

Microsoft® Excel: Intermediate I

A Workshop for San Diego State University Staff



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Where to Find Help When You Need It

Help from your Division/College's Computer Consultant

Some divisions and colleges have computer consultants assigned to them. You can contact these consultants when you need help. To determine if you have a consultant assigned to your division or college, look to: <http://rohan.sdsu.edu/~facstaff>

Help from the BATS Web Page

BATS (Baseline Access, Training and Support) is a California State University initiative to provide all students, faculty, and staff with "baseline" access to information resources via networks, training in the uses of baseline hardware and software systems, and ongoing professional and technical support for utilization of computer resources at San Diego State University. You can access the BATS Web Page by pointing your browser to: <http://rohan.sdsu.edu/~bats/>

Help in the San Diego State University, Faculty Room

The Faculty Room is staffed Monday through Friday with computing consultants who will try to answer your questions.

Location: Adams Humanities, 1109
Phone Number: x45727
Semester Hours: 7:30am – 6:00pm Monday -Thursday
7:30am – 4:30pm Friday
Semester Intersession: 7:30am – 4:30pm Monday – Friday

Help from the Faculty Computing Help Line

Phone Number: x41348 **E-mail:** helpline@mail.sdsu.edu
Semester Hours: 7:30am – 6:00pm Monday – Thursday
7:30am – 4:30pm Friday
Semester Intersession: 7:30am – 4:30pm Monday – Friday

Help from the Staff Computing Help Line

Phone Number: x40824 **E-mail:** staffhelp@sdsu.edu
Semester Hours: 7:30am – 6:00pm Monday – Thursday
7:30am – 4:30pm Friday
Semester Intersession: 7:30am – 4:30pm Monday – Friday

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Onscreen Help

Onscreen Help

To view onscreen help, click on **Help**. The Help menu will pull down. Once the menu is displayed, select one of the following tabs:

Show the Office Assistant

An icon will appear. Click on icon and a menu will appear. Click on subject that you are interested in or type in your question in the blank box at the bottom of the menu. Then press the enter key. Hide the Office Assistant by clicking on the Assistant icon, the click on the right side of the mouse and select hide.

What's This?

Select this option and your cursor will include a Question Mark next to it. Click on anything on the screen and Word will provide an explanation of the item.

Show Balloons (Macintosh)

Select this option and when you place your cursor over various items on your screen, Excel will provide an explanation of the item.

Help in the User's Manual

You can also use the User's manual that came with your software to help you answer questions and find solutions to problems.

Help on the Web

Additionally, Microsoft offers Help for "frequently asked questions" at their support website located at:

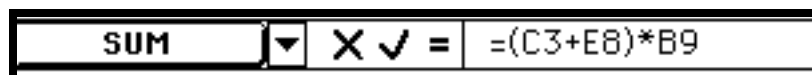
<http://www.microsoft.com/support/>

FORMULAS

In Excel, a formula always starts with the equal (=) sign.

The Formula Bar

When the formula bar is active, you can create a formula by typing, inserting functions, or selecting cells. Simply click in the data entry area and begin typing.



Formula entry area

Types of Operators You use operators to specify the kind of mathematical operation to

perform on the elements of a formula. The common types of operators used in formulas are arithmetic operators and comparison operators.

Arithmetic Operators

These operators perform basic mathematical operations, combine numeric values and produce results.

- + Addition
- Subtraction
- / Division
- * Multiplication
- % Percent
- ^ Exponentiation

Comparison Operators

Compare two values and produce logical values of TRUE or FALSE with these operators.

- = Equal
- > Greater than
- < Less than
- >= Greater than or equal to
- <= Less than or equal to
- <> Not equal to

What Formula Error Values Mean

Microsoft Excel displays an error value in a cell when it cannot calculate the formula properly. Error values always begin with a number sign (#).

<u>Error value</u>	<u>Meaning</u>
#DIV/0!	Is trying to divide by zero.
#N/A	Refers to a value that is not available.
#NAME?	Uses a name that Excel does not recognize.
#NULL!	Specifies an invalid intersection of two areas.
#NUM!	Uses a number incorrectly.
#REF!	Refers to a cell that is not valid.
#VALUE!	Uses an incorrect argument or operand.
#####	Produces a result that is too long to fit in the cell. This is not actually an error value, but an indicator that the column needs to be wider.

Copying Formulas Many times, you may want to copy the same formula across a number of columns or down a number of rows.

To copy a formula to other columns:

1. Select the cell of the formula you want to copy.
2. Drag the fill handle (bottom right corner of the cell) across the cells in which you want to copy the formula.

Excel copies the formula to the other cells and, in each column adjusts the formula's references so that the formula refers to the numbers in that column.

	Freshman	Sophomore	Junior	Senior
Fall	7435	7903	6537	5783
Spring	7036	7903	6421	5598
Total	14471	15806	12958	11381

To copy a formula to other rows:

1. Select the cell of the formula you want to copy.
2. Drag the fill handle (bottom right corner of the cell) down through the cells in which you want to copy the formula.

FUNCTIONS

Microsoft Excel comes with a variety of built in pre-defined functions for your use.

Using the Function Wizard

Whenever you want to use a built-in Microsoft Excel function or a custom function, you can use the Function Wizard to help you select a function, assemble the arguments correctly, and insert the function into your formula. The formula bar shows the changes you make as you build your formula.



Activate the Function Wizard by clicking the Function Wizard button and follow the instructions given.

CHARTS

A chart is a graphic representation of your worksheet data. Values from cells (data points) are displayed as bars, lines, column, pie slices, or other shapes in the chart. Data points are grouped into data series, which are distinguished by different colors or patterns on the chart.

Creating a Chart Using the ChartWizard



The ChartWizard is a series of dialog boxes that simplifies creating a chart. The ChartWizard guides you through the process step by step: you verify your data selection, select a chart type, and decide whether to add items such as titles and a legend. A sample of the chart you are

creating is displayed so you can make changes before you finish working with the ChartWizard.

The Difference Between Embedded Charts and Chart Sheets

You can create an embedded chart as an object on a worksheet when you want to display a chart along with its associated data.

You can create a chart sheet as a separate sheet in a workbook when you want to display a chart by itself on a page. The corresponding data is stored on a different sheet in a workbook.

Whether you create an embedded chart or a chart sheet, your chart data is automatically linked to the worksheet you created it from. When you change the data on your worksheet, the chart is updated to reflect these changes.

Plotting Data Series in Rows or Columns

When you create a chart, you specify the orientation of the data—whether the data series are in rows or columns that are adjacent to each other.

Plotting Nonadjacent Selections

Sometimes the data you are plotting is in rows or columns separated by other data or by blank rows or columns. You can make nonadjacent selections and use them to create a chart by:

1. Selecting the cells in the first row or column
2. Hold the CTRL (Windows) or COMMAND (Macintosh) key down while you make additional selections.

Changing the Chart Type

Sometimes you want to change the chart type to better illustrate you data.

To change the chart type:

1. Activate the chart by clicking on the chart image.
2. From the **Format** menu, select the **Chart Type** command.
3. Select the type of chart you want from the palette.

Adding items to a chart

A simple chart cannot always convey information as clearly or completely as you would like. You can add information, increase visual interest, and enhance readability by adding elements such as data labels, titles, a legend, and gridlines.

To add items, right click on the chart (Windows) or hold down the Control key and click on the chart (Macintosh). The Chart Options box

will appear.

Adding Data Labels Specify the kind of data labels you want displayed.

Adding a Chart Title and Axis Titles Enter the Chart title, Category (X) axis title or Value (Y) axis title in the applicable boxes:

Adding a Legend To add a legend that identifies the data series or categories in your chart check the **Show Legend** box. Then indicate the placement of the legend by clicking on the appropriate button.

Adding Gridlines You can add Major and/or Minor gridlines along the (X) and/or (Y) axis. Simply check the appropriate boxes.

Changing data in a chart

Adding Data Series and Data Points Once you have created a chart, you sometimes need to update it by adding or deleting a data series. In some cases, you might want to change the range of worksheet data the chart is based on.

It's easy to add data to an embedded chart on a worksheet:

- Select the data on the worksheet to be added and drag it onto the chart.

Deleting Data Series You can delete a data series by selecting it and pressing the **DEL** key. You can also select the **Clear** command from the **Edit** menu, and then select **Series**.

Changing the Range of Data Plotted If you want a chart to display different data than was originally plotted, you can change the worksheet range the chart is based on.

To change the range:



1. Select the chart on your worksheet.
2. Click the ChartWizard button.
3. In Step 2, specify the new range to be plotted in the chart.

LINKING WORKSHEETS AND WORKBOOKS

When you open Excel, you are opening a Workbook that consists of a variety of Worksheets. Each Worksheet contains a massive grid of rows and columns (65,536 rows and 256 columns), and each Workbook can contain from one to 255 Worksheets.



Each Worksheet is assigned a default name such as Sheet1, Sheet2 etc., and the name can be easily changed to a more meaningful name by double clicking on the default name and typing in the new name.

Linking Worksheets

You can include a large amount of data on a Worksheet, but often it is hard to find information spread out over a single Worksheet. Many users find it easier to work with multiple Worksheets, and they use Excel's linking function to calculate values based on cells on other Worksheets.

As an example, assume that you have a single Workbook with data in a Worksheet named SalesIncome and in a second Worksheet named InterestIncome. You need to add the value of cell A7 on SalesIncome to cell B3 on SalesIncome with the result showing in cell F9 on a third Worksheet named TotalIncome.

The formula you would type in cell F9 on the TotalIncome sheet would be:

=SalesIncome!A7+InterestIncome!B3

=	Tells Excel that this is a formula
SalesIncome	Refers to the sheet labeled SalesIncome
!	Simply separates the sheet reference from the cell reference
A7	Is the cell reference on SalesIncome
+	Indicates the type of operation to be performed
InterestIncome	Refers to the sheet labeled InterestIncome
!	Simply separates the sheet reference from the cell reference
B3	Is the cell reference on InterestIncome

Linking Workbooks

Some people may elect to use multiple Workbooks in addition to multiple Worksheets, and Excel provides a means of linking Worksheets in multiple Workbooks in order to calculate formulas.

As an example, assume that you have a Workbook named SalesData and another Workbook named BankReports. Each Workbook contains multiple Worksheets. Assume that you need to add the value of cell C3 in Worksheet UnionBank in Workbook BankReports to the value of cell G6 in Worksheet NorthSales in Workbook SalesData. The result is to be shown in the Workbook BankReports in cell N8 on Worksheet Taxes.

The formula you input into cell N8 would be:

=[SalesData]NorthSales!G6+[BankReports]UnionBank!C3

=	Tells Excel that this is a formula
----------	------------------------------------

[SalesData]	A Workbook name
NorthSales	A Worksheet in the SalesData Workbook
!	Simply separates the sheet reference from the
cell	reference
G6	A cell in the NorthSales Worksheet
+	Indicates the type of operation to be performed
[BankReports]	A Workbook name
UnionBank	A Worksheet in the BankReports Workbook
!	Simply separates the sheet reference from the
C3	cell reference A cell in the UnionBank Worksheet

TEMPLATES

A template is a spreadsheet with formatting, styles, and frequently used text already applied.

- The following settings can be stored in a template:
- The number and type of sheets in a workbook
- Cell and sheet formats and styles
- Page formatting and print settings for each sheet
- Text such as row and column headings, as well as data, formulas, graphics and other information you want each new workbook to have
- Custom toolbars, macros, and hyperlinks
- Protected or hidden areas of the workbook
- Calculation and display options

Create New Template

To create a new template:

1. Set up a blank workbook with any standardized text and formatting you want.
2. Choose **File** from the Menu Bar and select the **Save As** option.
3. Click the **Save as Type** drop-down list and select **Template**.
4. Give the template a name and save it in the Spreadsheet Solutions folder that is within the Template folder.

Using a Custom Template

The template has been saved and is now ready for you to use.
To use a customized template:

1. Chose **File** from the Menu Bar and select the **New** option.

2. Select the Spreadsheet Solutions option and then select the desired template and click on **OK** to open the template.
3. Use the template as you would any worksheet.
4. When you go to save your work, you will be prompted to assign a new name to your worksheet. You will not overwrite the customized template so you can use it repeatedly.

TIME SAVING TIPS

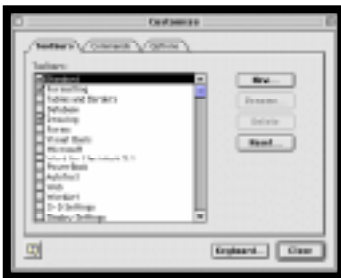
Excel is packed with features that can make your work easier.

Customizing Toolbars

You can easily customize your toolbars to include the commands you use most often.

To customize a toolbar select **Tools** from the Menu Bar and then select **Customize**. The Customize window will open.

1. From the **Toolbars** tab, select the toolbar to be customized.
2. From the **Commands** tab, use the **Categories** list box to display different buttons in the **Commands** list box.
3. To select and place a button on the toolbar, click on the desired button in the Commands list box and drag it up to the toolbar at the location where you want the button added. Release the mouse button and the new button is inserted onto the toolbar.
4. To remove a button from the toolbar, simply drag it off the toolbar.
5. When finished, click on the Close button to exit the **Customize** dialog box.



Format Painter

Once you have a cell or range formatted the way you want it, you may decide that that formatting should be applied elsewhere on the spreadsheet. Instead of going through all the formatting steps again, use the Format Painter tool to copy the desired formatting to the other area(s).

1. Select the cell or cells that contain the formatting you want to copy.
2. To apply the formatting to one cell or range, click on the Format Painter button on the toolbar once. To apply the formatting to multiple cells or ranges, double click on the Format Painter button.



3. Select the cell or cells that you want to format with the same options. When you release the mouse button, the selected range will be formatted just like the original range.
4. If you are formatting more than one cell or range, select the cells or ranges to be formatted and release the mouse button. Continue this step until all desired cells or ranges are formatted.
5. When you are done formatting multiple cells or ranges, click on the Format Painter button once more to quit the Format Painter.

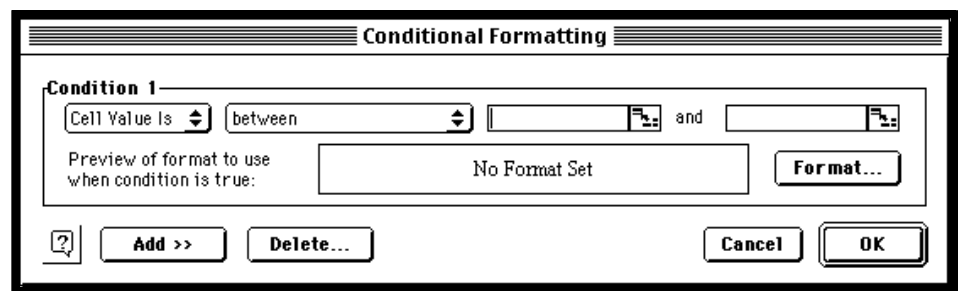
Conditional Formatting

You can use Excel's Conditional Formatting feature to have Excel automatically change the formatting for a cell if the value in the cell changes, based on criteria you select.

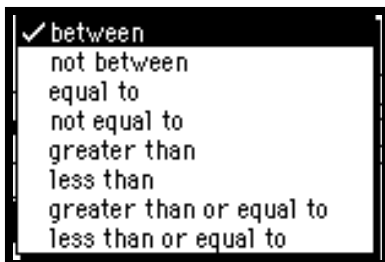
For instance, if you are tracking an inventory of items and you want to be sure you notice when the inventory of the item falls to zero, you can instruct Excel to change the formatting of the cell so it is shaded with a heavy red line around it and the text is boldfaced.

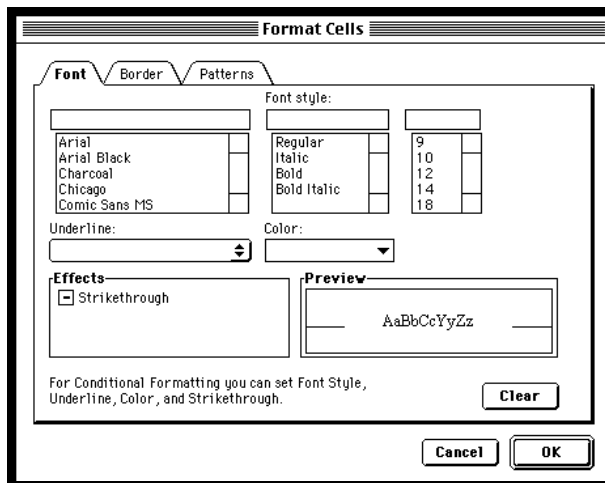
To assign conditional formatting:

1. Select the cell(s) containing the value you want to format conditionally.



2. Select **Format** from the Menu Bar and then select **Conditional Formatting**. The Conditional Formatting dialog box appears.
3. Most often you will want to select the **Cell Value Is** option in the drop down list at the far left of the box.
4. The next drop down list contains the arguments you will use to activate the conditional formatting. Depending on the argument selected, the remaining text boxes will vary.
5. In the remaining text boxes enter the data to complete the argument.
6. To specify the formatting, click on the **Format** button. The **Format Cells** dialog box appears.





7. Use the **Font**, **Border** and **Patterns** tabs to select the desired formatting.
8. When finished, click **OK**. You will be returned to the Conditional Formatting dialog box where you will see an example of the selected formatting. Click **OK** to exit the box.

As you use Excel's toolbars, you will notice that clicking on some of the buttons results in a drop down pallet being displayed. Palettes that contain title bars can be turned into floating palettes. To tear off a palette:

Tear Off Palettes

1. Click on the drop-down arrow to the right of the button on the toolbar. The palette is displayed.
2. Click the title bar and drag the palette to a new location on the screen.
3. Release the mouse button and the palette remains floating on the screen.
4. To close the palette, click on the **Close** button in the upper right hand corner.

To enter the current date in a cell, press the **Control** and the **Semicolon** keys simultaneously.

Enter Current Date/Time

To enter the current time in a cell, press the **Control** and the **Shift** keys simultaneously.

N/A Function

To avoid the problem of unintentionally including empty cells in your calculations use #N/A to mark empty cells. Simply enter #N/A in an empty cell in the worksheet where the data is to go, and every cell that relies on that data will reflect the #N/A message. Formulas will not be

over written, and you will know that some data is missing in your worksheet.

Comments You can attach non-printing comments to any cell in your worksheet. You may use these comments to remind yourself of something unique about the cell or you may want to make a comment to someone else who is looking at the spreadsheet.

To make a comment in a cell:

1. Select the cell to contain the comment.
2. Click on **Insert** on the Menu Bar and select **Comment**.
3. Type the text of your comment on the yellow note. Click elsewhere on the worksheet. A red triangle will appear in the upper right corner of the cell indicating that a comment is attached to the cell.
4. To view the comment, position the mouse pointer over the cell.

If you want to use a number as text (such as a date), enter an apostrophe then the number. This will alert Excel to the fact that the number is text.

Treating a Number as

Text To enter a fraction, type the integer, then hit the space bar and type the fraction. To enter only the fractional part, type a zero, a space, and then the fraction.

Entering Fractions

Fast Column Formatting Quickly format the width of a column so that it will accommodate the longest entry in the column by placing the cursor on the right column-heading border. The pointer will change to a thick line with arrows on either side of it.

Double click the mouse button and the column width will automatically adjust.

Show Formulas Switch the screen display between the normal view and formulas view by holding down the Control key and pressing the “left apostrophe/tilde” key.