MultiFinder™ User's Guide

✿ File Edit View Special

Chart

Letter

memo:

Dear Mr. Walthrop,

Macintosh

26 items   11,081K in disk   7,938K available

System Folder   Utilities   Programs   Le

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Macintosh

Trash

Apple® Macintosh™ MultiFinder

Macintosh™ MultiFinder User's Guide

Contents

Welcome to MultiFinder

MultiFinder is the first-generation multitasking operating system for the Apple® Macintosh™ Plus, Macintosh SE, and Macintosh II computers—making it possible for you to have several applications open at the same time, including background applications that let you perform one task while your Macintosh performs another.

MultiFinder provides important additional features for the advanced Macintosh user. You may choose to start using MultiFinder today, or you may want to wait until later.

What does MultiFinder do for you?

☐ You can copy and paste information between documents (and applications) easily and quickly—without having to save one document before you open the other.

☐ You can have constant access to the Finder. This makes it possible to start additional applications whenever you want, rename or delete documents you aren't working on, and so on.

☐ Because of MultiFinder's background processing capabilities, you can run certain applications in the background, out of the way while you continue working. MultiFinder comes with one background application for use with a LaserWriter® printer: Background Printing. With this feature, you can print documents and go on with your work while the printing is in progress. If you're sharing a LaserWriter on a network, you can even schedule documents to print after hours or at a time of day when there's minimal traffic at the printer.

System requirements

MultiFinder is a standard feature of the system software included on the two *System Tools* disks (version 5.0) that came with this package. You cannot use MultiFinder with earlier versions of the Finder and System files.

MultiFinder runs on all Macintosh Plus, Macintosh SE, and Macintosh II computers with a minimum of 1 megabyte of memory (RAM). If you have more than 1 megabyte, MultiFinder gives you even more power and flexibility. (You'll be able to open more applications at a time.)

If you plan to use MultiFinder with more than one large application (the more advanced applications tend to be large), a minimum of 2 megabytes of memory is necessary for satisfactory performance. See your authorized Apple dealer or representative for information about installing additional RAM.

Finding out how much memory you have

To find out how much memory your Macintosh has, choose About the Finder from the Apple menu and look at the window that appears. You see the heading Total Memory, followed by a number.

❖ *Can't find the heading Total Memory?* If you can't find Total Memory, you haven't installed the *System Tools* version 5.0 disks. Follow the installation instructions that came with this package.

Divide the Total Memory number by 1,024. For example, the number 1,024 means you have 1 megabyte of RAM; the number 2,048 means you have 2 megabytes.

About this manual

Here's an overview of what you'll find in this manual.

Chapter 1, "Before You Begin," tells you how to prepare your system for Background Printing, how to turn MultiFinder on, and how to turn it off.

Chapter 2, "A Sample Session," shows you how to work with MultiFinder and switch between applications.

Chapter 3, "Background Printing," explains background processing in general and tells how to print documents on a LaserWriter printer while you work in an application at the same time.

Chapter 4, "Some Technical Points About Memory," tells you how you can manage the memory available for your applications (especially important if you have not expanded beyond the standard 1 megabyte).

Chapter 5, "The Set Startup Command," covers the command you use to set your startup applications.

Appendix A, "Tips for Working With MultiFinder," gives you some suggestions that may help you work with MultiFinder.

Appendix B, "Troubleshooting," discusses problems you might encounter and suggests remedies.

What you should already know

MultiFinder is an advanced feature that will make your Macintosh more powerful and more flexible.

This manual assumes that you are moderately experienced with your Macintosh and that you already know basic Macintosh skills, including how to

- □ use the mouse and keyboard
- □ open an application or document
- □ throw documents away
- □ drag, shrink, and enlarge windows
- □ manipulate objects on the desktop
- □ use the Font/DA Mover

If you don't know these techniques, take time now to learn them. Spend time working with a few applications; familiarize yourself with how you communicate with the computer and how it responds. MultiFinder is a product you will appreciate and enjoy more fully when you are familiar with the Macintosh.

Before You Begin

This chapter covers some things you need to know before you can work with MultiFinder: getting ready and turning MultiFinder on and off.

Getting ready

Before you can take advantage of MultiFinder, you must have installed the system software on the *System Tools* version 5.0 disks. Refer to the installation instructions that came with this package if you have not already installed the correct software.

Preparing your system for Background Printing with a LaserWriter

If you have a LaserWriter printer and plan to use Background Printing, you need to install special printing resources. Otherwise, skip ahead to "Turning MultiFinder On."

1. **Start your Macintosh with your startup disk.**

2. **Select and open the startup disk icon, if necessary.**

3. **Insert** *System Tools Disk 2* **into a 3.5-inch drive.**

4. **Select and open the** *System Tools Disk 2* **icon.**

5. **Select and open the MultiFinder Printing folder.**

6. **Press the Shift key and hold it down while you select the PrintMaster and Backgrounder icons.**

PrintMaster   Backgrounder

Background Printing resources

7. **Drag the two icons to the System Folder on your startup disk.**

   When you release the mouse button, you see a message telling you that the files are being copied.

❖ *Replacing existing resources?* If you already have versions of the files in your System Folder, a message appears asking whether you want to replace items with the same name. Click OK.

Turning MultiFinder on

You turn MultiFinder on by clicking in the Set Startup dialog box. If you have more than one disk icon on the desktop, make sure the one you plan to start from is the one highlighted. (Click it to select it.)

1. Choose Set Startup from the Special menu.

The Set Startup dialog box appears.

```
┌──────────────────────────────────────────────────┐
│                                                    │
│  ┌─────┐ Start up "HD20" with:                     │
│  └─────┘                                            │
│                                                    │
│        ○ 🖴 Finder    ◉ 🖴🖴🖴 MultiFinder            │
│  ................................................. │
│  Upon startup, automatically open:                 │
│        ○ Selected Items                            │
│        ○ Opened Applications and DAs               │
│        ◉ MultiFinder Only                          │
│                          ┌────────┐ ┌──────────┐   │
│                          │ Cancel │ ║    OK    ║   │
│                          └────────┘ ╚══════════╝   │
│                                                    │
└──────────────────────────────────────────────────┘
```
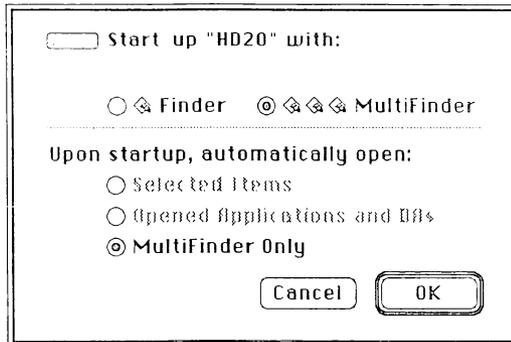
Set Startup dialog box

2. Click the button labeled MultiFinder (the one with the three icons after it).

3. Click OK.

This confirms your choice and closes the Set Startup dialog box.

4. If you want to turn MultiFinder on right away, choose Restart from the Special menu.

If you'd just as soon continue what you're doing with things as they are, that's fine. The next time you choose Restart or turn off your computer and start it again, MultiFinder will be on.

Turning MultiFinder off

While most applications will run well with MultiFinder, now and then you might find an application that is not compatible. If you encounter erratic behavior in an application with MultiFinder on, you may want to turn MultiFinder off. You use the Set Startup dialog box to do it.

1. Choose Set Startup from the Special menu.

The Set Startup dialog box appears.

2. Click the button labeled Finder (the one with one icon after it).

3. Click OK.

The next time you choose Restart or Shut Down from the Special menu, you'll be in the Finder with MultiFinder turned off.

❖ *Quitting your applications:* When you choose Restart or Shut Down with MultiFinder on and applications open, MultiFinder quits the applications for you. If there are unsaved documents open, MultiFinder asks whether you want to save each document. If you click Yes, MultiFinder saves the document and then quits the application. If you click No, MultiFinder does not save the document but quits the application for you.
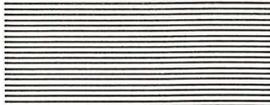
Chapter 2

A Sample Session

MultiFinder gives you a lot of flexibility, and once you've become accustomed to working in this new environment, you'll make up your own mind about how you want to use all the features. Meanwhile, the best way to familiarize yourself with the possibilities is through hands-on experience.

Make sure you've installed MultiFinder and have started up with it turned on.

What you'll work with

To keep things simple in this session with MultiFinder, you will be working with two applications as you perform the procedures:

□ Finder (a system application that gives you the desktop—your "home base")

□ TeachText (a simple word processing application)

Make sure the TeachText icon appears in your directory window. If you need to, you can copy TeachText to your startup disk from the *System Tools Disk 1* that came with this package. (The Finder is available automatically, as soon as your system is turned on and you see the desktop.)

The directory for your startup disk should be the only open window. If any other windows are open, close them.

What you'll learn

In this sample session you'll see how easy it is to work with MultiFinder and switch between applications. Specifically, you'll become familiar with

☐ what's different about the Finder desktop and the menu bar

☐ how to start applications

☐ three ways to move among open applications

☐ how desk accessories work with MultiFinder

In the procedures that follow, the actions you should take appear as numbered steps, printed in **bold** type. Comments explaining what's happening, or why something's happening, are in plain type. Read along and follow the directions.

The Finder desktop

Small Finder Icon

With MultiFinder and your computer turned on, you are looking at the Finder desktop. (Finder is always the first application open.)

1. Notice the small icon at the right edge of the menu bar.

The desktop looks the same as it did before you turned MultiFinder on—except that a small icon representing the currently active application appears at the right edge of the menu bar. The Finder icon is the one you see first because the Finder is the only thing running at this point.

Starting applications

TeachText Icon

You can start applications as you need them. When you start a new one, the applications you've already started are still open and available to you.

2. Open the TeachText icon to start the application.

In a few seconds you see the TeachText window, "Untitled," empty and filling the screen. The small icon at the right edge of the menu bar has changed from Finder to TeachText.

3. Notice that the titles in the menu bar have changed.

The menu bar always holds menu titles for the application you're interacting with—TeachText in this case.

Because many applications have similar menu titles, you may not notice the titles changing as you move among applications. There are times, though, when it's important to notice the menu bar and remember that it belongs to the application you're using. (With several applications open at once, you can lose track of where you are—especially when it's time to quit an application.)

The first way to move around: The Apple menu

The Apple menu is still what you use to open desk accessories, and now you can also use it to move among open applications.

4. Move the pointer to the Apple menu, press the mouse button, and hold it down while you look at the menu.

When you want to verify which application you're using, look at the Apple menu. At the top of the menu, the About command tells you the name of the active foreground application. (Right now, it says About TeachText.)

5. Pull down the Apple menu again and notice the section near the bottom (the one showing icons and names).

With MultiFinder, the icons and names of all open applications appear in this section of the Apple menu. Notice the check mark beside the icon and name of the application you're using (TeachText).

You can use this menu to choose any other open application on the list, bringing the application to the foreground where you can work with it.

6. Choose Finder from the Apple menu.

You just used the Apple menu to move from one open application (TeachText) to another (Finder).

As soon as you choose the Finder, the menu titles and the icon at the right edge of the menu bar change again. In addition, the Finder window comes forward. The TeachText window is still there in the background, covering the desktop, but inactive.

❖ *Reminder:* If you inadvertently lose track of the window of any application you want to work with, you can always return to the Apple menu and choose the application there. This brings the application forward and makes the window active.

Open applications are listed here.

The second way to move around: Windows

Clicking an application's inactive window is a second way to move among open applications.

7. Click anywhere in the TeachText window (behind the Finder window).

You just moved from one application (Finder) to another (TeachText)—by clicking in an inactive window.

8. Use the size box to shrink the TeachText window so you can see the desktop behind it.

Shrink the window as small as you can. When you can't drag the size box any farther, release the mouse button. (You won't actually see the desktop until you let go of the mouse button.)

9. Click the zoom box.

As soon as you click the zoom box, the window grows to fill the screen as before.

10. Click the zoom box again.

The TeachText window shrinks back to the smallest size it can be. This zoom technique is a handy way to make windows big enough to work in, then shrink them quickly so you can see more of the desktop and other application windows.

Applications that use the whole desktop

A few applications (MacPaint™ version 1.5 or earlier, for example) use the whole desktop, and don't let you shrink them or move them aside to see windows and icons that are "under" them. The windows and icons are still there—they're just hidden.

When an application has taken over the desktop, you can still choose other open applications (including the Finder) from the Apple menu. This way you'll get an active window you can work in, and the menu bar will change to the menu bar of the application whose window is active. However, you still won't be able to see the Finder desktop. (You can tell because the Trash icon isn't there.)

If you really need to get to the Trash, or some other item on your desktop, simply quit the application that's taking up the screen. Use the Finder desktop for what you need, and restart the application.

11. Drag the TeachText window toward the lower-left corner of your screen to get it out of the way.

You should be able to see most of the desktop and at least part of the Finder directory window. Right now the TeachText window is active, and the directory window is inactive.

12. Click in the Finder directory window to make it active.

With MultiFinder, windows behave the same way they have in earlier versions of the Macintosh system software. That is, only one window can be active at a given time. As soon as you click in the Finder directory window, it becomes active and comes forward—making the Finder ready for you to interact with it. TeachText is still open, but its window is inactive.

Dimmed TeachText icon
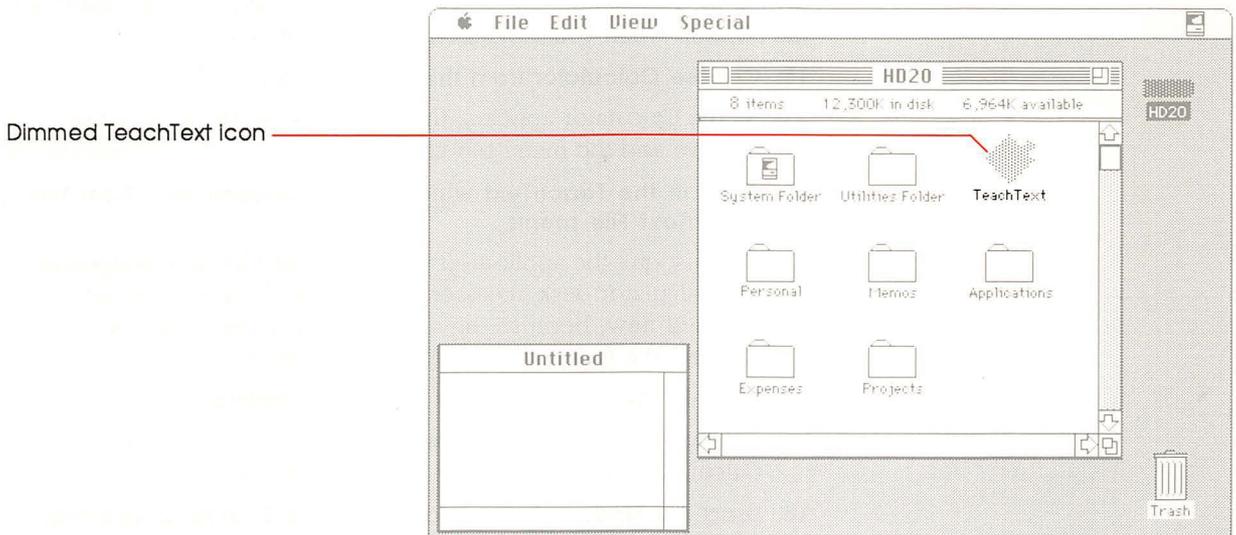
Active and inactive windows

The third way to move around: Dimmed application icons

Here's a third way to move among open applications.

13. Find the TeachText icon in the Finder window.

Notice that the TeachText icon is dimmed, just as a folder is dimmed when it's open.

14. Double-click the dimmed TeachText icon.

You've activated TeachText again. Double-clicking a dimmed application icon tells the application you want to use it. (You can also select the icon and choose Open from the File menu.)

So far...

You've used three techniques to let an open application know you want to interact with it:

☐ You chose the application from the Apple menu.

☐ You clicked in the application's inactive window.

☐ You double-clicked the application's dimmed icon.

In the final part of this sample session, you'll get a chance to see how desk accessories work with MultiFinder.

Desk accessories

When you're using MultiFinder, desk accessories are still there when you want them—and they don't close automatically when you start or quit an application. Desk accessories continue to be available on the desktop when you move between applications.

15. Choose Calculator from the Apple menu.

As the Calculator appears, the TeachText window becomes inactive and the menu bar changes.

16. Click in the TeachText window, then choose Quit from the TeachText File menu.

You just quit the application you were using when you opened the Calculator desk accessory. (The TeachText icon is not dimmed now, because the application is closed.) And as you can see, the Calculator is still on your screen.

17. Click in the Finder window to make it active.

Activating the Finder window may have covered up the Calculator, but it's still there—open and inactive.

18. Drag the Finder window down about 2 inches so you can see the Calculator again.

You have to release the mouse button to finish dragging.

19. Click in the Calculator to bring it forward, then choose Close from the File menu (or click its close box).

In this sample session you've become familiar with the menu bar and with starting applications, and you've practiced using the Apple menu, activating windows, and opening and closing desk accessories. That's most of what you need to know to work happily in the MultiFinder environment.
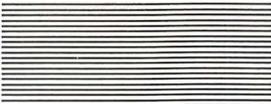
Background Printing

The term *background processing* describes what happens when the computer does some work for you in the background—without interrupting or disturbing you—while you use the same computer to work on something else. With appropriate background applications (and MultiFinder), you are free to continue using your Macintosh while it performs other tasks for you.

Background Printing (included with MultiFinder) is an example of a background process. With Background Printing and a LaserWriter printer, you can continue working in an application *and* print documents at the same time.

How Background Printing works

When Background Printing is turned on, any time you use the Print command (in the File menu), the document you are printing will be saved on your startup disk and sent to the printer. (In technical jargon the document has been **spooled.**) If you send several documents to the printer, each will be spooled and then printed in order.

Spooled files are files that the computer places in temporary storage, out of the way while other processing goes on.

Spooling uses just a fraction of the time it takes to print a document, greatly reducing your waiting time. Once the document has been spooled, the actual printing can go on in the background—freeing the computer for your use.

Background Printing won't change how you use the Print command, but it reduces the time your computer is tied up with printing. (If you've never used the Print command before, see your Macintosh owner's guide for instructions.)

Making sure Background Printing is on

MultiFinder comes with Background Printing preset to On. However, if someone else has used your system, it may have been turned off. To take advantage of Background Printing, first verify that it's on.

1. **Select the Chooser desk accessory from the Apple menu.**

2. **In the upper-left corner of the Chooser window, select the LaserWriter icon.**

   Background Printing is an option only for LaserWriter printers.

   As soon as you click the LaserWriter icon, you see the standard list of LaserWriter printers you have access to. Below that box you see the label Background Printing followed by the buttons On and Off.

3. **Make sure the On button is selected.**

4. **If necessary, select the LaserWriter at which you want to print your documents.**

5. **Close the Chooser window.**

When Background Printing is turned on, you can print documents as you always have—with added speed and convenience. On the other hand, you can decide you want additional control over the printing process. For example, you might want to review the status of a document you are printing, schedule when it prints, and determine whether or not you receive notification of what's going on. The application that lets you do all this is called *PrintMaster*.

PrintMaster

With Background Printing turned on, as soon as you choose the Print command you open PrintMaster, a new application. PrintMaster offers options intended to give you additional control over what happens to documents you are printing. At the same time, PrintMaster is self-sufficient enough that you can ignore its presence and let it go about its business in the background.

As with other applications in the MultiFinder environment, there are several ways to bring the PrintMaster window to the front of your screen so you can interact with it:

□ If nothing is printing at the moment, you can select and open the PrintMaster icon. (You'll find the icon in the System Folder.)

□ If printing is going on, you can choose PrintMaster from the Apple menu, or you can double-click the dimmed PrintMaster icon (in the System Folder).

The menu bar now belongs to PrintMaster.

File
Open
Close
Preferences...
Stop Printing
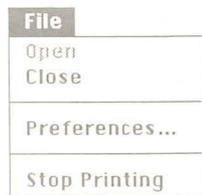
PrintMaster File menu

You use the PrintMaster File menu for several purposes:

□ to open or close the PrintMaster window

□ to choose and open the Preferences dialog box

□ to stop (or resume) printing

The PrintMaster window

Whenever you open PrintMaster (by choosing its name from the Apple menu or selecting and opening its icon in the System Folder), you'll see the PrintMaster window.

Document that's printing and the name of the LaserWriter printer

Documents that are waiting to print (numbered to show their place in the queue)

Document that's scheduled to print at a specified time

Document that's postponed indefinitely (won't print until you schedule it)

```
┌─────────────────────────────────────────────┐
│ ▤□        PrintMaster       ▤▤▤▤▤            │
│                 Printing                     │
│ ┌─────────────────────────────────────────┐ │
│ │ 🖨 4th Quarter Report @ Montana          │ │
│ └─────────────────────────────────────────┘ │
│                 Waiting                      │
│  1  🖨  Project Plan @ Wyoming          ⬆   │
│  2  🖨  SigCHI trip rprt @ Wyoming          │
│ ⏲ 🖨  Trip Report @ 3:15 am 5/27/87        │
│    🖨  March Status postponed indefinitely ⬇ │
│ ┌──────────────────┐  ┌──────────────────┐  │
│ │  Cancel Printing │  │  Set Print Time… │  │
│ └──────────────────┘  └──────────────────┘  │
│ Printing Status: 4th Quarter Report          │
│ Pages To Print: 14                           │
│ status: preparing data                       │
│                                              │
└─────────────────────────────────────────────┘
```

PrintMaster window

The PrintMaster window has a number of useful features. Going from top to bottom, the following sections explain what they do for you.

Printing

This part of the window tells you the name of the document that is printing and the name of the printer you're using.

Waiting

This part tells you the names of any other documents you've elected to print, and general information about their status.

☐ Numbered documents are waiting to be printed as soon as possible, and the numbers show which will print first, second, and so on. Along with the name of the document, the list also shows the name of the printer it's going to.

Any time you want to change the order in this list, simply drag a numbered document to a different place in the sequence. (Move document number 2 into position as number 1, for example.)

☐ When you've deferred printing until a specific time of day, the document is identified by a small clock. (You use Set Print Time to defer printing.) In addition, you see the time and date when the document is scheduled to print.

☐ Documents that you've postponed indefinitely appear with a short blank line beside them (and the message "postponed indefinitely"), indicating that there is no set time for them to print. They will stay this way until you use Set Print Time to schedule printing.

If you have more than four documents in the Waiting list, you can scroll to see the rest.

❖ *More than one LaserWriter printer.* If you are on a network with access to more than one LaserWriter printer, you can send documents to different printers. Use the Chooser to select the printer—before you choose the Print command.

Remove from List/Cancel Printing

Just below the Waiting list is a button labeled Remove from List or Cancel Printing, depending on which document you select.

☐ If you select one of the Waiting documents, the button reads Remove from List. Click it to delete that particular printing request.

☐ If you select the document that is actively printing, the button reads Cancel Printing. Click it if you want to cancel the printing that's in progress.

Set Print Time...

This button allows you to specify a time and date to print a document in the Waiting list. First select the document you want, then click this button. The Set Print Time dialog box appears.

```
┌─────────────────────────────────────────────┐
│ ┌─────────────────────────────────────────┐ │
│ │ Set Print Time:                         │ │
│ │                                         │ │
│ │  ◉ │ 11:23:55 AM   │      ┌────────┐    │ │
│ │    │  9/21/87    ⬍│      │ Cancel │    │ │
│ │                          └────────┘    │ │
│ │                          ╔════════╗    │ │
│ │  ○ Postpone Indefinitely │   OK   │    │ │
│ │                          ╚════════╝    │ │
│ └─────────────────────────────────────────┘ │
└─────────────────────────────────────────────┘
```
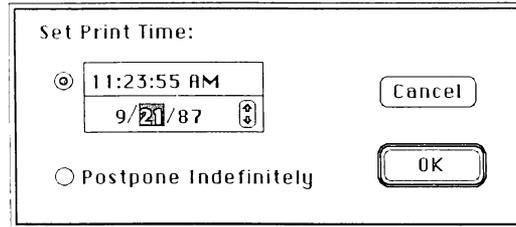
Set Print Time dialog box

When you get to this dialog box, you can set the time and date you want your document to print, using a clock that works just like the Alarm Clock desk accessory. (By the way, the current time and date always appear first on this clock.)

Change the time or date displayed by clicking the digits you want to change. Arrows appear on the right. Click the up or down arrow to scroll the numbers higher or lower. Or use the keyboard to type the numbers. Press the Tab key to move to the next field (for example, from month to day to year).

If you don't know when you want to print a document, click the button beside Postpone Indefinitely. Later, when you're ready to schedule the printing, come back to this dialog box and use the clock to set the appropriate time (and date, if necessary).

Once you've made your selection, click OK to confirm it. Or, if you change your mind, you can click Cancel.

Printing Status

This part at the bottom of the window gives you information about any document you have selected from Printing or Waiting.

The Preferences dialog box

When you choose Preferences from the PrintMaster File menu, the Preferences dialog box appears.

```
Preferences:

   Hide PrintMaster's window
   when printing:
         ⊙ Yes    ○ No

   Notify immediately when
   problem occurs:
         ⊙ Yes    ○ No

      [ Cancel ]    [[  OK  ]]
```
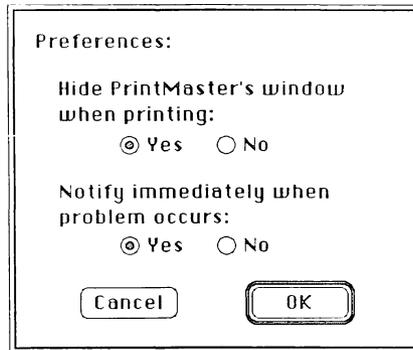
Preferences dialog box

Hide PrintMaster's window when printing

This option is preset to Yes. Even when the setting is Yes, you can always use the Apple menu to bring up the window.

If you change this setting to No, every time printing starts the PrintMaster window will appear on your desktop. However, it will not come to the front to interrupt whatever else you're doing. You may have to drag a few windows out of the way to find it (or you can choose PrintMaster from the Apple menu to bring the window forward).

Notify immediately when problem occurs

This option is preset to Yes. This means that if a problem develops that will prevent a document from printing, an alert message will appear to inform you—even if it means interrupting something else you're doing. If your computer is short of memory or the printer is out of paper, you will be alerted.

If you change this setting to No, the alert messages will still be sent, but they will be stored until you go looking for them. If you notice that a particular document hasn't printed when you think it should have, choose PrintMaster from the Apple menu (or select and open its icon). Any alert messages will appear, along with the PrintMaster window.

Stop Printing/Resume Printing

This label on the PrintMaster File menu changes, depending on what you choose.

□ If it says Stop Printing and you choose it, the printing process stops as soon as the current document finishes printing. (If you don't want to wait for the document to finish printing, use the Cancel Printing button in the PrintMaster window, described earlier.) At that point, the label changes to Resume Printing.

□ If it says Resume Printing and you choose it, printing begins again. The label changes to Stop Printing.

Once you've chosen Stop Printing, none of your documents print until you come back to the PrintMaster File menu and choose Resume Printing.
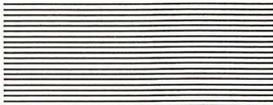
Some Technical Points About Memory

Your Macintosh has a finite amount of memory that it sets aside for each application and uses to keep track of what's going on. When you open two or more applications with MultiFinder, you add to the complexity of the computer's task in sorting out how much memory is available and how much it can allocate. Once in a while, you may get a message that you can't open an application because there's not enough memory available. When that happens there are several possible ways to resolve the situation, but first you need to understand how memory works in your Macintosh.

Think of your refrigerator at home. Certain areas are fixed in size (such as the freezer compartment and vegetable drawers, which cannot shrink or expand). Other areas can change; you can adjust shelves to meet your needs. When you have a dozen 9-inch bottles of soda pop, and your shelves are arranged for items 5 inches tall, you don't cut the bottles in half to make them fit; you raise, lower, or remove one or more shelves to allow for 9 inches of vertical space.

```
┌─────────────────────┐
│ ┌─────────────────┐ │
│ │   Free memory   │ │
│ │      480K       │ │
│ └─────────────────┘ │
│ ┌─────────────────┐ │
│ │  Application C  │ │
│ │      256K       │ │
│ └─────────────────┘ │
│ ┌─────────────────┐ │
│ │  Application B  │ │
│ │      320K       │ │
│ └─────────────────┘ │
│ ┌─────────────────┐ │
│ │  Application A  │ │
│ │      512K       │ │
│ └─────────────────┘ │
│ ┌─────────────────┐ │
│ │    Finder &     │ │
│ │     System      │ │
│ │      480K       │ │
│ └─────────────────┘ │
└─────────────────────┘
```

Applications sharing memory
on a Macintosh
(2 megabytes available)
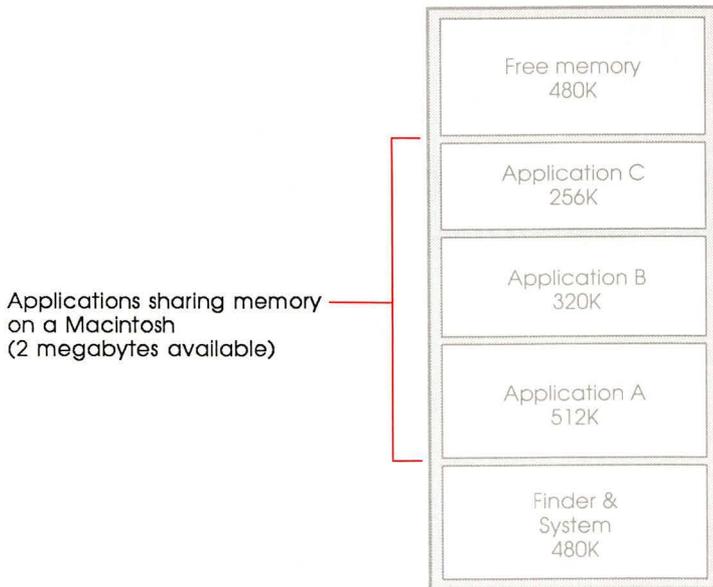
How memory works in your Macintosh

The memory in your Macintosh is similar. A part of it is reserved exclusively for the System file and the Finder. The rest of your computer's memory is more flexible.

The Finder memory graph

To find out how memory is allocated in your system, you use the Finder memory graph. To see it, choose About the Finder from the Apple menu. In the window that appears, the graph shows you how much memory each open application is assigned and how much of that memory the application is currently using.

This is the largest block of memory available for the next application you open.

The bars show how much memory is available for each open application. (Dark areas show how much is being used right now.)

```
╔═══════════════════════════════════════════════════╗
║ ▢ ═══════════ The Macintosh™ Finder ═══════════  ║
╟───────────────────────────────────────────────────╢
║  Finder:   6.0           Macintosh System Software║
║  System:   4.2           ©1987 Apple Computer, Inc.║
║                                                     ║
║  Total Memory:   2,048K  Largest Unused Block: 1,301K║
║                                                     ║
║  ◈ TeachText      256K  ▓░░░░░░░░░░░░░░░░░░        ║
║  ▤ Finder         192K  ▓▓▓▓░░░░░░░                ║
║  ▤ System         296K  ▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓            ║
╚═══════════════════════════════════════════════════╝
```
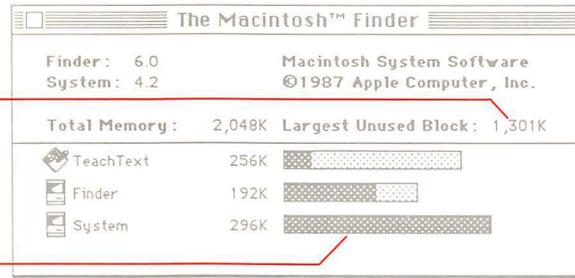
About the Finder window

The number labeled Largest Unused Block just above the graph is the amount of memory available for another application. This number, however, doesn't necessarily represent the total amount of free memory in the system because of something called *fragmentation*.

Fragmented memory

Fragmentation occurs when you start some applications, quit one or more, and then start another application. The memory in the system is broken into chunks—fragmented—so that it isn't all available as one contiguous block. Macintosh applications can run only in contiguous blocks of memory.

Sometimes you'll get a message telling you that there's not enough memory available when in fact the memory you need is not being used, but is scattered in separate areas. If this is the case, you just have to tell the computer to collect the smaller areas into a single larger one.

Largest unused block of memory
(not the total amount of
free memory)

Free memory that's
fragmented
(not all in one chunk)

Free memory 480K
Application C 256K
Free memory 320K
Application A 512K
Finder & System 480K
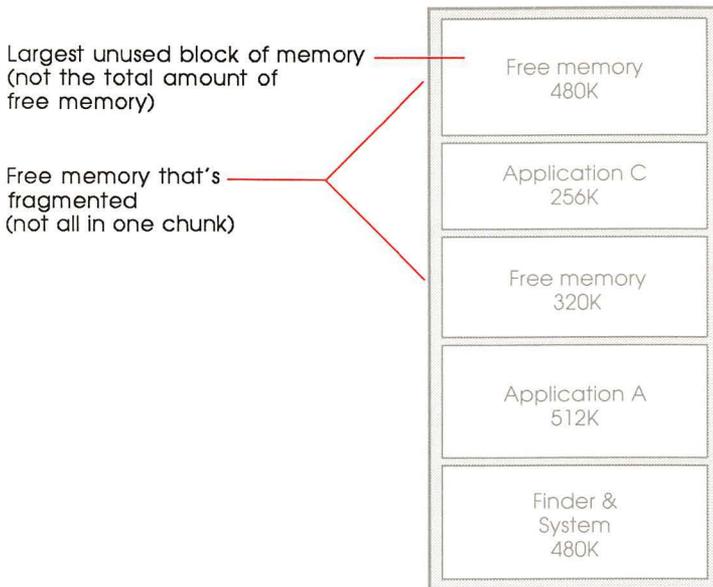
Fragmented memory

Creating an unfragmented block of memory

Follow these steps to reorganize free memory into an unfragmented block:

1. Quit all applications.

2. Start the applications again.

When you restart the applications, the fragmentation will be gone. The largest available block size in the About the Finder window will be a true gauge of the amount of memory available for additional applications.

Changing application memory size in special situations

In general, as you start an application, it tells the computer how much memory it wants reserved. As long as there is a big enough chunk of free memory, the computer will accommodate the demands of each application.

Occasionally, though, you might need to adjust the amount of memory set aside. Some older applications ask for more memory than they really need. (These applications weren't expected to share computer memory with other applications—as they must when you use MultiFinder.) Other times, when you are working on a very large document, the application may not have asked for enough space in memory.

You can tell the computer to set aside different amounts of memory for an application's use—more if you get a message that the application is out of memory, less if you want to try conserving memory to run more applications. You modify memory size in the application's *information window*.

Important Before you lower the memory size of any application, make a backup copy of the application.

To change an application's memory size,

1. **Select the application's icon and choose Get Info from the File menu.**

The information window for the application appears.

```
╔══════════════════ Info ══════════════════╗
║ □                                         ║
║   ◇        Locked □                        ║
║      TeachText                             ║
║   Kind: application                        ║
║   Size: 15,287 bytes, 15K on disk          ║
║                                            ║
║   Where: HD20, SCSI 3                       ║
║                                            ║
║                                            ║
║   Created: Thu, Jan 15, 1987 2:04 AM        ║
║   Modified: Mon, Jun 22, 1987 8:00 PM        ║
║  ┌──────────────────────────────────────┐  ║
║  │ TeachText Version 1.0                  │  ║
║  │                                        │  ║
║  │                                        │  ║
║  │                                        │  ║
║  └──────────────────────────────────────┘  ║
║   Suggested Memory Size (K): 192K           ║
║   Application Memory Size (K): │ 384 │       ║
╚═══════════════════════════════════════════╝
```

Recommended memory size (can't be changed)

Memory to be set aside for the application
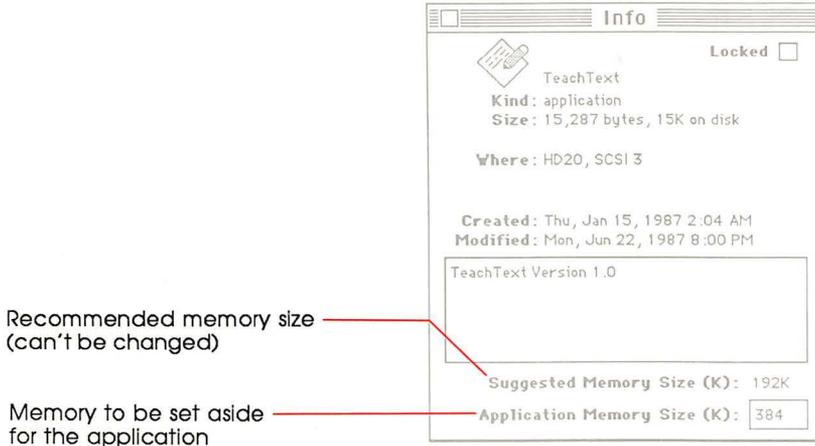
An information window

Near the bottom of the window you see two lines:

□ *Suggested Memory Size* specifies the amount of memory recommended for this application. You cannot edit this number; it's here for your information (so you won't have to remember what the recommended amount was).

□ *Application Memory Size* shows the amount presently reserved for the application. You can edit this number to increase (or decrease) the memory to be used.

If you don't see these lines, MultiFinder is not turned on. (See "Turning MultiFinder On" in Chapter 1.)

Important Do not change Application Memory Size to a number that is lower than Suggested Memory Size. Doing so will cause the application to run with unpredictable results (if it operates at all).

If the application does not include a Suggested Memory Size ("n/a" appears instead of a number) or if you think the application is taking up more space than it needs, contact the manufacturer and ask what memory size is recommended.

2. Use the mouse to select the Application Memory Size box.

When it's selected, the box is highlighted.

If you cannot select the Application Memory Size box for a particular application, the application must be open. You cannot change the memory size for an application that is open. Quit the application first.

3. Type a number to change the memory size.

For example, if you plan to work on an extra-large spreadsheet, you might increase the size from 384K to 512K.

❖ *To reinstate Suggested Memory Size:* If you want to change this number back to the recommended amount, leave the box blank. The preset number will be filled in automatically.

4. Click the close box on the Information window.

The next time you start the application, it will have the specified memory area to work in.
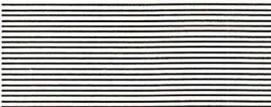
Chapter 5

The Set Startup Command

MultiFinder lets you select two or more applications (and documents) to open automatically upon startup. This is especially handy if you use the same set of applications from one day to the next.

Using Set Startup requires a bit of advance planning. Once you choose the Set Startup command, the Set Startup dialog box will appear, presenting these options:

☐ *Selected Items* refers to any applications and documents you select in the directory window before you choose Set Startup. When you select multiple icons, they must all come from the same folder or they will not all be included as startup applications and documents.

If you select only one application, its name appears instead of "Selected Items." (When no applications are selected, this option is dimmed and you can't use it.)

☐ *Open Applications and DAs* refers to any applications and desk accessories that are open at the time you choose Set Startup. If the applications you have already opened are the ones you want to see when you turn on your computer, this is the button to click. (When no applications are open, this option is dimmed.)

☐ *MultiFinder Only/Finder Only* means that you want MultiFinder (or the Finder, if MultiFinder is turned off) to be your startup application. This button is selected automatically if you have not clicked one of the other two buttons in the list.

Setting startup applications

Follow these steps to set your startup applications:

1. Decide which Set Startup option you want to use.

The choices are Selected Items, Open Applications and DAs, and MultiFinder Only/Finder Only. (The third choice changes depending on whether or not MultiFinder is turned on.)

**2. If it isn't already active, activate the Finder.**

You can only get to the Set Startup command from the Special menu in the Finder.

If you can see the Finder window, click in it to activate the Finder. Or choose Finder from the Apple menu.

3. Choose Set Startup from the Special menu.

The Set Startup dialog box appears.

The list represents the options for startup applications. ———

Set Startup dialog box

4. Click the button next to the option you want.

5. Click OK.

Any time you want to change your startup applications, you must click OK to have the changes take effect.
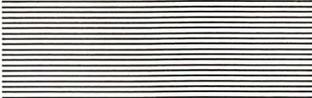
Tips for Working With MultiFinder

This appendix gives you some suggestions that may enhance your working relationship with MultiFinder. The first tip is a shortcut, and the second may be useful if you haven't expanded your system to more than 1 megabyte of memory.

Temporarily starting without MultiFinder

If you are having problems with an application and think it may not be happy in the MultiFinder environment, you can start without MultiFinder temporarily. Press the Command key and hold it down while you start (or restart) your computer. Keep holding it down until the menu bar appears, then let go. This turns MultiFinder off for this time only. The next time you start or restart your computer, MultiFinder will start as usual.

If you want to turn MultiFinder off altogether, use the Set Startup dialog box. (See "Turning MultiFinder Off" in Chapter 1.)

Using the RAM cache

The RAM cache lets you set aside a part of memory where applications can store information for quick retrieval. This can speed up your work. However, the RAM cache takes memory that could be used to start an application. For a system with 1 megabyte of memory, a RAM cache of 32K is a good working size. (And if you're really pressed for space, you can turn it off.)

To determine what setting you have on your system, choose Control Panel from the Apple menu. In the Control Panel window, you'll see a section labeled RAM Cache. If RAM Cache is turned on and the setting is higher than 32K, lowering it will free up an equivalent amount of memory. (For this change to take effect you must restart your Macintosh.)

Appendix B

Troubleshooting

This appendix helps you solve problems that may arise as you work with MultiFinder.

These are the factors most likely to cause trouble:

- □ You haven't installed everything you need. (Check again to make sure you've followed the instructions for installing the system software and Background Printing.)

- □ You haven't turned on the features you want to use.

- □ You need more memory (RAM) for what you want to do.

- □ You don't have enough disk storage space for Background Printing.

The suggestions here may help you solve some problems. If all else fails, you can always operate your Macintosh with MultiFinder turned off, opening one application at a time. Or you might want to consider adding memory and a hard disk to your system. (Your authorized Apple dealer can help.)

You can't open an application

If free memory is fragmented, you may not be able to open an application—even though it has worked with MultiFinder in the past. To clear up fragmentation, quit all open applications and restart them. (For more details on memory and fragmentation, see Chapter 4, "Some Technical Points About Memory.")

In certain cases when the largest available block of memory is close to the amount you want, you'll get a message offering the option of opening the application with less memory than the preferred amount. If you want to try this, click OK in the message box; otherwise, click Cancel. While you are running the application in this situation, it's a good idea to save what you're working on frequently. If you notice that the application is not behaving normally, quit it.

Desk accessories won't work

Some desk accessories won't work with MultiFinder turned on. For example, some spelling checkers may not work because they cannot connect with the document you want to check. When you want to use a desk accessory that doesn't work with MultiFinder on, turn MultiFinder off. (See "Turning MultiFinder Off" in Chapter 1.) Use the desk accessory to do what you want, then turn MultiFinder on again.

Another circumstance that can prevent you from opening a desk accessory is a shortage of free memory. If this is the case, your Macintosh will make an Alert Sound. To open the desk accessory, you'll need to close one of the open applications.

You can't add or remove fonts or desk accessories

If MultiFinder is turned on and you try to add fonts and desk accessories to (or remove them from) the startup System file, you won't be able to do it. Turn MultiFinder off and the Font/DA Mover will work normally. (See "Turning MultiFinder Off" in Chapter 1.)

The icon is missing from the menu bar

A few applications have so many menu titles that there won't be room for the active application's icon at the right edge of the menu bar. If that happens, everything's still OK; you've merely run out of menu bar real estate.

You can't open a disk or folder icon

If your system has a hard disk, you can accumulate a lot of applications, folders, and documents. In other words, you have more items for the Finder to manage (keeping track of names, dates, copies, and locations). If the Finder gives you a message that it is out of memory, you should increase the application memory size for the Finder.

Changing the memory size for the Finder is the same as changing it for any application—except that you can make the change while the Finder is active (not possible with any other application). Open the System Folder and select the Finder icon. Then choose the Get Info command from the File menu. Use the pointer to select the box labeled Application Memory Size, and type a new number. Finally, in order for the change to take effect, restart the computer.

Background printing won't work

Are Background Printing and MultiFinder turned on?

Background Printing must be turned on. Select the Chooser desk accessory from the Apple menu. Find the label Background Printing and make sure the On button is selected. (For more detailed instructions, see "Making Sure Background Printing Is On" in Chapter 3.)

It is also possible that MultiFinder hasn't been turned on. If so, the Background Printing On and Off buttons will appear dimmed. Use the Set Startup dialog box to turn MultiFinder on. (See "Turning MultiFinder On" in Chapter 1.)

Are the necessary printing resources installed?

If you open the Chooser and can't find the Background Printing label and the On and Off buttons, you have not installed all the printing resources you need. See "Preparing Your System for Background Printing With a LaserWriter" in Chapter 1.

Is your startup disk full?

Because Background Printing must be able to create a spooled file and store it temporarily on your startup disk, a shortage of space on the disk can cause a problem. If your startup disk is a hard disk, there should be plenty of space. However, if you are working on a system that has two 3.5-inch drives and no hard disk, PrintMaster may not be able to find enough storage space for large spooled documents.

When this problem occurs, you will get a message telling you that the document could not be printed because there's not enough free space (and identifying the disk involved). Before you can print the document, you'll have to turn Background Printing off (with the Chooser desk accessory) and then choose the Print command again. You will be printing in the foreground, and you won't be able to use the computer for another task until printing is finished.

Do you have a LaserWriter printer?

Background Printing is available only for the LaserWriter printer.

Have you reset the Alarm Clock?

When you have elected to set a specific time and date for a document to print, PrintMaster depends on the internal clock to tell it when to start. If you have reset the Alarm Clock or the Time or Date on the Control Panel, that can affect the schedule for a printing job.

If you have reset the clock and a job has not printed as expected, open PrintMaster and select the document in the Waiting list. Then use Set Print Time (from the PrintMaster window) to reschedule printing according to the new clock setting.

Is there a compatibility problem?

Occasionally an application will be incompatible with Background Printing. Documents won't print or your system may hang up, and none of the suggested remedies works to fix the problem. When that happens, turn off Background Printing and print in the foreground.

Sometimes an update to application software can make the application incompatible even though it has worked with Background Printing in the past. When this happens, you can print in the foreground (by turning Background Printing off), and you may want to contact the application manufacturer to report the problem.

General misbehavior

Most applications are compatible with MultiFinder, but now and then you may find an application that is not. If you notice erratic behavior in an application, it is best not to use it in the MultiFinder environment. (See "Temporarily Starting Without MultiFinder" in Appendix A and "Turning MultiFinder Off" in Chapter 1.)