



Microsoft Excel 2008 for Mac

An introduction

Prepared by Todd Vandenberg

Web Services Librarian

Spencer S. Eccles Health Sciences Library

University of Utah

todd.vandenberg@utah.edu or 801-581-5263



Table of Contents

INTRODUCTION	3
DEFINITIONS:	3
<i>Cell labeling</i>	3
GETTING STARTED	4
INTERFACE	4
<i>Menu Bar</i>	4
<i>Toolbar</i>	5
<i>Elements Gallery</i>	5
<i>Toolbox</i>	5
WHAT'S CHANGED IN EXCEL?	5
<i>Tips for a mixed environment:</i>	6
KEYBOARD SHORTCUTS	6
GETTING STARTED	6
FORMATTING, FORMULAS AND FUNCTIONS	7
<i>Formatting cells</i>	7
<i>Formulas structure</i>	7
<i>Adding totals faster:</i>	7
HANDLING LARGE WORKSHEETS	8
<i>Inserting Rows, Columns and Sequential Numbers</i>	8
<i>Renaming Worksheets</i>	8
<i>Keeping Headings in View</i>	8
CREATING CHARTS	10
IMPORTING DATA.....	10
<i>Importing exercise</i>	10
PRINTING	11
HELPFUL FUNCTIONS.....	12
<i>SUMIF(range,criteria,sum_range)</i>	12
<i>COUNTIF(range,criteria)</i>	12
<i>Logical functions: IFERROR</i>	13
EXCEL AND REPORTING	13
PIVOT TABLES	13
Q & A	14
APPENDIX	15

Introduction

Microsoft Excel is a spreadsheet application that features calculation, graphing tools and other features for manipulation of alphanumeric data. It displays a vast area of cells organized in rows and columns, and each cell contains data or a formula, with relative or absolute references to other cells. It can contain any combination of types of data, but is most commonly used for:

- **numerical data:** financial, statistical, date & time related
- **charts:** visual representation of data
- **lists:** helpful for tracking lists of information/data

Microsoft Excel files are easily recognized by the “.xls” (version 2003 and earlier for Windows, 2004 and earlier for Mac) or “.xlsx” (version 2007 for Windows, 2008 for Mac) file extensions at the end of the name.

Definitions:

- **worksheet:** single sheet of cells in 1,048,576 rows by 16,384 columns. Used interchangeably with spreadsheet. You will probably never fill one up or break it by putting too much into it.
- **workbook:** tabbed group of worksheets in a single file. The number of sheets is limited only by the computing power of your computer.
- **active cell:** the cell bordered in dark, thick lines with a white background
- **select a cell** (or cells): click on (or click and drag through) the cells you wish to work with.

Cell labeling

Each cell is uniquely labeled and referred to by a combination of 1-3 letters (from “A” to “XFD”) followed by a number from 1 to 1048576. You can tell what cell you are working on by the display in the Name Box:



Getting Started

Interface

Let's look first at four principle parts of the Excel interface:

1. Menu Bar
2. Toolbar
3. Elements Gallery
4. Toolbox

Menu Bar

1. **View menu:** indicates with check marks which items are currently visible. You can add or remove items here as you need.

- Normal vs. Page Layout: can be changed from view menu or buttons in lower-left corner of screen.



2. **Preferences:**

- In the menu bar at the top select Excel -> Preferences.



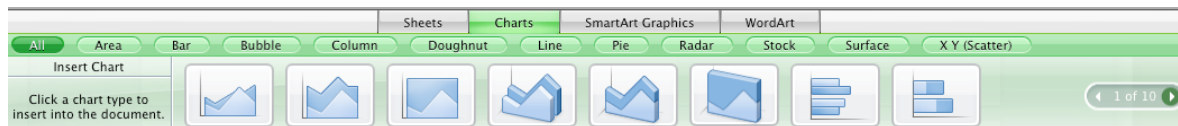
- Select the "View" option. As you mouse over the different options notice that an explanation appears at the bottom of the window.
- Click the "Show All" switch or the "Back" button.
- Click on the "Compatibility" option. If you are working in a mixed environment and want to automatically create documents in an earlier version of Excel, here it the place to set that.

Toolbar



By default the Toolbar presents users' most-frequently used commands in an icon + text version. You can change this by Control-clicking on the bar, or selecting View -> Customize Toolbars and Menus from the Menu bar.

Elements Gallery



Microsoft has created tabbed "groups" of similar features. Adding software that interacts with Office programs will create additional tabs or add to the "Add-Ins" tab (if it already exists).

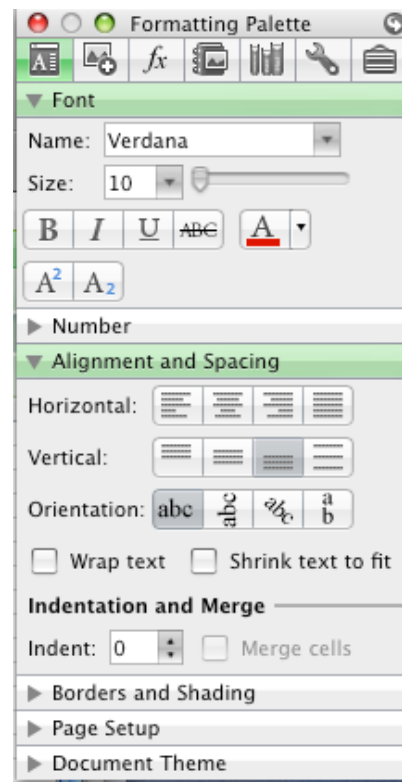
Toolbox

Microsoft has added a "Toolbox" to the right of the screen whose name changes depending on which set of options you have selected. The "Formatting Palette" option opens by default.

What's changed in Excel?

Since the 2004 version Excel has been made more robust. Changes include:

- Expanded from 65k to more than 1 million rows, and from 256 to 16k columns per spreadsheet, which required a new file format (".xlsx"), which utilizes the eXtensible Markup Language or XML.
- Tables automatically include filtering.
- Increased formatting power: themes, more colors, conditional formatting expanded from 4.
- Using the Elements Gallery you can create new, professional looking charts.
- Easier to create pivot tables.
- Conditional formatting for identifying trends (ex. top 10 items).



Tips for a mixed environment:

1. Learn how different versions interact. Comparison tool available at Microsoft's website (<http://tinyurl.com/yhmmqbv>).
2. Create files in the most common version.

Keyboard shortcuts

To	Press
Move right one cell	Press the Tab key or the right arrow key
Move left one cell	Press shift+Tab or the left arrow key
Move down one cell	Press the Return key or the down arrow key
Move up one cell	Press shift+Return or the up arrow key.
Move down one full screen	Page Down (extended keyboard) fn key + down arrow (laptop)
Move up one full screen	Page Up (extended keyboard) fn key + up arrow (laptop)
Move right one full screen	Alt + Page Down (extended keyboard) Option + Page Down (for Mac)
Move left one full screen	Alt + Page Up (extended keyboard) Option + Page Up (for Mac)
Move to beginning of row	Home (extended keyboard) fn key + left arrow (laptop)
Move to beginning of sheet	Control + Home (extended keyboard) fn key + Control + left arrow (laptop)
Move to end of data on sheet	Control + End (extended keyboard) fn key + Control + right arrow
Move to end of current row	Control + right arrow key
Move to end of current column	Control + down arrow key

Getting Started

Open the file "exercises.xlsx". Click on the "Allowance" worksheet tab.

Exercise: teaching youth to save.

An older child wants an increase in allowance to buy a new video game. We are going to demonstrate that s/he already makes enough money to buy the game if they save for it.

1. In the "Other" row, enter any dollar amount under \$10 for each of the 4 weeks.
2. Type in the word "Total" just below the word "Other" in column A and press "Tab" or the right arrow key to move to the next cell.
3. To instantly total a column or row of numbers in the active cell just click on the sigma symbol in the formatting toolbar. After viewing the formula to make sure it is correct press "Tab" or the right arrow key to move to the next cell.



4. Finish creating totals for each column. Then add a column title after Week 4 labeled “Monthly Total”. Sum up the row horizontally so the total is in that column.
5. To add the cents after the decimal and the dollar sign, click and drag through all the cells containing the totals we created, then click on the dollar sign in the Formatting Toolbar.

Formatting, Formulas and Functions

The next exercises developed for this workshop are built around a fictitious medical consulting business with you as the owner. Click on the “Fees” worksheet tab in your open workbook.

Formatting cells

- Make text headings fit: double-click each column’s right border beside the letter heading
- Add decimals and commas by clicking on the comma button in the Formatting Toolbar.
- Creating column headings centered in bold
 - Select the cells with headings
 - Click on the bold capital “B” and then on the center-text button in the formatting bar. For more options use the “Format -> Cells...” menu.

Formulas structure

A formula or other calculation structure always begins with an equals sign (“=”). In the case of a function it is followed by the name of the function with left and right parentheses enclosing the cells being referred to.

For example,

=SUM(B2:B10)

will add up the numeric contents of cells B2 through B10. And the function

=AVG(C2:C21)

will calculate the average of the numeric contents of cells C2 through C21.

Adding totals faster:

- Add a “Q totals” row heading after “South” and use the sigma to total only the first column.
- Fill Right: Making sure cell B6 is still selected, place your cursor at the bottom-right corner of the cell. It will change to a dark plus sign (“+”). Click and drag over 3 more columns and release the mouse button. Note the “Auto Fill” icon that appears at the end of the row. This will allow you to adjust your Fill Right as needed (Fill Right is a form of copy-and-paste.)
- Click the check mark (Windows) or press Enter (both).

- Add a “Y totals” column heading after “Fourth Quarter” and use the sigma to total the first row of figures.
- Fill Down: Making sure cell F2 is still selected, place your cursor at the bottom-right corner of the cell. It will change to a dark plus sign like before. Click and drag down 3 more rows and release the mouse button.

Handling large worksheets

Inserting Rows, Columns and Sequential Numbers

Click on the “Rename” worksheet tab in your workbook. This spreadsheet shows the top 40 pages visitors went to from the FAQ page on the Library’s website.

To add a single column to the left of the existing columns:

1. Click on column A to select the entire column.
2. **Insert -> Columns.** Now you have a blank column to the left of your data.

To insert rows:

- Click on the heading for row 1 and drag through row 4
- **Insert -> Rows.** Now you have 4 additional blank rows for headings and data.

Inserting Sequential Numbers:

- Type the following headings above your data:
 - “Page Name” above column B.
 - “URL” above column C.
 - “Views” above column D.
- In the blank column to the left of your data, type the heading “Rank” just to the left of “Page Name”, and then press “Enter” or “Return” to go down just one row.
- Type a “1” in that row, press “Return”, and then type a “2” in the next row. Click and drag to select the cells with “1” and “2” in them.
- Place your cursor on the bottom-right corner of the cell with a “2” in it. It will change to a dark plus sign (“+”). Click and drag down column A to the end of your data to fill in with sequential numbers.

Renaming Worksheets

To rename the “Rename” worksheet:

- Double-click on the “Rename” tab, or control + click and select “Rename”.
- Type “FAQ Stats” and press “Enter” or Return.

Keeping Headings in View

Click on the “News” worksheet tab in your workbook. This spreadsheet shows data downloaded from a web server, with many, many columns and rows.

- Freeze panes:
 - To keep the row and column headings on the screen click on cell B2.
 - Window -> Freeze panes.
 - Now when you scroll up/down or right/left the column and row headings stay visible.
- Hiding columns
 - Click and drag across columns C – D, or click on column C and shift + click on D.
 - Right-click (or Control + click) on the selected columns and select the “Hide” option. Columns C and D are now hidden, and columns A and E have bold, blue lettering to show where columns have been hidden.
 - To show C & D, click and drag across columns A and E, right-click (or Control + click) on the column headings and select “Unhide.” You can now see all columns.
- To unhide columns:
 - Click and drag across columns B & E

Click on the “Sales report1” worksheet tab in your workbook. This is a spreadsheet listing sales orders for a company serving the US and the UK.

- To keep the headings on the screen, click on cell C1 and use “Freeze panes.”
- Sorting data by column
 - Click on cell A1.
 - Hold down the fn+Control+Shift keys and press the right arrow key. All data is now selected. Release the Control and Shift keys.
 - Data -> Sort
 - In the “Sort” menu select “Order Amount” and “Descending” to see who had the largest orders. If you have selected the row of headings, make sure the “My list has” option has “Header row” selected
 - Selecting additional columns in the “Then by” fields can refine sorting.
 - Click the OK button to complete.
- Filtering data
 - Click and drag through columns A through E.
 - Data -> Filter -> AutoFilter
 - Each column heading is now a drop-down list of options. Click on each to view the options.
 - To view all orders over \$10,000
 - Order Amount -> (Custom Filter...)
 - Set Order Amount to “is greater than” and enter 10,000.
 - Click OK.

- To turn off AutoFilter: Data -> Filter -> select AutoFilter to uncheck it.

Creating Charts

- Click on the Website hits tab
- Select cells A1 through E5 (entire table)
- Format the numbers with commas and no decimal places. (If you get “#####” in a cell, widen the column until the numbers appear.)
- With entire table still selected, in the menu bar at the top select Insert -> Chart. Note the ribbon and options that appear. Also note what options have opened in the Toolbox’s Formatting Palette.

- Set the chart type to “Clustered Column.”
- Note the difference between selecting “Rows” and “Columns”. Leave it on “Rows”.
- Add the title “Website Hits” to the chart.
- Locate the legend in a place that looks best to you.

Importing data

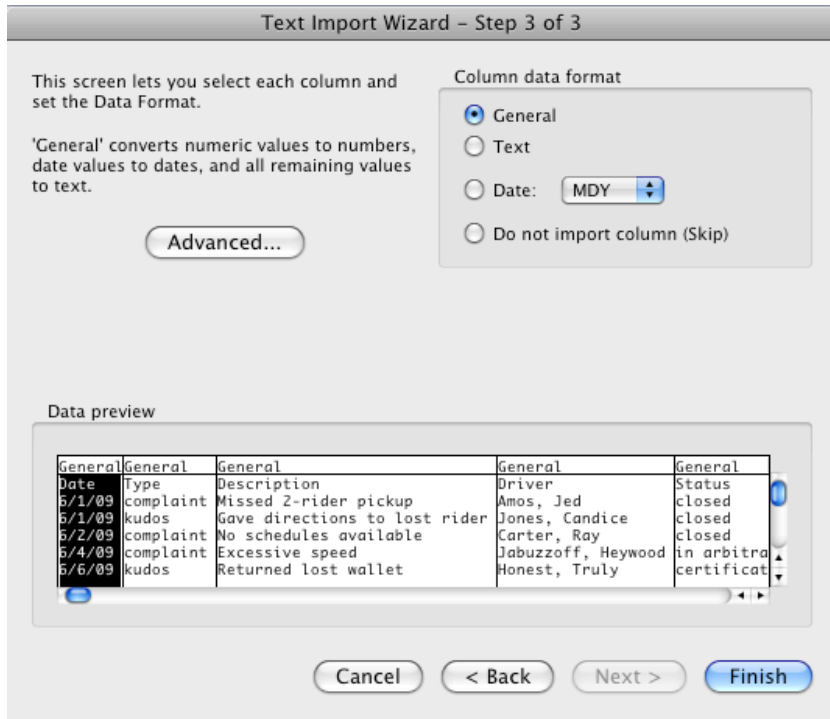
To import data into Excel each item needing its own cell needs to be delimited – separated by a specific character. The most common delimiters used include:

- comma (“,”)
- tab
- semicolon (“;”)
- pipe (“|”)

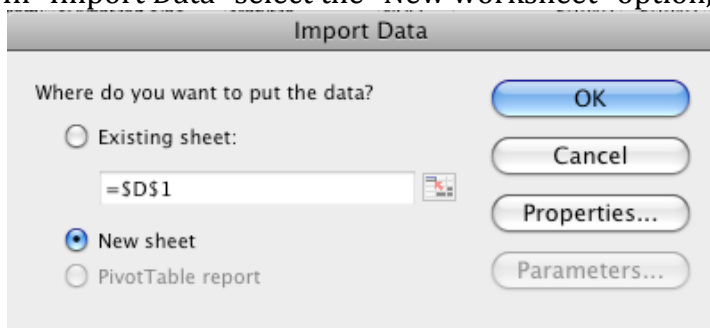
Importing exercise

In your current workbook:

1. File -> Import. In the Import Wizard leave the “CSV file” option selected and click “Import”. Select the import1.csv file and click “Get Data.”
2. In Step 1 of the Text Import Wizard, make sure that the “Delimited” option is checked, then click the “Next” button.
3. In Step 2 check the “Comma” option and uncheck all others.
4. In Step 3 change the “Column data format” for the first column to “Date: MDY”, leaving all other columns as “General” data format.



5. Click Finish.
6. In "Import Data" select the "New worksheet" option, then click OK.



7. Right click on the tab for the worksheet you just created and select "Rename". Type the word "Transit" and press Enter.

Printing

- Print area
 - Click on "Transit" worksheet tab.
 - Double-click between columns C & D, D & E, and E & F to AutoFit text.
 - To only print the first three columns select cells A1 through C8.
 - File -> Print Area -> Set Print Area
 - To preview, File -> Print, then click the "Preview" button.
- Print setup
 - File -> Page Setup -> Header/Footer tab

- To add page numbering at the bottom of each page select “Page 1 of?” from the “Footer:” drop-down menu
- Add a page title
 - Click the “Custom Header” button
 - Center section: -> type “June Feedback”.
 - Click and drag over “June Feedback” and click the Font button (“A”). Select a font style and size to suit.
 - Click OK, then click OK again.

Helpful functions

SUMIF(range,criteria,sum_range)

This function evaluates contents of cells in the first **range** to see if they meet a certain **criteria**, which can be in the form of a number, expression, or text that defines which cells will be added. If the criteria are met then the function will add up the numeric contents of the corresponding cells in the **sum_range**.

For an explanatory example of this function click on the Bakery tab in your workbook. Click on cell J6 to see this function in action. The SUMIF function is checking all the cells from B2 to B25 to see if they contain the word “pastry” (not case-sensitive). If that value is found then it adds the corresponding value in cells E2 through E25 to the sum total.

To do the same for Buttercream:

- Click on cell J7 to select it
- Insert -> Function...
- In the “Search for a function” box type “SUMIF” (no quotes)
- In the “Select a function:” box double-click on “SUMIF”.
- In the Function Arguments dialog box type the following values:
 - Range -> B2:B25
 - Criteria -> “buttercream” (*with quotes*)
 - Sum_range -> E2:E25
- Press the Return key.

You can visually check to make sure the formula calculated correctly.

COUNTIF(range,criteria)

This function checks the contents of a **range** of cells against a given **criteria**. For every cell that meets this criteria it increases a running tally or total by one (1), and the result is the total number of cells meeting that criteria.

- Click on cell I12 and type “Mixes”. Then press the Tab key. You should now be in cell I13.
- In the menu bar select “Insert -> Function...” or click on the “Formula Builder” palette in the Toolbox.
- Find the COUNTIF function and select it.

The screenshot shows the 'Insert Chart' dialog box in Microsoft Excel 2008 for Mac. The 'Column' chart type is selected. Below the dialog, a data table is visible with the following content:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1		Q1	Q2	Q3	Q4										
2	East	221,909,875	287,502,345	192,003,245	346,004,789										
3	West	436,009,456	387,007,586	294,803,456	334,501,234										
4	North	126,707,493	185,702,094	210,003,388	276,907,474										
5	South	374,004,567	26,820,020	482,603,300	596,003,765										

- Function Arguments:
 - Range -> A2:A25
 - Criteria -> "mix"
- Press the Return key.

You now have a count of the number of mixes the bakery carries.

Logical functions: IFERROR

This function returns a value that you specify if a formula evaluates to an error; otherwise, it returns the result of the formula. The syntax is:

=IFERROR(value,value_if_error)

- Click on the "Quotas" tab. This is a sales quota tracking worksheet for a fictitious auto parts company.
- Format cells in column E so numbers display as percentages.
- Calculate each person's percent of quota by dividing **Quota** by **Units Sold** by dividing C4 by D4, and put the result in E4. Use fill-down to complete it quickly.
- Note the **#DIV0!** error message.
- Substitute **=IFERROR(C4/D4,0)** for the formula in E4.
- Use fill down to complete formulas for all rows.

Now the results do not display the error message.

Excel and Reporting

Pivot Tables

Spreadsheets can contain large amounts of data, which you might need to rearrange and analyze to find trends and patterns. Pivot table reports can help make sense of your data.

- In the Bakery tab select the entire table (A1 through F25).
- Data -> PivotTable
- In the Wizard make sure "Microsoft Office Excel list or database" and "PivotTable" are selected.
- Click Next
- Range -> \$A\$1:\$F\$25
- Click Next
- In Step 3 click Finish.
- From the PivotTable Field List click & drag:
 - Item Category -> Drop Column Fields Here
 - Item Type -> Drop Row Fields Here
 - Inventory -> Drop Data Items Here

Now you have a report that provides an overview of what items you have in inventory by category and type. To change fields in the table you must first drag the existing field back to the table, and then drag the new one you want to the table.

Q & A

Notes:

Appendix

Keyboard shortcuts table

To	Press
Move right one cell	Press the Tab key or the right arrow key
Move left one cell	Press shift+Tab or the left arrow key
Move down one cell	Press the Return key or the down arrow key
Move up one cell	Press shift+Return or the up arrow key.
Move down one full screen	Page Down (extended keyboard) fn key + down arrow (laptop)
Move up one full screen	Page Up (extended keyboard) fn key + up arrow (laptop)
Move right one full screen	Alt + Page Down (extended keyboard) Option + Page Down (for Mac)
Move left one full screen	Alt + Page Up (extended keyboard) Option + Page Up (for Mac)
Move to beginning of row	Home (extended keyboard) fn key + left arrow (laptop)
Move to beginning of sheet	Control + Home (extended keyboard) fn key + Control + left arrow (laptop)
Move to end of data on sheet	Control + End (extended keyboard) fn key + Control + right arrow
Move to end of current row	Control + right arrow key
Move to end of current column	Control + down arrow key



This work is licensed under the Creative Commons Attribution-Noncommercial-Share Alike 3.0 United States License. To view a copy of this license, visit <http://creativecommons.org/licenses/by-nc-sa/3.0/us/> or send a letter to Creative Commons, 171 Second Street, Suite 300, San Francisco, California, 94105, USA.

