Operating Systems and Languages Library

MS-DOS

User Guide

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PERSONAL
COMPUTER

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Ing. C. Olivetti & C., S.p.A.
Direzione Documentazione
77, Via Jervis - 10015 Ivrea (Italy)

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PREFACE

This manual is a user guide for the MS-DOS operating system. It describes Microsoft Version 3.30 of MS-DOS, and is for anyone who wishes to use this operating system on an Olivetti Personal Computer.

SUMMARY

This manual is in two parts: the first part teaches you about the basic concepts of MS-DOS, the second part is a reference section to the Video File Editor and to a selection of MS-DOS commands. The appendix is a glossary which describes the technical terms used in this manual.

PRE-REQUISITE PUBLICATIONS

Installation and Operations Guide for your Personal Computer.

RELATED PUBLICATIONS

MS-DOS Software Installation Guide
MS-DOS Quick Reference Guide
MS-DOS Messages
MS-DOS Reference Manual
MS GW-BASIC Interpreter under MS-DOS User Guide
MS GW-BASIC under MS-DOS Quick Reference Guide

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CONTENTS

PART I

1. LEARNING ABOUT MS-DOS

TERMS YOU SHOULD KNOW

INTRODUCING MS-DOS TERMS

When you are introduced to a new or different idea, you must often learn a new set of words to understand the idea. The MS-DOS operating system is no exception. The following pages explain some terms you will need to know so that you can read and use this manual.

Program

Programs, often called application programs, applications, or software, are series of instructions written in computer languages. These instructions are stored in files and tell your computer to perform a task. For example, a program might tell your computer to alphabetically sort a list of names. Spreadsheets and word processors are other examples of programs.

File

A file is a collection of related information, like the contents of a file folder in a desk drawer. File folders, for instance, might contain business letters, office memos, or monthly sales data. Files on your disks could also contain letters, memos, or data. For example, your MS-DOS master disk contains more than thirty files. Your other disks may contain files that you've created, or that came with the disk.

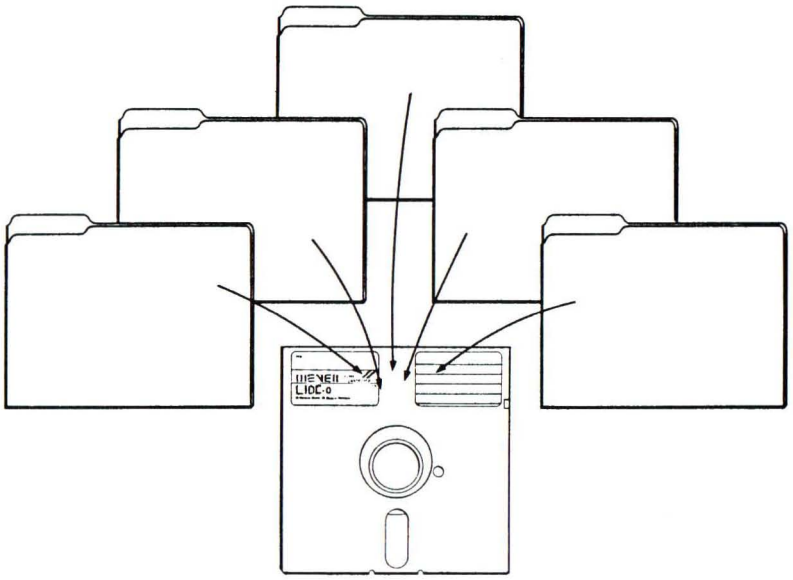
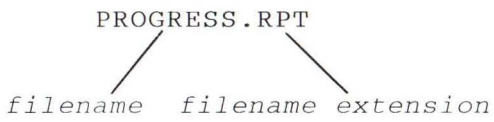


Fig. 1-1 File Folders

Filename

Just as each folder in a file cabinet has a label, each file on a disk has a name. This name has two parts: a *filename* and an *extension*. A filename can be from one to eight characters in length, and can be typed in uppercase or lowercase letters. MS-DOS automatically converts filenames to uppercase letters. Filename extensions consist of a period followed by one, two, or three characters. Extensions are optional, but it's a good idea to use them, since they are useful for describing the contents of a file to you and to MS-DOS. For instance, if you want to be able to quickly identify your report files, you can add the filename extension ".RPT" to each one. Here's an example of a filename with this extension:



When you look at the directory on your MS-DOS master disk, you will see many files with the extension ".EXE" or ".COM". The extension ".EXE" means *executable*, and ".COM" means *command*. These extensions tell MS-DOS that the files are programs that can be run. Many files will have other kinds of extensions, such as ".DOC" and ".TXT", which might contain text. Another common program file extension is ".BAS" for BASIC programs. Some application programs assign filename extensions automatically. For example, Microsoft Multiplan assigns the extension ".MP", and Lotus 1-2-3 assigns one of three extensions, for instance ".WKS" for worksheet files.

Directory

A directory is a table of contents for a disk. It contains the names of your files, their sizes, and the dates they were last modified.

Volume Label

When you use a new disk, you can put a label on the outside of it to help you identify its contents. You can also give each of your disks an internal name, called a *volume label*.

You can look at the volume label on a disk by displaying its directory. Some programs may look at the volume label to see if you are using the correct disk. So make sure that you label your disks. See Chapter 4, "Using Commands", for step-by-step instructions on how to create a volume label for a disk.

Disk Drive

To use the files or programs that are on a floppy disk, you must first insert the disk into a floppy disk drive. Floppy disk drives are commonly referred to as the "A:" drive and the "B:" drive. A hard disk drive, normally installed inside your computer, is usually referred to as the "C:" drive. Check your "Installation and Operations Guide" to see

which drive is "A:" and which is "B:" (or "C:").

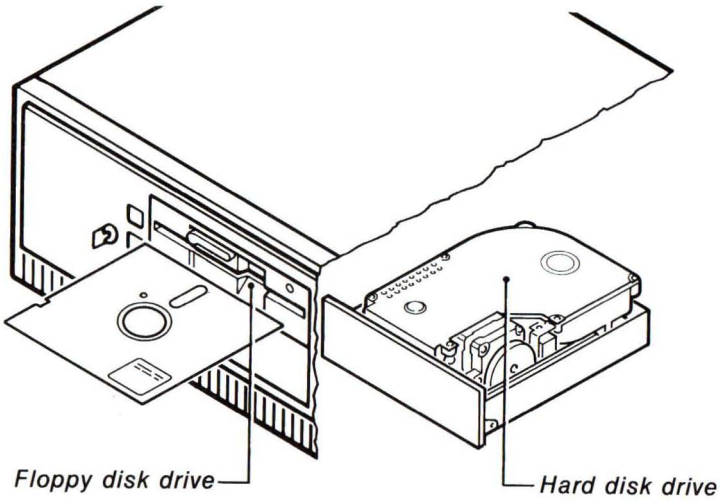


Fig. 1-2 Floppy and Hard Disk Drives

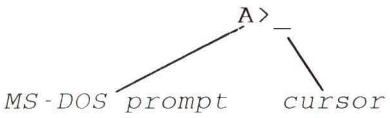
Drive Name

A complete *drive name* consists of a *drive letter* and a *colon*. When using a command, you may need to type a drive name before your filename to tell MS-DOS where to find the disk that contains your file. For example, suppose you have a file named FINANCES.DOC on the disk in drive "B:". To tell MS-DOS where to find this file you would type the drive name before the filename:

```
B:FINANCES.DOC
 /          \
drive name   filename with extension
```

The Default Drive and the MS-DOS Prompt

If you don't specify a drive name when you type a filename, MS-DOS automatically searches for the file on the disk in the *default drive*. The default drive is where MS-DOS searches first when you type a command. To let you know that it is ready to receive a command, MS-DOS displays a symbol, called a *prompt*, that contains the default drive letter followed by a greater-than sign (>). Following the greater-than sign is the *cursor*, the blinking box or flashing underline that shows where the next character you type will appear. Here's an example of a typical MS-DOS prompt and the cursor:



So when your prompt is A>, MS-DOS searches only the disk in drive "A:" (the default drive) for files and programs unless you tell it to search in another drive.

Changing the Default Drive

To change the default drive, you simply type the letter of the desired drive, followed by a colon. For example, if you will be working primarily with files on drive "B:", it is easier to change the default drive to "B:", so that you won't have to type the letter "B", followed by a colon, with every command and filename. Here's how to change the default drive:

```
B:
```

Command

Just as you will run programs to create and update files containing your data, you will also need to run some special programs, called MS-DOS commands, that let you work with entire files. When you type MS-DOS commands, you are asking the computer to perform tasks. For example, when you use the DISKCOPY command to copy your MS-DOS master disk, you are using a file named DISKCOPY.EXE, whose

task is to copy the files on the MS-DOS disk.

Other MS-DOS Commands:

- Compare, copy, display, delete, and rename files
- Copy, format, and label disks
- Run your programs, as well as those supplied with MS-DOS
- List directories for disks
- Set the date and time
- Set printer and screen options

You'll learn more about MS-DOS commands in Chapter 4, "Using Commands". But for more detailed descriptions of commands, see Chapter 7 "MS-DOS Commands".

Devices

Whenever you use your computer, you supply the information (input) and expect a result (output). Your computer uses pieces of hardware called *devices* to receive input and send output.

For example, when you type a command, your computer receives input from your keyboard and disk drive, and usually sends output to your screen. It can also receive input from a mouse, or send output to a printer. Some devices, such as disk drives, perform both input and output.

Device Names

Device names are special names given to each device that your computer knows about. An example of a device name is "LPT1:", which stands for the first parallel lineprinter connected to your computer. When you add a new device, such as a mouse, to your computer, you sometimes need to tell MS-DOS about it by setting up (configuring) your computer for that device. Refer to the information that came with your device, or to the "MS-DOS Software Installation

Guide", for more information on configuring your computer for devices.

Error Messages

If you or your computer makes a mistake when using a device or MS-DOS command, MS-DOS displays an appropriate *error message.* Error messages apply to general errors (such as misspelling a command) or to device errors (such as trying to use a printer that is out of paper). For a complete list and explanation of each MS-DOS error message (device and general), see the "MS-DOS Messages" manual.

Memory

Memory is the place in your computer where information is actively used. When you run a program, MS-DOS stores that program and the files it uses in the computer's available memory. Some programs and files use more memory than others, depending on how large and complex they are.

THE KEYBOARD

KEYS YOU USE WITH MS-DOS

Now that you've learned about MS-DOS terms, you can learn about the keys you will be using with the MS-DOS operating system.

Differences between keys

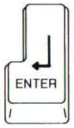
In addition to the keys you'd find on a typewriter, your computer keyboard has some keys that have special meanings to MS-DOS.

First, note that there are two important differences between a typewriter keyboard and a computer keyboard:

A computer understands the difference between a one and a lowercase L. Be sure you don't type a lowercase L when you mean a one.

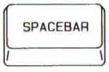
Capital O and zero may look alike, but they have different meanings to a computer. Many computers display a zero with a diagonal line (0) through it. Make sure you type the correct letter or number when you give commands to MS-DOS.

The ENTER key

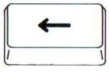


Press the ENTER key after you type commands. When you press the ENTER key after typing a command, MS-DOS performs the command.

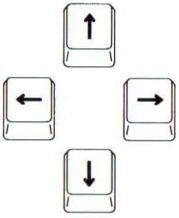
Moving the Cursor: Keys That Move the Cursor



The SPACEBAR moves the cursor to the right.



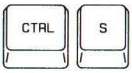
Use the BACKSPACE key to correct typing mistakes on the current line. The BACKSPACE key deletes characters as it moves the cursor to the left.



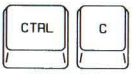
To move the cursor to the left or right *without deleting any characters,* you must use the direction keys. Direction keys move the cursor right, left, up, and down. They do not affect the characters that are displayed. Some programs ignore these keys or do not use them. In these manuals, the direction keys are also referred to as the RIGHT, LEFT, UP and DOWN arrow keys.

Control Key Combinations: Using the CONTROL Key

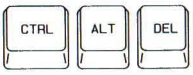
The CONTROL key has a special task. It lets you give complex commands to your computer by pressing only two or three keys. You must hold down the CTRL key while you press another key. That is, you use the CONTROL key as you would the SHIFT key.



When you press the CTRL key and the S key at the same time, you can stop the scrolling of the screen display. Then to continue scrolling, press CTRL S again.



When you press the CTRL key and the C key at the same time, you can stop a command.



If you want to restart MS-DOS, press the CTRL, ALT and DEL keys at the same time.

If you have an 101 or 102 Key New Industry Standard Keyboard, when you press the PAUSE key, you can stop the scrolling of the screen display. Then to continue scrolling, press the SPACE bar.

2. LEARNING ABOUT DISKS, FILES, DIRECTORIES

FLOPPY DISKS

A floppy disk is a flexible, magnetized plastic disk. A double-density floppy disk can store up to 400 single-spaced pages of text. A high-density disk can store about three times that amount.

5 1/4 INCH FLOPPY DISKS

Every floppy disk is enclosed in its own protective cover. The front of this cover is smooth, while the back has visible seams. You should always place labels on the front of the cover, at the top, so that the label doesn't touch the magnetic surface of the disk. It's also a good idea to use a felt-tip pen when writing on labels - a pencil or ballpoint pen can damage the disk if you press too hard.

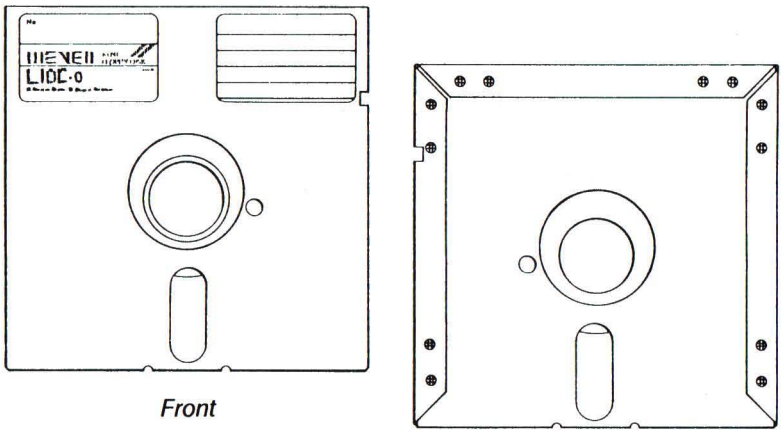


Fig. 2-1 A 5 1/4 inch Floppy Disk

You should store floppy disks in a safe place, away from dust, moisture, magnetism, and extreme temperatures. Be sure to label each disk you use, since labels help you identify what files are on the disk and remind you that the disk has information stored on it.

DISK PROTECTION

Protecting Your Disks

Labels help you keep track of the information on your disks, but you may also need to protect the disks themselves. Some floppy disks are protected, letting you examine information on them without letting you change anything. These are called *write-protected* disks.

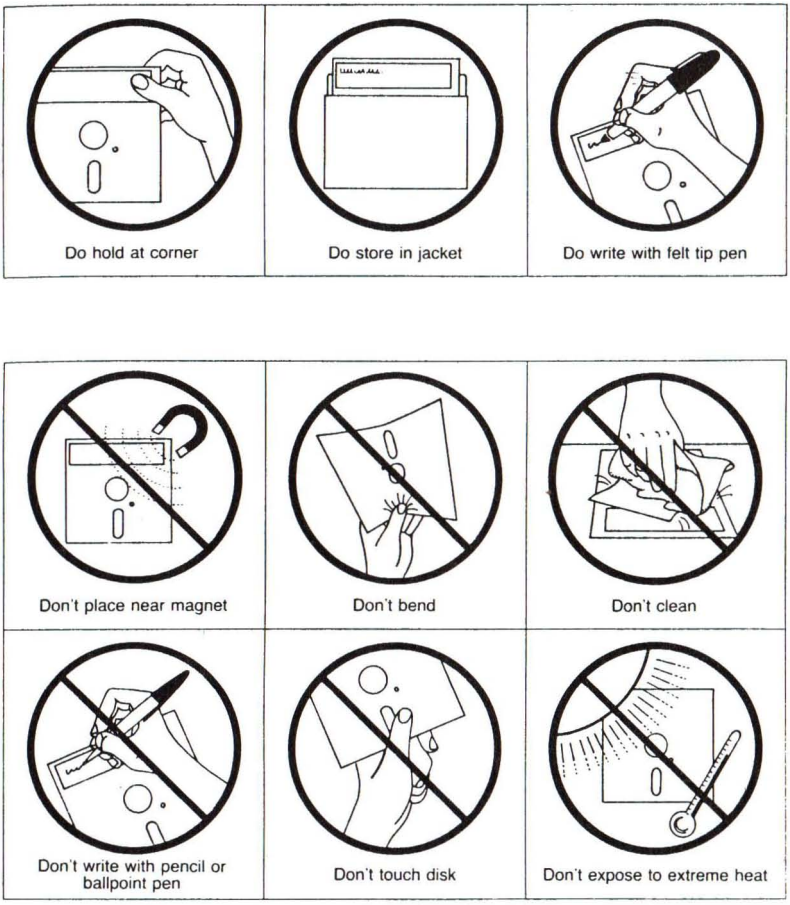


Fig. 2-2 5 1/4 inch Diskette Advice

Floppy disks can be write-protected in one of two ways. Some have a small piece of tape, called a tab, covering a notch on the right side of the disk. You can copy information onto a write-protected disk by first removing the write-protect tab; however, you should consider why the disk was protected - **before** you change its contents. After you have

copied or changed a write-protected disk it's always a good idea to replace the write-protect tab.

If a disk does not have a write-protect notch, it is permanently write-protected. Many application programs, come on write-protected disks that protect the files from being destroyed accidentally.

3 1/2 INCH FLOPPY DISKS

About 3 1/2 inch disks

The MS-DOS Ver 3.30 operating system also supports 3 1/2 inch disks, which, like 5 1/4 inch floppy disks, are portable magnetic disks. Data on 3 1/2 inch disks is more densely packed, so depending on the style, a single 3 1/2 inch disk can store as much (or more) data than a high-density floppy disk.

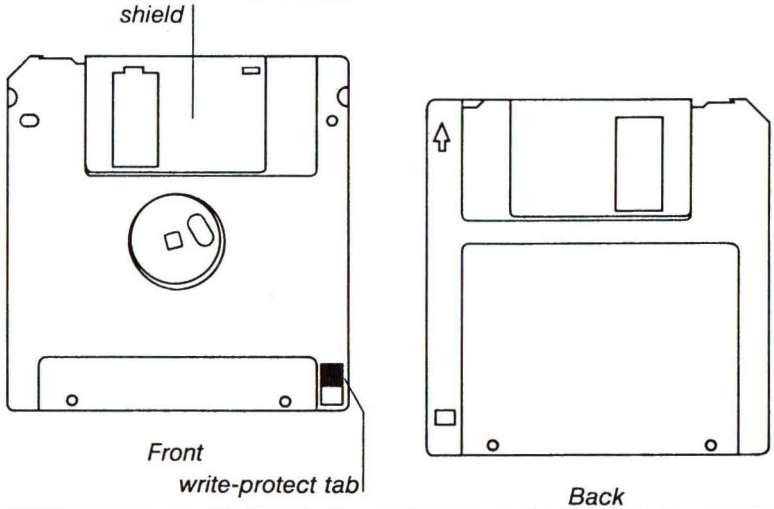


Fig. 2-3 A 3 1/2 inch Floppy Disk

These smaller disks, sometimes called microfloppies, have rigid plastic covers with metal shields that guard the disk from dirt and fingerprints. When you place the disk into the disk drive, the computer automatically moves this shield aside to read the disk.

Note that 3 1/2 inch disks have a write-protect notch. This notch can be covered with a built-in tab. As with 5 1/4 inch floppy disks, if the write-protection notch is covered by the tab, no data can be written to the disk. Be sure to label your 3 1/2 inch disks and store them in a safe place. As with 5 1/4 inch floppy disks, extreme temperatures, magnetism, dust, and fingerprints can all harm your data on a disk.

Note MS-DOS works virtually the same way with both 3 1/2 inch and 5 1/4 inch floppy disks. So in this documentation, the term floppy disk is used to mean either of these two types of disks.

HARD DISKS

In addition to floppy disks, some computers use a hard disk, which can store much more information than a floppy disk. Computers also take less time to find information stored on a hard disk than on a floppy disk. A hard disk is usually built into the computer.

When you store application programs, including MS-DOS, on your hard disk, you should keep a backup copy of the programs on a floppy disk in case the information on the hard disk is accidentally damaged or destroyed. (For more information about making a backup copy of your MS-DOS disk see Chapter 3, "Getting Started".)

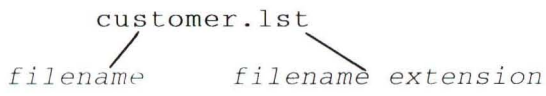
FORMATTING YOUR DISKS: THE FORMAT COMMAND

Before you can use your new disks for storing information, you must format them. You do this with the FORMAT command, a special program that structures a disk so that MS-DOS can find information on it. The FORMAT command also checks the disk for defective spots.

You can format both floppy and hard disks. But remember that if a disk is not blank, formatting it destroys any data already on the disk. You will learn more about the FORMAT command in Chapter 4, "Using Commands".

HOW TO NAME YOUR FILES

When naming a file, you may have trouble finding a name that uniquely identifies the file's contents. Dates, for example, are often used in filenames; however, they take up several characters, leaving you with little flexibility. Other common names for files are words like BUDGET, FINANCES, ANALYSIS, REPORT, etc. These kinds of filenames identify the contents, but leave little room for dates. So the secret is to find a compromise-a point where you can combine a date with a word, creating a unique filename. The name of a typical MS-DOS file (see Chapter 1) looks like this:



Notice that the filename was typed in lowercase letters. You can type filenames in uppercase or lowercase letters, even though MS-DOS converts them into upper-case letters. Some more examples of filenames are:

```
BUDGE.86
TAKEOVER.BID
JUNE86
FINANCES.DOC
SCHEDULE.MAY
```

Valid Filename Characters

Many of your filenames will contain only letters and numbers. But you may also use any of the following symbols (and letters) in your filenames and extensions:

A-Z a-z 0-9 $ % ' - @ { } ~ ` ! # ( ) & ^ _

Warning: Some applications may not let you use all of these symbols. If in doubt use only letters and numbers.

Invalid Filenames

Avoiding invalid filenames Although you do have some freedom when naming your files, there are certain names that you may not use, because MS-DOS reserves them for specific devices that your computer uses. These invalid names are AUX, CLOCK$, COM, CON, LPT, LST, NUL, and PRN. You may use these names as extensions (except for CLOCK$), but remember not to use them to name your files.

DIRECTORIES

The names of your files are kept in a directory on each disk. The directory also contains information on the sizes of the files, and the dates they were created and updated.

The MS-DOS Directory

If you want to know what files are on your disk, you can use the DIR command. This command tells MS-DOS to display all the files in a specific directory on a disk. For example, if your MS-DOS disk is in drive "A:" and you use the DIR command, the directory display would look similar to this:

```
Volume in drive A is START(3_30)
Directory of A:\

COMMAND  COM     25292   11-30-87   9:00a
ANSI     SYS      1647   11-30-87   9:00a
COUNTRY  SYS     11254   11-30-87   9:00a
DISPLAY  SYS     11259   11-30-87   9:00a
DRIVER   SYS      1165   11-30-87   9:00a
FASTOPEN EXE      3888   11-30-87   9:00a
FDISK    COM     48919   11-30-87   9:01a
FORMAT   COM     11681   11-30-87   9:00a
KEYB     COM      9617   11-30-87   9:00a
KEYBOARD SYS     22119   11-30-87   9:00a
MODE     COM     15440   11-30-87   9:00a
NLSFUNC  EXE      3029   11-30-87   9:00a
PRINTER  SYS     13559   11-30-87   9:00a
REPLACE  EXE     13234   11-30-87   9:00a
SELECT   COM      4132   11-30-87   9:00a
SYS      COM      4735   11-30-87   9:00a
VDISK    SYS      3424   11-30-87   9:00a
XCOPY    EXE     11216   11-30-87   9:00a
EGA      CPI     49065   11-30-87   9:02a
LCD      CPI     10752   11-30-87   9:00a
4201     CPI     17089   11-30-87   9:00a
5202     CPI       459   11-30-87   9:00a
       22 File(s)       5120 bytes free
```

You can also get information about any file on your disk by entering the DIR command followed by a filename. For example, to display directory information for a file named schedule, you could use the following command:

DIR SCHEDULE

MS-DOS would respond by displaying the filename SCHEDULE followed by the file's size in bytes and the date and time it was last changed; for example:

```
SCHEDULE    3698 8-7-87 4:11p
```

3. GETTING STARTED

HOW TO START AND END YOUR MS-DOS SESSION

The first two chapters in this manual introduced you to the fundamentals of MS-DOS. Now it's time to put your new knowledge to the test. You'll start by loading MS-DOS into your computer's memory.

STARTING MS-DOS

To start MS-DOS, just follow these steps (these steps work for computers that have either hard disks or floppy disks):

1. First, make sure your computer is turned off.

2. Insert this disk into drive "A:". (Refer to your computer's "Installation and Operations Guide" to identify the correct drive.)

3. Close the disk drive door.

4. Turn on the power for your monitor and your computer.

The light on the disk drive should glow, and you should hear some whirring noises as your computer reads the disk. You should then see something similar to the following on your screen:

```
Current date is Tue 1-01-1980
Enter new date (mm-dd-yy):
```

MS-DOS asks you to provide the date.

Setting the Date and Time

1. Type the date. For example, if the date is July 6, 1988, you simply type the following command, then press the ENTER key:

   07-06-88

   If the date is already correct, or you do not want to answer this prompt, press the ENTER key to move to the next step.

2. Type the time according to a 24-hour clock. For example, if it is 1:30 P.M., type the following, then press the ENTER key:

   13:30

If the time is already correct, or you do not want to answer this prompt, press the ENTER key.

MS-DOS does not accept your command until you press the ENTER key.

Note

If you make a mistake when you are typing the date or time, simply backspace over the mistake and retype (as you use the BACKSPACE key, you will notice that the characters disappear). If you make a mistake and have already pressed the ENTER key, press the CONTROL ALT DEL keys simultaneously to restart MS-DOS and try again.

Your screen should look something like this (your time and date may be different, depending on what you typed in steps 1 and 2):

```
Current date is Tue 1-01-1980
Enter new date (mm-dd-yy): 07-06-87
Current time is 0:00:45:10
Enter new time: 13:30

Microsoft(R) MS-DOS(R) Version 3.30
(c)Copyright Microsoft Corp 1981-1987

A>_
```

In this example, the default drive is drive "A:", so the A> is the standard

MS-DOS prompt. When you see A> prompt, MS-DOS is waiting for instructions from you.

Before you start giving these instructions, however, you might like to know how to quit MS-DOS.

QUITTING MS-DOS

There is no "quit" command in MS-DOS, but you can end your MS-DOS session easily by following these steps:

1. Make sure that your last command is finished. You should see the MS-DOS prompt (for example, A>) on the screen.

2. Remove the floppy disks from the drives, put them back in their protective jackets, and store them in a safe place, away from dust, moisture, and magnetism.

3. Turn off your computer.

HOW TO MAKE A BACKUP COPY OF YOUR MS-DOS DISK

In this section you'll learn how to make a backup copy of your MS-DOS disk if you have two floppy disk drives. If you have a hard disk, read "If You Have a Hard Disk". If you have only one floppy disk drive, read this section, then "If You Have Only One Floppy Disk Drive" at the end of this chapter.

MS-DOS comes with a program named DISKCOPY that lets you copy the contents of disks. You need not format your blank disks before you use the DISKCOPY command.

Making a Backup Copy of MS-DOS

Making a backup copy of your MS-DOS master disk is easy:

1. Start MS-DOS with the MS-DOS master disk in drive A:.

2. Make sure that a blank disk is in drive B:.

3. At the MS-DOS prompt, type the following:

   DISKCOPY A: B:

4. Press the ENTER key. If you make a mistake when typing this command, such as misspelling it, MS-DOS displays the following error message:

```
Bad command or file name

A>_
```

   To fix this error, retype the command, and check the spelling before you press the ENTER key. Your screen should look like this:

```
A> DISKCOPY A: B:

Insert SOURCE diskette in drive A:

Insert TARGET diskette in drive B:

Press any key when ready . . .
```

   Note: If you have only one floppy disk drive, MS-DOS prompts you to insert the drive A disk. For more information, see the section, "If You Have Only One Floppy Disk Drive", later in this chapter.

5. Press the SPACEBAR to start the DISKCOPY program. The disk copying process takes time, so you'll have to wait awhile. When the DISKCOPY program is complete, MS-DOS asks:

```
Copy another?  (Y/N)
```

6. Type N (for No) to end the DISKCOPY program.

You now have two MS-DOS disks: the MS-DOS master disk and the copy you just made.

Label the new disk, and cover its write-protect notch with a write-protect tab. Then put your MS-DOS master disk in a safe place, away from dust, moisture, and magnetism. If anything should happen to the

copy you have just made, you'll have to use the master disk to make another copy.

Note: Always use your backup copy of the MS-DOS master disk. Keep the master disk in a safe place.

IF YOU HAVE A HARD DISK

If your computer has a hard disk, you should copy all the files from the MS-DOS master disk onto the hard disk. Then each time you start MS-DOS, you won't need to use a floppy disk; instead, you'll be able to start MS-DOS directly from the hard disk. When you have copied the MS-DOS files onto your hard disk, the original floppy disk will be your backup copy.

But before you can copy the MS-DOS files onto your hard disk, you may need to install MS-DOS on it first. To find out whether you need to do this, see the chapter "Hard Disk Systems" in the "MS-DOS Software Installation Guide".

Warning: Whenever you format a disk, you destroy its files. It's a good idea to copy any files from your hard disk onto floppy disks before you format the hard disk (to learn how to copy files, see Chapter 4, "Using Commands"). Once you have formatted your hard disk you should never have to format it again.

Formatting Your Hard Disk

The following example assumes that your hard disk is named drive "C:". Follow these steps to format it:

1. Start MS-DOS, with the MS-DOS system disk in drive "A:".

2. At the MS-DOS prompt, type the following command:

   FORMAT C: /V /S
   then press the ENTER key

3. If you've typed the command correctly, MS-DOS formats the disk in drive C. However, if you make a mistake when typing the command line, such as misspelling it, MS-DOS displays the

following message:

```
Bad command or file name

A>_
```

To fix this error, retype the command, and check the spelling before you press the ENTER key. If you have typed the command correctly, MS-DOS displays a message showing you its progress as it formats your hard disk.

When the format process is complete, MS-DOS displays the following prompt:

```
Volume label (11 characters, ENTER for none)?
```

4. Type the name that you want to use to identify the hard disk (for example, HARD DISK), and press the ENTER key. MS-DOS asks:

```
Format another? (Y/N)
```

5. Type N (for No) to end the FORMAT program.

To copy files onto your newly formatted hard disk, you must use the COPY command. This command is automatically loaded into your computer's memory when you start MS-DOS.

Note: You cannot copy files onto your hard disk by using the DISKCOPY command. The DISKCOPY command works only for copying one floppy disk to another.

Copying Files onto a Hard Disk

To copy your MS-DOS master disk onto a hard disk (drive C), follow these steps:

1. Make sure that the MS-DOS master disk is in drive "A:".

2. At the MS-DOS prompt, type the following command:

COPY A:*.* C:

This command tells MS-DOS to copy all files on drive "A:" to drive "C:".

3. Press the ENTER key.

The COPY program then lists each file on the screen as it is copied onto the new disk. When the process is complete, MS-DOS shows you how many files it has copied.

You now have two MS-DOS disks: the MS-DOS master disk and the copy you have just made on your hard disk.

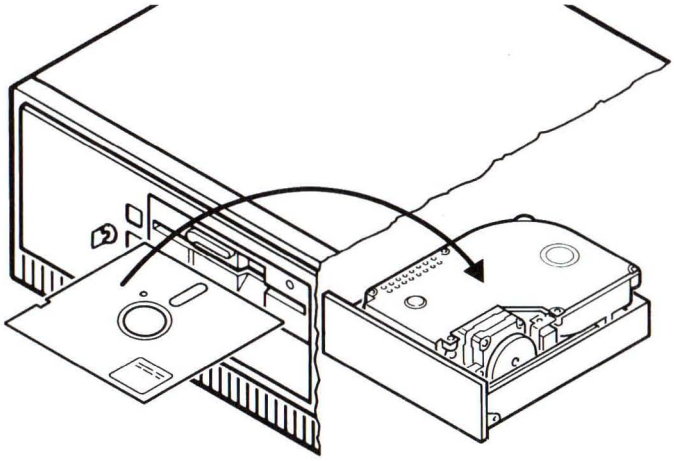


Fig. 3-1 Master Diskette Copied to Hard Disk

Now, put the master disk in a safe place, away from dust, moisture, and magnetism. If anything happens to your hard disk, you will have to use the master disk to make another MS-DOS backup copy.

IF YOU HAVE ONLY ONE FLOPPY DISK DRIVE

If your computer has only one floppy disk drive, you can still use MS-DOS commands as you would on a system with more than one drive, but you must also specify a drive name when you type a command. By specifying the drive letter, you tell your computer to perform the command on that drive. The drive names "A:" and "B:" then represent the disks that you put into the single drive. In response to your commands, MS-DOS then prompts you to insert the proper disk, as in the following example:

```
A> FORMAT A: /V
Insert new diskette for drive A:
and strike ENTER when ready_
```

If you specify drive "B:" in a command when you have only one drive, MS-DOS prompts you to insert the disk for drive "B:". To make a copy of your MS-DOS disk if you have only one floppy disk drive, type the following at the MS-DOS prompt:

```
DISKCOPY A: B:
```

MS-DOS responds with the following message:

```
Insert SOURCE diskette in drive A:
Press any key when ready . . .
```

Remove the MS-DOS disk, put the blank disk into the drive, and press any key. You may need to reinsert the disks for drives "A:" and "B:" several times to complete the copy process.

Note: The letter in the system prompt represents the default drive; it does not represent the last disk used.

4. USING COMMANDS

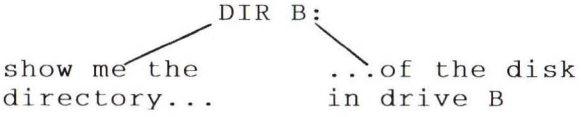
USING FILE COMMANDS

You can use several MS-DOS commands to manage your files. Some of the more common commands are DIR, COPY, DEL, RENAME, and PRINT.

Note: The examples in this chapter assume that drive "A:" is the default drive. Also, many of these examples use filenames which are intended for illustrative purposes only - to use these commands, you would substitute the name of a file on the default disk.

THE DIR COMMAND

If you want to find out what files are on a disk, you can list its directory by using the MS-DOS DIR command. For example, to display the directory of the disk in drive B, you would use the following command:



You could also display the directory on the hard disk by using the drive letter "C:" instead of "B:" with the DIR command. If you use the DIR command without a drive letter, MS-DOS lists the directory of the disk in the default drive.

Example

Listing the MS-DOS Directory

Suppose you want to see how many files are in the directory of the MS-DOS disk in drive "A:". To display this directory you would simply follow these steps:

1. Make sure the MS-DOS disk is in drive "A:".

2. Make sure the disk drive door (for drive A:) is closed

3. At the MS-DOS prompt, type the following command, then press the ENTER key:

   DIR

4. If the disk drive door (for drive "A:") is open when you try to use this command, MS-DOS will display the following error message:

   ```
   Not ready error reading drive A

   Abort, Retry, Ignore?_
   ```

   To fix this error, you simply close the door for drive "A:" and type R (for Retry)

5. MS-DOS then displays the directory. If necessary, you can stop the directory listing from scrolling by pressing CTRL S. To view the rest of the display, you simply press CTRL S again.

Your screen should look similar to this:

```
Volume in drive A is DOS 3-3

Directory of A:\


COMMAND  COM     25292   11-30-87   9:00a
ANSI     SYS      1647   11-30-87   9:00a
COUNTRY  SYS     11254   11-30-87   9:00a
DISPLAY  SYS     11259   11-30-87   9:00a
DRIVER   SYS      1165   11-30-87   9:00a
FASTOPEN EXE      3888   11-30-87   9:00a
FDISK    COM     48919   11-30-87   9:01a
FORMAT   COM     11681   11-30-87   9:00a
KEYB     COM      9617   11-30-87   9:00a
KEYBOARD SYS     22119   11-30-87   9:00a
MODE     COM     15440   11-30-87   9:00a
NLSFUNC  EXE      3029   11-30-87   9:00a
PRINTER  SYS     13559   11-30-87   9:00a
REPLACE  EXE     13234   11-30-87   9:00a
SELECT   COM      4132   11-30-87   9:00a
SYS      COM      4735   11-30-87   9:00a
VDISK    SYS      3424   11-30-87   9:00a
XCOPY    EXE     11216   11-30-87   9:00a
EGA      CPI     49065   11-30-87   9:02a
LCD      CPI     10752   11-30-87   9:00a
4201     CPI     17089   11-30-87   9:00a
5202     CPI       459   11-30-87   9:00a
       22 File(s)       5120 bytes free
```

THE COPY COMMAND

If you need to copy files, you can use the COPY command to copy one or more files, either on the same disk or from one disk to another. For instance, suppose you need a copy of a file named SALES.DOC that you have on a disk in drive A, and suppose you want to call this new copy MONTHLY.RPT.

Example

Copying a file.

To copy the SALES.DOC file and call the new copy MONTHLY.RPT you would just follow these steps:

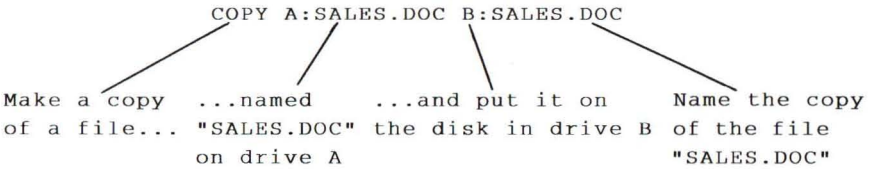
1. Make sure that the disk with the SALES.DOC file is in drive "A:" and that "A:" is the default drive.

2. At the MS-DOS prompt, type the following command:

   COPY SALES.DOC MONTHLY.RPT

3. Press the ENTER key.

You cannot give the new copy of a file the same name as the original. You can, however, copy a file from one disk to another and keep the same filename. For example, to copy a file from the disk in drive "A:" to the disk in drive "B:", use the following command:



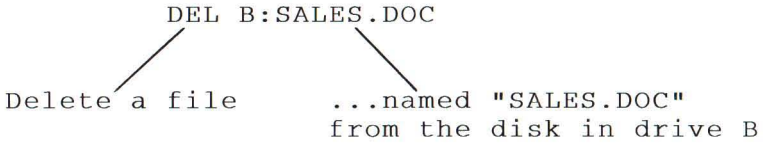
Note: In the previous example, if "A:" is the default drive (that is, if the prompt is "A>"), you needn't type the letter "A:", followed by a colon, before the first filename. If you don't specify a new name, the copy will also have the name of the original file. For example, the following commands all produce the same result:

```
COPY A:SALES.DOC B:SALES.DOC

COPY SALES.DOC B:SALES.DOC

COPY SALES.DOC B:
```

Again, by substituting the drive letter "C" for "B", you could copy the SALES.DOC file to drive "C:".

THE DEL COMMAND

Just as you may need to make copies of files, you may also need to remove old or unnecessary files to clean up your file system. When you want to erase a file from a disk, you can use the MS-DOS DEL command. Remember, though, that the DEL command permanently erases the file. To delete an old sales.doc file from the disk in drive "B:", at the MS-DOS prompt you would use the following command:



You could also delete a file named SALES.DOC from drive "C:" by simply substituting the drive letter "C" for "B".

Example

Deleting a file.

Suppose you have an old copy of the SALES.DOC file that you no longer need. To delete this file from the disk in the default drive, you would just follow these steps:

1. Make sure that the disk with the SALES.

2. At the MS-DOS prompt, type the following command:

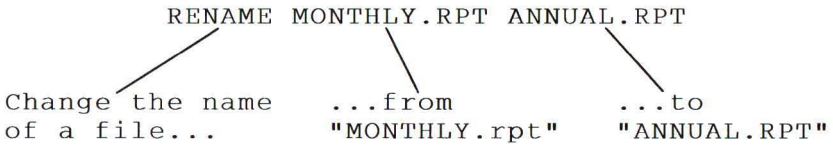
   DEL SALES.DOC

3. Press the ENTER key. MS-DOS then deletes the SALES.DOC file from the disk.

Note: The DEL command does not work if you type the word delete. You can, however, substitute the word ERASE in place of the DEL command.

THE RENAME COMMAND

Occasionally, you may want to change the name of a file. For example, suppose you have a file named MONTHLY.RPT on a disk. When you add other monthly reports to your disk, you may want to change the name of the original file to something more specific. To change the name to ANNUAL.RPT, for instance, you would use the following command:



You can only rename files on the same disk, so you cannot change A:MONTHLY.RPT to B:MONTHLY.RPT or C:MONTHLY.RPT.

Example

Renaming a file.

Suppose you want to rename a file named PAYROLL.DOC, on the disk in the default drive, to SALARY.DOC. You would simply follow these steps:

1. Make sure that the disk with the PAYROLL.DOC file is on the disk in the default drive ("A:").

2. At the MS-DOS prompt, type the following command:

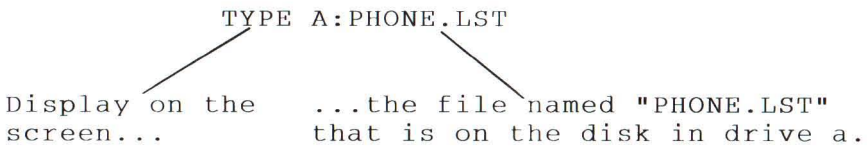
   RENAME PAYROLL.DOC SALARY.DOC

3. Press the ENTER key.

Note: The RENAME command can be abbreviated to REN.

THE TYPE COMMAND

If you want MS-DOS to display a file that contains text (often called a text file) on the screen, use the TYPE command. For example, say you have created a file named PHONE.LST on the disk in drive "A:", and you want to check one of the phone numbers. To display the file on the screen, you would use the following command:



Example

Displaying a file.

Suppose you want to check your employees' salary figures. So you decide to look at a file named SALARY.DOC that is on the disk in the default drive. To display the SALARY.DOC file you would just follow these steps:

1. Make sure that the disk with the salary.doc file is in the default drive (A).

2. At the MS-DOS prompt, type the following command:

   TYPE SALARY.DOC

3. Press the ENTER key.

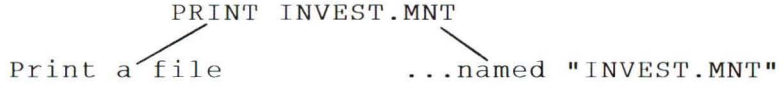
MS-DOS then displays the SALARY.DOC file on the screen. If the

SALARY.DOC file is on drive "B:" or "C:", you could easily type the drive letter, followed by a colon, with the TYPE command.

Hints: If the file is too long to fit on the screen, remember that you can press CTRL S to prevent it from scrolling off the screen. When you press CTRL S again, the file will resume scrolling. MS-DOS displays only text files on the screen. So if you try to display a program file (one with an extension of .COM or .EXE), you will see only strange symbols on the screen. If you have an application program that creates files, you may need to run the application to view them. For example, if you use Microsoft Multiplan to create a file, Multiplan automatically adds the extension .MP to the filename. You would then have to start Multiplan to view the file.

THE PRINT COMMAND

If you have a printer attached to your computer, you can print files with the MS-DOS PRINT command. Assume, for example, that you have a file named invest.mnt and want to print it on your printer. You could use the following command:



Example

Printing a file.

Say you have a file that contains a list of investors and their phone numbers, and suppose you want to print this file and keep it near your phone. The file is named INVEST.MNT and is on the disk in drive "B:". Drive "A:" is the default drive (A> is the prompt). To print the INVEST.MNT file, you would just follow these steps:

1. Make sure that the MS-DOS disk is in drive "A:".

2. Make sure that the disk with the INVEST.MNT file is in drive "B:".

3. Check to see that your printer is on, has paper, and is ready to print.

4. At the MS-DOS prompt, type the following command:

   PRINT B:INVEST.MNT

5. MS-DOS prompts you for the name of the printing device connected to your computer (this name is usually the communications port that the printer cable connects to). Just type the name, or press the ENTER key to print to the default printer.

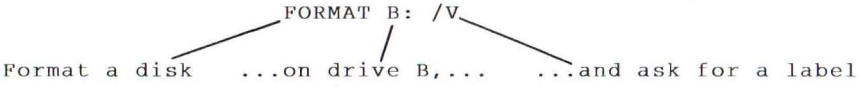
Hints While a file is being printed, you can type other commands to MS-DOS. You can even run other programs or create and modify files. But since printing a file takes a lot of your computer's resources, your tasks may take longer if you try to do them while you are printing a file. So if you have a long file to print, you might schedule the printing for when you plan to be away from your computer. In addition, if you want to print a file that you've created with an application program, you may also have to use the application program's print command to print the file.

USING DISK COMMANDS

This section presents two commands that you use for disks: FORMAT and DISKCOPY.

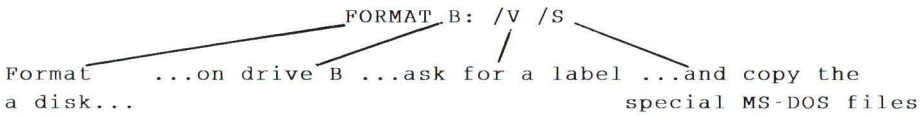
THE FORMAT COMMAND

When you purchase new disks, they are blank and unformatted. You must format them before MS-DOS can use them. Formatting structures a disk so that MS-DOS can find and store information on it; formatting also checks the disk for defective spots. You can format a disk by using the FORMAT command. To format a blank disk in drive "B:", you would use the following command:



Note: If you have only one disk drive, MS-DOS prompts you to insert the disk that you want to format. See If You Have Only One Floppy Disk Drive, in Chapter 3, "Getting Started".

You can also format a blank disk in such a way that some special MS-DOS files are copied onto it during formatting. These files are necessary only if you want to use the disk to start MS-DOS. To format a blank disk in drive B and include these special MS-DOS files, you would use the following command:



If you don't want to use the disk to start MS-DOS, you don't need to specify the /S option when formatting the disk. If you have a disk and don't know whether you can use it to start MS-DOS, put the disk into drive "A:" and press the CTRL ALT DEL key combination. If the disk does not contain the system files, MS-DOS displays an error message.

Example

Formatting a Floppy Disk.

Suppose you need to create a new data disk to hold some tax records, but you don't want to copy the special MS-DOS files when formatting the disk. To format and label a blank disk (in drive "B:") without including the special MS-DOS files, you simply follow these steps:

1. Make sure that the MS-DOS disk is in drive "A:".

2. At the MS-DOS prompt, type the following command:

   FORMAT B: /V

3. Press the ENTER key.

   Your screen should look like this:

   ```
   A>FORMAT B: /V
   Insert new diskette for drive B:
   and strike ENTER when ready_
   ```

4. Insert a blank disk in drive B.

5. Press the ENTER key to start the format process. When formatting is complete, MS-DOS displays the following prompt:

```
Volume label (11 characters, ENTER for none)?
```

6. Type a label that identifies the contents of this disk (for example, DATA DISK), and press the ENTER key. MS-DOS then asks:

```
Format another?  (Y/N)
```

7. Type N (for No) to exit the FORMAT program.

In this example, you learned how to format a floppy disk that was in drive "B:", a floppy disk drive. To format your hard disk, you should follow the instructions in Chapter 3, "Getting Started". Now your disk is formatted and ready to use. Be sure to label it on the outside cover, and remember to include the volume label that you used in step 6. The label will remind you that you have formatted the disk, and will help you identify its contents.

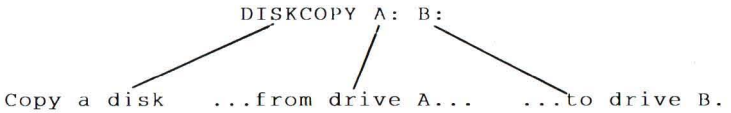
Warning: The FORMAT program destroys any information already on a disk. It's a good idea to check the directory of a disk before you format it, just to make sure you won't be destroying any important files.

THE DISKCOPY COMMAND

You may often need to make copies of entire disks instead of individual files. You can do this easily with the MS-DOS DISKCOPY command. To use the DISKCOPY command, you must have:

- an MS-DOS disk
- a disk you want to copy
- a blank disk to put the copy on

To copy the contents of a disk in drive "A:" to a disk in drive "B:", you would use the following command:



Note: You cannot use the DISKCOPY command to copy the contents of a floppy disk to or from a hard disk. Instead, you must use the COPY command.

Example

Copying a Floppy Disk.

Suppose you want to bring a data disk with you on a business trip, but you don't want to take your original disk because it might get damaged. All you have to do is use the DISKCOPY command to make a copy of the disk. For example, to copy the contents of a disk in drive "A:" to a disk in drive "B:", you simply follow these steps:

1. Put your MS-DOS disk in drive "A:".

2. At the MS-DOS prompt, type the following command:

   DISKCOPY A: B:

3. Press the ENTER key. Your screen should look like this:

```
A>DISKCOPY A: B:

Insert SOURCE diskette in drive A:

Insert TARGET diskette in drive B:

Press any key when ready . . .
```

4. Remove the MS-DOS disk from drive A, replacing it with the disk you want to copy (SOURCE). Then place a blank disk (TARGET) in drive "B:".

5. Press the SPACEBAR to start the DISKCOPY process. When the disk has been copied, MS-DOS asks:

```
Copy another?  (Y/N)
```

6. Type N (for No) to exit the DISKCOPY program.

5. USING APPLICATIONS WITH MS-DOS

HOW TO RUN APPLICATION PROGRAMS

MS-DOS lets you run many different application programs, including spreadsheets, word processing programs, and graphics packages. These application programs can help you in a number of ways. For instance, they can help you balance a budget, figure income taxes, or manage information, such as stocks, monthly reports, and address lists.

Starting An Application From A Floppy Disk

Once you have started MS-DOS, you can run an application program, as follows:

1. If drive "A:" is not the default drive
2. Put the application program disk in drive "A:" (the default drive)
3. Type the name of the application program you want to run
4. Press the ENTER key.

Example

Suppose you have a word processing application called PHRASE that you want to use to write a monthly status report. To start PHRASE in MS-DOS, you would follow these steps:

1. Make sure that the default drive is drive "A:" by typing the letter "A" followed by a colon.
2. Type the name PHRASE (supposing PHRASE is the word used to start the application).

3. Press the ENTER key to start PHRASE, which you could then use to create, edit, format, or print your status report.

Starting An Application From A Hard Disk

If you want to run an application that is on your hard disk (drive "C:"), follow these steps:

1. Change the default drive to "C:", the drive that contains the application program.

2. Type the name of the application program you want to run.

3. Press the ENTER key.

Example

Suppose you have a graphics program called CANVAS stored in drive "C:", and you want to use it to create a chart showing the current month's sales data. To start CANVAS in MS-DOS, you would follow these steps:

1. Change the default drive to drive "C:" by typing the letter "C", followed by a colon.

2. Type CANVAS (supposing CANVAS is the word to start the application).

3. Press the ENTER key to start CANVAS.

You could then use CANVAS to create your chart.

A Note About Using Application Programs

After quitting some application programs, especially programs that use a lot of memory, you may receive the following error message from MS-DOS:

```
Invalid COMMAND.COM
Insert disk with COMMAND.COM in drive d:
Replace and strike any key when ready
```

This message doesn't mean you have ruined your application program or your computer. It occurs because your application used so much of the computer's memory that it wrote over the MS-DOS COMMAND.COM file. To fix the error, you simply reinsert a disk that contains a copy of COMMAND.COM in the default drive (this COMMAND.COM file must be the same version you used to start MS-DOS). You then press any key when you're ready to continue using your computer.

HOW TO CREATE A FILE WITH EDIT

MS-DOS includes a video file editing program called EDIT that lets you create and edit files. EDIT is called a video file editor because it shows you a full screen view of your file.

To help you learn how to use EDIT, the following section takes you through a sample editing session in which you'll use EDIT to create a small file. Suppose a client asks you to write a catchy advertisement for an electric pencil sharpener, so you decide to create a file named PENCIL.AD on the disk in the default drive. You want the file to contain the following lines:

```
Introducing...
The X-1000 Automatic Pencil Sharpener
From Sharpe Office Supplies
The World Leader in Office Sharpeware
```

Creating A File With EDIT

The following example shows you how to start EDIT, create the PENCIL.AD file, and save the file and exit EDIT. All you have to do is follow these steps:

1. Make sure the MS-DOS disk is in drive "A:".

2. At the MS-DOS prompt, type the following command:

   EDIT PENCIL.AD
   then press the ENTER key

   Since you are just creating the file, EDIT responds with the following message:

   ```
   OK to Create?
   ```

3. Press Y (for Yes).

You will see the following on your video screen:

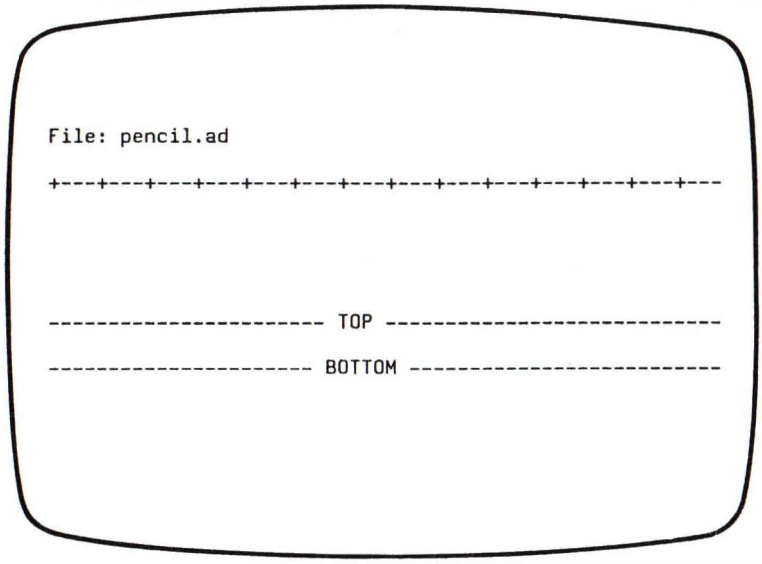


Fig. 5-1 Initial EDIT Screen

4. Press the ENTER key.

5. Type the following lines. Remember to press the ENTER key after each line, including the last line.

```
Introducing...
The X-1000 Automatic Pencil Sharpener
From Sharpe Office Supplies
The World Leader in Office Sharpeware
```

Correcting mistakes in EDIT

Note: If you make a mistake when typing a line, use the BACKSPACE key (←) to erase the mistake before you press the ENTER key. If you do press the ENTER key before correcting the mistake, don't worry about it - you'll learn later how to correct a previous lines.

Your screen should look like this:

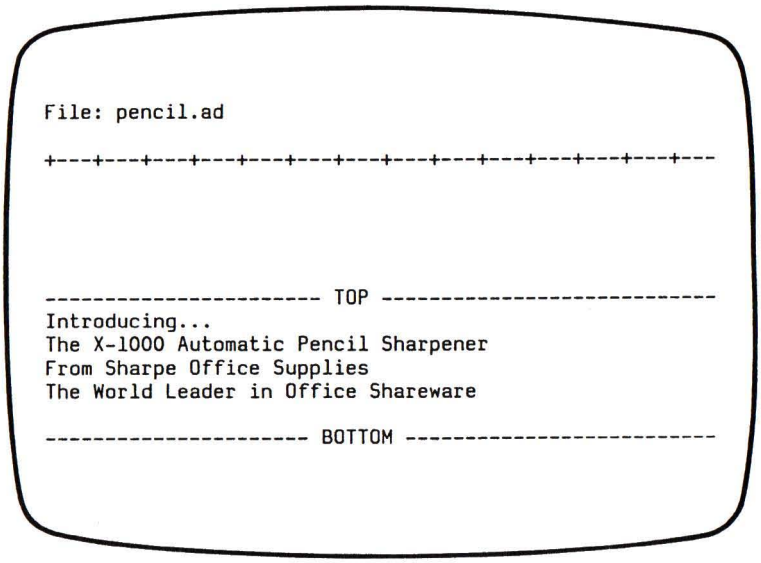


Fig. 5-2 EDIT Screen After Input

6. If you made a mistake when typing a previous line, use the up cursor key (ˆ), until the cursor is on the line containing mistake. You can then use the backspace (←) key to delete characters in error. If you need to insert characters, press the insert key (INS) in the right hand pad: the cursor becomes a blinking square to indicate character insertion mode. Then type the correct characters.

7. To save the file and exit to MS-DOS press SHIFT F5 .

You now have a file named PENCIL.AD on the disk in your default drive. If you type the MS-DOS DIR command, you should see an entry for PENCIL.AD. You can also view this file by using the TYPE command as follows:

TYPE PENCIL.AD
then press ENTER

To learn more about how to use EDIT, see the next chapter "The Video File Editor (EDIT)"

PART II

6. THE VIDEO FILE EDITOR (EDIT)

INTRODUCTION

EDIT is the MS-DOS Visual File Editor that you can use to create text files and save them on disk. EDIT also allows you to update existing files by deleting, changing and inserting text.

Text is displayed in a 21 line "window". This "window" can be moved over any part of the file. Each text line in a newly created file can contain up to 512 characters. Existing text files can be edited with EDIT, however if a line contains more than 512 characters, the characters after column 512 are overstruck on column 512.

EDIT can handle as large a file as permitted by the available memory.

THE EDITING SESSION

HOW TO INVOKE THE VIDEO FILE EDITOR

EDIT

Purpose	To create, view or edit text file(s).
Category	External
Syntax	**[***drive***:][***path***] EDIT [/B][/T][/R]** *pathname*
Comments	*pathname* indicates the path to the file, which is to be edited.

If the /B switch is used a backup of the file is to be made when the Video File Editor is entered. This backup is named *filename*.BAK where *filename* is the same as that specified in the command line.

If the /T switch is used the size of the file will be minimized by automatically replacing multiple spaces with TAB characters wherever possible.

The /R switch should be used if you only want to read the contents of the file. This protects the file from accidental damage while examining it.

Example

Suppose you want to edit a file called NOTE1 on drive "B:" in a directory called MEMOS. Then type:

EDIT B:\MEMOS\NOTE1
then press ENTER

Characteristics

If the file does not already exist the following prompt appears on the screen:

```
OK to Create?
```

You must reply Y (Yes) to create the file.

The Video File Editor is initially in "overstrike" mode. That is, you can enter text and overwrite whatever is written on the file. This indicated by a blinking "line" cursor.

To change the mode to "insert" press the INS key. That is when you enter text, any text to the right of the cursor will be pushed to the right by the inserted text. However any text pushed past the right hand margin will be lost.

HOW TO EXIT EDIT AND/OR SAVE FILES

Use the function keys to exit and/or save the file you are editing.

FUNCTION KEY	MEANING
SHIFT F5 (EXIT AND SAVE)	Saves your file and exits to MS-DOS or to the previously edited file (after using the EDIT command "FILE").
F5 (SAVE TEXT)	Saves the current edited file, you may continue editing.
SHIFT F1 (ABORT)	Abort editing the current file, without saving and exit to MS-DOS or to the previously edited file (after using the EDIT command "FILE"). If text has been altered or added since starting the editor you are asked to "Confirm Abort?". To confirm, press Y for (Yes). Any other action causes the Video File Editor to ignore the ABORT.

THE DISPLAY

Once the Video File Editor has been invoked the monitor shows a display such as the one shown in Figure 6-1.

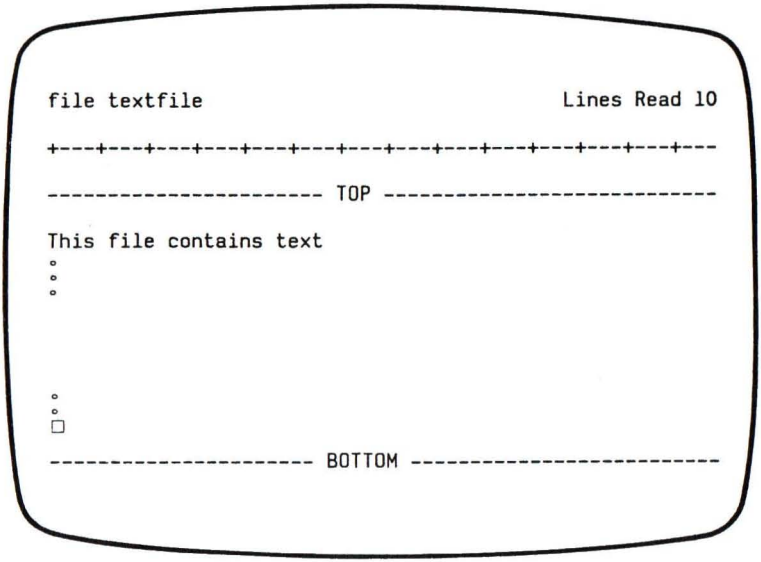


Fig. 6-1 Video File Editor Screen Layout

Line 1 indicates the file name and the current message.

Line 2 is used for high level commands and search strings and is therefore only used when in command mode. Refer to the section entitled "Using the Editor Command Line" for details.

Line 3 shows the tab stop settings (4 character positions per tab).

Lines 4 to 24 contain the text window.

Line 25 is not used.

On entering the Video File Editor the beginning and end of the file are marked by two display lines containing the words TOP and BOTTOM, respectively. The former, known as the TOP bar, always appears immediately before the first line of text in the file. And the BOTTOM bar always appears immediately after the last line of text. They are not actual lines of text and are there merely as markers. The cursor is initially positioned on the TOP bar.

The cursor changes shape when switching between certain modes of editing. It is represented here as an underline.

Note that the screen mode for the Video File Editor is 80 x 25 lines, even if it is invoked from a terminal set to 40 x 25 lines.

THE KEYBOARD

The keyboard functions in a different manner once the Video File Editor has been invoked. This provides the means by which the required editing functions are entered. The following tables show for each function key, the function name and the key-stroke combination that executes that function.

Using the Numeric Keypad

KEY-STROKE	FUNCTION KEY NAME
HOME	TOP
END	BOTTOM
PGUP	FULL SCREEN UP
PGDN	FULL SCREEN DOWN
←	CURSOR LEFT
→	CURSOR RIGHT
↑	CURSOR UP
↓	CURSOR DOWN

Using the Function Keys

Note that these function keys are summarized on a template supplied with your system. Keep this template by your keyboard, for quick reference during working sessions.

KEY-STROKE	FUNCTION KEY NAME
F1	COMMAND MODE
SHIFT F1	ABORT
F2	RESTORE LINES
SHIFT F2	DELETE LINE
F3	JOIN LINES
SHIFT F3	SPLIT LINE
F4	END OF LINE
SHIFT F4	START OF LINE
F5	SAVE
SHIFT F5	SAVE AND EXIT
F6	NEXT LINE
SHIFT F6	ERASE TO END
F7	GOTO MARK
SHIFT F7	INSERT MARK
F8	SEARCH DOWN
SHIFT F8	SEARCH UP
F9	LINE DOWN
SHIFT F9	LINE UP

KEY-STROKE	FUNCTION KEY NAME
F10	HALF SCREEN DOWN
SHIFT F10	HALF SCREEN UP

Using Control Keys

KEY-STROKE	KEY FUNCTION NAME
CTRL H	BACKSPACE
CTRL I	TAB
CTRL K	ERASE TO END
CTRL L	REFRESH
CTRL R	RECALL LINE
<-	BACKSPACE
INS	INSERT MODE
DEL	DELETE CHAR
ESC	ESCAPE
	TAB
SHIFT	REVERSE TAB
ENTER	INSERT LINE or EXECUTE COMMAND

USING THE EDITOR COMMAND LINE

The second line of the screen (above the scale line) is called the editor command line and is used for entering high level commands and search strings.

To enter text on the editor command line you must first press F1 (the COMMAND MODE) function key. This moves the cursor to the second line. You can now enter text there. All line editing operations - such as INSERT MODE, BACKSPACE and DELETE CHAR - now apply to the editor command line. The RECALL LINE function when used in command mode restores the editor command line to its previous contents. The ENTER key performs EXECUTE COMMAND when used in this mode.

Repeating the COMMAND MODE key returns the cursor to the text window without performing any command operation.

STRING SEARCHES

This feature enables you to search the file for a particular combination of characters. Before searching for a text string you must enter command mode by pressing F1 (the COMMAND MODE) function key. Then enter the text to be searched for followed by the appropriate function key, as described in the following table:

FUNCTION KEY	MEANING
F8 (SEARCH DOWN)	Searches for the text string starting from the the current cursor position and moving down the file until the first occurrence of the string is encountered. If found, the window and cursor are moved to it.
SHIFT F8 (SEARCH UP)	Searches for the text string starting from the cursor position and moving up the file. If the string is found then the window and cursor are moved to it.

Examples

If you are editing the following text:

> This is an example of how to use the search function keys of the Video File Editor to find a particular combination of characters. The Video File Editor is a highly functional program.

Search Down

1. Press F1 - the cursor will move to the "Command Line".
2. Type "func".
3. Then press F8 (Search Down)."

   The cursor will move under the "f" of "function in the above text.
4. Press F8 (Search Down) again.

   The cursor will move under the "f" of "functional".

Search Up

1. Press F1 - the cursor will move to the "Command Line".
2. Type "Editor".
3. Then press SHIFT F8 (Search Up)."

   The cursor will move under the "E" of "Editor" in the last line of the above text.
4. Press SHIFT F8 (Search Up) again.

   The cursor will move under the "E" of the first instance of "Editor".

COMMANDS

The Video File Editor commands are a set of special commands that enable you to perform a number of high level functions. Before entering a command you must press F1 , the COMMAND MODE function key. You can then type the command on the editor command line. To execute the command you must then press the ENTER , the EXECUTE COMMAND key.

GOTO

Purpose — This command enables you to move the window to a specific line number in the file.

Syntax — **GOTO** *line*

Characteristics — Each line of the text file is automatically numbered. That is, the first line of the file is line 1, the TOP bar is line 0 and the MARK bar does not count. The parameter *line* is a decimal number, which indicates which line number in the file you want the cursor to move to.

If this number is greater than the number of lines in the file then the window is moved to the end of the file.

DELETE

Purpose — This command removes all text between the current line and the MARK line and places the removed text in the restore buffer from where it can be re-inserted at will. If the MARK line does not exist an error message is given.

Syntax — **DELETE**

FILE

Purpose — The FILE command allows you to suspend processing of the current file and invoke the editor on another file. When editing of the new file is terminated by a SAVE AND EXIT or ABORT function, the old file is recalled at the point at which it was exited.

Syntax — **FILE** *pathname*

Characteristics — The parameter *pathname* gives the path and the filename of the file to be edited.

The command line option switches (**/B**, **/T** or **/R**) used by the old file remain the same for the new file.

Editing of each file is kept entirely independent except for the restore buffer, which enables the transfer of lines of text from one file to another.

Further files can be entered and edited from the new file using the FILE command. There is no limit to the number of levels that can be created in this way except that the text of all the files invoked must fit into the available memory.

7. MS-DOS COMMANDS

TYPES OF MS-DOS COMMANDS

There are two types of MS-DOS commands:

- Internal commands
- External commands

WHAT ARE INTERNAL COMMANDS?

Internal commands are the simplest, most commonly used commands. When you list the directory on your MS-DOS disk, you cannot see these commands because they are part of a file named COMMAND.COM. When you type internal commands, MS-DOS performs them immediately. This is because they were loaded into your computer's memory when you started MS-DOS. Following is a list of the MS-DOS internal commands:

```
BREAK   CALL    CHCP    CHDIR   CLS     COPY    CTTY
DATE    DEL     DIR     ECHO    EXIT    FOR     GOTO
IF      MKDIR   PATH    PAUSE   PROMPT  REM     REN
RMDIR   SET     SHIFT   TIME    TYPE    VER     VERIFY
VOL
```

Using Pathnames with Internal Commands

Some internal commands can use paths and pathnames. Specifically, four commands - COPY, DIR, DEL, and TYPE - have greater flexibility when you specify a pathname after the command.

The format of the COPY command is as follows:

COPY *pathname pathname*

If the second pathname is a directory (a path), MS-DOS copies all the files you specify in the first *pathname* into that directory, as in the following example:

COPY \USER\PETE*.* SALES

The format of the DEL command is as follows:

DEL *pathname*

If the *pathname* is a directory (a path), all the files in that directory are deleted. If you try to delete a directory, MS-DOS asks you:

```
Are you sure (Y/N)?
```

Type Y (for Yes) to complete the command, or N (for No) to stop the command. The following example deletes a file named NOTES.TMP in the directory \USER\PETE on the "D:" drive:

DEL D:\USER\PETE

The format of the DIR command is as follows:

DIR *pathname*

The following command displays the files in the directory \USER\PETE on the "D:" drive:

DIR D:\USER\PETE

The format of the TYPE command is as follows:

TYPE *pathname*

You must specify a filename for this command. MS-DOS then displays this file on your screen in response to the TYPE command.

The following example would display the contents of the file REPORT.NOV in the directory \USER\EMILY on the "D:" drive:

TYPE \USER\EMILY\REPORT.NOV

WHAT ARE EXTERNAL COMMANDS?

Any filename with an extension of .COM, .EXE, or .BAT is considered an external command. For example, files such as FORMAT.EXE and DISKCOPY.EXE are external commands. And because all external commands are also files, you can create new commands and add them to MS-DOS. Programs that you create with most languages (including assembly language) will be .EXE (executable) files. Note, however, that when you use an external command, you do not need to type its filename extension.

Note: If you have more than one external command with the same name, MS-DOS will run only one of them, according to the following order of precedence: .COM, .EXE, .BAT.

To illustrate this precedence, suppose your disk contains the files FORMAT.EXE and FORMAT.BAT. If you were to type the external command format, MS-DOS would always run the program FORMAT.EXE first, and not run the FORMAT.BAT file at all.

The following is a list of some of the external MS-DOS Commands:

APPEND	ASSIGN	ATTRIB	BACKUP
CHKDSK	COMMAND	COMP	DISKCOMP
DISKCOPY	FASTOPEN	FDISK	FIND
FORMAT	GRAFTABL	GRAPHICS	JOIN
KEYB	LABEL	MODE	MORE
NLSFUNC	PRINT	RECOVER	REPLACE
RESTORE	SELECT	SHARE	SORT
SUBST	SYS	TREE	XTREE

USING PATHS WITH EXTERNAL COMMANDS

Before MS-DOS can run external commands, it must read them into memory from the disk. When you give an external command, MS-DOS immediately checks your working directory to find that command. If it isn't there, you must tell MS-DOS which directory the external command is in. You do this with the PATH command.

Using the PATH Command

When you are working with more than one directory, you may find it more convenient to put all the MS-DOS external commands in one directory. Then, when it needs them, MS-DOS can quickly find the external commands at one location.

Suppose, for example, that you are in a working directory named \USER\PROG and that the MS-DOS external commands are in \BIN. To find the FORMAT command, you must tell MS-DOS to choose the \BIN path, as in the following command, which tells MS-DOS to search in your working directory and in the \BIN directory on drive "C:" for all commands:

PATH=C:\BIN

You need only specify this path once during each computer session. Also, if you want to know what the current path is, you can simply type the PATH command by itself. In response, MS-DOS then displays the working path on the screen.

You can automatically set your path when you start MS-DOS by including the path command in a file called AUTOEXEC.BAT. For more information on the AUTOEXEC.BAT file, refer to the "MS-DOS Software Installation Guide".

REDIRECTING COMMAND INPUT AND OUTPUT

Usually, MS-DOS receives input from the keyboard and sends its output to the screen. You can, however, redirect this flow of command input and output. For instance, you may want input to come from a file instead of from the keyboard, and you may want output from a command to go to a file or lineprinter instead of to the screen. With redirection symbols, you can also create pipes that let the output from one command become the input for another command.

How to Redirect Your Output

By default, most commands send output to your screen. If you want to change this and send the output to a file, you just use a greater-than sign (>) in your command. For example, the following command displays on the screen a directory listing of the disk in the default drive:

DIR

The DIR command can send this output to a file named CONTENTS if you enter the following:

DIR > CONTENTS

If the contents file doesn't exist, MS-DOS creates it and stores your directory listing there. If contents does exist, MS-DOS replaces what is in the file with the new data.

Appending Output

If you want to append your directory or add one file to another (instead of replacing the entire file), you can use two greater-than signs (>>) to tell MS-DOS to append the output of the command (such as a directory listing) to the end of a specified file. For example, the following command appends your directory listing to an existing file named contents:

DIR >> CONTENTS

If CONTENTS doesn't exist, MS-DOS creates it.

How to Redirect Input

Often, it's useful to have input for a command come from a file instead of from the keyboard. This is possible in MS-DOS by using a less-than sign (<) in your command. For example, the following command sorts the file names and sends the sorted output to a file called NAMELIST:

SORT < NAMES > NAMELIST

FILTERS AND PIPES

MS-DOS Filter Commands

A filter is a command that reads your input, transforms it in some way, and then outputs it to your screen. In this manner, the input is filtered by the program.

MS-DOS filters include: FIND, MORE, and SORT. Their functions are as follows:

FIND	Searches for text in a file
MORE	Displays the contents of a file one screenful at a time
SORT	Alphabetically sorts the contents of a file

You can redirect the output from a filter into a file, or use it as input for another filter by using pipes. The following section explains how filters are piped together.

Command Pipes

If you want to use the output from one command as the input for another, you can pipe the commands to MS-DOS. Piping is done by separating commands with the pipe symbol (|). The following

command, for example, displays an alphabetically sorted listing of your directory on the screen:

DIR ¦ SORT

The pipe sends all output generated by the DIR command (on the left side of the bar) as input to the SORT command (on the right side of the bar).

Using Redirection Symbols with Pipes

You can also use piping with redirection symbols if you want to send the output to a file. For example, the following command creates a file named DIRECT.LST on your default drive:

DIR ¦ SORT > DIRECT.LST

The DIRECT.LST file now contains a sorted listing of the directory on the default drive.

You can also specify a drive other than the default drive. Suppose, for example, you want to send the sorted data to a file named DIRECT.LST on drive "B:". To do this you could simply type the following:

DIR ¦ SORT > B:DIRECT.LST

You can use more than one pipe on a command line. The following command, for instance, sorts your directory, shows it to you one screen at a time, and puts --More-- at the bottom of your screen when there is more output to be seen:

DIR ¦ SORT ¦ MORE

Since commands and filters can be piped together in many different ways, you will find many uses for them.

COMMAND CATEGORIES

The **Category** heading indicates whether the described command is: "Internal", "External", "Non-network".

The meaning of "Internal" and "External" has been described earlier in this chapter.

Non-network

This category means that the indicated command does not work over OLINET LAN. The following commands are "Non-network":

CHKDSK	DISKCOMP	DISKCOPY	FASTOPEN
FDISK	FORMAT	JOIN	LABEL
RECOVER	SUBST	SYS	

NOTATION CONVENTIONS

The following notation conventions are used throughout this chapter:

- Uppercase, bold letters and words within a syntax line represent keywords that must be typed exactly as shown.

  Example

  In the command line:

  DISKCOPY [*sourcedrive*:] [*targetdrive*:]

  DISKCOPY should be typed as shown.

  Outside syntax lines, keywords are shown in uppercase but not in bold.

  Note that uppercase letters and words are used simply as visual aids in this manual. Keywords may be typed in lowercase if desired.

- Lowercase italicized characters and words represent parameter names. They indicate that variable information is to be provided by the user.

  Example

  In the command line:

  DISKCOPY A: B:

  both *sourcedrive* and *targetdrive* have been replaced by specific values, that is A and B.

- A blank, a comma, a colon, or a semicolon may be used to separate the items in a line. In this manual the blank is usually shown in syntax lines.

- The symbols listed below are used to define the syntax of a line, but should not be typed in the actual line:

[ ] brackets

{ } braces

| vertical stroke ("or" sign)

... ellipsis

- Items contained by brackets ([ ]) are optional and so may or may not be selected.

  Example

  The representation:

  [*filespec*]

  indicates that a *filespec* may or may not be entered.

- Items enclosed by braces ({ }) and separated by vertical strokes (|) are alternatives. You should select only one such alternative.

  Example

  The representation:

  {A|B|C}

  indicates that either A or B or C should be selected.

- Items enclosed by brackets ([ ]) and separated by vertical strokes (|) are optional alternatives. You may choose one such alternative, or none at all.

  Example

  The representation:

  [A|B|C]

  indicates that A or B or C may, but need not, be selected.

- An ellipsis indicates that the preceding item or group of items may be repeated more than once in succession.

  Example

  The representation:

  A [B]...

  indicates that A can be typed alone or can be followed by

  B

  more than once in succession.

- Letters and words in courier indicate MS-DOS messages that appear on your Personal Computer screen. For example:

```
Insert new diskette for drive B:
and strike ENTER when ready
```

- Letters and words shown in narrow capitols indicate that you must press a specific key. For example the key whose inscription is CTRL is always referred to as CTRL.

- Commands need to be confirmed by typing↵ (the ENTER key), at the end of the command line.

APPEND

Purpose Sets a list of paths, which is used to search for data files. APPEND can be extended to make all files in the search path list appear to be in the current directory and/or for the list of paths to appear in the environment.

Category External

Syntax 1 The first time APPEND is called, if you wish only to a search path list for data files:

[*drive***:][***path***]APPEND[=][***drive***:]***path***[;[***drive***:]***path***]...**

Syntax 2 The first time APPEND is called, if you wish to extend the way APPEND works:

[*drive***:][***path***] APPEND [/X][/E]**

If the /X switch is used commands such as COMP, DIR and command execution will search for files, as specified in a subsequent APPEND command, as if they were in the current directory.

If the /E switch is used MS-DOS keeps the APPEND search path list in the environment.

Syntax 3 Subsequent calls to APPEND:

APPEND[=][*drive***:]***path***[;[***drive***:]***path***]...**

Syntax 4 To display the list of appended directories:

APPEND

Syntax 5 To delete appended paths:

APPEND[=];

Examples

Example 1: Suppose you want to access data files in a directory called LETTERS on drive "B:", and in a directory called REPORTS on drive "A:". To do this, use the following command:

APPEND B:\LETTERS;A:\REPORTS

Example 2: Suppose you have a word processor which only works if it's executable files and data files are in the current directory. The word processor called PHRASE and it's overlays are in a directory called PROGRAMS on drive "C:" and the data file MEMOIRS is in a directory called TEXT on drive "D:". The current directory is root (\) on drive "C:". To set up the APPEND search path list enter the following commands:

1. APPEND /X

2. APPEND=C:\PROGRAMS;D:\TEXT

3. PHRASE MEMOIRS

The command in step 3 works as though PHRASE and MEMOIRS were in the current directory. Indeed the internal command DIR will give a listing of the files in the directories PROGRAMS and TEXT as though they were in the current directory.

Warning

Do not use the MS-DOS 3.30 APPEND command with the OLINET LAN APPEND command.

ASSIGN

Purpose Instructs MS-DOS to route all requests from *drive1* to *drive2*. Drive assignments can be repeated on the ASSIGN line.

Category External

Syntax **[***drive***:][***path***] ASSIGN [***drive1***=***drive2***]...**

Comments The ASSIGN command lets you read and write files on drives other than "A:" and "B:" for applications that use only those two drives. You cannot assign a drive being used by another program, and you cannot assign an undefined drive. Do not type a colon after the drive letters *drive1 drive2*.

Notes To ensure compatibility with future versions of MS-DOS you should use the SUBST command instead of ASSIGN. The following commands, therefore, are equivalent:

```
ASSIGN A=C

SUBST A: C:\
```

Since the ASSIGN command disguises the true device type, you should not use ATTRIB:

- with commands that require drive information (BACKUP, RESTORE, LABEL, JOIN, SUBST, PRINT)
- during normal use of MS-DOS.

Examples

If you want to run an application on a hard disk drive, "C:", and this application requires you to put your program disk into drive "A:" and your data disk into drive "B:", you would enter this command:

ASSIGN A=C B=C

All references to drives "A:" and "B:" would then go to drive "C:".

To reset all drives to their original assignments, type the following command and press the ENTER key:

ASSIGN

ATTRIB

Purpose — Sets or resets the read-only attribute and/or archive bit attribute of file(s) in the current directory and optionally in sub-directories.

Category — External

Syntax — **[***drive***:][***path***]ATTRIB [+R|-R] [+A|-A]**
[*drive***:]***pathname* **[/S]**

Where

+R sets the read-only attribute of a file.

-R disables read-only mode.

+A sets the archive attribute of a file.

-A clears the archive attribute of a file.

/S indicates the file(s) in the specified directory and subdirectories will be processed.

Comments The ATTRIB command sets read-only and/or archive attributes for files. You may use wildcards to specify a group of files. The attributes of those files matching filename are displayed or modified based on the switch selection. ATTRIB doesn't accept a directory name as a valid filename.

The drive and pathname specify the location of the file or files you want to reference. The /S switch processes all subdirectories as well as the path specified.

The BACKUP, RESTORE, and XCOPY commands use the archive attribute as a control mechanism. You can use the +A and -A options to select files that you want to back up with the backup /M command, or copy with the XCOPY /M or XCOPY /A commands.

Notes If an application creates a file that has read and write permission, ATTRIB forces read-only mode to allow file sharing over a network.

Examples

Displaying File Attributes:

To display the attribute of a file called NEWS86 on the default drive, you would type the following command:

ATTRIB NEWS86
then press ENTER

Setting Read-only Permissions:

The following command gives the file REPORT.TXT read-only permission:

ATTRIB +R REPORT.TXT
then press ENTER

Setting a file as read-only prevents you from accidentally deleting or modifying it.

To remove read-only permission from the files in the \USR\PETE directory on drive B:, and the files in any subdirectories, you would type the following command:

ATTRIB -R B:\USR\PETE /S
then press ENTER

Using The Archive Switch:

As a final example, suppose you want to give a co-worker a disk that contains all files in the default directory of the disk in drive A, except for files with the extension .BAK that contain old copies of edited files. To copy these files to a disk in drive B:, you would type the following:

ATTRIB +A A:*.*
then press ENTER

then

ATTRIB -A A:*.BAK
then press ENTER

and

XCOPY A: B: /M
then press ENTER

If you use the XCOPY /M switch, XCOPY automatically turns off the archive bits of the files in drive A: as it copies them.

BACKUP

Purpose Backs up one or more files from one disk to another.

Category External

Syntax **[***drive***:][***directory***]BACKUP** *source-drive***:[***pathname***]** *target-drive***: [/S] [/M] [/A] [/F] [/D:***date***] [/T:***time***] [/L:[[***drive***:][***path***]***filename***]]**

Comments The BACKUP command can back up files on disks of different media (hard disks and floppy disks). BACKUP also backs up files from one floppy disk to another, even if the disks have a different number of sides or sectors.

Option Switches

SWITCH	PURPOSE
/S	Backs up subdirectories.
/M	Backs up only those files that have changed since the last backup.
/A	Adds the files to be backed up to those already on the backup disk. It does not erase old files on the backup disk. This switch will not be accepted if files exist that were backed up using backup from MS-DOS version 3.20 or earlier.
/F	Causes the target disk to be formatted if it is not already. For this switch to function, the MS-DOS FORMAT command must be accessible by the current path.
/D:*date*	Backs up only those files that you last modified on or after date.
/T:*time*	Backs up only those files that you last modified at or after time on the specified date. Time must be specified in 24 hour clock format. See the example for the correct format.
L:*filename*	Makes a backup log entry in the specified file. If you do not specify filename, BACKUP places a file called BACKUP.LOG in the root directory of the disk that contains the files being backed up.

Backup Log Files

A Backup Log File uses the following format:

- The first line lists the date and time of the backup.
- A line for each backed-up file lists the filename and number of the backup disk on which the file resides.
- If the Backup Log File already exists, BACKUP appends the current entry to the file.

You can also use the Backup Log File when you need to restore a particular file from a floppy disk, but you must specify which disk to restore so that the RESTORE command does not have to search for files. The RESTORE command always puts a file back in the same place from which it was backed up. BACKUP displays the name of each file as it is backed up. You should label and number each backup disk consecutively to help you restore the files properly with the RESTORE command. If you are sharing files, MS-DOS lets you back up only those files to which you have access.

Notes

You cannot use an old version of the RESTORE command (MS-DOS Ver. 3.20 or earlier) for files backed up with the MS-DOS Ver. 3.30 BACKUP command.

Unless you use the /A switch, BACKUP erases the old files on a backup disk before adding new files to it.

You should not use the BACKUP command if the drive you are backing up has been assigned, joined, or substituted with the ASSIGN, JOIN, or SUBST commands. If you do, you may not be able to restore the files with the RESTORE command.

Example

Backing Up Files:

Suppose Emily wants to back up all the files in the \USER\EMILY directory on drive C: to a blank, formatted disk in drive "A:". To do this, she would type:

BACKUP C:\USER\EMILY A: /D: 1-21-88 /T:13:00
then press ENTER

BREAK

Purpose Turns off or on the abort feature provided by CTRL C and CTRL BREAK .

Category Internal

Syntax **BREAK [ON|OFF]**

Comments Depending on the program you are running, you may use CTRL C to stop an activity (for example, to stop sorting a file). Normally, MS-DOS checks to see whether you press CTRL C while it is reading from the keyboard or writing to the screen or printer. If you set BREAK to ON, you extend CTRL C checking to other functions, such as disk reads and writes.

Notes Some programs may set themselves to respond to CTRL C at any time. Setting break does not affect these programs' CTRL C checking.

Examples

To check for CTRL C only during screen, keyboard, and printer reads and writes, type the following:

BREAK OFF
then press ENTER

To find out how BREAK is currently set, type:

BREAK
then press ENTER

CHDIR

Purpose Changes the current directory.

Category Internal

Syntax 1 **CHDIR [***drive***:][***path***]**

Syntax 2 **CD [***drive***:][***path***]**

Comments The CHDIR command changes your working directory to the directory you specify. A shorthand notation for the CHDIR command is CD.

Examples

Either of the following commands will change your current directory to the directory called PRIMETIM:

CHDIR \PRIMETIM
then press ENTER

or

CD \PRIMETIM
then press ENTER

To display the name of your working directory, simply type:

CD
then press ENTER

For example, if your working directory is \USER\PETE on drive B, and you type the command:

CHDIR B:
then press ENTER

MS-DOS displays the following:

```
B:\USER\PETE
```

Shortcuts

There are two shortcuts you can use when you want to change your directory to a parent directory or subdirectory of your working directory. To illustrate, suppose you have a directory called SPECIALS that has a subdirectory called SPONSORS. So to change your working directory to \SPECIALS\SPONSORS, you would type:

CD \SPECIALS\SPONSORS
then press ENTER

If your working directory is SPECIALS, you can type the following command to change to the \SPECIALS\SPONSORS directory:

CD SPONSORS
then press ENTER

Then, if you wanted to change your working directory back to the parent directory, \SPECIALS, you could type this command:

CD ..
then press ENTER

Type CD \ to return to the root directory. The root directory is the highest-level directory on your computer and is usually the directory that you see when you start MS-DOS.

CHKDSK

Purpose Scans the disk in the specified drive and checks it for errors.

Category External, Non-network

Syntax **CHKDSK [*drive*:][*path*] [*filename*] [/F] [/V]**

Where

/F Fixes errors on the disk. If you do not specify this switch, CHKDSK does not correct errors that it finds in your directory. However, it does display messages about files that need to be fixed.

/V Displays the name of each file in each directory as it checks the disk.

Comments If you specify the /F switch, CHKDSK will show an error if it finds any open files on the disk. If you do not specify the /F switch and there are open files, CHKDSK may give results that make it seem like there are lost clusters on the disk. This happens when the File Allocation Table has yet to be updated regarding open files. If CHKDSK reports a large number of clusters as lost, you should consider repairing the disk.

The CHKDSK command shows the status of your disk. You should run CHKDSK occasionally on each disk to check for errors. If you do run CHKDSK on a disk and any errors are found, CHKDSK displays the error messages, followed by a status report.

CHKDSK Status Report

A typical status report might look like this:

```
Volume SYS (3 30)  created Dec 6, 1987 9:20a
  160256       bytes total disk space
  8192         bytes in 2 hidden files
  512          bytes in 2 directories
  30720        bytes in 8 user files
  121344       bytes available on disk

  65536 bytes total memory
  53152 bytes free
```

If you type a filename after CHKDSK, MS-DOS displays a status report for the disk and for the individual file.

Notes CHKDSK does not correct errors on a disk unless you specify the /F switch. For more information on CHKDSK errors, refer to the specific error message in the booklet "MS-DOS Messages". CHKDSK doesn't work on drives used in the SUBST or JOIN commands.

CLS

Purpose Clears the screen.

Category Internal

Syntax **CLS**

Comments The CLS command clears your screen, leaving only the MS-DOS prompt and a cursor.

Examples

Clearing your screen

You may find it more comfortable to work with a clean slate. If you want to start a new process with a clear screen, type:

CLS
then press ENTER

COMMAND

Purpose Starts a new command processor.

Category External

Syntax **[***d***:][***path***] COMMAND [***drive***:***shellpath***]**
[*cttydev***][/E:***nnnnn***][/P][/C** *command-string***]**

Where *shellpath* is the pathname of a directory containing COMMAND.COM

cttydev allows you to specify a different device (such as AUX) for input and output.

/C *command-string* is a command to be passed to the new command processor. This must be the last switch if used.

Comments This command starts a new command processor (the MS-DOS program that contains all internal commands). When you start a new command processor, you also create a new command environment. This new environment is a copy of the old, parent environment. However, you can change the new environment without affecting the old one. The command processor is loaded into memory in two parts: transient and resident. Some applications write over the transient memory part of COMMAND.COM when they

run. When this happens, the resident part of the command processor looks for the COMMAND.COM file on disk so that it can reload the transient part. The *drive:shellpath* option tells the command processor where to look for the COMMAND.COM file if it needs to reload the transient part into memory.

Option Switches

SWITCH	PURPOSE
/E:*nnnnn*	Specifies the environment size, where *nnnnn* is the size in bytes, ranging from 160 to 32,768. MS-DOS rounds this number up to the next logical paragraph boundary. The default value is 160 bytes.
/P	Keeps the secondary command processor in memory and does not automatically return to the primary command processor.
/C *comm-string*	Tells the command processor to perform the command or commands specified by string and then to return automatically to the primary command processor.

Note

If *nnnnn* is less than 160 bytes, MS-DOS defaults to 160 bytes and displays the following message:

```
Invalid environment size specified
```

If *nnnnn* is greater than 32,768 bytes, MS-DOS displays the same message, but defaults to 32,768 bytes.

For more information about the *cttydev* option, see the CTTY command in this chapter.

Examples

Starting A New Command Processor

The following command tells the MS-DOS command processor to do three things:

1. Start a new command processor under the current program
2. Run the command CHKDSK B:
3. Return to the first command processor

Type:

COMMAND /C CHKDSK B:
then press ENTER

COMP

Purpose Compares the contents of two sets of files.

Category External

Syntax **[***drive***:][***path***] COMP [***pathname1***[***pathname2***]]**

Comments The COMP command compares one file or set of files (*pathname1*) with a second file or set of files (*pathname2*). These files can be on the same drive or on different drives. They can also be in the same directory or different directories. The two sets of files you want to compare can have the same path and filenames - provided they are on different drives. If you type only a drive for the second option, COMP assumes that *pathname2* is the same as *pathname1*. You can use wildcards (* and ?) to specify the pathnames.

If you don't type the pathname options or if you omit the *pathname2* option, COMP prompts you for them. If either option contains only a drive or a path with no filename, COMP assumes the filename is *.*.

As COMP proceeds, it displays the paths and names of the compared files. A message appears if COMP cannot find a file matching the *pathname2* parameter, or if a directory path is invalid. If no file matches the *pathname1* option, COMP prompts you for both the pathname options again.

Characteristics

During the comparison, a message appears for any location in the two files that contains mismatching information. The message indicates the offset into the files of the mismatching bytes and the contents of the bytes themselves (all in hexadecimal notation). The message has the following format:

```
Compare error at OFFSET XXXXXXXX
file1 = XX
file2 = XX
```

In this format, file1 is the first filename typed; file2 is the second filename typed. After ten unequal comparisons, comp stops comparing and displays the following message:

```
10 Mismatches - ending compare
```

If the file sizes are different, a comparison does not take place. After a successful comparison, COMP displays the following message:

```
Files compare OK
```

After the comparison of the two files ends, COMP proceeds with the next pair of files that match the two pathname parameters, until no more files can be found that match the *pathname1* option. Then COMP displays the following message:

```
Compare more files (Y/N)?
```

You now can compare two more files, or end the comparison. If you want to compare two more files, type Y (for Yes). COMP prompts you for two new path options.

If, at the end of a comparison, the *end-of-file* marker cannot be found, the following message will be displayed:

```
EOF mark not found
```

Examples

In the following example, COMP compares each file with the extension .ASM in the current directory on drive C: with each file of the same name (but with an extension of .BAK) in the current directory on drive B:

COMP C:*.ASM B:*.BAK
then press ENTER

COPY

Purpose — Copies one or more files. Alternatively several files can be concatenated and copied to a target file.

Category — Internal

Syntax 1 — To copy files

COPY *source* **[/A|/B]** **[***target***][/A|/B][/V]**

or

Syntax 2 — To append files

COPY *source1***[/A|/B]+***source2***[/A|/B]**
[+*source3***[/A|/B]...]** **[***target***][/A|/B][/V]**

Comments — If you do not specify target, the copy is created in the

working directory on the disk in the default drive. For simple copying the target file copy has the same name, creation date and creation time as the source file. If the original file is on the default drive and you do not specify the target file, the COPY command quits (you are not allowed to copy a file to itself), and MS-DOS displays the following error message:

```
File cannot be copied onto itself
0 File(s) copied
```

Option Switches

SWITCH	PURPOSE
/V	Causes MS-DOS to verify that the sectors written on the target disk are recorded properly.
/A	Lets you copy ASCII files. This switch applies to the filename preceding it, and to all remaining filenames in the command, until copy encounters another /A or /B switch. This switch tells the command processor to read until the end-of-file mark.
/B	Lets you copy binary files. This switch applies to the filename preceding it, and to all remaining filenames in the command, until copy encounters another /A or /B switch. This switch tells the command processor to read the number of bytes specified by the file size in the directory.

If MS-DOS cannot verify a write, it displays an error message. Although recording errors rarely occur with the COPY command, the /V switch lets you verify that critical data has been correctly recorded; it

also causes the copy command to run more slowly, because MS-DOS must check each entry recorded on the disk.

Using the /A and /B Switches

The COPY command switches /A and /B perform differently depending on whether they are placed following the source filename or the target filename.

When used with a source filename:

/A Causes the file to be treated as an ASCII (text) file. Data in the file is copied up to but not including the first end-of-file mark (CTRL Z). The remainder of the file is not copied.

/B Causes the entire file to be copied, including any end-of-file marks.

When used with a target filename:

/A Causes an end-of-file character to be added as the last character of the file; for example:

```
COPY MEMO.DOC /A LETTER.DOC
```

/B Does not add an end-of-file character; for example:

```
COPY BILLING.ASM /B BILLING2.ASM
```

When you are combining files, the default switch is always /A. Do not try to concatenate files if one of the source filenames has the same name or extension as the target.

Copying Files and Subdirectories

If you want to copy all of a directory's files and subdirectories, you should use the XCOPY command. Refer to the XCOPY command in this Chapter for more information.

Examples

To copy a file called ANIMAL.TYP from your working drive and directory to a directory on drive C: called BIGCATS, type:

COPY ANIMAL.TYP \BIGCATS
then press ENTER

Appending files: The COPY command also lets you concatenate files. To do this, simply list any number of files as options to copy, each separated by a plus sign (+), and then specify a target file to send the combined files to; for example:

COPY INTRO.RPT+BODY.RPT+B:SUM.RPT REPORT

This command concatenates files named INTRO.RPT, BODY.RPT, and SUM.RPT (from drive B:), and places them in a file called REPORT on the default drive. When you are concatenating files, the target file is created with the current date and time. If you omit the target file, MS-DOS combines the files, and stores them under the name of the first specified file.

Combining files: You can also combine several files into one by using wildcards; for example:

COPY *.TXT COMBIN.DOC

This command takes all files with an extension of .TXT and combines them into one file named COMBIN.DOC. In the following example, each file that matches *.TXT is combined with its corresponding .REF file. The result is a file with the same filename but with the extension .DOC. Thus, FILE1.TXT is combined with FILE1.REF to form FILE1.DOC, XYZ.TXT with XYZ.REF to form XYZ.DOC, and so on:

COPY *.TXT + *.REF *.DOC

The following copy command combines all files matching *.TXT and all files matching *.REF, into one file named COMBIN.DOC:

COPY *.TXT + *.REF COMBIN.DOC

Copy compares the filename of the source file with the filename of the target. If they are the same, that one input file is skipped, and MS-DOS prints the error message:

```
Content of destination lost before copy.
```

Further joining proceeds normally.

For example, the following command concatenates all *.TXT files (except ALL.TXT) to ALL.TXT:

COPY ALL.TXT+*.TXT

This command will not produce an error message.

CTTY

Purpose — Lets you change the device from which you issue commands.

Category — Internal

Syntax — **CTTY** *device*

Where — *device* specifies the device from which you are giving commands to MS-DOS.

Comments — CTTY is useful if you want to change the device on which you are working.

Notes — There are many programs that do not use MS-DOS for input, output, or either. These programs send input directly to the hardware on your computer. The CTTY command has no effect on these programs; it affects only programs that use MS-DOS.

Examples

Changing The Command Input And Output Device: The following command moves all command I/O (input/output) from the current device (the console) to an AUX port, such as another terminal:

CTTY AUX
then press ENTER

The next command moves I/O back to the console:

CTTY CON
then press ENTER

DATE

Purpose Enters or changes the date known to the system. This command sets your computer's internal clock.

Category Internal

Syntax 1 USA
DATE [*mm-dd-yy***]**

or

Syntax 2 Europe
DATE [*dd-mm-yy***]**

Comments You can change the date from your terminal or from a batch file. (MS-DOS does not automatically display a prompt for the date if you use an AUTOEXEC.BAT file, so you may want to include a DATE command in that file.) MS-DOS records this date in the directory when you create or change a file.

Remember to use only numbers when you type the date;

allowed numbers are:

```
mm = 1 thru 12
dd = 1 thru 31
yy = 80 thru 99 or 1980 thru 2079
```

The date, month, and year entries may be separated by hyphens (-) or slashes (/) or period (.). MS-DOS is programmed to change months and years correctly, whether the month has 28, 29, 30 or 31 days.

It is possible for you to change the mm-dd-yy format in which the date is displayed and entered. The COUNTRY command in the CONFIG.SYS file allows you to change the date format to the European standard dd-mm-yy. For more information on the CONFIG.SYS file, see the MS-DOS Software Installation Guide.

Examples

Displaying the current date

If you simply type the DATE command, MS-DOS displays the following message:

```
Current date is weekday mm-dd-yy
Enter new date (mm-dd-yy):_
```

Where *weekday* is the day of the week (for example, Tuesday). If you do not want to change the date shown, press the ENTER key. Or you can type a particular date after the date command, as in the following example:

DATE 3-9-88
then press ENTER

In this case, the Enter new date: prompt does not appear after you have pressed the ENTER key.

DEL

Purpose Deletes the specified file(s).

Category Internal

Syntax 1 **DEL [***drive***:]***pathname*

or

Syntax 2 **ERASE [***drive***:]***pathname*

Comments **Using Wildcards With DEL** The DEL command lets you use the * and ? wildcards to delete more than one file at a time. While convenient, this method of deleting files can be dangerous, so use wildcards cautiously.

If you type:

DEL *.*
then press ENTER

this tells MS-DOS that you want to delete all the files in the working directory. MS-DOS displays the prompt:

```
Are you sure?
```

If you type Y (for Yes) in response, MS-DOS deletes all files in the working directory.

To delete all the files in another directory, type the DEL command followed by the directory name.

Warning

Once you have deleted a file from your disk, you cannot recover it.

Examples

Deleting a file

The following command deletes a file named VACATION:

DEL VACATION
then press ENTER

If you have two files named VACATION.FEB and VACATION.APR, you can delete them both with the following command:

DEL VACATION.*
then press ENTER

DIR

Purpose Lists the files in a directory.

Category Internal

Syntax **DIR [***drive***:][***pathname***][/P][/W]**

Comments The DIR command, typed by itself, lists all directory entries in the working directory on the default drive. If you include a drive name, such as B:, with the DIR command, all entries in the default directory of the disk in the specified drive are listed.

Option Switches

SWITCH	PURPOSE
/P	Selects page mode, causing the directory display to pause once the screen is filled. To resume scrolling the display, press any key.
/W	Selects wide display and causes MS-DOS to display only filenames and not other file information. The wide display lists up to five files per line.

Note

DIR lists all files with their size in bytes and the time and date of last modification.

Note that the following DIR commands are equivalent, since you can use the wildcards ? and * in the pathname option:

This command	Is equivalent to
DIR	DIR *.*
DIR filename	DIR filename.*
DIR .ext	DIR *.ext

If the COUNTRY command in the CONFIG.SYS file is set to a country other than the United States, the directory date and time formats may differ. For more information on the CONFIG.SYS file, see the MS-DOS Software Installation Guide.

Examples

If your directory contains more files than you can see on the screen at one time, enter the following:

DIR /P

This command displays the directory one screen at a time. As one screen fills up, you can press any key to see the next screen of the directory listing.

DISKCOMP

Purpose Compares the contents of the disk in the source drive to the disk in the target drive.

Category External, Non-network

Syntax **[***drive***:][***path***] DISKCOMP [***source-drive***: [***target-drive***:]] [/1] [/8]**

Comments DISKCOMP performs a track-by-track comparison of the disks. It automatically determines the number of sides and sectors per track based on the format of the source disk.

Option Switches

SWITCH	PURPOSE
/1	Causes DISKCOMP to compare just the first side of the disk, even if the disks and drives that you are using are double-sided.
/8	Causes DISKCOMP to compare just the first 8 sectors per track, even if the disks contain 9 or 15 sectors per track.

Remarks

If you specify only one drive, DISKCOMP uses the default drive as the target drive. If you specify the same drive as the source and target, DISKCOMP does a comparison using one drive, and prompts you to insert the disks as appropriate. If all the tracks are the same, DISKCOMP displays the message:

```
Compare OK
```

If the tracks are not the same, DISKCOMP displays a Compare error message that includes the track number and side number (0 or 1) where it found the mismatch. If the target disk is not the same type as the disk in the source drive, DISKCOMP displays the following message:

```
Drive types or diskette types not compatible
```

When DISKCOMP completes the comparison, it prompts you with the following message:

```
Compare another diskette (Y/N)?_
```

If you type Y (for Yes), DISKCOMP prompts you to insert the proper disks and does the next comparison. If you type N (for No), DISKCOMP ends. If the disk in the default drive does not contain MS-DOS and you end DISKCOMP, you'll receive the following message:

```
Insert disk with COMMAND.COM in drive A
and strike any key when ready
```

DISKCOMP does not work on network drives, and you cannot use it with assigned, joined, or substituted drives. If you attempt to use the DISKCOMP command with these types of drives, it displays an error message.

Note

When comparing a disk with a backup disk that you made with the COPY command, you may receive the Compare error message, even if the files on the disks are identical. This is because the COPY command duplicates the information, but doesn't necessarily place it in the same location on the target disk. In this case, you should use the COMP command to compare individual files on the disk. For more information, see the COMP command later in this chapter.

DISKCOMP does not work on network drives, and you cannot use it with ASSIGNed, JOINed, or SUBSTituted drives. If you try to use the DISKCOMP command with these types of drives, an error message will appear.

Example

Comparing Two Disks: If your computer has only one floppy disk drive, drive A:, and you want to compare two disks, you can simply type the following command, from the A:> prompt:

DISKCOMP

MS-DOS prompts you to insert each disk, as required.

DISKCOPY

Purpose

Copies the contents of the floppy disk in the source drive to a formatted or unformatted floppy disk in the target drive.

Category

External, Non-network

Syntax

[*drive***:][***path***] DISKCOPY [***source-drive***:] [***target-drive***:] [/1]**

Comments

source-drive and target-drive may be the same. If you omit the drive options, MS-DOS prompts you for the drives. If the target disk is not formatted, DISKCOPY formats it with the same number of sides and sectors per track as the source disk.

Option Switch

The /1 switch allows you to copy only one side of a disk.

Warning

The DISKCOPY command works only with floppy disks. You cannot use DISKCOPY with a hard disk.

If you omit both options, MS-DOS performs a single-drive copy operation on the default drive. If you omit just the second parameter, MS-DOS uses the default drive as the target drive. In either case, though, DISKCOPY destroys the contents of the target disk.

Diskcopy prompts you to insert the source and target disks at appropriate times and waits for you to press any key before continuing.

After copying, DISKCOPY then prompts you with the following message:

```
Copy another diskette (Y/N)?_
```

If you type Y (for Yes), MS-DOS prompts you to insert source and target disks, and performs the next

copy on the drives that you originally specified.

To end the DISKCOPY process, type N (for No).

Example

Copying A Disk To copy the disk in drive "A:" to the disk in drive "B:", use the following command:

DISKCOPY A: B:
then press ENTER

DISKCOPY prompts you to insert both disks and press any key to begin copying.

ERASE

Purpose Deletes the specified file(s). See the "DEL" command.

EXIT

Purpose Exits from a secondary command processor and returns to a parent program or command processor, if one exists.

Classification Internal

Syntax **EXIT**

Comments If you use the MS-DOS command program to start a new command processor, you can use the EXIT command to return to the old command processor. Also,

while running an application program, you can exit to the MS-DOS command processor, and then return to your program.

For more information about command processors, see the COMMAND command earlier in this chapter.

Examples

If you start a new command processor by typing the following command:

COMMAND
then press ENTER

You can then return to the previous command processor by typing:

EXIT
then press ENTER

FC

Purpose Compares two files or two sets of files and displays the differences between them.

Category External

Syntax 1 For ASCII comparisons:

[*drive***:][***path***] FC [/#][/a][/c][/l][/n][/t][/w]**
[/lb *length***]***pathname1 pathname2*

Syntax 2 For binary comparisons:

[*drive***:][***path***] FC [#][/b]** *pathname1 pathname2*

Where *pathname1* is the first file that you want to compare. *pathname2* is the second file that you want to compare.

Note See the "MS-DOS Quick Reference Guide" for a definition of the option switches.

Example

Comparing text files

Suppose you want to compare two text files called MONTHLY.RPT and SALES.RPT. To make this comparison, you would enter the following command line:

FC /a MONTHLY.RPT SALES.RPT

/a Abbreviates the output of an ASCII comparison. Instead of displaying all the lines that are different, FC displays only the lines that begin and end each set of differences.

FIND

Purpose Searches for a specific string of text in a file or files.

Category External

Syntax **[***drive***:][***path***] FIND [/V] [/C] [/N] "***string***" [***pathname***]...**

Where *string* is a group of characters you want to search for.

Comments The FIND command looks for string in one or more files. After searching the specified files, FIND displays any lines it has found that contain the specified string.

String must be enclosed in quotation marks. Uppercase

characters in string will not match lowercase characters.

Put in two sets of quotes where the string itself contains quotes. That is:

```
FIND "this is a quote ("")"
```

finds the string this is a quote(").

If you omit *pathname*, find acts as a filter. It takes input from the MS-DOS standard input (usually from the keyboard, a pipe, or redirected file) and displays any lines that contain string.

Wildcards (* and ?) are not allowed in filenames or extensions.

Option Switches

SWITCH	PURPOSE
/V	Displays all lines not containing the specified string.
/C	Displays only the number of lines that contain a match in each of the files.
/N	Precedes each line with its relative line number in the file.

If you specify the /C switch with the /V switch, FIND displays the number of lines that do not contain the string you typed. If you specify the /C switch with the /N switch, find ignores the /N switch.

Examples

Finding A String Of Text In A File: The following command displays all lines from the file PENCIL.AD that contain the string Pencil Sharpener:

FIND "Pencil Sharpener" PENCIL.AD

Finding Files That Do Not Contain A String: The next command causes MS-DOS to display the names of all files on the disk in drive B: that do not contain the string date:

DIR B: | FIND /V "date"

Finding A File Which Contains A Quotation: The following command finds the string, The dentist said, "Open wide!", in the file STORY.DOC, type the following command:

FIND "The dentist said, ""Open wide!""" STORY.DOC

FORMAT

Purpose — Formats the disk in the specified drive to accept MS-DOS files.

Category — External, Non-network

Syntax — **[***drive***:][***path***] FORMAT** *drive***: [/1][/4][/8][/V][/S][/B] [/N:***xx***][/T:***yy***]**

Comments — The FORMAT command creates the directory and the file allocation tables on a disk. You must use this command to format all new disks before MS-DOS can use them.

You must specify the drive that you want to use to format a disk. Format then uses the drive type to determine the default format for a disk.

Warnings Formatting destroys any previously existing data on a disk.

It ignores drive assignments created with the ASSIGN command.

Option Switches

The FORMAT command accepts the following switches:

SWITCH	PURPOSE
/1	Formats a single-side of the floppy disk.
/4	Formats a 5-1/4-inch, double-sided disk in a high-capacity disk drive. If you are using a single- or double-sided drive, you may not be able to reliably read disks formatted with this switch.
/8	Formats eight sectors per track.
/B	Formats the disk, leaving ample space to copy an operating system, such as MS-DOS 3.30.

SWITCH	PURPOSE
/S	Copies the operating system files from the disk in the default drive to the newly formatted disk. The newly formatted disk must be 1.2 megabytes or greater in size; otherwise, FORMAT rejects the command. If the operating system is not on the default drive, FORMAT prompts you to insert a system disk in the default drive (or in drive A: if the default drive is non-removable).
/T:track	Specifies the number of tracks on the disk. This switch formats 3-1/2-inch floppy disk to the number of tracks specified. For 720K-byte disks and 1.44-megabyte disks, this value is 80 (/T:80).
/N:sector	Specifies the number of sectors per track. This switch formats a 3-1/2-inch disk to the number of sectors specified. For 720K-byte disks, this value is 9 (/N:9).
/V	Causes format to prompt you for a volume label for the disk you are formatting. A volume label identifies the disk and can be up to 11 characters in length (no tabs allowed). An example of a volume label is "PROGRAMS".

Formatting a Hard Disk

See the "MS-DOS Software Installation Guide".

Note

You should not use the FORMAT command with drives used in the ASSIGN, JOIN, or SUBST commands, and you cannot FORMAT drives over a network. For more information about disk volume labels, see the DIR, LABEL, and VOLUME commands in this chapter.

The following table shows which switches you can use for certain types of disks:

Disk type	Valid switches
160/180K bytes	/1 /4 /8 /B /N /T /V /S
320/360K bytes	/1 /4 /8 /B /N /T /V /S
720K bytes	/N /T /V /S
1.2 megabytes	/N /T /V /S
1.44 megabytes	/N /T /V /S
hard disk	/V /S

Examples

Formatting a floppy disk

To format a floppy disk in drive A: and copy the operating system to it, type the following command:

FORMAT A: /S
then press ENTER

To format a floppy disk in drive A: for use with data, type:

FORMAT A:
then press ENTER

GWBASIC

Purpose Enters the MS GW-BASIC interpreter.

Category External

Syntax **[***d***:][***path***] GWBASIC**

Remarks For more information on how to initialize GW-BASIC see the "MS GW-BASIC Interpreter under MS-DOS User Guide".

JOIN

Purpose Joins a disk drive to a specific path.

Category External, Non-network

Syntax 1 To join:

[*d***:][***path***] JOIN** *connected-drive splice-drive:\splice-directory*

Syntax 2 To deassign a join:

[*d***:][***path***] JOIN** *connected-drive* **/D**

Syntax 3 To find out which drives are joined:

[*d***:][***path***] JOIN**

Comments With the JOIN command, you don't need to name physical drives with separate drive letters. Instead, you can refer to all the directories on a specific drive with one path. If the path already existed before you gave the JOIN command, you cannot use it while the JOIN is in effect. Also, you

cannot join a drive if it is being used by another process.

If the path does not exist, MS-DOS tries to make a directory with that path. After you give the JOIN command, the first drive name becomes invalid, and if you try to use it MS-DOS displays the Invalid drive error message.

Notes

The following commands do not work on drives used in the JOIN command :

```
CHKDSK    LABEL
DISKCOPY  RECOVER
FDISK     SYS
FORMAT
```

Example

Joining a drive: You can join a drive only with a root level directory. For example, this command will work:

```
JOIN D: C:\SALES
```

But the following one will not:

```
JOIN D: C:\SALES\REGIONAL
```

LABEL

Purpose

Creates, changes, or deletes the volume label on a disk.

Category

External, Non-network

Syntax

[*drive***:[***path***] LABEL [***drive***:][***label***]**

Where

label is the new volume label, which may be up to 11 characters in length.

Comments

A volume label is a name you can specify for a disk. MS-DOS displays the volume label of a disk as a part of its directory listing to show you which disk you are using.

If you do not specify a label, LABEL prompts you with the following message:

```
Volume in drive x is xxxxxxxxxx
Type a volume label of up to 11 characters or
press Enter for no volume label update: _
```

Naming volume

A volume label may be up to 11 characters in length and may include spaces, but not tabs. Type the volume label that you want and press the ENTER key. Or, you can press the ENTER key immediately if you want to delete the volume label. Label will prompt you with the message:

```
Delete current volume label (Y/N)?_
```

If you type Y (for Yes), LABEL deletes the volume label on the disk. Otherwise, the volume label stays the same.

Notes

You can use the MS-DOS DIR or VOL command to determine if the disk already has a volume label. Label doesn't work on drives involved with SUBST or JOIN commands. Do not use any of the following characters in a volume label:

```
* ? /  | . , ; : + = < > [ ] ( ) & ^
```

Examples

Labeling a disk: To label a disk in drive A: that contains sales information for 1987, you might type:

LABEL A:SALES1987
then press ENTER

MKDIR

Purpose Makes a new directory.

Category Internal

Syntax 1 **MKDIR [***drive***:]***path*

Syntax 2 **MD [***drive***:][***path***]**

Comments The MKDIR command lets you create a multilevel directory structure. Remember, however, that directories created with MKDIR are always subdirectories of your working directory unless you explicitly specify a different path with the MKDIR command.

Examples

Creating a subdirectory If you want to create a directory to keep all your tax information, you could type the following command from your root directory:

MKDIR \TAXES
then press ENTER

Now, suppose you want to create a directory named rental under the TAXES directory to keep track of information about an apartment that you rent out. To do this from the root directory, you simply type the following command:

MKDIR \TAXES\RENTAL
then press ENTER

To create the same subdirectory from the \TAXES directory, you could type either the previous command, or

MKDIR RENTAL
then press ENTER

MORE

Purpose Sends output to the console one screen at a time.

Category External

Syntax **[*drive*:][*path*] MORE**

Comments MORE is a filter that reads from standard input (from a pipe or redirected file) and displays one screen of information at a time. MORE is commonly used to view long files.

Example

For example, you may use the DIR command, the SORT command or a filename as a source. The more command then pauses and displays the --More-- message at the bottom of your screen.

Press any typing key to display another screen of information, then keep pressing it until you have read all the data.

Notes

To hold input information until it is displayed, the MORE command creates a temporary file on the disk. If the disk is full or write-protected, MORE will not work.

Examples

Viewing long files: Suppose you have a long file called CLIENTS.NEW that you want to view on your screen. The following command redirects the file through the more command to show the file's contents one screen at a time:

MORE < CLIENTS.NEW
then press ENTER

If you have a long file of customers you could use the MORE command to view it one screen at a time. Suppose this file is called CLIENTS.NEW. To see it, you would just type the following command:

TYPE CLIENTS.NEW | MORE
then press ENTER

PATH

Purpose Sets a command search path in the environment.

Category Internal

Syntax **PATH=[;|[*pathname*[;*pathname*]...]**

Characteristics

Where *pathname* is the path of a directory you wish MS-DOS to search, including optionally a drive letter. Do not include a filename.

PATH tells MS-DOS which directories, and in what order, to look for external commands after it has searched your current directory.

You can specify a single directory path or a number of paths each separated by a semicolon (;). The default is no search path; in this case MS-DOS only searches your current directory.

If you enter PATH with no parameter, MS-DOS displays the current search path. If you enter PATH; any previously established path is cancelled and only your current directory is searched.

You only need to set the search path once in any terminal session.

Path only finds executable files: e.g. .COM, .EXE, .BAT files. Path ignores files with any other extension. The paths are searched in the order specified, so place the most frequently accessed directories first.

Non-existent directories specified in the PATH variable in the environment are ignored.

Example

The following command tells MS-DOS to search three directories to find external commands (the three paths for these directories are D:\USER\PETE, D:\USER\EMILY and C:\BIN):

```
PATH=D:\USER\PETE;D:\USER\EMILY;C:\BIN
```

PRINT

Purpose Queues test files for background printing, while other MS-DOS commands are obeyed.

Category External

Syntax 1

The first time PRINT is called

[*d***:][***path***] PRINT [/D:***device***] [/B:***buffsize***] [/U:***busyticks***] [/M:***maxticks***] [/S:***timeslice***] [/Q:***queuesize***] [[***pathname***]...]**

Syntax 2

Subsequent calls to PRINT

[d:][*path***] PRINT [[/C|/P][[***pathname***]...]][/C|/P]...**

Syntax 3

Subsequent call to terminate PRINT

[*d*:][*path*] PRINT [/T]

Where

SYNTAX ELEMENT	MEANING
d	Specifies the drive where PRINT is to be found.
path	Specifies the directory where PRINT is to be found.
pathname	The file specification of a file to be printed, optionally preceded by the drive and the path leading to the directory where the file is to be found.
/D:device	Use to specify the print device. If not used PRINT will specify for a print device.
/B:buffsize	Use to set the internal print buffer size in bytes. The normal size is 512 bytes. Increasing the size may increase performance.
/U:busyticks	Specifies the number of MS-DOS clock ticks that PRINT will wait if the printer is busy. Otherwise PRINT gives up its timeslice. The default is 1 tick.

▶

SWITCH	PURPOSE
/M:maxticks	Specifies how many MS-DOS clock ticks print can have to print a file. Maxticks can be from 1 to 255 clock ticks (the default is 2).
/S:timeslice	Specifies the time slice value. timeslice can be from 1 to 255 (the default is 8). The lower the value the higher the priority of the print queue.
/Q:queuesize	Specifies the number of files allowed in the print queue. queuesize can be from 1 to 32 (the default is 10).

Comments

You can use the PRINT command only if you have an output device, such as a printer or a plotter, connected to one of your computer's serial or parallel ports.

Characteristics

You may use global and wildcard characters.

When you run PRINT for the first time in a terminal session, you are prompted as follows:

```
Name of list device [PRN:]
```

Type the name of a valid line printer device driver, or simply press ENTER to accept the default line printer device PRN:.

The following switches are possible with this command:

SWITCH	MEANING
/T	TERMINATE: this switch cancels all files in the print queue (those waiting to be printed). A message to this effect will be printed.
/C	CANCEL: This switch turns on cancel mode. The preceding filespec and all following filespecs will be suspended in the print queue until /P switch is encountered on the command line.
/P	PRINT: This switch turns on print mode. The preceding filespec and all following filespecs will be added to the print queue until a /C switch is encountered on the command line.

PRINT with no parameters displays the contents of the print queue on your screen without affecting the queue.

Examples

The following command empties the print queue for the device named LPT1:

PRINT /T /D:LPT1
then press ENTER

The following command removes the PENCIL.TST file from the default print queue:

PRINT A:PENCIL.TST /C
then press ENTER

The next two commands show how to remove the file PENCIL.TST

from the queue and then add the file pen.tst to the queue:

PRINT PENCIL.TST /C
then press ENTER

PRINT PEN.TST /P
then press ENTER

PROMPT

Purpose Changes the MS-DOS command prompt.

Category Internal

Syntax **PROMPT [[*text*][$*character*]...]**

Comments This command lets you change the MS-DOS system prompt (for example, A>). If, when using the prompt command, you do not type a new value, the prompt is set to the default value, which includes the default drive name.

Special Prompts

You can use the characters in the prompt command to create special prompts:

Type these characters	To get this prompt
$q	The = character
$$	The $ character
$t	The current time
$d	The current date
$p	The working directory of the default drive
$v	The version number

Type these characters	To get this prompt
$n	The default drive
$g	The > character
$l	The < character
$b	The | character
$_	A carriage return - linefeed sequence
$e	ASCII (Hexadecimal 1B)
$h	Backspace (to erase a character that has been written to the prompt line)

Examples

Setting your prompt

The following example sets the drive prompt to *drive*:*current directory*:

PROMPT $P
then press ENTER

The following command sets a two-line prompt that displays the following:

```
Time = (current time)
Date = (current date)
```

PROMPT TIME = T_DATE = $D
then press ENTER

RENAME

Purpose: Changes the name of a file.

Category Internal

Syntax **REN[AME] [***drive*:**][***path*]*old_file new_file*

Comments The REN command renames all files matching *old_file*.

You may use wildcards (* or ?) in either filename parameter. If wildcards appear in the second parameter, the corresponding characters in the first parameter remain unchanged.

Examples

Renaming files

The following command changes the extension of all filenames ending in .TXT to .DOC:

REN *.TXT *.DOC
then press ENTER

In the next example, REN renames a file named CHAP10 (on drive B:) to PART10:

REN B:CHAP10 PART10
then press ENTER

The newly renamed file PART10 remains on drive B:.

REPLACE

Purpose Updates or adds files according to the criteria set by the option switches. You cannot use the REPLACE command to update hidden files or system files.

Category External

Syntax **[***drive***:][***path***] REPLACE [***source-drive***:][***source-path***]** *source-file* **[***target-drive***:][***target-path***] [/A][/P][/R][/S][/W]**

Comments The REPLACE command performs two functions:

- It replaces files in the target directory with files in the source directory that have the same name.
- When you specify the /A switch, REPLACE adds files that exist in the source directory (but not in the target directory) to the target directory.

  You may use wildcards in the *source-file* name.

If you use more than one option switch with the REPLACE command, there must be a space between the option switches.

Example

REPLACE A:*.* B: /S /W /P

Option Switches

SWITCH	PURPOSE
/A	Adds new files to the target directory instead of replacing existing ones. You may not use this switch with the /S switch.
/P	Prompts you with the following message before it replaces a target file or adds a source file: Replace filename? (Y/N)_
/R	Replaces read-only files as well as unprotected files. If you do not specify this switch, any attempt to replace a read-only file causes an error and stops the replace process.
/S	Searches all subdirectories of the target directory while it replaces matching files. This switch is incompatible with the /A switch. Replace never searches subdirectories in the source path.
/W	Waits for you to insert a disk before beginning to search for source files. If you do not specify the /W switch, REPLACE begins replacing or adding files immediately.

If you specify /W but not /A, REPLACE displays the following message:

```
Press any key to begin replacing files
```

If you specify both the /W and /A switches, replace displays the following message:

```
Press any key to begin adding file(s)
```

As files are replaced or added, REPLACE displays their filenames on the screen. At the conclusion of the replace operation, it displays a summary line:

```
nnn file(s) added/replaced
```

or

```
No files added/replaced
```

Examples

Replacing Files

Suppose various directories on your hard disk, drive C:, contain files named PHONES.CLI that contain client names and phone numbers. To update these files and replace them with the latest version of the phones.cli file on the disk in drive A, you would type the following command:

REPLACE A:\PHONES.CLI C:\ /S
then press ENTER

This command replaces every file on drive C: that is named PHONES.CLI with the file PHONES.CLI from the root directory on drive A:.

Adding Files

Suppose you want to add some new printer device drivers to a directory called C:\MSTOOLS, which already contains several printer driver files for a word processor. To do this, you would type the following:

REPLACE A:*.PRD C:\MSTOOLS /A
then press ENTER

This command searches the default directory of drive "A:" for any files that have the extension .PRD (that don't currently exist in the \MSTOOLS directory on drive C:) and then adds these files to C:\MSTOOLS.

RESTORE

Purpose Restores files that were backed up using the BACKUP program.

Category External

Syntax **[***drive***:][***path***] RESTORE** *source-drive***:[***target-drive***:] [***pathname***][/S][/P][/B:***date***][/A:***date***][/E:***time***][/L:***time***][/M] [/N]**

Option Switches

SWITCH	PURPOSE
/S	Restores subdirectories also.
/P	Prompts for permission to restore any files matching the file specification that are read-only or that have changed since the last backup.
/B:date	Restores only those files last modified on or before date.
/A:date	Restores only those files last modified on or after date.

SWITCH	PURPOSE
/E:time	Restores only those files last modified at or earlier than time.
/L:time	Restores only those files last modified at or later than time.
/M	Restores only those files modified since the last backup.
/N	Restores only those files that no longer exist on the target disk.

Once MS-DOS has restored the file, use the DIR command to make sure that the file was restored properly.

Note

RESTORE cannot restore system files. Use the SYS command to restore these files.

The MS-DOS Ver. 3.30 RESTORE command will restore files backed up with either the MS-DOS Ver. 3.30 BACKUP command, or an earlier version of BACKUP.

Examples

Restoring a File

To restore the file INVEST.MNT from the backup disk in drive A: to the \IRSHARPE directory on drive C:, type the following:

RESTORE A: C:\IRSHARPE\INVEST.MNT
then press ENTER

Press the ENTER key to let MS-DOS know that the backup disk is in drive "A:".

RMDIR

Purpose Removes an empty sub-directory.

Category Internal

Syntax 1 **RMDIR [***drive***:]***path*

Syntax 2 **RD [***drive***:]***path*

Comments RMDIR removes a directory that is empty except for the . and .; special files. These two symbols refer to the directory itself and its parent directory, respectively. Before you can remove a directory entirely, you must delete its files and remove it's subdirectories.

Examples

Removing a Directory

Suppose you want to remove a directory named \USER\PETE. You would follow these steps:

1. To ensure that the directory is empty, type the following:

   DIR \USER\PETE
   then press ENTER

2. Then, from any directory except the one you want to remove, type the following command:

   RMDIR \USER\PETE
   then press ENTER

Remember that if you are working in the same directory that you are

trying to remove, you'll receive the following error message:

```
Invalid path, not directory, or directory
not empty.
```

SET

Purpose Sets one string of characters in the environment equal to another string for later use in programs or batch files.

Category Internal

Syntax **SET [***key=value***]**

Comments When MS-DOS recognizes a SET command, it inserts the given string and its equivalent into a part of memory reserved for the environment. If the string already exists in the environment, it is replaced with the new setting.

If you specify just the first string, SET removes any previous setting of that string from the environment. Or if you use the SET command without parameters, MS-DOS displays the current environment settings.

Examples

Setting a String

The following command sets the string include to C:\INC until you change it with another SET command: SET INCLUDE=C:\INC

SORT

Purpose A filter which sorts data alpha-numerically in forward or reverse order.

Category External

Syntax **[*drive*:][*path*] SORT [/R][+*number*]**

Comments If you do not specify a file, SORT takes input typed in at the keyboard and outputs to the screen.

The SORT program uses the collating sequence table, based on the country code and code page settings.

The | and < redirection symbols direct data through the sort utility from source. For example, you may use the DIR command or a filename as a source. You may use the MORE command or a filename as a destination.

Option Switches

SWITCH	PURPOSE
/R	Reverses the sort; that is, sorts from Z to A, and then from 9 to 0.
/+*number*	Sorts the file according to the character in column *number*. If you do not specify this switch, the SORT command sorts the file starting with the character in the first column.

Note: SORT does not distinguish between uppercase and lowercase letters. Characters above ASCII code 127 are sorted based on

information found in the COUNTRY.SYS file, or in an alternate file specified by the country command in your CONFIG.SYS file.

Examples

Sorting a file

The following command reads the file EXPENSES.TXT, sorts it in reverse order, and displays it on your screen:

SORT /R < EXPENSES.TXT
then press ENTER

The following command pipes the output of the DIR command to the SORT filter. This filter sorts the directory listing starting with column 14 (the column in the directory listing that contains the file size) and sends the output to the screen. The result is a directory, sorted by file size:

DIR | SORT /+14
then press ENTER

The following command does the same thing as the previous one, except that the MORE filter gives you a chance to read the sorted directory one screen at a time:

DIR | SORT /+14 | MORE
then press ENTER

SUBST

Purpose Substitute a dummy drive specifier for a pathname.

Category External, Non-network

Syntax 1 To Substitute:

[*drive***:][***path***] SUBST** *dummy-drive***:** *pathname*

Syntax 2 To undo a substitution:

[*drive***:][***path***] SUBST** *dummy-drive***: /D**

Syntax 3 To display the current substitution:

[*drive***:][***path***] SUBST**

Comments

The SUBST command lets you associate a directory path with a dummy-drive letter. This dummy-drive letter then represents a virtual drive because you can use the drive letter in commands as if it represented an actual physical drive.

When MS-DOS finds a command that uses a virtual drive, it replaces the drive letter with the path and treats that new drive letter as though it belonged to a physical drive.

Note: The following commands do not work on drives used in the SUBST command (or the JOIN command):

CHKDSK	FORMAT	SYS
DISKCOPY	LABEL	
FDISK	RECOVER	

Example

Creating A Virtual Drive

The following command creates a virtual drive, drive Z:, for the pathname B:\USER\BETTY\FORMS:

SUBST Z: B:\USER\BETTY\FORMS
then press ENTER

This example assumes that you have included the line, LASTDRIVE=Z, in your CONFIG.SYS file.

Now, instead of typing the full pathname, you can get to this directory by simply typing the name of the virtual drive:

Z:
then press ENTER

TIME

Purpose Display or set the system time.

Category Internal

Syntax **TIME [***hours***:***minutes***[:***seconds***[.***hundredths***]]]**

Comments MS-DOS keeps track of time in a 24-hour format, and uses the time information to update the directory whenever you create or change a file.

Displaying the current time

The TIME command without options displays the current time, and gives you an opportunity to change it:

```
Current time is hh:mm:ss.cc
Enter new time:_
```

If you do not want to change the time shown simply press the ENTER key. If you do want to change the time, type in a new value in the 24-hour clock format. The following are valid values:

hours = 0 thru 23
minutes = 0 thru 59
seconds = 0 thru 59
hundredths = 0 thru 99

Separate these elements (seconds and hundredths of seconds are optional) with the separator defined in the country-dependent information file. For the United States, use a colon (:).

You can also type the new time directly on the command line.

If you do not type a valid time, MS-DOS displays the following message and then waits for you to type a valid time:

```
Invalid time
Enter new time:_
```

Note

You can change the time command format by changing the country command in the CONFIG.SYS file. For more information, see the "MS-DOS Software Installation Guide".

The TIME command sets your computer's internal clock.

Examples

To reset the time of day on your computer's clock, you can type the time command by itself and MS-DOS will prompt you for the correct time. Or you can include the correct time when you type the command. For example, if you want to set your computer's clock at 1:36 p.m., you could type the following command:

TIME 13:36
then press ENTER

TREE

Purpose Displays all the directories and paths on the given drive. It also has an option to list the files in each directory.

Category External

Syntax **TREE [*drive*:] [/F]**

Comments **Finding Directory Names** The TREE command lists the full path of each directory, along with the names of their subdirectories.

The /F switch displays the names of the files in each directory.

Examples

If you want to see names of all directories and subdirectories on your computer, simply type:

TREE
then press ENTER

If you also want to see, one screen at a time, the files in all the directories on drive C:, you could type:

TREE C: /F | MORE
then press ENTER

Printing a Tree Listing: To print that same list on a printer, use the following command:

TREE C: /F > PRN
then press ENTER

TYPE

Purpose Displays the contents of the specified text file on the video screen.

Category Internal

Syntax **TYPE [***drive***:]***filename*

Comments You can use the TYPE command to view a text file without modifying it.

Note that when you use TYPE to display a file that contains tabs, all the tabs are expanded to the current setting for tabs (generally eight spaces wide). Also, if you try to display a binary file or a file created by an application program, you may see strange characters on the screen, including bells, formfeeds, and escape sequence symbols.

Examples

Displaying A File

If you want to display the contents of a file called HOLIDAY.MAR, you would type the following command:

TYPE HOLIDAY.MAR
then press ENTER

If the contents of the file you wish to display are fairly long, you could use a command like this to display the file's contents one screen at a time:

TYPE HOLIDAY.88 | MORE
then press ENTER

VER

Purpose Displays the MS-DOS version number.

Category Internal

Syntax **VER**

Comment If you want to know what version of MS-DOS you are using, you simply type the VER command. The version number will then be displayed on your screen.

Example

Displaying The MS-DOS Version

When you type:

VER
then press ENTER

the following message is displayed:

```
Olivetti Personal Computer DOS Version 3.30 Rev. x.xx
```

VERIFY

Purpose Sets an internal switch which causes disk writes to be verified.

Category Internal

Syntax **VERIFY [ON|OFF]**

Comments You can use this command to verify that your files are written correctly to the disk (no bad sectors, for example). MS-DOS verifies the data as it is written to a disk. You will receive an error message only if MS-DOS is unable to successfully write your data to a disk.

Note: This command has the same purpose as the /V switch in the COPY command.

Examples

If you want to know the current setting of VERIFY, use the VERIFY command without an option:

VERIFY
then press ENTER

VERIFY ON remains in effect until you type the following:

VERIFY OFF
then press ENTER

VOL

Purpose Displays the disk volume label identification, if it exists.

Category Internal

Syntax **VOL [***drive***:]**

Comments This command displays the volume label of the disk in a specific drive. If you do not type a drive letter, MS-DOS displays the volume label of the disk in the default drive.

Note: For more information about how MS-DOS uses volume labels, see the LABEL and FORMAT commands in this chapter.

Examples

Displaying A Volume Label

If you want to find out what the volume label is for the disk in drive "A:", you would type the following:

VOL A:
then press ENTER

If the volume label is DOS 3-3, MS-DOS responds by displaying the message:

```
Volume in drive A is DOS 3-3
```

XCOPY

Purpose — Copies files and directories, including lower level directories, if they exist.

Category — External

Syntax — **[***drive***:][***path***] XCOPY** *source-pathname* **[***target-pathname***] [/A][/D:***date***] [/E][/M][/P][/S][/V][/W]**

Comments — If you omit the target parameters, XCOPY assumes you want to copy the files to the default directory.

If you only specify the *drive*: XCOPY uses the default directory with the default filename, *.*.

Option Switches

SWITCH	PURPOSE
/A	Copies source files that have their archive bit set. Does not modify the archive bit of the source file. For information on how to set the archive attribute, see the ATTRIB command.
/D:date	Copies source files modified on or after the specified date. Note that the date format may vary depending on the country code that you are using. For more information, see the DATE command.
/E	Copies any subdirectories, even if they are empty. You must use this switch with the /S switch.
/M	Same as the /A switch, but after copying a file, it turns off the archive bit in the source file. For information on how to set the archive attribute, see the ATTRIB command.
/P	Prompts you with (Y/N?), allowing you to confirm whether you want to create each target file.
/S	Copies directories and lower level subdirectories, unless they are empty. If you omit this switch, XCOPY works within a single directory.

SWITCH	PURPOSE
/V	Causes XCOPY to verify each file as it is written to the target to make sure that the target files are identical to the source files.
/W	Causes XCOPY to wait before it starts copying files.

XCOPY displays the following message:

```
Press any key when ready to
start copying files
```

You must press a key to continue, or press CONTROL-C to abort the XCOPY command.

Examples

Using The XCOPY Command

The following example copies all the files and subdirectories (including any empty subdirectories) on the disk in drive A: to the disk in drive B:

XCOPY A: B: /S /E
then press ENTER

The XCOPY command may prompt you to specify whether the target is a file or a directory. For example, the following command creates the directory A:\WORKERS as it doesn't already exist, and copies the file payroll to it:

XCOPY PAYROLL A:\WORKERS
then press ENTER

XCOPY asks you:

```
Does TARGET specify a file name
or directory on the target
(F)file, D(directory)?
```

Type F if the target is a file, or D if the target is a directory.

Another method to distinguish between the target being a file or a directory is to place a back-slash (\).

By using the back-slash, it indicates that the target is a directory:

XCOPY PAYROLL A:\WORKERS
then press ENTER

Using this method XCOPY does not ask whether the target is a file or a directory.

A. GLOSSARY OF TERMS

The following table defines the terminology in this manual.

TERM	MEANING
active partition	The partition on hard disk which contain the operating system files enabling the bootstrapping of the computer. This happens on system reset or when the computer is turned on.
ASCII	American Standard Code for Information Interchange. A 7 BIT code, which has been extended to an 8 BIT code (a BYTE) to represent graphic characters and international characters.
basic input output system (BIOS)	Part of the operating system which provides an interface with the machine hardware. Most of the BIOS is in Read Only Memory (ROM), the rest is loaded from the system disk.
binary digit (BIT)	In a binary numbering system, only two marks are used 0 and 1. Each of these marks is called a binary digit.

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TERM	MEANING
bootable file	A file of a specific format that the bootstrap loader can load into memory to initialize the system.
byte	Eight bits, which is normally a code for an ASCII character.
current directory	The directory in which you are working.
cylinder	Hard disks usually consist of a number of platters. A cylinder refers to the same track on each surface of the platters which form a notional cylinder.
disk	A diskette or hard disk.
diskette	A single or double-sided 5 1/4 or 3 1/2 in floppy disk.
drive specifier	A letter referring to the diskette drive or hard disk drive in question. For example it may be: A - first diskette drive. B - second diskette drive. C - hard disk drive.
editing function keys	The keys that invoke the intra-line commands.

TERM	MEANING
external command	A command that is not loaded into memory at initialization. Such commands reside on disk from where they are loaded, executed and purged from memory.
formatting	Disks must be formatted before they can be used with MS-DOS. Formatting places tracks, which are split into sectors, onto the surface(s) of a disk. The sectors are of fixed number of bytes, typically 512 bytes. Also formatting places a boot record and an empty directory on the disk.
hard disk	A disk that is built into the computer. A hard disk can store much more information than a floppy disk, and the computer can retrieve information from it faster.
hardware reset	A system reinitialization caused by pressing the physical reset button. The subsequent initialization includes diagnostic tests and a reset of all system parameters. Any AUTOEXEC.BAT file or CONFIG.SYS file is executed.
inter-line commands	The EDLIN commands that operate on entire lines of text.

TERM	MEANING
intra-line commands	The commands invoked by the special editing function keys that perform editing operations within a single line of text.
internal command	A command that is embedded in the COMMAND.COM file and resides in memory whenever MS-DOS is booted.
Kilobyte KB	2 to the power 10 = 1024 Bytes
Mega-byte MB	2 to the power 20 = 1 048 576 Bytes
nil parameter	A parameter to a command where the parameter in question is not specified in the command line. The parameter therefore assumes a default value.
partition	A certain number of cylinders of a hard disk, which have been set aside for the use of a particular operating system. That operating system treats the partition like a complete, but smaller, hard disk. The maximum primary partition size allowed for MS-DOS is 32 MB. The number of cylinders this corresponds to, depends on how many bytes per cylinder.
pathname	A sequence of one or more directory names separated by backslashes optionally beginning ▶

TERM	MEANING
	with a drive specifier and optionally terminating in a file name. It specifies a path through a directory structure to access a file or directory.
sectors	The track on a disk is divided into sectors. MS-DOS disks are soft sectored. The number of sectors per track is typically 8, 9 or 15.
source line	A line of text containing either the last command line entered or the current line in a file being edited. It can be retrieved in whole or part or modified using the special editing function keys.
system file	An MS-DOS file that is present on the MS-DOS system diskette that contains system software. There are three such files: 2 hidden files and COMMAND.COM.
system reset	A system reinitialization caused by pressing the CTRL, ALT and DEL keys simultaneously. Any AUTOEXEC.BAT file or CONFIG.SYS file is executed.
text file	An ASCII file whose records are separated by CR/LF.

▶

TERM	MEANING
tracks per inch (t.p.i.)	A disk track is the circular locus of the head as the disk rotates. The head can be moved to the other tracks; they are concentric circles. A double density diskette has 48 t.p.i. A quad density disk has 96 t.p.i.
virtual disk	An emulation of backing store in Random Access Memory (RAM). It is faster than disk backing store, but the information on virtual disk is lost when the computer is turned off.
volume label	A name that can be assigned to a disk by the FORMAT command. It will subsequently be displayed in a directory listing, or by the VOL command
wild card character	A special symbol used to represent any single character (?), or any string of characters (*).
working session	The time between booting MS-DOS and the next boot of MS-DOS or switch-off.

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