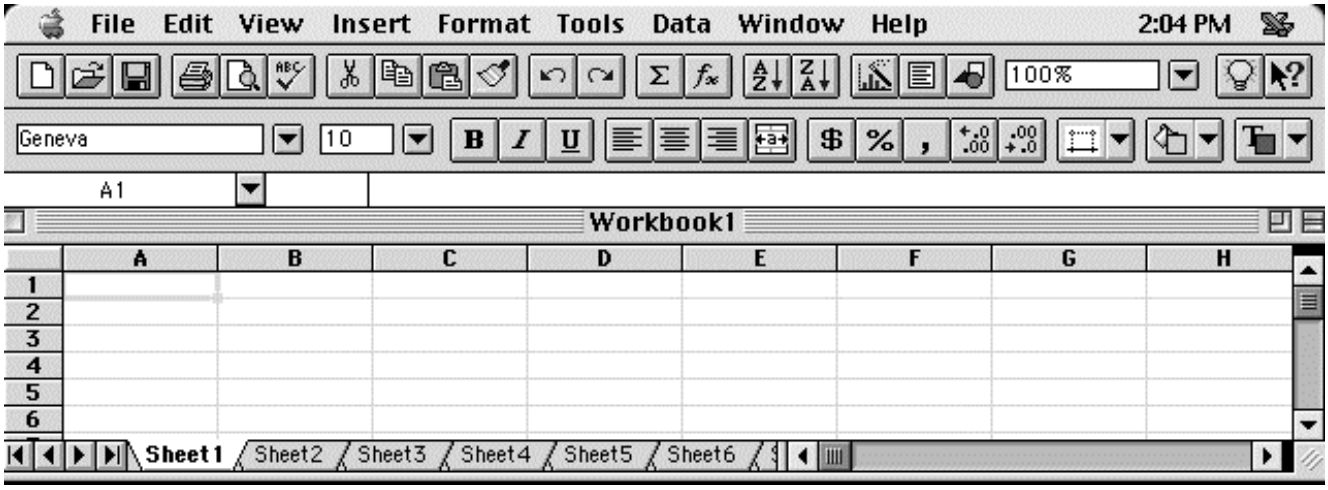
Introduction to MS Excel 5.0 for Macintosh

Workstation & Microcomputer Facilities
Information Systems & Technology
University of California, Berkeley

Course Description: This class provides an introduction to Microsoft Excel. Topics will cover basic data entry, formatting data, worksheet basics, formulas, and functions.

Prerequisites:
Before taking this class you should be familiar with the Macintosh computing environment or have completed the **Introduction to Macintosh** class.

The W&MF staff has prepared this document for you so that you can familiarize yourself with the basics of Microsoft Excel 5.0 for the Macintosh. This document is meant to serve as a future reference for you. Not all the information mentioned in this document will be covered in the **Introduction to MS Excel** class. Before taking this course, you should be familiar with the Macintosh computing environment or have completed the Introduction to the Macintosh class.



Getting Started

What is Excel?

Microsoft Excel is a spreadsheet program that helps you record, analyze, and calculate data. Excel is useful because it can eliminate repetitive calculations and automatically update data to reflect changes you have made. Excel also allows you to organize and present your data using a variety of graphs and charts. Here are some of its features:

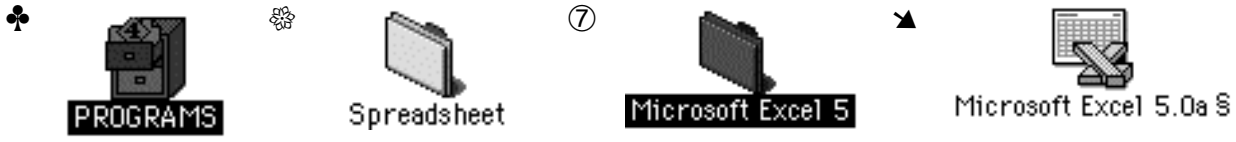
Worksheet	You can store, manipulate, calculate, and analyze data such as numbers, text, and formulas on a worksheet.
Database	You can conveniently sort, search, and manage a large amount of information on a worksheet, using standard database operations.
Charts	You can quickly present your worksheet data in a chart or graph.
Macros	You can automate frequently performed tasks and perform specialized calculations by saving the command sequence.

NOTE: Although Excel can plot different types of charts and graphs, it can only use data from pre-defined values. Users can not enter an equation with variables instead of numbers; Excel will be unable to plot $y=x^2$ for all X's. However, Excel will allow you to find any y-value for any x-value and plot the result.

Opening Excel 5.0 and 5.0 Workbooks

- **Finding and Opening Excel 5.0**
  If you are using **Excel 5.0** on your home computer, you can open the program by *double-clicking* on the **Excel 5.0** icon in the appropriate location of your hard drive.

  At our facilities, you can launch **Excel 5.0** by (opening) *double-clicking* on Programs:Spreadsheet: Excel 5.0 folder: Excel 5.0.



- **Opening a New Workbook**
  Launching Excel should automatically open a new workbook. If Excel did not open a new workbook for you or if you would like a new workbook, go to **File** and then drag it down to **New...**
- **Opening an existing Excel File**
  To open an already existing Excel File, go to **File** and drag down to **Open.** Then direct Excel to the file you want to open.

Understanding Your Screen

Menu Bar

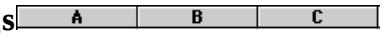
The **Menu** bar allows the user to easily access commands with a single click of the mouse button. Each of these categories serves as a pull-down menu listing related functions.

To activate any menu command:

- Open a menu by clicking its name on the menu bar. When the menu is activated, a list of the commands available will be displayed.
- Drag your mouse pointer down to highlight a menu command. (Remember to keep your mouse button down)
- Release the mouse button to activate the command.

Tool Bar

The Tool Bar permits the user to execute commands with a single click of a mouse button instead of using the menu bar. You can pick which Tool Bars appear on you screen or customize your own Tool Bar by going into **View** and selecting **Toolbars...**

Column headings 

Row headings 

All columns are referenced by letters and all rows are referenced by numbers.

Formula Bar

The Formula Bar displays the location and data of the active cell. The left portion names which cell is currently highlighted by column (letter) and row (number). The right portion displays the contents of that cell. You can also edit contents here.

Scroll Bar

The Scroll Bar (located at the bottom of the screen) allows you to scroll in between various worksheets in your workbook.

Status Bar

The left side of the status bar (located on the bottom of the screen) displays a brief description of the currently selected command, or of the current activity in progress. The right side indicates whether a keyboard mode such as Overwrite (OVR), Number Lock (NUM) and Cap Lock (CAPS), etc., is turned on.

Data Entry

Entering Data

You can enter data in a cell by selecting the cell and typing your data.

To enter data quickly into several adjacent cells:

Select the range of cells by clicking the mouse on the starting box and dragging it to the last box. Then, you can make cell entries, one after another, in successive cells.

NOTE: Do not use the arrow keys when you are entering data or when you have cells highlighted. (Using your arrow keys will result in selecting a new active cell.) When a cell is highlighted, the entire box has a thick black order around it. When more than one cell is highlighted, the entire box becomes black.

Table 1 - Basic Controls

	Keys	
Action	**General Scrolling**	**When Highlighted**
Move up one cell	up arrow	shift+return
Move down one cell	down arrow	return
Move right one cell	right arrow / tab	tab

Move left one cell	left arrow / shift tab	shift tab

Formula Bar Entry

You can complete a cell entry or an edit to an entry by clicking the *enter box* or by pressing ENTER. You can cancel an entry or edit by clicking the *cancel box* or by pressing ESC.

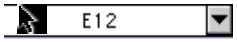
Direct Cell Entry

Direct cell entry allows you to directly edit the data from within the cell. To activate the cell, *double-click* on it. The border will change into a thin line and then you can begin to edit the contents of the box.

Editing Cell Entries

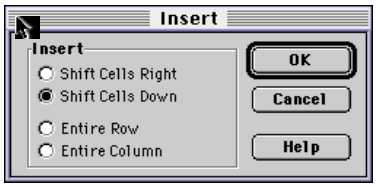
Before we can edit cell entries, we must select the cells we want to edit. For this course, we will stick to selected single cells, or multiple adjacent cells.

Table 2 - Cell Selection

Action	Keys
Selecting a single cell	1. Mouse 2. Arrow keys 3. Using Coordinate 
Selecting an entire row	Click on the row header of the row you want to select
Selecting an entire column	Click on the column header of the column you want to select
Selecting an entire worksheet	Click on the box where the column and row headers meet
Selecting multiple adjacent cells	1. Drag the mouse over the cells you want to select or, 2. Using the mouse, select the first cell (top left) of the cells you want, then hold down the shift key and select the last cell (bottom right) of the cells you want.
Selecting multiple adjacent columns or rows	1. Drag the mouse over the row/column header of the rows/ columns you want to select, or 2. Using the mouse select the first row/column of the rows/ columns you want, then hold down the shift key and select the last row/column header of the rows/columns you want.
Selecting multiple non-adjacent cells	Using the mouse, select the first cell of the cells you want, the hold down the command key and select the rest of the cells.
Selecting multiple non adjacent rows or columns	Using the mouse select the first row/column of the rows/columns you want, then hold down the command key and select the rest of the rows/columns you want.

Insert

After you have entered data on your worksheet, you may want to insert blank cells between occupied cells to make room for new data or to include more white space in the data area. You can insert individual blank cells, entire rows, or entire columns anywhere on the worksheet.



To insert a new cell or cells:

- Select the area where you want to insert new cells.
- Go under the **Insert** menu and select **Cells..**
- From there you will have the to chose which way to shift the existing cell(s) to make room for the new cell.
- There is also the option of inserting new rows above the current row or new columns to the left of the current column.

To insert rows or columns:

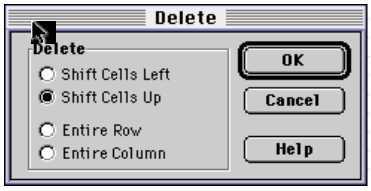
- Select the row or column heading(s) of the row(s) or column(s) you want to delete
- Go under the **Insert** menu and select **Rows** or **Columns**

To insert a new sheet(s):

Go under the **Insert** menu and select **Worksheet**.

Delete

Use the Delete command to remove cells from the worksheet and close up the space occupied by the cells. Deleted cells do not go to the Clipboard. Use the cut command if you want to move data to a new location.



To delete a cell or cells:

- Select the number of cells you want to delete.
- Go under the **Edit** menu and select **Delete..**
- From there you will have the to chose which way to shift the existing cells.
- You can also delete an entire row which shifts remaining rows up or delete an entire column which shifts remaining columns left.

To delete rows or columns:

- Select the row or column heading(s) of the row(s) or column(s) you want to delete
- Go under the **Edit** menu and select **Delete..** or use the key stroke **command+K**

To delete a work sheet:

Go under the **Edit** menu and select **Delete Sheet**.

Clear

Clearing a cell clears the contents, formats, notes, or all three from that cell, but leaves the cleared cell in the structure of the worksheet.

To clear a cell, row, or column:

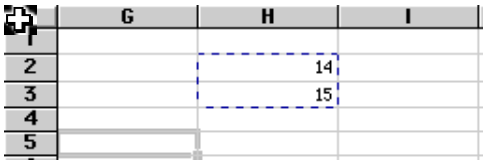
- Highlighted the intended cell, row, or column you want to clear.
- Go under the **Edit** menu and select **Clear**
- Under the **Clear** command, you can either select clear **All, Contents, Formats**, or **Notes**.
- Select the command you want and release.

It is usually better to delete a whole sheet than to clear a sheet of all its content. To clear a single cell of its contents, hit the **delete** button on your keyboard.

What's the difference between Clear and Delete?

If a cell content is **cleared**, its value is zero and the cell remains. However, when a cell is **deleted**, the cell is completely removed and adjacent cells move to close up space that was occupied by the deleted cell.
This is a common error among Excel users who are just trying to clear the existing cell of old data so that they can enter a new set of data. Remember that by **deleting** the existing cell, other cells will move to eliminate the space and may alter calculations.

Copy, Cut, and Paste



Cut and Copied cell(s) will have a dashed rectangle around it

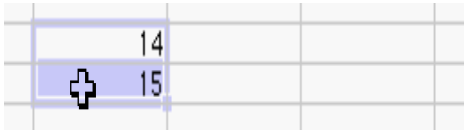
Copy

Select your desired cell(s) and use this command to make a copy of them:

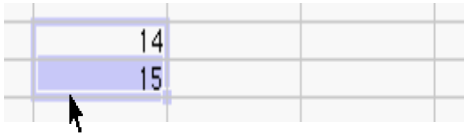
- Go under the **Edit** menu and select **Copy**, or click on  , or use the key stroke **command+C**
- Now you are ready to paste your selection

Drag and Drop

- Select the cell(s) you want.



- Move your mouse to the edge of the highlighted area. Your cross will turn into an arrow.

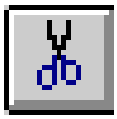


- Drag your mouse to the new position of the selected cell(s).

- The cells are now moved to the new location.

Cut

Use this command to remove the selected cell(s) and place them on the Clipboard. You can cut any cell(s) by the following methods:

- Selecting your desired cell(s)
- Go under the **Edit** menu and select **Cut**, or click on  , or use the key stroke **command+X**
- Now you are ready to paste your selection

Paste

Use this command to place the contents of the Clipboard into the selected cell(s). To paste the contents of the Clipboard:

- Cut or Copy cell(s) into the clipboard
- Select the cell where the Clipboard content is going to go. You must either select:
  - a paste area equal to the size of the copied or cut cell(s) (i.e. 2x2 or 4x4) or
  - select a single cell where the first cell (top right) of the copied or cut cell(s) is going to be pasted. The rest of the copied or cut cells will be pasted in the same order in which it was copied or cut.
- Go under the **Edit** menu and select **paste**, or click on  , or use the key stroke **command+V**
- The pasted cells will overwrite any existing cells.

Quick Edit Menu

To activate the Quick Edit Menu:

Hold down the control key and press your mouse button.

To activate the commands in the Quick Edit Menu:

Drag the mouse pointer to the command you want and release the mouse button to activate.

Formatting Your Cells and Entries

Cell Formatting

With cell formatting, you can change the appearance of data in your worksheet. Examples are formatting numbers to designate dollar amounts, percentages, decimals, or change the font, size, style, color, and alignment of data in a cell. You can also change the appearance of the cells in your worksheet by adding colors or borders to your cells.

NOTE: As with all editing, you must select either the cell, range of cell, row(s), column(s), or the entire sheet that you want the format to be applied.

Number

You can choose to have the cell data converted from decimals into percentages or have it turned in currency, by automatically adding $ sign in front of every cell. Excel can also customize how it displays your data. It can add commas in your numbers, or even adjust the number of decimal places in the number

Alignments

The Alignment format window allows you to left align, center or right align text within your cell(s).

For example, to center text within a range of cells:

- Enter the data you want to center in the left most cell.
- Highlight the cells where you want your data to be centered.
- Hit the button or activate the **Format Menu, Cells...** option, choose **Alignments** and select **Center across section.**

The Alignment menu will allow you to change the Orientation and Vertical alignment of your data. It will also allow you to activate **word wrap**, Excel's method of keeping long lines of text within one cell.

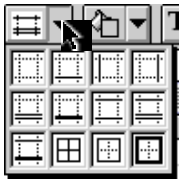
Fonts

The Fonts format window allows you to change the font Times, its size 10, its style to U (underline), I (italics), or B (bold), and its color.

Using the Fonts format menu will also allow you to do font effects such as strike through, superscript, subscript, outline, shadow and double underline.

Border

The Border format allows you to add borders to your cells to enhance a worksheet.



To add borders to you cell(s), row(s), column(s) or sheet:

- Select the area where you want the border to be applied.
- Select or go to the Cell Format Menu and select **Borders**.
- If you are using the tool bar, drag to the border you want or if you are using the Border menu, select the line size you want and pick where it should be applied.

Creating a Series

Several types of data repeat in logical sequence. Days of the week and months, for example, repeat predictable patterns. Excel can repeat several such sequences when you create a series. You can create a series using the **Fill Series** menu or by **dragging**.

To create a series with the Fill command:

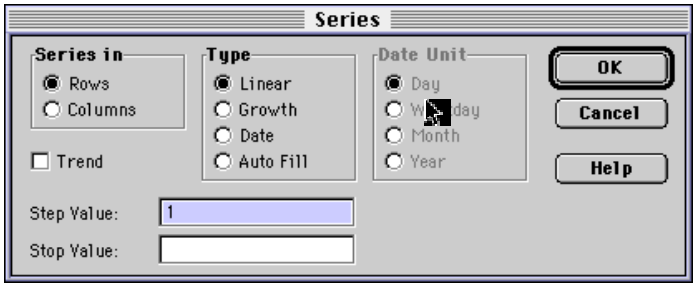
- In the first cell where you want to start the series, enter a starting value.
- Select the cells in the row or column in which you want to extend the series, starting at the cell in which you entered the starting value of the series.
- From the **Edit** menu, chose **Fill Series...**

  Choose the series type (linear, exponential)

  Choose the linear increment, or growth factor you want

  Choose when you want Excel to stop extending the series.

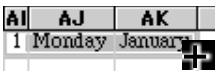
  Hit **OK** when finished

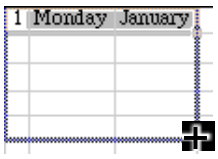


To create a series by dragging:

- Select a range of two cells and enter the first few values for the series. Leave the range selected.
- Move cursor over to the bottom right corner of the selected range.  This is called the **fill handle**.
- Cursor should turn into black cross. 
- Drag the fill handle to include the range of cells you want to fill. Release the mouse button at the end of the range.

First:





Then

Result

Formula Entry

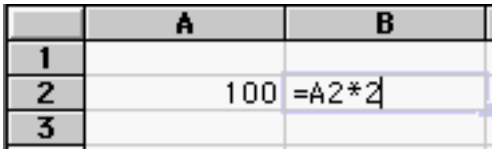
A formula is a simple way to evaluate a series of values. Each formula starts with an equals sign "=" followed by either a *cell reference* (such as "A1") or a *value* (such as "1875"). Usually a formula contains a series of values or cell references separated by *math operators.* (see Table 3)

Basic mathematical operation rules (such as; parentheses show what operation should be done first) do apply in Excel.

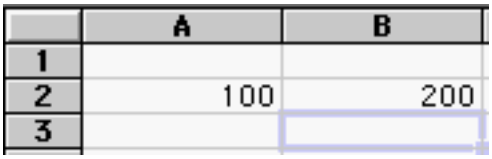
Table 3 Math Operators

Function	Sign
Division	/
Multiplication	*
Subtracting	-
Addition	+
Power	^

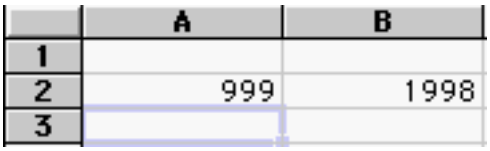
So, if I wanted B2 to equal twice the value of A2, I would enter in
= A2 * 2
for the value of A2



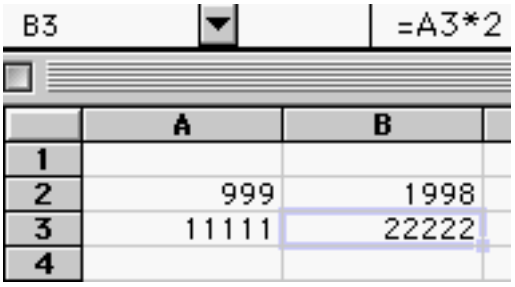
As soon as I accept the entry, the value of B2 is now exactly twice the value of A2



But, anytime I update the cell in A2, the formula causes B2 to update as well. If I change A2 to be 999, B2 will now be 1998.



NOTE: You can cut, copy, and paste formulas in exactly the same way as you do with data. But, any cell reference is automatically updated accordingly. If I copied B2 into B3, the cell one cell down, the formula of B3 will now be
= A3 * 2
referring to a cell one square down. This is useful if you have a single formula applied over a lot of values.



Functions

A function is a special prewritten formula that takes a value or values, performs an operation, and returns a value or values. Functions can be used alone or as building blocks in other formulas. Using functions simplifies and shortens formulas in your worksheets, especially those that perform lengthy or complex calculations. For example, instead of typing the formula "=A1+A2+A3+A4", you can use the Sum function

to build the formula =SUM(A1:A4). The necessary data such as "A1:A4" are called arguments. If I wanted to calculate the average value of those four cells, you would use =AVERAGE(A1:A4), and so on.

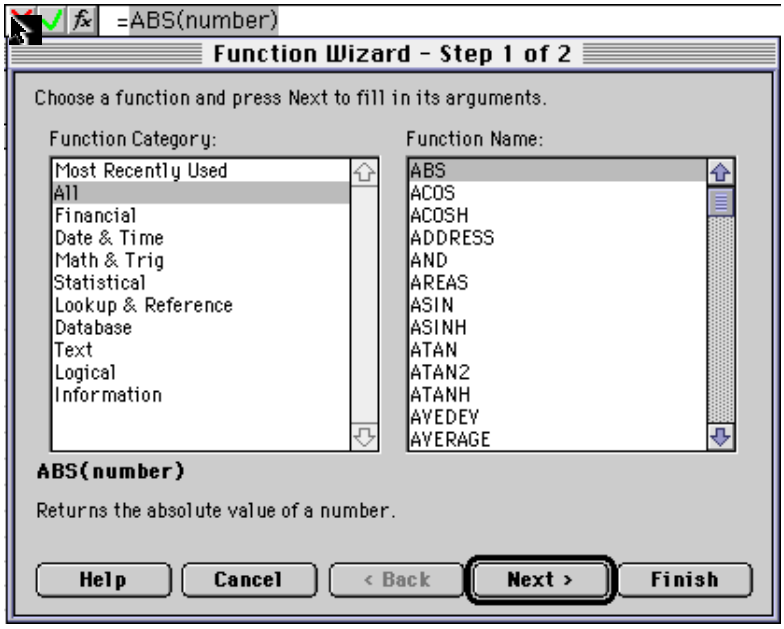
To input any function:

- Write in any function with the correct arguments into your formula, or
  Click on the **Function Wizard** Icon, or
  go to **Function...** under the **Insert** Menu

Using Function Wizard

Either of these last two options will bring up the Function Wizard. Function Wizard will let you choose the correct function with the necessary arguments, even if you don't know the function's name.

Step 1

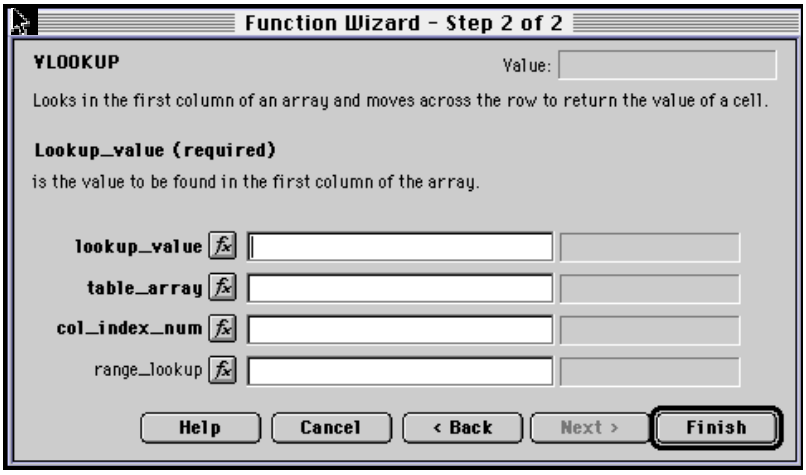


Step 1 of Function Wizard allows you to pick the function the you want.

Simply highlight the function that you want and hit **Next**

Step 2

Step 2 of Function Wizard will give you a description of the function at the top and list the necessary arguments to complete the function. Depending on which argument you are at, Excel will give you a description of what values are needed in the specific argument.



NOTE: Arguments that are in **Bold** are necessary while the normal text are added argument that can be included.

To input the range of data necessary for each argument:

- Type in the correct range or
  Select the range from your worksheet using your mouse. or
  If the required data input for the argument is a function, then hit the function wizard icon next to the argument and repeat steps one and two to create the input.

When you are done, hit the **Finish** button or hit **Back** to change your function.

Conclusion

This course only covered the most basic aspects of Excel. In the intermediate course, we cover more advanced functions like worksheet space management, working with formulas, creating charts and graphs from data, sorting data, and data analysis.

If you have any question for the instructor or roamer about anything that we've covered, please feel free to ask.

Don't forget to fill out an evaluation form before you leave.