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# VISI SCHEDULE<sup>®</sup>

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## *Reference Guide*

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# VISISCHEDULE®

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AUTOMATIC PROJECT SCHEDULING & JOB COSTING

## Reference Guide for the IBM® Personal Computer

Program by  
Dr. Michael Posehn  
Organic Software, Inc.

Manual by  
VisiCorp

Published and Distributed Exclusively by  
VisiCorp



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## USING THE REFERENCE GUIDE

The *VisiSchedule Reference Guide* has five chapters, three appendixes, a glossary, and an index. The chapters have self-contained units that you can read when you need or want specific information. (The *Reference Guide* is not intended to be read sequentially.) Each unit gives a complete description of a specific task.

Chapter 1: "Learning the Basics" contains general information about the program. It describes how to progress to the Main menu after loading the program, how to select menu options and enter information, and how to edit information. It also contains information about saving and retrieving data, and exiting the program.

Chapter 2: "Creating or Modifying a Schedule" describes how to create and revise projects. It discusses all the functions that deal with creating a schedule, entering information into the schedule, viewing the schedule, and changing the schedule. It also explains the difference between adding and inserting a job.

Chapter 3: "Handling Files and Memory" describes how to save, load, and delete files, and explains the significance of clearing memory.

Chapter 4: "Printing Reports" describes the reports available with the program and provides instructions on printing and previewing reports. It also includes information on setting up the program for your particular printer.

Chapter 5: "Reviewing Program Options" contains an alphabetic listing of all program options with a brief explanation of each. If you have a question about a particular menu option, you can locate it here for a quick description.

The Appendixes contain information on error messages (Appendix A), using your VisiSchedule data with other DIF™ software (Appendix B), and useful facts about the program (Appendix C).

The Glossary is especially useful for finding the meaning of special terms used in the manual, and the Index helps you find relevant topics quickly.

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# CHAPTER 1

## Learning the Basics

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This chapter explains the basics of the program, essentials that you must know to use the program correctly. These units treat in detail some of the material you have already covered in the *QuickStart™ Course*. If you are relatively new to using computers, you will probably want to read the entire chapter. If you are more experienced with computers, you may want to skim this chapter or just read the summary at the beginning of each unit and then read further only as you feel is necessary.

This chapter contains information about:

- The *Startup screen* (the first screen that you see after loading the program and the only screen in the program that you can't return to)—how the information that you enter on this screen is later used by the program (Unit 1).
- How to select menu items and move the cursor (Unit 1).
- The layout of the screens and the purpose of the information that is displayed by the program (Units 1 and 2).
- Ways of correcting information (Unit 3).
- Ways of entering dates (Unit 4).
- Where your data is stored and the purpose of the Path option (Unit 5).
- How to format floppy disks for saving data (Unit 6).
- How to set the colors on the screen if you have a color card and a color monitor (Unit 7).
- The correct way of exiting the program and the information that is saved when you do (Unit 8).

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## UNIT 1

# VIEWING THE STARTUP SCREEN

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Refer to the *Getting Started* guide for instructions on installing the VisiSchedule program on your hard disk and for general instructions on loading the program.

After you have loaded the program, your screen should look like Figure 1-1.

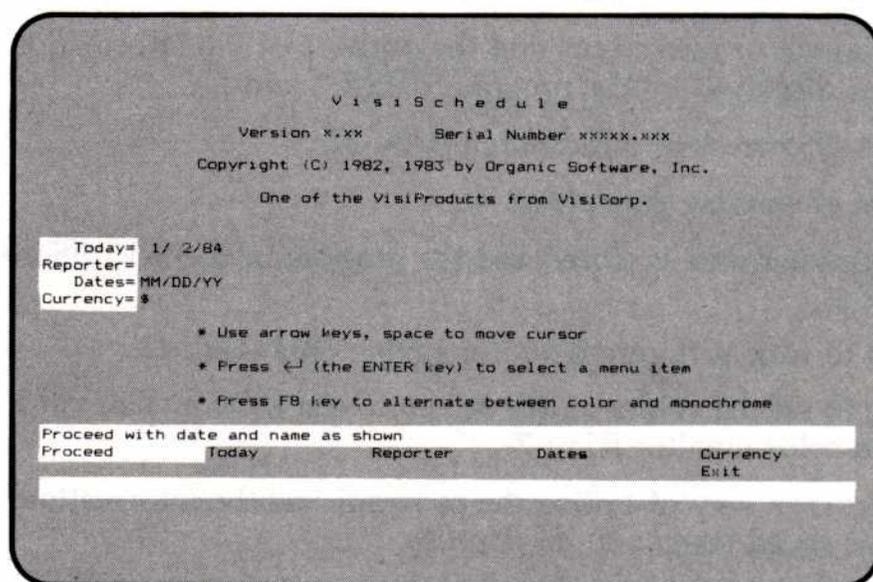


Figure 1-1. The Startup Screen

The *Startup screen*, shown in Figure 1-1, is the first screen you see after loading the program. It is displayed only when you first load the program; after you leave this screen, the only way to get back to it is by reloading the program. It is the only screen in the program that works this way; in all other cases, the Quit option will take you back to the preceding screen or menu.

See "Entering Startup Information," later in this unit, for an explanation of how the program uses the information that you enter in the Startup menu.

If you have a color card installed in your computer and are using a color monitor, the Startup screen can be displayed in color. The program sets colors that you can easily change. Refer to Unit 7 in this chapter, "Setting the Color on Your Screen," for information on changing the colors used in menus and schedules.

The top of the Startup screen contains the version number, the program disk serial number, and the copyright notice.

The middle of the screen displays four items: the current date, the reporter's name, the format for dates, and the currency symbol to be used. The display shows the current value of each. Below these items are general directions on using a menu.

At the bottom of the screen is a six-option menu. Proceed moves you into the main portion of the program. Today, Reporter, Dates, and Currency specify information that is recorded on your program disk. Exit takes you out of the program.

The top line of the menu (called the *long prompt*) describes the option that the cursor is highlighting. When the cursor is on Proceed, for example, the long prompt reads Proceed with date and name as shown.

## SELECTING A MENU OPTION AND MOVING THE CURSOR

You can select a menu option in two ways:

- Type the first letter of the option you want.
- Press one of the arrow keys to move the cursor in any of the four directions; or press the space bar to switch the cursor up and down between menu lines. After you position the cursor on the desired option, press .

You can select the menu option either way. There is no functional difference between the two methods.

In this guide, the word *select* means to use one of these two methods to start a task. The first letter of each option appears as **bold** and corresponds to the letter you can type to select the option.

Press  on the keyboard. The cursor moves to the word Today. If the cursor doesn't move, press the **NUMLOCK** key once, and then press .

Each time you press the **NUMLOCK** key, you alternately switch the numeric keypad from entering numbers to performing the functions printed under the numbers on each key. So, with **NUMLOCK** in one position, the **→** key is active. If you press **NUMLOCK** once after that, the number 6 is active. For the VisiSchedule program, leave the **NUMLOCK** key in the position that activates the arrow keys and the other special keys (**HOME**, **END**, **PGUP**, and **PGDN**).

With the cursor on Today, the long prompt changes to Today's date.

Continue to press **→** until the cursor reaches the last option on the top line: Currency. Now press **→** once more. The cursor jumps down to the first option on the bottom line. Press **→** two more times to make the cursor jump to the first option in the top line. This is called *wraparound*.

Cursor wraparound works in both directions. Press **←** when the cursor is at the upper-left corner of the menu. It jumps to the last option on the bottom line.

You can also press **↑** or **↓** to move the cursor. Or, if you prefer, you can use the space bar rather than **↑** or **↓**. The space bar switches the cursor back and forth between menu lines. With the arrow keys or the space bar, you can quickly move the cursor to any desired option.

At first, you might find it easier to learn the program by using the arrow keys or space bar because you can read the long prompt (the line above the menu) to see what each option does. After you become familiar with what each option does, you can increase your speed and save time by typing the first letter of the option.

## ENTERING STARTUP INFORMATION

The startup information, displayed in the middle of your screen, appears on all program reports. Except for Reporter, each item has an initial setting. By selecting from the options at the bottom of the screen, you can enter or change the descriptions. Also, if you have both a color card and color monitor, you can press the **F8** key to switch between a color and monochrome screen display. (The **F8** key is operable only in the Startup and Main menus.)

The startup options are:

- Today—the current date.
- Reporter—the name of the preparer of each report.
- Dates—the format for displaying dates.
- Currency—the symbol used for displaying monetary values.

## Changing the Current Date

The **Today** option sets the date that will show on reports as the current date. This date also determines the holiday list for the **Days** option (described in Chapter 2) in the **Workweek** menu.

The date that you entered in response to the system (DOS) prompt is automatically transferred to this location by the **VisiSchedule** program. (If you did not enter a date, the original DOS date appears here.) If the date is incorrect or if you want to use a different date, you can change it.

To change the current date:

1. Select **Today**.

The flashing cursor appears at the bottom of the screen. The date that appears to the right of **Today=** appears here.

2. Enter the correct date by typing one or two digits, as necessary, for the month and day and two digits for the year, separated by slashes.

Be sure to enter the date in the format set by the **Dates** option (either month/day/year or day/month/year). (See Unit 4, "Entering Dates," later in this chapter for more information on other ways to enter dates.) Use the **[BKSP]** key to correct any typing mistakes.

3. Press **[↵]**.

The new date appears in place of the date that was displayed next to **Today=** in the upper portion of the screen.

## Entering the Reporter Name

The **Reporter** option sets the name that is listed as the preparer of each report. The reporter name can be from 1 to 24 characters, including spaces.

To enter the reporter name:

1. Select **Reporter**.

The flashing cursor appears at the bottom of the screen. If a reporter name is already entered, it appears on the line with the cursor. (See Unit 3 in this chapter for information on how to edit your entries and how to correct typing mistakes.)

2. Type from 1 to 24 characters to be used as the name.

You can use any letters, numbers, shifted letters, shifted numbers, punctuation, and the space bar. Use the **[BKSP]** key to correct any typing mistakes.

3. Press **[↵]**.

The reporter name appears after **Reporter=** in the upper portion of the screen.

## Changing the Format for Dates

The program displays dates in either of these two formats:

- MM/DD/YY (month, day, year), or
- DD/MM/YY (day, month, year).

Initially, the program displays dates in the month/day/year format. If you change the format, all existing dates are automatically converted to the selected format.

To change the format for dates:

1. Select **D**ates.

The program displays a menu with the current format for dates highlighted.

2. Select either **MM/DD/YY** or **DD/MM/YY**.

The new format appears next to **Dates=** in the upper portion of the screen. If you wanted to leave the format as previously set, you could also have selected **Q**uit here.

## Changing the Currency Symbol

Because the program was written in the United States, the currency symbol is initially \$. If you change the currency symbol, the new symbol replaces \$ throughout the program, even in files that were previously entered and saved on disk.

To change the currency symbol:

1. Select **C**urrency.

The current symbol used for currency is displayed at the bottom of the screen.

2. Type the character to be used as the new symbol.

You can use any printable characters, including letters, numbers, shifted letters, shifted numbers, and punctuation.

3. Press **↵**.

The new symbol appears next to **Currency** in the upper portion of the screen.

When the Startup screen is correct, select **P**roceed to move to the Main menu. If you don't want to continue, select the **E**xit option to exit the VisiSchedule program. (See Unit 9 in this chapter for more information on exiting the program.)

## UNIT 2 VIEWING THE MAIN MENU

This unit explains the status areas that are displayed in the upper part of the screen with the Main menu. The options in the Main menu are described in specific sections of this *Reference Guide* and can be found by identifying the task you want to accomplish.

After you select **Proceed** in the Startup menu, the program displays the Main menu. The Main menu is shown in Figure 1-2.

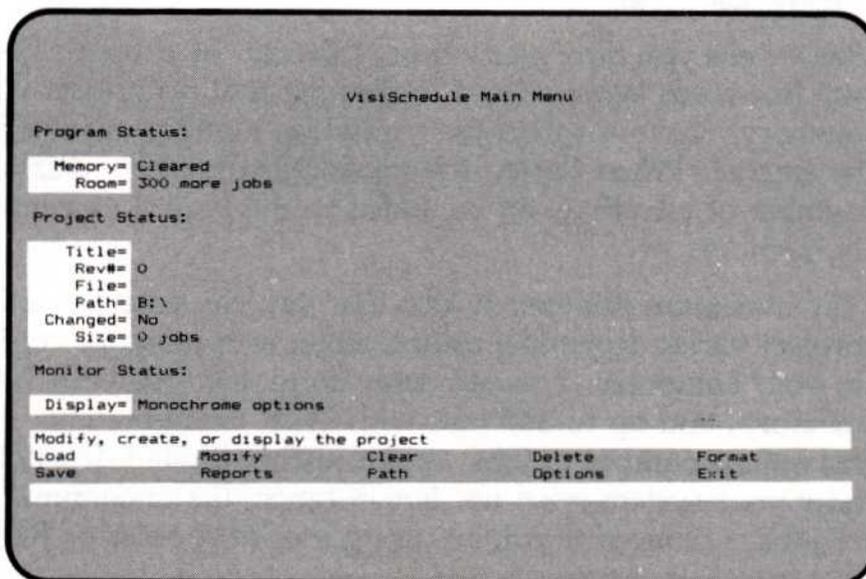


Figure 1-2. The Main Menu

The Main menu screen display has four parts:

- The Program Status area tells you whether a project is loaded into the computer memory and how many jobs can be added to the project.
- The Project Status area lists the project's title, its revision number, its file name, the designated path name for storing or retrieving data, whether the project has been changed since it was loaded, and the number of jobs in the project. If no project file is loaded, some of these fields will be blank.
- The Monitor Status area shows the type of monitor, either monochrome or color, that has been specified.
- The Main menu at the bottom of the screen displays the options.

Like the Startup menu, the Main menu displays a long prompt for each option. The program first displays this menu with the cursor on Load, which has the long prompt Load a project from disk into memory. Move the cursor to each menu option, and read the other long prompts to see what each option does.

## THE PROGRAM STATUS AREA

The Program Status area, at the top of the Main menu screen, tells you whether a project is in memory and how many more jobs can be entered into memory. The items in the Program Status area include:

- Memory= lets you know whether or not the computer memory is cleared. If no project is in memory, the line reads Memory=Cleared. After you enter a project or load a file, the line reads Memory=Not cleared.
- Room= tells you how many more jobs can be entered. When the top line reads Memory=Cleared, indicating that no project is in memory, Room= displays the maximum number of jobs that can be entered. When Memory=Not cleared appears, Room= displays the number of jobs that can be added to the project currently in memory.

The maximum number of jobs that you can enter for a given project varies depending on the amount of memory contained in your computer. You can enter up to 100 jobs with 128K of memory, and up to 300 jobs with 192K or more. The maximum number of jobs can be further limited depending on how your system is set up. For instance, the maximum number of jobs is reduced if you are using a print spooler or RAM disk.

## THE PROJECT STATUS AREA

The Project Status area is in the middle of the screen between the Program Status and Monitor Status areas. The Project Status displays the title of the loaded project, its revision number, its disk file name, the path name, whether the project has been changed since it was loaded, and its size in number of jobs. The items in the Project Status area include:

- Title= shows the name you gave to the project in the Title option in the Project Description menu. If there is no project in memory, this item is blank.
- Rev#= displays the revision number of the project. The value is maintained by the program, or you can set the value with the Revision option in the Project Description menu.
- File= displays the disk file name of the project most recently in memory. The first time you load the program, this item is blank. After you have saved and/or loaded a project, and use the Exit option to leave the program, this item shows the last file you used.
- Path= shows the location being used for the data source or destination. Data can be saved either in the main directory or in subdirectories of a floppy or hard disk drive.
- Changed= tells you whether or not the project in memory has been changed since it was entered or loaded. Changed=No appears if there is no project in memory or after you save a file. Changed=Yes appears if the project in memory has been changed since it was loaded, or if it has not been saved since it was created.
- Size= displays the number of jobs in the current project. When there is no project in memory, the line reads Size=0 jobs.

## THE MONITOR STATUS AREA

The Monitor Status area is in the middle of the screen between the Project Status area and the menu. This area identifies the type of monitor, either monochrome or color, that has been specified.

The first time you load the program, you are asked to specify whether or not you are using a color monitor. If you later use the program with a computer that has a different type of monitor, you can change that setting by pressing the **(F8)** key. The **(F8)** key alternately specifies that you are using either a monochrome or color monitor. (The **(F8)** key is also operable in the Startup menu.)

## UNIT 3

### EDITING INFORMATION

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This unit describes how to change erroneous information. If you make a mistake while typing information, you can easily revise your entry. Or, if you change your mind and do not want to revise an entry, you can restore the previous information or value.

#### IF YOU MAKE A MISTAKE *BEFORE* PRESSING

If you type a word or number incorrectly and have not yet pressed , you can press the **BKSP** key to erase the incorrect characters. Then retype the remainder of your entry.

#### IF YOU MAKE A MISTAKE *AFTER* PRESSING

If you have already pressed  and notice that you typed an incorrect character, you can edit it without retyping the entire entry.

Select the option that you want to change. Suppose you typed the second-to-last character incorrectly. Move to that character by pressing  until the cursor is flashing under the character. Then retype the end of the entry and press  to record it. You can use this editing technique with all VisiSchedule options that allow you to enter data. It can save you time, especially if your entry is long.

#### RESTORING INFORMATION

With all options in the program, you can cancel a new entry and bring back the previous value (or information) by pressing **ESC**; you must do so before pressing . If you select an option, begin entering information, and then change your mind, or if you simply want to leave an item unchanged, press **ESC** to restore the previous entry.

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## UNIT 4 ENTERING DATES

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At any point in the program where you can enter a date, you can enter it as either an absolute (literal) or a relative date. The program handles and maintains dates in the range from 1/1/1977 through 12/31/2065. For dates outside this range, the year is rounded. The years 66 through 69 are rounded down to 65, and 70 through 76 are rounded up to 77.

The characters that you can use for either an absolute or relative date are listed below. If you attempt to enter an invalid character, the computer beeps and rejects the character. The program also rejects impossible dates. For example, you cannot enter a month of 13 or a day of 45. You cannot enter 2/29 unless the year is previously set to a leap year.

### ABSOLUTE DATES

Absolute dates can be entered in either of two forms, as determined by the Dates option in the Startup menu:

- 10/02/84 (MM/DD/YY)
- 02/10/84 (DD/MM/YY)

The program accepts only numbers and slashes if you are entering an absolute date. The components of the date (month, day, and year) must be separated by slashes.

If you want to change a date, you need not change the entire date. If you change only the month and day and press , the current year is kept. Typing the slash key skips over a field. For example, to change 7/25/84 to 7/26/84, type |26 and press .

## RELATIVE DATES

You can enter dates in a relative form as a number of days, weeks, months, or years from the currently recorded date. For example:

+3M means add three months to the current date.

The program accepts +, -, D, W, M, Y, and the digits 0 through 9 if you are entering a relative date. If you attempt to enter an invalid character, the computer beeps and rejects the character.

You can change the current date by entering a relative period of time preceded by a plus sign (+) or a minus sign (-). You must specify whether the relative period is in days, weeks, months, or years by entering D, W, M, or Y after the number. For example:

- +60D adds sixty days to the current date.
- -3W subtracts three weeks from the current date.
- +6M adds six months.
- -1Y subtracts one year.

---

---

## UNIT 5

# CHANGING THE PATH DESIGNATION

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---

Depending on your DOS, your computer may or may not support path names and subdirectories. Consult the *Getting Started* guide and your system manual for information on using path names and subdirectories.

The Path option in the Main menu specifies the location (disk drive or subdirectory) where the VisiSchedule program expects to send or retrieve information. Whenever you save, load, or delete a file, the program automatically seeks the location designated by the Path option.

Path names can be either:

- A floppy or hard disk drive, or
- A subdirectory on a drive.

If you are using only floppy drives, the program automatically sets the path name to one of the floppy drives. If you are using a hard disk drive, the program sets the path name to your hard disk drive. The currently specified path name appears to the right of Path= in the Project Status area.

When you designate only a drive name as the path name, the information sent to and retrieved from it is stored in the main directory. A *subdirectory* is a specific location that you have previously created on a drive. If you change the path designation, information can be sent to and retrieved from a different disk drive or a subdirectory.

To change the path name:

1. Select **Path**.

The current path name and the flashing cursor appear at the bottom of the screen. The program prompts you with the possible drive names.

2. Type the path name.

- For a drive name:

Type the single character that is the name of the drive.

The program adds the colon (:) and backslash (\) automatically. If you type the colon and backslash, the program does not add these characters.

- For a subdirectory:

Type the single character that names the drive, followed by a colon and a backslash, followed by the name(s) of any subdirectory. (If your path name includes more than one subdirectory, each must be separated by a backslash.)

3. Press .

The new path name appears next to Path= in the Project Status area of the screen.

If you specify a nonexistent path name, you will get the error message, E2-Illegal device name the first time you try to save, load, or delete a file. Press any letter to erase the error message; then specify the correct path name.

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## UNIT 6

# FORMATTING FLOPPY DISKS

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The Format option, in the Main menu, prepares a floppy disk so it can be used to hold VisiSchedule project data. Without this preparation, the program will not write information on the disk. It is not necessary to format a floppy disk if you are using a hard disk system; you can store data either directly on your hard disk or, if you prefer, on a floppy disk. (The program formats only floppy disk drives; it cannot accidentally format a hard disk drive.)

---

### WARNING:

BE SURE TO CHECK THE DISK TO BE FORMATTED BEFORE CONTINUING WITH THE FORMAT PROCESS. IF YOU FORMAT A DISK THAT ALREADY CONTAINS DATA, YOU WILL LOSE ALL OF THE DATA ON THAT DISK.

ALSO, MAKE SURE THAT YOU HAVE SPECIFIED THE PROPER DRIVE NAME. IF YOU ACCIDENTALLY SPECIFY THE DRIVE THAT CONTAINS YOUR PROGRAM DISK, YOU WILL DESTROY YOUR PROGRAM DISK.

---

To format a floppy disk:

1. Select **F**ormat.

The program asks you to indicate which drive you want to format and prompts you with the possible drive names. The flashing cursor appears at the bottom of the screen. (If you installed the program onto your hard disk and have only one floppy drive, the program instructs you to insert a disk into the floppy drive; if this message appears, skip to step 3.)

2. Type the character that names the drive you want to use for formatting and press **↵**.

A message appears in the middle of the screen instructing you to insert the disk to be formatted into the specified drive.

3. Insert a new disk or one that has data that you no longer want to keep into the specified drive.

At the bottom of the screen, the program asks if you are ready to format the disk. When the message first appears, the answer is set to **N**O. (Therefore, if you automatically press **↵**, you will not accidentally damage data that you want to keep.)

4. Type **Y** to continue with the formatting process or press **ESC** to cancel formatting.

If you type **Y**, the program formats the disk that is in the specified drive. When the process is complete, the Main menu appears. If you press **ESC** instead of typing **Y**, the program cancels the formatting process (if there is a disk in the specified drive, it remains unchanged), and the Main menu appears.

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## UNIT 7

# SETTING THE COLOR ON YOUR SCREEN

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If you have a color card installed in your computer and are using a color monitor, you can change the menu and schedule colors that are initially set by the program. The **Options** option, in the Main menu, takes you to a menu where you can change the colors for your screen display. Once you return to the Main menu, you cannot automatically restore the old color settings; you must select **Options** again and reset each option that was changed.

---

### WARNING:

DO NOT SELECT **Options** UNLESS YOU HAVE BOTH THE REQUIRED COLOR CARD AND COLOR MONITOR. IF YOU DO HAVE A COLOR CARD, BUT HAVE A MONOCHROME MONITOR, THIS OPTION IS STILL OPERABLE IF YOU MISTAKENLY INDICATED THAT YOU HAVE A COLOR MONITOR. DO NOT CHANGE ANY DISPLAY SETTINGS; IF YOU DO, YOU CAN MAKE ALL OR PART OF YOUR SCREEN UNREADABLE.

---

If you do not have a color card or have indicated that you have a monochrome monitor, you cannot use the **Options** option. If you select **Options**, the program displays an error message indicating that colors are unavailable with either a monochrome card or monitor.

To change one or more of the display colors:

1. Select **O**ptions.

The Display Options menu appears as shown in Figure 1-3. The color selections, indicated by either a diamond or a diamond on a rectangle, appear on the right side of the screen. You are prevented from selecting colors that are represented by a solid rectangle.

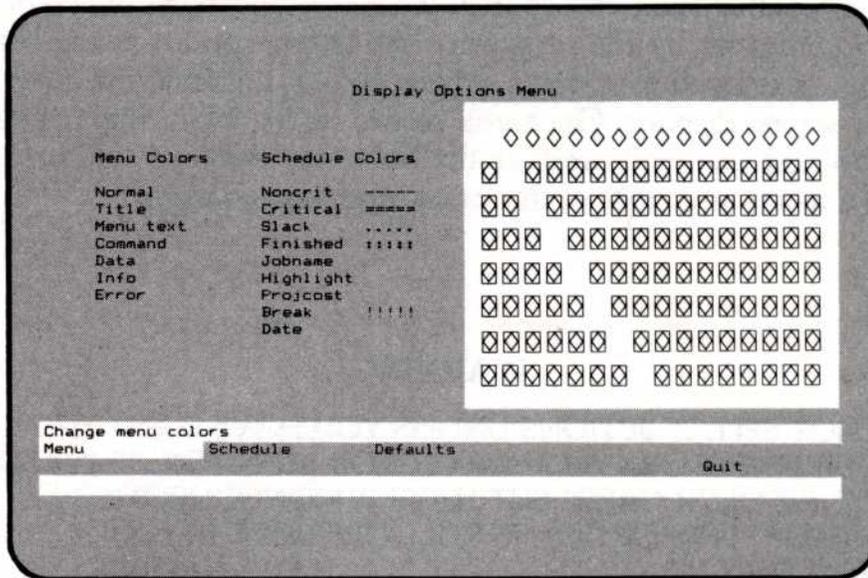
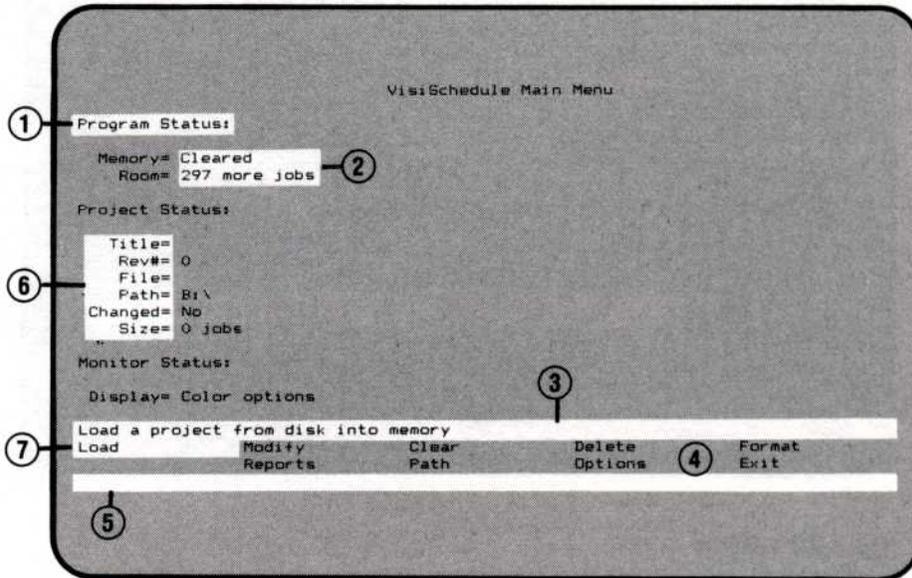


Figure 1-3. The Display Options Menu

From the Display Options menu, you can select Menu, Schedule, Defaults, or Quit. The Menu option lets you change the color settings for screen menus. The Schedule option lets you change the color settings for schedule displays. The Defaults option returns the last colors set before making any changes. The Quit option returns you to the Main menu.

2. Select either **Menu** or **Schedule**, depending on which settings you want to change.

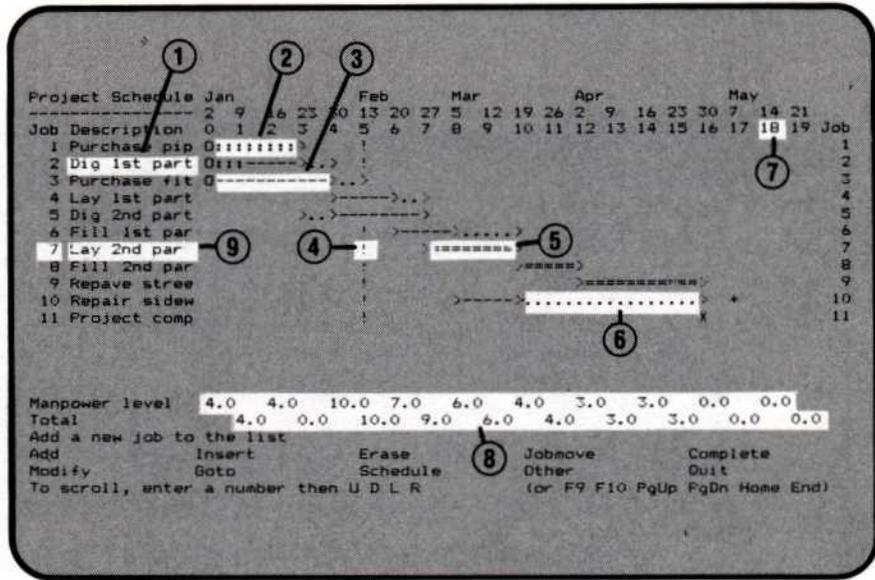
The sample screen shown in Figure 1-4 identifies the areas you can set with the Menu option.



- ① Title
- ② Data
- ③ Info
- ④ Normal
- ⑤ Error messages appear here
- ⑥ Menu text
- ⑦ Command

Figure 1-4. Sample Screen to Identify Menu Colors

The sample screen shown in Figure 1-5 identifies the areas you can set with the Schedule option.



- ① Job name
- ② Finished
- ③ Noncrit
- ④ Break
- ⑤ Critical
- ⑥ Slack
- ⑦ Date
- ⑧ Projcost
- ⑨ Highlight

Figure 1-5. Sample Screen to Identify Schedule Colors

3. Select the option you want to change.

In the upper portion of the screen, a flashing arrow appears to the left of the option you selected. The currently set color is enclosed in a rectangle on the color chart. The message that appears in the middle of your screen tells you how to change the color.

4. Press any of the four arrow keys (**↑**, **↓**, **→**, or **←**) until the rectangle is enclosing the desired color. If you want that item to blink or flash, type **B**.

The option to the right of the flashing arrow appears in the selected color. If you typed **B**, the option flashes.

5. Press **↵** to set the color or press **ESC** to restore the previously set color.

The listing of Menu or Schedule Colors displays the selected color. If you want to change additional settings, repeat steps 3 through 5.

6. Select **Quit** to return to the Display Options menu.

If you want to change additional colors, repeat steps 2 through 6.

7. Select **Defaults** to restore the colors that were set before you selected **Options**, or select **Quit**.

If, after changing the colors, you decide that you prefer to use the colors that were set previously, select **Defaults**. The previous color settings are restored and displayed on the Display Options menu. The setting for the **Defaults** option changes each time you save a new color sequence.

After you are satisfied with the color settings, select **Quit**. If you did not make any changes, the program immediately returns to the Main menu.

8. If you changed any colors, the program asks Keep the new setup? Type **Y** or **N**.

If you want to save the new colors that you just set, type **Y**. If you want to use the colors that were set before selecting **Options**, type **N**. The Main menu appears.

Once you return to the Main menu, you cannot automatically restore the old color settings; you must select **Options** again and reset each option that was changed.

## UNIT 8

# EXITING THE PROGRAM

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You should use the Exit option every time you are finished using the program. Using Exit, rather than simply removing your floppy disks and turning off the computer, saves several items of information on the VisiSchedule program disk or on your hard disk. This information, which is used the next time you load the program, includes:

- The name of the last file you loaded or saved, whichever occurred last.
- The current path name.
- The reporter's name.
- The date format.
- The currency symbol.
- The latest color settings selected.
- The printer setup information.

If you do not use the Exit option, the current information is lost. The next time you load the program, you will get the information from the last time the Main menu Exit option was used.

When you are finished using the program:

1. Select **Exit**.

It takes only a few seconds to exit the program in this preferred manner. If you have saved all new data, or have not made any changes to project files, the program exits immediately.

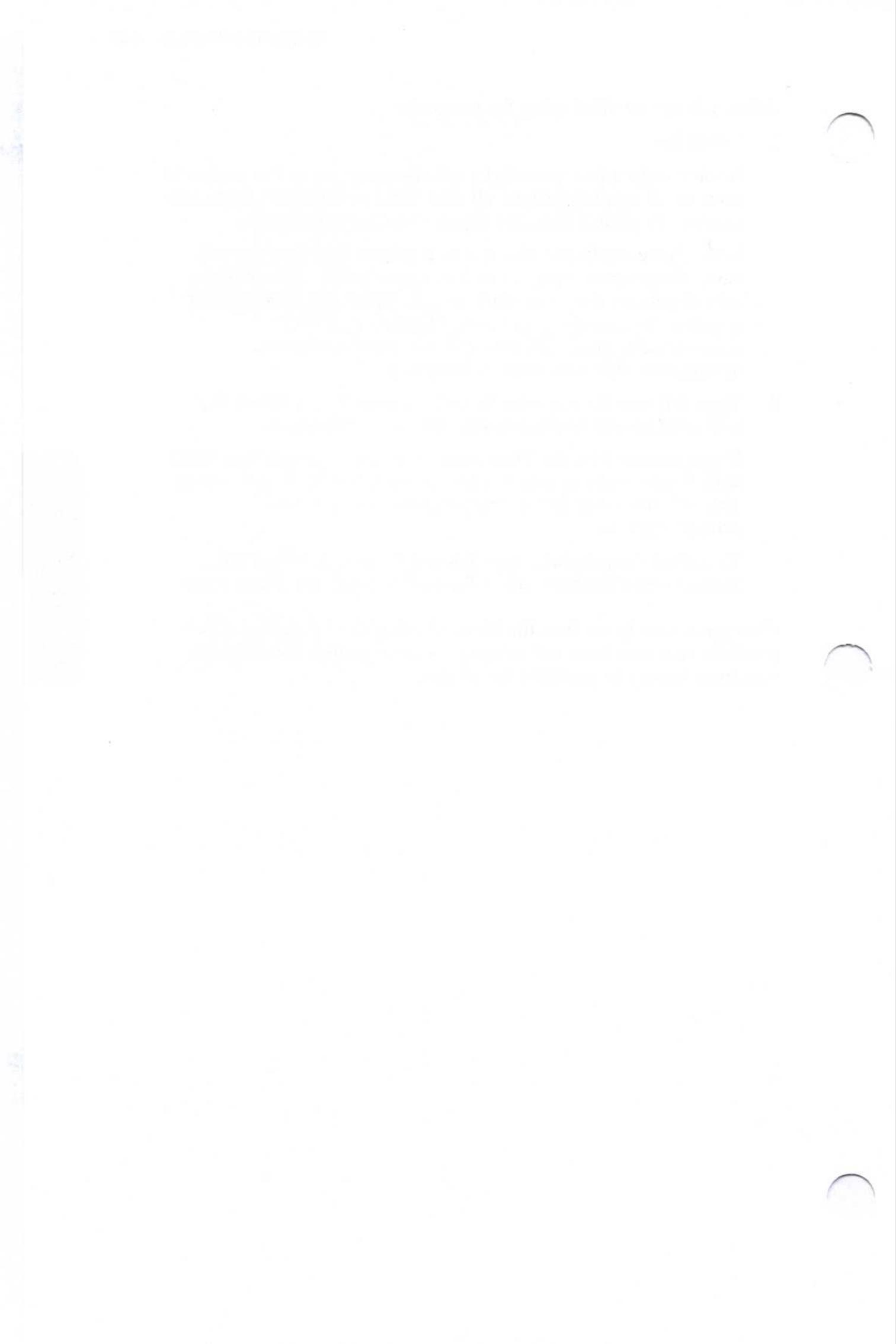
If you have made any changes to a project that you did not save, the program reminds you to save the file. The program asks if you are sure you want to exit. When the message first appears, the answer is set to **N0**. (Therefore, if you automatically press , you will not accidentally lose information that you want to keep.) \*

2. Type **N** if you do not want to exit, or type **Y** to confirm that you want to exit without saving the new information.

If you answer **No**, the Main menu appears. You can then select **Save** if you want to save the project in memory. If you answer **Yes**, you are taken out of the program and the DOS prompt appears.

To restart the program, type **vsc** and press . When the Startup menu appears, select **Proceed** to reach the Main menu.

It's a good idea to get into the habit of using the **Exit** option. The reminder that you have not saved a changed project file can keep you from having to reenter a lot of data.



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## CHAPTER 2

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# Creating or Modifying a Schedule

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The units in this chapter describe all the functions that deal with creating a schedule, entering information into the schedule, viewing the schedule, changing the schedule, and changing the schedule display.

The procedure for creating a schedule is:

1. Enter the project description, including title, leader, time units, start date, manpower units, direct cost units, critical path setting, and revision number.
2. Enter the manpower and cost information, including occupations required for various jobs and salaries. If you are not calculating project cost, these do not need to be entered.
3. Enter work schedule restrictions, including defining the normal working week and specifying days and weeks off.
4. Enter the actual schedule information, including job name, job length, prerequisites, earliest starting date, direct costs, required manpower, and deadlines. You can enter all or part of this information depending on your scheduling needs.
5. Make corrections and changes.

Once you have created your schedule, you should save it. Then you can use some of the other options described in this chapter to experiment with changes to the schedule.

## UNIT 1 SETTING UP A PROJECT

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The computer memory must be clear before you can begin entering a new project. If the first line in the Program Status area does not read **Memory=Cleared**, select **C**lear in the Main menu.

To create a new project, select **M**odify by moving the cursor to **M**odify and pressing **↵** or by simply typing **M**. The Modify menu appears on your screen. It has four options in addition to **Q**uit:

- The **D**escrip option takes you to the Project Description menu, where you set options that apply to the project in general, such as the title, the unit of time to be used, and the start date.
- The **M**anpower option takes you to the Occupation menu, where you specify up to nine occupation categories and the salaries for each.
- The **W**ork option takes you to the Workweek menu, where you specify which days or weeks employees will not be working.
- The **S**chedule option takes you to the Schedule menu, where you enter the specifics for each job in the project. This menu is the heart of the VisiSchedule program. In this menu, you create the schedule graph by entering the jobs, their prerequisites, their durations, and other information.

### ENTERING THE PROJECT DESCRIPTION

To define the project description, select **D**escrip from the Modify menu. Figure 2-1 shows the Project Description screen.

The project description categories are displayed in the upper portion of the screen. All but the first two have initial settings. By selecting from the options at the bottom of the screen, you can enter or change the description settings. As you finish with each option, the new setting is displayed in the upper portion of the screen. When you have finished entering the project description, select **Q**uit to return to the Modify menu.

Project Description:

```

Title=
Leader=
Time= Days
Start= 1/ 2/84 Mon Jan 2
Manpower= $
Cost= $
Critical= Yes
Revision= 0

```

Project title	Leader	Time	Start	Revision	Quit
Projtitle	Directcost	Critical	Revision	Quit	

Figure 2-1. Project Description Screen

The description options are:

- Projtitle—use to enter the title of the project.
- Leader—use to enter the name of the project leader.
- Time—use to select the time unit for the project, either weeks or days. Initially Time is set in days.
- Start—use to enter the date when the project is scheduled to begin. Initially Start is set to the current date.
- Manpower—use to select the monetary unit for salaries. Initially Manpower is set to dollars (\$).
- Directcost—use to select the monetary unit for direct, one-time costs (any costs other than salaries). Initially Cost is set to thousands of dollars (K\$).
- Critical—use to indicate whether the critical path is calculated for the project. Initially Critical is set to Yes.
- Revision—use to set the revision number of the project. Initially Revision is set to zero.

## Entering the Project Title

The project title can be from 1 to 30 characters including spaces. It is printed on reports generated by the VisiSchedule program. If no title is entered, blanks are printed in place of the project title.

To enter the project title:

1. Select **Projtitle**.

The flashing cursor appears at the bottom of the screen. If a project title is already entered, it appears on the line with the cursor.

2. Type the title (remember that it should not exceed 30 characters and spaces).

You can use any letters, numbers, shifted letters, shifted numbers, punctuation, and the space bar. Use the **BKSP** key to correct any typing mistakes.

3. Press **↵**.

The title appears next to **Title=** in the upper portion of the screen.

## Entering the Project Leader Name

The project leader name can be from 1 to 24 characters including spaces. The project leader name appears on summary reports. This name can differ from the one entered for Reporter in the Startup menu.

To enter the project leader name:

1. Select **Leader**.

The flashing cursor appears at the bottom of the screen. If a leader name is already entered, it appears on the line with the cursor.

2. Type the name (not exceeding 24 characters and spaces).

You can use any letters, numbers, shifted letters, shifted numbers, punctuation, and the space bar. Use the **BKSP** key to correct any typing mistakes.

3. Press **↵**.

The leader name appears next to **Leader=** in the upper portion of the screen.

## Changing the Time Units

Time can be calculated in either days or weeks. If you have a short-term project or a project with tasks that take less than one week, you probably want to use days as the time units. If you have a long project, you probably want to use weeks as the time units.

To change the time unit setting:

1. Select **Time**.

The **Time** menu is displayed with the currently selected option highlighted.

2. Select either **Days** or **Weeks**.

The project description in the upper part of the screen is updated with the new selection.

## Changing the Start Date

The start date appears on the upper part of the screen in the form specified in the **Startup** menu (MM/DD/YY or DD/MM/YY). (See "Entering Dates" in Unit 4 of Chapter 1 for more information on date formats and entering dates.) If no start date has been specified, the program displays the current date. When you change the start date for a project, all jobs in the schedule change relative to the new date.

To change the start date:

1. Select **Start**.

The flashing cursor appears at the bottom of the screen. The currently entered date appears on the line with the cursor.

2. Type the new date in the same format as the date on the line.
3. Press .

The new start date appears next to **Start=** in the upper portion of the screen.

## Changing the Manpower Cost Units

Salary units can be dollars (\$), thousands of dollars (K\$), or millions of dollars (M\$). The salary unit defined here is important when you enter specific salary figures from the Modify menu. You can enter up to four digits; negative numbers and decimal points are not allowed. You should select a unit that is meaningful for the manpower costs in each project. For example, if your salaries are in the \$100 range, you would not want to use thousands or millions of dollars as your monetary unit.

The Manpower option is initially set to dollars (\$). To change the manpower cost units:

1. Select **Manpower** from the Description menu.

The Manpower menu is displayed with the currently selected option highlighted.

2. Select **\$** (dollars), **K\$** (thousands of dollars), or **M\$** (millions of dollars).

The project description in the upper part of the screen is updated with the new selection.

## Changing Units Used for Direct Costs

Direct cost (costs other than salaries) units can be dollars (\$), thousands of dollars (K\$), or millions of dollars (M\$). The cost unit defined here is important when you enter specific direct cost figures in the Schedule menu. You can enter up to four digits; negative numbers and decimal points are not allowed. You should select a unit that is meaningful for the direct costs in each project. For example, if your costs are in the \$10,000 range, you would not be able to use dollars as your monetary unit.

The Directcost option is initially set to thousands of dollars (K\$).

To change the direct cost units:

1. Select **Directcost** from the Description menu.

The Directcost menu is displayed with the currently selected option highlighted.

2. Select **\$** (dollars), **K\$** (thousands of dollars), or **M\$** (millions of dollars).

The project description in the upper part of the screen is updated with the new selection.

## Changing Critical Path Calculation

When the VisiSchedule program displays critical jobs, those jobs that must be completed before another can be started, it uses a special symbol. Another symbol is used to display slack time. If you choose not to display critical paths, all jobs are displayed with the same symbol and slack times are not displayed. (For a description of all the symbols used, see Table 2-1 in Unit 3.) Jobs with no successors are displayed with the same symbol as critical jobs.

If you want to display critical paths, leave this setting at Yes. If you do not want to display critical paths, change this setting to No.

To change the critical path display:

1. Select **C**ritical from the Description menu.

The current setting is displayed at the bottom of the screen.

2. Press **Y** or **N** to select the setting you want.

The critical setting in the upper part of the screen is updated with the new selection.

## Changing the Project Revision Number

The revision number for a project starts at zero and is automatically increased by one each time you save the project file. If you want to have a specific revision number on a report, you can set this number to any integer from 0 to 999.

To change the revision number:

1. Select **R**evision from the Description menu.

The current revision number and the flashing cursor appear at the bottom of the screen.

2. Type a number from 0 to 999 and press **↵**.

The revision setting in the upper part of the screen is updated with the new setting.

After completing the project description, select **Q**uit to return to the Modify menu.

## ENTERING OCCUPATIONS AND SALARIES

To specify occupations and salaries for the people involved in a project, select **Manpower** from the Modify menu.

The left side of the screen lists the occupations assigned to each of the nine skills. You need not assign a name to each; however, your report will be clearer if the job lists two engineers rather than two people in skill #1.

The right side of the screen lists the salaries for the occupations. The salaries are listed in manpower-cost units per time unit. For example, if manpower costs are defined in dollars (\$) and the time unit is weeks, the salaries are listed in dollars per man-week.

To enter or change occupations and salaries:

1. Move the cursor to highlight the skill you want to enter or change.

You can move the cursor with the  and  keys, or you can type the number or first letter of the skill you want. The asterisk marks the item with the cursor. When you select a skill, the asterisk remains, marking the category you are working on.

2. Press .

Three options are displayed at the bottom of the screen: Occupation, Salary, and Quit.

3. Select **O**ccupation to enter the occupation.

The current entry is displayed with the flashing cursor on the first letter.

4. Type the occupation name (up to 20 characters) and press .

You can use any letters, numbers, shifted letters, shifted numbers, punctuation, or the space bar. When you press , the occupation is displayed in the upper portion of the screen.

5. Select **S**alary to enter the salary for the marked occupation.

The current entry is displayed with the flashing cursor on the first letter.

6. Type a number (up to four digits) and press .

If you cannot express the salary accurately in a four-digit number, the salary cost unit for the Manpower option (\$, K\$, or M\$) in the Project Description menu should be changed.

7. Select **Q**uit to complete the entry for the marked occupation.

8. Repeat steps 1 through 7 for each occupation you want to enter

## ENTERING WORKWEEK INFORMATION

The Workweek menu lets you specify the working days for a normal workweek (Normal), the holidays and other days off (Days), and the nonworking weeks within the project (Weeks).

To specify workweek information, select **Work** from the Modify menu. Your screen appears as shown in Figure 2-2.

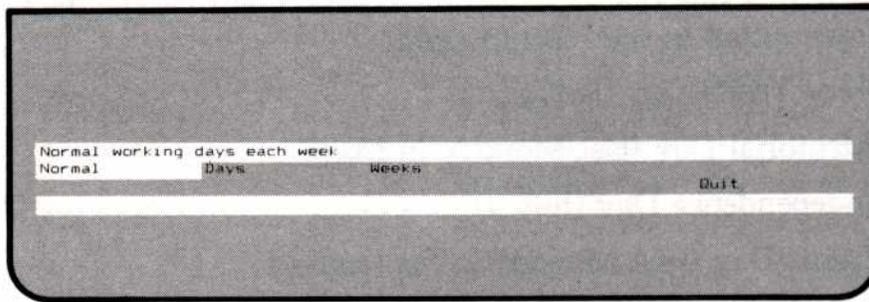


Figure 2-2. Workweek Menu

The Normal and Days options can be used only if you selected Days for the Time option in the Project Description menu. If a project is measured in weeks, you can use only one option from this menu: Weeks.

Select **Quit** to return to the Modify menu.

## Changing the Days in a Workweek

The Normal option lets you specify the normal working days in a project. The initial setting is for a five-day week, Monday through Friday.

To change the days in a workweek:

1. Select **Normal** from the Work menu.  
A list of the days of the week, Sunday through Saturday is displayed in the upper portion of the screen. Asterisks mark the days selected for the workweek.
2. Use the  and  keys to move the cursor to the day you want to change.
3. Press the space bar to remove an asterisk from a selected day or to add an asterisk to select the day.
4. Repeat steps 2 and 3 until the days of the workweek are correctly marked.
5. Press  to return to the Workweek menu.

## Entering Holidays and Days Off

The **Days** option specifies the special nonworking days in the project's schedule. Regular nonworking days such as weekends, as specified with the **Normal** option, are not included in the **Days** option holiday list. You can use the **Days** option only if you set the **Time** option to **Days** in the **Project Description** menu.

The program automatically creates a list of six holidays beginning with the first one that occurs in the same month as the date set in the **Today** option in the **Startup** menu:

- New Year's Day (January 1)
- Memorial Day (last Monday in May)
- Independence Day (July 4)
- Labor Day (first Monday in September)
- Thanksgiving Day (fourth Thursday in November)
- Christmas Day (December 25)

To add to or change the list of holidays and days off:

1. Select **D**ays from the **W**ork menu.

A list appears of the current holidays and other days off. The current date is displayed in the lower part of the screen.

2. To add a date to this list, type the date in the form shown and press .
3. To remove a date from the list, type the date as shown in the list, and press .

Pressing  alternately adds and removes a given date from the list.

4. To exit the **D**ays option after the holiday list is correct, press .

## Entering Nonworking Weeks

The **Weeks** option lets you identify nonworking weeks for vacations, shutdowns for retooling, and the like. A nonworking week can begin on any day of the week; it does not have to begin on the same weekday that the project starts on.

To enter or change the list of nonworking weeks:

1. Select **Weeks** from the **Workweek** menu.

If any nonworking weeks are currently specified, they appear in a list in the upper portion of the screen. The current date with the flashing cursor under the first number is displayed in the lower part of the screen.

2. To add a week to the list, type the date of the first day of the week in the format shown and press .
3. To remove a week from the list, type the date of the first day as shown in the list and press .

Pressing  alternately adds and removes a given week from the list.

4. To exit the **Weeks** option after the list is correct, press .

## UNIT 2 SCHEDULING JOBS

The Schedule menu is the core of the VisiSchedule program. From the Schedule menu, you define each job by number, name, duration, prerequisites, earliest start times, costs, and other important factors. You enter the data; the program calculates and displays the results.

To specify the jobs in a schedule, select **Schedule** in the Modify menu. Figure 2-3 shows the Schedule menu.

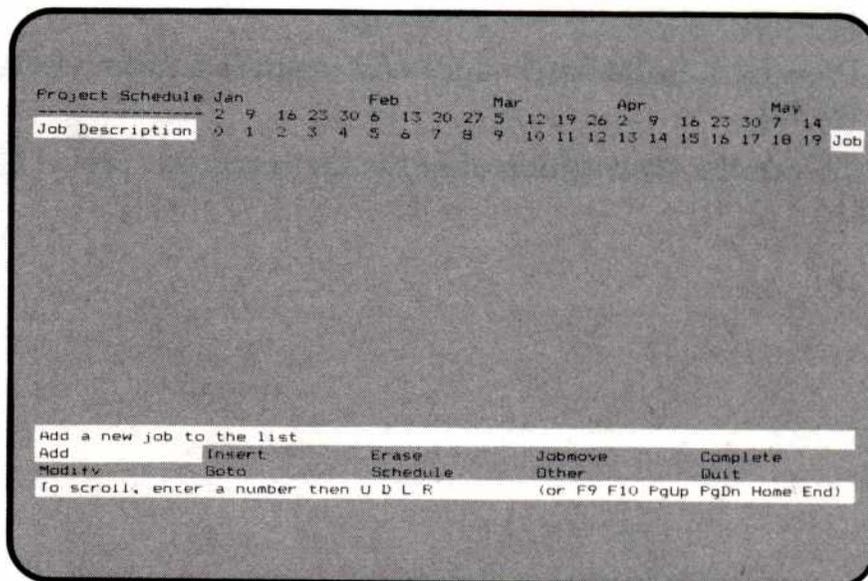


Figure 2-3. Schedule Menu

The top of the screen contains the time line in daily or weekly units (depending on how you set the Time option) starting at 0. When you enter each job, the job's line extends from one time unit to another in the time line, reflecting the number of weeks or days it takes to complete the job. The starting date of the project is determined by the date you typed for the Start option in the Project Description menu.

## ENTERING JOBS

The Schedule menu gives you two options with which you can create jobs: Add and Insert. You can define any job with either option. Add is typically used to append a new job to the end of a schedule. Insert is used to put a new job into the middle of a schedule.

The major difference between the two options is in how they affect the scheduling of later jobs. Add puts the new job into the list of jobs, but does not affect the schedules of any existing jobs. Insert puts the new job between two jobs on the time line, and impacts the schedules of jobs that follow. (See "Adding vs. Inserting a Job" later in this unit.)

To schedule a job in a project, select either **Add** or **Insert** from the Schedule menu. The program displays the Job Location menu. The number of the job last entered is displayed in the prompt.

You can add or insert a job before or after the job shown in the prompt. If you want to add or insert before or after a different job number, select **Job** and type the number of the job you want. If you do not enter a job number, the program uses the number of the last job entered. When no jobs have been entered, it uses 0.

When the job number you want to add before or after is correct, simply select **After** to add or insert after that job number or select **Before** to add or insert before that job number.

After you specify where to add or insert the job, the program displays the Job Specification menu as shown in Figure 2-4.

The screenshot shows a terminal window with a project schedule grid and a job specification form. The grid has columns for months (Jan, Feb, Mar, Apr, May) and rows for days (1-31). The 'Job Description' row contains numbers 0 through 19. Below the grid is a form with the following fields:

Name of the job				Working on job 1
Accept	Name	Joblength	Prereq	Earliest
Cost	Skill	Deadline		Quit

Figure 2-4. Job Specification Menu

Use this menu to define all details of an individual job. You select only those options that you want to use to define a job. Nothing shows on the screen until you enter all the information you want and select **Accept**. The options are:

- **Name** is a 1- to 30-character name of the job.
- **Joblength** is the duration of the job.
- **Prereq** is a list of jobs that must be completed before this job can begin.
- **Earliest** is the earliest date at which this job can begin.
- **Cost** is the direct cost associated with the job.
- **Skill** is used to specify the occupational skills and number of people required for the job.
- **Deadline** is used to specify the date by which the job must be done.

After you complete each part of the job description, you are returned to the Job Description menu. The parts of the job are not displayed on the screen until you select the **Accept** option. The **Accept** option enters the job description in the project schedule and displays the job in the upper portion of the screen. See Unit 4 for information on modifying a job after you have selected the **Accept** option.

You can cancel all the values and return to the Schedule menu by selecting **Quit**.

## Entering the Job Name

The job name can be up to 30 characters, including spaces. When the name has been entered, it is displayed at the left side of the schedule under **Job Description**. Only the first 12 characters of the name are displayed on the screen; however, the whole name appears in reports.

To enter a job name:

1. Select **Name**.

The flashing cursor appears at the bottom of the screen.

2. Type the job name (up to 30 characters).

You can use letters, numbers, shifted letters, shifted numbers, punctuation, and the space bar.

3. Press **↵**.

## Entering the Job Length

Joblength is the duration of the job. The duration is expressed in a whole number of weeks or days, depending on the time unit used in the project.

Fractional durations are not allowed. If you find that you want to enter durations as portions of weeks, you should change the time unit to days. (See "Entering the Project Description" in Unit 1.)

A job of 0 duration is allowed. Jobs with a duration are shown as arrows, and jobs of 0 duration are shown as a single character (\* or X). The maximum job length is 999 time units.

To enter the job length:

1. Select **J**oblength.
2. Type an integer number of days or weeks.
3. Press .

## Entering the Job Prerequisites

The prerequisites are jobs that must be completed before this job can begin. You can specify no more than nine prerequisites for a given job. The initial entry for this option is the number of the preceding job, or, if no other jobs exist, the initial entry is 0.

To enter the job prerequisites:

1. Select **P**rereq.

The program displays the current prerequisites at the bottom of the screen with the flashing cursor.

2. Type the prerequisite job numbers separated by commas.

To remove all prerequisites, type **0**. If you enter a zero as part of a string of prerequisites, the string is revised to contain only a zero.

3. Press .

A job can have no more than nine prerequisites. If a job depends on more than nine others, you can create two other fictitious jobs of zero duration and split the prerequisites between them. Then the real job will have the two zero-duration jobs as prerequisites.

## Entering the Earliest Date the Job Can Begin

If you do not enter a date for this option, the job begins after the last prerequisite is completed. You usually use the **Earliest** option when a job has no prerequisites, but cannot begin until a certain day or week.

To enter the earliest date for a job:

1. Select **Earliest**.
2. Type the day or week number for the earliest day the job can begin.

If your project is scheduled in weeks, you can only indicate the earliest week that a job can begin; you cannot specify a day.

3. Press .

## Entering Direct Costs

The direct costs for a job are those other than salary: materials costs, overhead, etc. The cost is expressed in the cost units defined in the Project Description menu. (See "Entering the Project Description" in Unit 1.)

To enter the cost figure:

1. Select **Cost**.

The currently specified cost is displayed at the bottom of the screen with the flashing cursor.

2. Type a number (up to four digits).

If you need a number larger than four digits, you have to go back to the Project Description menu and change the direct cost units. The current cost unit is displayed in the prompt.

3. Press .

## Entering the Skills and Number of People Required

Use the **Skill** option to specify the occupational skills required for the job along with the number of people needed for each skill category. From this information, the program calculates the manpower cost for each week.

To enter the skill requirements:

1. Select **S**kill.

The program displays the Skill menu shown in Figure 2-5.

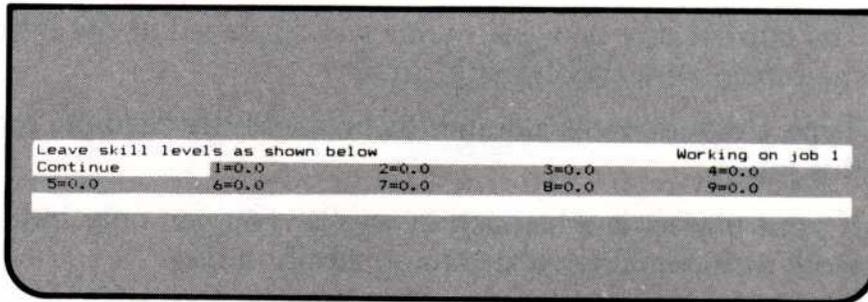


Figure 2-5. Skill Menu

The actual skills and salaries are defined in the Manpower option of the Modify menu. (See "Entering Occupations and Salaries" in Unit 1.) To see the defined skills, move the menu cursor. As you move the cursor to each skill number, the program displays the assigned title in the top line of the menu. You can move the cursor in this menu with the arrow keys or by typing the skill level number.

2. Move the cursor to the skill you want to set and press .
  3. Type the number of people in this skill required for this job and press .
- You can enter any number between 0.1 and 999.9.
4. Repeat steps 2 and 3 if this job requires people in more than one skill category.
  5. When you have set the number of people required for the necessary skills, select **C**ontinue.

## Entering the Job Deadline

The Deadline option lets you specify the date by which the job must be done. You specify the date by its day or week number on the time line. The deadline date shows on the graph as a plus sign (+), but it does not affect the scheduling. If you set a deadline beyond the project end date, it will be shown on the screen display, but will not be shown on the printed schedule.

If you do not set a deadline, the initial setting is 0. To remove a deadline, set the day or week number to 0.

To set a deadline:

1. Select **Deadline**.

The current day or week number is displayed at the bottom of the screen with the flashing cursor.

2. Type a day or week number to be set as the deadline for this job.

If your project is scheduled in weeks, you can only indicate a week as a deadline; you cannot specify a day.

3. Press .

## ADDING VS. INSERTING A JOB

The Schedule menu gives you two options with which you can create jobs: Add and Insert. You can define any job with either option. Add is typically used to append a new job to the end of a schedule. Insert is used to put a new job into the middle of a schedule.

The major difference between the two options is in how they affect the scheduling of later jobs. Add puts the new job into the list of jobs, but does not affect the schedules of any existing jobs. Insert puts the new job between two jobs on the time line, and impacts the schedules of jobs that follow. Figure 2-6 shows the difference between the two options.

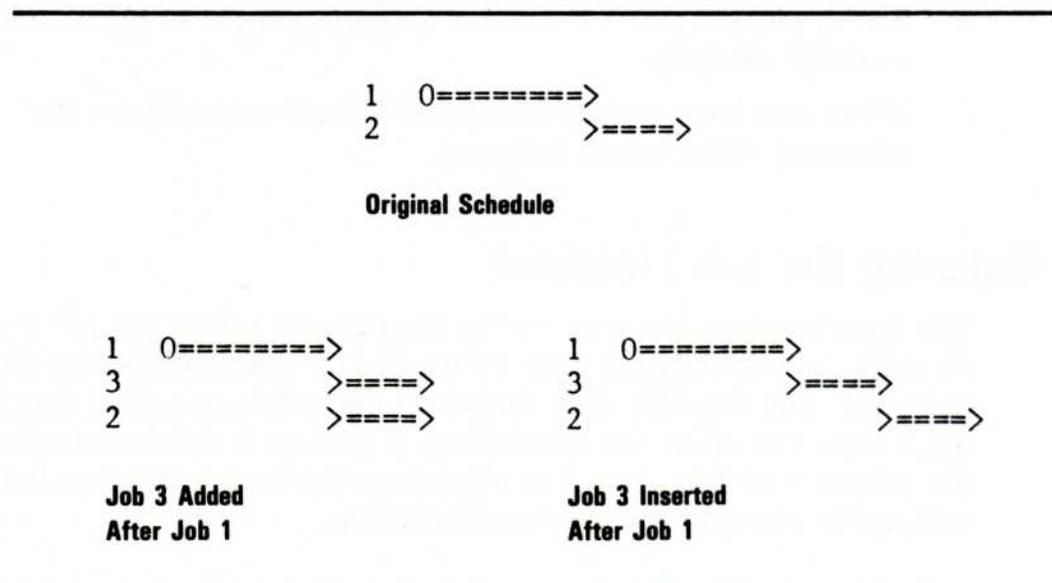


Figure 2-6. Comparison of Add and Insert Options

When you add or insert a new job, it assumes prerequisites depending on the option used to create it and on whether it is located before or after a specific job. Figure 2-7 shows the assignment of prerequisites for all combinations.

This assignment of prerequisites is done to save you time as you enter jobs. If the prerequisites are not correct for your project, you can always change them with the Prereq option.

---

#### Initial Job List

```
1 0-->..>
2 0=====>
3          >==X
```

**Job 3 has 1 and 2 as prerequisites**

#### Adding Job 4 After Job 2

```
1 0-->..>
2 0=====>
4          >==X
3          >==X
```

**Job 4 has 2 as a prerequisite**  
**Job 3 has 1 and 2 as prerequisites**

#### Adding Job 4 Before Job 3

```
1 0-->..>
2 0=====>
4          >==X
3          >==X
```

**Job 4 has 1 and 2 as prerequisites**  
**Job 3 has 1 and 2 as prerequisites**

#### Inserting Job 4 after Job 2

```
1 0-->.....>
2 0=====>
4          >==>
3          >==X
```

**Job 4 has 2 as a prerequisite**  
**Job 3 has 1 and 4 as prerequisites**

#### Inserting Job 4 Before Job 3

```
1 0-->..>
2 0=====>
4          >==>
3          >==X
```

**Job 4 has 1 and 2 as prerequisites**  
**Job 3 has 4 as a prerequisite**

---

**Figure 2-7.** The Effect of Before and After on Prerequisites during Add and Insert

## UNIT 3 VIEWING THE JOB SCHEDULE

Figure 2-8 shows a sample schedule. Table 2-1 describes all graph symbols and how each is used.

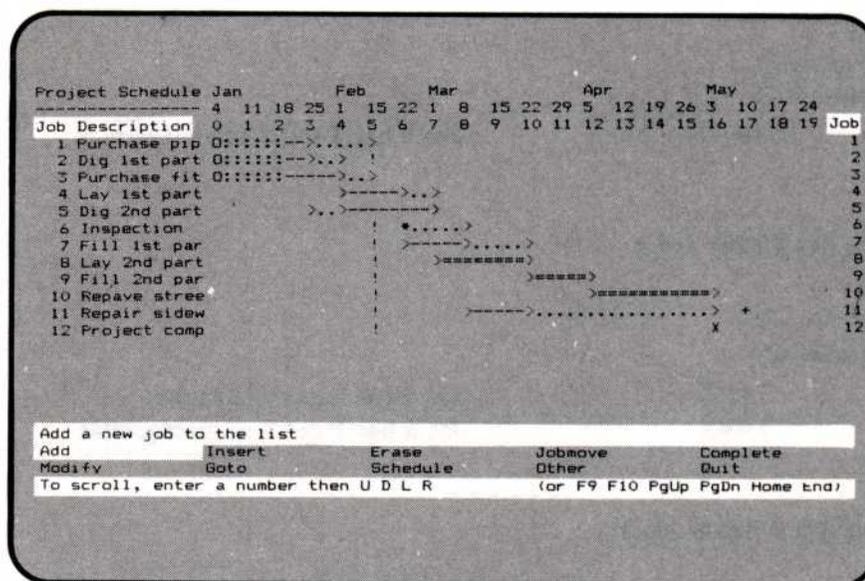


Figure 2-8. Sample Schedule

**Table 2-1.** Schedule Symbols

Symbol	Description
>=====>	A critical job. A critical job cannot be delayed without delaying the entire project.
>----->	A noncritical job. Slack time is associated with a noncritical job. This symbol is used for all jobs when you choose not to show the path.
>.....>	Slack time for a noncritical job. A job can be delayed up to its total slack time without delaying the project.
>:~::~~::~>	A completed job.
>:~::~~::~=====>	A partially completed job. The uncompleted portion could be critical or noncritical.
0=====> 0>-----> 0:~::~~::~>	Jobs with no prerequisites. These jobs are scheduled to begin on a specific date and do not depend on the completion of another job.
>=====X >:~::~~::~X	Jobs with no successors. No other jobs name these jobs as prerequisites. The last job in a project normally ends with an X. A project can have multiple finishes.
*	A zero-length job with successors. A job with zero duration marks an important event or shows a job that does not require an entire time unit.
X	A zero-length job with no successors, usually the end of a project.
+	A deadline. This marks the date when the job must be completed.
!	A break in the schedule. If the time unit is days, this marks holidays and nonworking weeks. If the time unit is weeks, this marks nonworking weeks only.

## DISPLAYING A DIFFERENT PORTION OF THE SCHEDULE

For many projects, the schedule is so long that jobs continue off the right side of the screen display. Or the project may have more than 17 jobs. If so, you often want to display a different part of the schedule. To do so, you can scroll the screen in any direction.

The schedule display is like a window that views a portion of the total schedule. Scrolling moves the entire schedule in the direction you specify. In other words, when you scroll left, you move all the

Scrolling works only in the main Schedule menu; it does not operate in the extension menu that is reached by way of the Other option.

Across the bottom of the Schedule menu are the scrolling instructions: To scroll, enter a number then U D L R (up, down, left, and right) (or F9 F10 PgUp PgDn Home End). Typing a number before pressing U, D, L, or R moves the schedule that number of lines or dates.

Table 2-2 shows you how to move the schedule.

**Table 2-2. Scrolling Keys**

To move	Use
Up	<b>U</b> to move one line or type a number and then press <b>U</b> .
Down	<b>D</b> to move one line or type a number and then press <b>D</b> .
To left	<b>L</b> to move one date or type a number and then press <b>L</b> .
To right	<b>R</b> to move one date or type a number and then press <b>R</b> .
One screen to left	<b>(F 9)</b>
One screen to right	<b>(F 1 0)</b>
To next page (down)	<b>(P G D N)</b>
To previous page (up)	<b>(P G U P)</b>
To last job	<b>(E N D)</b>
To first job	<b>(H O M E)</b>

## DISPLAYING A JOB AT THE TOP OF THE SCHEDULE (GOTO OPTION)

You can display a selected portion of the schedule using the Goto option. You give a specific job number and the program displays the portion of the schedule beginning with that job.

To display a specific job:

1. Select **Goto** from the Schedule menu.

The number of the last job added, modified, or specified in the Goto option appears at the bottom of the screen with the flashing cursor.

2. Type the number of the job you want displayed at the top of the screen.

The page beginning with that job number is displayed on the screen. The job order of the schedule does not change. If you select **Goto** but have not yet defined any jobs, press **(E S C)** to continue.

---

---

## UNIT 4 REVISING A SCHEDULE

---

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Several options in the Schedule menu can be used to revise a project schedule:

- **Modify** is used to change jobs that have already been entered.
- **Erase** is used to delete a job.
- **Jobmove** is used to move a job to a different position in the list.
- **Complete** is used to mark jobs or parts of jobs that have been completed.
- **Schedule** is used to change the start date of a job.

### MODIFYING JOBS

To change or check a value entered for a job, use the **Modify** option on the Schedule menu.

To modify an entry:

1. Select **Modify** from the Schedule menu.  
The number of the last job entered, modified, or selected with the **Goto** option is displayed at the bottom of the screen with the flashing cursor. (Initially, the last job number on the schedule is displayed.)
2. Type the number of the job you want to change.  
The Job Description menu appears. This is the same menu used with the **Add** and **Insert** options.
3. Select the option you want to view or change.  
The information currently entered for that option appears at the bottom of the screen.
4. To change the information, type the new setting. To leave the information as it is, press **ESC** (select **Continue** in the Skill option). Pressing **↵** erases the field.  
See Unit 1 for more instructions on how to use these options.
5. When you have made all the changes you want, select **Accept** to enter the job in the schedule.  
The schedule is redisplayed with the new settings.

To exit this menu without making any changes, select **Quit**.

## MOVING A JOB

Use the **Jobmove** option to place a job anywhere in the list. This option does not change any aspect of the job; it changes only the job's position in the list.

Moving a job in the list does not change its number, prerequisites, or successors. To change the job numbers, use the **Renumber** option of the **Other** menu (see Unit 5 in this chapter). To change prerequisites, use the **Modify** option to change the prerequisites for the jobs involved (see "Modifying Jobs" earlier in this unit).

To move a job:

1. Select **Jobmove** from the **Schedule** menu.

The number of the last job entered or modified is displayed at the bottom of the screen with the flashing cursor. (Initially, the last job number on the schedule is displayed.)

2. Type the number of the job you want to move and press . (If the displayed job is the one you want to move, just press .)

The **Jobmove** menu is displayed. To tell the program where to move the selected job, you indicate another target job number and then tell the program whether to put the first job before or after the second job.

The program displays a suggested target job in the prompt. If the target job is the one you want, go on to step 5.

3. To change the target job number, select **Job**.

The current target job number is displayed with the flashing cursor.

4. Type the number of the target job and press .

The **Jobmove** menu reappears.

5. Select **After** or **Before** to move the selected job either before or after the target job.

The revised schedule is redisplayed in the upper part of the screen.

## ERASING A JOB

The **Erase** option removes a job from the schedule. After entering all the jobs in a project, you may need to remove one or more of them from the list as the project's requirements change.

Figure 2-9 explains how the program handles prerequisites after a job is erased. As with prerequisites for the Add and Insert options, the figure illustrates the prerequisites that the program automatically assigns. You can always change prerequisites with the Prereq option if the automatically assigned job numbers are incorrect for your project.

---

**Before Erase**

```

1 0-->.>
2 0====>
3      >====>
4      >====>
5      >-->

```

**Job 3 has 1 and 2 as prerequisites**  
**Job 4 has 3 as a prerequisite**  
**Job 5 has 3 as a prerequisite**

**After Job 3 is Erased**

```

1 0-->.>
2 0====>
4      >====>
5      >-->

```

**Job 4 has 1 and 2 as prerequisites**  
**Job 5 has 1 and 2 as prerequisites**

007-012

**Figure 2-9.** The Effect of Erase on Prerequisites

To erase a job:

1. Select **Erase** from the Schedule menu.

The number of the last job entered or modified is displayed at the bottom of the screen with the flashing cursor. (Initially, the last job number on the schedule is displayed.)

2. Type the number of the job you want to erase and press .

The job is removed and the revised schedule is redisplayed in the upper part of the screen.

To restore a job you have erased, use the **Add** option and redefine the job. If you do this immediately, the previous entries are displayed when you select an option from the Job Description menu. However, you must retype the entry and press  to redefine it.

## MARKING A JOB AS COMPLETE

For you to monitor your project, a schedule must reflect the current status of a job. The schedule should show the completed work as well as the scheduled work.

The **Complete** option lets you indicate which jobs are completed. A completed job is shown as a series of colons (:::) (see Table 2-1 in Unit 3 for all the display definitions).

You cannot complete a job unless all prerequisites for that job are completed first. You are prompted if there are any incomplete prerequisites.

To mark a job as completed:

1. Select **Complete** from the Schedule menu.

The number of the last job entered or modified is displayed at the bottom of the screen with the flashing cursor. (Initially, the last job number on the schedule is displayed.)

2. Type the number of the job you want to mark as complete and press .

You are prompted for the number of days or weeks you want to mark as complete. The total duration of the job is displayed at the bottom of the screen. You can mark all of a job or a portion of a job as completed.

3. Type the number of days or weeks you want marked as completed (integers only) and press .

If you enter a value greater than the job duration, the program assumes you mean the entire job.

The revised schedule is redisplayed in the upper part of the screen with the completed portion displayed as colons.

To change a job where the entire entry has been marked complete back to its incomplete status, follow steps 1 and 2 above. You are prompted, *Would you like to uncomplete it?* Press **Y** if you want to return to the incomplete marking. Press **N** if you want to leave it as it is.

If part of the job has been marked complete, you can change it by changing the number of days or weeks in step 3. Typing **0** returns the project to its original status.

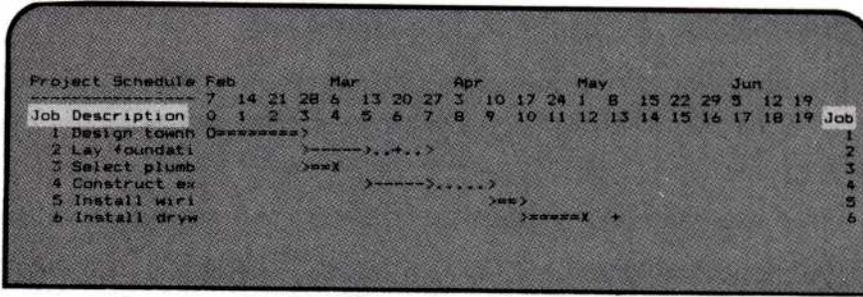
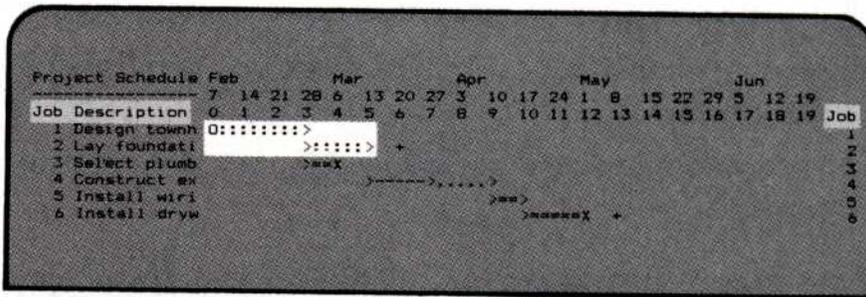
**Before marking:****After marking:**

Figure 2-10. Marking Jobs 1 and 2 Complete

## SCHEDULING THE STARTING DATE OF A JOB

The Schedule option in the Schedule menu lets you change the start date of any job in the project. By changing the start date for a job, you can quickly see what effect this change would have on the entire schedule.

If a job is on the critical path, changing the start date to an earlier date may not affect the schedule because the prerequisites still must be completed before the job can really start. Starting a job at a later date can move successive jobs out.

To change the start date for a job:

1. Select **Schedule** from the Schedule menu.

The number of the last job entered or modified is displayed at the bottom of the screen with the flashing cursor. (Initially, the last job number on the schedule is displayed.)

2. Type the number of the job you want to change and press .

The program prompts for the number of the day or week that is the earliest date to start the job. The bottom line suggests a range of entries that will not affect the rest of the schedule. If the job is on the critical path, the bottom line tells you to enter **0** if you don't want to delay the rest of the schedule.

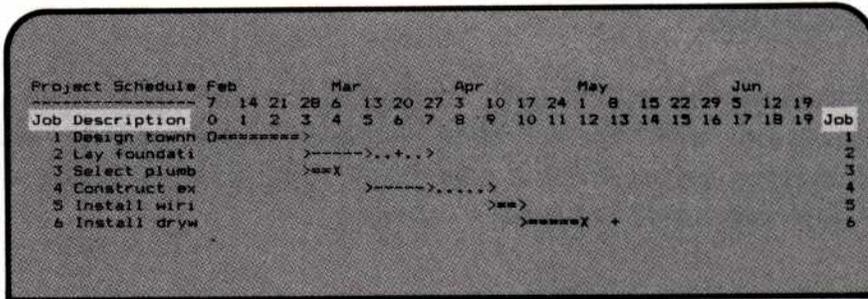
3. Type the number for the day or week you want the job to start and press .

The revised schedule is redisplayed in the upper part of the screen.

You can cancel all modifications made with the Schedule option by selecting the Level option from the Other menu, entering a skill number of **0**, and answering with **Y** when asked if you want to cancel scheduling. (See Unit 5.)

Figure 2-11 shows the result of moving the start date for job 4 from week 5 to week 6.

**Before changing the start date:**



**After changing the start date:**

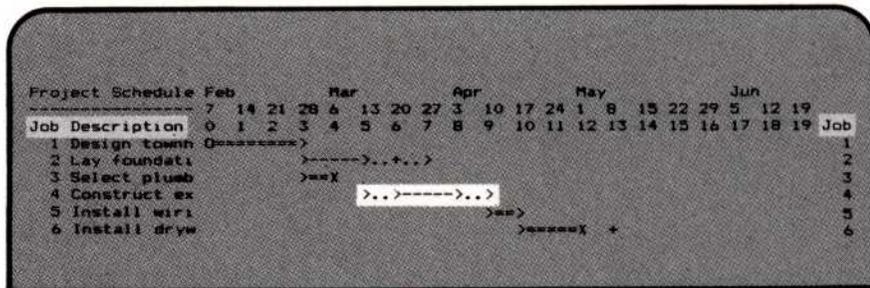


Figure 2-11. Changing the Start Date of Job 4

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## UNIT 5

# USING SPECIAL SCHEDULE OPTIONS

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Select **O**ther to go to the Schedule Extension menu. This menu has special options for changing or highlighting the display:

- Highlight is used to highlight the schedule display to show a job's prerequisites and successors.
- Display is used to display manpower level and/or direct costs below the schedule.
- Level is used to automatically level manpower peaks.
- Renumber is used to permanently renumber all jobs.
- Slip is used to slip the entire schedule for jobs that have not been completed.
- Milestone is used to set milestones to be included in reports.

## HIGHLIGHTING PREREQUISITES AND SUCCESSORS

It is not always obvious from the VisiSchedule display which jobs are prerequisites or successors to a given job. You can display this information for a single job at a time with the Highlight option.

To highlight a job:

1. Select **H**ighlight from the **O**ther menu.

The number of the last job entered or modified is displayed with the flashing cursor. (Initially, the last job number on the schedule is displayed.)

2. Type the number of the job you want to highlight and press **↵**.

The number and name of the job you selected are highlighted. The names of jobs that are prerequisites or successors to the selected job are also highlighted.

To remove the highlighting, repeat the steps, entering **0** at step 2.

Figure 2-12 shows the results of highlighting job 4. The names of jobs 1 and 2 are highlighted because they are prerequisites for job 4. Both the number and name of job 4 are highlighted to indicate that it is the job being considered. The names of jobs 5 and 6 are highlighted to indicate that they are successors to job 4.

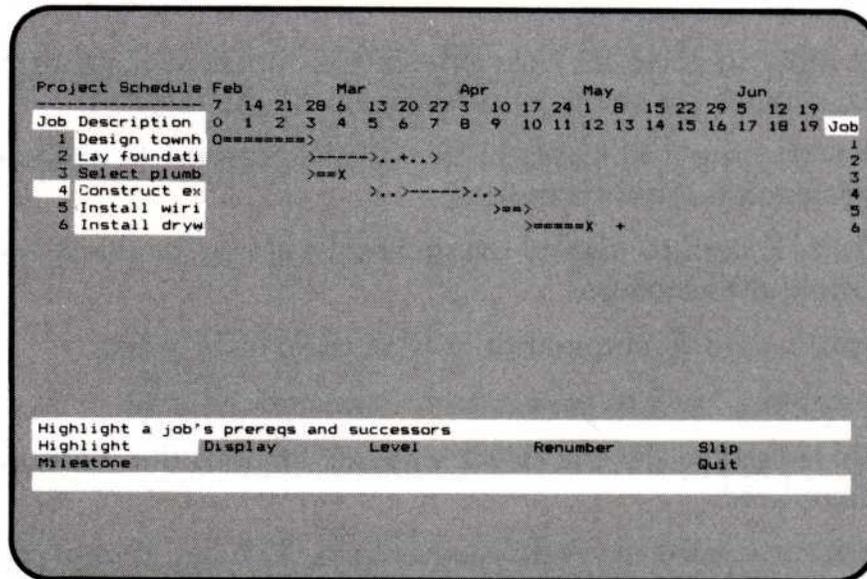


Figure 2-12. Highlighted Schedule

## DISPLAYING COSTS AND SALARIES

Use the **Display** option to display a line of manpower or cost information across the bottom of the schedule display, above the menu. To display manpower level or costs, select **Display** from the **Other** menu. The **Display** menu options are:

- **None** is used to cancel any manpower or cost information displayed on the screen.
- **Manpower** is used to display manpower requirements for each time period of the schedule.
- **Salary** is used to display salary costs for each time period of the schedule.
- **Costs** is used to display direct costs for each time period of the schedule.

To display manpower, select **Manpower**. The program asks you to enter the skill category. Your options are a single skill category or the total of all skill categories. Enter a number for a specific skill category. Enter **0** for all skill categories.



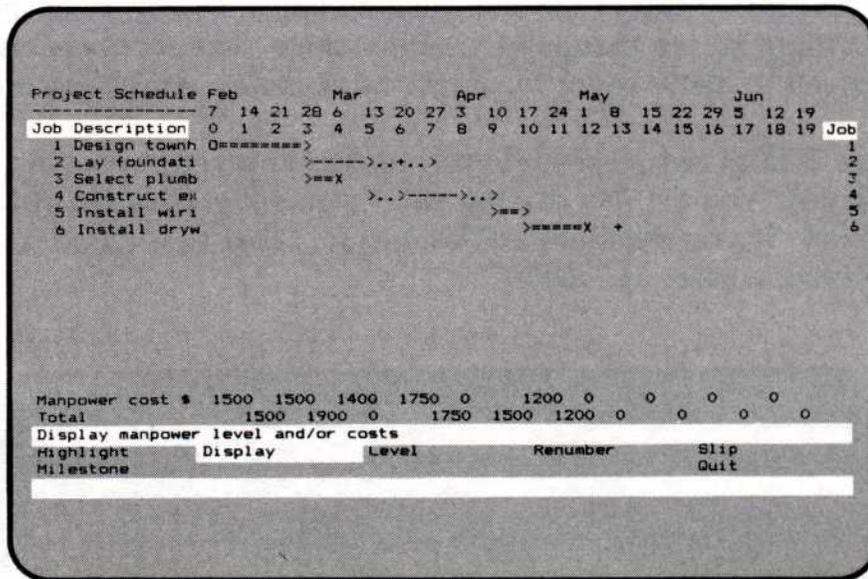


Figure 2-14. Schedule with Manpower Costs Displayed

To display direct costs, select **Display**, then **Costs**. The program displays the direct costs. Zeroes are displayed when there are no direct costs. The numbers are staggered to allow room for larger numbers for each time unit.

Figure 2-15 shows a schedule with the direct costs displayed

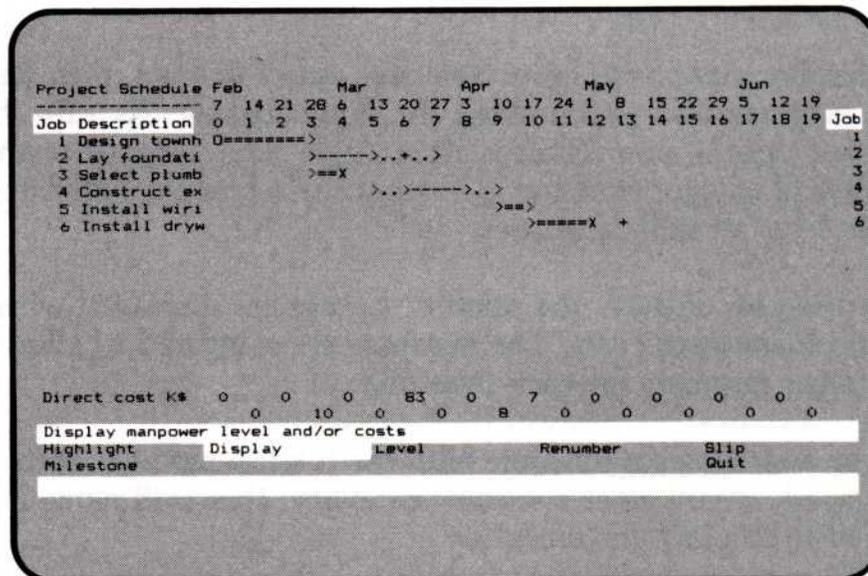


Figure 2-15. Schedule with Direct Costs Displayed

To cancel the display, select **None**.

## EVENLY DISTRIBUTING MANPOWER (LEVEL OPTION)

The Level option moves the starting dates of noncritical jobs within the slack time to even out the job responsibilities in a single skill category. The option levels only one category. When leveling is possible and multiple skills are used, the leveling of one may adversely affect others. The option does not change the scheduling of a critical job.

Before you level a schedule, you can display the manpower requirements for the skill(s) you want to adjust using the Display option (see "Displaying Costs and Salaries" earlier in this unit).

To level a schedule, select Level. The program asks you to enter the skill category. A skill number is displayed with the flashing cursor. Enter a number for a specific skill category. If you previously displayed the requirements for that skill, the schedule is redisplayed with the revised manpower requirements.

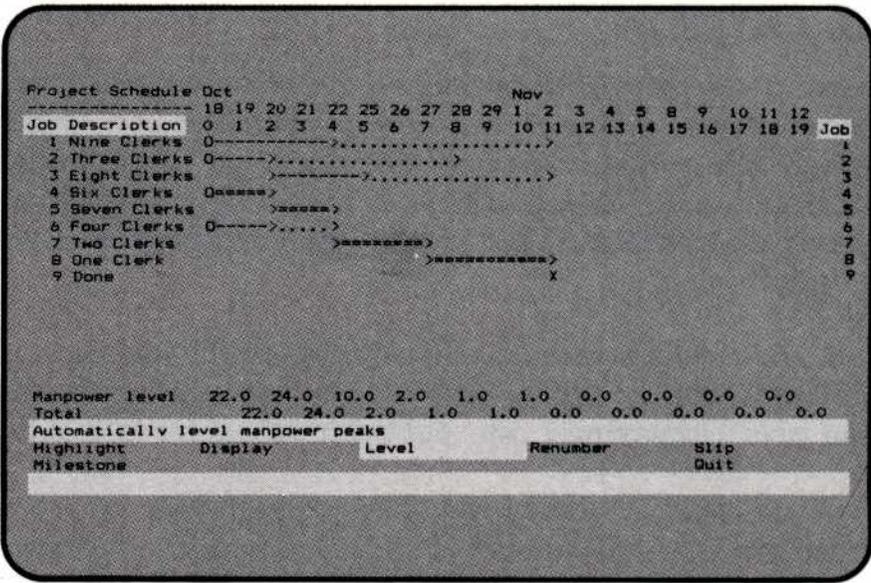
To return to the original schedule, select Level again and enter 0 as the skill number. You are prompted to press Y to undo scheduling or N to leave it as it is.

Figure 2-16 is designed to show the maximum capability of the Level option. It shows a schedule before and after leveling. The result in this example is dramatic; do not expect results like this every time you use the option. Many projects cannot be leveled.

Notice in Figure 2-16 that the number of people needed on any given day varies from 24 to 1. This project would be easier to manage if there were not such fluctuations. Many of the jobs have considerable slack time, which indicates that leveling might be possible.

The Level option has no effect on a project that has no slack time. It affects only those jobs that are not on the critical path.

**Before leveling:**



**After leveling:**

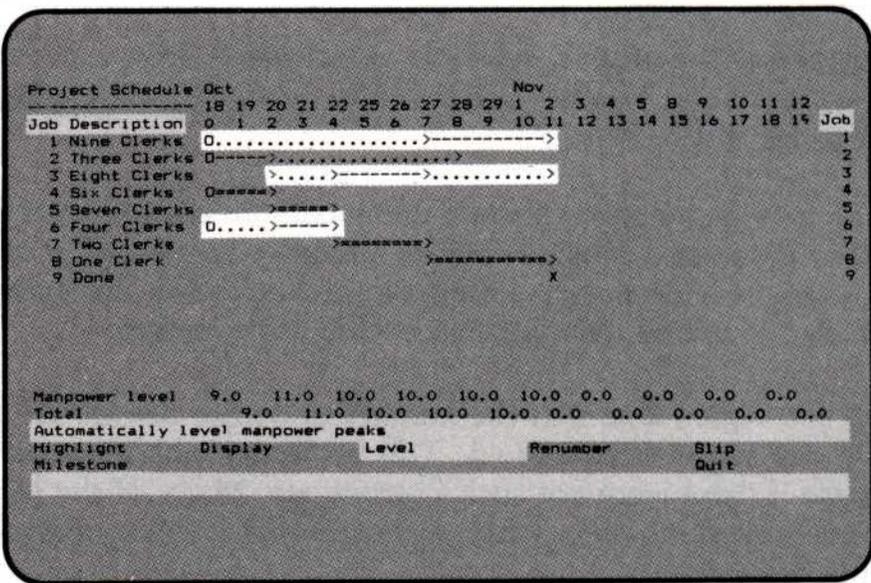


Figure 2-16. The Results of Leveling a Schedule

## RENUMBERING JOBS

The Renumber option permanently renumbers the jobs in ascending order. To renumber a schedule, select **R**enumber. Because this option is irreversible, the program asks if you are sure you want to renumber. Type **Y** to continue; **N** cancels the option.

## SLIPPING A SCHEDULE

It is not a law of nature that schedule slips must happen, but they do occur. The VisiSchedule program provides an option that adjusts the schedule for a project slip.

To reschedule a project to allow for a slip:

1. Make sure all completed jobs have been marked.

Before selecting the Slip option, you must identify all completed work because it affects the project completion date. (See "Marking a Job as Complete" in Unit 4.) The schedule will be slipped to allow for the time required to finish incomplete jobs.

2. Select **Slip** from the Other menu.

The program prompts you to enter a date (time unit) when the slip occurs.

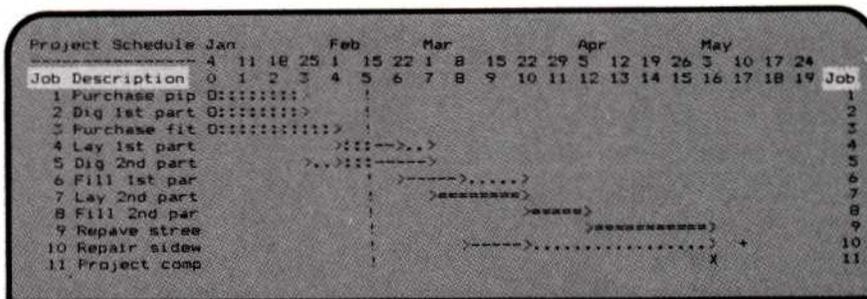
3. Type the number of the date that becomes the start date for all uncompleted work and press .

The entire schedule shifts to the right to begin at the specified date.

To change the schedule back, select **Slip**, type **0**, and press .

Figure 2-17 shows the result of entering a two-week slip into a schedule. The slip date is entered as week 6. The completion date moves from week 16 to week 18.

**Before slip:**



**After slip:**

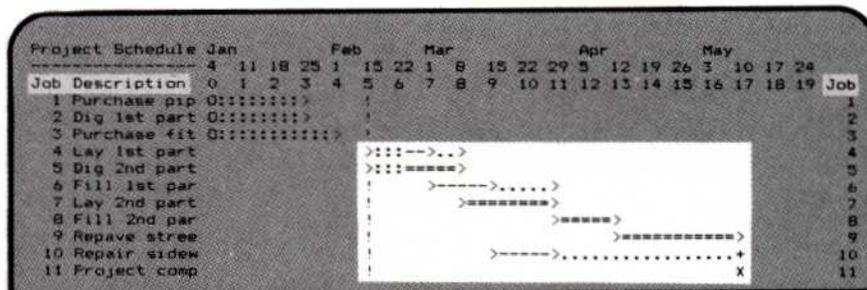


Figure 2-17. Slipped Schedule

## SETTING MILESTONES

A milestone is a significant event in your project. With the Milestone option, you can mark the beginning or end of any job as a milestone. Then you can choose to sort the jobs by milestone in the Job Description Report, or you can choose milestone dates to be one of the columns in the Tabular Job Report. The reports are described in Chapter 4. The milestones are not displayed in the schedule graph.

After you select the option, use the Milestone menu to mark a milestone at the Start or the End of a job. You can cancel a previously marked milestone by selecting None. To exit the menu, leaving the milestones as previously set, select **Quit**.

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## CHAPTER 3

# Handling Files and Memory

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### Chapter Outline

Unit 1 Saving a File .....	3-4
Unit 2 Loading a File .....	3-6
Unit 3 Clearing Memory .....	3-8
Unit 4 Deleting a File .....	3-9

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This chapter explains how to use the computer's memory and maintain project files. A *project file* is the collection of all information about a project.

The VisiSchedule program contains several options related to saving, retrieving, and managing storage files:

- Save copies the project data from the computer memory onto disk for future use.
- Load reads a project file from disk and loads it into the computer memory.
- Clear erases all project data from the computer memory.
- Delete erases a project file from disk. Remember that you Delete the physical file from a disk and Clear the copy of a file from memory.

The Path option designates the location (the path name can specify just a drive or a subdirectory on a drive) used by the Save, Load, and Delete options. (See Chapter 1, Unit 5, and see the *Getting Started* guide for information about the Path option.) Save, Load, and Delete work only with the path designated in the Path option. If you want to use files on another drive or directory, you must change the path to that directory before using these options.

## UNIT 1 SAVING A FILE

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The **Save** option stores the project in memory on either the hard disk or a floppy disk, depending on how you've set the **Path** option. It's a good idea to stop and save a project file at regular intervals as you enter it. This is especially true if the project contains many jobs. By storing the data frequently, you protect yourself against accidental data loss because of a power failure or a malfunction.

When you select **Save**, the program displays a list of all files saved in the location designated by the **Path** option. Two items on the list are not file names: **[New name]** and **[None]**. If you select the **[New name]** option, you are asked for a project file name. If you select **[None]**, the **Save** option is canceled, and the **Main** menu is displayed.

All project files can be identified by the suffix **.DAT**. If you select an existing file name for the **Save** option, the program takes the already existing file and changes the suffix from **.DAT** to **.BAK**. The new file takes the **.DAT** suffix. A backup (**.BAK**) file is invaluable if you ever save over an existing file name by mistake. You can load a **.BAK** file and retrieve data that otherwise would have been lost.

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### Note:

Before attempting to save any files, be sure that the path name is correct. See the *Getting Started* guide for information on path names.

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To save a project file:

1. Select **Save**.

If the project data has not changed since the file was last saved, or if there is no data currently in memory, the program asks *Do you want to save anyway?* Type **Y** to confirm that you do want to save the file, or type **N** if you decide not to save another copy of the file.

The program lists all files that are currently contained in the location designated by the Path option. If you have modified a file that already exists, the name of the saved file is highlighted. If you have created a new project, the program highlights [New Name]. The program also puts an asterisk to the left of the item that is highlighted.

2. Move the cursor to the desired file name (or to [New Name] if you're saving a new file). If you want to cancel the save process, move the cursor to [None].

You can move the cursor in two ways:

- Press the  $\uparrow$  and  $\downarrow$  keys to move the cursor up or down. The cursor wraps around to the opposite end of the list when you press the  $\uparrow$  key from the top of the list or the  $\downarrow$  key from the bottom of the list.
  - Type the first letter of the file name to move the cursor to a particular file name. Typing the letter again moves the cursor to the second name beginning with that letter, and so on.
3. Press  $\rightarrow$  to select the highlighted item.
    - a. If the cursor is highlighting the name of a file, the program saves the file with that name and then returns to the Main menu.
    - b. If the cursor is highlighting [New name], the flashing cursor appears at the bottom of the screen and you are instructed to enter the new file name. Type the file name and press  $\rightarrow$ . (The suffix .DAT is added to the file name by the program; do not type it as part of the name.)

File names can have up to eight characters. Allowable characters are:

- A through Z. If you enter lowercase letters, they will be changed to uppercase by the program.
- 0 through 9.
- \_ (underscore).

If you type any other characters for a file name, you'll get the error message, E7-Illegal filename.

After you enter the file name, the program returns to the Main menu.

## UNIT 2 LOADING A FILE

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The Load option retrieves a file from the location designated by the Path option and loads it into the computer memory. If you want to load a file that is not included in the list of file names, check the Path option to see that it is set to the proper location. If it is set properly and if your files are saved on a floppy disk, check that you have the correct data disk inserted.

As with the Save option, after you select Load, the program lists the project data files that are stored in the location designated by the Path option. The file names always end with .DAT. The last items on the list are [".BAK" files] and [None].

You can exit the Load option without loading a file by selecting [None]. The [".BAK" files] option allows you to load the previous version of a file. You can load a .BAK file by selecting [".BAK" files] and then selecting the desired file name from the list of .BAK files. .BAK files are explained in Unit 1 in this chapter, "Saving a File."

To load a file:

1. **Select Load.**

If you already have a project in memory, the program asks Do you wish to CLEAR memory? Type **Y** to clear the file that is in memory and continue with the load operation. If you wish to cancel the load process, so you can then save the current file or continue working with it, type **N**.

The program lists all files that are currently contained in the location designated by the Path option. The program highlights and puts an asterisk to the left of the file that was last in memory or the one that was last used before selecting Exit if you have just loaded the program.

2. Move the cursor to the desired file name. If you want to cancel the load process, move the cursor to [None].

You can move the cursor in two ways:

- Press the  and  keys to move the cursor up or down. The cursor wraps around to the opposite end of the list when you press the  key from the top of the list or the  key from the bottom of the list.
- Type the first letter of the file name to move the cursor to a particular file name. Typing the letter again moves the cursor to the second name beginning with that letter, and so on.

3. Press  to select the highlighted item.

The cursor vanishes, and the drive that is specified by the Path option begins running. After the file is loaded, the Main menu appears. The status areas have been updated to reflect the information pertaining to the loaded file.

## UNIT 3 CLEARING MEMORY

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You must always clear the computer memory when you want to start a new project. Otherwise, when you select **Modify** to enter the new Project Description, the program modifies the project in memory instead of starting a new one.

To clear the computer memory, select **Clear**. If the memory contains project data that has not yet been saved, the program asks Are you sure you want to clear memory? To continue with the **Clear** option, type **Y**. If you want to save the data currently in memory, type **N** to cancel the **Clear** option, and then select **Save**. After you type **Y** or **N**, the **Main** menu appears.

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## UNIT 4 DELETING A FILE

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You can remove project files from a floppy disk or from the hard disk with the **Delete** option. After you select the **Delete** option, the program displays a list of all files saved in the location specified by the **Path** option.

You can exit the option without deleting a file by selecting the **[None]** option at the bottom of the list. The cursor is on **[None]** with an asterisk next to it.

In the **Load** and **Save** options, you can select only one item from the list. With the **Delete** option list, you can select several items that you want to delete.

To delete one or more files:

1. Select **Delete**.

The program lists all files that are currently contained in the location designated by the **Path** option. The program highlights and puts an asterisk to the left of **[None]**.

2. Mark file(s) for deletion by moving the cursor to the desired file name and pressing the space bar.

After you press the space bar, the program puts an asterisk to the left of the highlighted file. If you accidentally mark a file for deletion, press the space bar again to remove the asterisk. (The space bar alternately adds or removes the asterisk.)

You can cancel one or more selections by moving the cursor to **[None]** and pressing the space bar. An asterisk appears before **[None]**, and the other asterisks are removed.

3. Press .

The program instructs you to confirm your selection(s). If you have marked more than one file for deletion, the program names each file separately.

The program displays the name of the selected file and asks  
Do you really want to delete this file?

4. Type **Y** to delete the specified file, or type **N** to cancel the option.  
After any files have been deleted, the Main menu appears.

# MEMORANDUM

TO : [Illegible]

FROM : [Illegible]

SUBJECT : [Illegible]

[Illegible text]

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# CHAPTER 4

## Printing Reports

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### Chapter Outline

<b>Unit 1 Understanding the Various Reports</b> .....	4-3
The Project Description Report .....	4-5
The Job Description Report .....	4-6
The Tabular Job Report .....	4-7
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The Time Line .....	4-9
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Scheduling Days with Nonworking Periods .....	4-11
Scheduling Weeks with Nonworking Periods .....	4-12
<b>Unit 2 Identifying Your Printer</b> .....	4-13
<b>Unit 3 Previewing and Printing Reports</b> .....	4-16
Previewing the Reports .....	4-16
Printing the Project Description Report .....	4-17
Printing the Job Description Report .....	4-19
Printing the Tabular Job Report .....	4-24
Printing the Schedule Graph .....	4-30
Printing All the Reports .....	4-32

This chapter describes the reports available in the program and provides instructions on specifying your printer. It then explains how to display and print each report.

# THE HISTORY OF THE

The history of the world is a long and varied one, filled with many interesting events and people. It is a story that has been told in many different ways, from ancient times to the present day. The history of the world is a story of change and growth, of challenges and triumphs. It is a story that has shaped the world we live in today.

The history of the world is a story of many different cultures and peoples. Each culture has its own unique traditions and customs, and each people has its own story to tell. The history of the world is a story of many different ways of life, of many different ways of thinking and feeling. It is a story of many different paths, of many different destinations.

The history of the world is a story of many different times and places. It is a story of many different eras, of many different periods. It is a story of many different lands, of many different cities. It is a story of many different people, of many different lives. The history of the world is a story of many different things, of many different experiences.

The history of the world is a story of many different challenges and triumphs. It is a story of many different struggles, of many different victories. It is a story of many different hardships, of many different joys. The history of the world is a story of many different things, of many different experiences.

The history of the world is a story of many different people and events. It is a story of many different lives and deaths, of many different actions and reactions. It is a story of many different things, of many different experiences. The history of the world is a story of many different things, of many different experiences.



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## UNIT 1

# UNDERSTANDING THE VARIOUS REPORTS

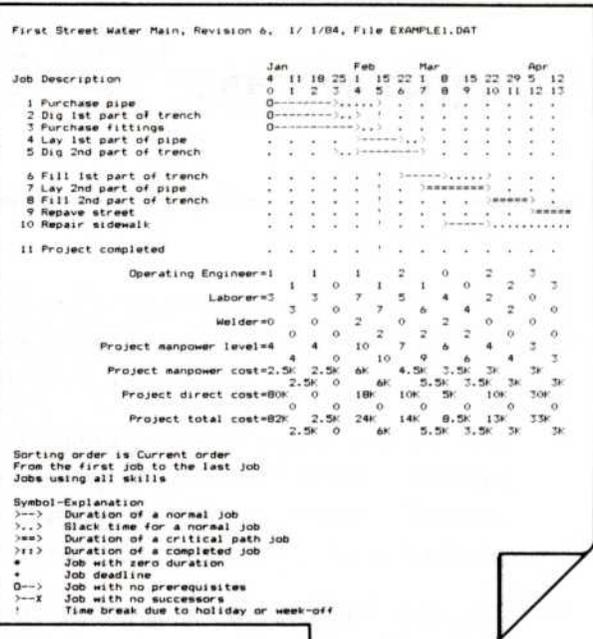
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Each program report presents selected information about a project in a specialized format. (See Figure 4-1 to get an idea of the format of each report.) You can create four different reports:

- The Project Description Report is created by selecting the Summary option from the Reports menu. This report includes a general description of the project, the skills needed, the time allotted and used, and the costs predicted.
- The Job Description Report is created by selecting the Listing option from the Reports menu. This report lists the characteristics of each job, such as the duration, the start and end dates, and the costs.
- The Tabular Job Report is created by selecting the Table option from the Reports menu. This report can list any set of job characteristics that you want. You can select the content and the order in which jobs appear.
- The Schedule Graph is created by selecting the Graph option from the Reports menu. This report contains the project's time line, the manpower and cost totals, and a legend explaining the schedule symbols.

**Sample Schedule Graph**



**Sample Job Description Report**

**JOB DESCRIPTION REPORT**  
 First Street Water Main  
 Revision 1, 1/ 1/84, File NEWEX1.DAT

Job #1, Purchase pipe  
 Job length = 3 Weeks  
 Work Completed = 5 Weeks  
 On critical path = Yes  
 Slack time = none  
 Prerequisites = none  
 Manpower skills = none  
 Total effort = none  
 Manpower cost = \$0.0  
 Direct cost = \$50000

Job #2, Dig 1st part of trench  
 Job length = 13 Weeks  
 Work Completed = 13 Weeks  
 On critical path = Yes  
 Slack time = none  
 Prerequisites = none  
 Manpower skills = none  
 Total effort = none  
 Manpower cost = \$0.0  
 Direct cost = \$0.0

Job #3, Purchase pipe  
 Job length = 3 Weeks  
 Work Completed = 5 Weeks  
 On critical path = Yes  
 Slack time = none  
 Prerequisites = none  
 Manpower skills = none  
 Total effort = none  
 Manpower cost = \$0.0  
 Direct cost = \$50000

Job #4, Lay 1st part of pipe  
 Job length = 13 Weeks  
 Work Completed = 13 Weeks  
 On critical path = Yes  
 Slack time = none  
 Prerequisites = none  
 Manpower skills = none  
 Total effort = none  
 Manpower cost = \$0.0  
 Direct cost = \$0.0

**PROJECT DESCRIPTION REPORT**

First Street Water Main  
 Revision 1, 1/ 1/84, File NEWEX1.DAT

Description data fields:  
 Name of project = First Street Water Main  
 Leader of project = J. S. Henderson  
 Time scale = Weeks  
 Start date = 1/ 2/84  
 Direct cost units = \$  
 Manpower cost units = \$  
 Find critical path = Yes

Skill categories:	DESCRIPTION	\$/Man-Week	Man-Weeks	TOTAL COST
1st Skill category =	Operating Engineer	1000	24.0	\$24000.0
2nd Skill category =	Laborer	500	46.0	\$23000.0
3rd Skill category =	Welder	750	10.0	\$7500.0
4th Skill category =	Civil Engineer	1500	0	\$0.0
5th Skill category =	Skill # 5	0	0	\$0.0
6th Skill category =	Skill # 6	0	0	\$0.0
7th Skill category =	Skill # 7	0	0	\$0.0
8th Skill category =	Skill # 8	0	0	\$0.0
9th Skill category =	Skill # 9	0	0	\$0.0

Working days:  
 Days of the week=RTuWThF

Holidays: Since the time scale is WEEKS, holidays are ignored  
 1/ 1/84 11/22/84  
 5/28/84 12/25/84  
 7/ 4/84  
 9/10/84

Nonworking weeks:  
 2/ 6/84 - 2/12/84

Schedule Summary:  
 Completion date = 4/30/84  
 Number of jobs = 11  
 Total manpower = 80.0 Man-Weeks  
 Manpower cost = \$24500.0  
 Direct cost = \$153000  
 Total cost = \$207500

**Sample Project Description Report**

**TABULAR JOB REPORT**

First Street Water Main  
 Revision 1, 1/ 1/84, File NEWEX1.DAT

JOB NAME	JOB WDR	DEADLINE	FILESTONE'S	STATUS
1 Purchase pipe	3 3			
2 Dig 1st part of trench	3 1			
3 Purchase fittings	4 0			
4 Lay 1st part of pipe	2 0			
5 Dig 2nd part of trench	3 0	2/27/84	FINISHED	
6 Fill 1st part of trench	2 0			
7 Lay 2nd part of pipe	3 0	2/27/84	STARTED	
8 Fill 2nd part of trench	2 0			
9 Repave street	4 0	4/ 2/84	STARTED	
10 Repair sidewalk	2 0	5/ 7/84		
11 Project completed	0 No		4/30/84	

Sorting order is Current order  
 From the first job to the last job  
 Jobs using all skills

**Sample Tabular Job Report**

Figure 4-1. VisiSchedule® Reports

The contents of the Project Description Report are standard and cannot be changed. The other three reports can be customized.

When you select the Listing, Table, or Graph option, the Report Options menu appears. This menu differs slightly for each report, so the things that you can modify vary for each of these three reports. In each case, however, you can use the Report options menu to modify the contents of the specified report. The items that can be modified include:

- The jobs that are included in the report. Reports can contain all the jobs in a project or just those that you specify.
- The skill categories to be included in the report.
- The order in which the jobs appear.
- Whether or not headings and page numbers are to appear on each page of the Tabular Job Report.
- The format for dates in the Tabular Job Report. Dates can appear in the current format (MM/DD/YY or DD/MM/YY) or as a day or week number.
- The types of information to be included in the Tabular Job Report.
- Whether or not job and skill names are to appear on each page of the Schedule Graph or only on the first page.

## THE PROJECT DESCRIPTION REPORT

The Project Description Report, created from the Summary option in the Reports menu, lists the project details entered with the Descrip, Manpower, and Work options from the Modify menu. Additionally, this report calculates values from an analysis of the whole project. These values are:

- The man-weeks required for each skill category.
- The cost for each skill category.
- The project's completion date.
- The number of jobs.
- The total manpower requirement.
- The total manpower cost.
- The total direct cost.
- The total project cost.

## THE JOB DESCRIPTION REPORT

The Job Description Report, created from the Listing option in the Reports menu, lists details about each job in the range of jobs or skills that you select. The jobs appear in the sequence that you specify before printing the report. The report lists all aspects of the job.

The report includes the following information about each job:

- The duration.
- The number of time units completed.
- Whether the job is on the critical path.
- The amount of slack time.
- The prerequisites.
- The manpower skills and salaries.
- The total effort.
- The manpower cost.
- The direct cost.
- The earliest and latest start dates.
- The earliest and latest finish dates.

## THE TABULAR JOB REPORT

The Tabular Job Report is created from the Table option of the Reports menu. You can vary the types of information that the report contains. The information that you can choose from includes:

- **Costs**—The total direct costs and manpower costs.
- **Deadline**—The dates of all deadlines that you set.
- **Earliest start**—The earliest possible start date that you set with the Earliest option.
- **Early start**—The start date based on the prerequisites, unless you have changed that date as a result of using the Level, Schedule, or Earliest options.
- **Job length**—The number of time units scheduled and the number of time units completed.
- **Job name**—The name that you gave to each job.
- **Job number**—The number assigned by the program.
- **Late finish**—The latest possible completion date without delaying the project.
- **Manpower levels**—The number of workers from each of the nine skill levels needed for each job.
- **Milestones**—The dates of the defined milestones and the status (started or finished) of each.
- **Number of successors**—The number of jobs for which this job is a prerequisite.
- **Prerequisites**—The numbers of those jobs that must be completed before this job can start.
- **Scheduled start**—The scheduled start date that was set with the Schedule or Level option if different from the early start date.
- **Slack time**—The number of total and free slack time units for each job.

You can select any combination of information that you choose. You are limited only by the amount of information that can fit across the width of each report page. If you want to select more information than will fit on a page, you can create two or more reports with different selections. If you do not specify the information to be included, this report includes only the job number and job name. (See the section entitled "Printing the Tabular Job Report" in Unit 3 in this chapter for more specific information about limiting the size of this report.)

## THE SCHEDULE GRAPH

The Schedule Graph, created from the Graph option in the Reports menu, contains the project's time line, the manpower and cost totals, and a legend explaining the schedule symbols.

Across the top of the Schedule Graph is the time scale. It is measured in days or weeks, depending on what you entered for the Time option in the Project Description menu. The second line across the top gives the time period number for each day or week. Reports do not show the whole schedule on a single page if the printer width is narrower than the schedule.

The number of time units on the printed schedule depends on the length of the project and on how you choose to modify the report. (For instance, whether the report contains all or just some of the jobs, and whether or not all skill categories are included affects how many time units are needed to show the graph.) You can specify that the job and skill names appear on each page of a multiple-page report or only on the first page. By printing them only on the first page, you can tape the schedule pages together to make a complete linear schedule.

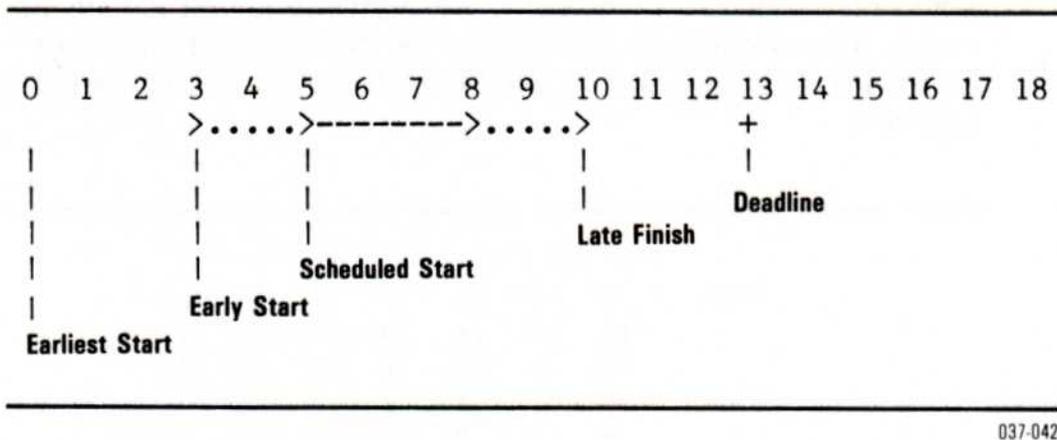
In the middle of the page is a list of the skills included in the report, the project's manpower level, manpower cost, direct cost, and total cost. This is the same cost information that can be displayed in the Schedule menu with the Display option. Don't be alarmed if the last digit of a calculated figure differs from screen display to report. The report totals are calculated to an extra digit for greater accuracy.

At the bottom of the page, the report lists the sorting order, the range of jobs included, and the skills that are covered. The legend explains the schedule symbols.

Refer to Table 2-1 in Chapter 2 or the Pocket Reference Card for a detailed list of the symbols used in both the Schedule Graph and the Schedule screen display.

## The Time Line

The time line has many parts, as shown in Figure 4-2.



037-042

Figure 4-2. The Schedule Time Line

The definitions of these time line parts are:

- The earliest start is the earliest date possible to start the job. You specify this with the *Earliest* option in the Job Specification menu. A job cannot begin before this date. The initial value is time period 0.
- The early start is either the earliest start date or the date on which all prerequisites are completed, whichever is later. The job starts on this date unless changed with the *Schedule* or *Level* options.
- The scheduled start is a start date established with the *Schedule* or *Level* options.
- The late finish is the latest date at which the job can end without delaying the project completion date. The late finish and actual finish are the same for critical jobs, but they can differ for noncritical jobs.
- The deadline is the date on which the job must be finished. The deadline is created with the *Deadline* option. The deadline has no effect on the scheduling of the job; it is shown for information only.

## Schedule Breaks

Breaks occur in schedules because of holidays, or days or weeks off that you specify in the Workweek menu. The effect of days and weeks off depends on whether the project's time unit is days or weeks. The examples in this section use the calendar shown in Figure 4-3. It is a portion of the December 1984 and January 1985 calendar.

---

	S	M	T	W	T	F	S
Dec.	9	10	11	12	13	14	15
	16	17	18	19	20	21	22
	23	24	25	26	27	28	29
Jan.	30	31	1	2	3	4	5
	6	7	8	9	10	11	12

---

037-043

Figure 4-3. Calendar Used in Examples

For these examples, the normal workweek will be Monday through Friday. December 25 and January 1 (Tuesdays) are defined as holidays. A nonworking week is defined beginning on December 24 (Monday) and ending on December 30. It is not necessary, however, for nonworking weeks to begin on the same day of the week as the project.

### Normal Working Week

You can enter a project start date as any day, even a nonworking day, but the program moves the start to the first working day following the start date. For example, if you entered 12/16/84 (a Sunday and nonworking day) as the start date, the program develops the schedule beginning on 12/17/84.

### Scheduling Days with Nonworking Periods

Breaks in the normal flow, such as holidays and nonworking weeks are shown with an exclamation point (!) at the first time period following the break, as shown in Figure 4-4. Note that the exclamation point at day 5 (Dec. 31) indicates the week break from Dec. 24 through Dec. 30. The second exclamation point, at day 6, indicates the holiday on Jan. 1, the previous workday. Weekend breaks are not indicated on the schedule with exclamation points. The schedule does not indicate the holiday on 12/25/84 because it occurs within a nonworking week.

---

<b>Time:</b>	<b>Days</b>
<b>Start Date:</b>	<b>12/16/84</b>
<b>Holidays:</b>	<b>12/25/84</b>
	<b>1/1/85</b>
<b>Nonworking Week:</b>	<b>12/24/84-12/30/84</b>

PROJECT SCHEDULE	DEC				JAN				
-----	17	18	19	20	21	31	2	3	4
JOB DESCRIPTION	0	1	2	3	4	5	6	7	
1 START DIGGIN	0	=====							>
2 PURCHASE FIT				!	!				>=
3 BUILD SUPERS				!	!				
.	.								
.	.								
.	.								

---

037-044

Figure 4-4. Project with Breaks (Days)

### Scheduling Weeks with Nonworking Periods

Single nonworking days such as holidays and days off are not shown when the time unit is weeks. A workweek is considered to be five working days beginning on the same day of the week the project started. The five days do not have to be in the same calendar week, as shown in Figure 4-5. In this figure, the first workweek begins on Dec. 17 and includes the days Dec. 18, 19, 20, and 21. The second week begins on Dec. 31 and includes the four days following. The second week has only four working days because the program ignores holidays and days off when the time unit is weeks.

---

**Time: Weeks**  
**Start Date: 12/17/84**  
**Holidays: 12/25/84**  
**1/1/85**  
**Nonworking Week: 12/24/84-12/30/85**

PROJECT SCHEDULE	DEC	JAN	FEB
-----	17 31	7 14 21	28 4 11
JOB DESCRIPTION	0 1 2 3	4 5 6 7	
1 START DIGGIN	0=====		>
2 PURCHASE FIT	!		>=
3 BUILD SUPERS	!		
. .			
. .			
. .			

037-045

Figure 4-5. Project with Breaks (Weeks)

## UNIT 2 IDENTIFYING YOUR PRINTER

Before printing any reports, you must identify your printer for the program. The Printsetup option in the Reports menu takes you to a screen where you can specify the settings for your particular printer. If you are using a serial printer, you must also define some additional settings. See the section, "Special Display/Printer Adjustments" in the *Getting Started* guide.

After you select **Printsetup**, the program displays the Printer Setup menu as shown in Figure 4-6.

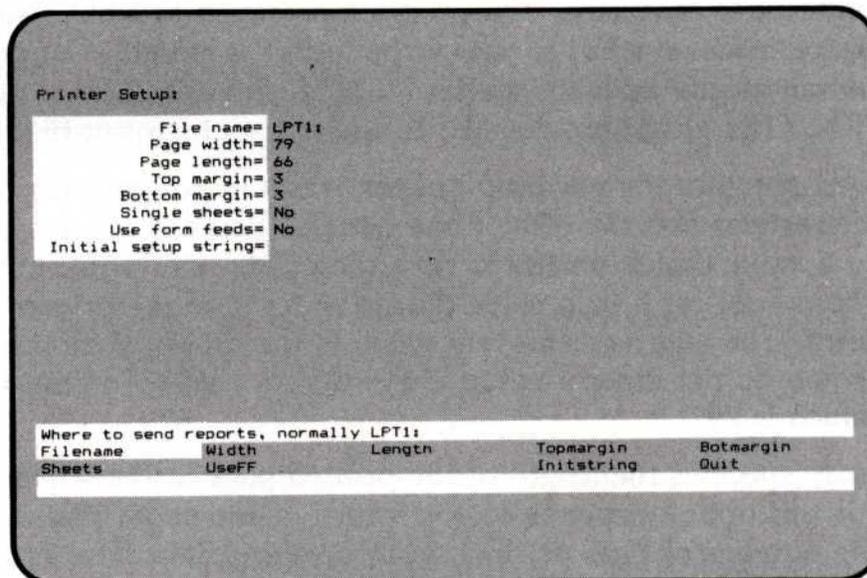


Figure 4-6. Printer Setup Menu

The top of the screen lists the current setup. Most of the values that you can set depend on your printer. Refer to your printer manual for information. If the manual is not definite about some of the options, print a short sample report to see if the report prints correctly.

Each of the printer setup options, except Initstring (initial setup string), has an initial setting. If you change the settings and exit the program with the Exit option in the Main menu, your new settings are recorded on the VisiSchedule program disk or on your hard disk. If you do not exit the program with the Exit option, the program keeps the initial settings.

The setup options are:

- **Filename** specifies where the report data is sent. This option is initially set to LPT1:. You can send reports to either a printer or to a disk file that the program saved in the location designated by the **Path** option.

To send reports to a printer, specify the name of the printer device. If you are using a parallel printer, the printer device name is either LPT1:, LPT2:, or LPT3:. If you are using a serial printer, the printer device name is either COM1: or COM2:. (See the *IBM Disk Operating System* manual for further information on printer device names.) When you specify a printer device name, it is not necessary to type the final colon. For example, you can type either **LPT1** or **LPT1:**.

To send reports to a disk file, type the name of the file and press . (File names can contain up to eight characters, including letters, numbers, and underscores.) You will find this feature useful if you want to create a text file that can be used with other programs. The program creates a text file, using the name specified here, in which the report is stored. The program automatically adds the suffix .TXT to distinguish it from project files. (The program adds .DAT to the name of project files.)

- **Width** specifies the maximum paper width in columns (or characters) that the printer can handle. You can set this option to a value that is narrower than the printer can print, but you should not set it to a value that is wider than the printer can print. The width can be any value in the range 79 through 218. If you do not enter a value, the program uses the initial value, which is 79.
- **Length** specifies the length of the printed page in lines. The value for this option depends on the length of the paper you use and the number of lines per inch your printer prints. The length can be any value in the range 18 through 255. If you do not enter a value, the program uses the initial value of 66. A device that prints at 6 lines per inch, for example, would use a value of 66 for an 11-inch page.
- **Topmargin** and **Botmargin** specify the number of blank lines to be left at the top and bottom of the printed report page. The program uses the initial value of 3 for both options unless you change them.

- **Sheets** specifies whether you are using single sheets or continuous form paper. This option is initially set to **NO** to indicate that you are using continuous form paper. If you are using single sheets, type **Y** to set this option to **YES**. When this option is set to **YES**, the program stops at the end of each page so you can put in a new sheet, align your paper, or tear off the printed page.
- **UseFF** (use form feed) specifies whether your printer accepts form feeds (page feeds) or only a series of line feeds. If your printer does not accept form feeds and if this option is set to **YES**, there will be no page breaks in your multipage reports. The program uses **NO** as the initial value.
- **Initstring** (initial setup string) specifies a printer setup sequence to make your printer print in special modes, such as double spaced, compressed, or double strike. Refer to the *Getting Started* guide for more information on setup strings for compressed printing for various printers.

Because of the number of different printers available for your computer, it is impossible to tell you what your values in the Printer Setup menu should be. Refer to your printer manual for specific information regarding the printer you are using.

When the options are correct, select **Quit** to return to the Reports menu. Remember that using the **Exit** option in the Main menu saves the printer setup information on the VisiSchedule program disk or on your hard disk.

## UNIT 3

# PREVIEWING AND PRINTING REPORTS

---

---

The options in the top line of the Reports menu create the reports. Summary creates the Project Description Report, Listing creates the Job Description Report, Table creates the Tabular Job Report, and Graph generates the Schedule Graph. The last option on the right, All, generates all four reports. As usual, the Quit option returns you to the previous menu, the Main menu.

## PREVIEWING THE REPORTS

Whenever you select one of the options that produces a single report (Summary, Listing, Table, and Graph), the program first asks if you want to preview the report on your screen. (If you select All, you cannot preview the reports.) The program initially specifies NO in response to the question about previewing. If you do not want to preview the report, type **N** or just press . If you want, you can view all or part of a report on the screen before printing it. Or you can simply preview it without subsequently printing the report.

To preview a report:

1. Select **R**eports from the Main menu.
2. Select **S**ummary, **L**isting, **T**able, or **G**raph.
3. Type **Y**.

The program displays a message that explains how to preview the report.

4. Press any key to begin the preview process.

The program displays as much of the report as fits on the screen.

5. Press any letter key to *scroll the display* (to move the report up one line at a time), or press  to move the report up a page at a time. If you want to discontinue the preview process, press **ESC**.

After you reach the bottom of the report or press **ESC**, the program asks if you want to print the report. (In some cases, you may have to scroll a few more lines before the program asks if you want to print it.)

6. Type **Y** to print the report or **N** if you do not want to print the report. After you preview or print the report, the Report menu appears.

## PRINTING THE PROJECT DESCRIPTION REPORT

To print the Project Description Report:

1. Select **S**ummary.

The program asks if you want to preview the report on the screen. (See the instructions at the beginning of this unit if you want to preview the report.)

2. Type **Y** or **N** depending on whether or not you want to preview the report.

If you previewed all or part of the report, the program asks if you want to print it. Type **Y** to print the report.

3. Align the printer paper.
4. Press any letter key to begin printing or press **(ESC)** to cancel printing.

The program prints the report on your printer or in a disk file depending on how you set the `Filename` option in the Printer Setup menu. After the program prints the report, the Reports menu appears.

Figure 4-7 shows a sample of the Project Description Report.

```

                                PROJECT DESCRIPTION REPORT
                                -----
                                First Street Water Main
                                Revision 1, 1/ 1/84, File NEWEX1.DAT

Description data fields:
  Name of project = First Street Water Main
  Leader of project = J. K. Henderson
  Time scale = Weeks
  Start date = 1/ 2/84
  Direct cost units = K$
  Manpower cost units = $
  Find critical path = Yes

Skill categories:

```

	DESCRIPTION	\$/Man-Week	Man-Weeks	TOTAL COST
1st Skill category =	Operating Engineer	1000	24.0	\$24000.0
2nd Skill category =	Laborer	500	46.0	\$23000.0
3rd Skill category =	Welder	750	10.0	\$7500.0
4th Skill category =	Civil Engineer	1500	0	\$0.0
5th Skill category =	Skill # 5	0	0	\$0.0
6th Skill category =	Skill # 6	0	0	\$0.0
7th Skill category =	Skill # 7	0	0	\$0.0
8th Skill category =	Skill # 8	0	0	\$0.0
9th Skill category =	Skill # 9	0	0	\$0.0

```

Working days:
  Days of the week=MTuWThF

Holidays:  Since the time scale is WEEKS, holidays are ignored
           1/ 1/84   11/22/84
           5/28/84  12/25/84
           7/ 4/84
           9/10/84

Nonworking weeks:
           2/ 6/84 - 2/12/84

Schedule Summary:
  Completion date = 4/30/84
  Number of jobs = 11
  Total manpower = 80.0 Man-Weeks
  Manpower cost = $54500.0
  Direct cost = $153000
  Total cost = $207500

```

037-047

Figure 4-7. Sample Project Description Report



- Skill lets you specify the skill category that will be included in the report. You can specify one skill category or all categories. If you specify a single category, only those jobs using that skill are included in the report.

You can use the Skill option together with the First and Last options to further limit the number of items included in the report. For example, if you specify job 5 as the First job, job 11 as the Last, and skill category 2, the generated report will contain only those jobs between jobs 5 and 11 that use skill 2.

- Order lets you specify the sequence in which the jobs will be sorted in the report. Figure 4-9 shows the Order option display. Table 4-1 lists the different sort sequences available through this option.

If you use the Order option along with the First and Last options, be aware that the sorting specified by the Order option is done first. It is possible that the First and Last options will eliminate all jobs from the list. Unless you double-check the order, it is advisable not to use Order when using First and Last and vice versa.

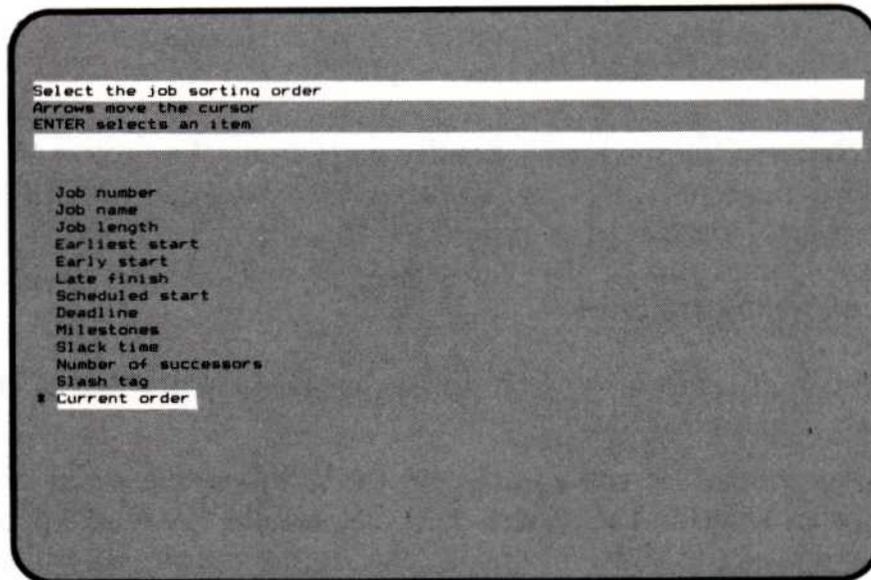


Figure 4-9. Order Option Display

**Table 4-1. Order Sort Sequences**

Order Item	Description
Current order	If no sorting has been done, the current order is used. Otherwise, the Current order option restores the file to the order it had when you were last in the Reports menu.
Deadline	Sorted by deadline date. Jobs without deadlines are printed before jobs with deadlines.
Earliest start	Sorted by earliest date on which the job can begin. If an earliest date has not been set, 0 (the start date) is used.
Early start	Sorted by early start date. The early start date differs from the scheduled start date if the slack time precedes the beginning of work.
Job length	Sorted by job length from the shortest to the longest.
Job name	Sorted in alphabetic order by job name.
Job number	Sorted in numeric order by job number.
Late finish	Sorted by late finish date. The late finish date is the last date that the job can finish without causing a project delay.
Milestones	Sorted by milestone date. If no milestone date has been set, the scheduled start date is used. If no scheduled start date has been set, the early start date is used.
Number of successors	Sorted by the number of successors a job has, from 0 to the maximum.
Scheduled start	Sorted by the scheduled start date set with the Schedule or Level options. If the scheduled start date was not set, the value is 0.
Slack time	Sorted by the amount of slack time for a job from 0 (critical jobs) to the maximum.
Slash tag	Sorted in ASCII order (numbers, letters, then underscores) by the portion of the name following the slash. Jobs with identical slash tags are ordered according to the first part of the name (before the slash).

To print the Job Description Report:

1. Select **Listing**.

The program displays the Report Options menu. If you want to modify the report, select one or more of the options listed in step 2. Otherwise, go on to step 3.

2. Select **First**, **Last**, **Skill**, or **Order**, as necessary, to modify the report.

If you do not change any of these settings, the program uses the initial values assigned by the program.

3. After making any desired changes, select **Print** to print the report.

The program asks if you want to preview the report on the screen. (See the instructions at the beginning of this unit if you want to preview the report.)

4. Type **Y** or **N** depending on whether or not you want to preview the report.

If you previewed all or part of the report, the program asks if you want to print it. Type **Y** to print the report.

5. Align the printer paper.

If you skipped the preview process, the program immediately instructs you to align the printing paper.

6. Press any letter key to begin printing or press **ESC** to cancel printing.

The program prints the report on your printer or in a disk file depending on how you set the **Filename** option in the **Printer Setup** menu. After the program prints the report, the **Reports** menu appears.

Figure 4-10 shows a portion of a sample Job Description Report.

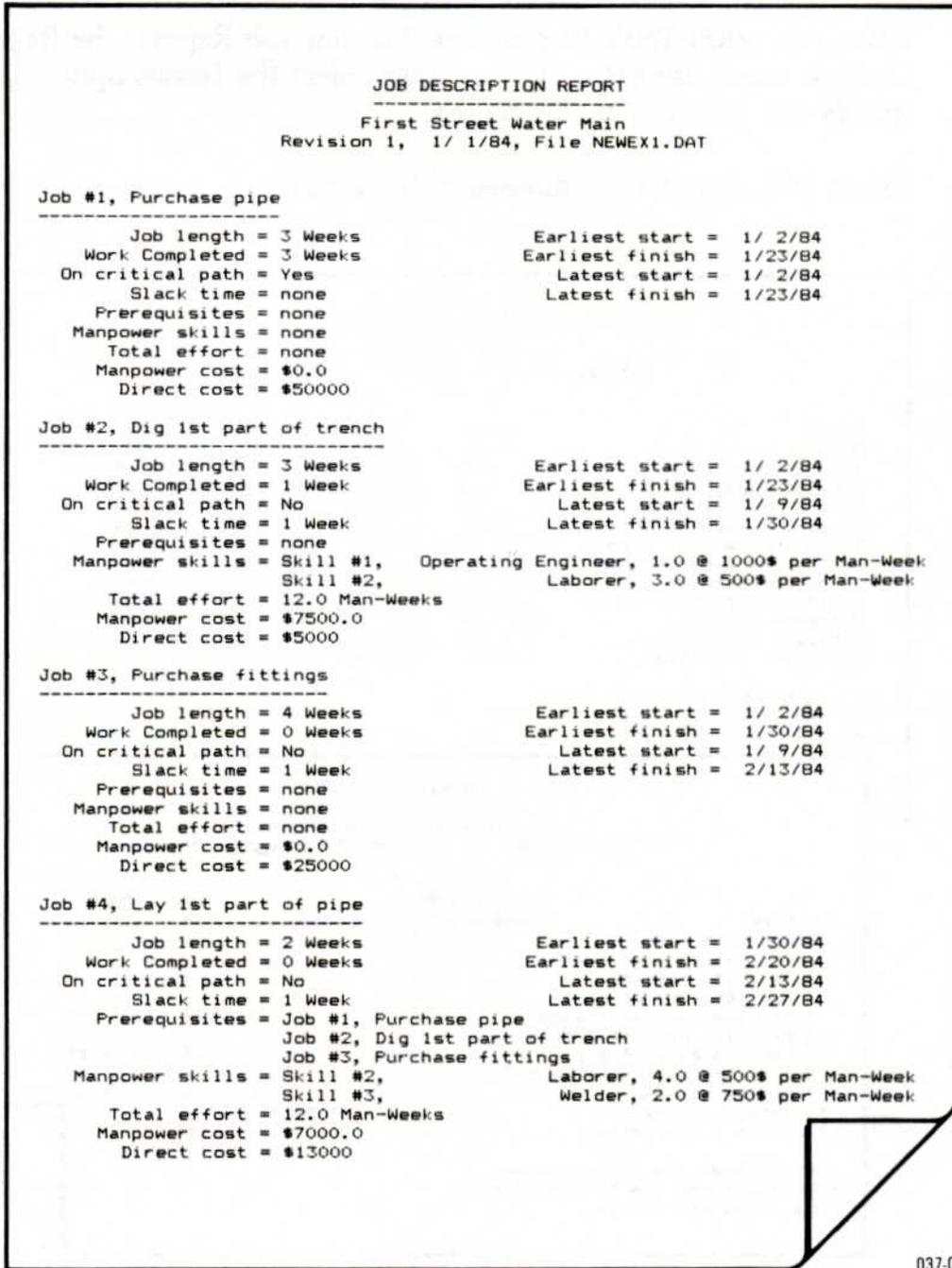


Figure 4-10. Sample Job Description Report

## PRINTING THE TABULAR JOB REPORT

After you select Table to print the Tabular Job Report, the Report Options menu appears. You can then select the Columns option to specify the contents of this report.

Figure 4-11 shows two samples of the report.

TABULAR JOB REPORT						
First Street Water Main						
Revision 1, 1/ 1/84, File NEWEX1.DAT						
JOB NAME	EARLY START	EARLY FINISH	LATE START	LATE FINISH	DEADLINE	
1 Purchase pipe	1/ 2/84	1/23/84	1/ 2/84	1/23/84		
2 Dig 1st part of trench	1/ 2/84	1/23/84	1/ 9/84	1/30/84		
3 Purchase fittings	1/ 2/84	1/30/84	1/ 9/84	2/13/84		
4 Lay 1st part of pipe	1/30/84	2/20/84	2/13/84	2/27/84		
5 Dig 2nd part of trench	1/23/84	2/20/84	1/30/84	2/27/84		
6 Fill 1st part of trench	2/20/84	3/ 5/84	3/ 5/84	3/19/84		
7 Lay 2nd part of pipe	2/27/84	3/19/84	2/27/84	3/19/84		
8 Fill 2nd part of trench	3/19/84	4/ 2/84	3/19/84	4/ 2/84		
9 Repave street	4/ 2/84	4/30/84	4/ 2/84	4/30/84		
10 Repair sidewalk	3/ 5/84	3/19/84	4/16/84	4/30/84	5/ 7/84	
11 Project completed	4/30/84	4/30/84	4/30/84	4/30/84		

Sorting order is Current order  
From the first job to the last job  
Jobs using all skills

TABULAR JOB REPORT					
First Street Water Main					
Revision 1, 1/ 1/84, File NEWEX1.DAT					
JOB NAME	JOB WORK LENGTH DONE	DEADLINE	MILESTONES DATE STATUS		
1 Purchase pipe	3 3				
2 Dig 1st part of trench	3 1				
3 Purchase fittings	4 0				
4 Lay 1st part of pipe	2 0				
5 Dig 2nd part of trench	3 0		2/27/84	FINISHED	
6 Fill 1st part of trench	2 0				
7 Lay 2nd part of pipe	3 0		2/27/84	STARTED	
8 Fill 2nd part of trench	2 0				
9 Repave street	4 0		4/ 2/84	STARTED	
10 Repair sidewalk	2 0	5/ 7/84			
11 Project completed	0 No		4/30/84		

Sorting order is Current order  
From the first job to the last job  
Jobs using all skills

037-051

Figure 4-11. Sample Tabular Job Reports

The Report Options menu that appears after selecting Table is shown in Figure 4-12. Note that the Report Options menu varies depending on the particular report that you selected.

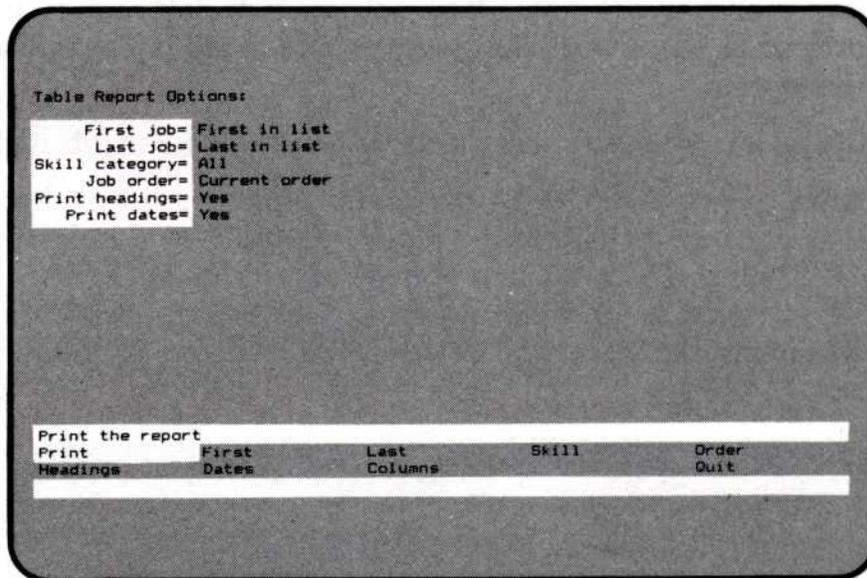


Figure 4-12. Report Options Menu for Table Option

The current settings for each option are listed at the top of the screen. This section does not discuss the options that were described in a previous section; they perform the same functions. If you have questions about First, Last, Skill, or Order, refer to the section entitled "Printing the Job Description Report." The additional options are:

- The Headings option lets you specify whether the heading and footing should be printed with the report. The primary purpose of this option is to let you eliminate page headings when you are printing the report onto a disk file. If you are printing onto a disk file, you must specify the disk file name with the Filename option in the Printer Setup menu. YES is the initial setting for this option. If you want to eliminate headings, type **N**.

- Dates specifies whether dates in the report are to be printed in the month/day/year (or day/month/year) format or as the time period number. Type **Y** to indicate that dates are to be printed in the current date format (either month/day/year or day/month/year). Type **N** to indicate that dates are to be printed as the time period number. YES is the initial setting for this option.
- Columns lets you select the contents of the Tabular Job Report.

After selecting Columns, the program displays a list of the items that you can include in the report. Figure 4-13 shows the item list display. Table 4-2 lists and describes the items. As you can see in Figure 4-13, the program initially selects only the first two items, Job number and Job name, for inclusion in the report.

```

Select the table's columns
Space bar selects an item
Arrows move the cursor. ENTER continues
Width must be less than 79, Total=27

Column width and name
# 4 Job number
# 23 Job name
  10 Job length
  10 Earliest start
  20 Early start
  20 Late finish
  10 Scheduled start
  10 Deadline
  20 Milestones
  10 Slack time
   5 Number of successors
  20 Costs
  40 Prerequisites
  55 Manpower levels

```

Figure 4-13. Columns Display

**Table 4-2.** Columns Options

Name	Size	Description
Costs	20	The total direct costs and manpower costs.
Deadline	10	The dates of all deadlines set. If no deadline is set, the column is left blank.
Earliest start	10	The earliest possible start date. If no earliest start date is set, the column is left blank.
Early start	20	The start date based on prerequisites unless changed with the Level, Schedule, or Earliest options.
Job length	10	The number of time units scheduled and the number of time units completed.
Job name	nn	The name you give to each job. The column width is equal to the number of characters in the largest job name in the project. The minimum is 5 and maximum is 30.
Job number	4	The number assigned by the program.
Late finish	20	The latest possible finish date without delaying the project.
Manpower levels	55	The number of workers needed for each job for each of the nine skill levels.
Milestones	20	The dates of the defined milestones. The milestone's status (STARTED or FINISHED) is displayed for jobs with a job length of one time unit or more. Because jobs of zero job length theoretically have no start or finish, the status of zero-length jobs is not shown. If Job name, Job number, and Milestones are the only items selected, jobs without defined milestones are not included in the report.
Number of successors	5	The number of jobs for which this job is a prerequisite.
Prerequisites	40	The job numbers that are prerequisite to this job.
Scheduled start	10	The scheduled start date if different from the early start date. The column is left blank if no schedule date has been set with the Schedule or Level options.
Slack time	10	The number of total and free slack time units for each job.

To select an item for the report:

1. Press the  or  keys, or type the first digit of the number or the first letter of the name to move the cursor to the desired item.

The program highlights the item with the cursor.

2. Press the space bar to mark an item for selection.

The program places an asterisk to the left of the item. (If you want to cancel a selection, press the space bar again to remove an asterisk.)

3. After making any desired selections, press .

Each item that was marked with an asterisk will be included in the report.

---

**Note:**

After you select **C**olumns, the number to the left of an item indicates its column width. The total report width (shown on the bottom line of the status area at the top of the screen) should not exceed the width that is specified for the printer width in the Printer Setup menu. Otherwise, there are no restrictions regarding the items that you select for inclusion in the report; no items are mandatory.

---

As Figure 4-13 shows, the display also contains the column width needed in the report for each item. This helps you design a report that fits your printer. This line tells you the current printer width setting and total column width taken up by the currently selected items. Always check these numbers to make sure the total report is no wider than the printer width before exiting the option.

If you have set any milestones, they appear on the list. However, a milestone's position in a job, **STARTED** or **FINISHED**, will not appear for jobs of zero duration.

To print the Tabular Job Report:

1. Select **Table**.

The program displays the Report Options menu. If you want to modify the report, select one or more of the options listed in step 2. Otherwise, go on to step 3.

2. Select **First**, **Last**, **Skill**, **Order**, **Headings**, **Dates**, or **Columns**, as necessary, to modify the report.

If you do not change any of these settings, the program uses the initial values assigned by the program.

3. After making any desired changes, select **Print** to print the report.

The program asks if you want to preview the report on the screen. (See the instructions at the beginning of this unit if you want to preview the report.)

4. Type **Y** or **N** depending on whether or not you want to preview the report.

If you previewed all or part of the report, the program asks if you want to print it. Type **Y** to print the report.

5. Align the printer paper.

6. Press any letter key to begin printing or press **ESC** to cancel printing.

The program prints the report on your printer or in a disk file depending on how you set the **Filename** option in the **Printer Setup** menu. After the program prints the report, the **Reports** menu appears.

## PRINTING THE SCHEDULE GRAPH

After you select **G**raph to print the Schedule Graph, the Report Options menu appears, as shown in Figure 4-14. This version of the Report Options menu differs slightly from the ones used for the Project Description and Tabular Job Reports. The top line is the same, but the second line contains the option Names.

```

Graph Report Options:
  First job= First in list
  Last job= Last in list
  Skill category= All
  Job order= Current order
  Name each page= No

Print the report
Print      First      Last      Skill      Order
Names                                           Quit
  
```

Figure 4-14. Report Options Menu for Graph Option

This section does not discuss the options that were discussed in the section on printing the Job Description Report. If you have questions about Print, First, Last, Skill, or Order, refer to that section. The additional option is described below.

- The Names option lets you specify whether the job and skill names are to be printed on each page of the report. Type **N** if you intend to tape multiple-page reports together, side to side, to lay out the entire schedule in a line. If you wish to use individual pages, type **Y**. (Subsequent pages without job names are very difficult to use.) If you do not specify a value, the program prints job names only on the first page of the report.

To print the schedule graph:

1. Select **G**raph.

The program displays the Report Options menu. If you want to modify the report, select one or more of the options listed in step 2. Otherwise, go on to step 3.

2. Select **F**irst, **L**ast, **S**kill, **O**rder, or **N**ames, as necessary, to modify the report.

If you do not change any of these settings, the program uses the initial values assigned by the program.

3. After making any desired changes, select **P**rint to print the report.

The program asks if you want to preview the report on the screen. (See the instructions at the beginning of this unit if you want to preview the report.)

4. Type **Y** or **N** depending on whether or not you want to preview the report.

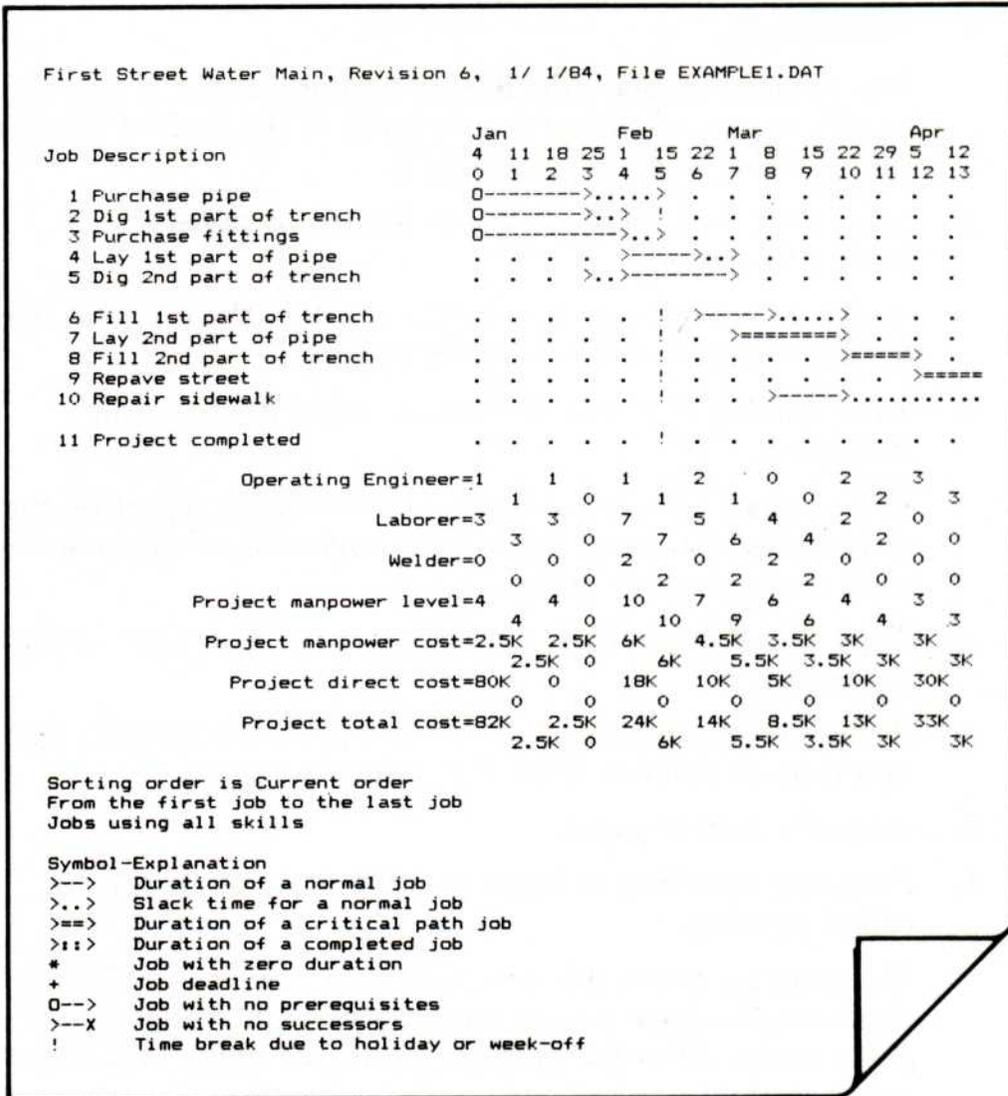
If you previewed all or part of the report, the program asks if you want to print it. Type **Y** to print the report.

5. Align the printer paper.

6. Press any letter key to begin printing or press **ESC** to cancel printing.

The program prints the report on your printer or in a disk file depending on how you set the `Filename` option in the Printer Setup menu. After the program prints the report, the Reports menu appears.

Figure 4-15 shows the sample Schedule Graph. Notice that the report contains the full job name rather than the abbreviated one used in the Schedule menu. It also contains all the cost and manpower figures. At the bottom is a legend explaining the symbols used in the schedule. (The program automatically inserts a blank line after every fifth job; you cannot delete this blank line.)



037-055

Figure 4-15. Sample Schedule Graph

## PRINTING ALL THE REPORTS

The All option prints all four reports. If you want to customize the reports, you must do it with the individual options before selecting **All**. You cannot select different options for each report. For example, if you select a sequence with the Order option for the Job Description Report, it applies to the Tabular Job Report and the Schedule Graph. This option does not let you preview the reports; however, you can align the printer paper before the printing begins.

---

---

## CHAPTER 5

# Reviewing Program Options

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This chapter contains an alphabetic listing of all program options. If you have a question about a particular aspect of the program, you can quickly find concise descriptions of all options in this chapter.

An option is a one- or two-word name in the menu (the lower portion of the screen). To select an option, highlight it with the cursor and press , or type the initial letter of the option. Some options take you to other menus, and other options allow you to enter data.

The flowchart in Figure 5-1 shows the relationship between menus within the program. It can help you to understand the structure of the program and to locate a specific option.

CHAPTER 2

THE HISTORY OF THE UNITED STATES

The history of the United States is a complex and multifaceted story that spans centuries and continents. It is a story of exploration, discovery, and the pursuit of a better life for all.

The early years of the United States were marked by the struggles of the founding fathers to create a new nation. They faced numerous challenges, including the threat of foreign invasion and the need to establish a stable government.

Over time, the United States has grown from a small collection of colonies to a global superpower. This growth has been driven by a combination of factors, including technological innovation, economic expansion, and a strong sense of national identity.

Today, the United States continues to play a leading role in the world. It is a country of diverse people and cultures, united by a common history and a shared vision of the future.

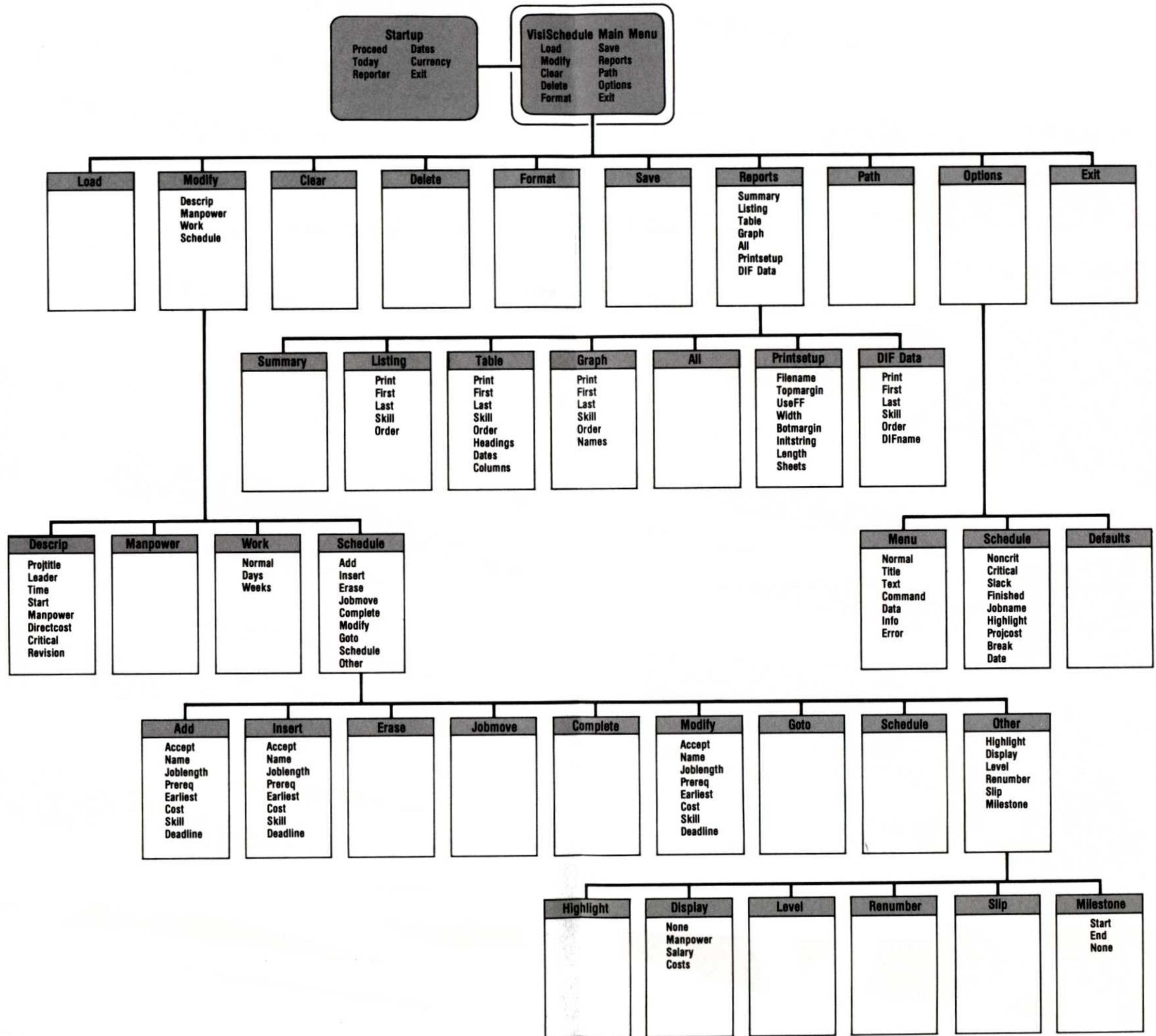


Figure 5-1. VisiSchedule® Menu Flow



### Accept—Job Specification Menu

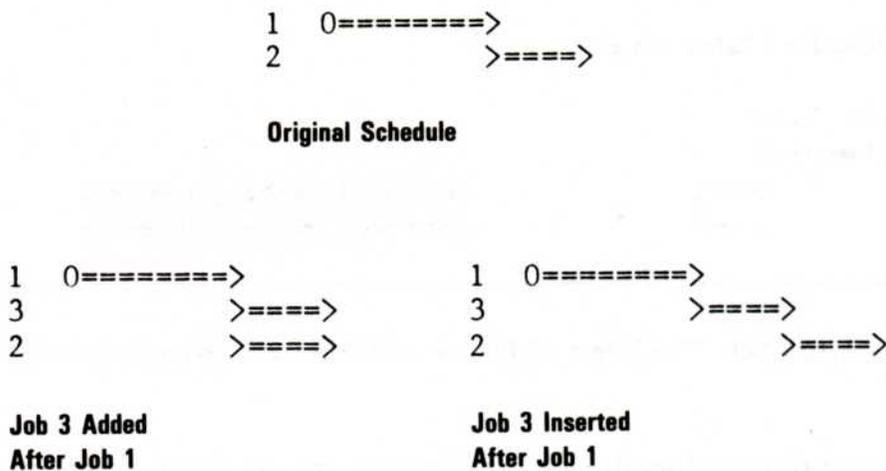
The Accept option enters into the schedule graph the changes you made with the other options in the Job Specification menu. The project schedule does not change until you select the Accept option. You can cancel the additions or changes by selecting the Quit option. The Accept and Quit options return you to the Schedule menu.

### Add—Schedule Menu

The Add option lets you add a job to the job list. The option takes you to the Job Location menu, where you specify the new job's location in the schedule.

This option does not affect the scheduling of any other job in the project; it simply adds a job to the list and sets its prerequisites according to whether it is added before or after another job.

Compare Add with the Insert option. The Insert option inserts a job into the job sequence and affects the scheduling of later jobs in the sequence. Be sure you use the correct option when adding (or inserting) a job. Figure 5-2 shows the relationship between the two options.



007-003

Figure 5-2. Comparison of Add and Insert Options

After you select the Add option, the program displays the Job Location menu. With this menu, you enter a job number and specify whether the new job is to be located before or after it.

Adding a job establishes the prerequisites in one of two ways:

- If you add job 3 *after* job X, job 3's prerequisite is job X.
- If you add job 3 *before* job X, job 3's prerequisites are the same as job X's prerequisites.

Figure 5-3 shows the difference between the initial prerequisite values when *Before* or *After* are used. Remember that you can always manually change prerequisites by selecting *Modify* and changing the *Prereq* option.

---

**Initial Job List**

```
1 0-->..>
2 0=====>
3          >==X          Job 3 has 1 and 2 as prerequisites
```

**Adding Job 4 After Job 2**

```
1 0-->..>
2 0=====>
4          >==X          Job 4 has 2 as a prerequisite
3          >==X          Job 3 has 1 and 2 as prerequisites
```

**Adding Job 4 Before Job 3**

```
1 0-->..>
2 0=====>
4          >==X          Job 4 has 1 and 2 as prerequisites
3          >==X          Job 3 has 1 and 2 as prerequisites
```

---

037-058

**Figure 5-3.** The Effect of *Before* and *After* on Prerequisites during Add

After the job location is determined, the program displays the Job Specification menu. With this menu, you enter the job name, job length, prerequisites, earliest start date, direct cost, skills used, and deadline.

If you have just erased a job, the values for the options in the Job Specification menu are unchanged when you add or insert the next job. So, instead of moving a job, you can erase it and then add or insert it at the new location to have the prerequisites automatically assigned.

### **After—Job Location Menu**

The **After** option places the selected job after the target location. The **Job** option identifies the target location. Refer to the **Add** and **Insert** options for information on prerequisites.

### **All—Reports Menu**

The **All** option prints three reports and the schedule graph. With this option you cannot preview the reports. Because the **All** option bypasses the **Report Options** menu, you cannot define any new limits for the reports, such as first job and last job. The program uses the limits that were last defined for each report. To make any changes, select the individual reports and set the limits. The limits that are shared between reports can have only one setting.

### **Before—Job Location Menu**

The **Before** option places the selected job before the target location. The **Job** option identifies the target location. Refer to the **Add** and **Insert** options for information on prerequisites.

### **Botmargin—Printer Setup Menu**

The **Botmargin** option sets the number of blank lines at the bottom of each report page. If you do not specify a number, the program uses 3 blank lines. The bottom margin must be a number between 0 and the page length, minus the top margin, minus 12. For example, if the top margin is 3 and the length is 66, the maximum bottom margin is 51 (66-3-12).

The program places the page number, if any, on the line above the bottom margin.

### **Break—Schedule Display Options Menu**

The **Break** option sets the display color of breaks in a schedule. After you select **Break**, press any of the four arrow keys to move the cursor to the desired color. If you want that item to blink or flash, type **B**. Typing **B** alternately turns the blinking feature on or off. After you select the desired setting, press , or you can press  to cancel the option.

### **Clear—Main Menu**

The **Clear** option erases the project file from memory. If the project was modified and was not saved on disk, the program asks if you are sure you want to clear memory. If you type **Y**, the project, including the changes you made, is erased. A response of **N** cancels the **Clear** option. You must clear memory before starting a new project.

### **Columns—Report Options Menu**

The **Columns** option specifies the items to be included in the Tabular Job Report. If you make no choice, the program includes the job number and the job name.

This option displays a list of all the items you can include in the report and the number of character spaces they require. Table 5-1 lists the items and their sizes with a description of each one.

The top of the screen shows the maximum report width that is set and totals the amount of space your selections will use. You should not select options that require more space than the current printer width. You can change the width with the **Width** option in the **Printer Setup** menu.

**Table 5-1.** Column Options

Name	Size	Description
Costs	20	The total direct costs and manpower costs.
Deadline	10	The dates for all deadlines set. If no deadline is set, the column is left blank.
Earliest start	10	The earliest possible start date. If no earliest start date is set, the column is left blank.
Early start	20	The start date based on prerequisites unless changed with the Level, Schedule, or Earliest options.
Job length	10	The number of time units scheduled and the number of time units completed.
Job name	5-30	The name you give to each job. The column width is equal to the number of characters in the largest job name in the project. The minimum is 5 and maximum is 30.
Job number	4	The number assigned by the program.
Late finish	20	The latest possible finish date without delaying the project.
Manpower levels	55	The number of workers needed for each job for each of the nine skill levels.
Milestones	20	The dates for the defined milestones. The milestone's position in the job (Start or Finish) is displayed for jobs with a job length of one time unit or more. If Job name, Job number, and Milestones are the only items selected, jobs without defined milestones are not included in the report.
Number of successors	5	The number of jobs for which this job is a prerequisite.
Prerequisites	40	The job numbers that are prerequisite to this job.
Scheduled start	10	The scheduled start date if different from the early start date. The column is left blank if no schedule date has been set with the Schedule or Level options.
Slack time	10	The number of total and free slack time units for each job.

### Command—Menu Display Options Menu

The **Command** option sets the color of a selected command (the cursor as it appears on the screen menus). After you select **Command**, press any of the four arrow keys to move the cursor to the desired color. If you want that item to blink or flash, type **B**. Typing **B** alternately turns the blinking feature on or off. After you select the desired setting, press **↵**, or you can press **ESC** to cancel the option.

### Complete—Schedule Menu

The **Complete** option marks all or part of a job as completed. A completed job is shown with colons.

You cannot complete a job unless you mark its prerequisites as completed; you use the **Modify** option to change the prerequisites.

The **Complete** option first prompts for a job number, then for the number of weeks (or days) of work that are completed. The display also shows the job's duration. You can enter any value less than the duration to mark a job as partially completed. If you enter a value greater than the duration, the program uses the duration value, and the job is marked as completed.

If you select a job that is completed, the **Complete** option gives you the opportunity to uncomplete it. Type **Y** to remove the colons that mark the job as completed. You cannot uncomplete a job that is a prerequisite for a job that is also completed; you must uncomplete the successor first.

If you want to change the duration of a completed job, you must first uncomplete the job. The program does not allow you to modify a completed job.

### Cost—Job Specification Menu

The **Cost** option contains the direct cost associated with a job. The prompt specifies whether the cost is to be entered in dollars (\$), thousands of dollars (K\$), or millions of dollars (M\$), as you defined in the **Directcost** option of the **Project Description** menu.

### Costs—Display Menu

The **Costs** option displays across the bottom of the schedule the total of all direct job costs for each time period. Direct costs are defined as any costs other than for manpower. The label for these costs reads **Direct cost** and specifies whether the cost units are dollars (\$), thousands of dollars (K\$), or millions of dollars (M\$).

You can remove the costs by returning to the **Display** menu and selecting **None** or another display option.

### Critical—Project Description Menu

The **Critical** option specifies whether the critical path will be shown for the project. Type **Y** to show critical path jobs and slack times. Type **N** to display critical and noncritical jobs with the same symbol. This option is initially set to YES.

### Critical—Schedule Display Options Menu

The **Critical** option sets the display color of critical jobs in a schedule. After you select **Critical**, press any of the four arrow keys to move the cursor to the desired color. If you want that item to blink or flash, type **B**. Typing **B** alternately turns the blinking feature on or off. After you select the desired setting, press , or you can press  to cancel the option.

### Currency—Startup Menu

The **Currency** option sets the symbol that precedes all monetary values. The program was written in the United States and sets the dollar sign (\$) as the initial symbol. If you change the currency symbol, the new symbol replaces \$ throughout the program, even in files that were previously entered and saved on disk.

### Data—Menu Display Options Menu

The **Data** option sets the color of data or information that you enter as you type it and as it appears in status areas on the screen. After you select **Data**, press any of the four arrow keys to move the cursor to the desired color. If you want that item to blink or flash, type **B**. Typing **B** alternately turns the blinking feature on or off. After you select the desired setting, press , or you can press  to cancel the option.

### Date—Schedule Display Options Menu

The **Date** option sets the display color of the date line in a schedule. After you select **Date**, press any of the four arrow keys to move the cursor to the desired color. If you want that item to blink or flash, type **B**. Typing **B** alternately turns the blinking feature on or off. After you select the desired setting, press , or you can press  to cancel the option.

### Dates—Report Options Menu

The **Dates** option sets the format for displaying dates in the Tabular Job Report. Dates can be displayed either in the current format (mm/dd/yy or dd/mm/yy) or as a week or day number. Type **Y** to display full dates, and type **N** to display the time-unit number.

### Dates—Startup Menu

The **Dates** option sets the format for entering and displaying dates to the month/day/year or the day/month/year format. The initial setting is MM/DD/YY. If you change the format, all existing dates are automatically converted to the selected format.

### Days—Workweek Menu

The **Days** option specifies the special nonworking days in the project's schedule. Regular nonworking days such as weekends, as specified with the **Normal** option, are not included in the **Days** option holiday list. You can use the **Days** option only if you set the **Time** option to **Days** in the **Project Description** menu. The program automatically creates a list of six holidays:

- New Year's Day (January 1)
- Memorial Day (last Monday in May)
- Independence Day (July 4)
- Labor Day (first Monday in September)
- Thanksgiving Day (fourth Thursday in November)
- Christmas Day (December 25)

The list begins with the first holiday that occurs in the same month as the date set in the **Today** option in the **Startup** menu.

To add a date to this list, type the date and press . To remove a date from the list, type the date as shown in the list, and press . Pressing  alternately adds and removes a given date from the list. Refer to the **Today** option later in this section for a description of the different ways to enter dates.

To exit the **Days** option after the holiday list is correct, press **ESC**.

### Deadline—Job Specification Menu

The **Deadline** option sets a deadline for a job. A deadline is displayed on the screen or in a report as a plus sign (+). The deadline has no effect on scheduling. It is shown on the schedule graph as information only.

The option prompts for a day or week number for the deadline. The initial value is 0. To remove a deadline, set the day or week number to 0.

Deadlines that occur after the end of a project do not appear on printed reports, but they do appear on the screen in the schedule display.

### Defaults—Display Options Menu

The Defaults option returns the last set of colors before you made any changes. If, after making changes in the Display Options menu, you decide you prefer to use the previous settings, then select the Defaults option. Each time you return to the Main menu and choose to keep a new set of colors, the Defaults option changes accordingly.

If you change the color settings, be sure to select the Exit option (as recommended in this manual) when you are finished using the program. Any changes that you make with the Display Options menu will not be saved on disk unless you select the Exit option before turning off your computer.

### Delete—Main Menu

The Delete option erases project files from a data or hard disk. You can select as many files as you want to delete. To mark a file for deletion, move the cursor to the name and press the space bar to mark the name with an asterisk (\*). When you press , you are given the opportunity to delete all marked files. Before each file is actually erased from the disk, you must confirm each choice. The file is not erased until you type Y. Typing N or pressing  cancels the Delete option for that file.

If you have more than 16 files on the disk, the [More] option takes you to the next screen, which shows you the next 16 files. File names ending with .BAK are the second-to-last revised versions of .DAT files. If your disk is full, you may want to delete some of the backup copies of your files to make room for other files.

### Descrip—Modify Menu

The Descrip option takes you to the Project Description menu, where you define options that relate to the whole project. The program displays the entries for these options at the top of the screen:

- The 1- to 30-character project title (Projtitle).
- The 1- to 24-character project leader's name (Leader).
- The time in days or weeks (Time).
- The project's start date (Start).
- The units of money for manpower costs: dollars, thousands of dollars, or millions of dollars (Manpower).
- The units of money for direct costs: units, thousands of units, or millions of units (Directcost).
- Whether or not the critical path is displayed (Critical).
- The revision number of the current project file (Revision).

Refer to each option for details on its use.

**DIF Data—Reports Menu**

The DIF data option displays the Report Options menu and the current options defined for the DIF™ Data Report. The DIF Data Report takes the project's manpower and cost information that you specify and writes it onto a separate file on disk. A file written in the DIF format can be read by some other programs. Instructions for loading the DIF Data Report into the VisiCalc® program are provided in Appendix B, "Using VisiSchedule Data with Other DIF Software."

From the Report Options menu, you can record the report on disk (Print), return to the Reports menu (Quit), or specify:

- The first job to be included in the report (First).
- The last job to be included in the report (Last).
- The skill categories to be included in the report (Skill).
- The order in which the jobs are to be listed (Order).
- The disk file name under which the report will be stored (DIF name).

Refer to each option for details on its use.

**DIF Name—Report Options Menu**

The DIF name option sets the disk file name for the DIF Data Report. The program assumes the project's disk file name with .DAT changed to .DIF.

You can enter another name for the DIF name. The file name must be no more than eight characters long. Then the program adds .DIF. Allowable characters are different from those allowed for other disk file names: A-Z (lowercase letters are automatically changed to uppercase), 0-9, \$ (dollar sign), & (ampersand), # (number sign), @ (at or each sign), ! (exclamation point), % (percent sign), ' (left single quote sign), ' (right single quote sign), ( (left parenthesis), ) (right parenthesis), - (hyphen), \_ (underscore), < (less-than sign), > (greater-than sign), { (left bracket), } (right bracket), \ (backslash), ^ (caret), ~ (tilde), | (vertical bar).

### Directcost—Project Description Menu

The **Directcost** option defines the value of one monetary unit for direct costs. Direct costs are defined as any costs other than those for manpower. In the rest of the program, you can enter up to four nonnegative integers for direct costs. Setting this option correctly enables you to enter the proper values later. You can choose one of three units:

- \$ (units) allows a range of 0 to \$9,999 in increments of 1 unit.
- K\$ (thousands of units) allows a range of 0 to \$9,999,000 in increments of 1,000 units.
- M\$ (millions of units) allows a range of 0 to \$9,999,000,000 in increments of 1,000,000 units.

If you change the direct cost units, the values in the project file are not changed accordingly; you must change them. For example, if the costs are currently entered as K\$ and you have a job with an estimate of 1,000K\$ (\$1,000,000), the estimate becomes 1,000M\$ (\$1,000,000,000) if you change the **Directcost** option to M\$. If you make this change, you should also change the value in the project data to 1M\$ (\$1,000,000).

### Display—Schedule Menu Extension

The **Display** option displays cost and manpower information at the bottom of the schedule graph, just above the menu.

The option takes you to the **Display** menu, where you can choose to display:

- The number of workers needed for each day or week in the schedule (**Manpower**). You can display figures for one skill category or for the totals of all skill categories.
- The salary costs for each day or week (**Salary**). You can display costs for one skill category or for the totals of all skill categories.
- The direct costs for each day or week (**Costs**).

You can select one of the preceding items or none of them. You cannot display more than one item on the screen. However, all selections do appear on the printed schedule graph except salary costs relating to only one skill. The values are staggered under each time unit to make them easier to read.

To turn off the current manpower, salary, or cost display, select **None** from the **Display** menu. The **Quit** option returns you to the **Schedule** menu extension without changing the display area.

### Earliest—Job Specification Menu

The Earliest option specifies the earliest possible start date for a job. The initial date for this option is the start date of the project. You usually use the Earliest option when a job has no prerequisites, but cannot begin until a certain day or week.

The option asks for the time unit number of the earliest start date. To remove an earliest start date, type **0**.

### End—Milestone Menu

The End option marks a milestone at the end of a job. Milestones do not show on the schedule graph. Milestone dates can be printed in the Tabular Job Report, or jobs can be sorted by milestone date. The End option removes the Start milestone if one is set. After you select End, the program returns you to the Schedule menu extension.

### Erase—Schedule Menu

The Erase option removes a job from the schedule. The program asks you to enter a job number. To cancel the option, press **ESC** instead of entering a job number.

The erased job's prerequisites become the prerequisites of the erased job's successors, as shown in Figure 5-4.

---

#### Before Erase

1	0-->.>	
2	0====>	
3	>====>	<b>Job 3 has 1 and 2 as prerequisites</b>
4	>====>	<b>Job 4 has 3 as a prerequisite</b>
5	>-->	<b>Job 5 has 3 as a prerequisite</b>

#### After Job 3 is Erased

1	0-->.>	<b>Job 1 has no prerequisites</b>
2	0====>	<b>Job 2 has no prerequisites</b>
4	>====>	<b>Job 4 has 1 and 2 as prerequisites</b>
5	>-->	<b>Job 5 has 1 and 2 as prerequisites</b>

Figure 5-4. The Effect of Erase on Prerequisites

If you have just erased a job, the values for the options in the Job Specification menu are unchanged when you add or insert the next job. So, instead of moving a job, you can erase it and then add or insert it at the new location to have the prerequisites automatically assigned.

### Error—Menu Display Options Menu

The Error option sets the color of any error messages that appear on the screen. After you select Error, press any of the four arrow keys to move the cursor to the desired color. If you want that item to blink or flash, type **B**. Typing **B** alternately turns the blinking feature on or off. After you select the desired setting, press **↵**, or you can press **ESC** to cancel the option.

### Exit—Main Menu

It is recommended that you always use the Exit option to exit the program. If you have a changed project file in memory, the program gives you the chance to save it before exiting. The program saves the following information on the VisiSchedule program disk, or on your hard disk, when you select the Exit option:

- The name of the last file you loaded or saved, whichever occurred last.
- The current path name.
- The reporter's name.
- The date format.
- The currency symbol.
- The latest color settings selected.
- The printer setup information.

If you exit the program by simply turning off the power switch, this housekeeping information is not saved. More importantly, if you do not use the Exit option, you are not reminded to save your current file with its changes.

### Exit—Startup Menu

The Exit option exits the VisiSchedule program. You can restart the program by typing **vsc** and pressing **↵**.

**Filename—Printer Setup Menu**

The **Filename** option specifies a printer or a disk file name as the destination for reports. To send reports to a printer, type the name of the printer device and press . For more detail on printer device names, see Unit 2, "Identifying Your Printer" in Chapter 4.

To send reports to a disk file, type the name of the file and press . You will find this feature useful if you want to create a text file that can be used with other programs. The file name must be no more than eight characters long. Then the program adds the suffix **.TXT**. Allowable characters are the same as for other disk file names: letters (A-Z), numbers (0-9), and underscores (**\_**). Lowercase letters are automatically converted to uppercase. The names of printer devices cannot be used as disk file names. If you enter one of them, the program puts a colon after the name and sends the output to the printer, not to the disk.

**Finished—Schedule Display Options Menu**

The **Finished** option sets the display color of finished or completed jobs in a schedule. After you select **Finished**, press any of the four arrow keys to move the cursor to the desired color. If you want that item to blink or flash, type **B**. Typing **B** alternately turns the blinking feature on or off. After you select the desired setting, press , or you can press **ESC** to cancel the option.

**First—Report Options Menu**

The **First** option sets the job number of the first job to be included in the report. The initial value of **0** begins the report with the first job in the list. If you enter a job number for the **First** option, job numbers smaller than the number you enter are not included in the reports. If the job number you enter does not exist in the project file, you will receive an error message.

If you request that the list be sorted, the sort is done before the **First** and **Last** jobs are selected.

**Format—Main Menu**

The **Format** option, in the **Main** menu, prepares a floppy disk so it can be used to hold **VisiSchedule** project data.

If you are running the program from your hard disk and have only one floppy drive, a message instructs you to insert a disk in the floppy drive. If you are running the program from a floppy drive, the program asks you **Format which drive?** and prompts you with the possible drive names. Specify the desired drive and press . The program then instructs you to insert the disk to be formatted in the specified drive and asks if you are **Ready to format the disk?** Type **Y** to continue the formatting process, or press  to cancel it. The **Format** option erases all data on the disk.

If you select **Format** when a project file is in the computer memory, **Do you wish to CLEAR memory?** appears on the screen. Type **N** to cancel formatting and return to the **Main** menu where you can save the current project in memory. Type **Y** to clear the file from memory and continue with the format operation.

### **Goto—Schedule Menu**

The **Goto** option displays the schedule beginning with a specific job. The job you select is displayed at the top of the schedule display, and the time line begins with the start of that job.

Instead of selecting **Goto** and entering the number of the first job, you can press the **HOME** key to do the same. Pressing the **END** key is equivalent to selecting **Goto** and entering the number of the last job in the schedule.

The **F9**, **F10**, **PGUP**, and **PGDN** keys are scrolling keys, which move the schedule under the time line. Refer to the **Schedule** option for more information.

### **Graph—Reports Menu**

The **Graph** option displays the **Report Options** menu and the current options defined for the schedule graph. The **Report Options** menu lets you print the schedule graph (**Print**), return to the **Reports** menu (**Quit**), or specify one of the following:

- The first job to be included in the printed schedule (**First**).
- The last job to be included in the printed schedule (**Last**).
- The skill categories to be included in the printed schedule (**Skill**).
- The order in which the jobs are to be listed (**Order**).
- Whether job and skill names are to be printed on each graph page (**Names**).

Refer to the individual options for details on their uses.

### **Headings—Report Options Menu**

The **Headings** option specifies whether the page headings, column headings, and page number are to appear on the **Tabular Job Report**. Type **Y** to include headings, and **N** to remove them. The **Headings** option allows you to strip extra data from a report. Removing headings makes it easier for other programs to read the report data. You should always set this option to **N** when collecting data for use by other programs.

**Highlight—Schedule Display Options Menu**

The Highlight option sets the color assigned to the highlighting feature of the Schedule menu extension. After you select Highlight, press any of the four arrow keys to move the cursor to the desired color. If you want that item to blink or flash, type **B**. Typing **B** alternately turns the blinking feature on or off. After you select the desired setting, press **↵**, or you can press **ESC** to cancel the option.

**Highlight—Schedule Menu Extension**

The Highlight option displays the job you select, its prerequisites, and its successors in a color that is either assigned by the program or set by you in the Schedule Display Options menu. (If you are using a monochrome monitor, highlighting appears in inverse video—dark characters on a light background). The selected job number and the job name are highlighted. Only the job names of the prerequisites and successors are highlighted.

The program asks for the number of the job you want to highlight. To cancel highlighting, select Highlight and type **0**.

**Info—Menu Display Options Menu**

The Info option sets the color of the two informational lines that appear above and below the screen menus. (The top informational line shows the long prompt.) After you select Info, press any of the four arrow keys to move the cursor to the desired color. If you want that item to blink or flash, type **B**. Typing **B** alternately turns the blinking feature on or off. After you select the desired setting, press **↵**, or you can press **ESC** to cancel the option.

**Initstring—Printer Setup Menu**

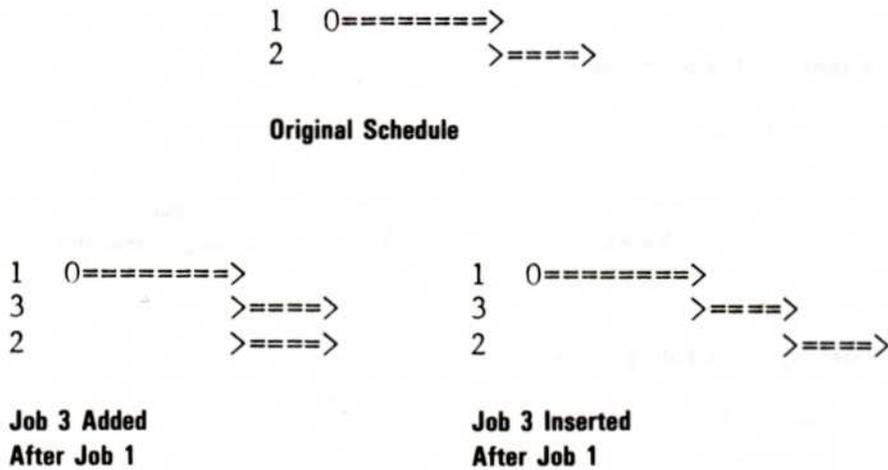
The Initstring option, which is short for *initial setup string*, lets you enter a printer setup string, which enables your printer to print in special modes such as double spaced, compressed, or double strike. Refer to your printer manual for the setup strings your printer requires for special printing modes. Or refer to "Printer Information," in the *Getting Started* guide for further detail on how to enter setup strings and for compressed mode setup strings (more characters per inch) that have been tested successfully with the listed printers.

A setup string must be entered as a series of decimal values separated by commas. The numbers are the decimal equivalent of the string in the ASCII character set. You can enter a maximum of eight numbers. To remove the setup string, type **0** for the Initstring option.

## Insert—Schedule Menu

The Insert option lets you insert a job into the job sequence. This option affects the scheduling of its successors in the project.

Compare the Insert with the Add option, which adds a job into the job list without affecting the schedules of the jobs that follow. Be sure you use the correct option when inserting (or adding) a job. Figure 5-5 shows the relationship between the two options.



007-003

Figure 5-5. Comparison of Add and Insert Options

The Add option first displays the Job Location menu. With this menu, you select a job number and specify whether the new job is to be located before or after it.

Inserting a job establishes the prerequisites in one of two ways:

- If you insert job 3 *after* job X, one of job 3's prerequisites is job X. Job 3 replaces job X in every prerequisite list in the project.
- If you insert job 3 *before* job X, job 3 assumes all of job X's prerequisites. Job X has only job 3 as its prerequisite.

Figure 5-6 shows the difference between the initial prerequisite values when Before or After are used. Remember that you can always change prerequisites by selecting Modify and changing the Prereq option.

---

#### Initial Job List

```
1 0-->..>
2 0====>
3          >==X          Job 3 has 1 and 2 as prerequisites
```

#### Inserting Job 4 After Job 2

```
1 0-->.....>
2 0====>
4          >==>          Job 4 has 2 as a prerequisite
3          >==X          Job 3 has 1 and 4 as prerequisites
```

#### Inserting Job 4 Before Job 3

```
1 0-->..>
2 0====>
4          >==>          Job 4 has 1 and 2 as prerequisites
3          >==X          Job 3 has 4 as a prerequisite
```

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**Figure 5-6.** The Effect of Before and After on Prerequisites during Insert

After the job location is determined, the program displays the Job Specification menu. With this menu, you can enter the job name, job length, prerequisites, early start date, direct cost, skills used, and deadline.

If you have just erased a job, the values for the options in the Job Specification menu are unchanged when you add or insert the next job. So, instead of moving a job, you can erase it and then add or insert it at the new location to have the prerequisites automatically assigned.

#### Job—Job Location Menu

The Job option specifies the target location for a job. The added, inserted, or moved job will be located before or after this location in the list. This option prompts for a job number.

### **Joblength—Job Specification Menu**

The Joblength option specifies the duration of the job. The duration is recorded as a number of time units, either days or weeks.

Fractional durations are not allowed. If you find that you want to enter durations as portions of weeks, you should change the time unit to days.

A job of 0 duration is allowed. Jobs with a duration are shown as arrows, and jobs of 0 duration are shown as a single character (\* or X). The maximum job length is 999 time units.

### **Jobmove—Schedule Menu**

The Jobmove option lets you move a job to a different position in the list. The option prompts for the job number. Then the Job Location menu is displayed. You enter a target job number and specify whether the job being moved is to be placed before or after the target job.

Moving a job in the list does not change its number, prerequisites, or successors. It changes only its location in the list.

### **Jobname—Schedule Display Options Menu**

The Jobname option sets the display color of the names of the jobs in a schedule. After you select Jobname, press any of the four arrow keys to move the cursor to the desired color. If you want that item to blink or flash, type **B**. Typing **B** alternately turns the blinking feature on or off. After you select the desired setting, press , or you can press  to cancel the option.

### **Last—Report Options Menu**

The Last option sets the job number of the last job to be included in the report. The initial value is 0, which specifies the last job in the list. If you enter a number for the Last option, job numbers greater than the number you enter are not included in the reports. If the job number you enter does not exist in the project file, you receive an error message.

If you request that the list be sorted, the sort is done before the First and Last jobs are selected.

### **Leader—Project Description Menu**

The Leader option specifies the name of the project leader. You cannot enter more than 24 characters. The name appears on the Project Description Report.

**Length—Printer Setup Menu**

The Length option sets the printer page length. The initial value is 66, which is the setting for an 11-inch page printed at 6 lines per inch. The length (plus top and bottom margins) must be between 12 and 255. For example, if each margin is 3, the minimum length is 18 (12 + 3 + 3).

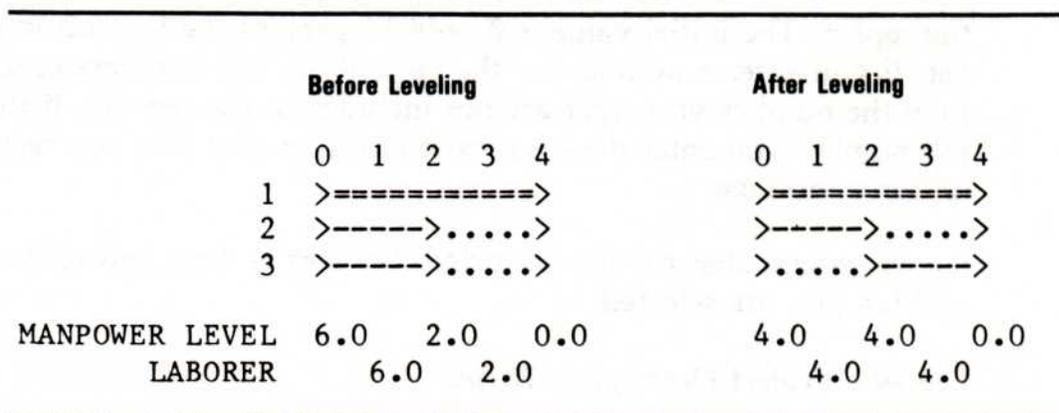
If your printer uses form feeds and you set the Formfeed option to YES, set the Length to a value less than the physical page length. If you do not set the length as instructed here, you may get an occasional blank page in a report.

**Level—Schedule Menu Extension**

The Level option adjusts jobs within their slack times to distribute workers evenly. This option can operate only with a project that has slack time. You can also use the Schedule option to adjust the manpower levels on critical and noncritical jobs.

Leveling operates on a single skill level. To level more than one skill level, you must use the option individually for each skill level. Be aware that leveling for a second skill level can undo the leveling for the first skill level. Leveling may change any start dates you have entered with the Schedule option.

Each of the three jobs in Figure 5-7 requires two laborers. Before leveling, jobs 2 and 3 are scheduled to begin on the same date. As a result, six laborers are needed for the first two weeks, then only two for the next two weeks. Leveling moved job 3 within its slack time to begin after job 2. The manpower peaks were leveled so four laborers could be hired for four weeks each without delaying the completion of the project.



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Figure 5-7. Leveling

To cancel leveling, select the Level option and type 0 for the skill level. Then you can cancel any scheduling you have done with the Schedule option of the Schedule menu.

### Listing—Reports Menu

The Listing option displays the Report Options menu and the current options defined for the report. With the Report Options menu, you can print the Job Description Report (Print), return to the Reports menu (Quit), or specify one of the following:

- The first job to be included in the printed report (First).
- The last job to be included in the printed report (Last).
- The skill categories to be included in the printed report (Skill).
- The order in which the jobs are to be listed (Order).

Refer to each option for details on its use.

### Load—Main Menu

The Load option copies a project file from a floppy disk or from the hard disk into the computer memory. Then you can display the project, modify it, and print reports from it. The file is never lost from the disk until you specifically delete it with the Delete option.

This option lists all project files contained in the location designated by the Path option. To select a project file, move the cursor to the file name and press . The program returns to the Main menu. The file name, project title, size, and changed status are listed in the Project Status area.

If you decide not to load a file from the list that is displayed, you can select [None] to return to the Main menu. If you have more than 16 files on the disk, select the [More] option to reach the next screen of files.

After all the files whose names end with .DAT have been displayed, select the [".BAK" files] option to reach the backup copies of those files. File names ending with .BAK are the second-to-last revised versions of corresponding .DAT files. You will need to load .BAK files only on rare occasions. If you inadvertently save a changed file under the same name as the old version, but realize you *do not* want to erase it, you can retrieve the old version by loading the .BAK version of the file.

If you select Load when another project file is already in the computer memory, Do you wish to CLEAR memory? appears on the screen. Type **N** to cancel loading and return to the Main menu, where you can save the current project in memory. Type **Y** to clear the file from memory and continue with the load operation.

### Manpower—Display Menu

The Manpower option displays the number of workers required for each time period. You can display figures for one skill level or the totals of all skill levels. The label for these levels is the name of the skill category or Manpower total.

The option asks for a skill category (1 to 9). To display the total of all skill categories, type **0**.

You can remove the manpower display by returning to the Display menu and selecting None or another display option.

### Manpower—Modify Menu

The Manpower option displays the occupation list. From there, you can select each of nine skill categories. Each skill category takes you to the Occupation menu, where you enter the skill level name (Occupation) and salary level (Salary). The Quit option takes you back to the occupation list, where you can either select another skill level or return to the Modify menu ([Done]).

### Manpower—Project Description Menu

The Manpower option defines the value of one monetary unit for manpower costs. Later, you enter from one to four nonnegative integers for manpower costs. Setting this option to suit your needs enables you to enter values later that accurately account for your manpower costs. You have three units to choose from:

- \$ (units) allows a range of 0 to \$9,999 in increments of 1 unit.
- K\$ (thousands of units) allows a range of 0 to \$9,999,000 in increments of 1,000 units.
- M\$ (millions of units) allows a range of 0 to \$9,999,000,000 in increments of 1,000,000 units.

If you change the manpower cost units, the values in the project file are not changed accordingly; you must change them. For example, if the salary is currently entered in \$ (dollars) and you have a skill with a salary of 1000\$ (\$1000), changing the Manpower option to K\$ changes the salary to \$1,000,000. If you make this change, you should change the value to 1K\$ (\$1000).

### Menu—Display Options Menu

The Menu option lets you change the color settings shown in the Menu Colors column of the Display Options menu. You can then select the Normal, Title, Menu text, Command, Data, Info, or Error options to change the respective settings. After making any desired changes, select **Quit** to return to the Display Options menu. Select **Quit** again to return to the Main menu.

If you have changed any color settings, the program asks you *Keep the new setup?* before returning to the Main menu. Type **Y** to use the new colors, or **N** to leave the colors unchanged.

### Menu Text—Menu Display Options Menu

The Menu text option sets the color of certain text or special messages that appear on the screen displays. After you select Menu text, press any of the four arrow keys to move the cursor to the desired color. If you want that item to blink or flash, type **B**. Typing **B** alternately turns the blinking feature on or off. After you select the desired setting, press , or you can press  to cancel the option.

### Milestone—Schedule Menu Extension

The Milestone option marks the beginning or ending of jobs as significant dates, or milestones. Milestones are not marked on the schedule, but they are recorded by the program. You can print a list of the project's milestones in the Tabular Job Report by selecting Milestones from the Columns list. You can also sort jobs by milestone date with the Order option.

The option prompts for a job number. Then it displays the Milestone menu. The Start and End options mark a milestone at the beginning or end of the job. The None option removes any existing milestones.

Only one milestone can be set for a job. If you set a milestone at the start or end of a job, you cancel the milestone when you choose the opposite setting. The Quit option returns you to the Schedule menu extension without adding or changing any milestones.

### Modify—Main Menu

The Modify option displays the Modify menu. The Modify menu contains options that take you to the following menus: Project Description, Manpower, Workweek, and Schedule. Use the Modify option to reach all parts of the program except those related to printing reports and maintaining data.

### Modify—Schedule Menu

The Modify option lets you change all aspects of a job. The option first asks for the job number of the job you want to modify. You can enter a job number and press  to continue, or you can press  to cancel the option. If you continue, the program displays the Job Specification menu. From there, you can change the job name, duration, prerequisites, early start date, direct cost, manpower levels, and deadline date.

To leave the Job Specification menu, select Accept or Quit. The Accept option records the changes you make on the schedule graph. The Quit option cancels the changes.

### **Name—Job Specification Menu**

The Name option specifies a job name of up to 30 characters. When the name is displayed on the screen, you see only the first 12 characters. All 30 characters are printed on the reports.

### **Names—Report Options Menu**

The Names option specifies whether job and skill names are to be printed on all pages of a printed schedule or only on the first page. Type **Y** to print the names on every page. Type **N** when the pages must be taped together to show the whole schedule; this will reduce the amount of paper needed.

### **Noncrit—Schedule Display Options Menu**

The Noncrit option, which is short for *noncritical*, sets the display color of noncritical jobs in a schedule. After you select Noncrit, press any of the four arrow keys to move the cursor to the desired color. If you want that item to blink or flash, type **B**. Typing **B** alternately turns the blinking feature on or off. After you select the desired setting, press , or you can press  to cancel the option.

### **None—Display Menu**

The None option erases the manpower, salary, or cost information that is currently displayed. When you select None, the program returns you to the Schedule menu extension.

### **None—Milestone Menu**

The None option removes a milestone marked for a job. When you select None, the program returns you to the Schedule menu extension.

### **Normal—Menu Display Options Menu**

The Normal option sets the color of the option names on the screen menus. After you select Normal, press any of the four arrow keys to move the cursor to the desired color. If you want that item to blink or flash, type **B**. Typing **B** alternately turns the blinking feature on or off. After you select the desired setting, press , or you can press  to cancel the option.

### **Normal—Workweek Menu**

The Normal option sets the normal working week. You can use this option only if you set the Time option to Days in the Project Description menu.

This option displays a list of the days of the week, Sunday through Saturday. You select each working day by highlighting it and pressing the space bar. To accept the list of working days, press . The initial setting is for a five-day week, Monday through Friday.

### **Occupation—Occupation Menu**

The Occupation option specifies the name for the skill level you selected. You can enter up to 24 characters. The name you enter is used in all reports and screen displays that list manpower categories and costs. If you do not enter a name, the program uses Skill # n, where n is a digit from 1 through 9.

### **Options—Main Menu**

The Options option takes you to the Display Options menu, where you can set the menu display and schedule colors for your color monitor. Select this option only if you have both the required color card and color monitor, and want to change the current colors. This option has no effect if your system has a monochrome card installed or if the Monitor Status area is set to Monochrome options.

If you have changed any color settings, the program asks you Keep the new setup? before returning to the Main menu. Type **Y** to use the new colors, or **N** to leave the colors unchanged.

If you change the color settings, be sure to select the Exit option (as recommended in this manual) when you are finished using the program. Any changes that you make with the Display Options menu will not be saved on disk unless you select the Exit option before turning off your computer.

### **Order—Report Options Menu**

The Order option sets the sequence in which the jobs are sorted for a report. Table 5-2 lists and describes the available sequences.

**Table 5-2. Order Sort Sequences**

Order Item	Description
Current order	If no sorting has been done, the current order is used. Otherwise, the current order setting restores the file to the order it had when you were last in the Printout menu.
Deadline	Sorted by deadline date. Jobs without deadlines are printed before jobs with deadlines.
Duration	Sorted by job length from the shortest to the longest.
Earliest start	Sorted by earliest date on which the job can begin. If an earliest date has not been set, 0 (the start date) is used.
Early start	Sorted by early start date. The early start date differs from the scheduled start date if the slack time precedes the beginning of work.
Job name	Sorted in alphabetic order by job name.
Job number	Sorted in numeric order by job number.
Late finish	Sorted by late finish date. The late finish date is the last date that the job can finish without causing a project delay.
Milestones	Sorted by milestone date. If no milestone date has been set, the scheduled start date is used. If no scheduled start date has been set, the early start date is used.
Number of successors	Sorted by the number of successors a job has, from 0 to the maximum.
Scheduled start	Sorted by the scheduled start date set with the Schedule or Level options. If the scheduled start date was not set, the value is 0.
Slack time	Sorted by the amount of slack time for a job from 0 (critical jobs) to the maximum.
Slash tag	Sorted in ASCII order (numbers, letters, then underscores) by the portion of the name following the slash. Jobs with identical slash tags are ordered according to the first part of the name (before the slash).

**Other—Schedule Menu**

The Other option takes you to the Schedule menu extension. From there, you can use the Highlight, Display, Level, Renumber, Slip, or Milestone options. To return to the main portion of the Schedule menu, select the Quit option in the extension.

### Path—Main Menu

The Path option specifies the location in which project data will be saved or from which it will be loaded or deleted. The program asks you to enter a path name, which can be either a floppy or hard disk or a subdirectory on either disk.

For more specific information on path names, see the *Getting Started* guide.

### Prereq—Job Specification Menu

The Prereq option lists the jobs that must be completed before the job you are entering can be started. Refer to the Add and Insert options to see how these options assume prerequisites. The Prereq option lets you replace the prerequisites the program automatically sets.

The option prompts you to enter a list of the jobs, by number, that must be completed before the subject job can be started. The program displays the current list of prerequisites, if any. The job numbers in the prerequisite list must be separated by commas. To remove all prerequisites, type 0. If you enter a zero as part of a string of prerequisites, the string is revised to contain only a zero.

A job can have no more than nine prerequisites. If a job depends on more than nine others, you can create two other fictitious jobs of zero duration and split the prerequisites between them. Then the real job will have the two zero-duration jobs as prerequisites.

### Print—Report Options Menu

The Print option prints the current report according to the other options you select in the Report Options menu. Before printing any one of the reports, you can preview the report on the screen. Type Y to preview the report, and type N to print the report immediately.

When you preview the report, press any letter key to scroll the report forward, line by line. Or you can press  to move the report forward a page at a time. If you have set the printed report width to more than 80 characters, the lines wrap on the screen, but print correctly on the printer. After you have scrolled through the entire report, the program prompts you to print the report. A response of Y prints the report, and N cancels it.

You can stop the previewing at any time by pressing . Then you can either print the report or return to the Reports menu.

**Printsetup—Printout Menu**

The Printsetup option displays the Printer Setup menu and a listing of the most recently entered printer setup values. With the Printer Setup menu you can specify:

- The name of the printer or file to which the report will be sent. Refer to Chapter 4, "Printing Reports," for more information.
- The page width in characters. The width must be in the range 79 through 255.
- The page length in lines. The length must be in the range 12 (plus top and bottom margins) through 255. For example, if the margins are both 3, the minimum length is 18 (12+3+3).
- The top and bottom margins in lines. The individual margins must be in the range 0 through page length minus the other margin minus 12. For example, if the top margin is 3 and the length is 66, the maximum bottom margin is 51 (66-3-12).
- Whether the printer uses continuous form paper or individual sheets.
- Whether the printer uses form feeds.
- Whether the printer uses automatic line feeds.
- A setup sequence if your printer requires one.

**Proceed—Startup Menu**

The Proceed option takes you to the Main menu. You can return to the Startup menu only by reloading the program, so Proceed accepts your settings for the following options:

- Today—date to show on reports.
- Reporter—name to show on reports.
- Dates—MM/DD/YY or DD/MM/YY format for data entry and reports.
- Currency—symbol to precede monetary values throughout the program.

**Projcost—Schedule Display Options Menu**

The Projcost option sets the color assigned to the display feature of the Schedule menu extension. After you select Projcost, press any of the four arrow keys to move the cursor to the desired color. If you want that item to blink or flash, type **B**. Typing **B** alternately turns the blinking feature on or off. After you select the desired setting, press **↵**, or you can press **ESC** to cancel the option.

**Projtitle—Project Description Menu**

The Projtitle option specifies a project title of up to 30 characters. The title appears on all program reports.

**Quit—Display Options Menu**

The Quit option returns you to the Main menu.

If you have changed any color settings, the program asks you Keep the new setup? before returning to the Main menu. Type **Y** to use the new colors, or **N** to leave the colors unchanged.

**Quit—Display Menu**

The Quit option returns you to the Schedule menu extension without changing the current display.

**Quit—Job Location Menu**

The Quit option cancels the Add, Insert, or Move option and returns you to the Schedule menu.

**Quit—Job Specification Menu**

The Quit option returns you to the Schedule menu without adding, inserting, or modifying a job.

**Quit—Milestone Menu**

The Quit option returns you to the Schedule menu extension.

**Quit—Modify Menu**

The Quit option returns you to the Main menu.

**Quit—Occupation Menu**

The Quit option returns you to the occupation list. The [Done] option in the occupation list returns you to the Modify menu.

**Quit—Printer Setup Menu**

The Quit option returns you to the Printout menu.

**Quit—Project Description Menu**

The Quit option returns you to the Modify menu.

**Quit—Report Options Menu**

The Quit option returns you to the Printout menu.

**Quit—Reports Menu**

The Quit option returns you to the Main menu.

### **Quit—Schedule Menu**

The **Quit** option returns you to the **Modify** menu if you are in the main portion of the **Schedule** menu. If you are in the **Schedule** menu extension, **Quit** returns you to the main **Schedule** menu.

### **Quit—Workweek Menu**

The **Quit** option returns you to the **Modify** menu.

### **Renumber—Schedule Menu Extension**

The **Renumber** option consecutively renumbers the project's jobs, starting with the job at the top of the list as job 1, the second job in the list as job 2, and so on to the last job.

Your job list will probably be out of numeric sequence after a session of adding, inserting, moving, and erasing jobs. Renumbering changes only two aspects of the jobs. It changes the job numbers, and it changes the prerequisite lists to reflect the job number changes. This preserves the project's prerequisites.

Renumbering is an irreversible process. For this reason, the program prompts you to confirm your intention to renumber after you select the option. Type **Y** to confirm the option, or **N** to cancel it.

### **Reporter—Startup Menu**

The **Reporter** option sets the name that is listed as the preparer of each report. You can enter up to 24 characters.

### **Reports—Main Menu**

The **Reports** option displays the **Reports** menu. From there you can print reports and extract manpower and cost information for transfer to another program.

### **Revision—Project Description Menu**

The **Revision** option contains the revision number for the project. When you create a project, the revision number is automatically set to 0. Each time you make a change to the project and save it on disk, the program increases the revision number by one. With this option, you can set the revision number to any value you wish, up to three digits long. The revision number is displayed on the **Main** menu screen as **Rev# =**.

### Salary—Display Menu

The **Salary** option displays the salary costs for each time period. You can display the costs for one skill category or for the total of all skill categories. The label for this option is **Manpower cost**, and it specifies whether the cost units are dollars (\$), thousands of dollars (K\$), or millions of dollars (M\$).

The option prompts for a skill category (1 to 9) to display the costs for a single skill level. To display the total of all skill levels, type **0**.

You can remove the manpower costs by returning to the **Display** menu and selecting **None** or another display option.

### Salary—Occupation Menu

The **Salary** option specifies the salary for the skill level you selected. You can enter up to four nonnegative integers. The salary is entered according to the **Manpower** and **Time** options in the **Project Description** menu. For example, if the manpower cost monetary unit is dollars (\$) and the time unit is weeks, the salary is expressed in dollars per week.

### Save—Main Menu

The **Save** option copies the file in memory to the location designated by the **Path** option.

This option lists the name of the files on the data disk and **[New name]** and **[None]**. You can replace the old version of the file with the changed version, or you may want to save the changed version under a new name. You can exit the option without saving anything by selecting **[None]**, which returns you to the **Main** menu.

If you choose to replace the old version with the new, the old version is renamed. The **.DAT** suffix is changed to **.BAK**, and the new version of the file takes the **.DAT** suffix. If a backup (**.BAK**) file already exists, it is deleted and replaced by the new **.BAK** file.

If you choose **[New name]**, you are prompted for an eight-character name. A file name can contain only letters, numbers, and underscores (**\_**). Lowercase letters are converted to uppercase. The program adds **.DAT** to the end of the name you supply.

If more than 16 files are on the disk, the **[More]** option is displayed. Selecting **[More]** displays the continuation of the list.

If you select **Save** when the current project is unchanged, the program asks if you are sure you want to save it. Type **Y** to continue the save operation; **N** cancels it.

When you save a file, the Project Status area is updated to reflect the current file name. The changed status becomes No. The revision number associated with the file you saved is increased by one.

It is a good practice to save frequently when entering a large schedule or when modifying extensively.

For further data protection, you should make backup copies of entire floppy disks and of data saved onto the hard disk.

### Schedule—Display Options Menu

The Schedule option lets you change the color settings shown in the Schedule Colors column of the Display Options menu. You can then select the Noncrit, Critical, Slack, Finished, Jobname, Highlight, Projcost, Break, or Date options to change the respective settings. After making any desired changes, select **Quit** to return to the Display Options menu. Select **Quit** again to return to the Main menu.

If you changed any color settings, the program asks you Keep the new setup? before returning to the Main menu. Type **Y** to use the new colors, or **N** to leave the colors unchanged.

### Schedule—Modify Menu

The Schedule option displays the Schedule menu. From there you can enter the specifics of each job in the project.

The schedule, displayed on the screen above the menu, graphically shows your project's progress over time. The Schedule menu is at the bottom of the screen.

If the project schedule is too long to fit on the screen, you can display the rest of the schedule in several ways. With the Schedule menu on the screen, type a number and **U**, **D**, **L**, or **R** to move the schedule in any direction up to 9999 units. The schedule moves within the window of the screen in the direction you specify. If the beginning of the schedule is displayed, for instance, you can scroll the schedule up, not down. Pressing the **(F9)** key is equivalent to typing **20R** to scroll the schedule 20 units to the right. Pressing the **(F10)** key is the same as typing **20L**.

The **(PGUP)** key displays the previous page of jobs. It is equivalent to typing **17D**. Press the **(PGDN)** key to see the next page of the project, which is the same as typing **17U**. Press the **(HOME)** key to display the project starting with the first job. Press the **(END)** key to move to the last job of the project.

### Schedule—Schedule Menu

The Schedule option lets you schedule a job to begin on a certain date. If the job is not on the critical path, the program prompts you to begin the job some time between the early and late start dates. If you enter a time unit outside these limits, the entire schedule may be affected.

The option prompts for a job number. After you enter a job number, you are prompted for the start date of the job. Type **0** to schedule the job to begin on the early start date. For noncritical jobs, the program lists the starting date range that will not affect the overall schedule. For critical path jobs, type **0** to avoid project delays. If you schedule a starting date before the early start date or the earliest start date, the remainder of the schedule is not affected.

You can unschedule all jobs—that is, return all scheduled jobs to the early or earliest start date—with the Level option. Select Level, type **0** for a skill level number, and type **Y** when the program prompts you to undo scheduling.

### Sheets—Printer Setup Menu

The Sheets option tells the program whether you are using single sheets or continuous form paper. If single sheets are used, the program stops at the end of each page to allow you to insert a new sheet of paper. Type **Y** if you are using single sheets of paper. Type **N** if you are not using single sheets.

Some people use the single sheet option to stop at the bottom of each page to make sure the paper is correctly aligned. After inserting and aligning the paper, press any letter key to continue printing. You can stop the printing at this point by pressing **ESC**.

When using the single sheet option, remember that the spacing for the top margin (Topmargin) is done after printing is resumed. If you want to have a one-inch margin at the top of the page, use either of the following (assuming your printer prints at six lines per inch):

- Set Topmargin to 6 and adjust the print head to the top of the paper.
- Set Topmargin to 0 and adjust the print head to a point one inch from the top of the paper.

**Skill—Job Specification Menu**

The Skill option lets you select the manpower required to do a job. The job can draw manpower from any combination of the nine different skills.

The option displays a menu of the skill level numbers with the number of people assigned from each level. The long prompt for each skill level number is the occupation name that you entered in the Occupation menu.

To change the number of people required for a skill level, move the cursor to the skill number and press . Then the program prompts for the number of people. The program accepts values in tenths of persons from 0.1 person up to 999.9 persons.

When you have set the number of people required for the necessary skills, select Continue. The program returns to the Job Specification menu.

**Skill—Report Options Menu**

The Skill option specifies the skill categories that will be included in the report. You can select a single skill by typing its skill level number, or you can select all skills by typing 0.

**Slack—Schedule Display Options Menu**

The Slack option sets the display color of slack time in a schedule. After you select Slack, press any of the four arrow keys to move the cursor to the desired color. If you want that item to blink or flash, type B. Typing B alternately turns the blinking feature on or off. After you select the desired setting, press , or you can press  to cancel the option.

**Slip—Schedule Menu Extension**

The Slip option reschedules a partially completed project. You may find that you are three weeks into a project, but the jobs scheduled to be completed by the third week are not finished. You could move each uncompleted job to the right under the time line, but the Slip option moves them all at once for you.

Before using the Slip option, make sure that all jobs or portions of jobs that are actually completed are marked completed with colons. Use the Complete option to do this. Then select Slip. You are prompted for the time period to which all jobs are to be slipped. After you enter the time period, the program modifies the schedule, maintaining all relationships for the uncompleted work.

Figure 5-8 shows how the option can affect the schedule. The upper portion of the figure shows the project as of time period 2. Job 2 should have been finished, but only one week is completed. Slipping the schedule as of time period 2 results in the schedule shown in the lower portion of the figure. Job 2 is shifted one time period because the remaining work cannot begin until the current date (time period 2).

Note that the Slip option does not preserve the history of a partially completed job. The first week of Job 2 was completed in the first week of the project. After the slip, the schedule shows the job as being completed in the second week. Job 2 is now on the critical path because it has no more slack time. Job 1 is not affected because it is completed. Job 3 is not affected because it is up to date.

---

**Status at Time Period 2**

```

    0  1  2  3  4
1  0::>
2  0:--->..>
3  0::::===>

```

**Schedule After Slip as of Time Period 2**

```

    0  1  2  3  4
1  0::>
2     0::::===>
3  0::::===>

```

---

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**Figure 5-8.** Slip Option

### Start—Milestone Menu

The Start option marks a milestone at the beginning of a job. Milestones do not show on the schedule display. Milestone dates can be printed in the Tabular Job Report, or jobs can be sorted by milestone date. The Start option removes the End milestone if one is set. After you select Start, the program returns you to the Schedule menu extension.

### Start—Project Description Menu

The Start option specifies the beginning date for the project. The initial value is the date you entered for the Today option in the Startup menu. You can enter another date according to the format described under the Today option later in this section.

The Start date becomes *Day* or *Week 0* in the project. If this date is a nonworking day or is in a nonworking week, the program uses the first working day that follows this date.

### Summary—Reports Menu

The Summary option prints the Project Description Report for the project in memory. The report is described in detail in Unit 1, "Understanding the Various Reports," in Chapter 4.

Before printing the report, you may preview it on the screen. Type **Y** to preview the report. Type **N** to print the report immediately.

When you preview the report, press any key to scroll the report forward, line by line. Or you can press  to move the report forward a page at a time. If you have set the printed report width to more than 80 characters, the lines wrap on the screen, but print correctly on the printer. After you have scrolled through the entire report, the program prompts you to print the report. Type **Y** to print the report or **N** to cancel it.

You can stop the previewing at any time by pressing . Then you can either print the report or return to the Reports menu.

### Table—Reports Menu

The Table option displays the Report Options menu and the current option entries defined for the report. The Report Options menu lets you print the report (Print), return to the Printout menu (Quit), or specify the following:

- The first job to be included in the printed report (First).
- The last job to be included in the printed report (Last).
- The skill categories to be included in the printed report (Skill).
- The order in which the jobs are to be listed (Order).
- Whether page and column headings and page numbers are to be printed on each report page (Headings).
- Whether dates or time unit numbers are to be included in the report (Dates).
- Which column items are to be included in the report (Columns).

Refer to each option for details on its use.

### Time—Project Description Menu

The Time option specifies the time units for the project. You can choose Days or Weeks. You should pick the scale that corresponds to the majority of the jobs in the project. If most of the jobs are many weeks long and a few are days long, you should probably choose Weeks. Then enter the short-term jobs as zero or one week in length.

The time scale is crucial. If you pick the wrong scale and find you have to change it, the job durations stored in the project file are not converted. You will have to use the Modify option to change the duration of each job. For example, if you first specify weeks and find that you must change to days, a job with a duration of 2 weeks is changed to 2 days, not to 10 working days.

### Title—Menu Display Options Menu

The Title option sets the color of the titles (such as the menu title) that appear on the screen displays. After you select Title, press any of the four arrow keys to move the cursor to the desired color. If you want that item to blink or flash, type **B**. Typing **B** alternately turns the blinking feature on or off. After you select the desired setting, press , or you can press  **ESC** to cancel the option.

### Today—Startup Menu

The Today option sets the date that will show on reports as the current date. The Today option also determines the holiday list for the Days option in the Workweek menu.

The date that you enter in response to the system prompt, when you start up your computer, is automatically transferred to this location. Enter a date here only if you wish to use a date that differs from that one. Dates can be entered in either of two forms, as determined by the Dates option in the Startup menu:

10/02/84 (MM/DD/YY)

02/10/84 (DD/MM/YY)

The program handles and maintains dates in the range from 1/1/1977 through 12/31/2065. For dates outside this range, the year is rounded. The years 66 through 69 are rounded down to 65, and 70 through 76 are rounded up to 77.

You can enter dates in a relative form as a number of days, weeks, months, or years from the currently recorded date:

+3M (3 months from the current date)

The program accepts only valid date characters and slashes if you are entering an absolute date. It accepts +, -, D, W, M, Y, and the digits 0 through 9 if you are entering a relative date. If you attempt to enter an invalid character, the computer beeps and rejects the character. The program also rejects impossible dates. For example, it does not allow you to enter a month of 13 or a day of 45. You cannot enter 2/29 unless the year is previously set to a leap year. You must use slashes to separate month, day, and year.

You need not change the entire date. If you change only the month and day and press , the current year is kept. Typing the slash key skips over a field. For example, to change 7/25/84 to 7/26/84, type /26 and press .

You can change the current date by entering a relative period of time preceded by a plus sign (+) or a minus sign (-). You must specify whether the relative period is in days, weeks, months, or years by typing **D**, **W**, **M**, or **Y** after the number. For example:

- +60D adds sixty days to the current date.
- -3W subtracts three weeks from the current date.
- +6M adds six months.
- -1Y subtracts one year.

### Topmargin—Printer Setup Menu

The Topmargin option sets the number of blank lines to be left at the top of each report page. If you do not specify a number, the program uses 3. The margin must be in the range 0 through the page length minus the bottom margin minus 12. For example, if the bottom margin is 3 and the length is 66, the maximum top margin is 51 (66 - 3 - 12).

### UseFF—Printer Setup Menu

The UseFF option specifies whether your printer uses form feeds. Type **Y** if your printer uses form feeds; type **N** if it does not.

If you are not getting the correct spacing between the page number of one page and the heading of the next page, the UseFF option is set incorrectly. For printers that do not use form feeds, the program issues a series of line feeds before beginning the next page.

If your printer uses form feeds and you set this option to YES, set the report length to a value less than the physical page length with the Length option. If you do not set the length as instructed here, you may get an occasional blank page in a report.

### Weeks—Workweek Menu

The **Weeks** option sets the project's nonworking weeks. A nonworking week can begin on any day of the week; it does not have to begin on the same weekday as the start date of the project.

To add a week to the list, type the date of the first day of the week and press **↵**. To remove a week from the list, type the date of the first day as shown in the list and press **↵**. Pressing **↵** alternately adds and removes a given week from the list. Refer to the **Today** option in this section for different ways to enter dates.

To exit the **Weeks** option after the list is correct, press **ESC**.

### Width—Printer Setup Menu

The **Width** option sets the page width in number of characters. Allowable values are between 79 and 218. Most printers print a 10 character-per-inch line of either 80 or 132 characters. Some printers can print up to 218 characters per line. Most reports use only 80 characters, although the Tabular Job Report and the Schedule Graph can use up to 218 characters. If you do not specify a value, the program uses 79.

If you are printing an 80-character line and your reports are double-spaced, you should change the width to 79 columns. Some printers issue an automatic line feed when printing an 80-character line. This causes double spacing because the VisiSchedule program issues a carriage return and a line feed.

### Work—Modify Menu

The **Work** option displays the **Workweek** menu. From there you can specify the project's normal working days (**Normal**), the days off (**Days**), and the weeks off (**Weeks**).



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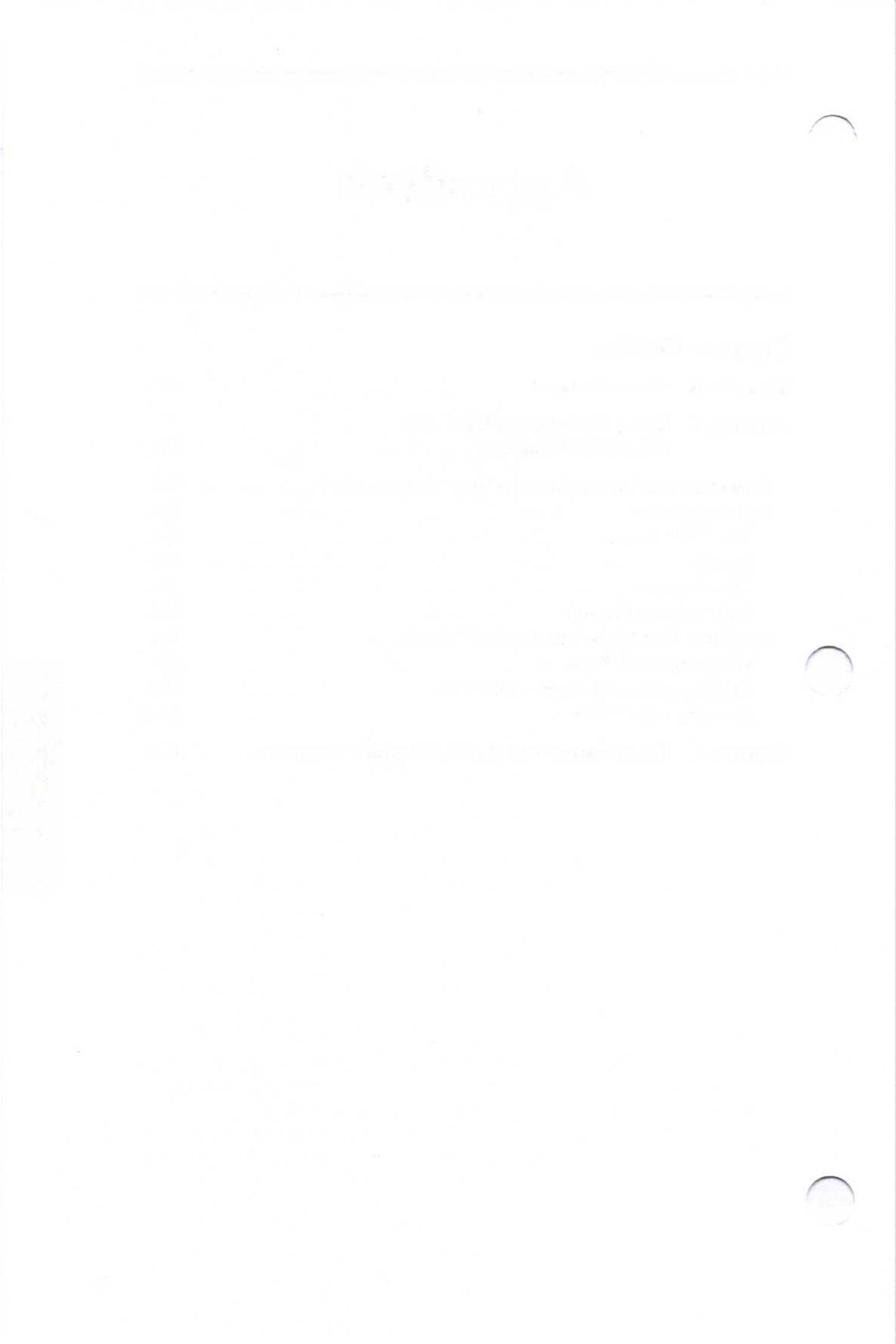
# Appendixes

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## Chapter Outline

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## APPENDIX A ERROR MESSAGES

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This appendix contains a list of the error messages displayed by the VisiSchedule program. The messages start with an E followed by a one- or two-digit number. Each message briefly describes the error condition and, when possible, the action you should take to correct the error.

The other error-checking mechanism in the program is the beep from the computer when you enter an invalid character or value. If you press an invalid key, you hear a beep.

### E1-Cannot read disk

An error occurred while reading a file from disk. You tried to format a bad disk or the disk drive door is open. It is very likely that the disk has a bad block. You should use your backup disk to load this file. If the problem is a bad disk, make a new backup. If the door is closed, try a different disk.

### E2-Illegal device name

An incorrect disk drive name was issued when loading or saving a file. Consult your DOS manual and try the operation again. If the error persists, contact your dealer.

### E3-Illegal operation

Try the operation again. Consult the appropriate section of the manual; if the error persists, contact your dealer.

### E4-Hardware error

Try the operation again. If the error persists, contact your computer dealer or computer maintenance person.

### E5-Disk drive is disabled

This error occurs when a disk drive is disabled after a read or write operation is started. It can occur if you open the drive door before the operation is completed or if there is no disk in the drive. It can also occur if the disk drive you specified with the Path option does not exist. Correct the condition and try again.

E6-File not found

This error occurs when you change a disk before a read or write operation is completed. Or you may have changed disks after listing the contents of the disk. Replace the original disk and proceed.

E7-Illegal filename

An invalid character is probably embedded in a file name. This error also occurs if you entered an illegal character for the DIF name option. Repeat the command and make sure the file name or DIF name is correct. File names can include only letters (A-Z), numbers (0-9), and underscores (\_). See the explanation of DIF name in Chapter 5 for the list of acceptable characters for the DIF name option.

E8-No room — insufficient space on disk

You have too much data in your file to fit on the disk. Use a different floppy disk with more free space or delete some files from this disk. If you were saving a modified file under the same name, the old file's suffix has changed from .DAT to .BAK. Use another VisiSchedule-formatted disk to save the file.

E9-Printer not ready

The printer you specified with the Filename option may be out of paper, may not be turned on, or may have a loose cable connection. Check the printer and proceed.

E11-Output file already exists

The specified file name already exists on the disk. Either specify a different name, change disks, or delete the existing file.

E12-Attempt to open an already open file

Repeat the option. Consult the appropriate section of the manual; if the error persists, contact your dealer.

E13-Attempt to access a closed file

Repeat the option. Consult the appropriate section of this manual; if the error persists, contact your dealer.

E14-Bad input format

You are probably trying to read a file that was not created by the VisiSchedule program. If it is a file created with the VisiSchedule program, the data disk may be damaged. Try a different data disk or contact your dealer.

E15-Line too long—buffer overflow

Repeat the option. Consult the appropriate section of this manual; if the error persists, contact your dealer.

E16-Disk is write-protected

You tried to format or save data on a disk that has a write-protect tab installed. Make sure you really want to write on this disk before you remove the tab.

E20-Name can't be blank

You must enter a file name.

E22-No more room in memory

You are trying to load a project file with too many jobs. (The maximum number of jobs per project varies depending on the amount of memory available: 128K—100 jobs; 192K or more—300 jobs.) The file was probably created on a computer with more memory, or you have taken some memory out of your computer. If you continue, memory will be filled with only as many jobs as memory can hold. You can add more memory to your computer (see your computer dealer), or you can combine jobs to reduce the number.

E24-Can't use drive X for formatting

You specified a nonexistent drive when you tried to format a disk. Try the operation again, being sure to specify a drive that is attached to your computer. The program prompts you with the available drive names.

E26-Bad disk

You tried to format a bad disk, or the disk drive door is open. If the door is closed, try a different disk.

E31-Color unavailable, can't use Options

You cannot set color options unless you have a color card installed in your computer and are using a color monitor. Either you have a monochrome card installed in your computer, or the Monitor Status area on the Main menu screen indicates that you specified a monochrome monitor. If you identified your monitor incorrectly and do have a color monitor, return to the Main menu and press the **(F8)** key.

E51-No more room, list limit is 24

The number of holidays and the number of nonworking weeks is limited to 24. You attempted to enter more. If your project does not run an entire year, try entering the first 24 holidays or nonworking weeks in order following the project start date.

E52-Not used if time scale is weeks

The program keeps track of holidays and nonworking days only if the time scale is Days. Currently, your time scale is Weeks.

E53-Illegal char in path name

You entered a character other than A through H as the drive name in the Path option. Enter a correct character.

E57-Illegal character in prerequisite list

A prerequisite list can contain from 1 to 9 numbers separated by commas. Only the comma and the digits 0 through 9 are allowed. The numbers can be from 1 to 3 digits long. Correct the list and continue.

E58-Job x does not exist

You entered the number of a job that does not exist. Enter a valid job number.

E59-Job x can't be its own prerequisite

You entered the current job number as its own prerequisite. Reenter the list and exclude the current job number.

E60-Job x would create a loop

A job you entered as a prerequisite is a successor of the current job. A job cannot be a prerequisite to itself, nor can it be both a prerequisite and a successor of an individual job. Reenter the list without this job number or correct the prerequisites of the subject job.

E61-Prerequisite job x isn't completed

You attempted to complete a job for which one or more prerequisites are not all completed. You cannot complete a job until all of its prerequisites are completed. If a job is completed before its prerequisites, you should change the prerequisite list.

E62-Illegal character in decimal number

You entered a decimal number that included a character other than the decimal point (.) and the digits 0 through 9. Reenter the number correctly.

**E63-Too many decimal points**

A decimal number can contain only one decimal point (.). Reenter the number correctly.

**E64-Too many digits**

You entered a number with more digits than the program accepts for this value. Reenter the number correctly.

**E65-Can't insert between completed jobs**

You attempted to insert a job before a completed job. A completed job's prerequisites must be completed. Either uncomplete the completed job or insert the new job in a different location.

**E66-Can't add or insert before job 0**

You attempted to add or insert a job before job 0. To add or insert a job at the top of the job list, place it after job 0 or before job 1.

**E67-Erasing x gives y too many prerequisites**

If you erase job x, job y will have more than 9 prerequisites. Before you can erase job x, you must modify the prerequisites for job x or y so the subsequent erasing of x will not give y too many prerequisites.

**E68-Can't, a prereq isn't completed**

You cannot complete a job until all of its prerequisites are completed. Either complete all prerequisites or change the prerequisite list.

**E69-Value must be between xxx and yyy**

In this message, the word *Value* is replaced by the specific number you entered. That number is not within the acceptable range. Reenter a value that is within the range specified in the message text.

**E70-Illegal print device name**

You entered something other than the acceptable printer device names or a disk file name for the Filename option. (See Chapter 4, "Printing Reports," for more specific information about file names.) Reenter a correct file name.

**E71-Columns are wider than the printer**

You selected too many columns for the Tabular Job Report. The total number of characters in the columns cannot exceed the printer width. Either increase the printer width, if possible, or change field selections in the Columns option.

E72-Illegal character in sequence

You entered a setup sequence string that contained an illegal character. The setup string is limited to a maximum of eight values, separated by commas. The values must be entered as decimal numbers in the range 0 through 255. The numbers must be separated with commas.

E73-Can't, a successor is completed

You attempted to uncomplete a job that has a successor that is completed. You must uncomplete all of a job's successors before you can uncomplete the job.

E74-Can't move a job before/after itself

You tried to move a job relative to itself. Repeat the option and specify the job you want this job moved before or after.

E77-Too many prerequisites, 9 maximum

You tried to enter more than nine prerequisites for a job. Specify fewer prerequisites for the job, or create two other fictitious jobs of 0 duration and split the prerequisites between them. Then the real job will have the two 0 duration jobs as prerequisites.

E78-Can't modify a completed job

You tried to modify a job that you already marked as completed. Uncomplete the job; then modify it.

E79-Can't schedule a completed job

You tried to schedule a job that was already completed. You must uncomplete the job before using the Schedule option.



The example in this appendix transfers cost and manpower data from a file to a DIF file. Then it gives directions for reading the data into the VisiCalc program. If you do not have the VisiCalc program, you should follow along to see the results of the transfer. If you do have the VisiCalc product and want to do the example, you should have your VisiCalc program disk ready along with a data disk formatted for the VisiCalc program.

Before the conversion can begin, you must load the project file with the desired data into memory.

From the Main menu, select **C**lear. Look at the Project Status area to check the path designation. If the location is not the same as the one from which the program is being run, select **P**ath and set it to the same drive or location.

Select **L**oad; then select the **LEVEL.DAT** project file.

Select **R**eports; then select **D**IF data.

The program displays the Report Options menu. Select **S**kill, type **1**, and press **↵**. This tells the program that you are going to transfer the data only for skill category #1. Select **D**IF name to specify the DIF file name. The data entry line reads LEVEL. The initial setting for the DIF name option is always the disk file name with .DAT changed to .DIF. Press **↵** to accept the current name.

Select **P**rint to write the data into the file named LEVEL.DIF. The data is limited to those jobs that use skill category 1.

Follow the instructions as they appear on the screen for switching disks. You are instructed to insert an IBM DOS disk. You can use a disk formatted with either IBM DOS 1.1 or 2.0. If the DOS disk has a write-protect tab in place, be sure to remove it.

When the option is done, select **Q**uit twice to return to the Main menu. Then select **E**xit to exit the program.

If you have only floppy drives, remove the VisiSchedule program disk and replace it with the VisiCalc program disk. If you have a hard disk system, load the VisiCalc program from the program disk or from its directory on your hard disk. (If you have never used the VisiCalc program disk, refer to the *VisiCalc User's Guide* for instructions on loading the program.) Then press the **CTRL-ALT-DEL** key combination. The VisiCalc worksheet appears on your screen.

Type **IS#L**. The prompt line reads Data load: File to Load.

Type **B:LEVEL.DIF**. If you make a typing error, press **(ESC)** to erase the error. Then retype the remainder of the name correctly. Press **(↵)**. Data load: R C or RETURN appears in the prompt line.

Type **R** to load the VisiSchedule manpower and cost data by rows across your screen. Or you can display the same data in columns by typing **C**. Now you can manipulate the data and use it to make calculations with your VisiCalc program.

## CONSIDERATIONS WHEN USING THE VISICALC® PROGRAM

The VisiCalc program uses a matrix of 63 columns by 252 rows. A VisiSchedule DIF file that exceeds 63 time units must be loaded into the VisiCalc program by columns. A file that contains more than 252 time units exceeds the VisiCalc program capability.

## EXCHANGING FILES

The information in the remainder of this appendix describes the DIF file format and lists three sample programs in BASIC that read and write DIF files. You need to read this information only if you want to write your own programs to using DIF.

Further information is available through the DIF Clearinghouse, which has been set up to coordinate and distribute information about the DIF format. The Clearinghouse maintains and distributes the DIF Technical Specification, which is a detailed technical description of the DIF format, and information about the commercially available programs that support the format. To obtain this information, please send your name, address, and a note requesting this information to: DIF Clearinghouse, P.O. Box 527, Cambridge, MA 02139.

## The DIF™ Format

The DIF format stores data in a form accessible to programs other than the VisiSchedule program. To accommodate a wide range of languages in which such a program might be written, several simplifying techniques have been used:

- Information about the size of the file is provided at the beginning.
- Records are kept as short as possible.
- The data type (string or number) of each value is explicitly defined.
- Strings are stored one per line.
- Strings that contain special characters are enclosed in quotation marks.
- The file ends with an explicit End-Of-Data record.

Figure B-2 shows a sample workload file used to describe the format and the programs that work with the DIF format.

Welder	2	1	3
Mechanic	1	2	4
Finisher	1	1	1
Total manpower	4	4	8
Manpower cost	1200	1200	2400
Direct cost	0	1300	0
Total cost	1200	2500	2400
Week	0		2

Figure B-2. Sample File for Use with DIF

The format stores the data in a series of slices; it can be sliced either horizontally (by rows) or vertically (by columns). Each of these slices is called a tuple; each slice along the other axis is called a vector.

A DIF file consists of a series of header records that describe the file, followed by one set of data records for each tuple, and ends with a pair of End-Of-Data records.

## Header

The header consists of four sets of three records that give information about the entire file:

TABLE
0,1
" "
VECTORS
0,V
" "
TUPLES
0,T
" "
DATA
0,0
" "

V is the number of vectors in the file.

T is the number of tuples in the file.

## Data Records

The data records consist of a pair of header records that identify the beginning of a tuple, and a pair of records for each value in the tuple:

-1,0	
BOT	Beginning of Tuple records.
T1,N1	
string1	First value of tuple.
T2,N2	
string2	Second value of tuple.
T3,N3	
string3	Third value of tuple.
.	
.	
.	
Tn,Nn	
stringn	Last (nth) value of tuple.

## End-Of-Data Records

The End-Of-Data records mark the end of the file:

-1,0
BOT

## PROGRAMS THAT WORK WITH THE DIF™ FORMAT

The following three programs demonstrate the use of the DIF format. They perform the following functions:

- Dump a DIF file just as it is stored, record by record.
- Print a worksheet from a DIF file.
- Create a DIF file by prompting for the worksheet entries.

## Dumping a DIF™ File

This program prints the DIF file just as it is stored, record by record. It asks for the name of the file and whether to print it. If not instructed to print the file, the program displays the file on the screen.

```

100 ' *****
110 ' *   INITIALIZATION   *
120 ' *****
130 NUL$ = CHR$(34) + CHR$(34)
140 FALSE = 0
150 TRUE = -1
440 '
450 '
460 ' *****
470 ' *   MAIN ROUTINE   *
480 ' *****
490 '
500 GOSUB 1000'           * PROMPT FOR ORDERS
510 GOSUB 1200           * PRINT HEADER
520 GOSUB 1400'         * PRINT DATA RECORDS
530 GOSUB 1600'         * END-OF-PROGRAM CLEANUP
540 END
940 '
950 '
960 ' *****
970 ' * PROMPT FOR ORDERS *
980 ' *****
990 '
1000 CLS
1010 INPUT "File name: ",FILENAME$
1020 IF RIGHT$(FILENAME$,4) <> ".DIF" THEN FILENAME$ = FILENAME$ + ".DIF"
1030 INPUT "Print the file (Y or N): ",REPLY$
1040 IF REPLY$ = "Y" OR REPLY$ = "y" THEN HARDCOPY = TRUE
1050 OPEN FILENAME$ FOR INPUT AS #1
1060 IF NOT HARDCOPY THEN CLS
1070 IF HARDCOPY THEN LPRINT FILENAME$: LPRINT " ";LPRINT ELSE PRINT FILENAME$:P
RINT:PRINT
1080 RETURN
1140 '
1150 '
1160 ' *****
1170 ' *   PRINT HEADER   *
1180 ' *****
1190 '
1200 INPUT #1, TITLE$
1210 INPUT #1, TYPE, NUMBER
1220 INPUT #1, STRNG$
1230 IF HARDCOPY THEN LPRINT TITLE$:LPRINT TYPE; ", "; NUMBER ELSE PRINT TITLE$:P
RINT TYPE; ", "; NUMBER
1240 IF STRNG$ = "" THEN IF HARDCOPY THEN LPRINT NUL$ ELSE PRINT NUL$ ELSE IF HA
RDCOPY THEN LPRINT STRNG$ ELSE PRINT STRNG$
1250 IF TITLE$ <> "DATA" THEN 1200
1260 IF NOT HARDCOPY THEN GOSUB 2000
1270 RETURN
1340 '
1350 '
1360 ' *****
1370 ' * PRINT DATA RECORDS *
1380 ' *****
1390 '
1400 INPUT #1, TYPE, NUMBER
1410 INPUT #1, STRNG$
1420 IF CSRLIN > 20 AND NOT HARDCOPY THEN GOSUB 2000
1430 IF HARDCOPY THEN LPRINT TYPE; ", "; NUMBER: LPRINT STRNG$ ELSE PRINT TYPE; "
, "; NUMBER: PRINT STRNG$
1440 IF STRNG$ <> "EOD" THEN 1400
1450 RETURN
1530 '
1540 '
1550 ' *****
1560 ' *   END-OF-PROGRAM   *
1570 ' *   CLEANUP         *
1580 ' *****

```

```

1590 '
1600 CLOSE 1
1610 RETURN
1920 '
1930 '
1940 ' *****
1950 ' *      PRINT      *
1960 ' * "RETURN FOR MORE" *
1970 ' * MESSAGE AT BOTTOM *
1980 ' *****
1990 '
2000 LOCATE 24,1
2010 PRINT "RETURN for more";
2020 REPLY$ = INPUT$(1)'
2030 CLS
2040 RETURN

```

\* WAIT UNTIL ANY KEY IS PRESSED

## Printing a Data File from a DIF™ File

The following program prints the workload file as it would appear on the screen. It asks for the name of the file in which the worksheet was saved in the DIF format, the width of columns to be printed, and whether the worksheet was saved by rows or by columns.

```

60 ' *****
70 ' *  INITIALIZATION  *
80 ' *****
90 '
100 DIM WORKSHEET$(50,50)
110 FALSE = 0
120 TRUE = -1
130 BYROWS = FALSE
440 '
450 '
460 ' *****
470 ' *  MAIN ROUTINE  *
480 ' *****
490 '
500 GOSUB 1000'
510 GOSUB 1200'
520 GOSUB 1400'
530 IF NOT FILEBAD THEN GOSUB 1600'
540 GOSUB 1800'
550 END
940 '
950 '
960 ' *****
970 ' * PROMPT FOR ORDERS *
980 ' *****
990 '
1000 CLS
1010 INPUT "File name: ", FILENAME$
1020 IF RIGHT$(FILENAME$,4) <> ".DIF" THEN FILENAME$ = FILENAME$ + ".DIF"
1030 INPUT "Column width: ", COLUMNWIDTH
1040 INPUT "Saved by row or column (R or C): ", REPLY$
1050 IF REPLY$ = "R" OR REPLY$ = "r" THEN BYROWS = TRUE
1060 INPUT "Print the worksheet (Y or N): ", REPLY$
1070 IF REPLY$ = "Y" OR REPLY$ = "y" THEN HARDCOPY = TRUE
1080 OPEN FILENAME$ FOR INPUT AS #1
1090 RETURN
1140 '
1150 '
1160 ' *****
1170 ' *  READ HEADER  *
1180 ' *****
1190 '
1200 INPUT #1, TITLE$
1210 INPUT #1, TYPE, NUMBER
1220 INPUT #1, STRNG$
1230 IF TITLE$ = "VECTORS" THEN VECTORS = NUMBER
1240 IF TITLE$ = "TUPLES" THEN TUPLES = NUMBER
1250 IF TITLE$ = "DATA" THEN RETURN

```

\* PROMPT FOR ORDERS  
\* READ HEADER  
\* READ DATA RECORDS  
\* PRINT THE WORKSHEET  
\* END-OF-PROGRAM CLEANUP

```

1260 GOTO 1200
1340 '
1350 '
1360 ' *****
1370 ' * READ DATA RECORDS *
1380 ' *****
1390 '
1400 FOR ROW = 1 TO TUPLES
1410   INPUT #1, TYPE, NUMBER
1420   INPUT #1, STRNG$
1430   IF TYPE <> -1 OR STRNG$ <> "BOT" THEN
       GOSUB 2000:
       RETURN
1440   FOR COL = 1 TO VECTORS
1450     INPUT #1, TYPE, NUMBER
1460     INPUT #1, STRNG$
1470     IF TYPE <> 0 AND TYPE <> 1 THEN
         GOSUB 2000: RETURN
1475     GOSUB 2200
1480     IF BYROWS AND TYPE = 0 THEN WORKSHEET$(COL,ROW) = NUMBER$:
       GOTO 1500
1490     IF BYROWS THEN WORKSHEET$(COL,ROW) = STRNG$
1500     IF NOT BYROWS AND TYPE = 0 THEN WORKSHEET$(ROW,COL) = NUMBER$:
       GOTO 1520
1510     IF NOT BYROWS THEN WORKSHEET$(ROW,COL) = STRNG$
1520     NEXT COL
1530   NEXT ROW
1540 RETURN
1550 '
1560 ' *****
1570 ' * PRINT THE WORKSHEET*
1580 ' *****
1590 '
1600 IF BYROWS THEN WDTN = TUPLES: DEPTH = VECTORS ELSE WDTN = VECTORS: DEPTH =
TUPLES
1610 FOR ROW = 1 TO DEPTH
1620   FOR COL = 1 TO WDTN
1630     IF HARDCOPY THEN LPRINT WORKSHEET$(ROW,COL); ELSE PRINT WORKSHEET$(
ROW,COL);
1640     NEXT COL
1650     IF HARDCOPY THEN LPRINT " " ELSE PRINT
1660     NEXT ROW
1670 RETURN
1730 '
1740 '
1750 ' *****
1760 ' * END-OF-PROGRAM *
1770 ' * CLEANUP *
1780 ' *****
1790 '
1800 CLOSE 1
1810 RETURN
1940 '
1950 '
1960 ' *****
1970 ' * ERROR IN FILE *
1980 ' *****
1990 '
2000 PRINT
2010 BEEP: PRINT "ERROR IN FILE . . ."
2020 PRINT TAB(5); "TYPE ="; TYPE
2030 PRINT TAB(5); "NUMBER ="; NUMBER
2040 PRINT TAB(5); "STRING = "; STRNG$
2050 FILEBAD = TRUE
2060 RETURN
2140 '
2150 ' *****
2160 ' * OFFSET *
2170 ' * LABELS & NUMBERS *
2180 ' *****
2190 '
2200 IF TYPE <> 0 THEN 2300
2210 NUMBER$ = STR$(NUMBER)
2220 IF LEN(NUMBER$) > COLUMNWIDTH - 1 THEN NUMBER$ = " " + LEFT$(NUMBER$,COLUMN
WIDTH - 1):RETURN
2230 BLANK$ = " "
2240 BN = COLUMNWIDTH - LEN(NUMBER$)

```

```

2250 NUMBER$ = LEFT$(BLANK$,BN) + NUMBER$
2260 RETURN
2300 IF LEN(STRNG$) > COLUMNWIDTH THEN STRNG$ = LEFT$(STRNG$,COLUMNWIDTH):
      RETURN
2310 BLANK$ = " "
2320 BN = COLUMNWIDTH - LEN(STRNG$)
2330 STRNG$ = STRNG$ + LEFT$(BLANK$,BN)
2340 RETURN

```

## Creating a DIF™ File

The following program prompts for worksheet entries (by row-column coordinate), then writes the entries on a disk in a DIF file. Either a string or number (integer or real) can be entered. To enter a label that starts with a number, type a quotation mark (") as the first character of the label. To end a row, type ESCAPE RETURN; to end the worksheet, type ESCAPE ESCAPE RETURN.

The program assumes the coordinate of the lower-right corner of the worksheet is the row-column coordinate of the location immediately to the left of the coordinate where ESCAPE ESCAPE is typed, so the last row should be at least as wide as all preceding rows. The worksheet is saved by rows.

```

60 ' *****
70 ' *   INITIALIZATION   *
80 ' *****
90 '
100 ESC$ = CHR$(27)
110 LASTINROW$ = ESC$
120 LASTONSHEET$ = ESC$ + ESC$
130 QUOTE$ = CHR$(34)
140 NUL$ = QUOTE$ + QUOTE$
150 DIM WORKSHEET$(50,50)
160 ROW = 1
170 COL = 1
180 FALSE = 0
190 TRUE = -1
440 '
450 '
460 ' *****
470 ' *   MAIN ROUTINE   *
480 ' *****
490 '
500 GOSUB 1000'           * PROMPT FOR ORDERS
510 GOSUB 1200'         * PROMPT FOR ENTRIES
520 GOSUB 1400'         * WRITE FILE
530 GOSUB 2000'         * END-OF-PROGRAM CLEANUP
540 END
940 '
950 '
960 ' *****
970 ' * PROMPT FOR ORDERS *
980 ' *****
990 '
1000 CLS
1010 INPUT "Write the file (Y or N): ",REPLY$
1020 IF REPLY$ = "Y" OR REPLY$ = "y" THEN DISKCOPY = TRUE
1030 IF DISKCOPY
      THEN INPUT "File name: ",FILENAME$:
            IF RIGHT$(FILENAME$,4) <> ".DIF" THEN FILENAME$ = FILENAME$ + ".DIF"
"
1040 RETURN
1140 '
1150 '

```

```

1160 ' *****
1170 ' * PROMPT FOR ENTRIES *
1180 ' *****
1190 '
1200 CLS
1210 WORKSHEET$(ROW,COL) = ""
1220 PRINT "Row"; ROW; ", Column ";CHR$(64+COL); ": ";
1230 REPLY$ = INPUT$(1)
1240 IF REPLY$ = CHR$(8) AND LEN(WORKSHEET$(ROW,COL)) - 1 = 0 THEN PRINT " ":
      GOTO 1210
1250 IF REPLY$ = CHR$(8) THEN WORKSHEET$(ROW,COL) = LEFT$(WORKSHEET$(ROW,COL),LE
N(WORKSHEET$(ROW,COL)) - 1): PRINT " "; WORKSHEET$(ROW,COL);:GOTO 1230
1260 IF REPLY$ <> CHR$(13)
      THEN PRINT REPLY$;: WORKSHEET$(ROW,COL) = WORKSHEET$(ROW,COL) + REPLY$:
GOTO 1230
1270 PRINT
1280 IF WORKSHEET$(ROW,COL) = LASTONSHEET$
      THEN WDTN = COL - 1: DEPTH = ROW: RETURN
1290 IF WORKSHEET$(ROW,COL) = LASTINROW$
      THEN ROW = ROW + 1: COL = 1: PRINT:GOTO 1210
1300 COL = COL + 1
1310 GOTO 1210
1320 '
1330 ' *****
1340 ' * WRITE FILE *
1350 ' *****
1360 '
1370 ' -----
1380 '          HEADER
1390 ' -----
1400 IF NOT DISKCOPY THEN RETURN
1404 OPEN FILENAME$ FOR OUTPUT AS #1
1410 PRINT #1, "TABLE"
1420 PRINT #1, 0; ", "; 1
1430 PRINT #1, NUL$
1440 PRINT #1, "VECTORS"
1450 PRINT #1, 0; ", "; DEPTH
1460 PRINT #1, NUL$
1470 PRINT #1, "TUPLES"
1480 PRINT #1, 0; ", "; WDTN
1490 PRINT #1, NUL$
1500 PRINT #1, "DATA"
1510 PRINT #1, 0; ", "; 0
1520 PRINT #1, NUL$
1540 '
1550 ' -----
1560 '          DATA RECORDS
1570 ' -----
1580 FOR COL = 1 TO WDTN
1590     PRINT #1, -1; ", "; 0
1600     PRINT #1, "BOT"
1610     FOR ROW = 1 TO DEPTH
1620         IF VAL(WORKSHEET$(ROW,COL)) <> 0 OR WORKSHEET$(ROW,COL) = "0" THEN
            PRINT #1, 0; ", "; VAL(WORKSHEET$(ROW,COL));:PRINT #1, "V":GOTO 1660
1630         IF LEFT$(WORKSHEET$(ROW,COL),1) = QUOTE$ THEN
            WORKSHEET$(ROW,COL) = MID$(WORKSHEET$(ROW,COL),2)
1640         PRINT #1, 1; ", "; 0
1650         PRINT #1, QUOTE$; WORKSHEET$(ROW,COL); QUOTE$
1660         NEXT ROW
1670     NEXT COL
1680 '
1690 ' -----
1700 '          END-OF-DATA
1710 ' -----
1720 PRINT #1, -1; ", "; 0
1730 PRINT #1, "EOD"
1740 RETURN
1930 '
1940 '
1950 ' *****
1960 ' * END-OF-PROGRAM *
1970 ' * - CLEANUP *
1980 ' *****
1990 '
2000 CLOSE 1
2010 RETURN

```



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## APPENDIX C USEFUL FACTS ABOUT THE VISISCHEDULE® PROGRAM

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Capacity	The number of jobs per project depends on the amount of memory available. 128K—100 jobs 192K or more—300 jobs
Cost units	Money in units, thousands of units, or millions of units, separately definable for skill category, salary and direct costs.
Dates	The program handles dates in the range 1/1/1977 through 12/31/2065. It handles dates in the format MM/DD/YY or DD/MM/YY.
Disk drives	Requires two floppy disk drives or one floppy and one hard disk drive. Drives can be single- or double-sided.
Duration	Up to 9999 time units for a project. Up to 999 time units for a job.
File names	Eight characters consisting of letters (A-Z), numbers (0-9), and underscores (.). The words LPT1, LPT2, LPT3, COM1, and COM2 are reserved and cannot be used as disk file names.
Holidays	Up to 24 days.
Names (people)	Up to 24 alphanumeric characters.
Numbers	All numbers are limited to 4 digits.
Output devices	Printers (LPT1, LPT2, or LPT3 if you have a parallel printer; COM1 or COM2 if you have a serial printer) or disk file (by name).
Prerequisites	Each job can have up to nine.
Report length	12 (plus margins) to 255 lines.
Report margins	0 to 243 lines minus the other margin.
Report widths	79 to 218 characters.
Setup strings	Up to eight characters expressed as decimal values.
Skills	Nine skill categories, each with a salary per time unit.
Time units	Days or weeks.
Title	Up to 30 alphanumeric characters.
Weeks off	Up to 24.



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# Glossary

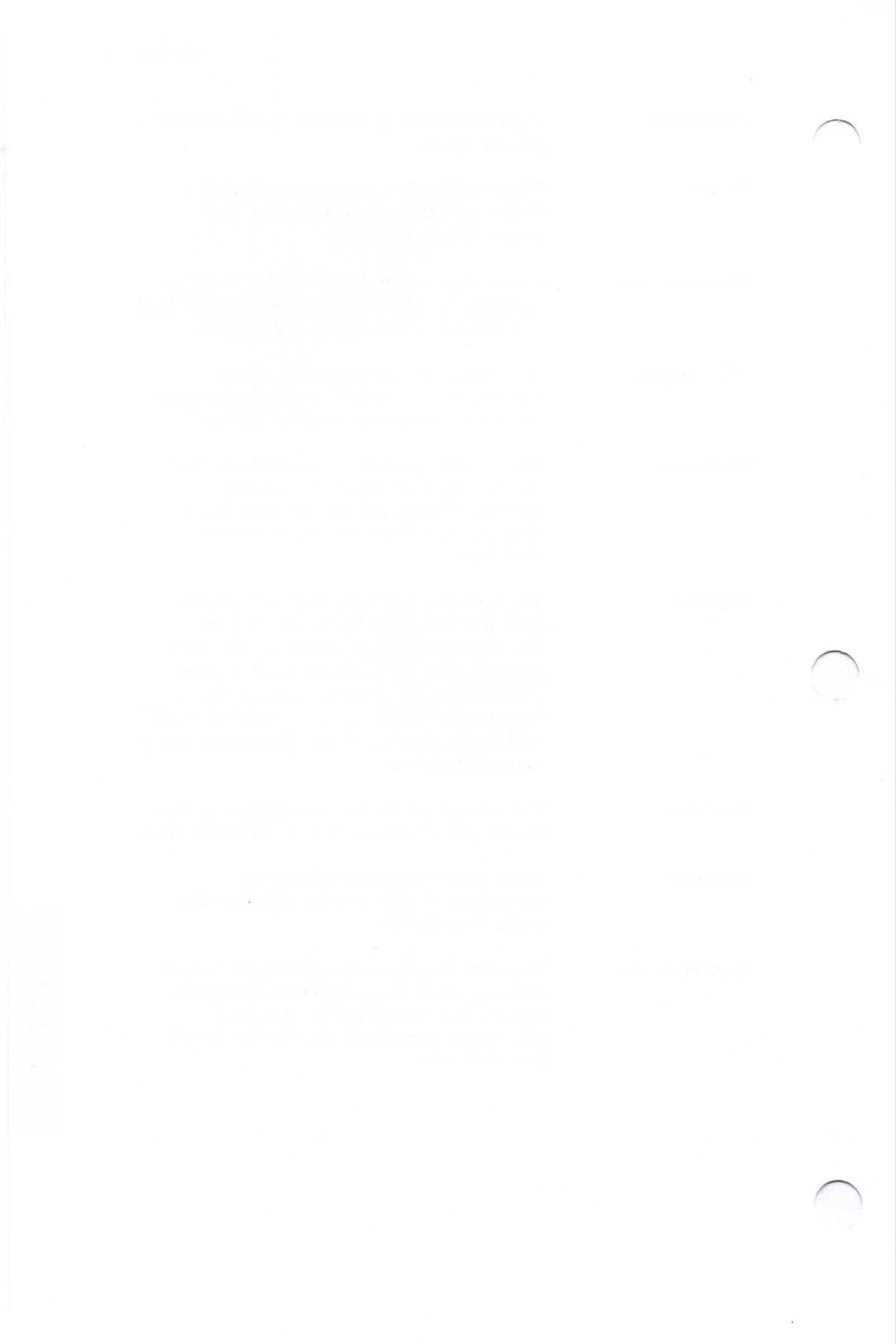
---

---

Completion date	The date when all jobs in a project are finished.
Critical path	The set of jobs that must be completed on schedule for the project completion date to be met. The jobs in the critical path have no slack time.
Deadline	A date, which is separate from the scheduled start and finish, by which a job must be completed. In the Schedule menu, the deadline is shown with a plus sign (+). It is used only to flag an important deadline, not for scheduling. The deadline does not affect the schedule.
DIF	A standard means of storing data so that it can be accessed and used by different programs. It allows the interchange of data between different programs.
Earliest start	A job cannot begin before this date. This is a constraint on the schedule that you enter with the Earliest option. The initial value is time period 0.
Early finish	The earliest date on which a job can be completed. In other words, the date the job will be finished if it starts on the early start date.
Early start	Either the earliest start date or the date when all prerequisites are completed, whichever is later. The job cannot begin earlier than this date.
File	A collection of related project data stored on a floppy or hard disk.

Free slack time	The slack time for a noncritical job, which does not affect the start of any subsequent job. Compare with <i>total slack time</i> .
Job	A basic activity with which the VisiSchedule program operates. It is an easily definable task. An individual component that combines with others to compose an entire project.
Job length	The length or duration of a job in time units, either days or weeks.
Late finish	The latest date the job can finish and not delay the project completion date. In other words, the date on which the job will finish if it is started on the late start date.
Late start	The latest date a job can begin without changing the completion date of the project. That is, the late start uses all the slack time available to the job.
Leveling	The process of moving jobs within their slack times to reduce the peak manpower requirements. Leveling can be done for only one skill category at a time.
Milestone	An event, such as the start or finish of a job, on which progress of the project is measured. A milestone is an informational marker only; it does not affect scheduling.
Noncritical job	A job that has slack time. That is, its start date can be changed, within the limits of the slack time, without changing the project completion date.
Normal workweek	The days of the week that are worked as part of a normal schedule. In the VisiSchedule program, Monday through Friday is assumed to be the normal work week unless changed by the user.

Prerequisite	A job that must be finished before another job can start.
Project	The major goal to be accomplished. It is broken up into manageable jobs. Each project is stored in a file.
Scheduled start	A start date established with the Schedule or Level options. The job begins at the early start if a scheduled start date is not created.
Skill category	An occupation with a specific salary assigned to it. The sum of salaries for a job is the total manpower cost for the job.
Slack time	The flexibility within noncritical jobs that allows their start times to be changed without affecting the project completion date. See also free slack time and total slack time.
Slash tag	The part of a job name that is separated from the rest of the name with a slash (/). The job names can be sorted by the name proper, or by the slash tag and the name. The slash tag is useful for sorting jobs by departments. In this use, the slash tag would contain the number of the department that is responsible for it.
Start date	The date on which the first job in a project begins. All scheduling is done from this date.
Successor	A job whose start depends on the completion of one or more previous jobs, called <i>prerequisites</i> .
Total slack time	The slack time for a noncritical job, which does not affect the completion date of the project, but does delay the start of a subsequent noncritical job. Compare with <i>free slack time</i> .



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# Index

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## Note:

Page numbers beginning with GS refer to pages in the *Getting Started* guide. All other page numbers refer to the Reference Guide.

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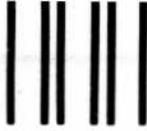
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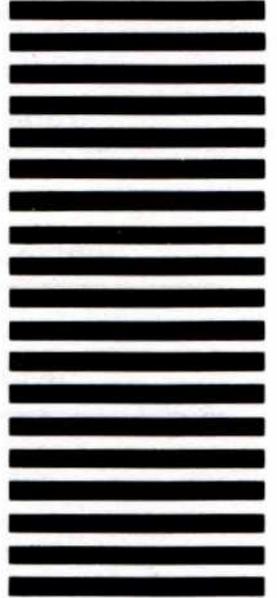
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# VISI SCHEDULE<sup>®</sup>

FOR THE IBM<sup>®</sup> PERSONAL COMPUTER

Program by  
Dr. Michael Posehn  
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VisiSchedule

MAIN MENU

Load	Modify	Clear	Delete	Format	Save	Reports	Path	Options	Exit
------	--------	-------	--------	--------	------	---------	------	---------	------

REPORTS MENU

Summary	Listing	Table	Graph	All
Printsetup	DIF Data			

OPTIONS MENU

Menu	Schedule	Defaults
------	----------	----------

MODIFY MENU

Descrip	Manpower	Work	Schedule
---------	----------	------	----------

DESCRIPTION MENU

Projtitle	Leader	Time	Start
Manpower	Directcost	Critical	Revision

SCHEDULE MENU

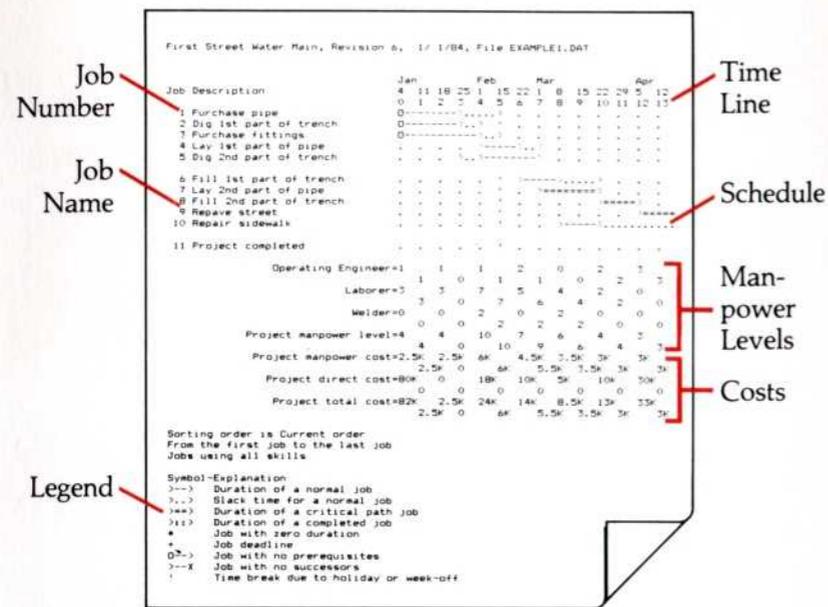
Add	Insert	Erase	Jobmove	Complete
Modify	Goto	Schedule	Other	

JOB DESCRIPTION MENU

Accept	Name	Joblength	Prereq	Earliest
Cost	Skill	Deadline		

OTHER MENU

Highlight	Display	Level	Renumber	Slip
Milestone				



**SCHEDULING SYMBOLS**

- >=====> A critical path job with both prerequisites and successors; this job cannot be delayed without delaying the entire project.
- >-----> A noncritical job with both prerequisites and successors; slack time is associated with a noncritical job; used for all jobs if the Critical option is set to No.
- >.....> Slack time for a noncritical job; a job can be delayed up to the total slack time without delaying the project.
- >:.....> A completed job.
- >:::====> A partially completed job; the uncompleted portion can be noncritical or critical.
- 0=====> Jobs with no prerequisites; these jobs are scheduled to begin on a specific date.
- 0----->
- 0:.....>
- >=====>X Jobs with no successors; these jobs are prerequisite to no other jobs. The last job in a project usually ends with an X, but other jobs may end with an X if the project has multiple finishes.
- >-----X
- >:.....X
- \* A zero-length job with successors; marks an important event or shows a job that does not require an entire time unit.
- X A zero-length job with no successors, typically the end of a project.
- + A deadline; marks the date by which the job must be completed.
- ! A break in the schedule; if the time unit is days, this marks holidays and nonworking weeks; if the time unit is weeks, this marks nonworking weeks only.

**MOVING THE CURSOR AND SELECTING OPTIONS**

- ← → Moves the cursor left or right within a menu.
- ↑ ↓ Moves the cursor up or down within a menu or list.
- Space Bar Switches lines within a menu.
- ⏎ Selects the option that the cursor is highlighting.
- First letter of option name Selects the option that begins with this letter; if no option begins with this letter, no action occurs.

**MOVING THE SCHEDULE**

- END Displays the last job at the top of the schedule graph screen. Same as selecting Goto and entering the last job number.
- F 9 Scrolls the schedule graph 20 time units (one "page") to the right; same as typing 20R.
- F 1 0 Scrolls the schedule graph 20 time units (one "page") to the left; same as typing 20L.
- HOME Displays the first job in the schedule at the top of the schedule graph screen; same as selecting Goto and entering the first job number.
- P G D N Displays the next page of the schedule graph; same as typing 17U.
- P G U P Displays the previous page of the schedule graph; same as typing 17D.

**MISCELLANEOUS KEYS**

- BKSP Erases characters during data entry.
- CTRL WARNING: DO NOT PRESS THE COMBINATION UNTIL YOU HAVE EXITED THE VISISCHEDULE PROGRAM. PRESSING THESE KEYS CAUSES THE PROGRAM TO RESTART WITHOUT SAVING YOUR DATA.
- ALT DEL
- ESC Cancels some functions such as report printing, and cancels data entry without making a change to the current value.
- SHIFT + PRTSC Prints the current contents of the screen to the parallel printer port.
- \ (Backslash) Separates the names of any subdirectories in a path name.
- F 8 Alternately switches the monitor status to either the monochrome or color options setting. The F 8 key is operable only in the Startup menu and the Main menu and only if a color card is installed.

**ENTERING DATES**

- D,W,M,Y Specifies day, week, month, or year for relative dates.
- + or - Indicates a relative date. + is future and - is past. Follow by a number and D, W, M, or Y.
- / (Slash) Jumps to the next field in a date entry. In job names, separates the slash tag from the main part of the name.

**FILE NAMING CONVENTIONS**

- Project files — filename.DAT
  - Backup project files — filename.BAK
  - Reports sent to disk files — filename.TXT
  - DIF files — filename.DIF
  - Backup DIF files — filename.BAK 'fi
- VisiSchedule file names cannot exceed eight characters. They may contain only letters (A-Z), numbers (0-9), or underscores (\_). Lowercase letters are converted to uppercase. The suffix .DAT, .BAK, .TXT, or .DIF is added by the program.

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# MENU CHART

## MAIN MENU

Load	Modify	Clear	Delete	Format
Save	Reports	Path	Options	Exit

LOAD	Loads a file into the computer's memory; select [None] if you do not want to load a file.
MODIFY	Takes you to all parts of the program where you create or modify elements of the project schedule: define project description, occupations, salaries, days or weeks off, and limitations for each job (see Modify menu).
CLEAR	Clears computer memory; clear memory before loading a file, starting a new project, or formatting a floppy disk.
DELETE	Deletes files from a disk; select [None] if you do not want to delete a file.
FORMAT	Formats a floppy disk for storing project files.
SAVE	Saves a file on disk.
REPORTS	Takes you to the part of the program where you can display or print reports, identify your printer to the program, and create DIF™ files (see Reports menu).
PATH	Designates the location (floppy or hard disk or subdirectory) where the program can send or retrieve information when you select Load, Save, or Delete.
OPTIONS	Changes the colors used for menu and schedule displays; operable <b>only</b> with both a color card and a color monitor (see Display Options menu).
EXIT	Exits the VisiSchedule program and saves valuable information about how you've used the program.

## REPORTS MENU

Summary	Listing	Table	Graph	All
Printsetup	DIF Data			

SUMMARY	Prints and/or displays the Project Description Report (see Chapter 4, Unit 3).
LISTING	Prints and/or displays the Job Description Report (see Chapter 4, Unit 3).
TABLE	Prints and/or displays the Tabular Job Report (see Chapter 4, Unit 3).
GRAPH	Prints and/or displays the schedule graph (see Chapter 4, Unit 3).
ALL	Prints all four program reports; all report options must be the same, otherwise the program uses the settings that were selected for the Job Description report (see Chapter 4, Unit 3).
PRINTSETUP	Identifies your printer to the program and specifies whether reports are to be sent to a printer device name or a disk file; UseFF indicates whether your printer issues form feeds; Initstring specifies printer setup strings for special print modes (see Chapter 4, Unit 2).
DIF DATA	Provides a way to transfer manpower and cost data from a VisiSchedule project file to a DIF format file (see Appendix B).

## DISPLAY OPTIONS MENU

Menu	Schedule	Defaults

MENU	Sets the display colors for menus (see Chapter 1, Unit 8).
SCHEDULE	Sets the display colors for schedules (see Chapter 1, Unit 8).
DEFAULTS	Restores all display colors to those that were last set before selecting Options (see Chapter 1, Unit 8).

## MODIFY MENU

Descrip	Manpower	Work	Schedule

DESCRIP	Specifies the general description of the project (see Project Description menu).
MANPOWER	Specifies occupations and salaries for skill categories.
WORK	Defines holidays and days or weeks off, up to 24 days or weeks; Normal and Days options available only if the schedule is measured in days.
SCHEDULE	Takes you to the part of the program where you can add, insert, and modify jobs, and specify the attributes for each job.

## PROJECT DESCRIPTION MENU

Projtitle	Leader	Time	Start
Manpower	Directcost	Critical	Revision

PROJTITLE	Specifies the title of the project; up to 30 characters.
MANPOWER	Defines the monetary unit for manpower costs: units (\$), thousands of units (K\$), or millions of units (M\$).
LEADER	Names the project leader; up to 24 characters.
DIRECTCOST	Defines the monetary unit for direct costs: units (\$), thousands of units (K\$), or millions of units (M\$).
TIME	Sets the time scale (days or weeks) for the project: must be set to days if you want to select Days or Normal when defining nonworking time.
CRITICAL	Specifies whether the critical path will be shown for this project; <b>Y</b> shows critical path and slack times; <b>N</b> displays critical and noncritical jobs with the same symbol.
START	Defines the starting date of a project; if you do not change it, the program uses the same date you entered for Today in the Startup menu.
REVISION	Changes the project's revision number, which otherwise is automatically tracked by the program; up to three digits.

## SCHEDULE MENU

Add	Insert	Erase	Jobmove	Complete
Modify	Goto	Schedule	Other	

ADD	Adds a job before or after the job that you specify; if added between two jobs, does not affect the existing jobs' prerequisites or successors (see Job Specification menu).
INSERT	Inserts a job before or after the job that you specify; can affect the prerequisites and successors of surrounding jobs (see Job Specification menu).
ERASE	Erases the job that you specify.
JOBMOVE	Moves the job that you specify to another position in the schedule.
COMPLETE	Marks all or part of a job as complete (or uncompletes a job that was previously marked as complete).
MODIFY	Modifies an existing job in the schedule (see Job Specification menu).
GOTO	Redisplays the schedule, starting with the job that you specify.
SCHEDULE	Schedules a job to begin on a specified date; can also adjust manpower levels on critical and noncritical jobs.

## SCHEDULE MENU EXTENSION

Highlight	Display	Level	Renumber	Slip
Milestone				

HIGHLIGHT	Highlights the prerequisites and successors of the job that you specify; also highlights job number and name of specified job.
DISPLAY	Displays at the bottom of the schedule the manpower requirements, salaries, or direct costs associated with the project; selecting None cancels these displays.
LEVEL	Adjusts jobs within their slack times to evenly distribute the required manpower; operable only with projects that have slack time.
RENUMBER	Sequentially rennumbers all the jobs in a schedule; once confirmed, this process is irreversible.
SLIP	Reschedules all the uncompleted work in a schedule; all completed work (all or part of a job) must be marked before selecting this option; amount of finished work affects project completion date.

## JOB SPECIFICATION MENU

Accept	Name	Joblength	Prereq	Earliest
Cost	Skill	Deadline		

ACCEPT	Records the job characteristics that you define in this menu and displays them in the schedule.
NAME	Specifies the name of the job; up to 30 characters, but only the first 12 are displayed in the schedule.
JOBLENGTH	Specifies duration of job, measured in days or weeks; the program sets this option to 1, if no entry is made.
PREREQ	Lists jobs that must be completed before the job can be started.
EARLIEST	Specifies the earliest possible starting date for a job.
COST	Assigns the direct cost associated with a job: cost units (\$, K\$, or M\$) are set by Directcost option in Project Description menu.
SKILL	Specifies the manpower requirements (occupations or skill categories and number of people from each) for a job; defines occupations and salaries with Manpower option in Project Description menu.
DEADLINE	Sets a deadline for a job; shown in the schedule as a plus sign (+).
QUIT	Cancels the addition, insertion, or modification of a job and all its specified characteristics, and then returns to the Schedule menu. This option operates differently than all other Quit options in the program.