another product, or have entered it directly in the Edit display.

This procedure begins in the Graph main menu.

To select the series for a line, area, or single-series bar graph

1. Select "data" from the Graph main menu.

---

2. Select "series" from the data types menu.  
The names of the available series are displayed.

---

3. Select the name of each series you want to use in the current graph.  
If you are plotting line or area graphs you may select up to 12 series for each graph. (Plotting multiple-series bar graphs is discussed in the following section.)

---

4. When you have finished selecting series, select "done."  
If you selected 12 series names in step 3, you will not need to select "done." You are automatically returned to the Graph main menu.  
You are returned to the Graph main menu.

At this point you could select "plot" from the Graph main menu and a graph would be drawn. This graph would use the same selections and options that you set up for your last graph.

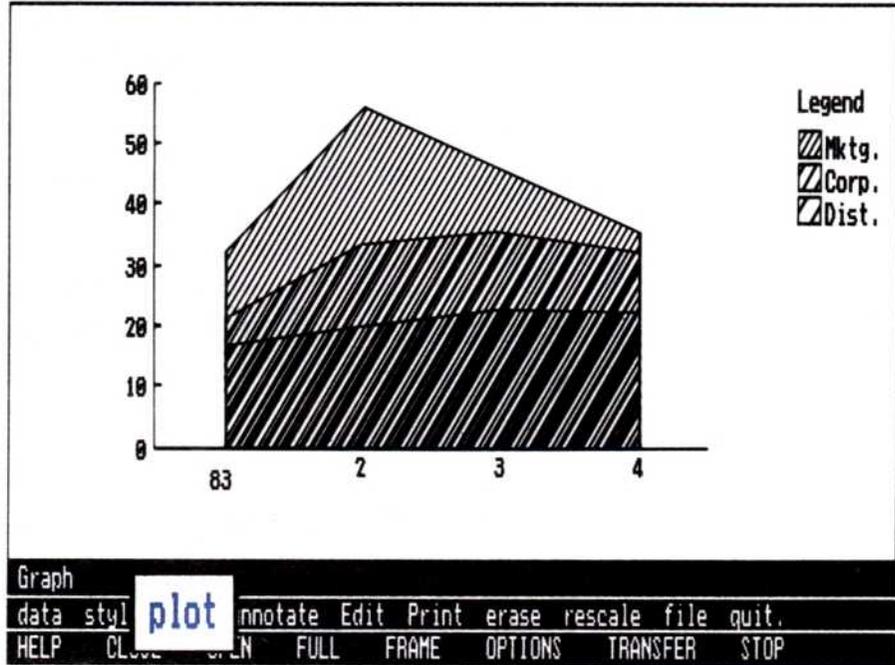
To select a specific graph type

1. Select "style."

---

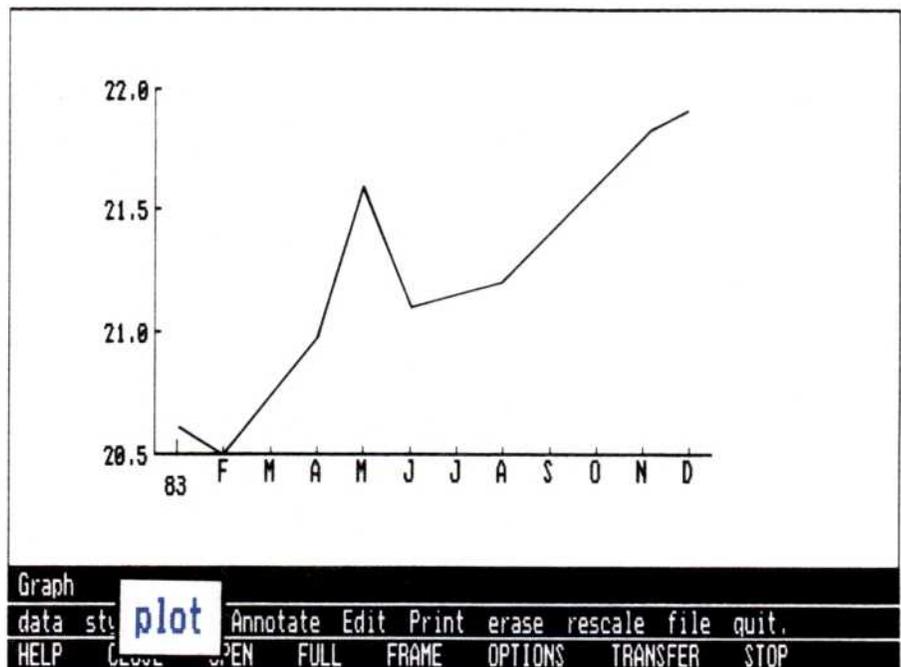
2. Select your graph type.  
Select either "Line," "Bar," or "Area." (Pie, X-Y, and high-low-close graphs are discussed later in this chapter.)
  - If you selected "Area," as in Figure 4-1, you are returned to the Graph main menu.

**Figure 4-1.** "Area" connects each of the series points to the next with a straight line and fills the area below the line with a pattern.

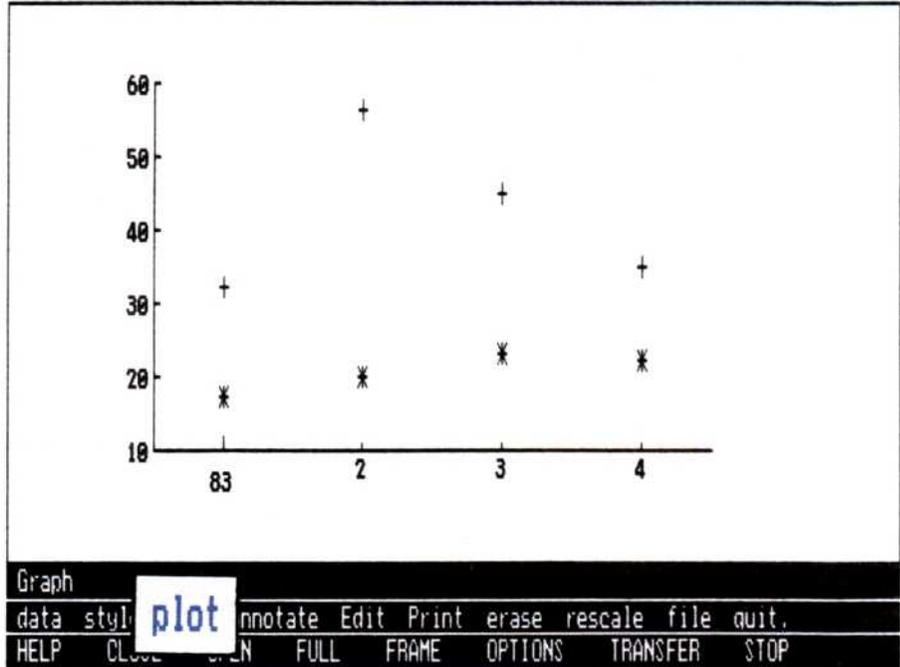


- If you selected "Line" or "Bar," you will have to make one additional selection:
- If you selected "Line," select the type symbol you want to use. Select either:
  - "Line" (See Figure 4-2).

**Figure 4-2.** "Line" connects each of the series points to the next with a straight line.



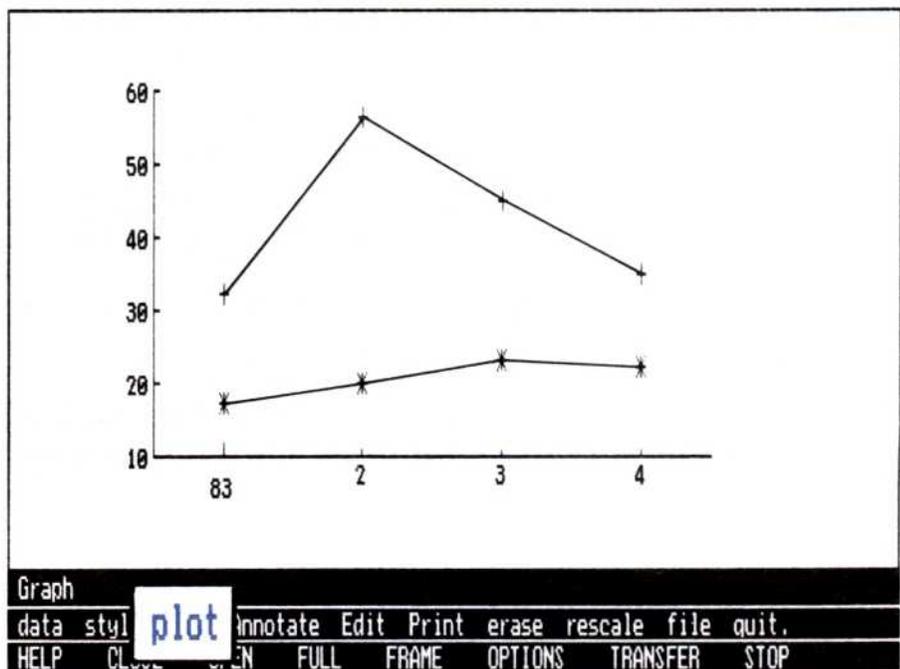
**Figure 4-3.** "Symbol" identifies each of the series points with a graphic character (+, \*, etc.) When more than one series is used in a line graph, different symbols are assigned to each series.



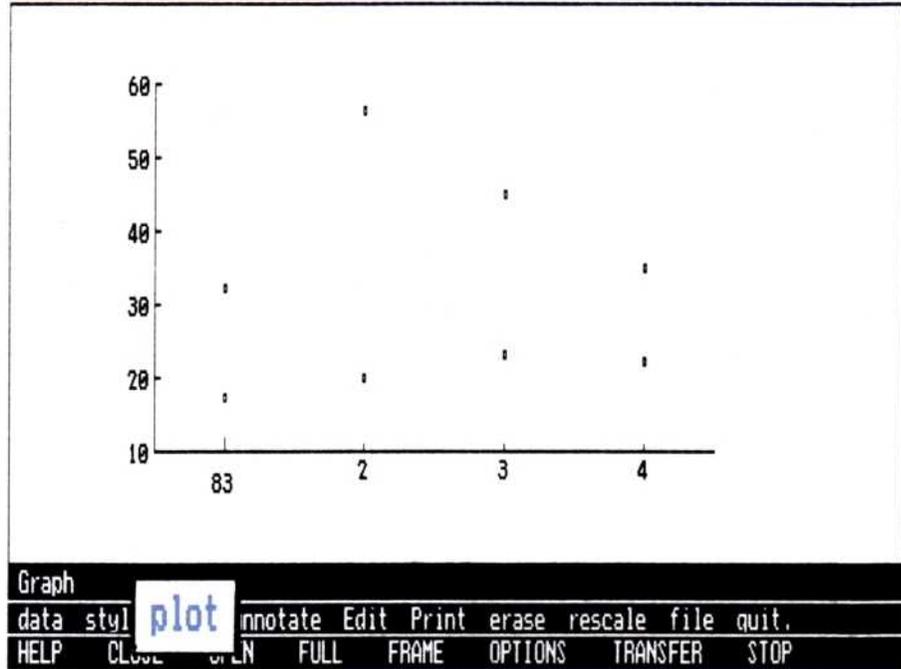
— "Symbol" (See Figure 4-3).

— "Both" (See Figure 4-4).

**Figure 4-4.** Selecting "Both" identifies each series with its own symbol and connects the points with straight lines.



**Figure 4-5.** Selecting “Point” places a single dot on the graph for each series point.



— “Point” (See Figure 4-5).

After you select the symbol type you want to use, you are returned to the Graph main menu.

Both stacked and comparative bar graphs are discussed in detail later in this chapter.

For a single-series bar graph:

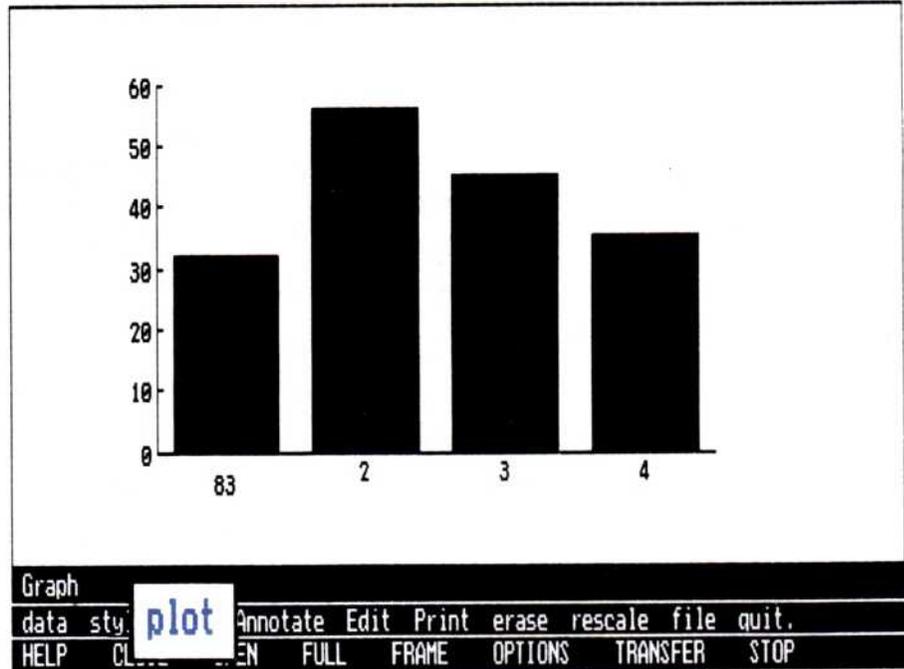
- Select “Stack” or “Compare.”  
You may choose either. It does not make any difference in a single-series bar graph.
- After you select the graph type, you return to the Graph main menu.

After you have selected your series and graph type, you are ready to draw the graph:

To draw the selected graph

1. Select “erase” from the Graph main menu to clear the display of any previous graph.
2. Select “plot.”  
The horizontal and vertical axes are drawn first, followed by the lines, bars, or areas representing your selected series.

**Figure 4-6.** A simple bar graph uses rectangles to represent the size of each value in the series.



When you see the graph you have created, you may realize that something needs to be changed, either in the series values themselves, or regarding the options you have selected to draw the graph.

To change some of the information in your series and replot it, simply return to the Edit menu, where the series used in the current graph are automatically shown, and edit the series. When you return to the Graph main menu, the graph is automatically redrawn with the new information, using your previous options and selections. You can replot the same series any number of times, trying different graph types or different options within the same graph type.

## Plotting Bar Graphs with More Than One Series

This section describes the differences between stacked bar graphs and comparative bar graphs. Instructions for creating stacked bar graphs and comparative bar graphs are in the next section.

## Stacked Bar and Comparative Bar Graphs

Although stacked bar graphs and comparative bar graphs are created with similar procedures, they

present your series in two different ways:

- Stacked bar graphs stack the information for each period of each series, showing cumulative period totals.

Stacked bar graphs are commonly used to keep track of cumulative or volume information, such as sales, inventory, and population. Stacking the bars displays the cumulative total of each of the individual series.

- Comparative bar graphs place information from different series (but with the same periods) next to each other, showing the differences between each series.

Comparative bar graphs are also used to keep track of several series of cumulative or volume information, such as sales, inventory, and population. Because the bars are drawn next to each other, you can easily compare the series.

In both types of graphs, the series used must have the same periodicity but may have different beginnings, endings, and number of periods. Both graph types require more than one series. You can have a maximum of 12 series in any graph.

(Periodicity and specifying periodicity for a series are explained in "Understanding Series" in Chapter 3.)

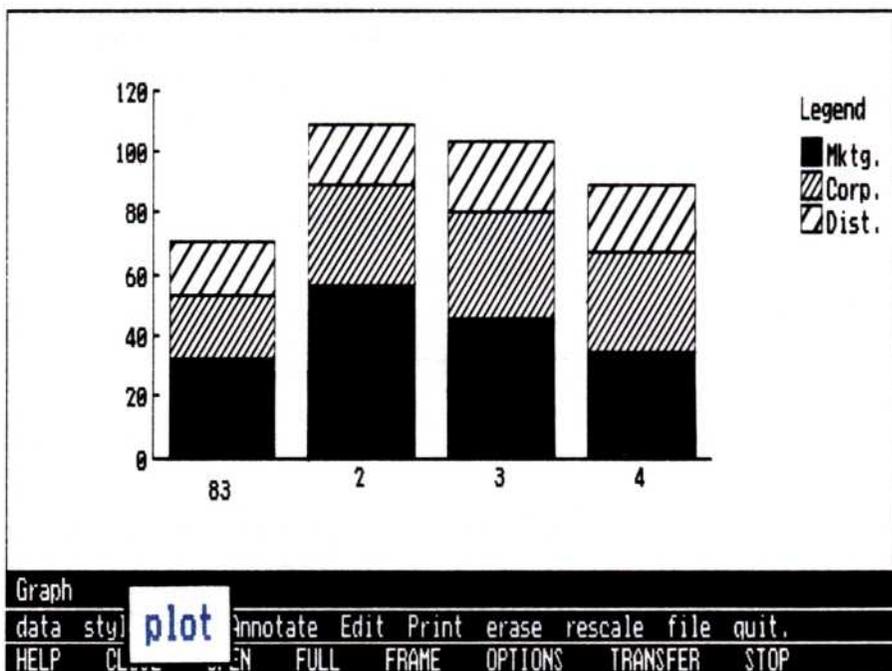
Figure 4-7 shows three separate series: Mktg., Corp., and Dist. These series were used to create the stacked bar graph in Figure 4-8 and the comparative bar graph in Figure 4-9.

Graph		Mktg.	Corp.	Dist.
1983	1	32	21	17
	2	56	33	20
	3	45	35	23
	4	35	32	22

Graph/Edit  
series replace add delete goto fill

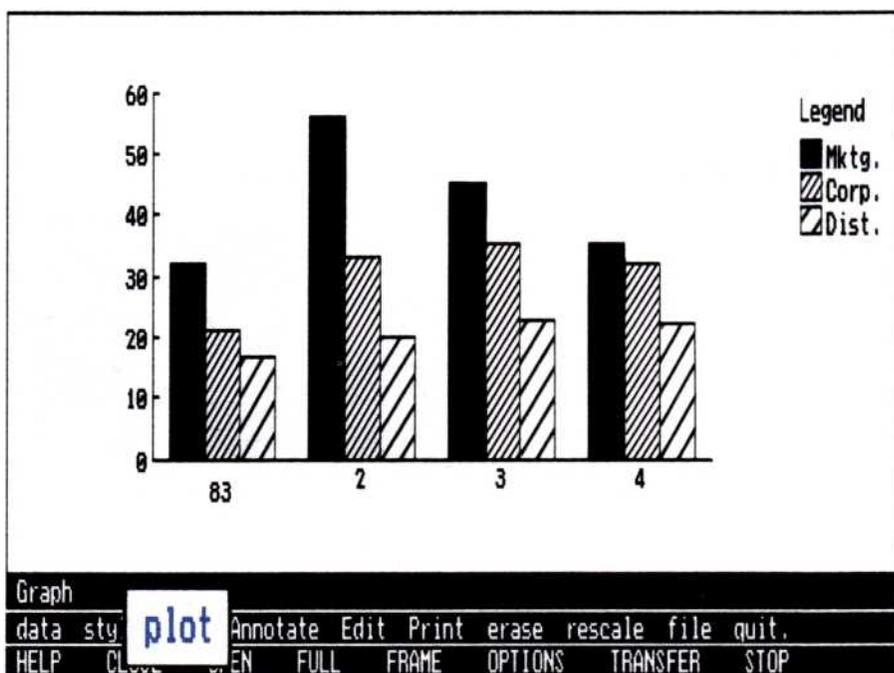
**Figure 4-7.** The Mktg., Corp., and Dist. series, which were used to create the graph in Figure 4-8.

**Figure 4-8.** When you use a stacked bar graph, your picture shows the effect of the combined series values. Each is identified by series but contributes to the total height.



Series used in bar graphs are drawn in the order that they are selected. In this example, Mktg. is selected first, Corp. second, and Dist. last. The stacked bar graph type is selected and then drawn as in Figure 4-8. Notice that Mktg. values are drawn first and that Corp. and Dist. are drawn above Mktg.

**Figure 4-9.** When you use a comparative bar graph, your picture shows the difference between series values of the same period. Points of the same period from each series are drawn next to each other, providing an easily interpreted comparative picture.



Selection order is also important in comparative bar graphs. In this example the order is the same: Mktg. first, Corp. second, and Dist. last. The comparative bar graph type is selected and then drawn as in Figure 4-9. Notice that Mktg. values are drawn first and that Corp. and Dist. are drawn to the right of Mktg.

## Plotting Stacked Bar Graphs

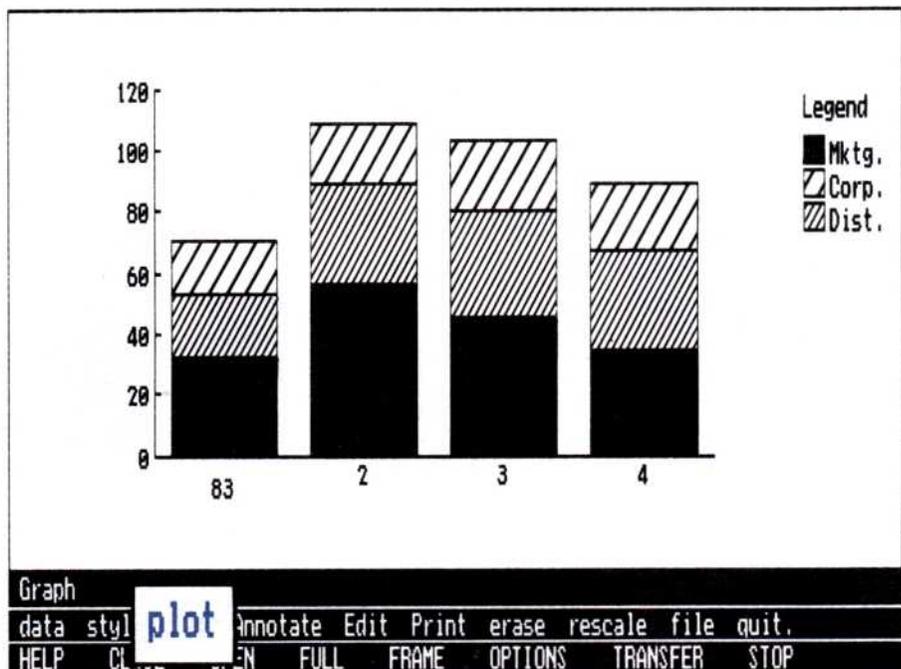
Negative values can affect a stacked bar graph in two ways:

- If a series has negative values, the Y-axis of its graph will be scaled to contain negative values in the range.
- When positive and negative values are stacked on the same period, the negative value will lower the top of the bar, rather than be stacked above a positive value.

Because series are drawn in the order they are selected, the first series selected will occupy the lower regions of a stacked bar graph and the later series will be drawn higher.

Before you begin, make sure that your series are in your working folder. You must have copied them from the current folder, transferred them from another program,

**Figure 4-10.** Stacked bar graphs are commonly used to keep track of cumulative or volume information, such as sales, inventory, and population. Stacking the bars displays cumulative total of each of the individual series.



or have entered them in the Edit display. You must have at least two series in your working folder for a stacked bar graph.

This procedure begins in the Graph main menu.

To plot a stacked bar graph

1. Select "erase" from the Graph main menu to clear the display of any previous graph.

---

2. Select "data" from the Graph main menu.

---

3. Select "series" from the data types menu.  
The series available for plotting are shown above the menu.

---

4. Select each series (up to 12) you wish to plot.  
Remember: Series are drawn in the order they are selected. The first series is plotted lowest and the later series are plotted higher.

---

5. Select "done."  
If you selected 12 series names in step 4, you will not need to select "done." You are automatically returned to the Graph main menu.

---

6. Select "style" from the Graph main menu.

---

7. Select "bar" from the graph type menu.

---

8. Select "stack" from the bar type menu.  
You are now back at the Graph main menu, ready to plot your graph.

---

9. Select "plot."

The horizontal and vertical axes are drawn first, followed by the stacked bars.

When you see the graph you have created, you may realize that something needs to be changed, either in the series values themselves or regarding the options you have selected to draw the graph.

To change some of the information in your series and replot it, simply return to the Edit menu, where the series used in the current graph are automatically shown, and edit the series. When you return to the Graph main menu, the graph is automatically redrawn with the new information, using your previous options and selections. You can replot the same series any

number of times, trying different graph types or different options within the same graph type.

## Plotting Comparative (Side-by-Side) Bar Graphs

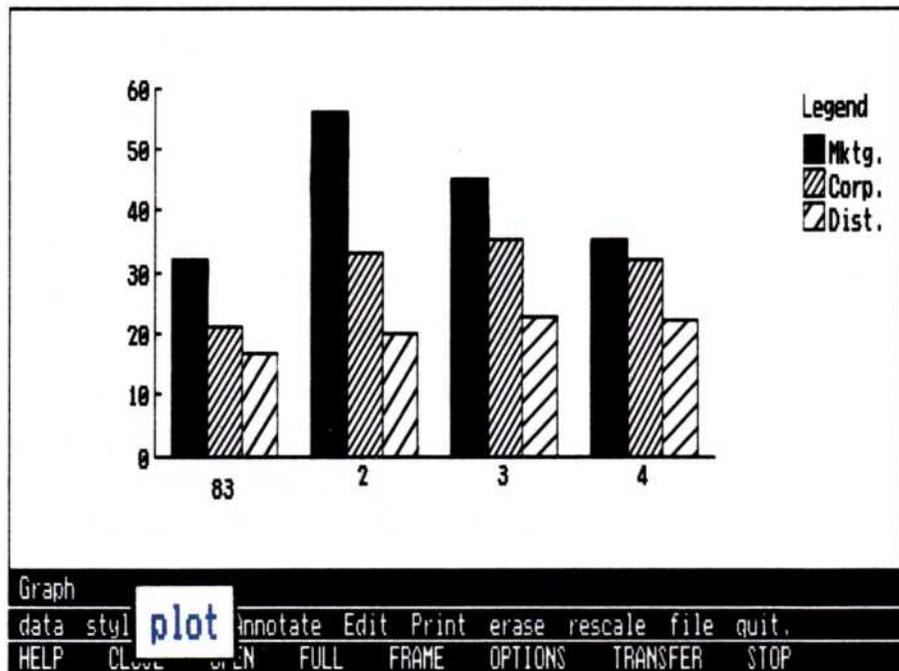
Before you begin, make sure that your series are in your working folder. You must have copied them from the current folder, transferred them from another program, or have entered them directly in the Edit display. You must have at least two series in your working folder for a comparative bar graph.

This procedure begins in the Graph main menu.

To plot a comparative bar graph

1. Select "erase" from the Graph main menu to clear the display of any previous graph.
2. Select "data" from the Graph main menu.
3. Select "series" from the data types menu.

The series available for plotting are shown above the menu.



**Figure 4-11.** Comparative bar graphs are commonly used to keep track of several series of cumulative or volume information, such as sales, inventory, and population. Because the bars are drawn next to each other, you can easily compare the series.

---

4. Select up to 12 series.

Remember: The series are plotted in the order they are selected; the first series is drawn leftmost and the later series are drawn to the right.

---

5. Select "done."

If you selected 12 series names in step 3, you will not need to select "done." You are automatically returned to the Graph main menu.

---

6. Select "style" from the Graph main menu.

---

7. Select "bar" from the graph type menu.

---

8. Select "compare" from the bar type menu.

You are now back at the Graph main menu, ready to plot your graph.

---

9. Select "plot."

The horizontal and vertical axes are drawn first, followed by the comparative bars.

When you see the graph you have created, you may realize that something needs to be changed, either in the series values themselves or regarding the options you have selected to draw the graph.

To change some of the information in your series and replot it, simply return to the Edit menu and edit the series. When you return to the Graph main menu, the graph is redrawn with the new information, using the options and selections from the previous graph. You can redraw the same series any number of times, trying different graph types or different options within the same graph type.

---

## Plotting High-Low-Close Graphs

---

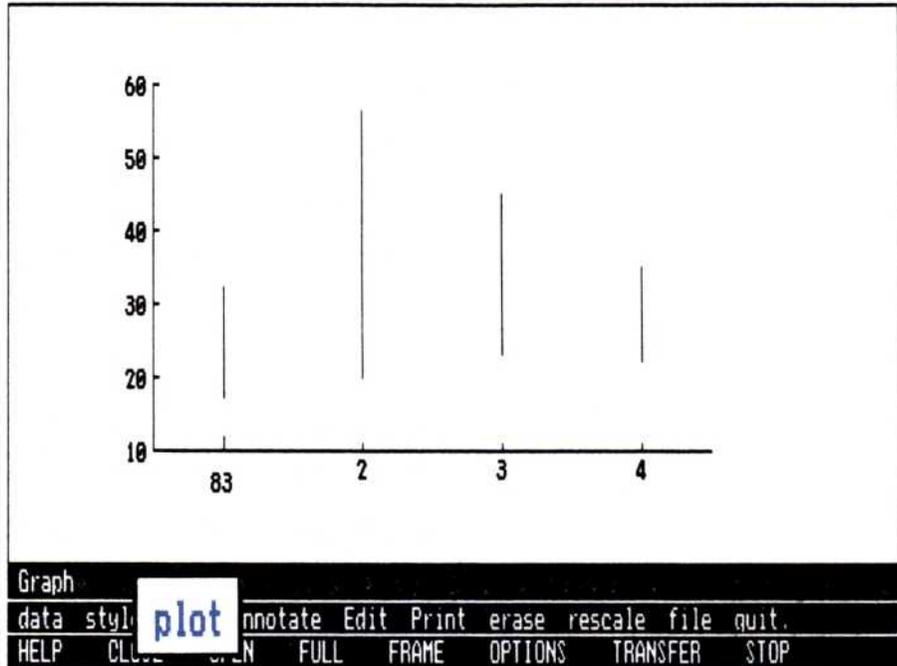
A high-low graph plots the high and low points from two series and connects them with a vertical line.

A high-low-close graph adds a value from a third series (the close) and marks this point on each of the vertical high-low lines. (The values in a close series should fall between the high and low series for each period on the X axis.)

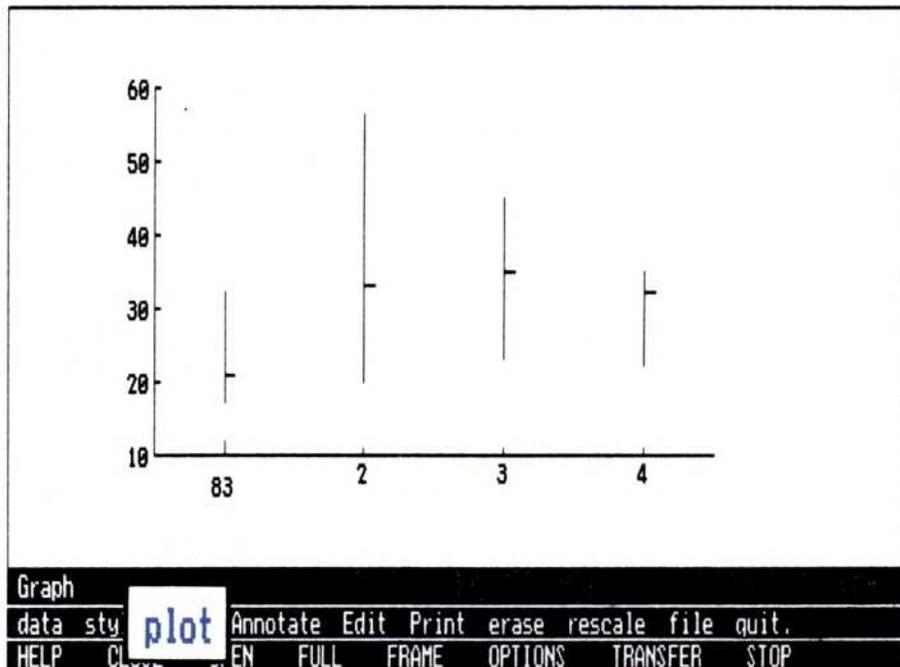
The high-low graph uses two series and the high-low-close graph uses three series.

Figures 4-12 and 4-13 show examples of high-low and high-low-close graphs.

**Figure 4-12.** A high-low graph plots the high and low points from two series.



**Figure 4-13.** A high-low-close graph requires three series, one composed of the high values for each time point, a second for the matching low values for the same time points, and a third that shows the final position at the end of the time period. This type of graph is commonly used in recording and presenting stock price histories, on a daily or weekly basis.



When selecting the series to plot in a high-low-close graph, either the high or low series can be selected first, but the close series *must* be selected last.

Before you begin, make sure that your series are in your working folder. You must have copied them from the current folder, transferred them from another program, or have entered them directly in the Edit display. You must have at least two series in your working folder for a high-low graph and three series for a high-low-close graph. All of the series must have the same periodicity.

This procedure begins in the Graph main menu.

To plot a high-low or high-low-close graph

1. Select "erase" from the Graph main menu to clear the display of any previous graph.

---

2. Select "data" from the Graph main menu.

---

3. Select "series" from the data types menu.  
The series available for plotting are shown above the menu.

---

4. Select each of the series names you wish to plot.  
You may select the high and low series in any order you wish. If you are plotting a high-low-close graph, select the close series last.

---

5. When you have finished selecting series, select "done."  
You are returned to the Graph main menu.

---

6. Select "style" from the Graph main menu.

---

7. Select "Hi-Lo-CI" from the graph type menu.  
You are now back at the Graph main menu, ready to plot your graph.

---

8. Select "plot."

The horizontal and vertical axes are drawn first, followed by the high-low lines. If you selected a close series, the marks representing these values are drawn last.

When you see the graph you have created, you may realize that something needs to be changed, either in the series values themselves or regarding the options you have selected to draw the graph.

To change some of the information in your series and

replot it, simply return to the Edit menu, where the series used in the current graph are automatically shown, and edit the series. When you return to the Graph main menu, the graph is automatically redrawn with the new information, using your previous options and selections. You can replot the same series any number of times, trying different graph types or different options within the same graph type.

Note: Do not add vertical grid lines to a high-low or high-low-close graph. The vertical grids will be drawn over the high-low lines and make them hard to interpret.

## Plotting X-Y Graphs

---

An X-Y graph plots the intersections of the points of two series. Two series with the same periodicity are required to plot an X-Y graph. The first series selected provides the X values and the second provides the Y values. If either series contains more values than the other, those values are not plotted.

X-Y graphs can be plotted with four different combinations of symbols: line, symbols, points, or both (lines and symbols). Examples of these four types of X-Y graphs are shown in Figures 4-14, 4-15, 4-16, and 4-17.

Before you begin, make sure that your series are in your working folder. You must have copied them from the current folder, transferred them from another program, or have entered them directly in the Edit display. You must have at least two series in your working folder for an X-Y graph.

This procedure begins in the Graph main menu.

To plot an X-Y graph

1. Select "erase" from the Graph main menu to clear the display of any previous graph.

---

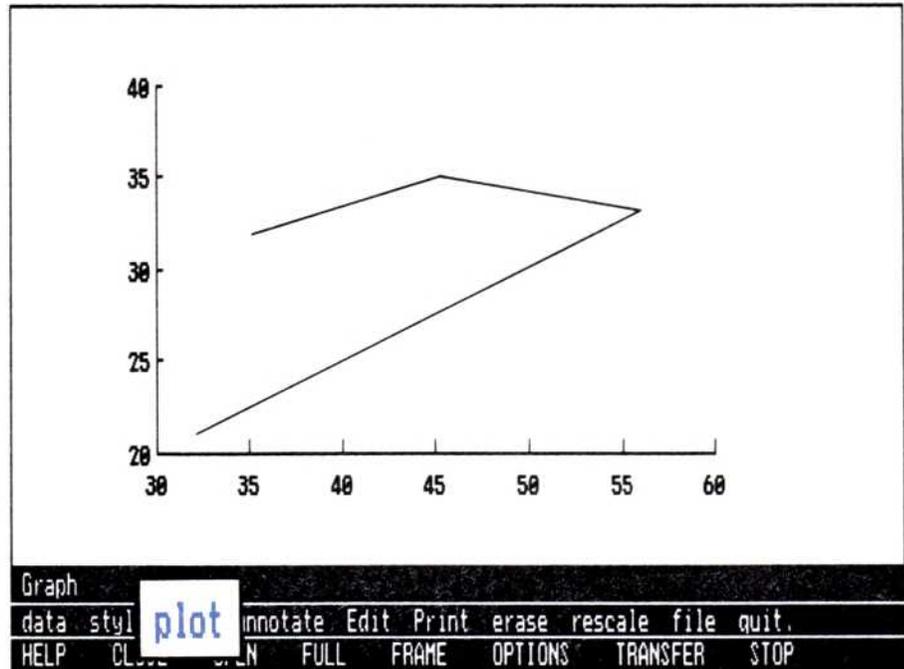
2. Select "data" from the Graph main menu.

---

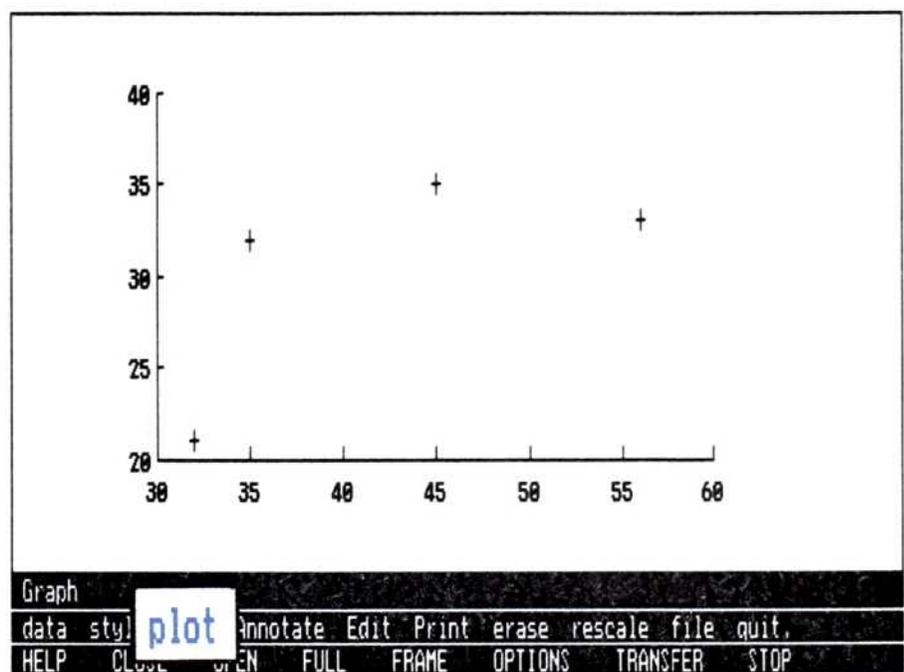
3. Select "series" from the data types menu.  
The series available for plotting are shown above the menu.

---

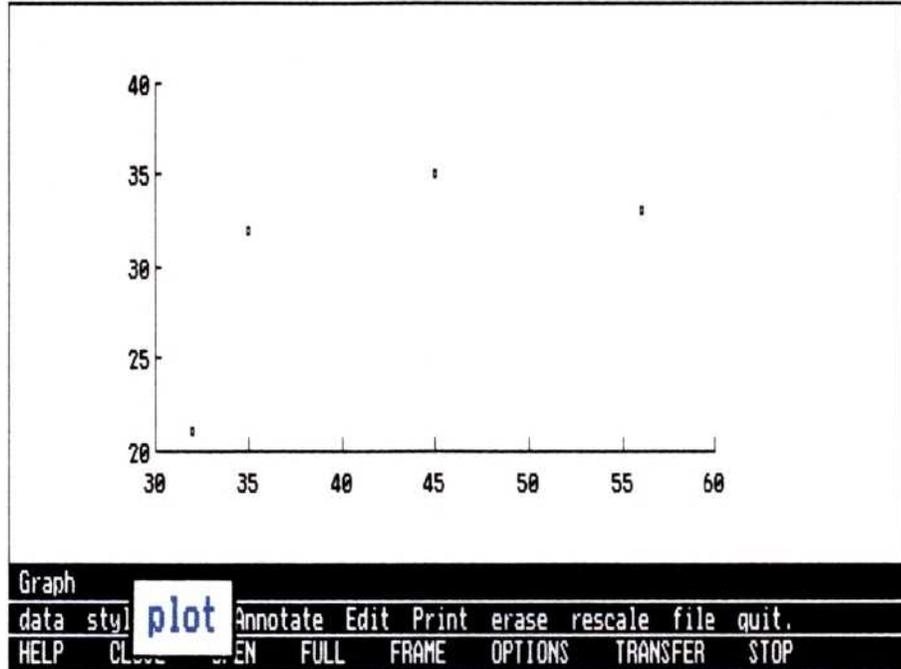
4. Select the names of the two series you wish to plot.  
The available series are shown above the menu. The first series you select is used as the X series and the



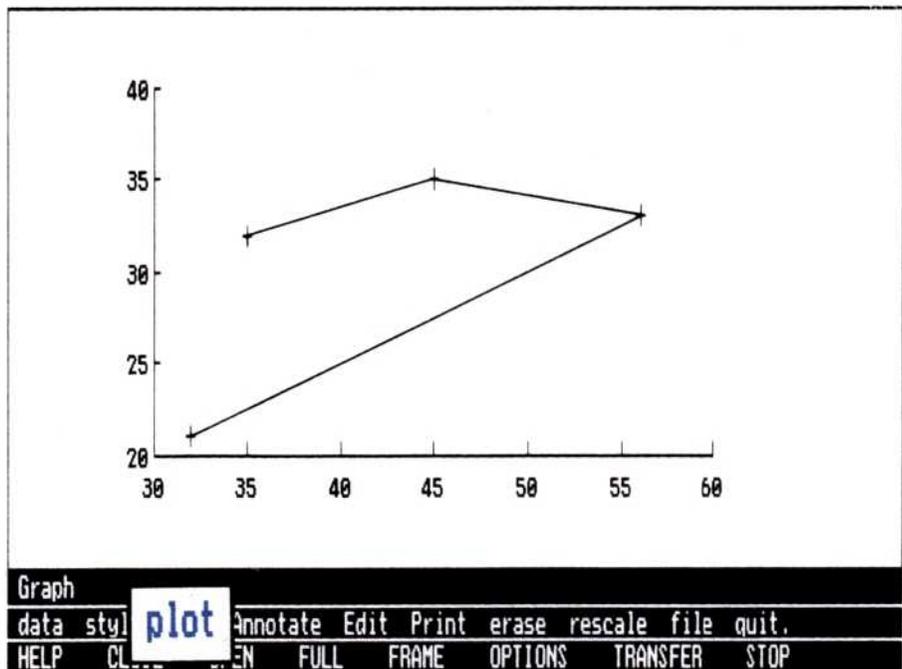
**Figure 4-14.** An X-Y graph shows the correlation between series points. This type of graph is commonly used to express the relationship between series, such as rainfall and crop growth, advertising expenditures and sales, etc. This graph uses the "lines" option.



**Figure 4-15.** This graph presents the same series as Figure 4-14 above, but uses the "symbol" option.



**Figure 4-16.** This graph presents the same series as Figure 4-14 above, but uses the "point" option.



**Figure 4-17.** This graph presents the same series as Figure 4-14 above, but uses the "both" (lines and symbols) option.

second becomes the Y series. These series must have the same periodicity.

- 
5. Select "done."

---

  6. Select "style" from the Graph main menu.

---

  7. Select "X-Y" from the graph type menu.

---

  8. Select the X-Y symbol type.

You can plot X-Y graphs in four different ways: with lines, symbols, points, or both (lines and symbols). Each of these options is described below.

- "line" connects each calculated point to the next point with a straight line.
- "symbol" identifies each of the calculated points with a character (+, \*, #, etc.)
- "point" places a single dot on the graph for each calculated point.
- "both" identifies each calculated point with its own symbol and connects the points with straight lines in the order in which they occur in the series.

After you select the symbol type, you return to the Graph main menu, ready to plot your graph.

- 
9. Select "plot."

The horizontal and vertical axes are drawn first, followed by the points where your X and Y series intersect.

When you see the graph you have created, you may realize that something needs to be changed, either in the series values themselves or regarding the options you have selected to draw the graph.

To change some of the information in your series and replot it, simply return to the Edit menu, where the series used in the current graph are automatically shown, and edit the series. When you return to the Graph main menu, the graph is automatically redrawn with the new information, using your previous options and selections. You can replot the same series any number of times, trying different graph types or different options within the same graph type.

## Plotting Pie Graphs

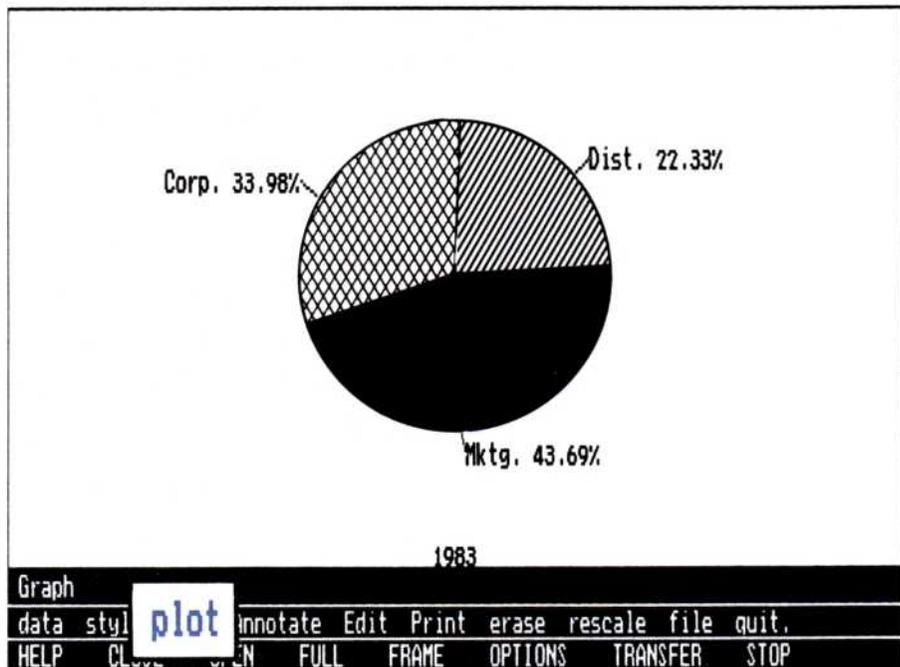
A pie graph uses one or more series to create an image of each period or series contribution (slice) to the whole pie. Each period or series becomes a slice of the total, as a percentage of the total period's value, as is seen in Figure 4-19.

Before you begin, make sure that your series are in the working folder. You must have copied them from the current folder, transferred them from another program, or have entered them directly in the edit display.

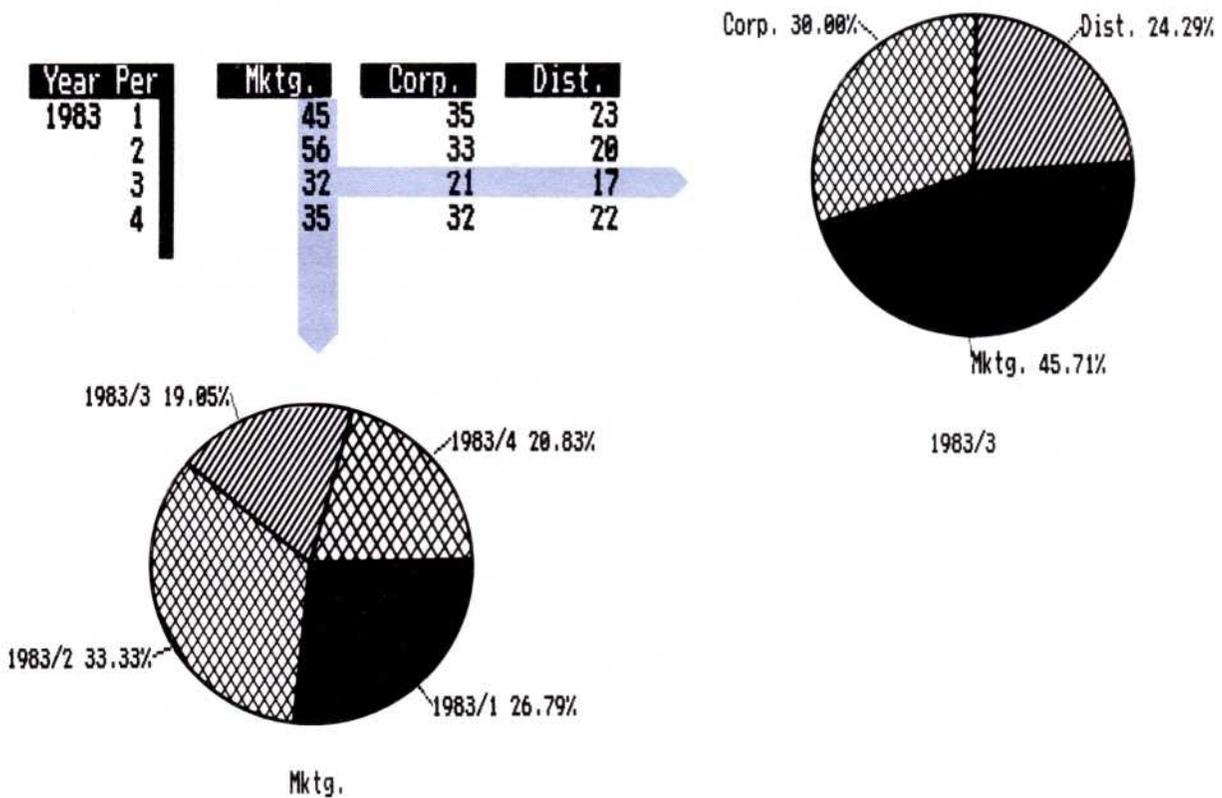
This procedure begins in the Graph main menu.

To plot a pie graph

1. Select "erase" from the Graph main menu to clear the display of any previous graph.
2. Select "data" from the Graph main menu.
3. Select "series" from the data types menu.  
The available series names are shown above the menu.



**Figure 4-18.** Pie graphs show the contribution to the whole pie of each period displayed in the graph. This type of graph is commonly used where it is necessary to display each series point's contribution to the whole picture.



**Figure 4-19.** A pie graph can be developed from all the periods in one series, or from matching periods in several series.

4. Select up to 12 of the series names.

5. Select "done."

If you selected 12 series names in step 4, you will not need to select "done." You are automatically returned to the Graph main menu.

You are returned to the Graph main menu.

6. Select "style" from the Graph main menu.

7. Select "pie" from the graph type menu.

8. Select "plot."

The program asks you for a beginning year.

This question may not make sense to you if your series does not take years into account; that is, if your series periodicity is 7 (weekly) or 1 (daily), and so forth. In this case, you should enter the first major period (year) that contains information you want to use in the pie graph. This is illustrated in

Figure 4-20. (Note: If you are plotting a pie graph with more than one series, the beginning year and beginning period indicate the one period that will be extracted from each of the series and used as a slice of the whole pie. An end year and period are not used.)

The program will always ask for the beginning year. However, if your series uses a periodicity of 1, the program will not prompt for a beginning period or ending period. After you enter the beginning year, the program will ask for the ending year. When your series use a periodicity of 1, there is no minor period. (For additional information on series and series periodicities, see Chapter 3, "Creating Series.")

9. Type the beginning year you want to plot in the graph. Enter the value by typing  ↵.

The program asks for the beginning period. (If your series periodicity is one, this prompt will not occur and you can skip this step.)

Graph			Series00	
Year	Per			
3	2		7.7	
	3		23.4	first period
	4		4	
	5		8.6	
	6		13.6	
	7		12.4	
4	1		15.2	last period
	2		13.1	
	3		15.3	
	4		20.3	

Graph/Edit  
series replace add delete goto fill

**Figure 4-20.** This series uses a periodicity of 7 (weekly). The values that are going to be used in the graph are 23.4, 4.0, 8.6, 13.6, 12.4, and 15.2. When the program asks for the start year, this user replies with 3, the major period, or week, that contains the first value used in the graph. The start period is 3, for the matching first value. When the program asks for the end year and end period, they are entered as 4 and 1, respectively. (Note: If you are plotting a pie graph with more than one series, the beginning year and beginning period indicate the one period that will be extracted from each of the series and used as a slice of the whole pie.)

10. Type the beginning period value you want to plot in the graph. Enter the value by pressing ↵.
  - If you selected more than one series, entering the beginning period to plot will draw the graph. This completes your pie graph, and you can skip the additional numbered instructions in this section.
  - If you have selected only one series, the program asks you for an ending year.

The program asks for the ending year.

---

11. Type the ending year you want to plot in the graph. Enter the value by pressing ↵.

The program asks for the ending period. (If your series periodicity is 1, this prompt will not occur and you should skip step 12.)

---

12. Type the ending period value you want to plot in the graph. Enter the value by pressing ↵.

When you enter the last value, the pie graph is drawn in the Graph display.

When you see the graph you have created, you may realize that something needs to be changed, either in the series values themselves or regarding the options you have selected to draw the graph.

To change some of the information in your series and replot it, simply return to the Edit menu, where the series used in the current graph are automatically shown, and edit the series. When you return to the Graph main menu, the graph is automatically redrawn with the new information, using your previous options and selections. You can replot the same series any number of times, trying different graph types or different options within the same graph type.

---

## Erasing the Graph Display

---

With the “erase” command of the Graph main menu you can clear the Graph display of any previously plotted series, labels, text, and format options (such as grids or background). You can redraw your last graph

after you select “erase” by selecting “plot.” However, you will have to reenter any labeling, scaling, or text that was on the erased graph. Only the basic graph will be redrawn.

This procedure begins in the Graph main menu.

To erase the  
Graph display

1. Select “erase” from the Graph main menu.

When you select a new graph type or series, the “plot” command does not erase the previous graph before it draws the new graph. If you do not erase before selecting “plot,” the new graph may be drawn over the current graph. This is called an *overlay* and is sometimes desirable. For information on creating overlay graphs, see “Overlaying Graphs” in Chapter 5.

---

# 5

## Enhancing Your Graphs

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## Chapter 5

## Enhancing Your Graphs

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With the Visi On Graph™ program, you can create special effects in your graphs to highlight important areas or place additional information in the display.

With the techniques described in this chapter, you can:

- Create labels for a main title, a subtitle, a bottom title, or a side title.
- Add text to your graphs to explain a point.
- Add a legend to identify the series used in the graph.
- Select two different font types for any label or text: roman or bold.
- Add or remove tick marks on your X and Y axes for clarity.
- Control shading used in bar, area, and pie graphs.
- Change the background color.
- Overlay graphs with other graphs.
- Change the scale of a graph.

This chapter contains step-by-step instructions for all of these enhancement techniques.

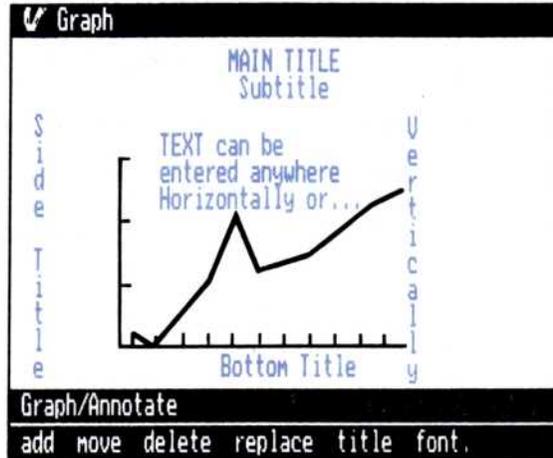
## Labeling Your Graph

---

One picture is worth a thousand words, but in a graph, a few carefully chosen words can double the value of your picture. Labels can call out points of interest, explain seeming discrepancies, and provide information that is not graphically represented.

A *title* is a group of words on a graph, used to clarify or explain the contents of the graph. Titles are always entered in a fixed position.

- *Main* title labels are horizontal, at the top of a graph.
- *Subtitle* titles are on a line just below and parallel to main titles.
- The *bottom* title runs below the graph's X axis.
- The *side* title runs to the left of, and parallel to, the Y axis.



**Figure 5-1.** Labels can be used in many ways: to define or enhance a graph, or to call attention to or explain any area on the graph.

*Text* is another type of label. Text can be positioned anywhere on the graph, can be one or more lines, and can run vertically or horizontally.

The *legend* is a group of labels the program adds to identify the different series that are used in the graph. Legends are treated differently from the other labels. They are discussed in "Adding or Removing a Legend" later in this chapter.

You should keep the following considerations in mind when you work with labels:

- Text should be one of the last things you place on your graph. If you are still adding series to the graph, text might obscure, or be obscured by, the newly plotted graph.
- The "erase" command clears your graph and its labels from the display. The "plot" and "rescale" commands redraw the graph and retain the labels from the previous graph.
- Because the graph displayed in your window may not have exactly the same proportions as the graph you print, labels may be printed in a different position than the one displayed in the window. The "partition" and "size" options of the Print and Graph options sheets can show you how your graph will print (see Chapter 6, "Printing" and "How Do You Use the Visi On Graph Program?" in Chapter 1).

- Main, sub-, and bottom titles, which are horizontal, are centered horizontally on the graph.
- Side labels, which are vertical labels, are centered vertically on the graph.

## Adding a Title

---

With the “title” command you can place a main title, subtitle, side title, or bottom title on your graph. The procedure is the same for all types of graphs.

Each type of title is placed in a specific area of the graph:

- “Main” titles appear at the top of the graph.
- “Subtitle” titles are printed on the second line from the top of the graph. You do not have to have a main title to have a subtitle.
- “Bottom” titles are printed below the horizontal or X axis.
- “Side” titles are printed parallel to the vertical or Y axis.

To put a title on your graph

1. Select “Annotate” from the Graph menu.

---

2. Select “title.”

---

3. Select your type of title:
  - “Main”
  - “Subtitle”
  - “Side”
  - “Bottom”

---

4. Enter your title.

---

5. Press .

How much text can be shown in the Graph or Annotate display depends on your window size. You can place more text on your graph than can be shown in the window and it may still appear on the printed graph. (See Chapter 6, “Printing”.)

You can continue to add labels in the Annotate menu, or if this completes your graph, choose to save your current graph (see Chapter 2, “Saving, Getting, and Organizing Series and Graphs”) or print it (see Chapter 6, “Printing”).



**Figure 5-2.** Usually used to describe or identify your graphs, titles are always entered to a fixed position on the graph.

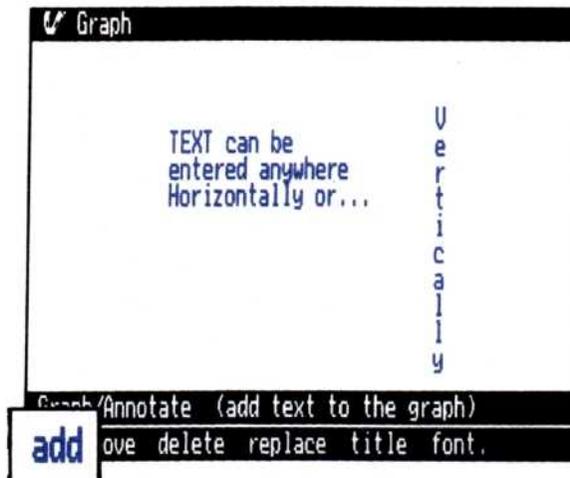
## Adding Text to a Graph

---

With the "add" command, you can place a label or block of text anywhere on your graph. The text can be printed horizontally or vertically, as shown in Figure 5-3.

To place text on your graph

1. Select "Annotate" from the Graph menu.
2. Select "add."



**Figure 5-3.** Text, either horizontal or vertical, can be put anywhere on your graph.

3. Select the direction you wish your text to be displayed:

- "Horizontal"
- "Vertical"

4. Select the location on the graph where you want to start your text.

This selection establishes the lower left corner of the first character in the first line of text and sets the margin for additional lines of text.

5. Enter your text.

How much text can be displayed on your graph depends on the size of your window. You can put more text on the graph than can be shown in the window but that text may appear on your printed graph. (See Chapter 6, "Printing.")

6. Press  to place the text on the graph.

7. If you want to place more lines of text on the graph, you may continue your entry. Each additional line of horizontal text is placed below the previous line. Each additional line of vertical text is placed to the right of the previous line.

8. To stop entering text, press  when the cursor is on a blank entry line.

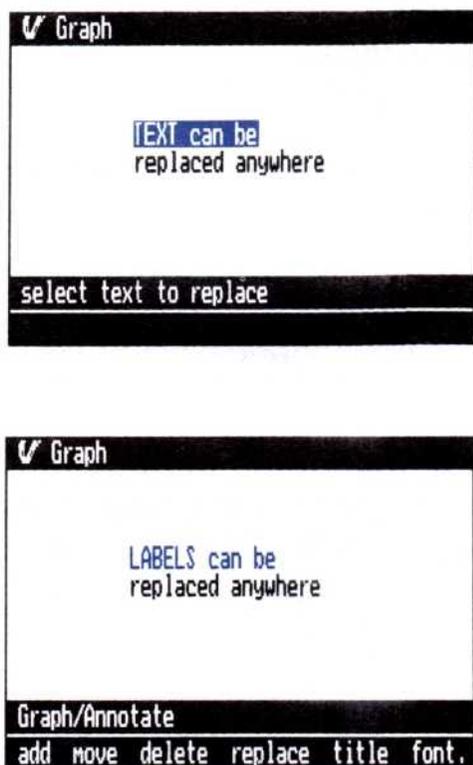
You can continue to add labels in the Annotate menu, or if this completes your graph, choose to save your current graph (see Chapter 2, "Saving, Getting, and Organizing Series and Graphs") or print it (see Chapter 6, "Printing").

---

## Replacing Labels

---

You can replace a previously entered label or single text line with the "replace" command. Any of the labels you can place on a graph can be replaced. The legend title and legend item labels can also be replaced. The new label can be longer or shorter than the previous label. If you select one line from a block of text, your new text will replace that line only.



**Figure 5-4.** When the “replace” command is used to change the contents of a label, the new label is entered in the same location as the previous label.

To replace a label or text

1. Select “Annotate” from the Graph menu.

---

2. Select “replace.”

---

3. Select the label or text you want to replace.

---

4. Enter your new text just as if you were entering it the first time.

---

5. Press .

How much text can be shown in the Graph display depends on your window size. You can place more text on your graph than can be shown in the window and it may still appear on the printed graph. (See Chapter 6, “Printing”.)

You can continue to add or replace labels in the Annotate menu, or if this completes your graph, choose to save your current graph (see Chapter 2, “Saving, Getting, and Organizing Series and Graphs”) or print it (see Chapter 6, “Printing”).

## Moving Labels on a Graph

You can move a previously entered label or block of text to a new position on the graph with the “move” command. Any of the labels you can place on a graph can be moved. The legend title can be moved, but legend item labels cannot be moved.

To move a label  
or block of text

1. Select “Annotate” from the Graph menu.

2. Select “move.”

3. Select the label or text you want to move.

The program asks you to select a new location for the label.

4. Select the new location for the label.

This location is then used as the lower left corner of the first character in the label. If the position you select is too far to the right or too far down on the graph, some of your label may be truncated. If this happens, simply select a new location for the label.



**Figure 5-5.** Any label can be moved. The label is erased from its original position and redrawn wherever you want it.

The label is redrawn in the new location. The change is not made permanent until you select “done” from the menu line. You may continue to select new locations for the label until you are satisfied with its position. Each time you select a new location, the old position is erased and the label is redrawn in the new position.

5. Select “done” to fix the label in its new location.

The number of characters that you can show on one line depends on where you begin the text. How much text that can be shown in the Graph or Annotate display depends on your window size. You can place more text on your graph than can be shown in the window and it may still appear on the printed graph. (See Chapter 6, “Printing.”)

You can continue to add labels in the Annotate menu, or if this completes your graph, choose to save your current graph (see Chapter 2, “Saving, Getting, and Organizing Series and Graphs”) or print it (see Chapter 6, “Printing”).

## Using Fonts

---

You can change the appearance of the individual labels you add to your graph by selecting different fonts. Each font creates alphabetical, numeric, and punctuation characters using different styles, letting you add emphasis, draw attention to, or differentiate between the different labels.



**Figure 5-6.** Different typefaces (fonts) can be used with any label you add to your graph. Once selected, a font is used with all labels you add, until you select another font.

When you begin using the Visi On Graph program, the font type is preset for "roman." When you change the font type, the new font type will be used for all of the labels you add, until you select another.

To change the font type

1. Select "Annotate" from the Graph menu.
2. Select "font" from the Annotate menu.
3. Select your font type.
  - Select "roman" for the standard typeface.
  - Select "boldface" for a thicker typeface.

You can switch fonts as many times as you like while adding labels to a graph. It is a good idea when you are first getting used to adding labels to change back to the standard "roman" style font between creating graphs.

---

## Removing Labels from a Graph

---

You can remove a label or block of text from a graph with the "delete" command. Any of the labels or titles you can place on a graph can be removed.

To remove a label or block of text

1. Select "Annotate" from the Graph menu.
2. Select "delete."
3. Select the label or text you want to remove.

The text is removed.

You are returned to the Annotate menu, where you can remove more labels by repeating these steps, or continue adding, replacing, and moving labels.

If this completes your graph, you may choose to save it (see Chapter 2, "Saving, Getting, and Organizing Series and Graphs") or print it (see Chapter 6, "Printing").

---

## Graph Options

---

The following sections discuss the changes that can be made to your graphs with the Visi On Graph options sheets.

For additional information on Visi On options sheets, see the *Visi On User's Guide*.

## Automatic and Manual Options

Two options that control when the screen is redrawn appear at the beginning of the Print options sheet. These options are "Redraw Mode automatic" and "Redraw Mode manual".

The preset selection is "automatic." Every time you select a new option in the Print options sheet, your graph is redrawn with that new option active. If you are changing several of your options at one time, you may want to use the "manual" redraw mode.

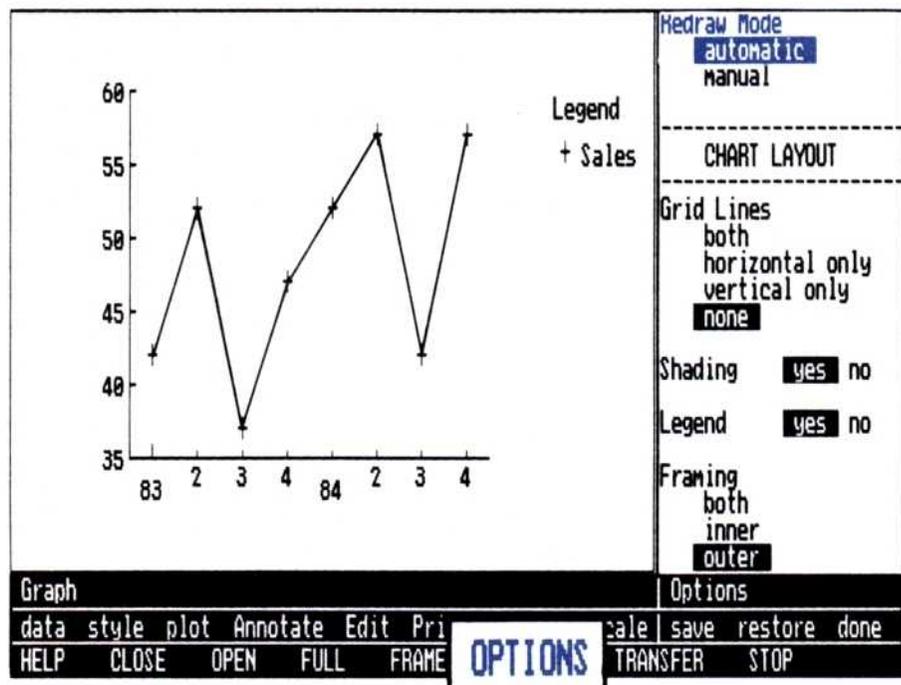
To change the redraw mode

1. Select one of the following:
  - "automatic" The graph will be redrawn every time you select an option. You can also select "automatic" to redraw the graph after changing options in "manual" redraw mode.
  - "manual" The graph will only be redrawn when you select "plot" from the Visi On Graph menu or select "automatic" from the redraw mode options.

## Adding or Removing a Legend

The legend lists each of the series used in the graph. The identifying pattern or symbol that series uses in

**Figure 5-7.** The "automatic" and "manual" redraw mode options control when the current graph is redrawn with new options.



the graph appears next to the series name. The legend is always drawn to the right of the graph; it shows as many of the series names as can fit in the window. When you print your graph, however, the legend will display every series used in it.

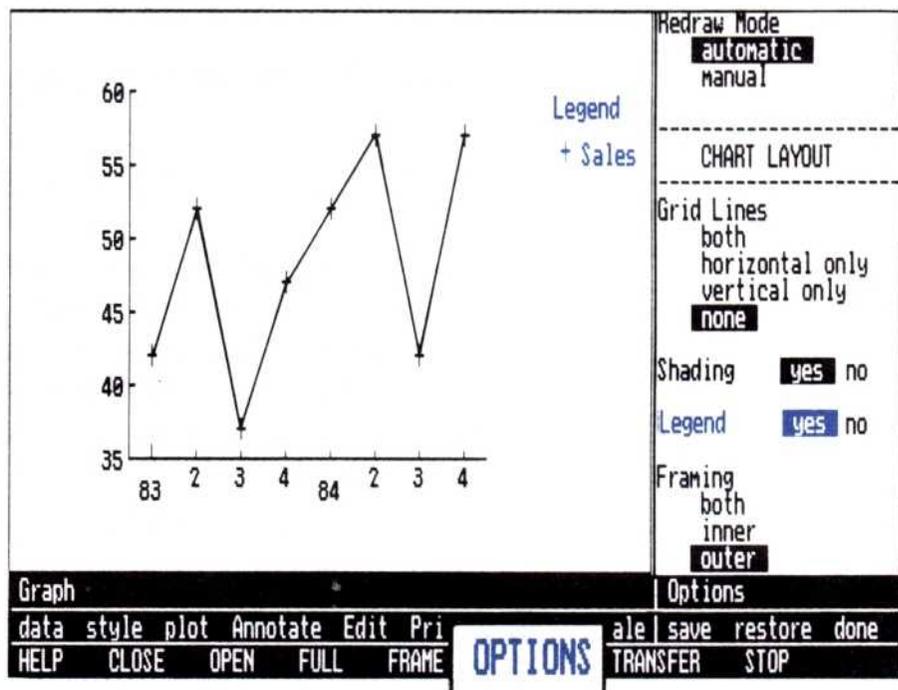
You may decide to remove the legend from your graph and use the Visi On Graph labeling commands to identify your individual series. Remember that removing the legend increases the graph size and amount of detail that you can display in your graph.

Legends are controlled by the Graph menu options sheet. The preset option for legends is "yes"; legends will be displayed unless this option is changed to "no."

To add or  
remove a legend

1. Select "OPTIONS" from the Visi On menu.
2. Scroll the options sheet until the "Legend yes no" option is visible, as in Figure 5-8.
3. Select one of the following:
  - "yes" if you want to have a legend displayed or printed with your graph.
  - "no" if you do not want to have a legend displayed or printed with your graph.

**Figure 5-8.** *The Legend option is near the beginning of the Graph options sheet but, depending on your window size, you may have to scroll it into view.*



If your options sheet redraw mode is set to “automatic,” the graph will be redrawn immediately using the new legend option.

If the redraw mode is set to “manual,” you must redraw the graph to see the effect of the new legend option. See “Automatic and Manual Options” earlier in this chapter for more information.

## Changing the Axis Labels

---

You can control the tick mark labels and the formats they appear in on the horizontal and vertical axes of your graphs.

Tick mark labels are the numbers along either axis that show the value or period of the individual plotted series points. You can change X-axis or Y-axis attributes in the Graph options sheet to display them as dollars, decimals, or in floating point.

You select labels for both the X and Y axes in the same way. Follow the instructions below when changing either set of attributes.

### Changing tick marks on either axis

To change tick mark labels on either axis

1. Select “OPTIONS” from the Visi On menu.
  2. Scroll the options sheet until the “X Axis attributes” or “Y Axis attributes” option is visible, as in Figure 5-9.
- 

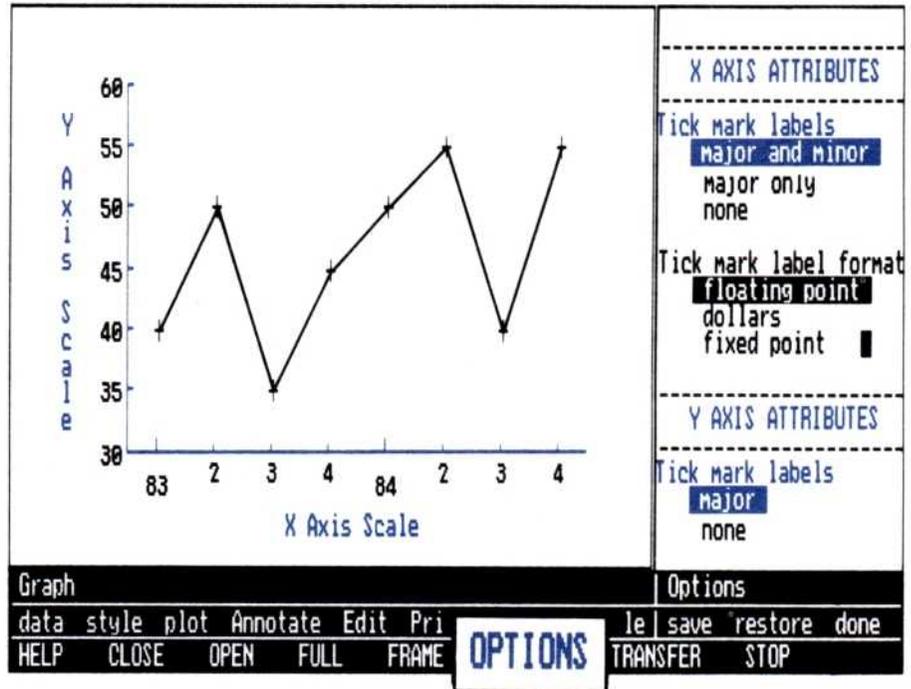
3. Select:

- “major” if you want the graph’s tick marks labeled.
- “none” if you do not want the graph’s tick marks labeled.

The X-axis attributes allow a third choice: “major and minor” labels. This option will affect your graph only if your series have a periodicity of greater than one. (See Chapter 3, “Creating Series” for a complete description of series periodicity.)

- “major and minor” if you want both major and minor periods to be marked.

If your options sheet redraw mode is set to “automatic,” the graph will be redrawn immediately



**Figure 5-9.** The X- and Y-axis attributes options are near the end of the Graph options sheet; you may need to scroll them into view.

using the new shading option.

If the redraw mode is set to “manual,” you must redraw the graph to see the effect of the new option. (See “Automatic and Manual Options” earlier in this chapter for more information.)

## Selecting dollars, decimals, or floating-point format

To select how the tick mark values are displayed

1. Select “OPTIONS” from the Visi On menu.

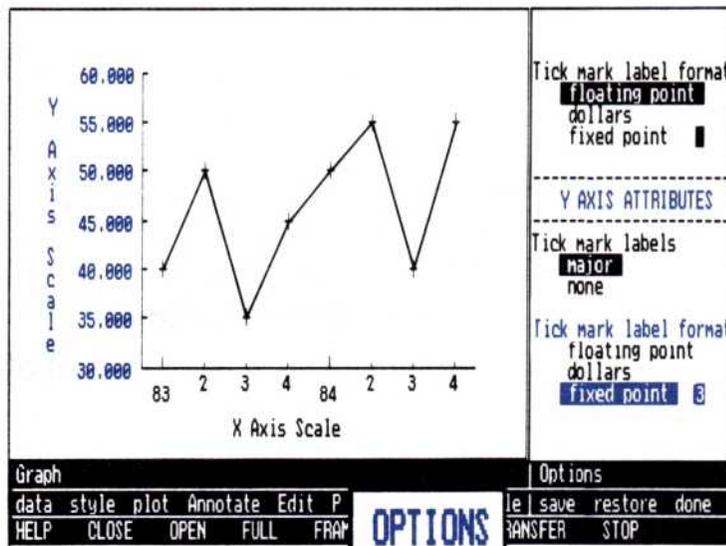
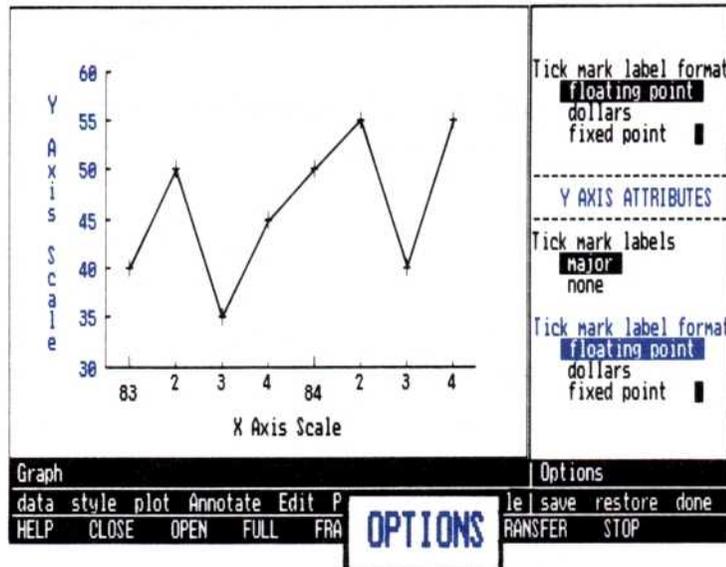
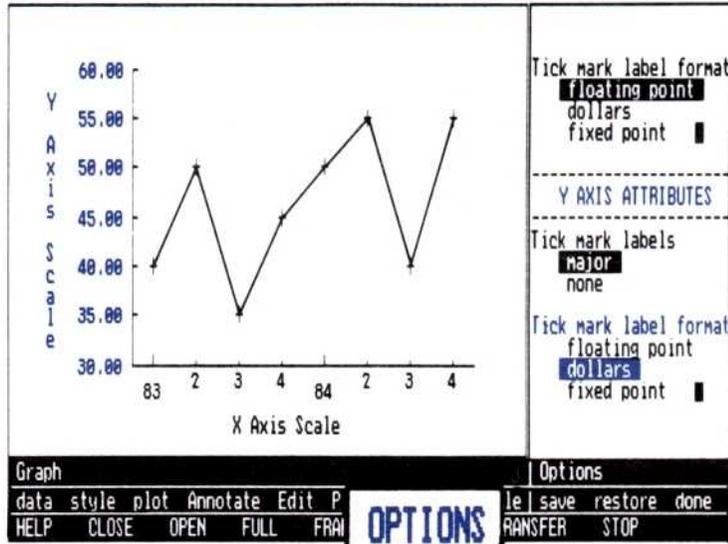
---

2. Scroll the options sheet until the “X Axis attributes” or “Y Axis attributes” option is visible, as illustrated in Figure 5-10.

---

3. Select one of the following:
  - “floating point” if you want the label’s unformatted value to be displayed.
  - “dollars” if you want the label’s value to be rounded to two decimal places.
  - “fixed point” if you want to enter a number of decimal places for the labels. You must then enter the number of decimal places:

**Figure 5-10.** The X- and Y-axis attributes options are near the end of the Graph options sheet; you may need to scroll it into view. The three attribute options are dollars, floating-point, and fixed point.



If you selected “fixed point”:

1. Select the white square to the right of the “fixed point” option.
- 
2. Press **(END)** and then type the number of decimal places you want (between one and three) and press **(↵)**.

If your options sheet redraw mode is set to “automatic,” the graph will be redrawn immediately using the new option.

If the redraw mode is set to “manual,” you must redraw the graph to see the effect of the new option. (See “Automatic and Manual Options” earlier in this chapter for more information.)

## Shading Your Graphs

---

You can draw bar, area, and pie graphs with or without shading. If you do not change the Graph options sheet, the preset value for this option is “yes” and shading will be used.

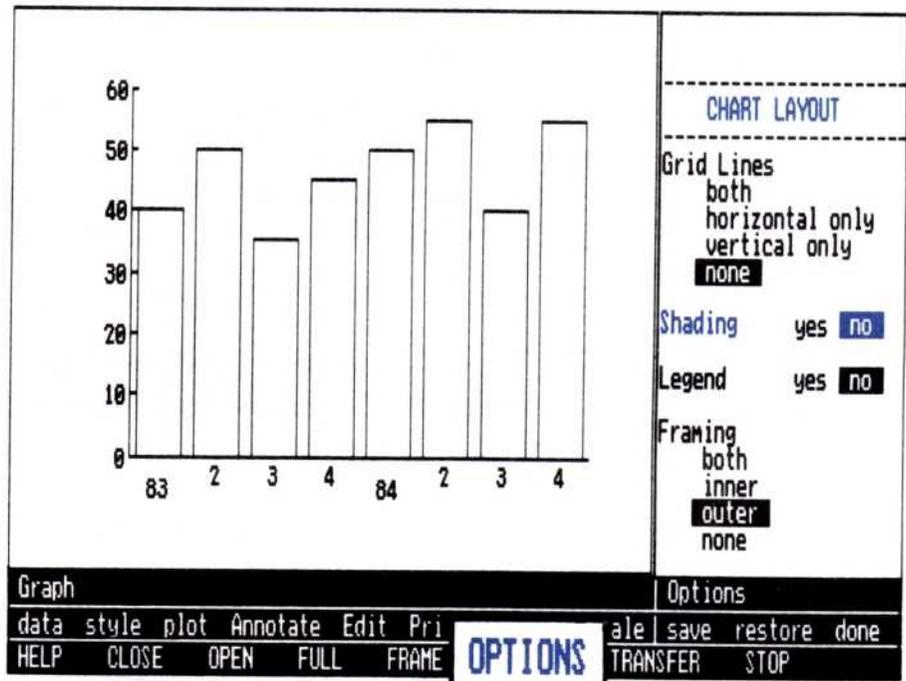
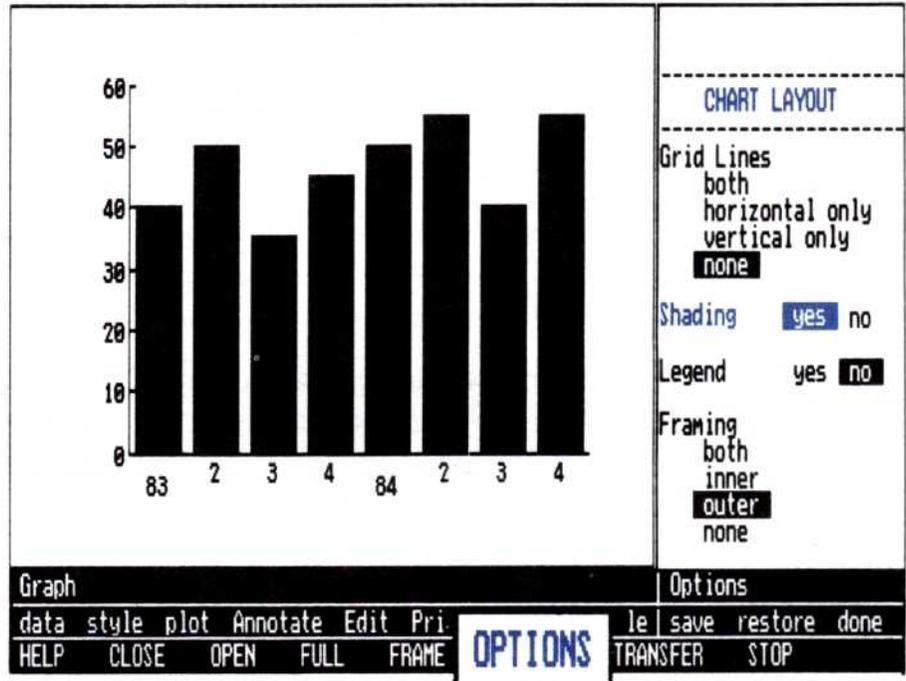
Each series is drawn using a pattern that helps distinguish it from the series next to it. If you change the shading option to “no,” the areas described in each series will be outlined but not filled with a pattern.

To change the shading option

1. Select “OPTIONS” from the Visi On menu.
- 
2. Scroll the options sheet until the “Shading yes no” option is visible, as illustrated in Figure 5-11.
- 
3. Select:
    - “yes” if you want to use shading in the graph.
    - “no” if you do not want to use shading in the graph.

If your options sheet redraw mode is set to “automatic,” the graph will be redrawn immediately using the new option.

If the redraw mode is set to “manual,” you must redraw the graph to see the effect of the new option. (See “Automatic and Manual Options” earlier in this chapter for more information.)



**Figure 5-11.** The shading option is near the beginning of the Graph options sheet but, depending on your window size, you may need to scroll it into view. This option controls whether or not your bar, area, and pie graphs are filled with a pattern when they are plotted.

## Changing the Background Color

---

You can choose either black or white for your background color. When you select black, the Graph display is black with white lines, patterns, and labels. When you select white, the graph display is white with black lines, patterns, and labels. Your background color will be black unless you change this option.

This option affects the displayed graph. It has no effect on the printed graph, which will always be printed with a white background.

To change the background color option

1. Select "OPTIONS" from the Visi On menu.

---

2. Scroll the options sheet until the "Screen Background Black White" option is visible, as illustrated in Figure 5-12.

---

3. Select:
  - "Black" if you want to use a black background in your graph.
  - "White" if you want to use a white background in your graph.

If your options sheet redraw mode is set to "automatic," the graph will be redrawn immediately using the new screen background option.

If the redraw mode is set to "manual," you must redraw the graph to see the effect of the new screen background option. (See "Automatic and Manual Options" earlier in this chapter for more information.)

## Adding a Grid to Your Graph

---

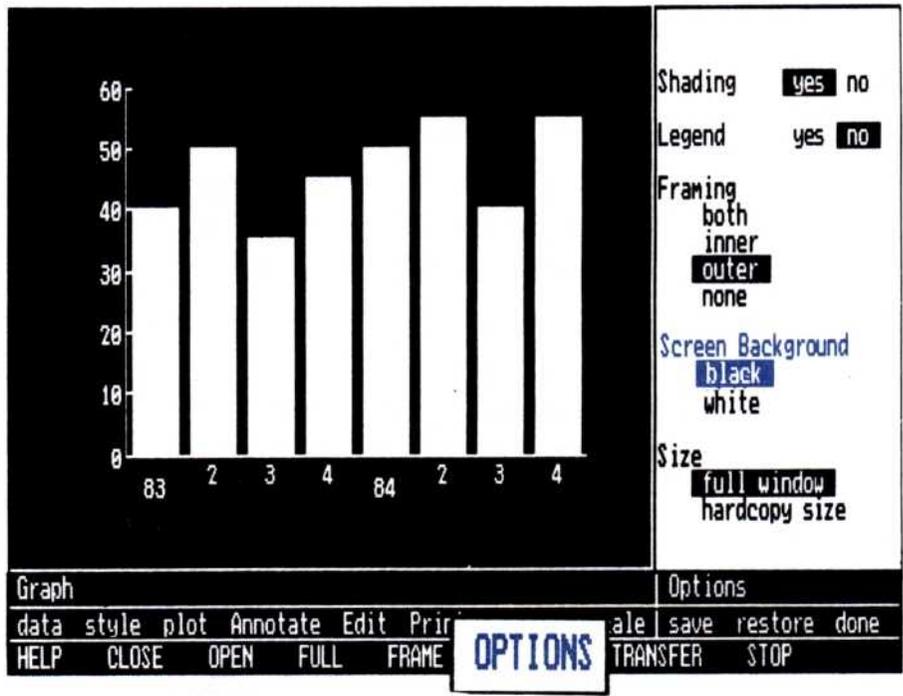
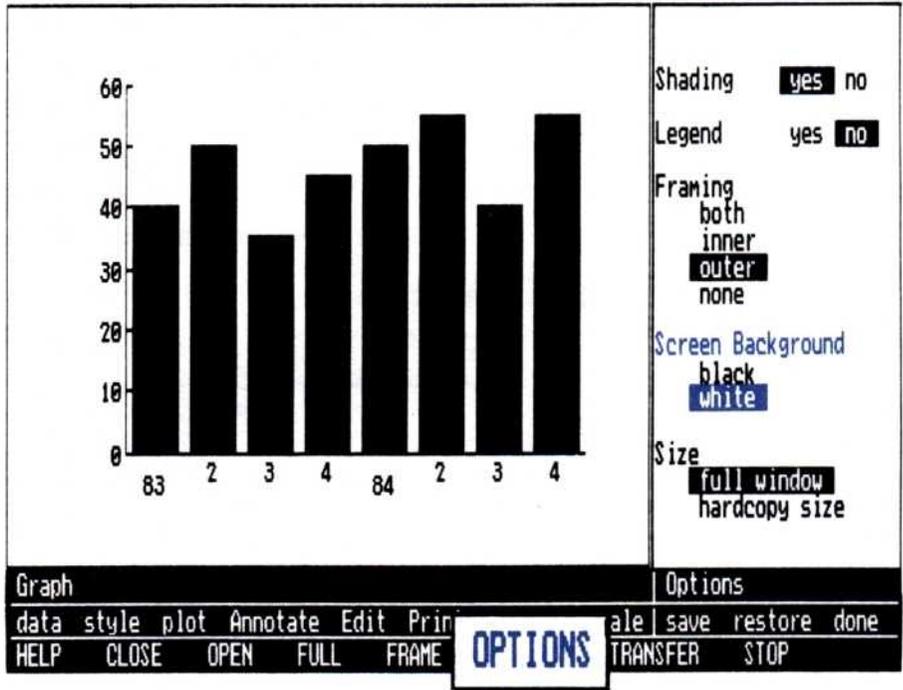
You can add three types of grids to your graph: horizontal lines, vertical lines, and both horizontal and vertical lines. Grid lines are drawn on the graph so that they appear behind the information. However, you should keep in mind that grid lines may obscure some line and high-low-close graphs.

To add or remove grid lines

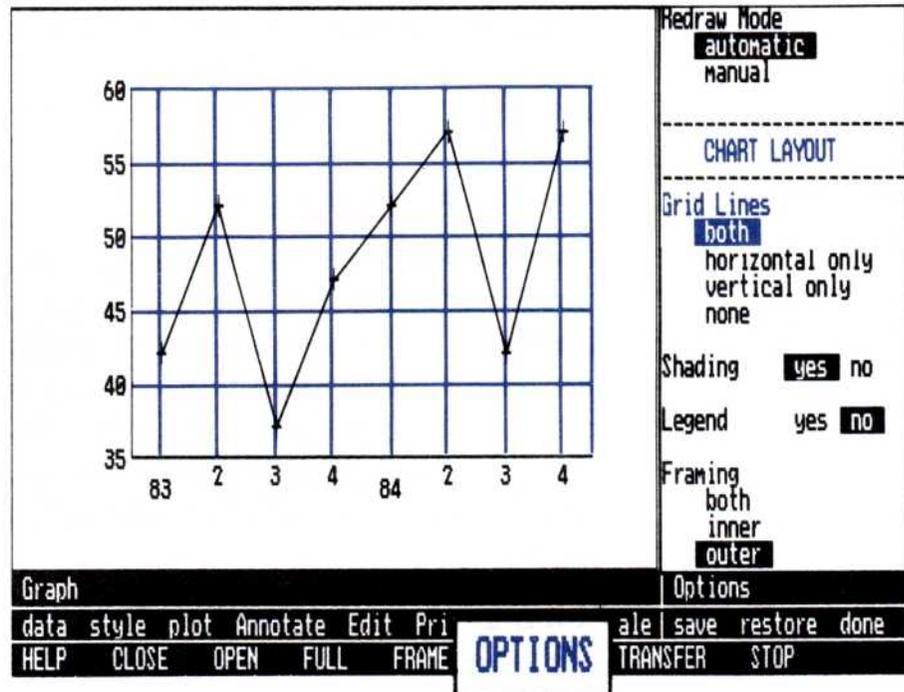
1. Select "OPTIONS" from the Visi On menu.

---

2. Scroll the options sheet until the Grid Lines option is visible, as illustrated in Figure 5-13.



**Figure 5-12.** The background color option is near the middle of the Graph options sheet. Depending on your window size, you may have to scroll it into view. This option controls whether your graph is drawn on a black or white background.



**Figure 5-13.** The grid lines option is near the beginning of the Graph options sheet but, depending on your window size, you may have to scroll it into view. Grid lines help you reference your axis values and plotted points.

3. Select one of the following:

- “both” if you want to use both horizontal and vertical grid lines on your graph.
- “horizontal only” if you want to use only horizontal lines on your graph.
- “vertical only” if you want to use only vertical lines on your graph.
- “none” if you do not want grid lines on your graph.

If your options sheet redraw mode is set to “automatic,” the graph will be redrawn immediately using the new grid lines option.

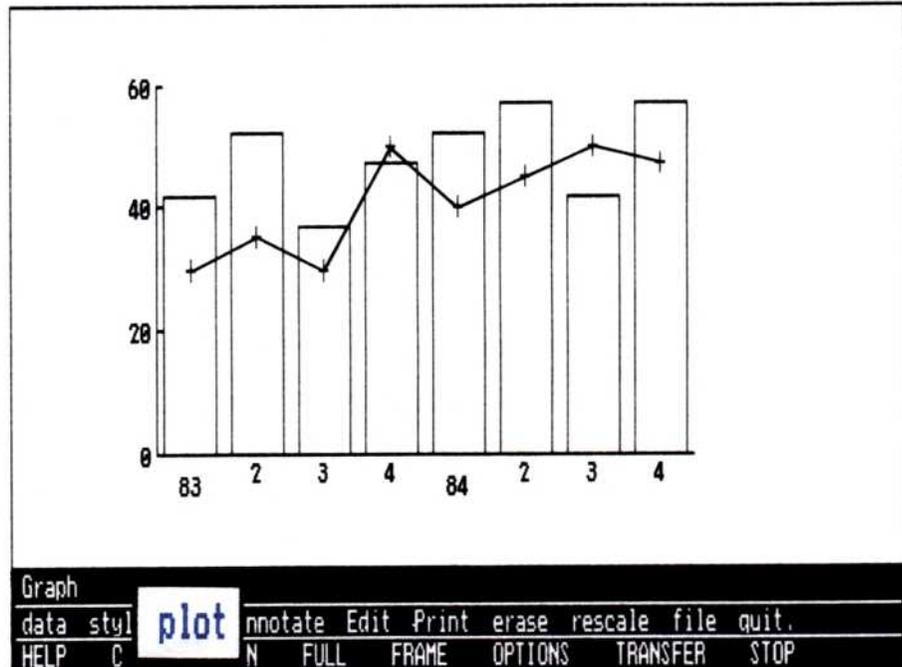
If the redraw mode is set to “manual,” you must redraw the graph to see the effect of the new grid lines option. (See “Automatic and Manual Options” earlier in this chapter for more information.)

## Overlaying Graphs

You can use the overlay technique to add an additional series, graph type, or combinations of both to an existing graph. With the exception of pie and X-Y graphs, you can overlay any two graph types. You can only overlay X-Y graphs with other X-Y graphs. Pie graphs cannot be overlaid.

There is no command to overlay a graph. Instead of choosing “erase” to clear the the previous graph as Chapter 4, “Turning Series into Graphs,” instructs you, you select a new chart type, new series, or both, and plot the new graph on top of the previous graph. The newly created graph is rescaled to include all of the series data points, and the new series are added to the legend.

You must consider the periodicity of each series you use when constructing an overlay graph. Because both graphs will use the same axes, the periodicity of each overlaid series must match that of the original series.



**Figure 5-14.** An overlay graph can add a new series to an existing graph, combine two types of graphs with the same series information to create a new graph style, or bring two different charts into the same picture. Creative use of the overlay technique can reveal very much about relationships among your series.

The individual beginning and ending points can be different, because the graph will rescaled when it is redrawn. (For information about series periodicity, see “Periodicity” in Chapter 3.)

When choosing what graph types to overlay, be careful to avoid obscuring or covering the previous graph. For instance, if a stacked bar graph overlays a comparative bar graph using the same series, only the stacked bar, which was drawn last, will be readable.

To create an overlay graph

1. Create the first graph.

(See Chapter 4, “Turning Series into Graphs,” for additional information.)

2. Select the new series, new graph type, or both, as if you were going to create a new graph.

Review your graph type. If you are overlaying an X-Y graph, you must use another X-Y graph. Pie graphs may not be used in overlays. Any other type of graph (area, bar, line, and high-low-close) may be overlaid.

If you are selecting new series, they must have the same periodicity as the series you plotted in step 1.

3. Select “plot.” (Do not select “erase.”)

4. The graph is redrawn with your new selections added. The overlaid selections are drawn last.

If the graph created in step 1 contains labels, these labels are redrawn on the new graph. However, because the graph may have been rescaled, the labels may now appear in a different location or describe situations that no longer apply. For additional information on moving, removing, and replacing these labels, see “Labeling Your Graph” earlier in this chapter.

---

## Changing the Scale (Height or Width) of Your Graph

---

In line, bar, area, and high-low-close graphs, each axis has a separate and distinct function. (Pie graphs have no scale.) In X-Y graphs, both axis represent individual series values.)

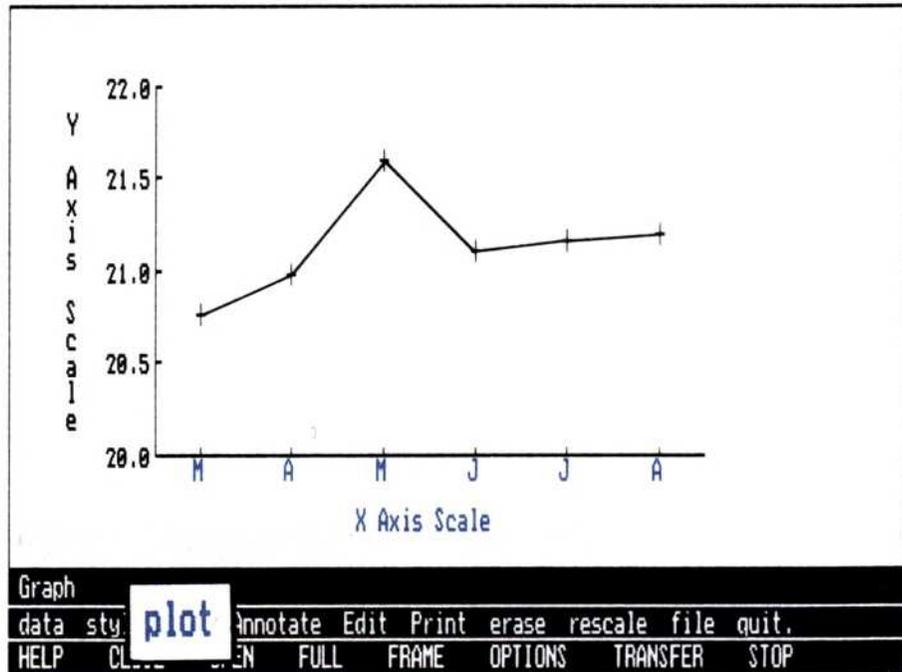


**Figure 5-15.** The scales of your X and Y axes define the beginning and ending values of each axis.

The X-axis scale reflects the periodic values of each series. These are usually the time period that each from which each series value is referenced. When the Visi On Graph program draws your graph, the X-axis scale includes all of the values that will fit from a series. Changing the scale, diminishing the ending value, or increasing the starting value may prevent some values from being plotted if these values then fall before or beyond the graph's scale.

Figure 5-16 illustrates the effect of changing the scale of the X axis.

The Y-axis scale reflects the maximum and minimum values of the series used in the graph. When the Visi On Graph program draws your graph, the Y-axis scale is set to include the smallest and largest values. Changing the scale, setting a smaller highest value, or setting a larger beginning value may cause some values to be truncated or not show on the graph at all, if these values are then above or below the graph's scale.



**Figure 5-16.** Changing the X axis, in this case increasing the minimum value and decreasing the maximum value, can focus the graph on a particular part of the series.

Figure 5-17 illustrates the effect of changing the scale of the Y-axis.

You do not have to specify the scale of a graph before you draw it. The program's preset values for each axis include all of the points in each series and display each value fully in the graph. The "rescale" command allows you to change these values, giving you control over the graph's graphic emphasis.

You must have a graph in the Graph display before you begin to rescale.

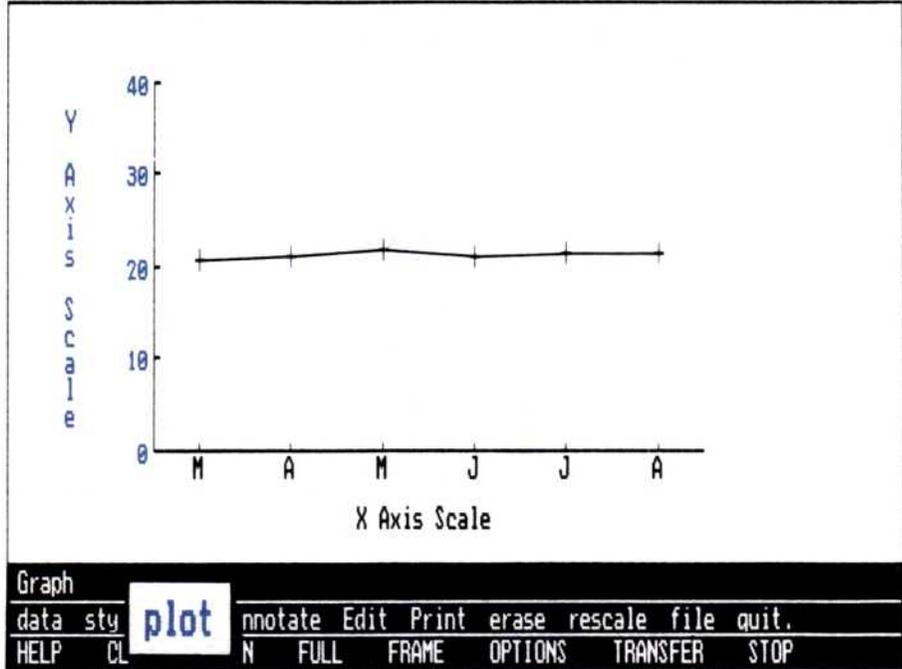
To change the scale of a graph

1. Select "rescale."

---

2. Select the axis you are rescaling.
  - "x-axis"
  - "y-axis"
  - "both" (causes both the X-axis and Y-axis to be rescaled)

The program asks you to select a rescaling mode.



**Figure 5-17.** Changing the Y axis, in this case increasing the maximum value and decreasing the minimum value, can often present a different view of your information.

3. Do one of the following:

- Select “automatic” if you want the Visi On Graph program to rescale the axes.

The graph is redrawn. You return to the Graph menu. You have completed the rescaling procedure. *Do not continue to step 4.*

- Select “manual” if you want to enter the beginning, and ending values for the scale(s) yourself.

The program asks you for each scale values.

4. There are several questions the program asks you when you choose to manually rescale. Answer each of the following questions as the program asks for them:

- If the graph is an X-Y graph, the program prompts for each of the following values separately:
  - Beginning value
  - Ending value
  - Number of divisions along the Y axis, or along both axes if the graph is an X-Y graph.

- If any other graph type is used, the questions will be different for each axis.
- When the X axis is rescaled, the program asks for the:
  - Start year
  - Start period
  - End year
  - End period
- When the Y axis is rescaled, the program asks for the:
  - Beginning value
  - Ending value
  - Number of divisions along the Y axis

The current value, which is shown beside each prompt, can be selected by pressing . When you are asked to supply a new number of divisions for either axis, the range of acceptable values appears on the prompt line in brackets.

In either case, to enter a new value, type the value followed by .

After you have rescaled, the new scales for each axis will not change until you select "erase" or use these same steps again to change them. It is important to remember that when the program first draws a graph, the scales are set to include each point in the graph. To reset changed scales to these original scales, select "automatic" in step 3 above.



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# 6

# Printing

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## Chapter 6

## Printing

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You can print both the series and graphs you create within the Visi On Graph™ program. If you have used print commands in other Visi On™ programs, you will find the Visi On Graph program uses a similar procedure. If you have not used this command in other Visi On programs, descriptions of all of the commands related to these tasks are available to you in the following sections.

Any series can be printed directly from the Edit display, giving you a paper copy of all of the values in all of the series currently in the display.

The graphs you create with the Visi On Graph program can be printed in a number of ways, from a single graph on a page to four different graphs on a single page.

You can print in two different ways. The first of these is to print the series or graph to a printer connected to your computer. This is referred to as *local printing*.

If you do not have a printer connected to your computer, or want to print the series or graph on a printer connected to another computer, you may have the Visi On Graph program store the printed graph or series in the Visi On Archives transmittal folder. Later, when you have connected a printer to your computer or have taken the contents of the transmittal folder to another computer that has the printer attached to it, you may print any of these series or graphs. This process is referred to as *remote printing*.

Additional information on printing in general and the transmittal folder in particular is found in the *Visi On User's Guide*.

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## Printing a Series

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With the “hardcopy” command of the Edit menu, you can print the series values used in a graph. At any time during your editing session—before, during, or after the editing—you can print all of the series shown in the Edit display. This printed listing of your series can be used for your own reference, to plan changes to the series, or as an attachment to your printed graph.

Begin this command with the series you want to print showing in the Edit display.

To print the series in the Edit display

1. Select “hardcopy” from the Edit menu.  
You are asked where you want to print the series.
- 

2. Select:
  - “local-print” if you want to use a printer connected to your computer, as selected in the Edit option sheet.
  - “remote-print” if you want to print the series in your transmittal folder. See the *Visi On User’s Guide* for information about series that are printed in the transmittal folder.

If you select “remote-print”:

You are prompted for the printer model on which you will eventually print the series. All of the installed printer models are displayed.

— Select the model on which you will print the series.

You are prompted for the name that the printed series will be saved under in the transmittal folder.

— Type a name for the printed series and press .

The Edit options sheet appears on the right-hand side of the Edit display, showing your optional choices for formatting printed output. The highlighted choices will be used unless you change them.

For a description of each of these options, see “Changing Print Options” later in this chapter.

The prompt asks you whether you want to use these options.

---

3. Select:
  - “yes” if you want to print using the highlighted selections.
  - “no” if you need to change any of the selections before printing.

You are returned to the Edit menu. Change the options as you need and then begin this process again with step 1.

If you select “yes,” the series are printed on your printer, or in the transmittal folder as indicated.

The printed series are a useful tool for editing when series are too long to be shown in the Edit display, or when you want to attach the series to a printed chart.

## Printing a Graph

---

After you create a graph, you will probably want to make a printed copy of it for your report or presentation. The Visi On Graph program allows you to do more than simply print a single graph on a sheet of paper:

- You can preview the printed graph, seeing it in exactly the proportions it will take when it is printed on paper.
- You can divide your printed page into two equal sections (either horizontally or vertically) or four equal quarters, each capable of showing a separate graph. The Visi On Graph program calls this process *partitioning*.
- You can add a main, sub-, or bottom title to the partitioned page, by using the “label” command of the Print menu.
- You can print the single or partitioned page in any size (up to 11 by 17 inches square).

Printing several graphs on one page is, of course, an option. If you want to print your current graph, follow the instructions in the next section, “Printing a Single Graph.” If, however, you want to print several graphs on one page or add page labels to your printed graph, read “Partitioning the Graph” and “Adding Titles to the Printed Page” later in this chapter.

## Printing a Single Graph

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Whether you are printing a single graph or a partitioned graph, the process of sending it to the printer is the same.

If you have already partitioned a graph or added page titles with the “title” command, you may begin this process at step 2.

If you want to print a graph currently displayed in the Graph display, begin this process at step 1.

To print a single graph

1. Select "Print" from the Graph main menu.  
The Print menu is shown as illustrated in Figure 6-1.

2. Select "hardcopy."  
You are asked where you want to print the graph.

3. Select:
  - "local-print" if you want to use a printer connected to your computer, as selected in the Print options sheet.
  - "remote-print" if you want to print the graph in your transmittal folder. See the *Visi On User's Guide* for information about graphs that are printed in the transmittal folder.

If you select "remote-print:"

You are prompted for the printer model on which you will eventually print the graph. All of the installed printer models are displayed.

— Select the model on which you will print the graph.

You are prompted for the name that the printed graph will be saved under in the transmittal folder.

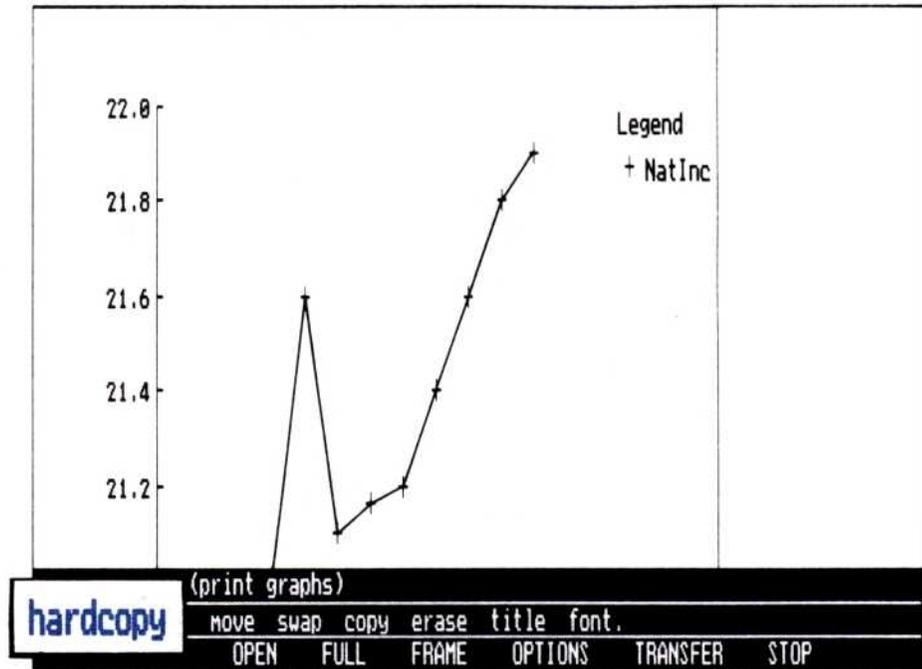
— Type a name for the printed graph, followed by .

The Print options sheet appears on the right-hand side of the Edit display, showing your optional choices for formatting printed output. The highlighted choices will be used unless you change them.

For a description of each of these options, see "Options in the Edit Menu" later in this chapter.

The prompt asks you whether you want to use these options.

4. Select:
  - "yes" if you want to print using the highlighted selections.
  - "no" if you need to change any of the selections before printing.



**Figure 6-1.** The Print menu allows you to print the graph shown in this display by selecting "hardcopy."

You are returned to the Print menu. Change the options as you need and then begin this process again with step 1.

If you select "yes," your printer then prints the graph or the graph is printed in the transmittal folder as indicated.

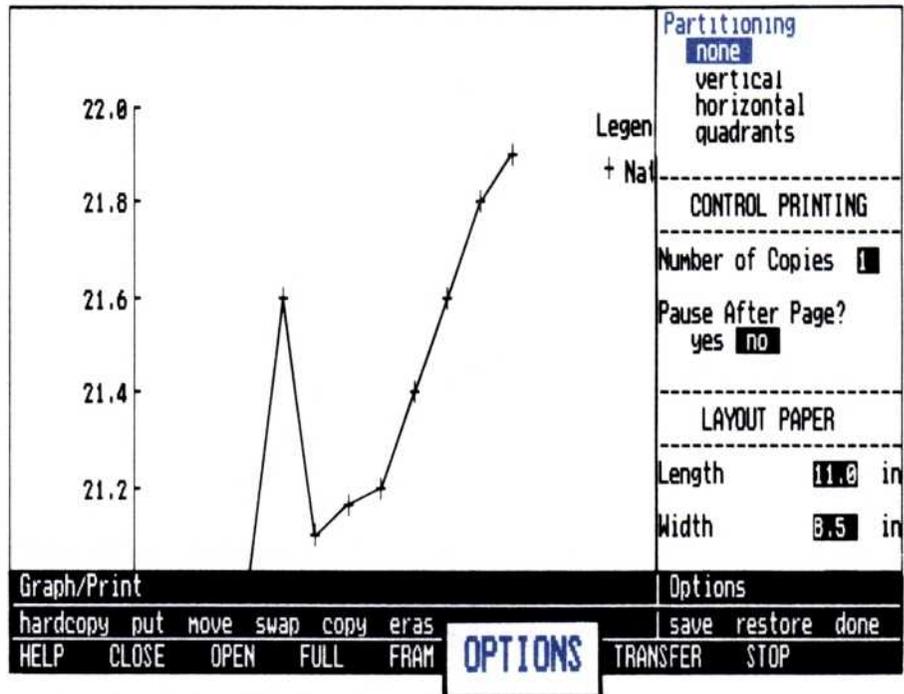
This procedure works for both single and partitioned displays. Read "Partitioning the Graph," "Adding Titles to the Printed Page," and "Changing Print Options" for additional information about enhancing your printed graphs and charts.

## Partitioning the Graph

You can print up to four graphs on a page by using the partition option and the commands that work with it. You can select the partition option at any time when you are in the Print menu.

To begin partitioning your page

1. Select "OPTIONS" from the Visi On menu.  
You are prompted to select the window to change the options.
2. Select the Visi On Graph window you are using.



**Figure 6-2.** The partitioning options at the top of the Print options sheet allow you to create a print display with one graph, two graphs divided vertically, two graphs divided horizontally, or four graphs on a single page.

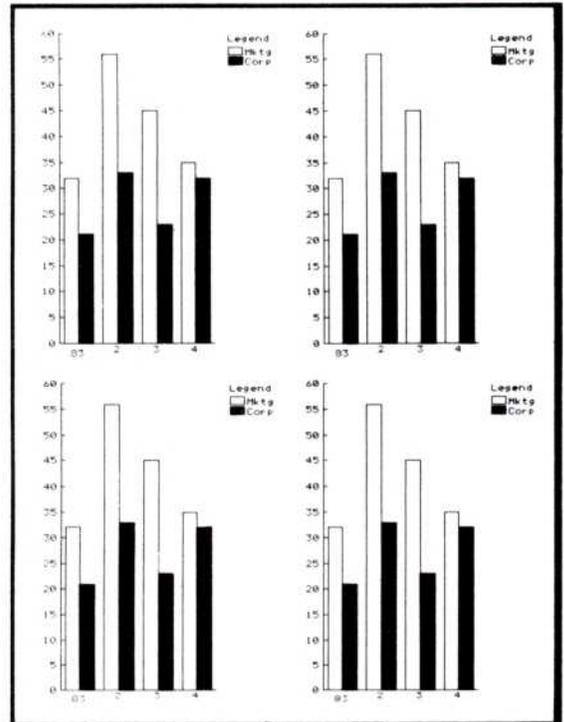
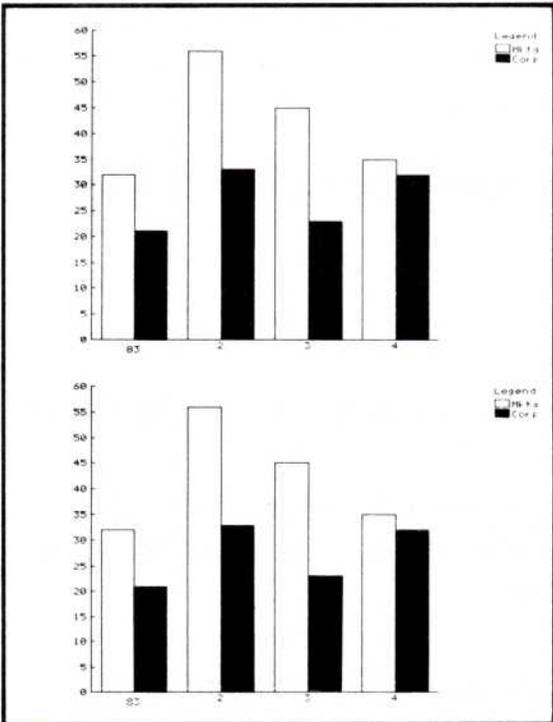
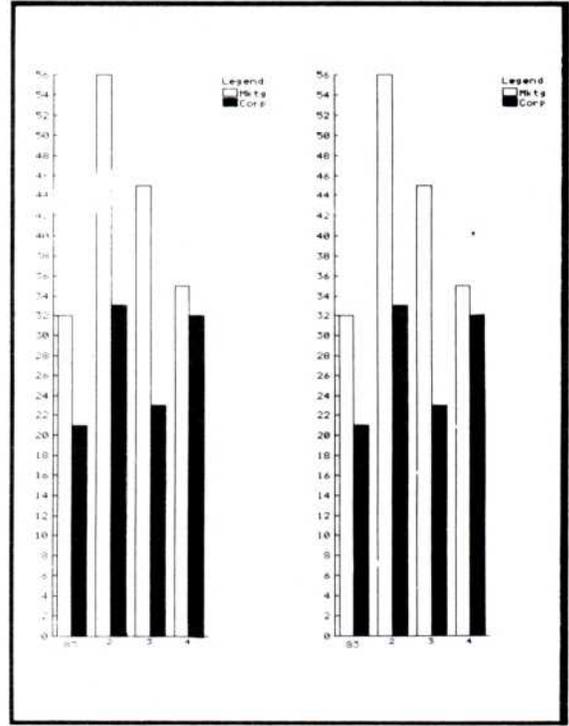
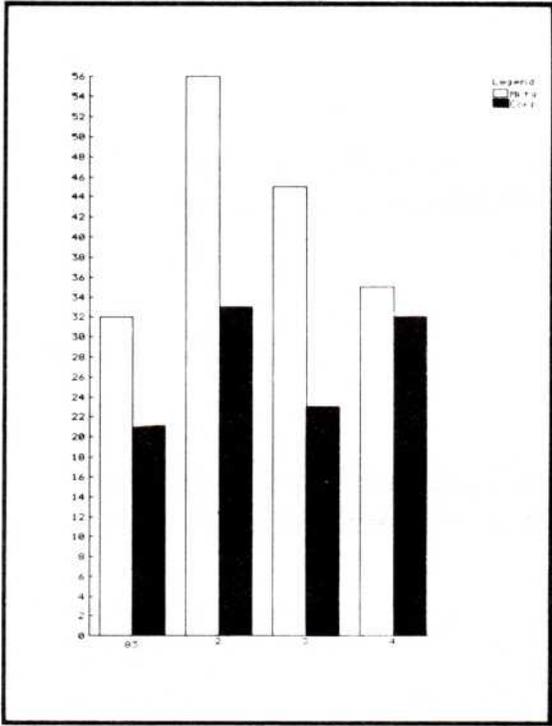
3. If you need to, scroll the options sheet until you can see all of the partitioning options, as illustrated in Figure 6-2.

4. Select:

- "none" if you do not want the page to be partitioned.
- "vertical" if you want two partitions divided vertically.
- "horizontal" if you want two partitions divided horizontally.
- "quadrants" if you want four partitions.

The page is then redrawn with the new partitioning option.

After you have partitioned the display, you will probably want to put a few graphs into it. Putting graphs into a partitioned display is covered in the next section.



**Figure 6-3.** The four types of display partitioning. The page with no partitioning (none) can hold only one graph. Vertical and horizontal pages can both hold two graphs, oriented vertically or horizontally. The quadrants page can hold four graphs.

## Putting graphs in a partitioned display

After you partition the page the way you want, you can begin filling it with graphs.

To add graphs to the partitioned page

1. Select "put" from the Print menu.

A list of the frozen graphs in the working folder is displayed. Additional selections of "current" and "done" are also shown.

- 
2. Select the names of the graphs you want to add to the partitioned page.

If you select "current," the graph that is currently shown in the Graph display will be used.

You may select as many graphs as can be displayed in the current partition. For instance, if you have divided the display into two horizontal or vertical partitions, you can select two graphs from the list. After you select the second graph, you are returned to the Print menu.

If you are selecting fewer than the total number of graphs that your partitioning can hold, select "done" to return to the Print menu.

The program prompts you to select the location for the first graph.

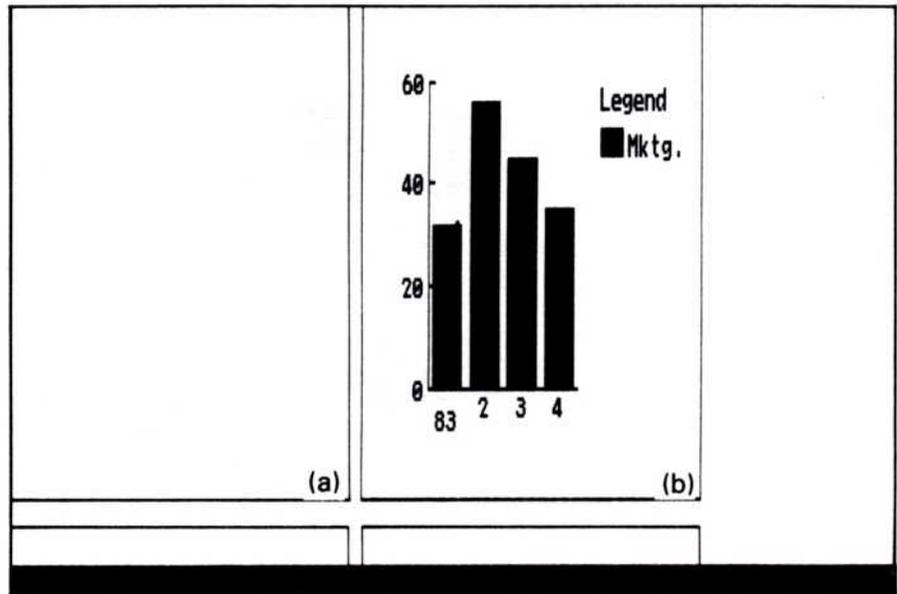
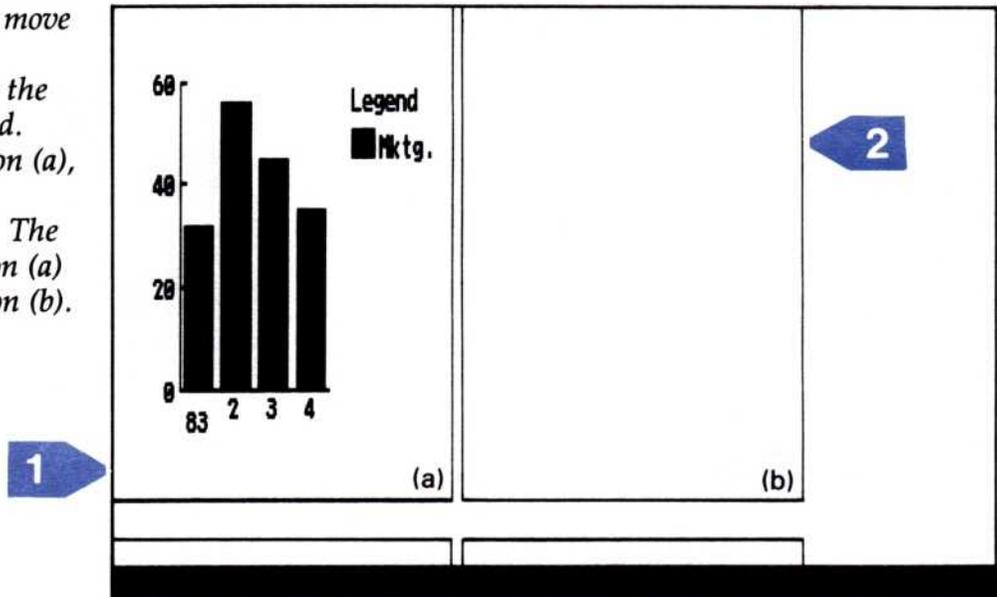
- 
3. Select the partition you want to fill with the selected graph.

If there is a graph in the selected partition, it will be replaced with the new graph.

Any other selected graphs will be placed in the display from left to right, top to bottom, in the order that they were selected.

You may find that you would rather have the graphs displayed in other locations, or that one or more of the graphs should be erased. You can use the "move," "swap," "copy," and "erase" commands to move graphs around on the partitioned page.

**Figure 6-4.** To move a graph between partitions, select the "move" command. (1) Select partition (a), followed by (2) partition (b). The graph in partition (a) moves to partition (b).



### Moving one graph to another partition

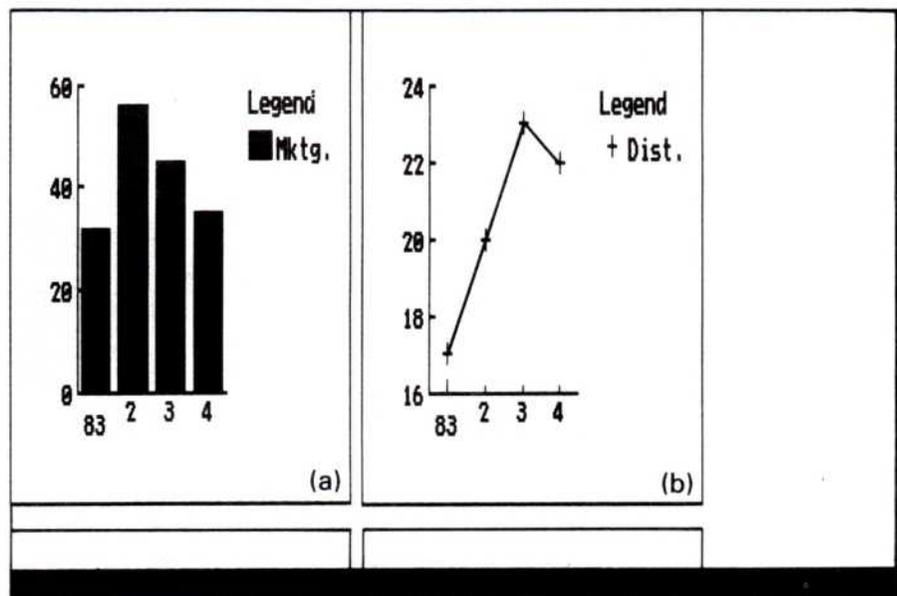
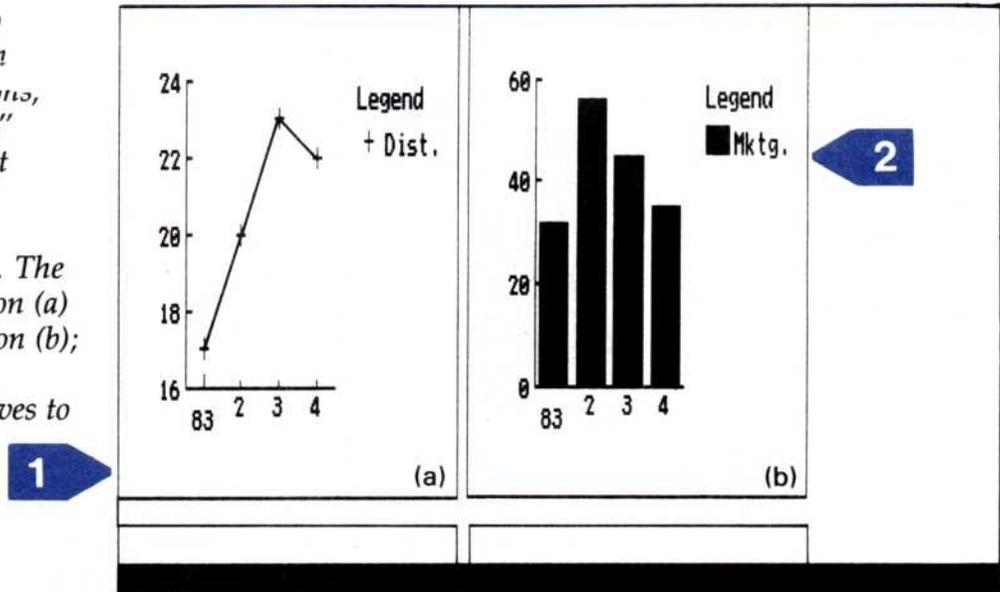
To move a graph to another partition

1. Select "move."
2. Select the partition with the graph you want to move.
3. Select the partition where you want to put that graph.

The new graph replaces any graph in that partition.

The graph is erased and redrawn in the new partition.

**Figure 6-5.** To switch graphs in different partitions, select the "swap" command. Select (1) Partition (a) followed by (2) partition (b). The graph in partition (a) moves to partition (b); the graph in partition (b) moves to partition (a).



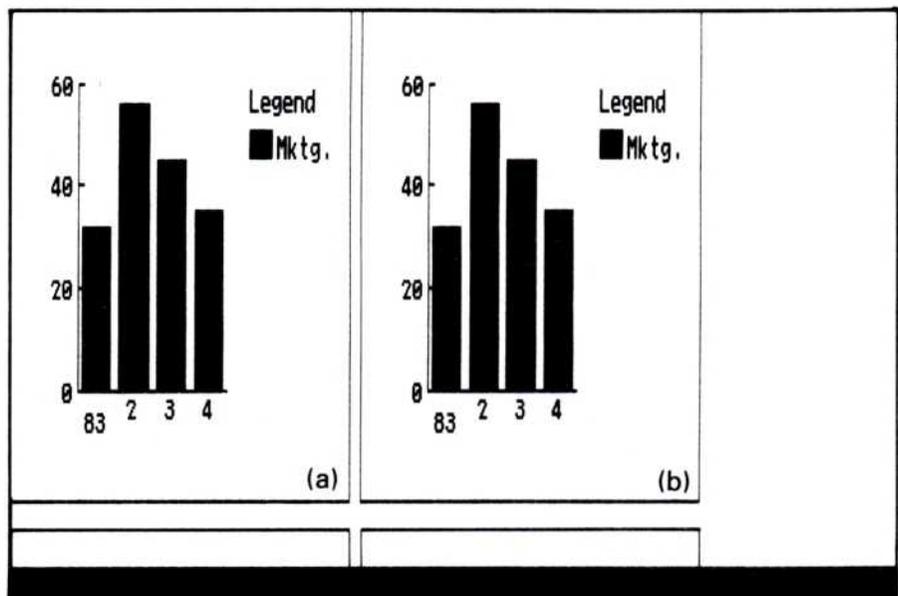
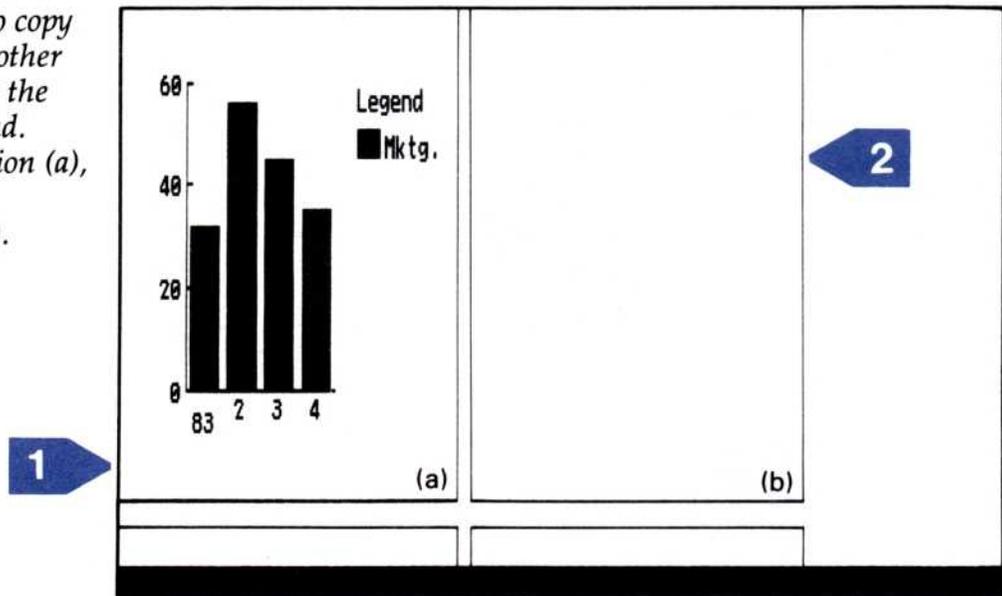
### Switching the positions of two graphs

To switch the positions of two graphs

1. Select "swap."
2. Select the first partition that contains a graph you want to move.
3. Select the second partition that contains a graph you want to move.

The graphs are erased from their old partitions and redrawn in the switched positions.

**Figure 6-6.** To copy a graph into another partition, select the "copy" command. (1) Select partition (a), followed by (2) partition (b). The graph in partition (a) is copied into partition (b).



### Copying a graph into a different partition

To copy a graph into a different partition

1. Select "copy."

---

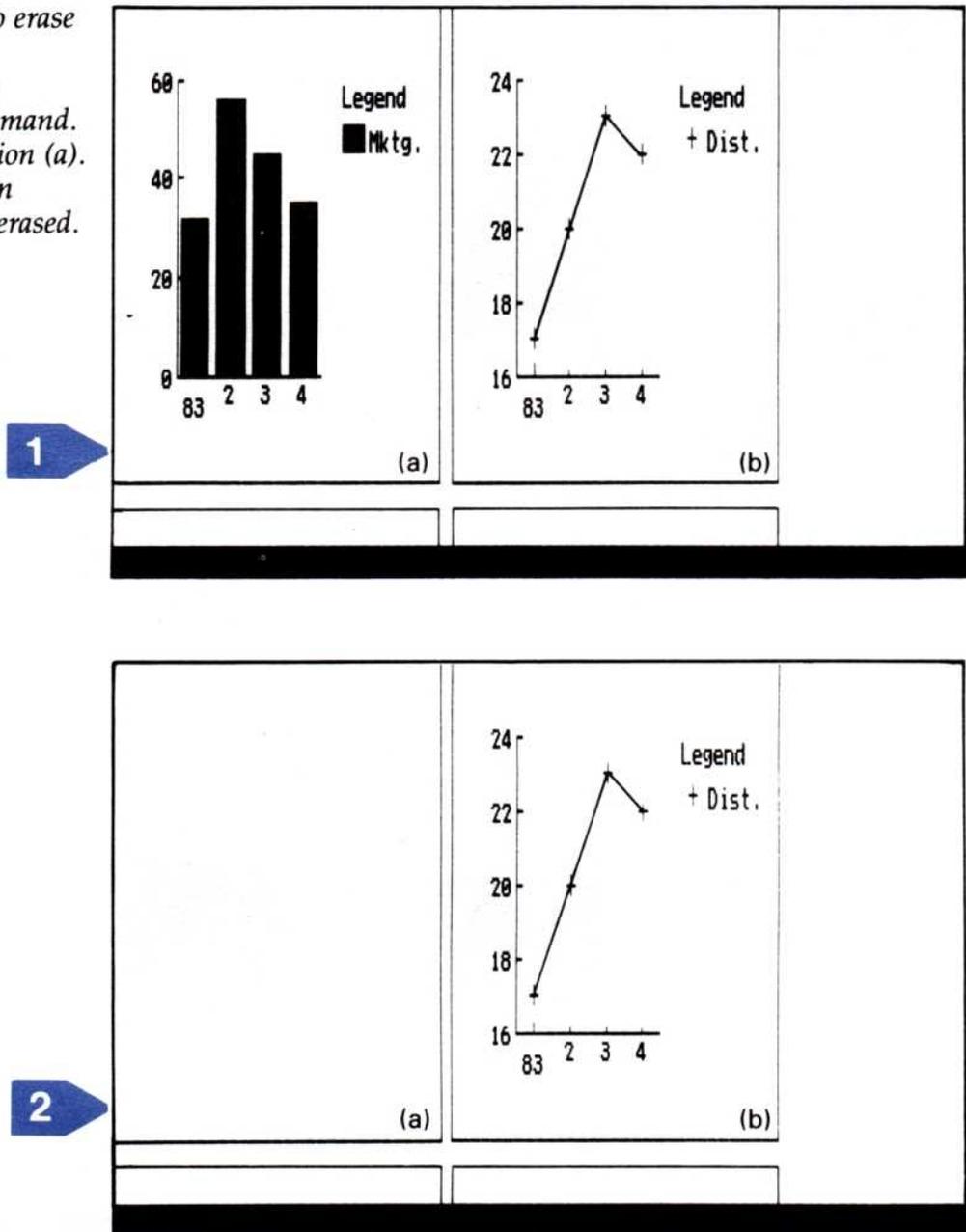
2. Select the partition with the graph you want to copy.

---

3. Select the partition where you want to put the copy of the selected graph.

A copy of the graph is drawn in the new partition.

**Figure 6-7.** To erase a graph from a partition, select the "erase" command.  
 (1) Select partition (a).  
 (2) The graph in partition (a) is erased.



## Erasing in the Print display

The "erase" command in the Print menu allows you to erase a graph, or a title that has been entered in the Print menu, from the Print display.

To erase a graph or title from the Print display

1. Select "erase."
2. Select the partition or title that you want to erase.  
 The selected partition or title is erased. No other partition or title is affected.

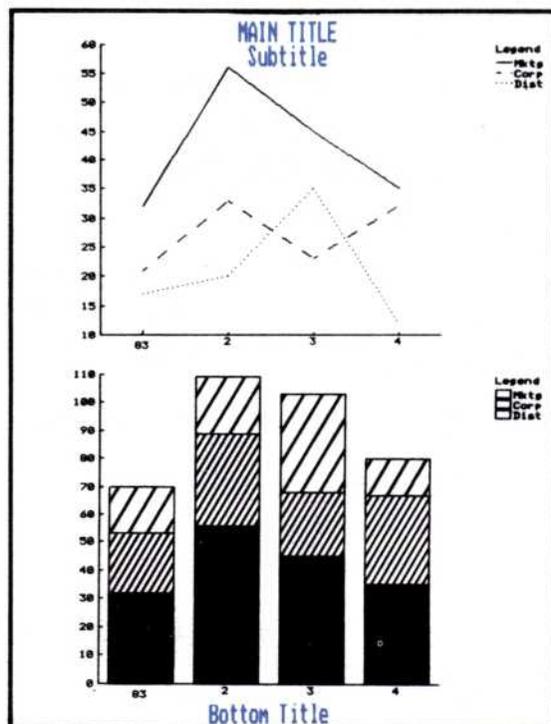
## Adding Titles to the Printed Page

You add three titles (in addition to those you have added in the Annotate menu) to the printed page with the “title” command of the Print menu. These titles are not saved with the graphs, but they are shown in the Print display and will appear on the printed page.

Just as you use the Annotate menu’s “title” command to enhance an individual graph, you can add details to explain the graphs in the printed page by using the “title” command.

You can add three types of titles to the partitioned page:

- “main” adds a title at the top of the printed page.
- “subtitle” adds a title one line below the main title.
- “bottom” adds a title below the printed page.



**Figure 6-8.** Three types of titles that can be added to a printed page: the main title, the subtitle, and the bottom title.

To add titles to your printed page

1. Select "title" from the Print menu.
2. Select the type of title:
  - "main"
  - "subtitle"
  - "bottom"
3. Type the title you want to place on the display and press **↵**.

The title appears, centered, in the position you selected.

If you want to replace any of the titles you have entered, begin again at step 1 and select the title you want to replace. The old title will be erased and your new title will be shown.

If you want to remove any of the titles you have entered, see "Erasing in the Print display" earlier in this chapter.

## Changing Print Options

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You can control the size, shape, and number of copies you print with the options sheets in both the Edit and Print displays.

Selecting the "OPTIONS" command of the Visi On menu opens either of these options sheets. Choosing a new option is as simple as scrolling to it and then selecting it. Selecting "done" from the options sheet menu closes the options sheet.

The following sections describe the options sheets found in both the Edit and Print menus. For additional information on options and the "OPTIONS" command, see the *Visi On User's Guide*.

### Changing number of copies

You can change the number of copies that are printed each time "hardcopy" is selected. This option is preset to print one copy.

To change the "Number of Copies" option

1. Select the number to the right of "Number of copies."
2. Press **END** and then type the number of copies you require and press **↵**. The number may be between one and 99.

## Pause after page

If you are printing more than one copy of your graph on single sheets of paper, you may want the program to pause between printed copies so that you can insert the next sheet in your printer.

To change the "Pause After Page?" option

1. Select one of the following:
  - Select "yes" if you want the Visi On Graph program to pause between printed pages.
  - Select "no" if you do not want the Visi On Graph program to pause between printed pages.

## Changing layout options

The layout options let you change the size and borders of your printed pages.

The "Length" or "Width" measurements can be a maximum of 17 inches each.

The "Top" and "Left" borders can be any size up to half of the length or width (respectively) of the page. The value you set for the "Top" border will also be used for the bottom border, and the value you set for the "Left" border will also be used for the right border.

To change the "Length," "Width," "Top Border" or "Left Border"

1. Select the number to the right of the layout option you are changing.
- 
2. Press **(END)**; then type the new value for the option and press **(↵)**.

## Selecting the printer

If you have more than one printer installed in your Visi On system, you may want to specify which is to be used for printing your Edit display or graph. The "Print Document On" option of both the Edit and Print options sheets gives you this control.

The "Print Document On" option will list all of the installed printers available to you when you select the options sheet. The preset printer will be the first one that was installed.

To select a new printer

1. Select the name of the printer you want to use to print your Edit display or graph.

This list of available printers may not be the same in the Print options sheet as it is in the Edit options sheet. It is possible that you may have printers installed in the system that are not able to print a graph. For additional information on installing and using printers, see the *Visi On User's Guide*.

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# 7

# Transferring Information

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## Chapter 7

## Transferring Information

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## Transferring Information into the Visi On Graph™ Program

---

The “TRANSFER” command in the Visi On™ menu lets you copy information from one window to another. Within the Visi On Graph™ program, you can use the “TRANSFER” command to copy parts of series into other series, or duplicate an entire series within the same Edit display.

In addition, you can transfer information from other Visi On program windows into your Visi On Graph window. You can transfer such items as:

- An entire chart from a different Visi On Graph window.
- Other series from a different Visi On Graph window. Each series carries its own periodicity, start date, name, and values.
- A row or column of values from a spreadsheet. Data in the row becomes a new series using the preset periodicity, start date, and name.
- Several rows or columns of values. Data in each row or column becomes a separate series with the preset periodicity, start date, and names. Any missing entries are replaced by zero values. Text is also replaced by zeros.

If the information you try to transfer would cause the Visi On Graph program to exceed its maximum limits, you are given an error message instead of the transferred values.

Those limits are:

- Twenty-four series in the working folder.
- Eight graphs. (Each transferred graph creates another frozen graph in the working folder.)
- One thousand numbers in any one series.
- Twelve series in the Edit display.

If you are unable to transfer information into the Visi On Graph program because you would exceed one of these maximums, you may:

- Open another Visi On Graph window.
- Copy some series or frozen graphs from the working folder into the current folder; then remove them from the working folder. See Chapter 2, “Saving, Getting, and Organizing Series and Graphs,” for additional information.
- Remove any series or frozen graphs you no longer need from the working folder. See Chapter 2, “Saving, Getting, and Organizing Series and Graphs,” for additional information.
- Clear any series you no longer need from the Edit display.

The following sections discuss how you can transfer graphic and numeric information into a Visi On Graph window from another Visi On window. If you are transferring from another Visi On Graph window, you should read “Selecting Graphs to Be Transferred” and “Selecting Numeric Information to Be Transferred” later in this chapter.

However, if you are transferring into or from another Visi On program, you should review its User’s Guide for transfer requirements. See the *Visi On User’s Guide* for information about “TRANSFER” and other Visi On commands.

## Selecting the Target Area for Incoming Graphs

---

One of the strengths of the Visi On system is that it allows you to directly use the work you have done with one Visi On program in another Visi On program without duplicating your previous effort. The “TRANSFER” command is the basis of that ability. This section discusses the use of the “TRANSFER” command and gives instruction on selecting a target area within a Visi On Graph window for an incoming graph.

Before you begin:

- The Visi On Graph program can only accept a transferred graph in the Graph display. The target window should show the Graph display. The display may already contain a graph, but it will be erased by the incoming transferred graph.

- You should have selected the Visi On “TRANSFER” command and specified a graph from another window as the source area for the transfer. If the source information is coming from another Visi On Graph window, see “Selecting Graphs to Be Transferred” later in this chapter for this information.
- The Visi On menu line requests the destination window for the transferred graph.

Continue with the transfer:

1. Select the window you are transferring the graph into.
2. Select any location in the Graph display of the target window.

The graph is then transferred into the Visi On Graph program.

Note: If you are transferring unnamed items, such as a portion of table or a spreadsheet, these new items are given temporary names. These names, such as “Transfer01,” will be used again in subsequent transfers and will replace the previously transferred items. If you want to make such a transfer permanent, you must change the new series names using the “parameters” command in the Edit menu. For additional information on using the parameters command, see “Changing Series Names, Periodicities, and Dates” in Chapter 3.

The graph becomes the current graph and is shown in the Graph display. If another graph was shown there before the transfer began, it is erased. The series are put in the working folder and can be edited in the Edit display.

Once the transfer is complete, there is no difference between transferred information and any other information in the program: series can be edited, graphs can be modified, and any item that appears in the working folder can be saved in the current folder.

## Selecting the Target Area for Incoming Numeric Information

---

One of the strengths of the Visi On system is that it allows you to directly use the work you have done with

one Visi On program in another Visi On program without duplicating your previous effort. The “TRANSFER” command is the basis of that ability. This section discusses the use of the “TRANSFER” command and gives instruction on selecting a target area within a Visi On Graph window for incoming numeric information.

Before you begin:

- You should have a Graph or Edit display in the destination window.
- You should have selected the Visi On “TRANSFER” command and specified the numeric information from another window as the source area for the transfer. If the source information is coming from another Visi On Graph window, see “Selecting Numeric Information to Be Transferred” later in this chapter for this information.
- The Visi On menu line requests the destination window for the transferred graph.

Continue with the transfer:

1. Select the window you are transferring the numeric information into.
2. Select the target area, select either:
  - Any location in the Graph display.
  - The first series column you want to fill with transferred information.

---

The information is transferred into the Visi On Graph program. Its appearance will vary, depending upon what program display was shown at the time of the transfer.

If the display was:

- The Edit display, the series are shown. The new information can be used to create one or more new series, or add values to an existing series, depending upon how the target area is specified.
- The Graph display, the numeric information is plotted as a graph, using the current graph style. The new series are added to the working folder.

Note: If you are transferring unnamed items, such as a portion of table or a spreadsheet, these new items are given temporary names. These names, such as “Transfer01,” will be used again in subsequent transfers and will replace the previously transferred items. If you want to make such a transfer permanent, you must change the new series names using the “parameters” command in the Edit menu. For additional information on using the parameters command, see “Changing Series Names, Periodicities, and Dates” in Chapter 3.

Once the transfer is complete, there is no difference between transferred information and any other information in the program: series can be edited, graphs can be modified, and any item that appears in the working folder can be saved in the current folder.

## Transferring Information out of the Visi On Graph™ Program

---

As well as accepting information from other programs, the Visi On Graph program can share its information with other Visi On system programs. This ability can save you much time, allowing you to apply the information you enter or create in the Visi On Graph program to projects in other Visi On system programs.

You can transfer information in the Visi On Graph program to another product window. You can transfer:

- An entire chart.

The chart is transferred, complete with series information, selected options, ranges, and annotation.

- Series (one or more).

Each series transferred carries the periodicity, start date, starting period, series name, and values.

- A series or part of a series.

Several numbers from one series, or several series can be transferred.

The following sections discuss how you can transfer graphic and numeric information out of a Visi On Graph window from another Visi On window. If the transfer is going to another Visi On Graph window, you should read “Selecting the Target Area for Incoming Graphs” and “Selecting the Target Area for Incoming Numeric Information” earlier in this chapter.

However, if you are transferring into another Visi On program, you should review its User’s Guide for transfer requirements. See the *Visi On User’s Guide* for more information about “TRANSFER” and other Visi On commands.

## Selecting Graphs to Be Transferred

---

One of the strengths of the Visi On system is that it allows you to directly use the work you have done with one Visi On program in another Visi On program without duplicating your previous effort. The “TRANSFER” command is the basis of that ability. This section instructs you in the use of transfer and how to select graphs to be transferred out of a Visi On Graph window.

In the Visi On Graph program the only place that can be used as the source of a transferred graph is the Graph display.

You must be in the Graph display before selecting “TRANSFER” from the Visi On menu.

To select graphic information for transfer from the Visi On Graph program:

1. Select “TRANSFER” from the Visi On menu.  
The program prompts you for the source window of the transfer.

---

2. Select the Visi On Graph window that contains the information you want to transfer.  
The program prompts you for the start of the region to be transferred.

3. Select any part of the graph.

The program prompts you for the end of the region to be transferred.

---

4. Again, select any part of the graph.

The source area is now defined. If you are transferring to another Visi On Graph window, see "Selecting the Target Area for Incoming Graphic Information" earlier in this chapter. If you are transferring to another Visi On program, see its User's Guide for transfer requirements.

---

## Selecting Numeric Information to Be Transferred

---

One of the strengths of the Visi On system is that it allows you to directly use the work you have done with one Visi On program in another Visi On program without duplicating your previous effort. The "TRANSFER" command is the basis of that ability. This section instructs you in the use of transfer and how to select series and parts of series to be transferred out of a Visi On Graph window.

You can transfer a series, a selected section of a series, several series, or selected sections of several series.

You must be in the Edit display before selecting "TRANSFER" from the Visi On menu.

To select numeric information for transfer from the Visi On Graph program

1. Select "TRANSFER" from the Visi On menu.

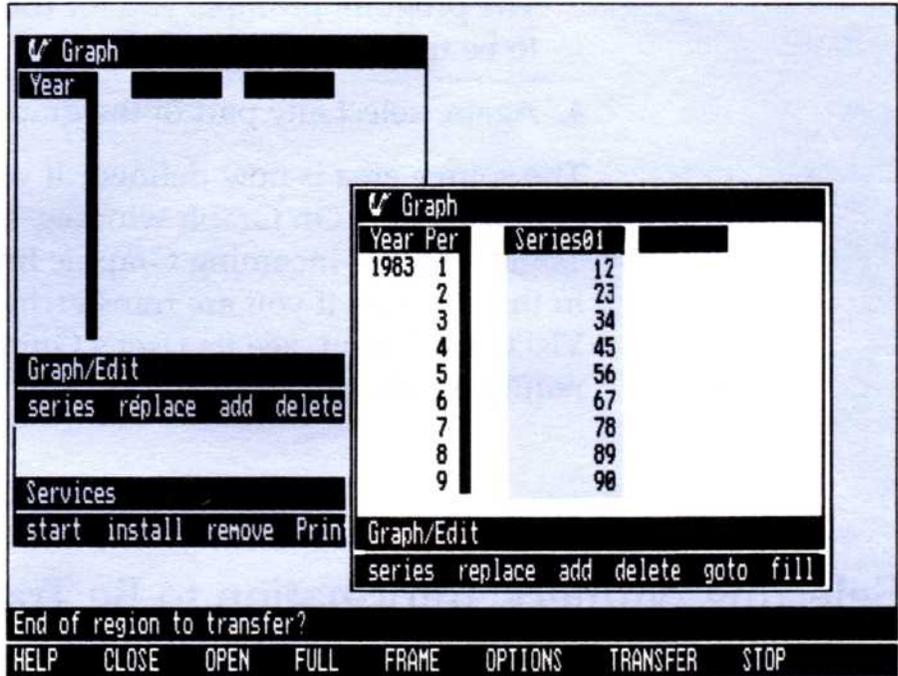
The program prompts you for the source window of the transfer.

---

2. Select the Visi On Graph window that contains the information you want to transfer.

The program prompts you for the start of the region to be transferred.

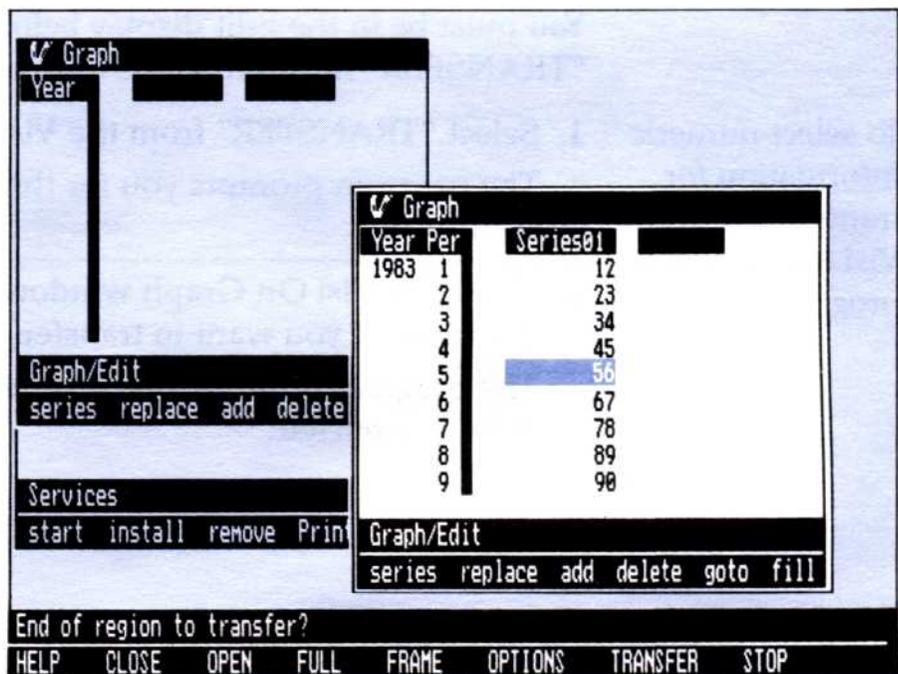
**Figure 7-1.** When selecting the source area of a transfer from the Edit display, select the name of the series you want to transfer.



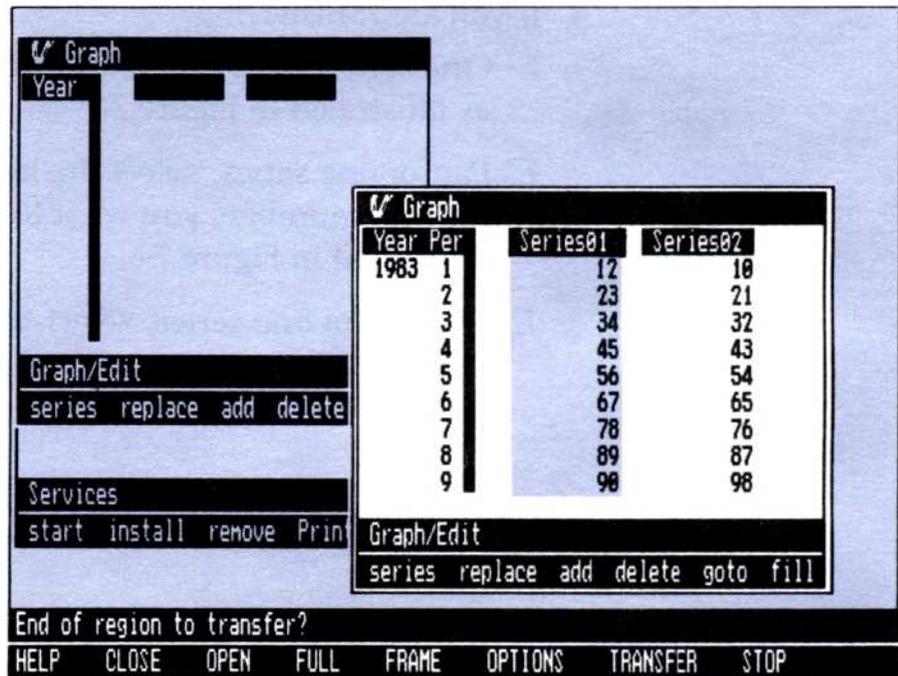
3. If you are transferring:

- One series, select the series name, as illustrated Figure 7-1.
- Part of one series, select the first number in the range of numbers you want to transfer, as illustrated in Figure 7-2.

**Figure 7-2.** When selecting the source area of a transfer from the Edit display, select the first number in the range of numbers you want to transfer.

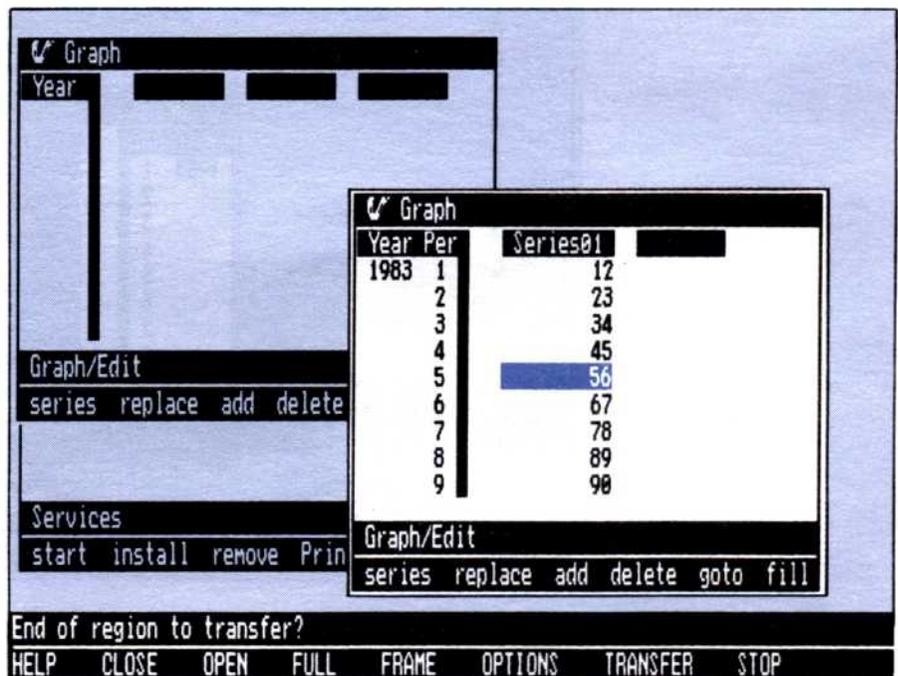


**Figure 7-3.** When selecting the source area of a transfer from the Edit display, select the name of the leftmost series you want to transfer.



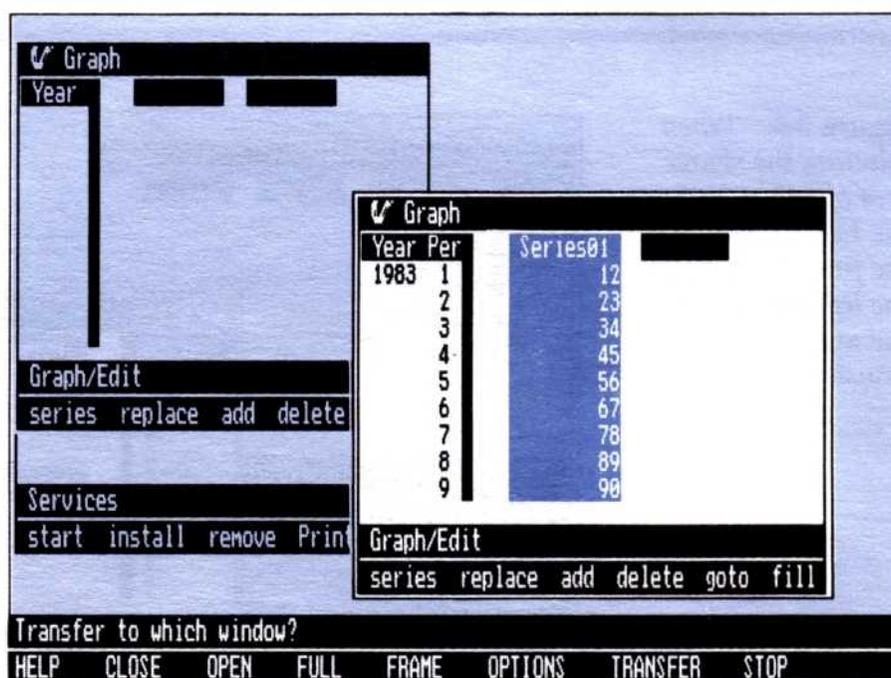
- More than one series, select the name of the leftmost series you want to transfer, as illustrated in Figure 7-3.
- Part of more than one series: select, from the leftmost series you are transferring, the first number in the range of numbers you want to transfer, as illustrated in Figure 7-4.

**Figure 7-4.** When selecting the source area of a transfer from the Edit display, select the first number from the leftmost series in the range you want to transfer.

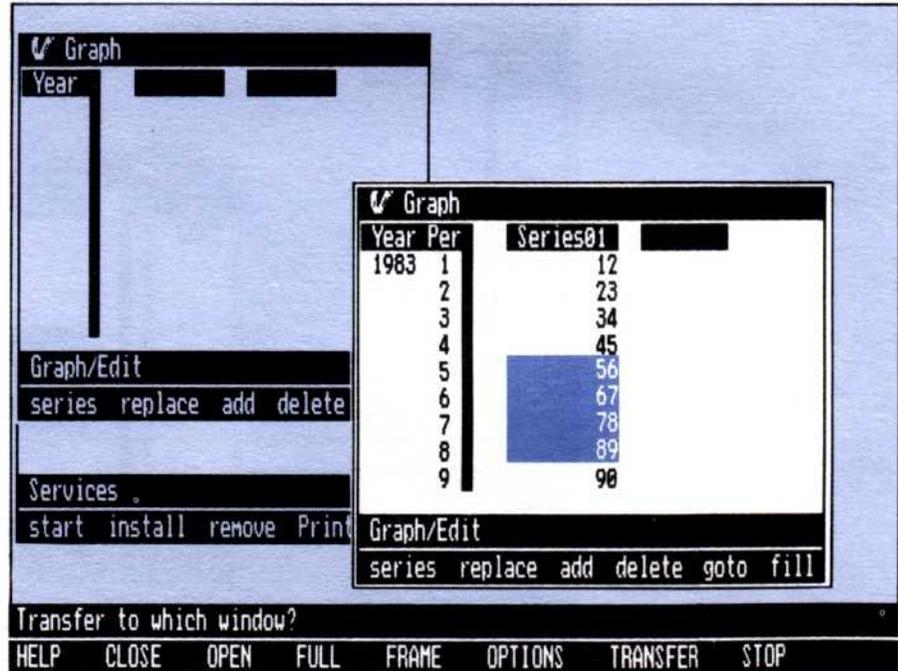


The menu line prompts you for the end of the region area transferred.

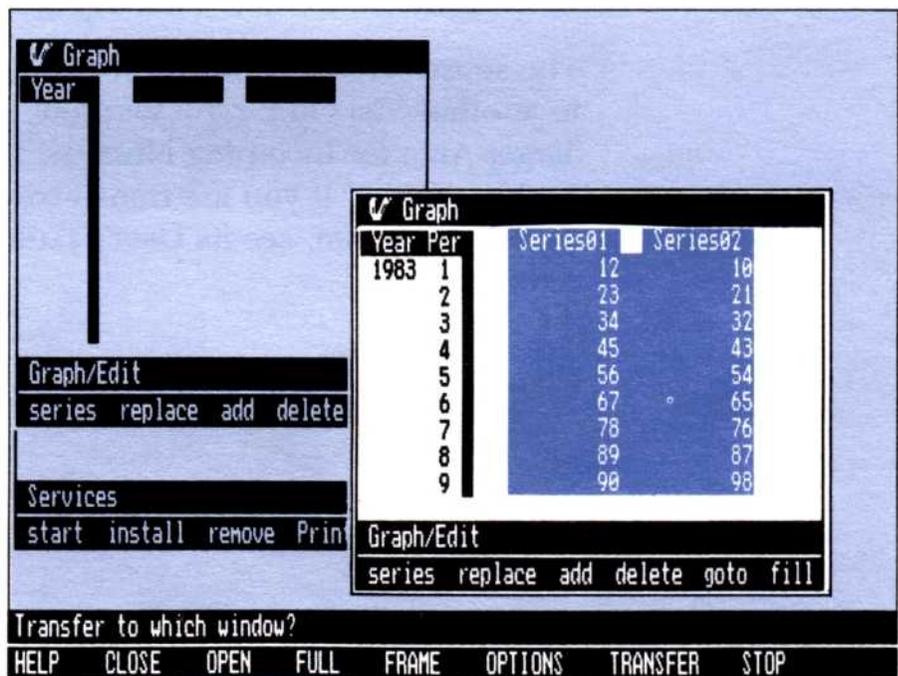
4. If you are transferring:
  - One series, again select the name of that series, as illustrated in Figure 7-5.
  - Part of one series, select the last number in the range of numbers you want to transfer, as illustrated in Figure 7-6.
  - More than one series, select the name of the rightmost series you want to transfer, as in Figure 7-7.



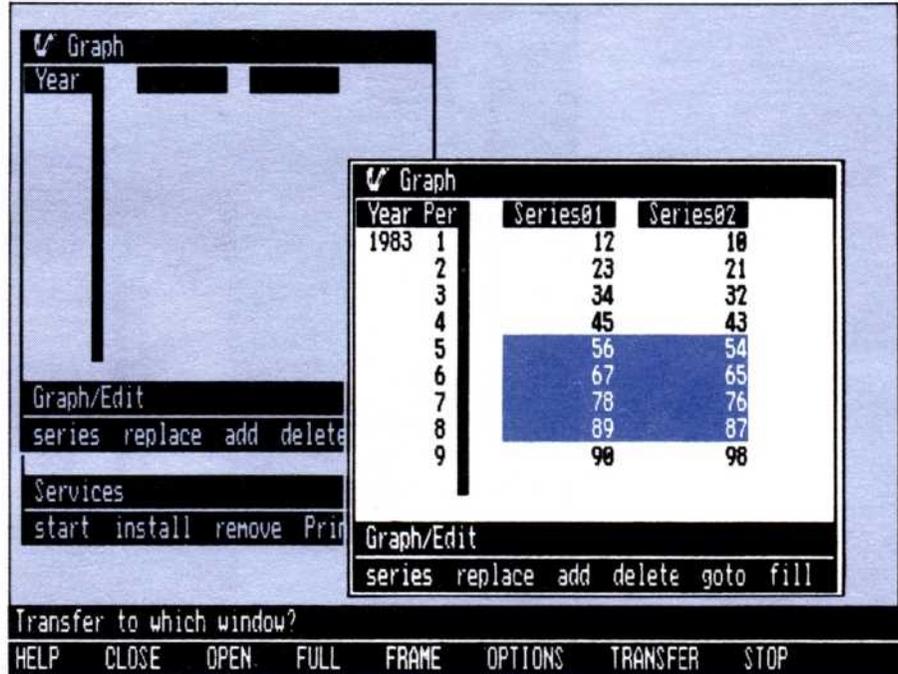
**Figure 7-5.** When prompted to selecting the end of the region of a transfer from the Edit display, select the series name a second time.



**Figure 7-6.** When selecting the end of the region of a transfer from the Edit display, select the last number in the range of numbers you want to transfer.



**Figure 7-7.** When prompted to select the end of the region of a transfer from the Edit display, select the name of the rightmost series you want to transfer.



**Figure 7-8.** When you select the end of the region of a transfer from the Edit display, select the last number in the range of numbers you want to transfer.

- Part of more than one series, select, from the rightmost series you are transferring, the last number in the range of numbers you want to transfer, as illustrated in Figure 7-8.

The source area is now defined. If you are transferring to another Visi On Graph window, see “Selecting the Target Area for Incoming Numeric Information” earlier in this chapter. If you are transferring to another Visi On program, see its User’s Guide for transfer requirements.





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# 8

# Examples

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## Chapter 8

## Examples

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Each exercise in this chapter introduces you to a basic type of graph or application of the program. The exercises in this chapter cover:

- Single-series line graphs
- Multiple-series line graphs
- Bar graphs
- Comparative bar graphs
- Stacked bar graphs
- Pie graphs
- X-Y graphs
- High-low-close graphs
- Mixed graph types
- Creating text pages

Each example guides you, step by step, through the creation of the graph. If you require additional information, see Chapter 4, "Turning Series into Graphs."

## Entering the Sample Series

---

Each of the exercises requires you to have in the working folder at least one of the following three series of data: the INCOME, X-Y, and HIGH-LOW-CLOSE series. Directions for entering these three sample series are given in the following sections.

The series required for each exercise are listed at the beginning of the exercise. Unless you are going to do all of the exercises, there is no reason to enter all series at once. Look at each exercise and see what series it requires; then, using the Visi On Graph™ editing commands, enter the required series.

Some of the series are used in more than one exercise. You may want to save them for later use, with the commands described in Chapter 2: "Saving, Getting, and Organizing Series and Graphs."

The following sections guide you through creating the series: selecting the series, entering the periodicities,

start dates, and series names. The series information is listed next. If you need more help with entering the sample series, see “Creating New Series” in Chapter 3.

## The INCOME Series

---

Beginning from the Graph main menu:

1. Select “Edit.”

There should not be any series in the Edit display. If there are series in the display, you must use the “clear” command in the Edit menu to remove them from the display. Instructions on using the “clear” command can be found in “Clearing Series from the Edit Display” in Chapter 3.

---

2. Select “series” from the Edit menu.
- 

3. Select “new series.”
- 

4. Select “done.”
- 

5. Enter **3** as the number of new series to create.
- 

6. Enter **12** as the series periodicity.
- 

7. Enter **NatInc** as the name of the first series.
- 

8. Enter **1983** as the series beginning year.
- 

9. Enter **1** as the series beginning period.
- 

10. Enter the series names and accept the defaults for periodicities.

Type:

**AreaInc**

**EuroInc**

---

11. Select “add.”
- 

12. Enter the information as it is displayed in Figure 8-1. Do not enter the shaded information. This information will appear in the Edit display as you make your entries. Again, if you need help entering this information, see “Creating and Changing Your Series” in Chapter 3.
- 

13. Select “done.”

These series are now ready for plotting.

Year	Per	NatInc	AreaInc	EuroInc
1983	1	20.6	21	17.1
	2	20.67	21.4	15.43
	3	20.75	21.7	16.3
	4	20.97	21.9	16.3
	5	21.6	22	16.4
	6	21.1	21.5	17.4
	7	21.16	21.6	17.1
	8	21.2	21.8	16.5
	9	21.4	22	17
	10	21.6	22.1	14.9
	11	21.8	22.6	15
	12	21.9	23	15.5

Figure 8-1. The INCOME series.

## The X-Y Series

From the Graph main menu:

1. Select "Edit."

There should not be any series in the Edit display. If there are series in the display, you must use the "clear" command in the Edit menu to remove them from the display. Instructions on using the "clear" command can be found in "Clearing Series from the Edit Display" in Chapter 3.

2. Select "series" from the Edit menu.
3. Select "new series."
4. Select "done."
5. Enter 2 as the number of new series.
6. Enter 1 as the series periodicity.
7. Enter **X-Series** as the name of the first series.
8. Enter 1 as the series beginning year.
9. Enter the second series name, accepting the default for the second series beginning period.

Type:

**Y-Series**

10. Select "add."

Year	Per	X-Series	Y-Series	
1	1	-2.75	-.7	
2	2	-1.65	1	
3	3	-.2	.2	
4	4	1	.7	
5	5	1.75	1.25	
6	6	2.25	1.25	
7	7	3.25	1.75	
8	8	4.75	2.5	

Figure 8-2. *The X-Y series.*

11. Enter the information as it is displayed in the Figure 8-2. Do not enter the shaded information. This information will appear in the editing window as you make your entries. Again, if you need help entering this information, see "Creating and Changing Your Series" in Chapter 3.
  12. Select "done."
- These series are now ready for plotting.

## The HIGH-LOW-CLOSE Series

Beginning from the Graph main menu:

1. Select "Edit."

There should not be any series in the Edit display. If there are series in the display, you must use the "clear" command in the Edit menu to remove them from the display. Instructions on using the "clear" command can be found in "Clearing Series from the Edit Display" in Chapter 3.

2. Select "series" from the Edit menu.
3. Select "new series."
4. Select "done."
5. Enter 3 as the number of new series.

Year	High	Low	Close
1977	100	99	100
1978	101.5	95.5	97.5
1979	105	100	103
1980	105.7	102.7	104.7
1981	109	105	107
1982	104	101	104
1983	102	99	100
1984	103.3	100.3	102.3

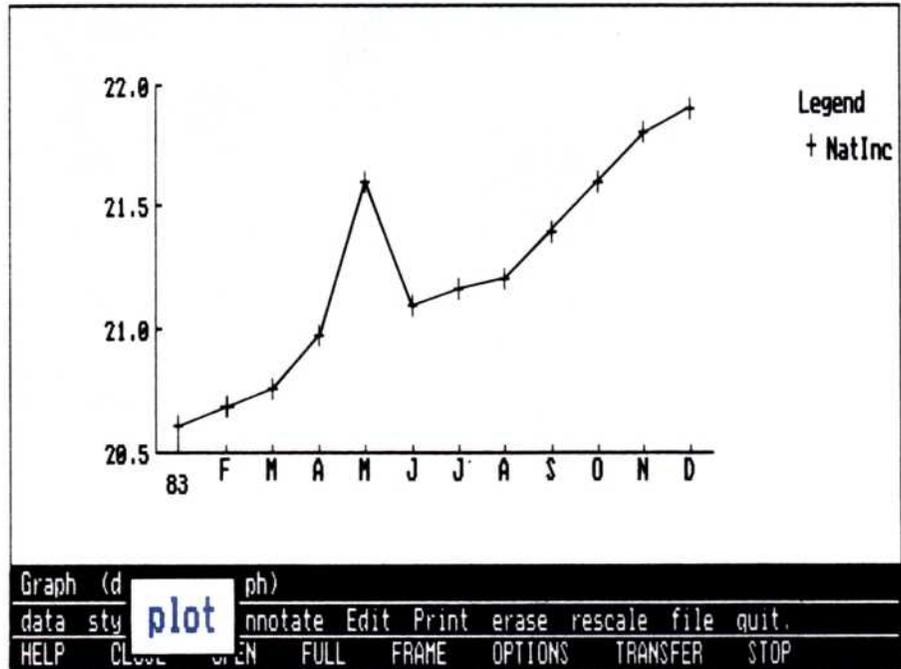
Figure 8-3. The HIGH-LOW-CLOSE series.

6. Enter **1** as the series periodicity.
7. Enter **High** as the name of the first series.
8. Enter **1977** as the series beginning year.
9. Enter the series names, accepting the defaults for the periodicities.  
Type:  
**Low**    
**Close**
10. Select "add."
11. Enter the information as it is displayed in Figure 8-3. Do not enter the shaded information. This information will appear in the Edit window as you make your entries. Again, if you need help entering this information, see "Creating and Changing Your Series" in Chapter 3.
12. Select "done."

These series are now ready for plotting.

## Creating a Single-Series Line Graph

This graph uses the INCOME series. For information on entering these series, see "Entering the Sample Series" earlier in this chapter.



**Figure 8-4.** Single-series line graphs are commonly used to keep track of single-point information, such as physical measurements, temperatures, and percentages.

Beginning from the Graph main menu:

1. Select "data" from the Graph main menu; then select "series" from the data type menu.

---

2. Select "NatInc" from the available series.

---

3. Select "done" from the series menu.

---

4. Select "style" from the Graph main menu.

---

5. Select "line" from the available graph types.

---

6. Select "both" from the line type menu.

---

7. Select "erase"; then select "plot" from the Graph main menu.

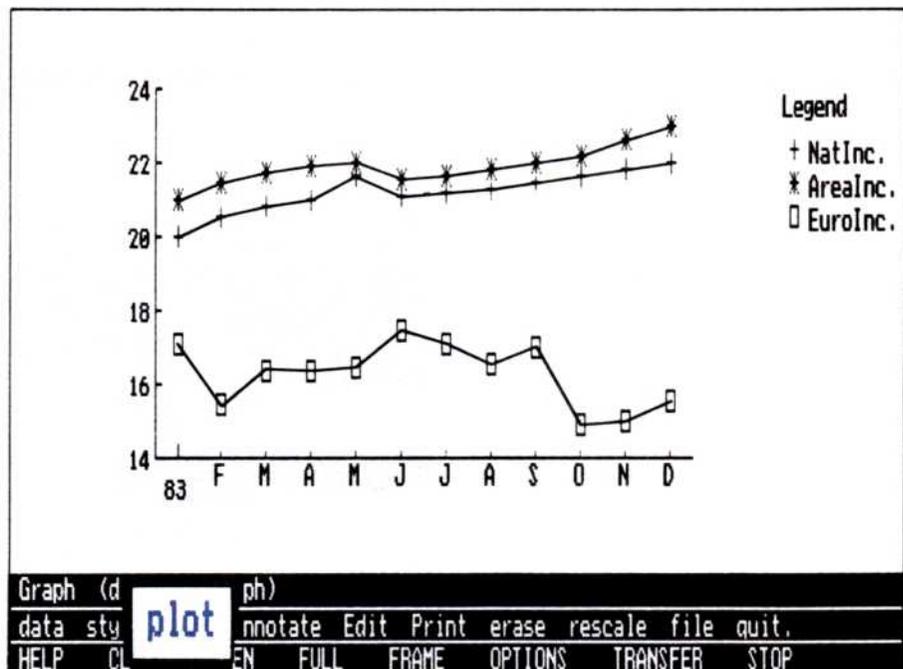
Once the graph is drawn, you can overlay it with another series or type of graph, add labels and change display options, or print it directly. For additional information see Chapter 5, "Enhancing Your Graphs" and Chapter 6, "Printing."

## Creating a Multiple-Series Line Graph

This graph uses the INCOME series. For information on entering these series, see "Entering the Sample Series" earlier in this chapter.

Beginning from the Graph main menu:

1. Select "data" from the Graph main menu; then select "series" from the data type menu.
2. Select "NatInc" from the available series.
3. Select "AreaInc" from the available series.
4. Select "EuroInc" from the available series.
5. Select "done" from the series menu.
6. Select "style" from the Graph main menu.
7. Select "line" from the available graph types.
8. Select "both" from the line type menu.



**Figure 8-5.** Multiple-series line graphs are commonly used to keep track of several series of single-point information, such as physical measurements, temperatures, and percentages. Because the lines are drawn next to each other, you can easily compare the individual series values.

9. Select "erase"; then select "plot" from the Graph main menu.

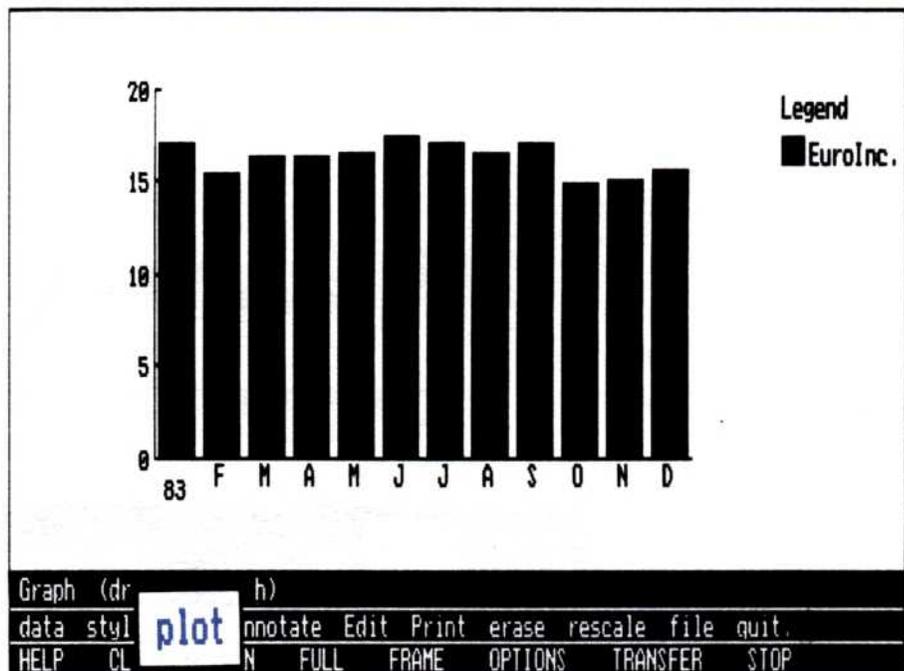
Once the graph is drawn, you can overlay it with another series or type of graph, add labels and change display options, or print it directly. For additional information see Chapter 5, "Enhancing Your Graphs" and Chapter 6, "Printing."

## Creating a Bar Graph

This graph uses the INCOME series. For information on entering these series, see "Entering the Sample Series" earlier in this chapter.

Beginning from the Graph main menu:

1. Select "data" from the Graph main menu; then select "series" from the data type menu.
2. Select "EuroInc" from the available series.
3. Select "done" from the series menu.



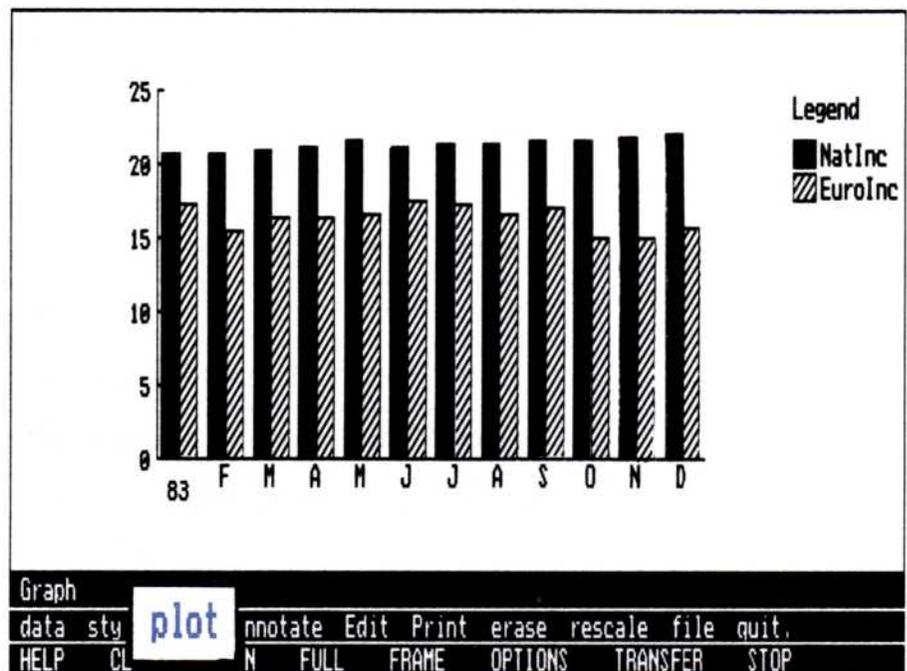
**Figure 8-6.** Bar graphs are commonly used to keep track of cumulative or volume information, such as sales, inventory, and population.

4. Select "style" from the Graph main menu.
5. Select "bar" from the available graph types.
6. Select "compare" from the bar graph type menu.
7. Select "erase"; then select "plot" from the Graph main menu.

Once the graph is drawn, you can overlay it with another series or type of graph, add labels and change display options, or print it directly. For additional information see Chapter 5, "Enhancing Your Graphs" and Chapter 6, "Printing."

## Creating a Comparative Bar Graph

This graph uses the INCOME series. For information on entering these series, see "Entering the Sample Series" earlier in this chapter.



**Figure 8-7.** Comparative bar graphs are commonly used to keep track of several series of cumulative or volume information, such as sales, inventory, and population. Because the bars are drawn next to each other, you can easily compare the values of each of the series.

Beginning from the Graph main menu:

1. Select "data" from the Graph main menu; then select "series" from the data type menu.
2. Select "NatInc" from the available series.
3. Select "EuroInc" from the available series.
4. Select "done" from the series menu.
5. Select "style" from the Graph main menu.
6. Select "bar" from the available graph types.
7. Select "compare" from the bar graph type menu.
8. Select "erase"; then select "plot" from the Graph main menu.

Once the graph is drawn, you can overlay it with another series or type of graph, add labels and change display options, or print it directly. For additional information see Chapter 5, "Enhancing Your Graphs" and Chapter 6, "Printing."

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## Creating a Stacked Bar Graph

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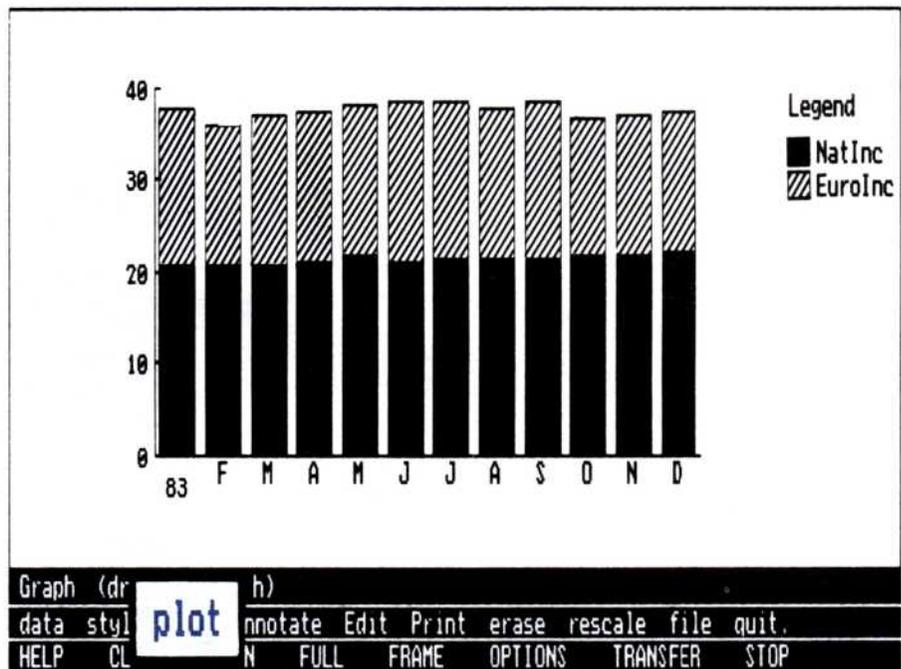
This graph uses the INCOME series. For information on entering these series, see "Entering the Sample Series" earlier in this chapter.

Beginning from the Graph main menu:

1. Select "data" from the Graph main menu; then select "series" from the data type menu.
2. Select "NatInc" from the available series.
3. Select "EuroInc" from the available series.
4. Select "done" from the series menu.
5. Select "style" from the Graph main menu.
6. Select "bar" from the available graph types.
7. Select "stack" from the bar graph type menu.
8. Select "erase"; then select "plot" from the Graph main menu.

Once the graph is drawn, you can overlay it with another series or type of graph, add labels and change

**Figure 8-8.** Stacked bar graphs are commonly used to keep track of cumulative or volume information, such as sales, inventory, and population. Stacking the bars displays the cumulative total of each of the individual series.



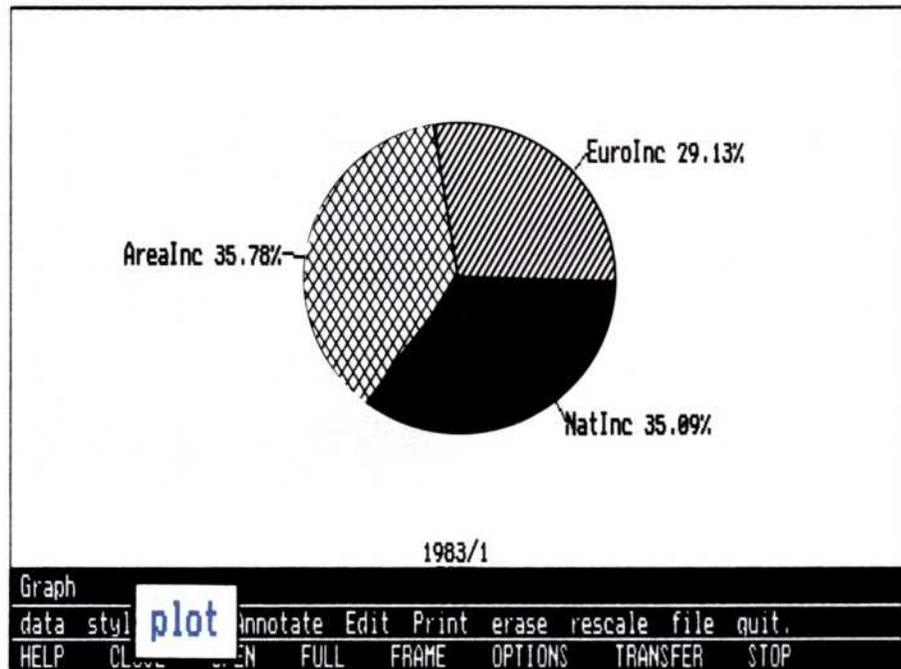
display options, or print it directly. For additional information see Chapter 5, "Enhancing Your Graphs" and Chapter 6, "Printing."

## Creating a Pie Graph

This graph uses the INCOME series. For information on entering these series, see "Entering the Sample Series" earlier in this chapter.

Beginning from the Graph main menu:

1. Select "data" from the Graph main menu; then select "series" from the data type menu.
2. Select "NatInc" from the available series.
3. Select "AreaInc" from the available series.
4. Select "EuroInc" from the available series.
5. Select "done" from the series menu.
6. Select "style" from the Graph main menu.
7. Select "pie" from the available graph types.
8. Select "erase"; then select "plot" from the Graph main menu.



**Figure 8-9.** Pie graphs show the contribution to the whole pie of each period or series displayed in the graph. This type of graph is commonly used where it is necessary to display each individual value's contribution to the whole picture.

9. Type **1983** for the year to plot.
10. Type **1** for the period to plot.

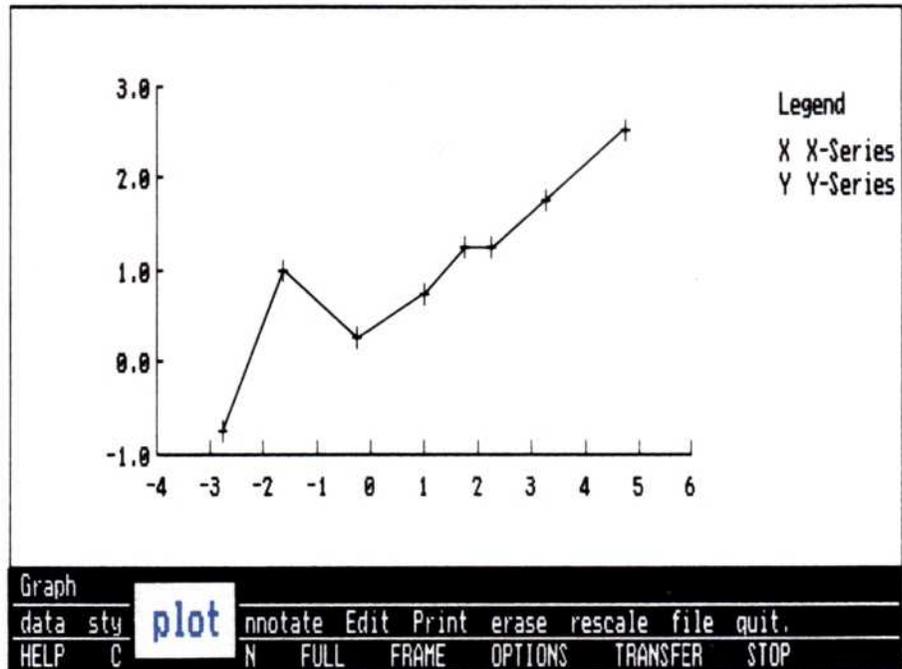
Once the chart is drawn, you can add labels, change display options, or print it directly. For additional information see Chapter 5, "Enhancing Your Graphs" and Chapter 6 "Printing."

## Creating an X-Y Graph

This graph uses the X-Y series. For information on entering these series, see "Entering the Sample Series" earlier in this chapter.

Beginning from the Graph main menu:

1. Select "data" from the Graph main menu; then select "series" from the data type menu.
2. Select "X-Series" from the available series.
3. Select "Y-Series" from the available series.



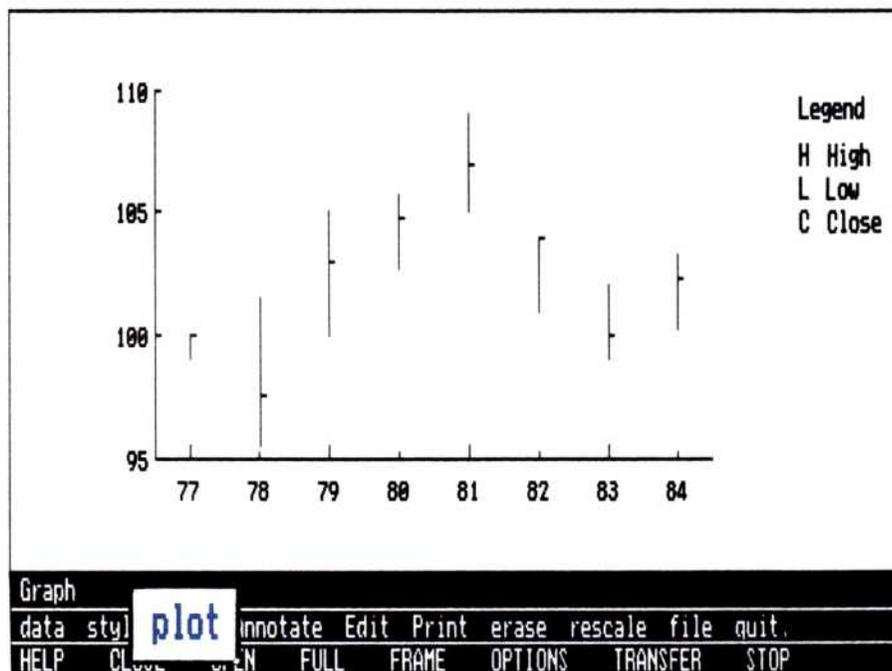
**Figure 8-10.** An X-Y graph shows the correlation between series points. This type of graph is commonly used to express the relationship between series, such as rainfall and crop growth, advertising expenditures and sales, and so forth.

4. Select "done" from the series menu.
5. Select "style" from the Graph main menu.
6. Select "X-Y" from the available graph types.
7. Select "both" from the X-Y graph type menu.
8. Select "erase"; then select "plot" from the Graph main menu.

Once the graph is drawn, you can add labels, change display options, or print it directly. For additional information see Chapter 5, "Enhancing Your Graphs" and Chapter 6, "Printing."

## Creating a High-Low-Close Graph

This graph uses the HIGH-LOW-CLOSE series. For information on entering these series, see "Entering the Sample Series" earlier in this chapter.



**Figure 8-11.** A high-low-close graph takes three series (or two for a high-low graph), one composed of the high values for each time point, a second for the matching low values for the same time points, and a third that shows the final position at the end of the time period. This type of chart is commonly used in recording and presenting stock price histories on a daily or weekly basis; it also has many applications in physics and in mathematical distributions.

Beginning from the Graph main menu:

1. Select "data" from the Graph main menu; then select "series" from the data type menu.

---

2. Select "High" from the available series.

---

3. Select "Low" from the available series.

---

4. Select "Close" from the available series.

---

5. Select "done" from the series menu.

---

6. Select "style" from the Graph main menu.

---

7. Select "hi-lo-cl" from the available graph types.

---

8. Select "erase"; then select "plot" from the Graph main menu.

Once the graph is drawn, you can overlay it with another series or type of graph, add labels and change display options, or print it directly. For additional information see Chapter 5, "Enhancing Your Graphs" and Chapter 6, "Printing."

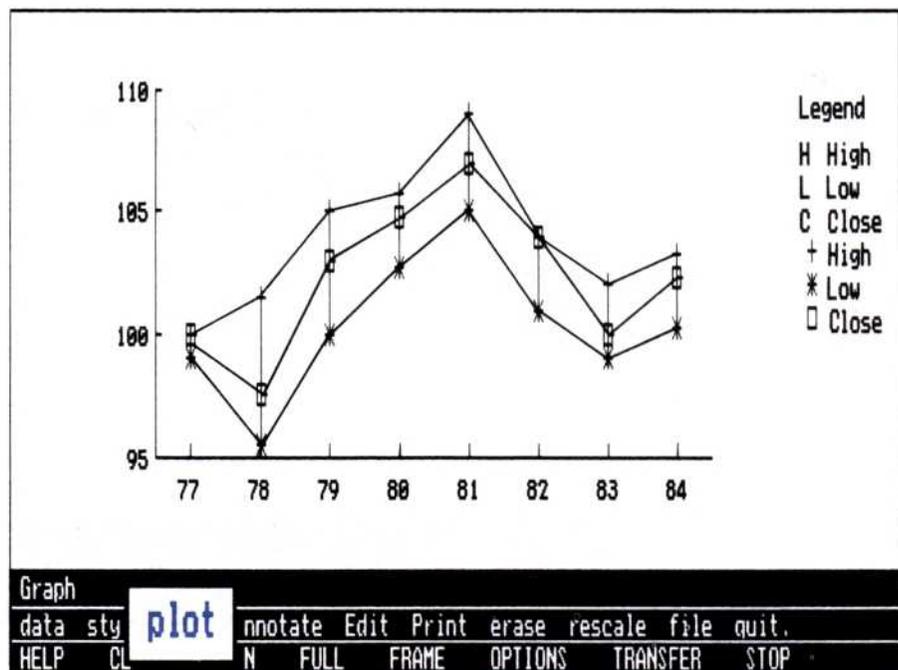
## Mixing Graph Types

This graph uses the HIGH-LOW-CLOSE series. For information on entering these series, see “Entering the Sample Series” earlier in this chapter.

In this exercise you will draw a high-low-close graph and then overlay it with a line graph. The overlaid line graph connects the series that contribute to the high, low, and close, and marks them with a symbol that is displayed in the legend.

Beginning from the Graph main menu:

1. Select “data” from the Graph main menu; then select “series” from the data type menu.
2. Select “High” from the available series.
3. Select “Low” from the available series.
4. Select “Close” from the available series.
5. Select “done” from the series menu.
6. Select “style” from the Graph main menu.



**Figure 8-12.** *Mixing graph types often requires an experimental and artistic attitude about displaying your information. A chart using mixed graph types can often tell the viewer more than two individual charts.*

7. Select "hi-lo-cl" from the available graph types.
8. Select "erase"; then select "plot" from the Graph main menu.
9. Select "style" from the Graph main menu.
10. Select "line" from the available graph types.
11. Select "both" from the line type menu.
12. Select "plot" from the Graph main menu.

Once the graph is drawn, you can add labels, change display options, or print it directly. For additional information see Chapter 5, "Enhancing Your Graphs" and Chapter 6, "Printing."

## Creating Text Pages

This exercise does not use any of the series at the beginning of this chapter.



**Figure 8-13.** The Visi On™ Graph program also allows you to use its font capabilities to create short, eye-catching sections of text. Such text pages can be used to head a memo, create a presentation foil, describe a partitioned graph, or enhance almost any form of written communication.

In this exercise you are creating an agenda list for a stockholders luncheon. You will use both fixed titles and text in the page, changing the font style for the activities listing.

Beginning from the Graph main menu:

1. Select "erase."

---

2. Select "Annotate."

---

3. Select "font" from the Annotate menu.

---

4. Select "boldface" from the font type menu.

---

5. Select "title."

---

6. Select "main."

---

7. Type **Meeting Agenda**

---

8. Select "title."

---

9. Select "subtitle."

---

10. Type **Fall Quarter Stockholders Luncheon** .

---

11. Select "font" from the Annotate menu.

---

12. Select "roman" from the font type menu.

---

13. Select "add" from the Annotate menu.

---

14. Select "horizontal."

---

15. Select the area about one inch below the F in "Fall."

---

16. Type:
  - Introduction**
  - Minutes of the last meeting**
  - Presentation by Northern Pulp Ltd.**
  - Lunch**
  - Election of Board**
  - Open discussion**
  -

The text page is complete.

Once the text page is composed, you can add or edit labels and change display options, or print it directly. For additional information see Chapter 5, "Enhancing Your Graphs" and Chapter 6, "Printing."

## Creating a Graph with Labels and Enhancements

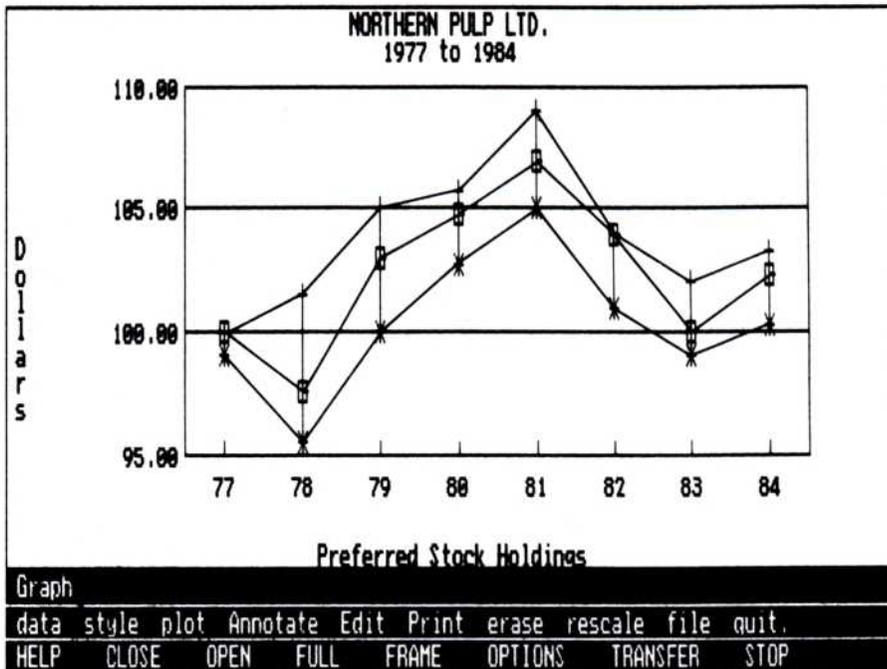
---

No matter how obvious your graph's message is, adding labels and using some of the program's options can clarify or enhance its meaning. This section demonstrates how you can label and change options in a graph.

This graph uses the information from the HIGH-LOW-CLOSE series. For information on entering these series, see "Entering the Sample Series" earlier in this chapter.

In this exercise you will:

- Draw a simple high-low-close graph
- Overlay a line graph using the same series
- Change some of the graph options
- Label the finished graph



**Figure 8-14.** In your complete graphs, you will usually take advantage of a couple of options, some labeling, and a font to make one label stand out.

Beginning from the Graph main menu:

Step 1: Select the series and graph type; then draw the basic graph.

1. Select "data" from the Graph main menu; then select "series" from the data type menu.
2. Select "High" from the available series.
3. Select "Low" from the available series.
4. Select "Close" from the available series.
5. Select "done" from the series menu.
6. Select "style" from the Graph main menu.
7. Select "hi-lo-cl" from the available graph types.
8. Select "erase"; then select "plot" from the Graph main menu.

Step 2: Because the same series will be used in the overlay graph, you only have to select the new graph type.

1. Select "style" from the Graph main menu.
2. Select "line" from the available graph types.
3. Select "both" from the line type menu.
4. Select "plot" from the Graph main menu.

You have finished drawing the graph. Now is a good time to change some of the display options.

Step 1

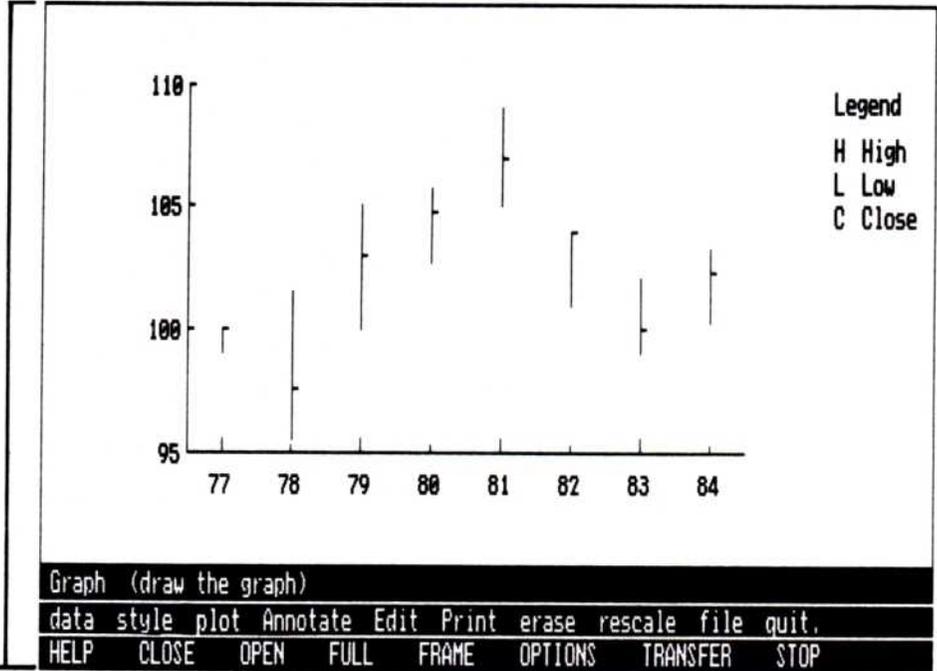


Figure 8-15. Drawing the High-Low-Close Graph.

Step 2

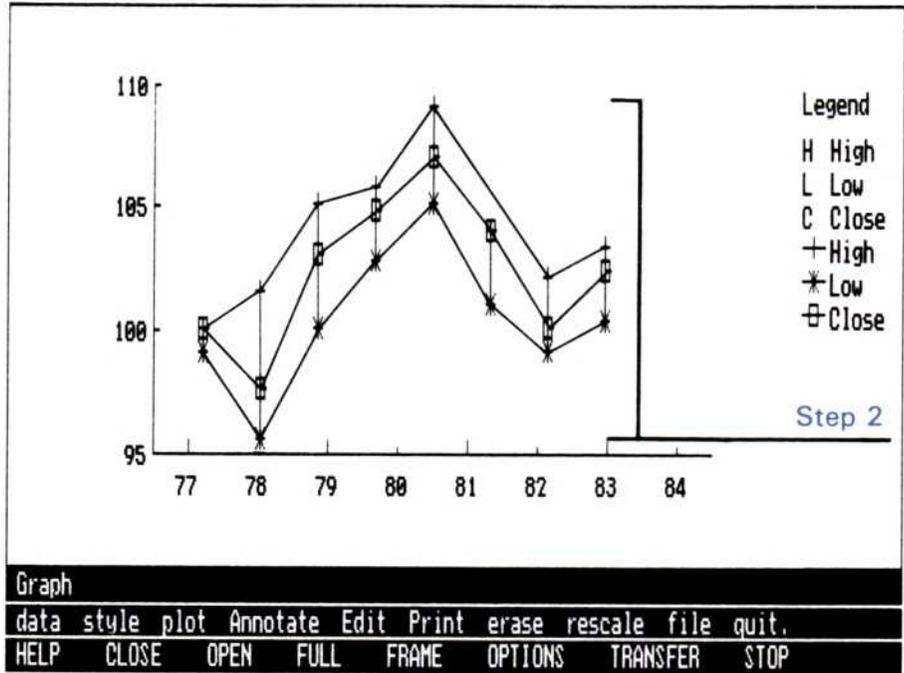


Figure 8-16. Overlaying the Line Graph.

Step 3: Begin enhancing your graph by adding horizontal grid lines to it.

1. Select "OPTIONS" from the Visi On menu.

---

2. Select the Visi On Graph window.

---

3. Select "horizontal only" from the Grid Lines section of the Graph options sheet.

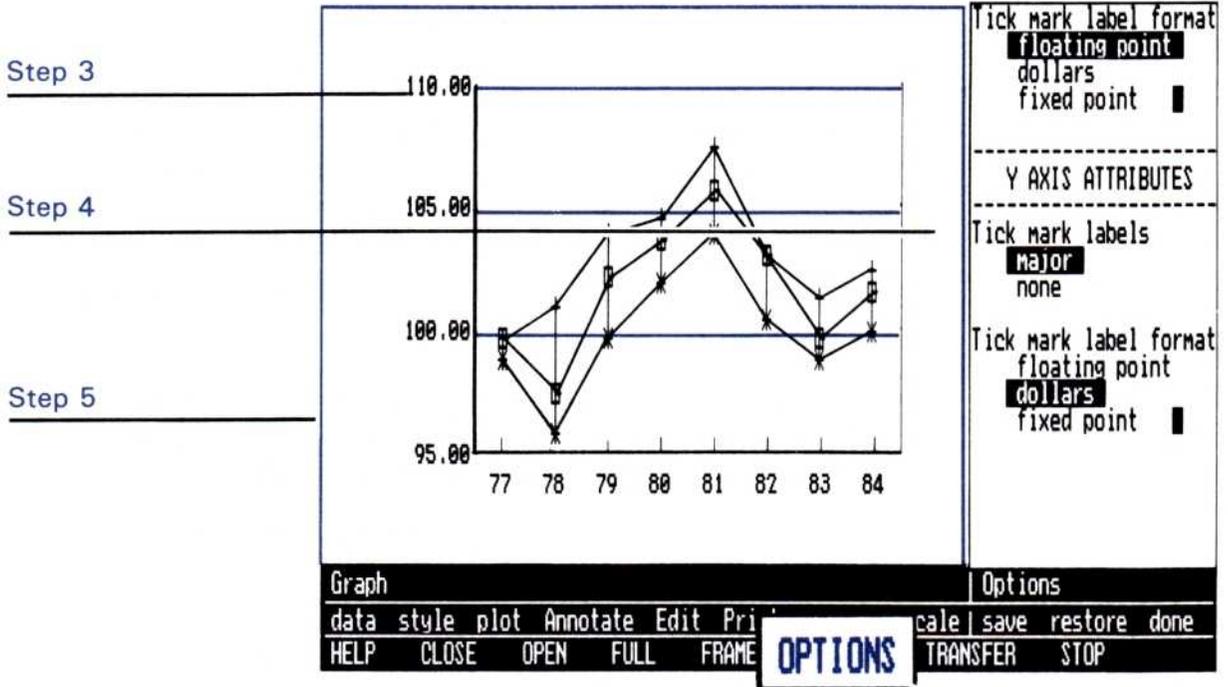
Step 4: The legend is confusing because the same series were used twice in the graph. This graph is fairly self-explanatory, so we can remove the legend and make more room for the plotted information.

1. Remove the legend by selecting "No" from the Legend section of the Graph options sheet.

---

Step 5: A frame around the outside can add a nice touch to your finished graph.

1. Add a frame around the graph by selecting "outer" from the Framing section of the Graph options sheet.



**Figure 8-17.** Adding horizontal bars (3), removing the legend (4), and adding a frame (5) to the graph.

Step 6: You can make the values on the Y axis look more like dollar figures. Change the Y-axis labels to a dollar format (two fixed decimal places). When you have done this, close the options sheet.

1. Scroll the options sheet to display the Y axis attributes; then select "dollars" from the Y Axis Attributes section of the Graph options sheet.
2. Select "done" from the Options sheet menu line.

Step 7: This graph needs some labels. Add a main title in a bold font.

1. Select "Annotate" from the Graph main menu.
2. Select "font" from the Annotate menu.
3. Select "boldface" from the font type menu.
4. Select "title" from the Annotate menu.
5. Select "main" from the title type menu.
6. Type **Northern Pulp Ltd.**

Step 8: Once a font is selected, it is used for all of the labels until another font is selected. Add a subtitle to the graph using the bold font.

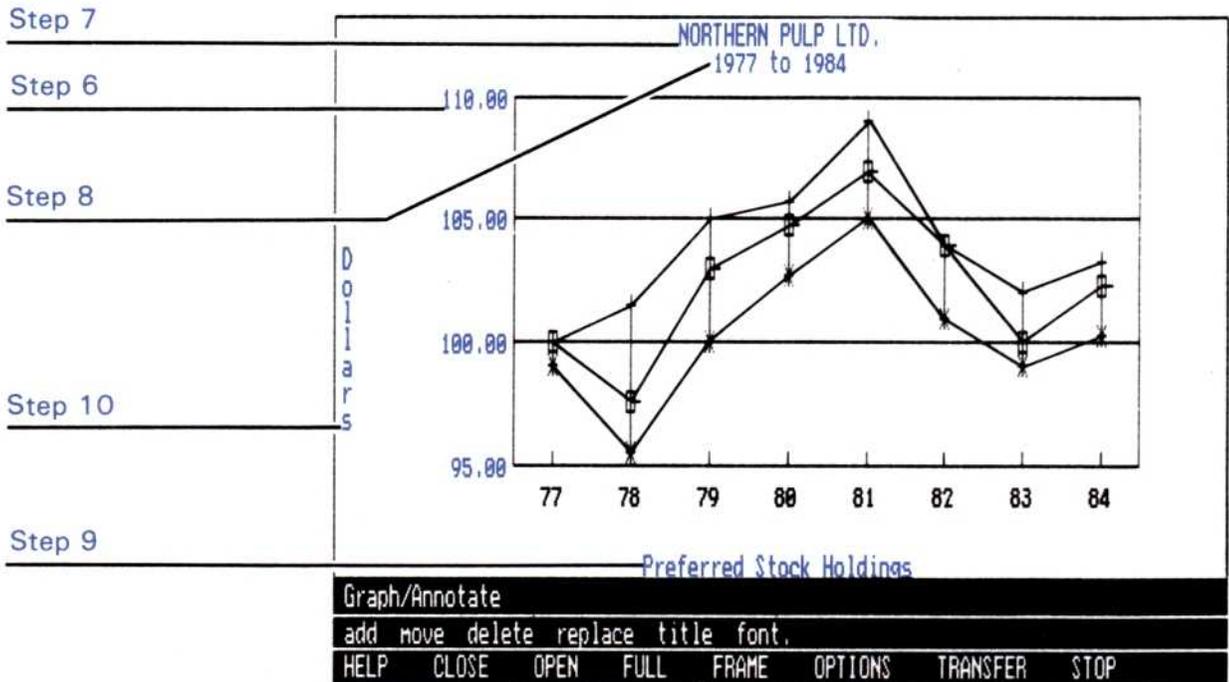
1. Select "title" from the Annotate menu.
2. Select "subtitle" from the title type menu.
3. Type **1977 to 1984**

Step 9: To change a font style, select a new font. Add a bottom title with the roman font.

1. Select "font" from the Annotate menu.
2. Select "roman" from the font type menu.
3. Select "title" from the Annotate menu.
4. Select "bottom" from the title type menu.
5. Type **Preferred Stock Holdings**

Step 10: One more label and the graph will be finished. Add a side label using the script font:

1. Select "title" from the Annotate menu.
2. Select "side" from the title type menu.
3. Type **Dollars**



**Figure 8-18.** Changing the Y axis label format (6), and adding titles (7-10) completes the graph.

The graph is finished.

The graphs you draw may require options or labeling selections other than the ones used here. For additional information, see Chapter 5, "Enhancing Your Graphs."







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# 9

# Messages



## Messages

---

**(101) Select a series before selecting plot**

You selected “plot” before you selected a series. Select “data,” “series,” one or more series names, and then select the “plot” command.

**(102) Range of selected series exceeds 1000**

The union of the series you selected contains more than 1000 data points. You can:

- Select the series again, leaving out some that expand the range.
- Edit the series and remove some of the data points at the high or low extreme.

**(103) Two series, minimum, are required for a hi-lo-cl graph**

You only selected a single series for a hi-lo-cl graph. You must select either two or three series. The first two series identify the high and low points for each time period. The third series, if selected, identifies the close points.

**(104) Two series are required for an X-Y graph**

You only selected a single series for an X-Y graph. You must select two series. The first series is plotted on the X axis and the second on the Y axis.

**(105) There are no common data points in the selected series**

You selected an X-Y or hi-lo-cl graph type and files that have no common data points. Select files with common years and periods for these graph types.

**(106) The maximum number of series, 12, are already displayed**

The program can display a maximum of 12 series. You tried to overlay a number of series that exceeded that total. Select fewer series and select the command again.

**(107) The maximum number of chart types, two, are already displayed**

The program can display a maximum of two

different graph types at a time. You tried to overlay a graph that already contained two graph types. As long as you have not exceeded the maximum number of series, you can overlay using one of the graph types already in use in the graph.

**(108) Cannot overlay an x-y graph with any other graph type**

You tried to overlay an X-Y graph with another graph type. You can only overlay an X-Y graph with another X-Y graph. Erase the currently displayed graph and then plot it.

**(109) Cannot overlay a pie graph**

You tried to overlay a pie graph. You cannot overlay a pie graph with any other type of graph, including another pie graph. Erase the currently displayed graph and then plot it.

**(110) There is no axis to rescale**

You selected “rescale” when there was no graph displayed or when a pie graph was displayed. You must have a line, bar, area, X-Y, or hi-lo-cl graph displayed to use the “rescale” command.

**(111) A previously selected series is no longer in memory**

You attempted to plot a series that you have removed from the working folder since you selected it. You must select series again via the “data/series” commands before you can plot. If you wish to plot the series you removed, select “file” and load that series back into the working folder.

**(112) There is no text to move**

You selected “move” when there is no text or titles on the displayed graph. You cannot move the axis labels or the legend with these commands.

**(113) No more text can be added to the graph—the text buffer is full**

You have reached the maximum amount of text that can be added to the graph. You must remove some text before you can add more.

**(115) The periodicities do not match—select series with like periodicities**

You selected series that have different periodicities. All selected series must have the same periodicity. Select again.

**(125) Three series, maximum, are allowed for a hi-lo-cl graph**

You selected more than three series for a hi-lo-cl graph. Only three are allowed. The first two are used for the high and low points. The optional third series, if selected, is used for the close points. Select two or three series and proceed.

**(126) Two series, maximum, are allowed for an x-y graph**

You selected more than two series for an X-Y graph. Only two are allowed. The first is plotted on the X axis and the second on the Y axis. Select two series and proceed.

**(127) Pie graph data must be all positive or negative, not mixed**

You selected series with mixed positive and negative data points for a pie graph. Either select different series or change the points to all positive or negative.

**(128) Selected series exceed maximum of 12**

The series to be added would exceed the maximum of 12. You either selected too many series via the Edit "series" command or the Visi On "TRANSFER" command. You must delete series so the total will not exceed 12 before proceeding.

**(129) Working folder is full, cannot save the graph**

The working folder contains the maximum it can hold. You must remove some graphs or series from the working folder. Be sure to save any important ones in a permanent folder before removing them.

**(133) Cannot add data point—year too large**

You cannot add a data point to this series. The last year is 9999, the largest allowable year. You can only add a data point if you use the "parameters"

command to change the starting date to a smaller number.

**(134) Cannot add data point—maximum reached**

You cannot add a data point because the series contains 1000 data points, the maximum number.

**(135) No series to select**

There are no series in the working folder. Select “file” in the graph menu and get series or select “Edit” to create series.

**(136) No data points in the area to be deleted**

You selected an area that has no data points in it. Select “continue,” the “delete” command, and then an area that has data points in it.

**(137) Edit capacity reached—cannot add all series**

You selected an additional series to be edited that will exceed the 2000 data point limit of the editing table. Use the “clear” command to remove series to make room for the additional series.

**(139) That name already exists in the working folder**

The name you entered for the new series already exists in the working folder. Series names must be unique within a folder. Enter a new name.

**(140) Edit capacity reached—cannot add data point**

The data point you tried to add will exceed the 2000 data point limit of the editing table. Use the “clear” command to remove series to make room for the additional series.

**(141) Working folder is full—too many series**

The working folder already contains 24 series. You must remove series from the working folder before you can add more.

**(142) Working folder is full—too many graphs**

The working folder already contains eight frozen graphs. You must remove a frozen graph from the working folder before you can add another.

**(144) That folder name already exists**

You entered a name for a newly created folder that already exists in the current folder. Enter a different folder name.

**(145) Cannot delete a folder until it is empty**

You attempted to remove a folder that still contains information. It may contain types of files other than series or graphs.

**(146) Must create a partition first**

The print sheet is not divided into partitions. You cannot execute that command unless the print sheet is divided. Select the type of partitioning from the options sheet.

**(223) Rescale is not applicable to pie charts**

You selected the “rescale” command when a pie chart was displayed. This command is not applicable to a pie chart.

**(224) Cannot display another graph with two hi-lo-cl graphs displayed**

You selected “plot” when two hi-lo-cl graphs are displayed. You must erase the current display before you plot another graph.

**(225) Only zero values can be interpolated**

You selected a non-zero value to be interpolated. You must select a zero value. The zero data point you select and all adjacent zero data points will be interpolated between the value of the preceding non-zero data point and next non-zero data point. Select “continue” and then a zero data point.

**(226) All displayed series are empty—cannot perform that command**

All the series in the edit table are empty. The command you selected cannot be performed on an empty series.

**(227) That series name already exists in the edit table**

You selected “parameters” or “series/new series” and entered a series name that already exists in the edit table. All series names in the edit table must be unique. Enter a unique name.

**(228) That series exists in the edit table under a different name**

That series already exists in the edit table with a different name. You changed the series name with

the “parameters” command. If you want a copy of that series, use the “TRANSFER” command.

**(229) That value is invalid for this option**

You typed in an options sheet value that is too large, too small, or contains unacceptable characters. The option is not changed. Select the option again and enter a correct value.

**(230) That file name already exists in the transmittal folder**

You entered a name for a remote print file that already exists in the transmittal folder. Enter a different name.

**(231) There are no printer models defined**

You attempted to print a series or graph on a remote printer. No remote printers are defined to the system. You must define the target printer from the Services window “Printing” menu.

**(232) Insufficient memory available to complete the transfer**

You started a “TRANSFER” command but there is not enough memory available to complete the command. “quit” all windows that you do not need for this transfer.

**(233) Transfer cancelled—invalid data**

You either attempted to transfer data that cannot be transferred or attempted to transfer data that is incompatible with the target area. For example, you may have tried to transfer a single data point into a graph display, which does not make sense.

**(234) There is no text to replace**

You selected “replace” when there is no text or titles on the displayed graph. You cannot replace the axis labels or the legend with these commands.

**(235) There is no text to delete**

You selected “delete” when there is no text or titles on the displayed graph. You cannot delete the axis labels or the legend with these commands.

**(236) No series displayed—cannot perform that command**

You selected a command that cannot be performed when no series are displayed. For example, you cannot “add” a data point until you have selected an existing series or created new series.

**(237) You entered an invalid number**

The program expected a numeric value and you entered an invalid number that probably has a non-numeric character or incorrect punctuation. Reenter the number correctly.

**(238) You picked an unrecognized area in the window**

You selected an area in the Edit display that has no meaning in the current context. For example, you may have tried to add a value to an area that does not contain a series.

**(239) Stacked bar graph exceeds the maximum value**

The series you have selected creates a bar graph bar that exceeds the maximum value the program can display. You will have to use fewer series (erase the graph and start over) or display the information with a different kind of graph.

**(240) Error reading or writing to a disk**

There was an error reading or writing to a disk. Check the drive and the disk and then retry the operation. Make sure the disk is formatted. If the error persists, you may have a defective disk or malfunctioning hardware.

**(241) The volume is off-line**

The volume that you tried to read or write is not available to the computer at this time. Make sure the correct disk is in the drive. You might have forgotten to mount the volume when you put it in the drive.

**(242) The source or destination is not available**

A file you need may not be mounted or may be in use by another program.

**(243) The file or folder is in use**

You may have another process that is using the file you need. Check other programs and utilities.

**(244) There is a nonexistent folder or file in the pathname**

You probably attempted to get a file by name. Most probably you misspelled the name of a folder in the pathname. Select the command again and reenter the pathname. It is also possible that you deleted that folder from the Archives since you loaded the Visi On Graph program.

**(245) There is an invalid / in that name**

The name you entered has an invalid slash (/) in it. Names can contain any characters except the slash, which is used to separate the folder and filenames in a pathname.

**(246) The folder name is too long—12 characters max**

You entered a folder name that exceeds the maximum length of 12 characters. Reenter a name of 12 characters or less.

**(247) The pathname is too long—64 characters max**

You entered a name that causes a pathname to exceed the maximum of 64 characters. The combined names that make up a pathname cannot exceed 64 characters. Reenter a shorter name.

**(249) That name already exists**

The name you entered already exists in the folder. It may be the name of a different type of file. Use the Archives utility to see a list of all the files in the folder. Enter a different name.

**(264) That file is the wrong type for this program**

You entered the name of a file that is not a series or a graph. That file cannot be loaded. You may have referenced the wrong folder or misspelled a name. Enter the correct name of a series or a graph file.

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# Appendix A

Converting VisiTrend® Series  
For Use with the Visi On  
Graph™ Program

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## Appendix A

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Overview of the Convert to Graph™ Program	A-1
Creating a Folder	A-1
Converting Series	A-2
Multiple Series Files	A-3

Because the Visi On Graph™ program differs in many respects from the VisiTrend/Plot® program, series created in the VisiTrend/Plot program must be converted for use with the Visi On Graph program.

This appendix explains how to use the Visi On Graph program's simple Convert to Graph™ program to convert your existing VisiTrend/Plot series to series usable with the Visi On Graph program.

Note: If your VisiTrend/Plot file contains several series saved under one name, please read "Multiple Series Files" at the end of this appendix.

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## Overview of the Convert to Graph™ Program

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When you select "Visi On Convert to Graph" from the Services window, the copyright display appears. You must select "continue" from the bottom of the display to get into the Convert to Graph program.

After you select "continue," a display closely resembling the Files display appears in the window. The top part of this display lists all the existing folders in your Archives central folder. The middle part lists all series in your Archives central folder.

The menu lists three commands:

<b>Command</b>	<b>What It Does</b>
convert	Converts VisiTrend/Plot series to Visi On Graph series.
new-folder	Creates a new folder.
quit	Removes this program window.

---

### Creating a Folder

---

If you want the series you are converting to be placed in its own folder in your Archives (file system), follow these steps:

- To create a folder
1. Select "new-folder" from the Convert to Graph program menu.  
You are prompted to enter the new folder name.
  2. Type the name of the folder you want.  
The folder name must be new; it cannot be the same as one of the folders listed in the top part of the display.

Creating a new folder automatically makes that new folder the current folder. Consequently, if you convert a series after creating a folder, it will be placed in the newly created folder. You need only type the series name when prompted for the file name of the converted series; you do not have to type the folder name as well.

## Converting Series

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- To convert a VisiTrend/Plot series
1. Select the folder where you want the converted series to be stored.
  2. Select "convert" from the Convert to Graph program menu.  
You are prompted to type the name of the VisiTrend/Plot file to be converted.
  3. Type the file name, including the drive, followed by .  
For example, if you have a VisiTrend/Plot series named SALES on a floppy diskette in drive A, type **A:SALES.SER**. (Remember that the VisiTrend/Plot program automatically adds a ".SER" extender to its file names.)
  4. You are prompted to type a new series name or select from the middle part of the display.  
If there are already series in the current folder, you are asked to select one of them to overwrite with the new series, or select "create" from the menu line to make a new series.  
If there are no series in the current folder, the program will assume that you are creating new series in the current folder and ask you for a name.

5. If you select “create” or have no series in the working folder:
- To give the series a new name, type the name—up to 12 characters—followed by .

You may accept the VisiTrend/Plot series name by typing  without a new file name. If the VisiTrend/Plot series name was over 12 characters in length, the new name will be truncated to the first 12 characters.

If you want to place the converted series into a folder other than the current folder, type the complete folder name, using slashes as necessary, and then the series name.

6. If you want to replace a series in the current folder with the new series:
- Select the existing series from the middle part of the display.

The converted series will be placed in the current folder.

---

## Multiple Series Files

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The VisiTrend/Plot program can save several series in one file. If your source file contains several series, the program will ask you for a name for each of the individual series. The method for naming these series is the same that described for single-series files. All of these series must be put in the same folder.







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# Glossary



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## Glossary

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### A

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**“add”** The Visi On Graph™ command in the Annotate menu that lets you add text to your graph in any position, either horizontally or vertically. In the Edit menu, this command lets you insert or add values to your series.

**“add”** The Visi On Graph command in the Edit menu that lets you insert data values in series. In the Annotate menu, this command lets you add text to your graphs.

**“Annotate”** The Visi On Graph command in the Graph main menu that lets you add text and titles to your graphs.

**Annotate options sheet** The Visi On Graph options sheet that lets you add grid lines, shading, and legends; change backgrounds; and change tick marks on the X and Y axes. This options sheet is displayed if you select “OPTIONS” while you are in the Annotate menu.

**arithmetic fill** Adding new values to a series, increasing each by a fixed amount.

### B

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**bottom title** The horizontal label at the bottom of a graph.

### C

---

**“clear”** The Visi On Graph command in the Edit menu that lets you erase the series from the window.

**“copy”** The Visi On Graph command in the Print menu that lets you duplicate a graph on the partitioned sheet to be printed.

### D

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**daily periodicity** Usually 1. Also see Periodicity.

**“data”** The Visi On Graph command in the Graph main menu that lets you select series or graphs for plotting.

**“delete”** The Visi On Graph command in the Edit menu that lets you delete data values from series. In the Annotate menu, this command lets you erase text or titles.

## E

---

**“Edit”** The Visi On Graph command that opens the Edit menu, where you can select series for editing; change, add, or delete data values; generate new values; and change series names, periodicities and start dates, for example.

**Edit display** The Visi On Graph program display where you enter and work with series values. The Edit display appears whenever you are in the Edit menu.

**Edit options sheet** The Visi On Graph options sheet that lets you change data display formats. You can choose the number of copies you need, or set paper sizes. This options sheet is displayed if you select “OPTIONS” while you are in the Edit menu.

**Edit table** The entire contents of the current series you are working with in the Edit display. Because the size of your window may vary, the Edit display itself may not show all series values.

**Editing cursor** The highlighted rectangle in the Edit display that indicates your position in a series.

**“erase”** The Visi On Graph command in the Print menu that lets you erase a graph from the sheet to be printed. In the Graph main menu, this command erases the displayed window.

## F

---

**factor** The number that is multiplied against or added to your beginning value when you are generating values to fill a series. Also see Seed value; Geometric fill; Arithmetic fill.

**“file”** The Visi On Graph command in the Graph main menu that lets you file (save) and retrieve (load) series and graphs.

**fill** To generate new values for an existing series.

**“fill”** The Visi On Graph command in the Edit menu that lets you generate new data values in a series. Also see Arithmetic fill; Geometric fill.

**“font”** The Visi On Graph command in the Annotate menu that lets you change the text and title typeface.

**“freeze”** To save the graph’s series, options, annotation, and scale. Freezing a graph allows you to retrieve it later.

---

## G

---

**geometric fill** Adding new values to a series, increasing each geometrically (multiplying by a factor).

**“goto”** The Visi On Graph command in the Edit menu that lets you move directly to a specific date in your series.

**“Graph display”** The Visi On Graph display that lets you draw and change options on your graphs.

---

## H

---

**“hardcopy”** The Visi On Graph command in the Edit menu that lets you print series data values. In the Print menu, this command lets you print your graphs.

---

## I

---

**interpolation** Replacing a range of zero values with new entries that are evenly incremented within the range.

---

## L

---

**Label** Any title, text, or legend used on a graph.

**Legend** A special group of labels used to identify the series that are used in a graph.

---

## M

---

**Main title** The horizontal label at the top of a graph.

**Major label** A label that you select to appear at the tick marks of your major period. Also see Major period.

**Major period** In series with periodicities other than one (1), the primary time cycle that is plotted in a graph.

**Minor label** A label that you select to appear at the tick marks of your minor period. Also see Minor period.

**Minor period** In series with periodicities other than one (1), a secondary time cycle that is plotted in a graph.

**Monthly periodicity** 12. Also see Periodicity.

**“move”** The Visi On Graph command in the Annotate menu that lets you move text and titles on your graphs. In the Print menu, this command lets you move a graph from its current location on the sheet to be printed.

---

## P

---

**“parameters”** The Visi On Graph command in the Edit menu that lets you change series periodicity, names, and start dates.

**Partitioning** Printing two or four graphs per printed page.

**periodicity** The number of times a series is reported before the time cycle begins again.

**“plot”** The Visi On Graph command in the Graph main menu that lets you draw your graphs.

**precision** The number of decimal places to which numbers are displayed.

**“Print”** The Visi On Graph command in the Graph main menu that lets you use the commands related to printing your graphs.

**Print display** The display where you preview your graphs before printing them.

**Print options sheet** The Visi On Graph options sheet that lets you partition your graphs; choose the number of copies you need; set paper sizes; and choose a printer. Also see Partitioning.

**“put”** The Visi On Graph command in the Print menu that lets you place a graph on the sheet to be printed.

---

## Q

---

**quarterly periodicity** Four (4). Also see Periodicity.

**“quit”** The Visi On Graph command in the Graph main menu that lets you leave the program.

## R

---

**“replace”** The Visi On Graph command in the Edit menu that lets you change data values in series. In the Annotate menu, this command lets you replace existing text or titles.

**“rescale”** The Visi On Graph command in the Graph main menu that lets you change X- and Y-axis scales.

## S

---

**seed value** The number your new values will begin with when you are generating values to fill a series. Also see “fill.”

**series** Numbers representing things or events that are based on a common source, usually in chronological order.

**“series”** The Visi On Graph command in the Edit menu that lets you select series for editing.

**Side title** The vertical label parallel to the Y axis on a graph (maximum 24 characters).

**Start date** The first reported date in a graph; usually a year, such as 1983.

**Start period** The first reported period in a graph. In graphs with a periodicity of 1, start dates and start periods are identical.

**“Style”** The Visi On Graph command in the Graph main menu that lets you select a type of graph—line, bar, X-Y, pie, or high-low-close.

**Subtitle** The horizontal label at the top of a graph, under the main title. It is smaller than a main title when printed.

**“swap”** The Visi On Graph command in the Print menu that lets you exchange the location of two graphs on the sheet to be printed.

## T

---

**Text page** In the Visi On Graph program, a special display or partition of text that you can create with the program's font capabilities.

**Tick mark labels** The numbers along the X and Y axes that show the value or period of the plotted points.

**Title** A word or group of words on a graph. Always found in a fixed position, they are used to identify the contents of the graph. Also see Main title; Subtitle; Bottom title; Side title.

**"title"** The Visi On Graph command in the Annotate menu that lets you add titles to your graphs. In the Print menu, this command lets you add titles to the sheet to be printed.

## U

---

**"undo"** The Visi On Graph command in the Edit menu that lets you remove the changes you made in your current editing session.

## W

---

**Weekly periodicity** Usually 4, 13, or 52. Also see Periodicity.

## X

---

**X-Y graph** A plot of the intersections of the points of two series.

---

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# Function Index

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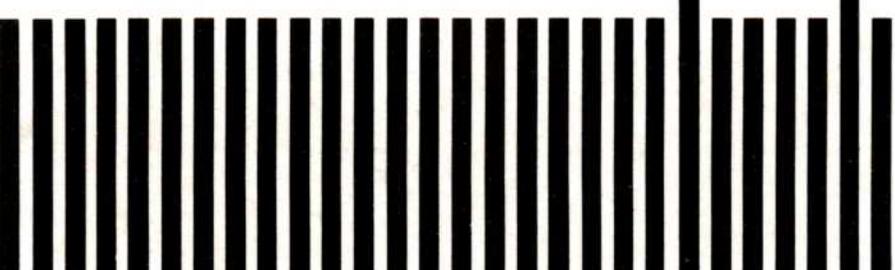
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