

EXCEL FUNCTIONS

OFFICE 97

Excel Functions is an intermediate workshop for those learning to use Microsoft Excel and preparing/reviewing for the Microsoft Excel proficient and/or expert certification. The workshop will introduce you to some of Excel's most powerful features including using functions and creating charts.

Creating and Applying Ranges

A range is a named section of the worksheet. When workspaces become large, or when data needs to be moved and manipulated often, a range is a good way to select a section of data quickly. You can then use the **Go To** command, or the **Name** box to select the range quickly.

- To create and name a range, simply highlight the section of text you would like to name, and select **Insert/Name/Define** to give it a name. Alternately, you can click into the **Name Box** in the Formula Bar (see left), and name it there as well. Names may contain no spaces, and must start with a letter or underscore character.
- You can also name individual cells, for ease of use in formulas later on. Naming a cell "Total" will allow you to later create a formula to calculate tax, for example, by using the formula "**=Total*0.05**".
- Naming a range can have many benefits. The ability to do formatting on like cells is certainly one of them. When a range is selected, either by the mouse, keyboard, or by a previously defined name, any formatting that is done is done to all of them. If you have totals in different areas of the sheet, and want to format them all the same, select them and apply your formats.
- You can also use the **Cut** and/or **Copy** and **Paste** commands as well as **Drag and Drop** to move ranges around. If you move the entire range, the name of the range goes with it.



Using Functions

Functions are the advanced mathematical, statistical, logical and other computations that can be easily used and inserted in Excel. They range from the relatively simple **SUM** and **AVERAGE** functions to the very advanced Trigonometric, Statistical, and Financial operations.

- Functions can be inserted by using the **Function Button** on the toolbar (left), selecting **Insert/Function...** from the menu, or, if you know the syntax, they can be manually entered. This is fairly easy with the simple ones (**=SUM(A1:B3)**), but not so easy with the more obscure ones (**=SUMIF(A1:B7,9,A3:B14)**).
- Most arithmetic functions will ignore non-numeric values in a list. This includes blank cells. So most **SUM**, **AVERAGE**, **COUNT**, etc. functions will just use the numeric and/or calculated values in their computation.

Perhaps the biggest hurdle to using new functions is understanding the syntax that they



use. Several new terms will be thrown at you in the Functions dialog box. Below are a few of the more popular.

number1, number2,... - A list of cell references and/or values. (A1, A2, A3)

Range – A range of cells, in the form **beginning cell:ending cell** (B2:B6)

Criteria – A value or cell reference that others will be compared to (as in Equal to) (9, B2, etc)

Logical Test – Used with IF statements, can include comparisons (B6>B7)

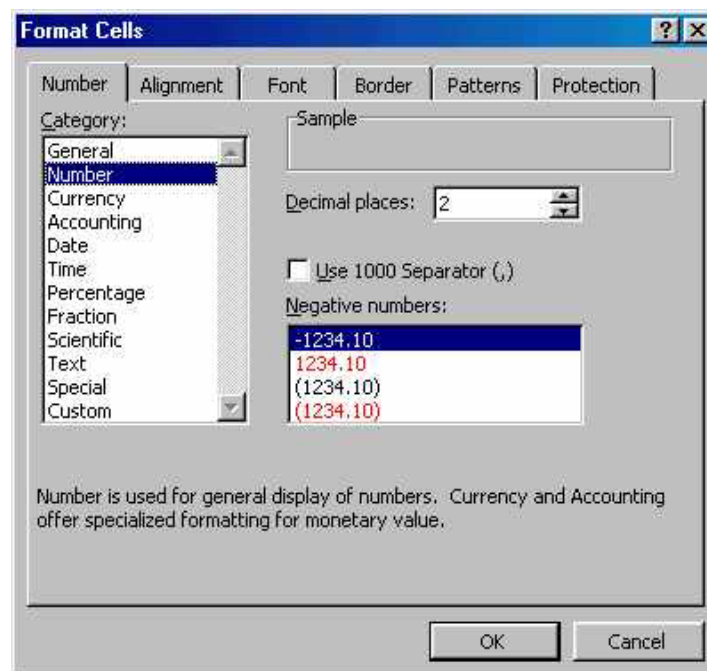
value_if_true, value_if_false – Also with IF, decides the contents of the cells based on the test.

Formatting Worksheets

Formatting numbers can greatly enhance the look of your work. It also is very important for basic readability, creating data that we are used to seeing. Many, many formats are included in Excel, and others can be created as needed.

To apply a format to a cell, range, or sheet:

- Highlight the cell(s) you would like to apply the format to.
- Select **Format/Cells** from the menu



- Select from the left column the type of number you have.
- Select from the right side the more specific format of that number, make decisions on placement and number of decimals, symbol, etc.
- Click OK.

If you cannot find the appropriate type of format, you can create your own.

- Select the cells you want to format.
- On the **Format** menu, click **Cells**, and then click the **Number** tab.
- In the **Category** box, click a category, and then select a built-in format that resembles the one you want.
- In the **Category** box, click **Custom**.
- In the **Type** box, edit the number format codes to create the format you want. Editing a built-in format does not remove it.

Editing Syntax:

displays only significant digits; does not display insignificant zeros.

0 (zero) displays insignificant zeros if a number has fewer digits than there are zeros in the format.

? adds spaces for insignificant zeros on either side of the decimal point, so that decimal points align. You can also use this symbol for fractions that have varying numbers of digits.

To display	Use this format code
1234.59 as 1234.6	#####.#
8.9 as 8.900	#.000
.631 as 0.6	0.#
12 as 12.0 and 1234.568 as 1234.57	#.0#
44.398, 102.65, and 2.8 with aligned decimals	???.???
5.25 as 5 1/4 and 5.3 as 5 3/10, with aligned division symbols	# ???/???

To display a comma as a thousands separator or to scale a number by a multiple of one thousand, include a comma in the number format.

To display	Use this format code
12000 as 12,000	#,###
12000 as 12	#,
12200000 as 12.2	0.0,,

To set the color for a section of the format, type the name of the color in square brackets in the section. The color code must be the first item in the section.

[BLACK]	[BLUE]
[CYAN]	[GREEN]
[MAGENTA]	[RED]
[WHITE]	[YELLOW]

More formatting options can be found by using the **Help** feature, and searching for Custom Number Formats.

Using Styles

Much like in Word, Excel can use pre-designed or user-designed Styles to speed formatting. Pre-defined include **Comma** style, **Percent** style, and **Currency** style. Any others can be designed by the user and added to the template if desired. To define a style:

- Select a cell that has the combination of formats you want to include in the new style.
- On the **Format** menu, click **Style**.
- In the **Style name** box, type a name for the new style.
- To define and apply the style to the selected cells, click **OK**.
- To define the style without applying it, click **Add**, and then click **Close**.

Excel also has several Autoformats available to decorate a range of numbers. Select **Format/Autoformat...** to select a pre-defined format to apply to your highlighted area. Individual features can be toggled on and off by selecting the **Options>>** button on the dialog box.