

TIPS, TRICKS, AND TUTORIALS

<PRINT SCREEN> AND THE HP LASERJETS

Using an IBM-compatible computer's <Print Screen> key to get something printed on Hewlett-Packard LaserJets can produce puzzling results for many people. Does this scenario sound familiar?

"When I press the print screen key, I have to do so three times before my printer actually prints anything. Then I get a page with 2-1/2 copies of what was on the screen. The next time I print several lines of what was on the previous screen appears at the top of the page."

BEHIND THE SCENES

The DOS <Print Screen> (and <Shift> <Print Screen> combination) feature was designed for people who need to make a paper record of what is currently on the screen. Page printers, such as the HP LaserJets, are designed to wait until they receive enough information from the computer to fill an entire page before printing it. To accomplish this task these printers use a special file called a "buffer." The buffer collects the characters that the computer sends to the printer and keeps track of the number of lines. When the number of lines in the buffer equals the number of lines that fit on a page, the buffer signals that it is full, and the printer initiates the process to compose and print a page.

Pressing the <Print Screen> key sends the characters on the screen to the printer's buffer. Since the number of lines that make up the screen are not enough to fill the buffer, you end up pressing the <Print Screen> key several times. By the third press there's more than enough information to fill one page. Since the buffer holds leftover information until it receives enough characters from the computer to make up another full page, lines from the "previous" screen appear at the top of the page the next time you print.

PRINT SOLUTIONS

The printer needs to receive an instruction that tells it to print a page before its buffer is full. Most software, such as WordPerfect or POPMail, includes this instruction when you use its print command. So if you're using a program such as Microsoft Word or Lotus 1-2-3, we recommend that you avoid using the <Print Screen> key and use the application's command to print information. This way, the printing instructions are relayed by the program, and you don't have to worry about how much information is in the printer's buffer.

One Caution

Some software gets hopelessly confused if you press the <Print Screen> key and the printer is not turned on. If this happens, you will probably have to restart your computer to get its attention.

LaserJet Control Panel

If you use the <Print Screen> key instead of the print command within a program, you can give the LaserJet instructions that empties the buffer and print a page. To do this press the buttons on the printer listed below:

Take the Printer Off-line

.....

1. Press the ON LINE button so the light is turned off.
2. Press the FORM FEED button.
3. Wait until the page is printed.

Return Printer to Original Settings

.....

4. Press the ON LINE button so the light is turned on.

(On other page printers these buttons may have different labels. For instance, the FORM FEED button might be labeled FF. Other printers may require you to press a different sequence of buttons. Refer to your printer manual if these steps do not work with your page printer.)

From DOS

When you are using DOS you may want to use the <Print Screen> key to make a paper record of your directory. You can type in instructions that tell the printer to print a page even though its buffer isn't full. This method works only when you are using DOS (when you can see the command prompt, for example C:>). To issue the instruction to your printer, follow these four steps:

1. Type

ECHO

and then press the <Spacebar>.

2. Hold down the <Alt> key and type

012

from the numeric keypad, being sure that the <Num Lock> key's light is on. (You will see ^L inserted on your screen. This step does not work if you use the number keys that appear across the top of the "typewriter" part of the keyboard.)

Then press the <Spacebar>.

3. Type

>PRN

and press the <Enter> key.

(To get the ">" symbol on most keyboards, hold down the <Shift> key and press the <.> key.)

4. When you've successfully followed these steps, you will see the command line displayed below on your screen:

```
ECHO ^L>PRN
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(from August 1991 Computer and Information Services Newsletter)

AND BOOKS, TOO

If you cannot find the computer books you want in the Book Center's Reference section, tell us what books you want to buy. Send specific titles or areas of interest to: Maureen O'Brien, 160 Williamson Hall, Minnesota Book Center, 231 Pillsbury Drive SE, Minneapolis, MN 55455. Here's what is new in the Reference section:

"Macintosh Bible, Guide to System 7" by Rubin, a Goldstein and Blair publication for \$12.

"The Little DOS 5 Book" by Nelson, a Publishers Group West publication for \$29.95.

"DOS Power Tools, Techniques, Tricks, and Utilities revised for DOS 5.0" (3 disks included) by Somerson, a Bantam publication for \$49.95.

(from August 1991 Computer and Information Services Newsletter)

BOOK CENTER NOTES

These offers are made to University departments, employees, and students. The regular Microcomputer Discount Program rules of eligibility apply. If you have questions about availability, phone the Electronics Desk at 625-3854.

Those with access to electronic mail and the University's internet and BITNET can get product and price change bulletins for the products sold through the Electronics Desk. To be added to the mailing list, E-mail a request to:

request@boombox.micro.umn.edu

Once you are on the mailing list, you will receive notification via E-mail as soon as we have new prices or products.

ZEOS PRICE CHANGES

Recently there were several changes in the ZEOS product line available through the Microcomputer Discount Program. The prices for most units decreased, and the size of the hard disk included with some packages increased from 124MB to 130MB. A few configurations were added, and the following lines are no longer available: 386SX-16, the 486-25 with 0 cache, and the 486-33 with 0 cache.

The Notebooks 286 and 386SX are unchanged. The table below lists the current prices for the products that did change. In the table the Hercules and the VGA monitors are monochrome. For more complete descriptions of all the ZEOS configurations, see the "ZEOS MS-DOS Compatibles" handout. Handouts are available at all the Microcomputer HelpLines.

TABLE 1: ZEOS PRICE CHANGES

To see this table, you must obtain the original paper copy.

MORE IBM CHANGES

IBM recently announced several changes to their product offerings and prices. Besides the new machines reported in this newsletter's news section, IBM upgraded some PS/2s without increasing their price and changed the items they are bundling with selected PS/2s. The enhanced products and the bundles are listed in separate tables below.

The Models 30/286, P70, 90, and 95 are available only as special orders; and, as announced in June, IBM withdrew the 50Z and 65SX from marketing. The Model 80-A16 configuration was added to the

discount program; its price is \$4356. The 80-A16 is a 25MHz 80386 system that comes with 4MB of RAM, memory cache, and a 160MB hard disk.

Complete descriptions of these and other IBM PS/2s are available in the "IBM PS/2 Computers" handout, which is available at all the Microcomputer HelpLines.

Enhanced PS/2s

IBM recently upgraded the PS/2s listed below without increasing their price. The enhanced configurations come with 4MB of RAM instead of 2MB and have larger hard disks with faster access times. The access times of the older hard disks range from 39-23 milliseconds. You may have noticed that the old PS/2s' part numbers are tied to the size of their built-in hard disk. Since these configurations have larger hard disks, their part numbers also changed.

TABLE 1: ENHANCED PS/2s

To see this table, you must obtain the original paper copy.

Bundle Changes

For several years IBM has bundled some of their personal computers with software and accessories. These bundles are national promotions, and the items IBM has bundled with their machines has varied greatly over time. Although the items included in the current bundles vary, all the bundles, except the portable L40SX, come with an IBM color monitor and an IBM mouse. All the bundles, including the L40SX, come with Microsoft Windows 3.0, Toolbook 1.5 (runtime), and Entertainment Pack.

At press time the Microcomputer HelpLine had disks and manuals for only some of the software included in the bundles. The HelpLine does not have any of the multimedia equipment. Although the software is pre-loaded on the machine's hard disk, IBM is including master disks and manuals for all the major major software in the current bundles. To help you calculate the bundles' savings, we've included prices of bundle items that the Book Center routinely sells.

TABLE 2: IBM BUNDLES

To see this table, you must obtain the original paper copy.

(from August 1991 Computer and Information Services Newsletter)

NEWS AND ANNOUNCEMENTS

CENTRAL SYSTEM HOURS FOR SEPTEMBER 1-2

Our ENCORE UNIX, VAX VMS, and CYBER NOS systems will run in unattended mode from midnight September 1st until midnight September 2nd. Normal operations on all these systems resume at midnight September 2nd. It is unlikely that any tape requests or printing will be processed during these hours.

(from August 1991 Computer and Information Services Newsletter)

NEWS AND ANNOUNCEMENTS

CONVERT 7-TRACK TAPES BY OCTOBER 1ST

We will remove the last of our seven-track tape equipment from service on October 1, 1991. This change will be important for some people who use the UX, VX, VZ, and CA central computers. After October 1st, we will no longer be able to read or write tapes in the seven-track format. Few modern computing systems still read seven-track magnetic tapes. Only our CYBER CA still reads seven-track format. If you own seven-track tapes, you should convert them as soon as possible. (Since the CYBER CA will be phased out next year, if you have CYBER tapes of any format, you should begin converting them as soon as possible.)

To speak to a consultant about converting your tapes, call the UX, VX, VZ, and CA central computing Help Line at 626-5592.

Is It 7- or 9-Track?

If you don't know what format your tapes are in, this guideline may help: if you wrote your tapes with one of our VMS systems, it is undoubtedly a nine-track tape.

(from August 1991 Computer and Information Services Newsletter)

ENVIRONMENT: A MENU-DRIVEN UTILITY ON VMS

Save Time and Work with ENVIRONMENT

TYPICAL SCENARIOS

Let's begin with a hypothetical situation.. Mary and Susan walk into the computer lab to work on a class paper. They sit at identical terminals and both log onto the same VMS system. When Mary is typing the command to call the editor, she can see that Susan, after typing a few keystrokes, is already working on her paper, which is displayed on the screen.

After a few revisions, both papers are done. Mary and Susan decide to print out their files. While Mary is typing the "PRINT" command that will direct her formatted output to a bin on the Lauderdale output shelves, she sees that Susan walks towards the laser printer in a corner of the lab where her paper is already printing.

Although both were working on the same system, Susan's working environment allows her to cut corners and make her work easier and more efficient. That is, Susan is not using default settings for her commands. Instead, she's taking advantage of another set of pre-selected options.

Susan may have a tailored environment for several reasons. She may have consulted her manual to learn about VMS commands, or read the "Welcome" on-line document and obtained a few ideas from there, or, most likely, she talked to a friend or consultant who told her which instructions to use for her settings.

If you feel that you have something in common with Mary and her inability to cut corners as Susan did, the ENVIRONMENT program may be for you. If you already know how to modify your environment in some ways, ENVIRONMENT may still teach you more.

ENVIRONMENT'S INTERFACE

ENVIRONMENT is a VT100-compatible program developed by the Computer and Information Services' VMS group. It has an easy-to-use interface that lets you select "action icons," different possibilities for your login and default work settings.

Using the arrow keys on your terminal keyboard, you move up and down and left and right among the icons and make your selection by pressing the <Return> key. Some selections have additional options. These will be presented as pop-down menus on your screen. If you need more guidance when you're using ENVIRONMENT, you can consult its built-in help facility. To set your terminal to a VT100-type, use the following VMS command:

set terminal/vt100

OPTIONS

ENVIRONMENT allows you to:

- * customize your "PRINT" command
- * speed up your login time
- * select default editors for several VMS utilities
- * use your own name when communicating with others
- * and request changes on your VMS validation

In this section we discuss all the options and settings you can use.

Print

You can set up a default PRINT command for DCL, Mail, ListDoc, and Notes by selecting a printer, characteristics, forms, and destination from menus. The menus list all the printers available for general users and the most commonly used print options. To add more options, edit your default "PRINT" command.

Speed Up Login

You can see and change login options that determine how often you receive notices about:

- * newly arrived BITNET files – daily or at each login
- * newly posted News – daily or at each login
- * resources used by your account – daily or at each login
- * newly arrived mail – never or at each login

A note of caution about the frequency choices above: if you select daily or never, you should make your own provisions to find out the information.

- * for BITNET files, use "RECEIVE"
- * for News use "NEWS"
- * for Mail use "MAI"
- * for resources consult the command "ACCSTOTL"

And More

You can see and change the default editor for DCL, Mail, ListDoc, and/or Notes and optionally add special editor commands.

You can set up your terminal type from a menu that lists the most commonly used terminals types.

So other users can easily identify you, you can set up your "personal name" with DCL, MAIL, and NOTES. Thereafter, the name you selected will show instead of your VMS user name.

You can see and request validation changes on your:

- * disk quota space,
- * working set, and
- * CPU time limit.

KEEPING TRACK OF YOUR SELECTIONS

Once you make your selections, ENVIRONMENT keeps track of them in different ways and places: on the system user's ENVIRONMENT profile, in the "environment.com" file that is placed in your default login directory, or in the VMS validation file.

In addition, ENVIRONMENT may send mail to the user name CONSULT to request validation changes that cannot be made without previous approval. If the validation that you requested cannot be granted, a consultant will contact you about it.

RUNNING ENVIRONMENT

To use ENVIRONMENT, set your terminal type to VT100 and at the \$ prompt type the full name

ENVIRONMENT

or the abbreviated form

ENV

For help, press the "PF2" key on your terminal keypad. For each step, you will get help related to the menu you see on your screen. To exit from any menu, select the "EXIT" icon or press the "PF4" key.

BEYOND ENVIRONMENT

ENVIRONMENT cannot customize all your work settings. To help you work even more efficiently and make your work still more pleasant, use the tailored procedure files and/or logicals and symbols.

Use the procedure files to execute a series of commands upon a single statement — the calling of the procedure. Use logicals and symbols to define "working spaces" (directories and subdirectories or devices) as well as commands that you use frequently. For more information about these, consult the "Working Environment" section of the "Welcome" document, available on-line through ListDoc.

Please let us know of problems you encounter running ENVIRONMENT and of other features that you think of that may be helpful. Send your feedback to us at these BITNET E-mail addresses:

George Karipys at George@umnacvx
Dave Nieters at Daven@umnacvx
Marisa Riviere at Marisa@umnacvx

(from August 1991 Computer and Information Services Newsletter)

EXCEL 3.0 FOR WINDOWS AND THE MACINTOSH

Microsoft Excel is a spreadsheet program for Macintosh and IBM-compatible computers that combines spreadsheet capabilities with business graphics and database features. Version 3.0 of Excel was designed to provide a consistent user interface across the Macintosh and Windows environments. Because of this consistency, we will talk about Excel in general. If differences occur between the Macintosh version and the Windows version, we will point these out.

Our readers who just want an overview of Excel 3.0's new features can skip ahead and read the section called "What's New in Version 3.0."

HARDWARE AND SOFTWARE REQUIREMENTS

Before reading the rest of the review, it might be helpful to know if Excel 3.0 will work on the equipment you own. Since it requires a lot of RAM (random access memory) and storage space, Excel 3.0 will not perform adequately on some hardware setups. With all of its features installed, Excel 3.0 uses 3+megabytes of disk space.

Macintosh

To use Excel version 3.0 you need at least a Mac Plus and System 6.0.2 or later. We also highly recommend that you have a hard drive. If you have a two floppy drive system, one drive must be the 1.44MB FDHD SuperDrive.

Excel 3.0 supports Apple's new System 7.0. If you use System 7 or MultiFinder under System 6.X, you need at least 2MB of RAM.

IBM and Compatibles

To run Excel 3.0 for Windows you need a personal computer with an 80286 microprocessor or higher, at least 1MB of RAM, and a hard drive with a minimum of 2.5MB of free disk space. You must also install Microsoft Windows version 3.0 or later. (Windows 3.0 must be purchased separately.)

An EGA-quality or higher monitor, such as the VGA, and a mouse are highly recommended. For best performance, we recommend that you have at least 2MB of RAM and run Excel on at least an 80386SX-based machine.

WHAT IS A SPREADSHEET?

Spreadsheet software is frequently used to help manage budgets and create sales reports. You can also use spreadsheets to manipulate statistical information and create small databases.

A typical spreadsheet looks like a sheet of grid paper. Excel and other spreadsheet programs, such as Lotus 1-2-3, call their documents "worksheets." Worksheets consist of rows and columns. Each intersection of a row and column is referred to as a cell. You enter your data into the worksheet's cells. If you have the right equipment, Excel lets you create a worksheet with over 4 million cells (16,384 rows by 256 columns).

Because Excel is multi-purpose software, not all data is stored in worksheets. Different types of data are stored in different forms. Excel allows you to create charts for visual representation of your data, macrosheets to customize your data and automate tasks that you perform frequently, and templates for quick creation of your most commonly used worksheets.

WORKSHEETS

You can store, manipulate, calculate, and analyze data such as text, numbers, and formulas in worksheets. In the example shown in Figure 1, you can see that we have entered some text and numbers. We also entered a formula in cell B15 to calculate the sum of cells B11, B12, and B13.

FIGURE 1: SIMPLE SPREADSHEET

To see this figure, you must obtain the original paper copy.

TOOLBAR

A feature new to Excel 3.0 is the Toolbar. The Toolbar is located between the Menu bar and the Formula bar. As shown in Figure 2, the Toolbar is a row of buttons. The buttons are represented as icons that you can use for formatting cells, summing ranges of cells, and creating several spreadsheet objects such as lines, squares, circles, charts, text boxes, outlines, and buttons. Macrosheets and Charts also have a Toolbar.

You can easily format cells in your worksheet by using the Toolbar's buttons or by choosing options under the "Format" menu. In Figure 3, you can see how the look of our worksheet changed when we used some of the Toolbar's formatting buttons to center and bold some text.

FIGURE 2: TOOLBAR

FIGURE 3: MORE COMPLEX WORKSHEET

To see figures 2-3, you must obtain the original paper copy.

Autosum Button

A Toolbar button that we expect people to use frequently is the Autosum button, which is shown on the right. In our example, we selected cell B15 and then clicked on the Toolbar's Autosum

button. When you select Autosum, Excel automatically enters the Sum function and uses a range of numbers that are above or to the left of the selected cell. Since the formula view is off, Figure 3 does not show the formula Excel created; that formula is =SUM(B11:B13).

Graphic Buttons

We used the Toolbar's rectangle tool and the text box tool to create the "Al's Meats" logo you see in Figure 3. We copied the pig from a graphics package.

LOOKING GOOD IS EASIER

Excel has many features that can help you create better looking spreadsheets. These features include text wrapping and style sheets.

Text Wrapping

New to Excel 3.0 is the "Alignment" menu's "Wrap Text" option that lets you display multiple lines in a single cell.

Style Sheets

If you use styles, you will be happy to know they've been added to Excel 3.0. You can apply styles to worksheets, macrosheets, and charts. A limitation of Excel's styles is that they are not shared across documents; however, you can copy and paste styles from one document to another.

Once you've used styles, you may find it hard to do without them. A style is a name for a collection of formatting features. For example, you may frequently create headings in your worksheet using a 14 point Times font that is italicized and center aligned. You can create one style that applies all these formatting options to selected cells.

Selecting the "Format" menu's "Style" command presents you with the dialog box shown in Figure 4. You define your styles using this dialog box, and your definitions are recorded in the "Description" box. We used the name "Heading" for our style. When you click on the "Add" button shown in Figure 4, the style name is added to the Toolbar's styles menu. (In Figure 2 the drop-down styles menu displays the name Normal.)

FIGURE 4: STYLE DIALOG BOX

To see this figure, you must obtain the original paper copy.

CHARTS

Charts are useful when you want to present your data graphically. You can create Excel charts two ways: as a separate document or directly on your worksheet, alongside your data. To create a

chart on your worksheet:

- * select a range of cells in your worksheet
- * click the Toolbar's "Chart" button
- * drag to select the area the chart should cover on your worksheet, and
- * press the <Enter> key.

Excel will automatically create a column chart, the default chart style. For Figure 5 we created a chart to represent the text and numbers in cells A11 through B13.

FIGURE 5: A SIMPLE CHART

To see this figure, you must obtain the original paper copy.

Excel has 68 built-in chart types, such as picture and 3-D, as well as 44 predesigned charts that include area, bar, column, line, pie, scatter, and combination charts. You can even import graphics to use as data-series markers to create "USA Today" type charts. We used this feature in Figure 6 to turn the standard black columns into stacks of pigs.

FIGURE 6: IMPORT GRAPHICS

To see this figure, you must obtain the original paper copy.

You can resize charts and other graphics that you place on your worksheet and position them anywhere on the worksheet. Whenever you update your worksheet data, your chart also gets updated. Figure 7 shows our completed worksheet.

FIGURE 7: COMPLETED WORKSHEET

To see this figure, you must obtain the original paper copy.

MACROS: LOOK MA, I'M PROGRAMMING

You can use macros to automate repetitive tasks, to create special calculation functions, and to customize Excel. For example, the University's 1991-92 budget program uses custom designed macros.

To create Excel macros you either record your keystrokes using the "Macro Record" feature or manually write macro commands onto a macrosheet. Macros use special functions; these functions are referred to as Excel's Macro Language. Whether you use the record feature or write your own macros, they are stored on their own macrosheets.

The trick to running macros is that you must open the macrosheet before you try to run the macro. To avoid having to open multiple macrosheets, you can store many individual macros on a single macrosheet.

You can execute a macro four ways:

1. Choose "Run" from the "Macro" menu.
2. Define your own keyboard shortcut.
3. Use the Toolbar's button feature to create a button on your

worksheet. (When you press the button, the macro will run.)
4. Include the new "ON.RECALC" function in your macro (then Excel will automatically rerun the macro to recalculate changes you make to the worksheet).

TEMPLATES

Templates are like forms. A template for Al's Meats would include the logo, the worksheet section without the amounts filled in, and the Total section with the proper formula placed in an appropriate cell.

When you open a template, Excel creates a copy of the template, preventing you from accidentally destroying the original. To create a template you cannot save the worksheet in the usual manner. You must specifically save the worksheet as a template, an option you'll find in the "Save" dialog box. After you've created a template and stored it properly, when you choose "New" from the "File" menu, you will see your template names listed along with your other options.

Figure 8 shows how the "New" dialog box appears after we've properly set up the Al's Meats template. Now if we need to create a new monthly report for Al's Meats, we can simply choose the template from the New dialog box.

In the Windows version you store templates in the startup directory called "XLSTART." On the Macintosh, you can store templates in the Excel Startup Folder; this folder goes in your System Folder.

FIGURE 8: TEMPLATE ADDED TO NEW MENU

To see this figure, you must obtain the original paper copy.

PRINTING

You use the "File" menu's "Page Setup" command to select the page's layout, such as set headers, footers, margins, chart size, paper orientation, and paper size. You can also control whether or not row and column headings and gridlines will print. Other fine tuning options allow you to control where the page breaks occur, set up row and column titles, and center the document on the page.

The "File" menu's "Print Preview" command allows you to see how your worksheet or chart looks before you actually print it. You can view your worksheet or chart in actual size or reduce it so that one full page will fit in the preview window. New to Excel 3.0 is the ability to change margins and column widths from within Print Preview.

In the Windows version of Excel 3.0, your printer is set up within the Windows environment. However, you can still change your printer settings within Excel by choosing "Printer Setup" from the

"File" menu. Be careful about the printer options you choose. For example, if your printer does not support Landscape (wide) orientation, Excel cannot make it print in Landscape.

CONVERTING BETWEEN MACs AND IBMs

Excel 3.0 for the Macintosh and for Windows was designed to have a consistent look and feel, i.e., a consistent user interface. For the most part we found this to be true, and, importantly, both packages use the same macro language.

While working on the University's budget project we used Apple File Exchange to successfully convert many worksheets and macrosheets from the Macintosh to the Windows version. One translation limitation we encountered was the eight character limit for DOS file names. When creating worksheets and macrosheets for both the Macintosh and the Windows environments, you must keep file names short. If you do not keep this difference in mind when you create macros that call other macrosheets, your macros will not work until you shorten their names (including changing the cells in the macro that do the calling).

Keyboard Differences

We noticed some relatively minor differences in keyboard commands. To invoke a macro keyboard shortcut on the Macintosh, you press <Option>, the "command" key, and the letter you assigned. In the Windows version you press the <Ctrl> key and the letter you assigned.

On the Mac you can use the <Return> key to move down one cell; to do this in Windows you must use the "down" arrow key. Unless the Mac has an extended keyboard, it has no equivalent to the <Home> and <End> keys you can use in Windows.

ADVANCED FEATURES

Excel supports features that are handy for people who create large spreadsheets. These features include data consolidation, goal seeking, and database functions.

Data Consolidation

The "Data" menu's "Consolidate" feature allows you to consolidate multiple worksheets into one. You can use this handy feature to create a year-end report from data on spreadsheets that were created monthly. To use data consolidation you link your destination area (e.g., the year-end report) to the source areas (e.g., the monthly spreadsheets). When destination areas are linked to source areas, your consolidated data is updated whenever you change the source data.

Goal Seeking

Goal seeking allows you to perform "what-if" analyses. Say, for example, that you want to earn a certain amount of interest this year on your savings accounts, but you're not sure how much money you'll have to save each month to achieve your goal. You could use the "Formula" menu's "Goal Seek" option to calculate the amount of money needed to earn a certain amount of interest. Goal seeking is useful when you know the answer, but you're not sure of the variable amounts needed to get your answer.

Database Functions

You can manage a small database on a worksheet using standard database operations. Excel limits you to one database per worksheet. You can use Excel's twelve database functions to calculate, find, and extract data.

Databases in Excel are different from standard database packages such as FileMaker Pro for the Macintosh or Paradox for IBM and compatibles. When you open an Excel worksheet, it is loaded into RAM. Therefore, the size of Excel databases and worksheets is limited by the amount of memory in your computer. Since standard database packages store the database on disk and load into memory only those records you request to view or change, they're a better tool for large databases.

MANUALS

Due to the differences between the two operating environments, the Windows and Mac versions of the "User's Guide," "Getting Started," and "Quick Reference Guide" are slightly different. The Windows and Mac versions of the "Excel Solver User's Guide" and "Function Reference Guide," however, are exactly the same.

Besides the manuals listed above, the Mac and Windows versions come with the additional manuals listed below.

The Macintosh version comes with a "Database Access User's Guide." This guide is for System 7 users and includes directions on accessing data from external databases using Apple's new Data Access Language (DAL).

The Windows version includes manuals entitled "Using Help for Lotus 1-2-3 Users and Q+E User's Guide." Q+E allows you access to external databases.

If you purchase the version 3 upgrade to the Mac or the Windows version, you also receive the "Upgrading to Version 3.0" manual. This manual explains the new features of Excel 3.0; the Windows and Mac manuals are exactly the same. (This manual does not come with new copies of Excel; it comes only in the upgrade packages.)

WHAT'S NEW IN VERSION 3.0

Those using an earlier version of Excel may wonder if they should upgrade to version 3.0. Below we've listed a few of Excel 3.0's new features:

- * automatically adjust columns to optimum widths
- * outline view helps you organize data
- * assign macros to a button or another object on the worksheet (click the button or object to run macro)
- * define documents as templates
- * adjust margins and page setup settings in Print Preview
- * consolidate data from several worksheets into one
- * create 3-D charts
- * create charts directly on worksheets
- * place graphic objects on worksheets
- * tools to draw lines, rectangles, ovals, and arcs directly on worksheets
- * create text boxes on worksheets
- * a Toolbar you can use to format and apply styles to cells on your worksheet
- * a Toolbar button that lets you automatically sum rows and columns

Upgrading to 3.0

The bad news is that the Book Center does not get discounts on upgrades. The good news is that because the University gets such a good discount on Microsoft products, buying a new copy from the Book Center is cheaper than buying the upgrade. The Book Center sells new copies of Excel 3.0 for the Mac for \$125 and for Windows for \$115. (When you purchase the Excel 3.0 upgrade from Microsoft your cost is \$129 plus \$5.50 for shipping and handling.) The difference between the new and the upgrade packages is that the upgrade includes a 46 page booklet that is a quick introduction to Excel's new and changed features. The Microcomputer HelpLines have copies of this "Upgrading to Version 3.0" booklet that you can look over.

Departments that want to order several copies can place a special order for a "10-Pack" of Excel 3.0 for the Mac for \$720. Microsoft does not offer a similar discount for multi-packs of the Windows version.

For more information on upgrades, contact Microsoft at 800/426-9400 and identify yourself as an "end user."

CONCLUSION

Overall we were pleased with Excel 3.0's performance and the consistent interface between the Mac and the Windows versions. The consistent interface is a plus for people whose offices have a mixture of Macs and IBMs because it makes moving from one machine to another much easier. The consistency also makes it easier to create worksheets, templates, and macros that can be used in both environments. With the exception of naming your worksheets and macrosheets, the translation between the Windows and Mac versions is very smooth.

The Toolbar makes formatting much easier, and the ability to use graphics allows you to create better looking worksheets and charts. In all, version 3.0's features add more power to Excel.

For the most part the documentation is well organized and complete. The documentation on macros, however, tends to be sketchy. We would like to see the "Macro Function Reference" guide expanded and see more information about writing macros and using macro functions.

We would not run Excel 3.0 on a Macintosh without a hard drive; it's too large to run satisfactorily on a floppy based system. We also would not consider running Excel for Windows on an 80286-based machine. On that kind of a hardware setup it's too slow. For all Windows applications we recommend at least an 80386SX-based machine.

We experienced memory-related problems when using the Windows version of Excel with large documents containing different fonts and styles. However, the error message "Not enough memory to display completely" is a Windows message, not an Excel related problem. To eliminate the message and the problem, we used fewer fonts and styles and closed other Windows applications that were open.

(from August 1991 Computer and Information Services Newsletter)

FREE SOURCE CODE FOR MATHEMATICAL AND STATISTICAL ROUTINES VIA E-MAIL

Electronic mail systems are generally used to send messages from one person to another, but it is also possible to use internet E-mail to automatically distribute information to a large, geographically-dispersed audience. Imagine a program that reads E-mail sent to it and can respond to commands it receives in the mail messages sent to it. This sort of program could automatically respond to requests by sending an E-mail reply to the person that sent the request. With this sort of system, it becomes economical to automatically send text to anyone who requests it. Well, this sort of system is available to distribute source code for mathematical and statistical routines you might use in writing your own software.

NETLIB AND STATLIB

NETLIB and STATLIB are automated E-mail systems that distribute public domain source code for mathematical and statistical routines. NETLIB contains a wide range of mathematical software, including numerical linear algebra, linear programming, nonlinear optimization, curve fitting, special functions, fast Fourier transforms, the numerical solution of ordinary and partial differential equations, and more. As you might expect, STATLIB contains a wide range of statistical routines.

Since you get source code, you must have compiler (such as Fortran, C, or Pascal compiler) to actually use these routines. Because this is public domain software, there are no guarantees of quality. Much of the code, however, is nationally recognized for its quality. We recommend that you carefully test and check each routine. In particular, look for machine constants in the codes. Machine constants for a CRAY might produce incorrect results when used on an IBM PC.

ACCESSING NETLIB AND STATLIB

To obtain index files and software from NETLIB or STATLIB, you send electronic mail to the appropriate internet E-mail address. Because all the University's central systems can send and receive internet E-mail, anyone with an account on the ACS Encore, ACS VAX, HSCS NOS, or SPCS IBM can access NETLIB and STATLIB. Moreover, Macintosh and IBM-compatible users who run POPMail and workstation users connected to the campus internet can also send internet E-mail to access these systems. Figure 1 contains E-mail addresses for the NETLIB and STATLIB E-mail systems.

FIGURE 1: E-MAIL ADDRESSES

netlib@ornl.gov
netlib@research.att.com

To use the systems, you also need to know what commands the NETLIB and STATLIB servers understand. The requests are one-line commands that can be the subject part of your mail message or the message itself. Figure 2 has sample commands. In response to commands you send, NETLIB and STATLIB will E-mail an appropriate response to you.

When you access NETLIB or STATLIB, don't ask for an entire library, such as LINPACK. Complete libraries are much too large to send. Instead, ask for specific routines.

FIGURE 2: SAMPLE COMMANDS AND EXPLANATIONS

Samples	Explanations
send index	Send an index of the libraries.
send index from eispack	Examine the full index for any library eispack.
find cubic spline	Search for all software with the keywords cubic and spline.
send dgeco from linpack	Retrieve DGECO and all routines it calls from the LINPACK library.
send only dgeco from linpack	Retrieve just DGECO and not subsidiary routines.
send dgeco but not dgefa from linpack	Retrieve DGECO and subsidiaries, but exclude DGEFA and subsidiaries.
send list of dgeco from linpack	Retrieve just the file names rather than the contents. This can be helpful when you already have an entire library and just want to know what pieces a particular application needs.

CENTRAL SYSTEM COPIES OF LIBRARIES

Some of the NETLIB libraries are already on the ACS VAX VX system and in CMLIB. The ENCORE UX system has local copies of LINPACK, EISPACK, MINPACK, and QUADPACK.

NETLIB Update

Two locations run the NETLIB E-mail system for the distribution of

the source code for public domain mathematical software. They don't have exactly the same software, although the differences are small. We understand that the system managers try to make them match up periodically.

The following routines have recently been added at
NETLIB@RESEARCH.ATT.COM

KINKAID/CHENEY

Programs from the 1990 text "Numerical Analysis: The Mathematics of Scientific Computing."

The following has recently been added to both NETLIB@ORNL.GOV and
NETLIB@RESEARCH.ATT.COM

STRINGSEARCH

String matching programs.

STATLIB Update

The following have recently been added at STATLIB@LIB.STAT.CMU.EDU

- * CMLIB
Fortran Core Mathematics LIBrary from the National Institute for Standards and Technology.
- * ASASCS
Material related to the American Statistical Association's Statistical Computing Section.
- * MUG
Minitab macros from the Minitab User Group.
- * MIS
Minitab Industrial Statistics macros.
- * DESIGNS
Designs, algorithms, and programs for creating designs.

LIBRARY DESCRIPTIONS AND MORE

You can get a current list of the NETLIB and STATLIB libraries and a more complete description of the commands by sending an E-mail message with the subject line

send index

to the appropriate server.

(from August 1991 Computer and Information Services Newsletter)

NEWS AND ANNOUNCEMENTS

HP LASERJET IIIP

Hewlett-Packard recently announced another 4 page-per-minute, 300 dots-per-inch (dpi) laser printer: the LaserJet IIIP. Some of the IIIP's features are highlighted below. For more information on this and other laser printers sold through the Microcomputer Discount Program, see the "Printers for IBM-Compatible Computers" handout, which is available at all the Microcomputer HelpLines.

Part	Description	Discount Price
33481A	HP LaserJet IIIP (toner and cable not included)	* \$899
92275A	black toner cartridge	* 65
33417B	AppleTalk interface (cable not included) (you can install this interface yourself)	195
33439P	PostScript cartridge	548
33474B	1MB memory board (HP)	* 195
33475B	2MB memory board (HP)	* 300
MBIN2	2MB memory board (not HP)	225
33472A	lower letter paper cassette, includes 250 sheet letter tray	137

Printer Cables

C304-9	shielded parallel: 6 feet	\$14
C-1A-10	shielded parallel: 10 feet	18
17255D	25-pin serial cable: 1 meter	30
24542G	9-pin serial cable: 3 meters	40

* Prices reduced respectively from \$975, \$80, \$295, and \$570 as we went to press.

When you purchase the LaserJet IIIP you get a power cable, user manuals, and a one year warranty. The IIIP uses the same toner as the LaserJet IIP; other HP laser printers use different toner cartridges. At press time the Microcomputer HelpLine in 125 Shepherd Labs did not have a LaserJet IIIP available for "test drives."

Resolution Enhancement

Like the other printers in the LaserJet III series (the III, IIID, and IIISi), the IIIP runs under HP's PCL5 (printer control language 5) and HP's resolution enhancement technology is built in. To achieve enhanced resolution, HP uses a proprietary circuit that can move dots or intelligently adjust their size and position in relation to neighboring dots. These adjustments result in smoother edges on curves and angled lines than you see on other 300 dpi laser printers.

Fonts

When you purchase a IIIP you get the same fourteen fixed size (bitmapped) and eight scalable (outline) typefaces that come with the LaserJet III.

The built-in fixed size fonts are listed in the table below. Courier comes in 10 and 12 characters per inch (pitch).

Fixed-Width Fonts	Portrait (normal)	Landscape (wide)
Courier Medium	10 and 12 pitch	10 and 12 pitch
Courier Bold	10 and 12 pitch	10 and 12 pitch
Courier Italic	10 and 12 pitch	10 and 12 pitch
Line Printer	8.5 point	8.5 point

HP's PCL5 includes Agfa Compugraphic's Intellifont. If you have compatible print drivers, Intellifont allows you to scale compatible fonts from .25–999.76 points. The IIIP's built-in scalable fonts are listed in the table below.

Scalable Fonts	Normal	Bold	Italic	Bold Italic
CG Times (a serif font)	x	x	x	x
Univers (a san serif font)	x	x	x	x

The IIIP has one font cartridge slot and is designed to be compatible with the font cartridges and printer drivers available for HP's older LaserJets. However, all of the LaserJet drivers cannot take advantage of the IIIP's newer features. If you use the IIIP with the PostScript cartridge, you will need at least 2MB of memory in the printer.

Other IIIP Features

You can use the same memory in the IIIP that you use in the LaserJets IIP, III, and IIID.

The IIIP comes standard with 1MB of memory and is expandable to 5MB. Unlike the LaserJet IIP, IID, and IIID printers, the 1MB of RAM in the IIIP is sufficient to print text on legal size paper. However, if your pages include a lot of graphics, you may need 2MB to print on legal size paper. The IIIP has two expansion slots for memory.

Built-in parallel and serial interfaces are standard on the IIIP, and you can add HP's AppleTalk interface kit. The IIIP is designed to fit in an environment where the average monthly requirements are less than 8000 pages. This capacity positions the IIIP between the IIP and the III.

The IIIP's standard 70-sheet input tray accepts envelopes as well as letter, legal, A4 and executive paper.

BOOK CENTER NOTES

These offers are made to University departments, employees, and students. The regular Microcomputer Discount Program rules of eligibility apply. If you have questions about availability, phone the Electronics Desk at 625-3854.

HP LASERJET IIISi ACCESSORIES

The discount prices for optional parts for the Hewlett-Packard LaserJet IIISi increased. The table below lists the old and new prices for accessories for the IIISi. Some of the IIISi's distinguishing features are:

- * prints at 17 pages-per-minute
- * 300 dots-per-inch resolution for text and graphics
- * includes two 500-sheet input trays
- * optional duplex (2-sided) accessory
- * supports HP's microfine toner
- * PostScript on ROM (PostScript requires more memory and installation by service technician)

The IIISi uses different memory, paper trays, and toner cartridges than the other LaserJets, but it is designed to be compatible with the font cartridges and printer drivers available for HP's older LaserJets. However, all of the LaserJet drivers cannot take advantage of the IIISi's newer features. Complete descriptions of the IIISi and other laser printers are available in the "Printers for IBM-Compatible Computers" handout. Handouts are available at all Microcomputer HelpLines.

IIISi Part	Description	Price	
		Old	New
33491A	HP LaserJet IIISi	no change	\$3025
C2061A	Duplex Accessory	425	475
C2063A	1MB SIMM	no change	90
C2065A	4MB SIMM	250	260
33494A	Adobe PostScript Upgrade Kit (price does not include installation)	535	705
92291B	Letter Paper Tray	85	105
92291C	Legal Paper Tray	85	105
92291D	A4 Paper Tray	85	105
92291E	Executive Paper Tray	85	105

Optional Network Interfaces

C2059A	Novell/Ethernet	\$425	\$470
C2059C	Novell/Token-Ring	485	540
C2059B	3Com 3+Open/Ethernet	425	470
C2059D	3Com 3+Open/Token-Ring	485	540

(from August 1991 Computer and Information Services Newsletter)

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IBM MONITOR CHANGES

The 12-inch IBM monochrome monitor P/N 8503 has been replaced by P/N 8504, a black-and-white monitor that comes on a tilt/swivel base. The new 8504 has a flatter, squarer tube that reduces glare and provides a larger viewing area. The 8504's very low frequency magnetic fields meet Swedish standards. The Book Center's price for the 8504 is \$206.

The 8504 is a white phosphor analog monitor that is a good companion for the VGA adapter that is built into all PS/2s. When used with the VGA adapter, it supports 640 x 480 resolution with up to 16 shades of grey and 320 x 200 resolution with up to 64 shades of grey. At press time the Microcomputer HelpLine in 125 Shepherd Labs did not have a display model of the 8504 monitor.

NEWS AND ANNOUNCEMENTS

IBM REWRITABLE OPTICAL DRIVE

With IBM's new optical drive you can store up to 127 million bytes on one small cartridge. This drive lets you write to the disk, read from the disk, and revise what you've saved to the disk. You insert the cartridge disks much like you insert floppy disks. To use this optical drive, your system must be running DOS 5.0, OS/2 Standard Edition 1.3, OS/2 Extended Edition 1.3, or DOS 4.0. When you use it with DOS 4.0 you cannot use the DISKCOPY and DISKCOMP functions.

You can install this 3.5-inch half-height SCSI device internally on some PS/2 models or externally on PS/2s with a 3510 or 3511 SCSI device enclosure. The optical drive includes the cables, slides, trays, and bezels you need to use it internally with supported PS/2s. The drive's average seek time is 66 milliseconds. At press time the HelpLine in 125 Shepherd Labs did not have a display model of this rewritable optical drive.

Part	Description	Discount Price
6450162	Rewritable Optical Drive	\$ 1077
38F8646	128MB rewritable cartridges:5-pack	*

* Cartridges are currently unavailable at the Book Center. We expect 5-packs to cost about \$325.

(from August 1991 Computer and Information Services Newsletter)

BOOK CENTER NOTES

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MAC SYSTEM 7 MANUALS: \$45

If you obtained Apple's new System 7 software from the Mac Information server, you got very little documentation. You can now buy the complete set of System 7 documentation for \$45. Although you do not get any disks, you get these four manuals: "What's New in System 7," "How to Install System 7," "Macintosh Networking Reference," and "Macintosh Reference," a heavily illustrated book with over 400 pages.

(from August 1991 Computer and Information Services Newsletter)

NEWS AND ANNOUNCEMENTS

NOS WILL GO IN JUNE 1992

As announced previously in the ACS Newsletter, that branch of Computer and Information Services previously known as Academic Computing Services will end its CYBER NOS service on June 30, 1992. We'll provide more information about the end of this CYBER NOS service in future issues of the "Computer and Information Services Newsletter."

NOS 2 is used on a Control Data Corporation CYBER 830, the central system know as CA. The CA provides interactive and batch computing for University researchers and students.

Converting Questions?

If you have questions about converting your projects to our VMS or UNIX systems, please call Michael Frisch at 625-5830. If you're interested in converting to CYBER NOS/VE or CYBER EP/IX (UNIX) systems, call 626-8366. If you are interested in converting to IBM VM/CMS, call 624-6235.

NEWS AND ANNOUNCEMENTS

NEW IBM PS/2S: 35SX, 40SX, 57SX

IBM recently introduced three new 80386SX machines in their Personal System/2 line of microcomputers: Models 35SX, 40SX, and 57SX. Through the Microcomputer Discount Program you can purchase the configurations that are listed in the table below. At press time the Microcomputer HelpLine in 125 Shepherd Labs had the 35SX and the 80MB 40SX available for test drives.

Standard Features

All the machines share some features. For example, they can sit horizontally on a desk or you can place them vertically in a stand and operate them on their side. The 40SX and 57SX even come with a floor standing pedestal to hold the system unit in a secure vertical position. The models' distinguishing features are discussed in individual sections below.

All the Models 35SX, 40SX, and 57SX sold through the Book Center come with

- * an 80386SX microprocessor that runs at 20MHz with 0-2 wait states
- * a socket for an i387SX math coprocessor
- * a one-year carry-in warranty
- * IBM DOS 5.0
- * system boards that include a 16-bit VGA display adapter and a diskette controller as well as parallel, serial, keyboard, and pointing device (mouse-type) ports
- * IBM's familiar 101-key enhanced keyboard that includes twelve function keys and three lighted mode indicators
- * a power cord and a cable for the keyboard

You can start up (boot) your machine from any disk drive, a useful feature if your disk drives are different sizes and support disks of different densities, such as 720K, 1.44MB, or 2.88MB.

Diskette Drives

.....

DOS 5.0, OS/2 Standard Edition, and OS/2 Extended Edition 1.30.1 support the new 2.88MB media sense diskette drive that is standard on the 57SX and an option on the 35SX and 40SX. You can use 720K and 1.44MB diskettes in the 2.88MB drive. The table below shows the diskettes sizes and their DOS formatted capacity.

Diskette Size	DOS Formatted Capacity
1MB	720 kilobytes
2MB	1.44 megabytes
4MB	2.88 megabytes

Memory

.....
Models 35SX, 40SX, and 57SX have three SIMM (Single InLine Memory Module) sockets on the system board. Two of those sockets are available for adding additional memory. The system board supports a maximum of 16MB, which is also the maximum memory that the machines support.

Manuals

.....
You also get some documentation including a "Guide to Operation," setup instructions for your specific machine, and a tutorial diskette that helps you learn about your system. If you want technical documentation, you must purchase it separately. The IBM DOS 5.0 documentation includes keyboard and code pages and two manuals: "Getting Started" and "User's Guide and Reference."

Models 35SX and 40SX

Generally the Models 35SX and 40SX are alike. Both feature the classic AT-type bus and have one 1.44MB 3.5-inch floppy disk drive. If you purchase the proper adapter you can add an external 5.25-inch 360K drive to the 35SX and 40SX.

Memory

.....
The 35SX and 40SX have one 2MB SIMM installed on their system boards. When you add memory to these machines, you can use 85 nanosecond or faster SIMMs in these sizes: 1MB, 2MB, 4MB, or 8MB.

Caution

.....
Since both the 35SX and 40SX contain hard disk BIOS functions that are not supported by IBMCACHE.SYS (the IBM disk cache program for PS/2s), this program is not on their starter diskettes. If you use this cache program on the 35SX or 40SX, you could corrupt the data stored on the hard disk.

SMARTDRV.SYS is supported. It is a DOS disk caching program for computers that have extended or expanded memory and a hard disk.

Model 35SX

.....
You get three full-size 8/16-bit expansion slots with the 35SX. Its power supply is 118-watt, 50-60Hz with 100-125VAC and 200-240VAC. The dual voltage is controlled automatically by the machine's autosensing/autoswitching feature. The 35SX has two internal storage bays. In the configuration sold through the discount program, one bay has a hard disk and the other has a diskette drive.

Model 40SX

.....
You get more expansion slots, more storage bays, and a larger power supply with the 40SX than you get with the 35SX. The 40SX has five full-size 8/16-bit expansion slots and a 197-watt 50-60Hz

- power supply with 100-125VAC and 200-240VAC. You control the dual voltage with a manual switch on the back of the unit.

The Model 40SX has storage bays for two more internal drives. You can add a second IBM 40MB or 80MB hard disk and one of the following diskette drives: (1) a 3.5-inch 1.44MB or 2.88MB drive or (2) a 5.25-inch 1.2MB drive.

Model 57SX

 The Model 57SX features IBM's Micro Channel bus with five 16-bit expansion slots, a SCSI port, and IBM's new 2.88MB 3.5-inch floppy disk drive. The power supply is 197-watt, 50-60Hz with 100-125VAC and 200-240VAC. You control the dual voltage with a manual switch on the back of the unit.

The 57SX can accommodate more combinations of DASD's (direct access storage devices) than the 35SX and 40SX. For example, you can use the two unused bays of the 57SXs sold through the Book Center to install two hard drives, two diskette drives, a CD-ROM, and/or IBM's new read/write optical drive. IBM has separate parts for a 3.5-inch 1.44MB, a 3.5-inch 2.88MB, and a 5.25-inch 1.2MB internal diskette drive; these same drive parts work in the 57SX and 40SX.

Some of the 57SX's system programs are stored in a 3MB protected partition on the hard disk drive. These programs include set configuration and backup/restore. You also get copies of these programs on the 57SX's "Reference Diskette." The hard disk's protected partition is unaffected by the DOS or OS/2 FORMAT command.

Since the 57SX is a more integrated machine than previous PS/2s, it does not support features such as the PS/2 Micro Channel memory adaptor options.

SCSI Support

.....
 The Small Computer System Interface (SCSI) controller is integrated into the planar and has an external port. Since the 57SX's internal hard disk is a SCSI device, you can attach only six other SCSI devices.

Memory

.....
 The 57SX is currently shipped with one 4MB SIMM. When you add memory you must use 70 nanosecond or faster SIMMs. Although the 57SX supports 2MB, 4MB, and 8MB SIMMs, it supports interleaved memory only with the following combinations of SIMMs:

- * one, two, or three 2MB SIMMs
- * two or three 4MB SIMMs

The 8MB SIMMs do not provide interleaving.

PS/2 Model	RAM	Hard Disk Size/Speed	Discount Price
------------	-----	----------------------	----------------

CPU: 80386SX. Speed: 20 Megahertz.

These basic units come with DOS 5.0 but no monitor.

* 35SX-043

8535-061	2MB	40MB/17ms	\$ 1715
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* 40SX

8540-043	2MB	40MB/17ms	\$ 1971
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8540-045	2MB	80MB/17ms	2144
----------	-----	-----------	------

* 57SX

8557-045	4MB	80MB/17ms	\$ 2419
----------	-----	-----------	---------

8557-049	4MB	160MB/16ms	2784
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Bundles

.....

IBM also offers the 57SX bundled with a color monitor and software. Different bundles come with different software. See the "Book Center Notes" section for more information on these bundles.

(from August 1991 Computer and Information Services Newsletter)

PROJECT MINNEXT CALL FOR PROPOSALS

PROPOSALS DUE SEPTEMBER 27, 1991

Project MinNeXT is a joint development project between the University of Minnesota and NeXT Computer Inc. MinNeXT will support faculty members in developing academic software on the NeXT platform. In addition, MinNeXT will place machines in departments that can take advantage of the networking and text-indexing/retrieval capabilities of the NeXT. As part of Project MinNeXT, thirty NeXT machines will be awarded to faculty and departments. Proposals are welcome from all collegiate units and departments on the Twin Cities campuses.

All proposals will be evaluated through peer review within the University. For questions about proposal preparation and details for MinNeXT, call 625-0073. Technical advice is available from the Faculty Resource Center (626-1090) or Computer and Information Services (626-4276).

Faculty Proposals

Fifteen NeXTstation Monochrome computers will be awarded to faculty members proposing to develop courseware for their specific disciplines. An annual progress report will be required from each Principal Investigator. The project must be completed within two years, or the awarded equipment will be recalled. NeXT Computer Inc. will have no proprietary rights to software or courseware produced through Project MinNeXT. Use and distribution of software will be handled according to established University policies and procedures.

Department Proposals

Project MinNeXT will locate 15 NeXTcube computers in various departments as part of a distributed file server network. The NeXTcube will be plugged into the backbone of the University's information network, providing access to campus-wide networks. This special project will allow the University to experiment with the impact of distributed computing in higher education.

Joint Proposals

Departments and faculty members may submit proposals jointly or separately. Special consideration will be given to proposals integrating courseware development on the NeXTstation with networking on the NeXTcube. We hope that the interaction between the two NeXT computers will ensure the productive use of both machines.

PROPOSAL GUIDELINES

- * Proposals may be submitted from individuals and groups on the University of Minnesota Twin Cities campuses.
- * Equipment is available only for the development and evaluation of new courseware. This project is not intended to solve student capacity needs. At most, one NeXTstation and one NeXTcube will be awarded per proposal. Some software may be provided with each machine based on the Project MinNeXT budget.
- * The evaluation criteria for faculty proposals will be the innovation and impact on instruction. All projects must involve development of imaginative software, courseware, or novel application of NeXT technology for instructional use. Only new, experimental approaches will be considered. Because one of the strengths of the NeXT computer is its networking capabilities, projects employing networking functions will receive strong consideration.
- * Awards to departments will be based on need and use. Departments should explain why they need the computer and who will use the computer. Departments benefiting most from the productive use of the NeXTcube will receive first priority.
- * Proposals must be 2-4 pages in length, following the Proposal Outline below.
- * Please prepare your proposal with a word processor (Macintosh preferred). Submit a diskette with your proposal on it, as well as 10 printed copies of the proposal.
- * Submit proposals by September 27, 1991 to Project MinNeXT, c/o Computer and Information Services. (The complete address is on the newsletter's back page.)

Proposal Outline

-
- * Cover Sheet: Must list project title, principle investigator(s), department, college, campus address, phone number, and e-mail address. All investigators must sign the cover sheet. In addition, departmental and college approval must accompany proposals receiving support from either of these sources.
 - * Background: A description of the project area and the course or courses involved. Include course level, frequency, typical enrollment and role in the curriculum. Also include the titles of any textbooks which the project might complement.
 - * Project Description: Describe what you plan to do, what you expect to produce, what makes the project innovative, and what impact it will have on instruction in your discipline on the national level. Departments should indicate how and by whom the machine will be used.
 - * Evaluation: Indicate how you will measure the effectiveness of your project. This should include a method of gathering quantitative data to show whether this method of instruction is helpful to students.
 - * Schedule: Describe the project's implementation schedule. Base your schedule on the number of months after the equipment is obtained. Remember that your award will be recalled if your project is not completed within two years.
 - * Resources: List equipment and resources required for your project, divided into three parts: 1) Equipment provided by NeXT Computer; 2) equipment and resources provided by the college; and

3) equipment and resources provided by Project MinNeXT. The NeXT list should include only NeXT hardware. The college list should include programming support, T.A.s, R.A.s, and release time. All University commitments must be prearranged with your department chairperson and your dean. MinNeXT can provide a very limited amount of software and equipment from other manufacturers.

(from August 1991 Computer and Information Services Newsletter)

NEWS AND ANNOUNCEMENTS

VMS: NEW HELP ENTRIES

We recently added about 50 new entries to the VMS HELP library on the central system called VX. The VX is a research and instructional cluster that includes a DEC VAX 6000-510 clustered with other VAX systems that use the VMS 5.4 operating system.

These new entries are mostly for math and engineering libraries and packages. We also added "HELP Libraries" and "HELP Applications" that contain a list of the new HELP entries and a one-line description for each. In the past, we put help information for libraries and applications under the "MOREHELP" command. With these additions to "HELP," we will delete "MOREHELP Libraries" and "MOREHELP Applications" on September 1, 1991.

(from August 1991 Computer and Information Services Newsletter)

BOOK CENTER NOTES

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WORD FOR THE MAC AND LASERWRITER LS

The latest Microsoft Word update for the Mac fixes the TrueType font problem for LaserWriter LS users. The Book Center expects to have free version 4.0D or 4.0G disks available for those who can show them appropriate proof of eligibility. To get your free update, bring your master Word disks and University ID to Williamson Hall.