

Moving you from Meek to Geek in a Nanosecond (or two)©!

2007 EXCELLING @ EXCEL

Prepared especially for you!

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Techedutainment Services Inc.

Technology ★ Education ★ Entertainment

Hey! It's Chic 2B Geek® Series!

Excel for Excellent Business Management

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The Five F's of Excel

We begin our journey learning Excel through the 5 *F's*. Here are the *Five F's* that we will learn in detail during this section and we will re-enforce our knowledge and build upon the 5 *F's* throughout our time together.

F1: Formatting

F2: Fills

F3: Formulas

F4: Functions

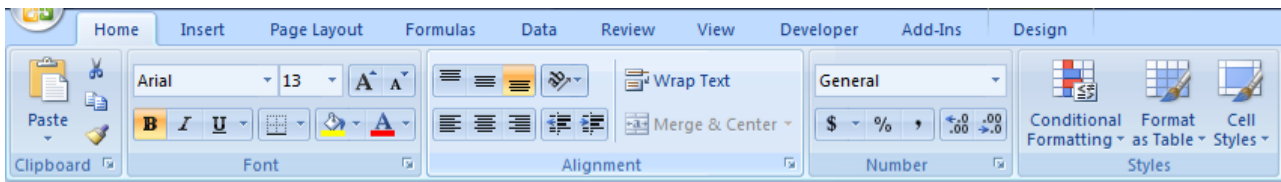
F5: Filters and Sorts

F1: Formatting for Appearances Sake


Now let's look at *the 5 Fs* of Excel. The First F is *Formatting*. Let's have fun with formatting our cells and worksheets. Primarily you will use the *Formatting Groups on the Home Tab* or the *Format Cells Dialogue box*.

🔥 A Hot Tip! You activate the Format Cells dialogue box by pressing your CTRL key and the number 1 key at the top of your keyboard (not the 1 key on your key pad) simultaneously. Also, you can also right click on your selected cells and from the shortcut menu choose Format Cells. If you added the Format Cells icon to your Quick Access Toolbar, you use that too. 🔥

We will learn in detail all of these command buttons on the *Home Tab*. We will use all of the



tabs on the *Format Cells dialogue box*, too. Before we format, we need to enter data into our blank worksheet. We will enter the Text and Data as pictured below.

- 1. Open Excel, if you are not in Excel.**
- 2. You should be at a blank new workbook. If not, click the  New Icon, if you added it to your Quick Access Toolbar or Press the CTRL key + N key simultaneously. This creates a new workbook file for you. Excel will display Book2 (or another number) on the title bar for you.**
- 3. Click in Cell A2 and type: January Budget and Expenses.**

To enter numeric data or alpha data simply begin typing in a cell. As you type your input appears on the *Formula Box Row* and in the Cell in which you are typing. Since there is no data in cell B2, our text will display; otherwise, our text would be truncated in Cell A2.

To Move from Cell to Cell you may Click, Tab, or press Enter. Depending upon your options pressing Tab takes you to the right one cell or Enter may take you down. To Edit previously Input data, Use the Formula Bar to highlight and select the data you want to change and type over the information or type in the cell.

🔥 A Re-enforcement Note 🔥 that your Name Box displays the cell in which you are working and the Formula Box displays the contents of the cell. Move to different cells using your



return key, tab key, arrow keys, or mouse button. It is important to input the information first – accomplish your formatting once some of your input is complete. ↗

1. Input as follows or enter your professional budget and expense data in the cells.

Cell	Data/Text
A4	Item
B4	Budget
C4	Expenses
D4	Difference

2. Save your Workbook as Budget.xlsx (Click the Save Icon or use File, Save to Save your file.)
3. Continue inputting the information as pictured here.
4. In Cell A14, Type Total. We will use a function later for Excel to Total the information.
5. In Cell A15, Type Average. We will use a function later for Excel to Average our information.

	A	B	C	D
1				
2	January Budget and Expenses			
3				
4	Items	Budget	Expenses	Difference
5	Lease	1200	1050	
6	Salary	5000	5000	
7	Insurance	450	425	
8	Telecommunications	375	400	
9	Education/Training	350	425	
10	Supplies	525	500	
11	Technology	175	185	
12	Entertainment	350	350	
13	Mileage	200	225	
14	Total			
15	Average			
16				

↗ **A Hot Tip! Entering data in Excel by Selecting and Using the Tab Key.** If you Select the areas of A5 through C15 and using the Tab Key to move from cell to cell, Excel will highlight this area and remain in this area for input and will not move to column D or row 21, until the selected range is cleared or press an arrow key. You can press the Shift key and the Tab Key together to go backwards. You may press the Enter key to go down and the Shift and Enter Key together to go up. Simply select the area for input, type your information in a cell, press the tab key, and Excel will move to the next cell to the right. This assists in data input accuracy. ↗

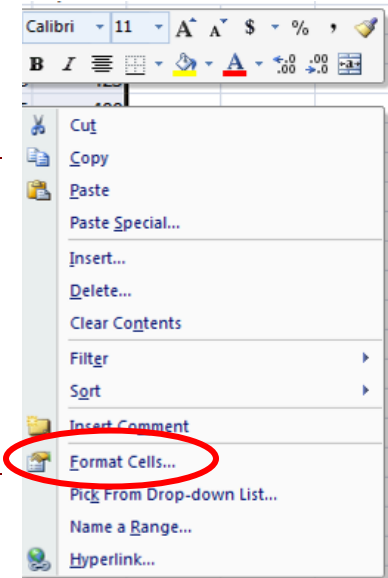
Formatting Groups

Once data is in our cells and worksheet, we are ready to format. We will format our selected

rows, columns, and cells in several ways:

- ✓ *Formatting command buttons* on the Home Tab,
- ✓ *The Format Cells Dialogue Box,*
- ✓ *The Mini Toolbar.*

➤ A Hot Tip: The Mini Toolbar. When you right click selected cells, rows, or columns, Excel provides a Mini Toolbar containing many popular commands, including formatting commands, such as font, font size, dollars, bold, colors, and so on. The menu toolbar is on top of the short cut menu. We will use this a lot in this course. Excel provides a short cut menu when you right click, too. You may activate the Format Cells Dialogue Box from this menu. ➤

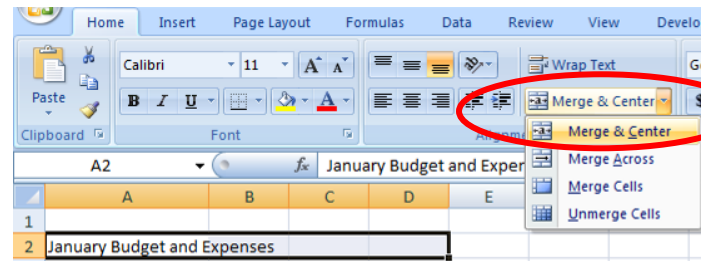


The Merge and Center

Okay, Let' have fun with formatting; we first want to have our title January Budget and Expenses centered across our worksheet area. In using Excel the text and information for a cell will display unless there is text and data in the adjacent cell, then your data is truncated or cut-off. The text and data are still there just not visible except on the *Formula Bar*. You have three choices

- ✓ *To make the column wider so your information will fit,*
- ✓ *To use Wrap text in the cell (which we will learn later),*
- ✓ *To use the Merge and Center Icon.*

In most cases make the column wider is acceptable; however, your column heading may be too wide for the data in the rest of the column. For Headings and Titles **➤ A Hot Tip!** you will want to use *the Merge and Center Command Button*. The *Merge and Center command button* above will collapse your selected cells into one cell and center the information in this one cell.



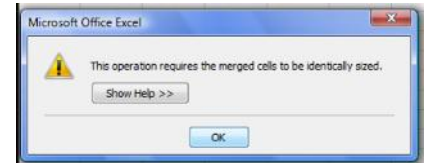
- 1. Using the Click and Drag method of selection, Select the cells A2 through D2.**
- 2. Once selected, Click the Merge and Center command button or use your Mini Toolbar.**

Our A2 cell is now one, big cell encompassing the former cells of B2 through D2. Click Cell D2,

notice the *Name Box* displays A2. *The Merge and Center Command button*: This icon is primarily used for titles that extend beyond one cell.

♪ *As a review, select the cells you want merged and click this icon to transform multiple cells into one cell and center the information contained in the cell.*

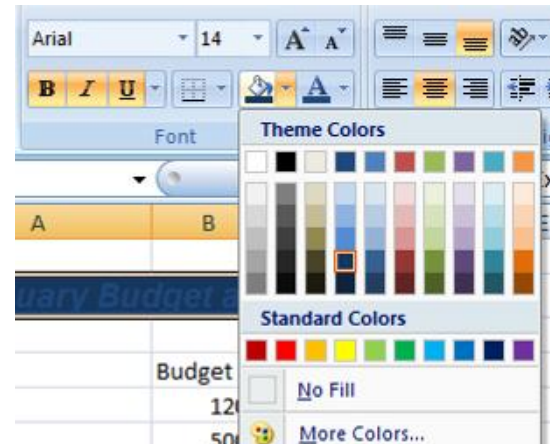
⊗ **An Important Gotcha! If you try to sort your data do NOT include this cell. Excel will give you an error message as displayed at right. To remove Merge and Center from a Cell, Select the cell and click the Merge and Center command button, again. Or you may remove Merge and Center by using the Format Cells Dialogue Box and the Alignment Tab. At the Dialogue box click the Alignment tab and notice the check mark in the Merge cells box, Uncheck (click the check mark) box in Merge cells. The cells option will be removed. ⊗**



Font Formatting Group

With Cell A2 the *Merge and Centered cell* selected and using the *Formatting Group's command buttons* please make the following changes:

1. **Change the Font to Arial using the font drop down list,**
2. **Change the size to 14 using the list,**
3. **Click the Bold Icon,**
4. **Click the Italic Icon,**
5. **Click the Underline Icon,**
6. **Change the Fill Color to a dark color – I'm choosing a Dark Blue,**
7. **Change the Font Color to a light color, using the Drop Down Arrow Color by the Font Color Icon.**



Our changes take effect immediately.

Click the Save icon or use your keyboard shortcut by Pressing the CTRL + S keys.

Format Cells Dialogue Box: Font

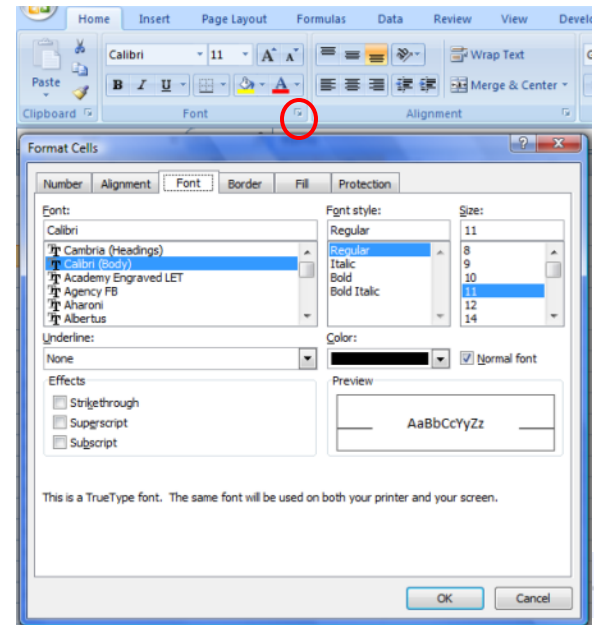
While the *Formatting Command buttons and Mini Toolbar* offers quick and easy formatting options for us. We will want to use *the Format Cells Dialogue box* for more options and formatting, particularly for different number styles, dates, and special font/character positioning.

The *Format Cells Dialogue Box* pictured at right displays when we click the **Dialogue Box**

Launcher circled at right. We will be using this dialogue box throughout our course including the Protection tab when we examine security and protection later.

The *Format Cells* dialogue box activates through these ways:

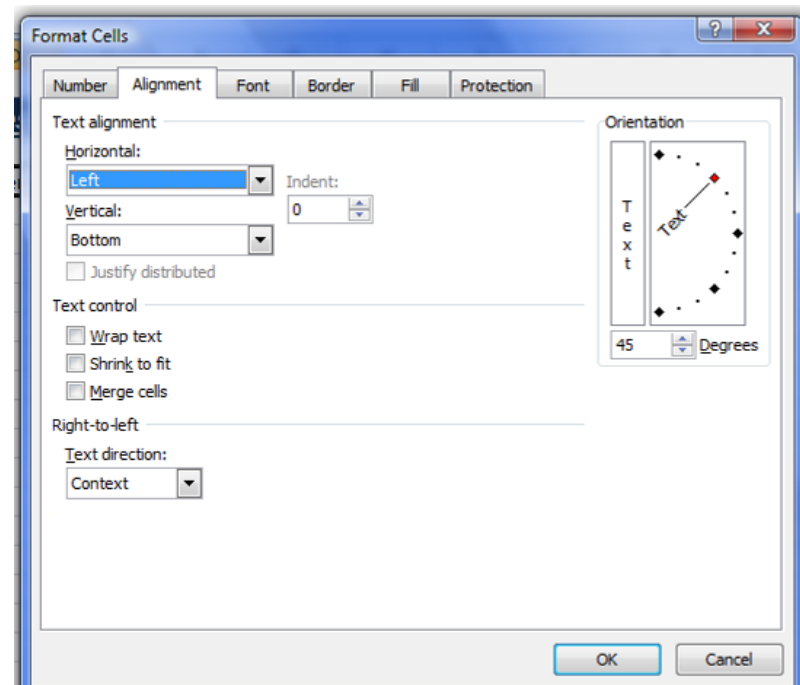
- ✓ *Right Clicking in the selected cells and from the shortcut menu selecting Format Cells,*
- ✓ *Pressing the Shortcut key of CTRL + 1 (The Control Key and the number 1 key together),*
- ✓ *Use the General Drop Down List in the Number Group and the last item is More Number Formats. . .*
- ✓ *Use the Dialogue Box Launcher on the Font Group in the Home Tab.*



Format Cells Dialogue Box: Alignment

Let's practice using the *Formatting Dialogue* box and some neat tricks for formatting our Headings.

- 1. Click and Drag to Select the Cells A4, B4, C4, and D4 with the text Item, Budget, Expense, and Difference**
- 2. Activate your Formatting Dialogue box by Right Click in the Selected cells and click Format Cells from the short cut menu.**
- 3. With your Formatting Dialogue box displayed, Click the Font tab and select a different font, change your font size, and change your font color,**
- 4. Click the Alignment Tab. Notice these important items:**



- ✓ *Horizontal and Vertical Alignments for text in cells,*
- ✓ *Text Control for Text Wrapping and Shrinking which we will use later,*
- ✓ *The Merge Cells (we used the icon for Merge Cells but we could have used this selection with center Alignment),*
- ✓ *The Orientation section which allows you to make your text vertical and angled.*

5. Click the Diamond for the 45 degrees or use the Spinner Control to select 45 degrees.

6. Click OK

Wow! Look at your angled text.

✎ A Hot Tip! Orientation Command Button. While the Alignment Tab in the Format Cells Dialogue box contains many options, the quickest and easiest way to angle your text is through the Orientation Command Button in the Alignment Group of your Home Tab. As pictured at right, this button allows you to use several popular angling and rotation options. The Format Cell Alignment opens the Format Cells Dialogue Box at the Alignment Tab. ✎



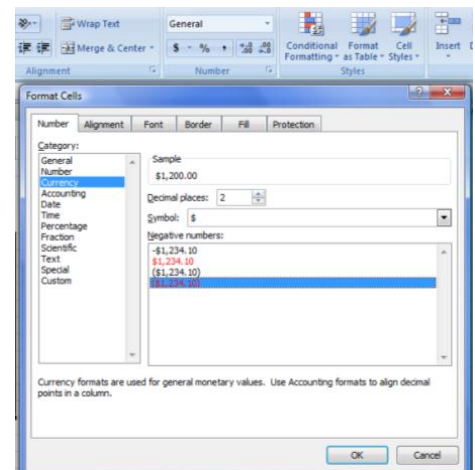
⊗**An Important Gotcha! While angled text looks great here, angled text doesn't look good with shading and with borders – the colors and borders extend beyond your cells and you may not like it. When we learn Borders and Shading, try it and see if you like it. ⊗**

✍ *Write your notes here:* _____

Format Cells Dialogue Box: Numbers

Time to Format the Numbers,

- 1. Click and Drag to Select cells B5 through D15 OR Click Cell B5, press the shift key and keep it pressed, and click cell D15 to select this area.**
- 2. Let's use the Format Dialogue Box for numbers.**
- 3. With the Format Cells Dialogue Box open, Click the Numbers Tab, (Pictured at right).**
- 4. Click the Currency Category and then select the Negative Numbers to be in red and Parentheses.**

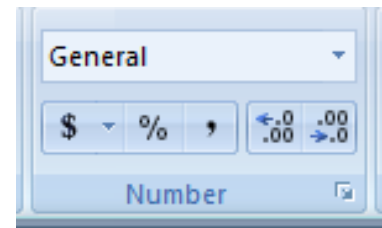


5. Click OK.

Our numbers are formatting are formatted as Currency.

We will use the *Number Group* on the *Home Tab* and the *Mini Toolbar* for our Number formatting, too.

Reselect the cells B5 through D15 in the Budget Workbook and Click the General drop down list on the Home Tab and choose another format, such as Accounting for your numbers. The menu for the General box and number formats is pictured here.



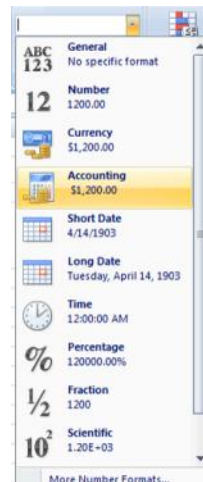
👉 A Hot Tip! The Special Numbers and Custom Numbers – Good information ahead – Read on - 👉

As we have and will continue to see, the *Category List* includes all types of formatting for *Numbers, Dates, Special, and Custom*. The *Special Category* will allow you to format *Social Security Numbers, Zip Codes, and Phone Numbers*. The *Custom Category* will allow you to design your own Numbers format.

Using number formatting such as ZIP Codes, Social Security numbers, and phone numbers are standard in *Excel*. *Excel* considers any series of digits as a number, but for phone numbers, SSNs, ZIP Codes, or another series of digits you may use in your organization such as Employee ID, etc. you will need to use the *Special Format*.

These are NOT numbers but are considered text. *A number in Excel and in math is:*

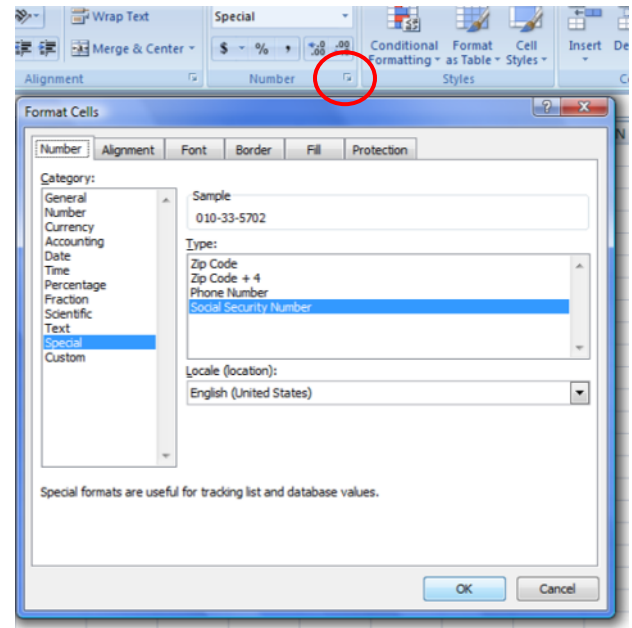
- ✓ *A Digit used in calculation such as multiplication,*
- ✓ *Has no special formats such as dashes,*
- ✓ *Does not begin with a 0.*



Let's use the Special Category in our Numbers tab on the Format Cells dialogue box.

- 1. Click Sheet 2 of your workbook, (Or click any empty sheet)**
- 2. In Cell A1 type *SSN*, press the tab key,**
- 3. In Cell B1 type *Phone*, press the tab key,**
- 4. In Cell C1 type *ZIP Code*.**

5. In Cell A2 type a SSN, such as 023456789 (Omit the dashes or other formatting you may use in a SSN and notice the leading zero disappears)
6. In Cell B2 type a Phone number, such as 6788889977
7. In Cell C2 type a nine digit zip code, such as 033995544 (Notice the leading zero disappears)
8. Select the area A2 through A20 (You may make your area larger if you like).
9. Click the Number Group's Dialogue Box Launcher to activate the Format Cells Dialogue box at the Numbers tab,
10. In the category section scroll to the Special category, Click the Special category,
11. Then Click Social Security Number in the Type area of the dialogue box.
12. Finally Click OK.
13. Your figures contain the dashes and the leading zero appears.
14. In Cell A3 type another 9 digit SSN without the dashes.
15. Press enter and notice your digits are magically formatted.
16. Let's accomplish the same for the Telephone Number. Repeat the steps 8 - 13, except use Cells B2 through B20 and select Phone Number from the Type area of your Special Category.
17. Let's accomplish the same for the ZIP Code. Repeat the steps 8 - 13, except use Cells C2 through C20 and select ZIP Code + 4 from the Type area of your Special Category.





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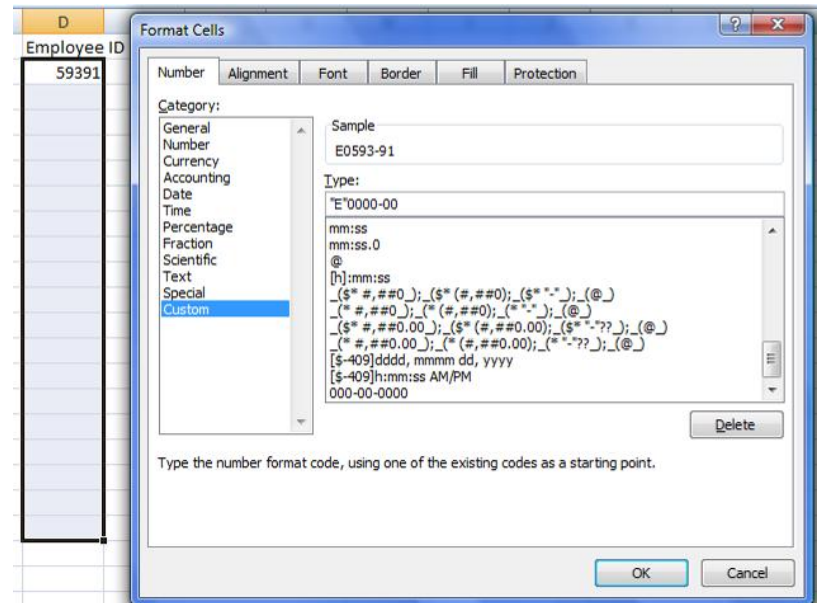
⊗ An Important Gotcha! You will need to type in the full 9 digits for the ZIP Code in order for your digits to appear correctly. If you don't have the final four digits, you will need to type zeroes. ⊗

The phone number formats are better and allow you to enter the area codes or not. Try several different series of phone numbers.

Custom Formats

Let's create a *Custom Format* for an Employee ID that uses alphabetical and numeric characters with a dash. You can create all sorts of custom formats for your organization's needs including Date, number, alphabetical, and a combination of characters for your particular format schemes.

1. We want our Employee ID to appear like this: **E0593-01**.
2. In the worksheet you were using as your practice in the last section, Click Cell D1 and Type Employee ID.
3. In Cell D2 type 059301 – don't put in the E or dash Excel will accomplish this for us once we complete our Custom Format.
4. Select Cells D2 through D20.
5. Activate the Format Cells Dialogue Box at the Numbers Tab by clicking the Dialogue Box Launcher from the Number Group on the Home Tab.
6. Click the Custom Category. Notice the existing formats – as Excel displays here you can use an existing format to help you design your own. The dates use m for months, d for days and y for years. The zero is for digits. Alphabetical characters must be surrounded by quotation marks.



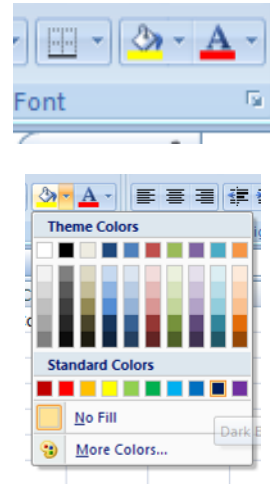
7. In the Type: Box enter "E"0000-00 as illustrated above.
8. Click OK.

Excel changes your ID to the appropriate format. In Cell D3 enter 063200 and Excel converts this to E0632-00. This format is available for you to use in the future from the Custom Category.

Format Cells Dialogue Box: Border and Fills

Reading and analyzing Excel worksheets can be a tedious task, especially large worksheets filled with numbers. Using *Borders and Shadings* with Patterns can produce blocks of cells that capture your attention and ease your eye strain. *Borders and Shadings* are great for titles and headings, too

The *Borders* and *Fill Color* command buttons on your *Home Tab's Font Group* offer rapid ways of applying a border and fill color (shading) to your selected cell(s). These icons pictured to the right will provide various *Borders* and the *Fills* or *Shading* (Paint can) options by clicking the Drop Down arrow.. These buttons can apply quick and easy formatting to your cells for borders and shading.



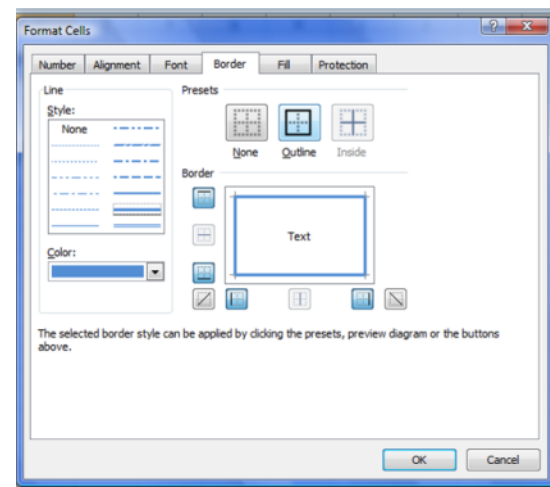
⊗ An Important Gotcha! If you copy your cells the borders and shading will copy, too. You won't like this in your worksheets especially the borders. We will learn how to control copying our cells and eliminating borders from our copying process later. A good practice is to save the Borders formatting as the last item of formatting for your cells and worksheets. ⊗

As with the other areas of formatting we will use this again and again.

- 1. Let's format our title, January Budget and Expenses, with Borders and Shading in our Budget workbook – Sheet 1.**
- 2. Select Cell A2,**
- 3. Activate your Format Cells Dialogue box,**
- 4. Click the Borders tab.**

Here are the Steps to Add a Border around your title:

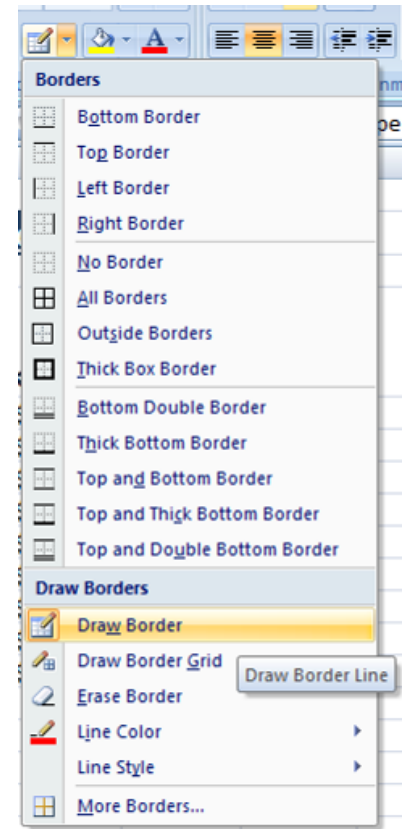
- 1. Choose a Style that you like,**
- 2. Choose a Color for your border,**
- 3. Choose Outline in the Presets section.**
- 4. Click OK.**



♪ Notice you can create custom borders and various sides of your cells to have a border. We will be separating various parts of our worksheets later and will draw borders, too. Always select your Style and Color before making your Border Choices or Presets. ♪

The *Draw Borders* section of the *Borders command buttons menu* allows you to draw your border. You select your Color and then your style and your cursor will turn into a pencil and you draw where you want to place your borders. If you mess-up, the *Erase Borders* and its eraser allows use to click this icon and click away our mistakes.

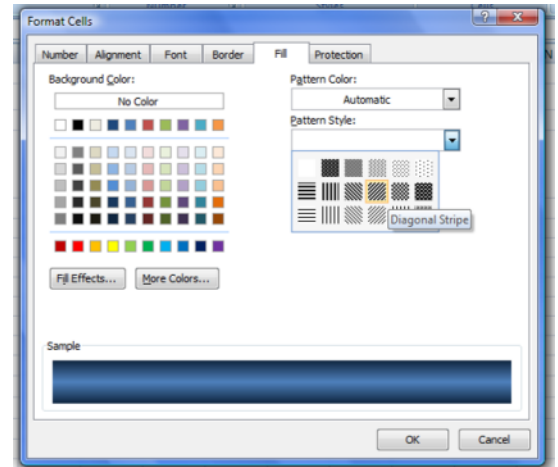
1. **Let's use this to draw other borders around our Total and Average Rows.**
2. **Click the Drop Down arrow next to your Borders Command Button.**
3. **Click the Line Color arrow and choose a color for your border.**
4. **Next, Click the Border's Drop Down arrow, again.**
5. **Click the Line Style and choose a style.**
6. **Next, Click the Border's Draw Border Item – Note the Draw Border Grid puts borders around all of your cells that you click and drag.**
7. **Your cursor turns into a pencil.**
8. **Click and drag across the row between Mileage and Total or Rows 13 and 14.**
9. **Draw Borders around other parts of your worksheet. Here's a picture of my borders.**
10. **Don't worry if you mess up – Activate your Borders Cascading Menu and Choose Erase Border – Your cursor turns into an Eraser and you click and drag to remove your borders.**
11. **When you are ready for more border click the Draw Borders item from the Borders Cascading menu.**
12. **To stop borders, simply click the Borders Command Button and to start Draw Borders again click this Command button again.**



	A	B	C	D
1				
2	January Budget and Expenses			
3				
4	<i>Items</i>	<i>Budget</i>	<i>Expenses</i>	<i>Difference</i>
5	Lease	\$1,200.00	\$1,050.00	
6	Salary	\$5,000.00	\$5,000.00	
7	Insurance	\$ 450.00	\$ 425.00	
8	Telecommunications	\$ 375.00	\$ 400.00	
9	Education/Training	\$ 350.00	\$ 425.00	
10	Supplies	\$ 525.00	\$ 500.00	
11	Technology	\$ 175.00	\$ 185.00	
12	Entertainment	\$ 350.00	\$ 350.00	
13	Mileage	\$ 200.00	\$ 225.00	
14	Total			
15	Average			
16				

With our border around our title, let's change shading inside the border.

- 1. Ensure A2 is selected in the Budget.xlsx workbook – we'll change the existing Fill color.**
- 2. Activate your Format Cells Dialogue Box,**
- 3. Select the Fill Tab as pictured at right.**
- 4. In the Patterns tab, you may simply choose a color and click OK.**
- 5. I have selected the Fill Effects and given myself an attractive gradient fill of blues.**
- 6. You can select different patterns with your colors, too.**
- 7. Make your creative selections and Click OK.**



You can make some distinctive and helpful borders and shadings for your titles, headings, and other cells that you wish to bring attention. You can save your eyesight, too.

Write your notes here: _____

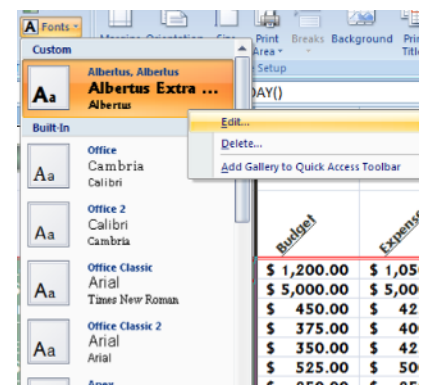
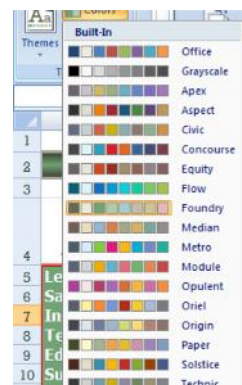
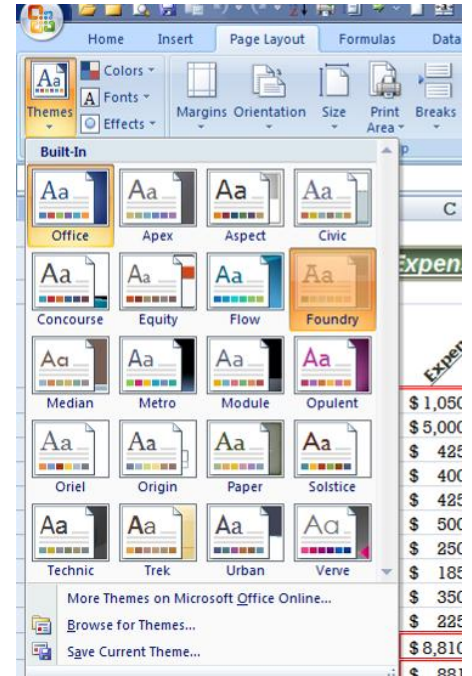
Important Tips to make your Formatting Experience Easier

Here are some other important and productive tips and tricks in helping with formatting and creatively using Excel in communication.

Themes

Themes across the Office Suite help with consistency and offer a variety of ways of changing your workbooks, documents, and presentations. The default *Theme* that *Excel* (and the Office Suite) uses is aptly entitled Office. *Themes* will change your Chart colors, fills, shadings, and other items in your workbook.

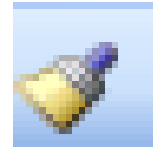
- 1. Open your Budget.xlsx file,**
- 2. Click the Page Layout Tab,**
- 3. Click the Themes button at the beginning of the Tab.**
- 4. Scroll through the gallery and look at various themes. As you move your cursor over a theme, Excel displays your worksheet in that them offering you a Live Preview.**
- 5. Select a Theme for your workbook and notice you can Create your own theme.**
- 6. You may use different color schemes and fonts. I have created my own Albertus Font Scheme as displayed at right.**



Format Painter

We will use the *Format Painter* throughout this course. Let's format Cell A5 and then use the *Format Painter* to copy this formatting to the other cells.

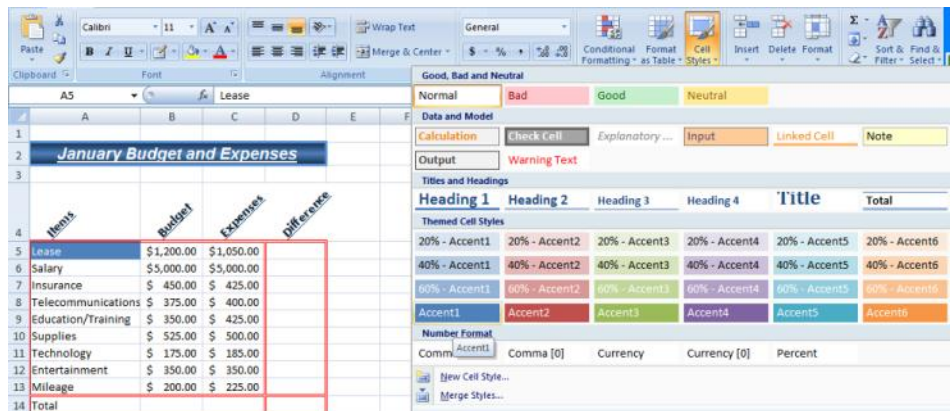
The *Format Painter* icon: This time saving button is *in the Home Tab's Clipboard group or in the Mini Toolbar*. – use your Screen Tip to assist in locating the command button as pictured at the right. *Format Painter* button allows you to apply formats from selected cells to other cells. *Select the formatted cells, click the Format Painter icon, and select the cells that you want to apply the formats.*



➤ **One click on the icon allows you to "paint" over once on the cells.**
Double clicking the Format Painter keeps the Format Painter active and allows you to "paint" over multiple cells or areas; you must re-click the Format Painter icon or press the Esc key to deactivate the painting function. ➤

This only copies the formats nothing else.

1. In your Budget workbook, Click Cell A5 which should have the word Lease in it.
2. Click the Cell Styles Icon and from your Style Pane choose a style from the Themed Cell Styles area. I'm choosing Accent1.



3. Next Format your cell further – I changed my font to Tahoma and Bolded the cell. Now, we want to apply this formatting to cells A6 – A15.
4. Make sure you are in cell A5 by clicking it or looking at your name box.
5. Click the Format Painter once.



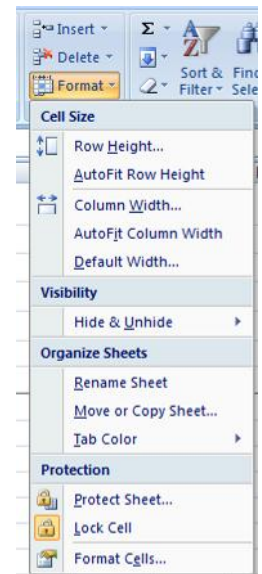
6. Your cursor turns into a paint brush.
7. Click and Drag the cells A6 through A15.
8. Your cells are formatted as cell A5.

After I accomplished this I decided the area had too many borders so I erased them and then I made Column A wider so the words would be visible. My completed formatting appears here.

	A	B	C	D
1				
2	January Budget and Expenses			
3				
4	<i>Items</i>	<i>Budget</i>	<i>Expenses</i>	<i>Differences</i>
5	Lease	\$1,200.00	\$1,050.00	
6	Salary	\$5,000.00	\$5,000.00	
7	Insurance	\$ 450.00	\$ 425.00	
8	Telecommunications	\$ 375.00	\$ 400.00	
9	Education/ Training	\$ 350.00	\$ 425.00	
10	Supplies	\$ 525.00	\$ 500.00	
11	Technology	\$ 175.00	\$ 185.00	
12	Entertainment	\$ 350.00	\$ 350.00	
13	Mileage	\$ 200.00	\$ 225.00	
14	Total			
15	Average			

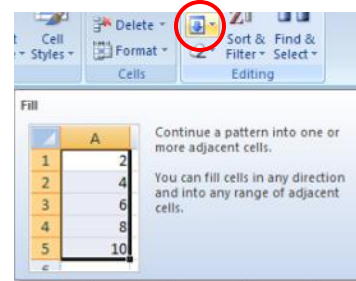
Cells Group

Depending on your screen resolution you may not be able to view the *Cells Group* on your Home tab, if you are then this can save time in quickly formatting your cells as the Format cascading menu appears here. My *Cells Group* is displayed below and the *Styles* and *Editing Groups* surround it. You can change your sheet names and Hide and Unhide, too. This is a time saving little menu.



F2: Filler' up with Fill Handle!

Perhaps you have heard of Phil Collins, Dr. Phil, or Phil Donahue, Excel has its own time saving and efficient tool called **Fill Handle**. *I call it the Dr. Fill of Excel. Fills* take our old, familiar copy and paste functions to a new level of data accuracy and efficiency. You use either the *Fill command button on the Home Tab* to fill your selection) or through your mouse operation. I'm a click and drag kind of guy and like the mouse method. So, I will concentrate on the mouse method, but will illustrate the Fill Command button.



Why use this Dr. Fill of Excel and what does Dr. Fill of Excel accomplish? Here are some of the magical uses of Fill:

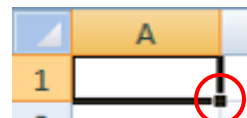
- ✓ *Copy Formula and Functions with or without Formatting to adjacent cells,*
- ✓ *Continue number patterns in adjacent cells, such as consecutive number (1, 2, 3, etc.) or multiples of numbers (3, 6, 9 etc) or even/odd numbers (2, 4, 6 etc.),*
- ✓ *Replicate Date Patterns, such as the first of every month or every other Friday,*
- ✓ *Making Schedules and Timesheets,*
- ✓ *Activate and use stored Custom Lists, such as Months and Days of Weeks.*

As in formatting we will use the **Fill Handle** throughout our course, especially for copying our formulas and functions and date series. Here are some exercises for us to use in getting to know Dr. Fill of Excel. Let's look at stored lists first and then we will customize our own list. We will look at using Fill for Number lists and date series, too.

Fill with Months and Weekdays

- 1. Open a blank workbook.**
- 2. Click cell A1.**

You will notice a little, tiny black box in the lower right corner of your cell border. This box appears on the corner all of your cell(s) that you are working in or have selected. Move your cursor over this box and the cursor turns into a plus (+) sign. That is Fill Handle.



Months

1. Type *Jan* then with Fill Handle,
2. Click and Drag down slowly, as you drag notice a ScreenTip will display Feb, Mar, etc as you Drag down.
3. Click and Drag to Dec or cell A12, when you release your Mouse button from dragging Fill will input the Months Abbreviations for you.
4. Wow, see the magic! Fill can type out the entire Month name, too, and can fill horizontally as well as vertically.



1. Click cell B1 and type April – (You don't have to begin with January for this to work),
2. Get your Fill Handle (+) in the lower right border of cell B1,
3. Click and Drag across to the right to cell M1 or March
4. Release your Mouse Button;
5. The full names of the months are displayed for you.

Days

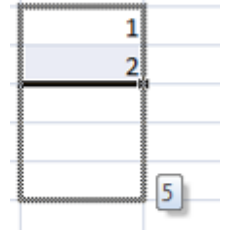
1. Fill Knows the Days of the Week, too.
2. Click cell C2 and Type *Monday*. Get your Fill Handle, Click and Drag to cell C8 or Sunday
3. Release your Mouse Button – the full names of the days are displayed for you.
4. Now, in cell D2, type *Sat* and fill the abbreviation of the days to cell D8.

Filling in a series of Numbers

Wait! Fill gets better and more powerful.

Consecutive Numbers

1. Click in a blank cell, and type the number 1.
2. Get Dr. Fill and press the CTRL (Control) Key.
3. With the Fill handle and CTRL key pressed, Click and Drag down.
4. Excel does consecutive numbering for you and you don't have to begin at 1 and 2.



Text with a Number

1. In Cell E2, Type *Volume 1*,
2. Get Fill Handle and Click and Drag down,
3. Notice the ScreenTip – Fill will display Volume 2, Volume 3, etc.
4. Drag down to Volume 20
5. Release your mouse button.
6. Fill Handle can be very smart and looks for patterns in your numbers and text.

Multiples of a Number

Now, let's accomplish a series of numbers or multiples of a number.

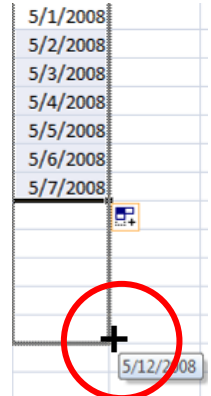
1. In Cell F2, Type 5 and in Cell F3 Type 10.
2. SELECT BOTH CELLS (This is an important step – Excel needs to “see” your pattern and examine it, so both cells of 5 and 10 need to be selected so Excel will know that you want multiples of 5).
3. Get your Fill Handle
4. Click and drag down slowly – notice Fill will display 15, 20, 25, and so on.
5. Release your mouse button and you have a series of multiples of 5.

If Dr. Fill can identify a pattern it will recreate it for you; otherwise, Fill will copy your data, functions, formulas, and text! This is a easy and great method of copying continuous information and data.

Filling in Dates

Consecutive Dates

1. In another blank cell type in today's date,
2. Get the Fill Handle and click and drag down notice that Excel provides consecutive dates for you as displayed at right.
3. You can Fill up, too and fill will reverse the order.
4. In Cell F12 type today's date and get your Dr. Fill handle and click and drag UP. Notice that the dates will fill in reverse order.



Bi-Weekly or other Weekly Dates

1. In another cell type in a date one week from today (such as 05/07/08 and 05/14/08).
2. Select both cells,
3. Get your Fill Handle,
4. Drag down – Dr. Fill will provide dates that are a week apart!
5. Release your mouse and there are your weekly dates.



Monthly Dates

You may use this for the first of every month or other monthly date,

1. In a blank cell, type in 01/01/09 in one cell and 02/01/09 in an adjacent cell,
2. Select both cells
3. Drag across to see fill adding 03/01/09 and 04/01/09 etc.
4. Release your mouse button after several dates.
5. This is great for billing dates, payment dates, etc.

♫ The trick is to remember to select BOTH cells so Excel can see the pattern you are creating, otherwise, Excel will fill in your dates sequentially. ♪

Excel 2007 allows you to use Fill in with bi-monthly, quarterly and other dates.

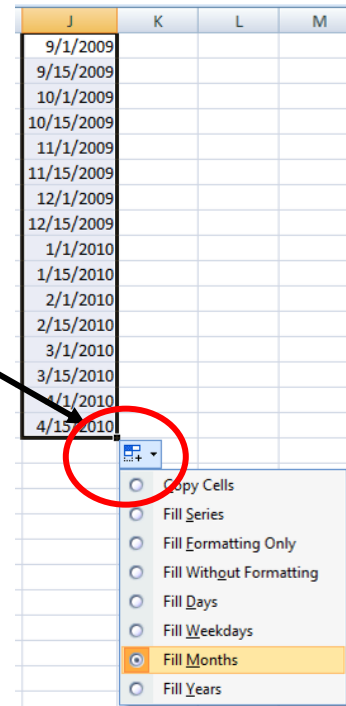
Relative Dates

We have used dates that are absolute – that is specific dates (and days) and exact time periods.

There are dates that are relative such as the 1st and the 15th of every month, or the second Wednesday of each month. These dates change based upon the month or week. Let's look at how to use Relative Dates in Fill.

1. In a blank cell type 09/01/2009.
2. In an adjacent cell type 09/15/2009.
3. Get your fill handle and fill down for a year of 1st and 15th of the months.
4. OOPS! Excel messes up badly and can't figure out the 1st and 15th of the months.
5. Select 09/01/2009 and 09/15/2009 again,
6. Fill Down and this time notice the *Insert Fill Options box*,
7. Click the drop down arrow and a menu like the one to the right appears.
8. Click Fill Months and wow – Excel repairs itself with the correct dates for you.

This is a handy feature to know in using custom date series and other types of series. The shortcut menu for your Fill options allow you to copy cell contents or Fill the series in a variety of ways.



Fill and Custom Lists

Fill is pretty smart, but where does it get the intelligence to type the months and days for you? Let me show you, but first lets create our own list and use it with Fill.

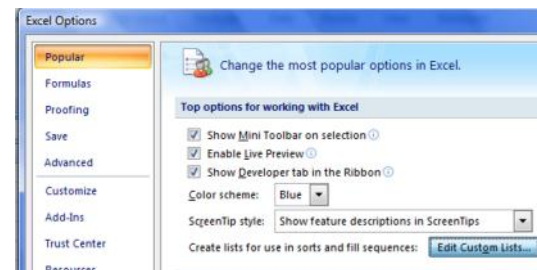
1. Enter the following information in column G:

<i>Cell</i>	<i>Information</i>
G1	Atlanta
G2	Chicago
G3	New York City
G4	San Francisco
G5	St. Louis
G6	Denver
G7	Seattle
G8	Miami

2. Click and drag to select cells G1 through G8.
3. Next, Click the Microsoft Office Button on the upper left part of your screen and from the menu, click the *Excel Options Button*.



4. The Excel Options screen appears, Click the *Edit Custom Lists...* button on the Popular Tab.



5. The Custom Lists Pane will appear as displayed below.

This is where the magic comes from in Excel to know to use the months and days.

6. Click the Import Button and Excel enters your selection into the List Entries box. Now, your list is ready to use throughout Excel.

You may enter new lists from here by clicking the Add button and typing in your list.

7. Click OK.

8. Open a New Workbook.

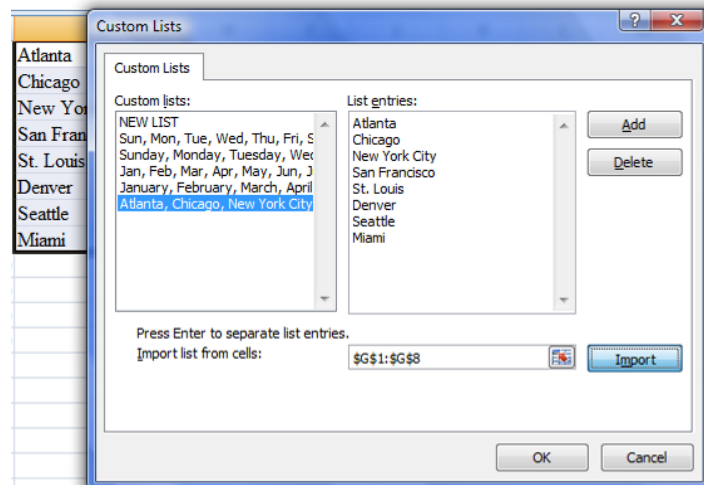
9. Type in one of your entries, such as a city that I demonstrated above.

10. Get your fill handle and click and drag to fill in your text information.

⊗ An Important Gotcha! The Add and Delete buttons in this dialogue box deletes or adds an ENTIRE list not an entry in the list! ⊗

We will be examining many of the tabs in Options later in our course.

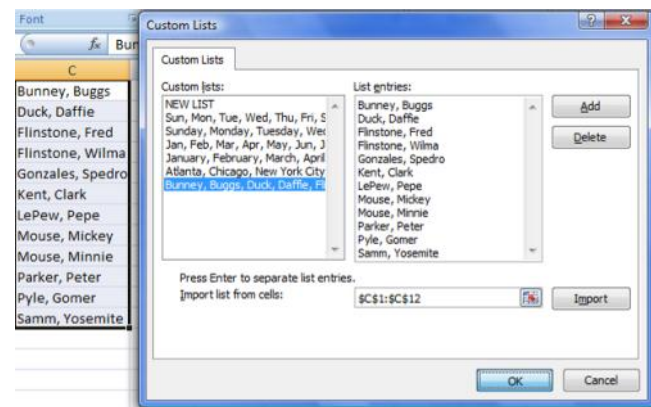
♪ You can create all sorts of imaginative lists of items that you frequently and repetitively type, such as company names, employee names, etc. You can create list in this dialogue box by selecting NEW LIST in the Custom lists box, type your entries in the List entries, and then Click Add. Try it. ♪



Names

I used Excel as manager to quickly add my associates names for schedules, personnel information and other uses. I entered my associates names by Last Name and First name separated by commas. Next, I selected the cells and went to the Custom lists pane as pictured here – Notice my associates names are created as a list here by Last Name and First Name separated by commas.

This made it handy to not enter repetitive data by typing the same list over





.....
and over and over again.

This makes sorting by last name and first name a breeze, too.

⊗ **An Important Gotcha!** While using lists are great, be careful not to use repeating names in your lists otherwise Excel won't know which list to use or may use the wrong list. For example, if you have an associate named Jan or April, and you begin your name list with Jan or April, Excel won't know whether to use your Month list or your associate list. You could start your list with another associate name and the list would work, but may not work if you use Jan or April. You could just not hire anyone named Jan or April, too!⊗

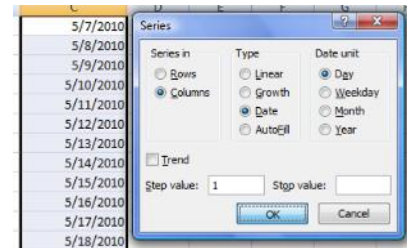
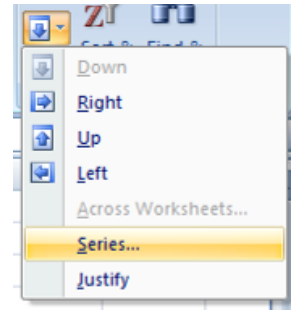
If you are ever responsible for schedules, this is a terrific timesaver. You can fill in your dates using a date pattern as discussed previously and build a custom list of names or activities for your schedule.

♪ *Write your notes here:* _____

Home Tab and the Fill Command

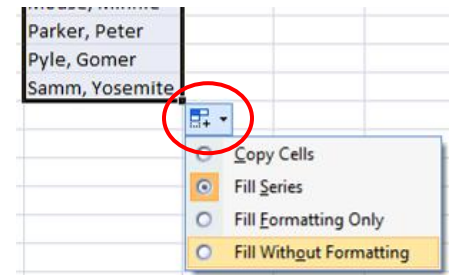
To use Fill from the *Home Tab*, Click the *Fill command*, and then the options at right appears for you to apply the fill *to the selected area*. Using the Fill Command you should select the area you want Excel to fill before applying the fill. *For Example:*

1. Type in a date in a cell.
2. Select a range of cells to use for additional dates.
3. Click the Fill Command button on the Home Tab.
4. Click the Series. . .
5. The Screen at right appears.
6. Notice all of the options for your fill including Weekday, etc.
7. Click OK.



Excel fills in Consecutive Dates for you as we previously accomplished using the Click and Drag method and the Fill Handle.

As we learned with the date fill, Excel 2007 has a *Fill Icon* that is pictured at right. When you use Fill, this icon will appear and provide shortcuts to select your formatting options and other options. The top item is *Copy Cells* – I use my Fill handle a lot to copy formulas and functions in Excel.



Select a cell with your formula and click and drag the area to copy your formula too – this works when the areas you are copying are continuous. Using Fill in this manner is like using Copy and Paste but in one, visual step. As I wrote at the introduction one of the most powerful and productive tools of Dr. Fill is to *copying Formulas and Functions*. We will use *Dr. Fill* in our next sections of *Forming our Formulas* and *Putting the Fun back into Functions*. We use *Fill* a whole lot in future sections and exercises.

Time to learn the true power of Excel's number crunching machine and that is *Formulas and Functions*.

F3: Forming our Formulas

The third F of Excel is the heart and soul of Excel. Excel is Excel because of the powerful Formulas and Functions that the application uses or that you may produce. Excel is “Excel-lent” at providing very complex and very simple built-in functions for you to use or you may create your own formulas. We will build simple formulas first and then use some of the functions in our Fourth F of Excel. Now, to “form” our own formulas.

In the beginning is the *cell*. As introduced at the start of this course, a *cell* is the intersection of a column and row, for example cell A1 is the intersection of Column A and Row 1. Generally, A1 is your “home” cell. If you are in another section of Excel and wish to return to the beginning of the worksheet press *the CTRL key and the Home key* simultaneously. We have entered text and number in cells and have formatted them. Now, we will insert formulas in cells and use the cells in calculations.

*Formulas and functions in cell begin with the equal (=) sign. A formula in a cell maybe =2+2 or =(8*2)+10. However, in Excel rarely will you use a specific number in a formula. You will use various cell references for your formula to get the numeric value.*

Formulas in Excel follow the order of algebraic standards:

- ✓ *Items in parentheses are calculated first and work left to right,*
- ✓ *Exponents are calculated next,*
- ✓ *Multiplication and Division numbers/cells are then calculated,*
- ✓ *Finally, Addition and subtraction items are calculated.*

Excel uses common Mathematical operators. The mathematical operators are:

Mathematical Operators

Addition	+
Subtraction	-
Multiplication	*
Division	/
Exponents	^

Symbols in Formulas and Functions

Below is a table of symbols and what they mean in formulas and functions. This will help explain and use the syntax that Excel needs in order to work properly for your formulas and functions.

<i>Symbol</i>	<i>What it means</i>
: (A Colon, such as A5:G5)	Think the word "Through" or A range of cells, so the sample at left would be "A5 Through G5"
, (A Comma, such as A5, C5, D5)	Think the word "And" or specific cells, so the same at left would be "A5 and C5 and D5"
() (Parenthesis - Cells used in the function or you may see a function without cells but has the () which is needed for the function to work, such as =TODAY() - which will put the date on the computer in your work sheet and update the date automatically for you.	Specifies the cells or range of cells needed for the Function or to separate items that need to be calculated in a specific order for your formula.
! (An Exclamation Point, =SUM(January:December!B5)	Think the word Join, The Exclamation points joins or connects different workbooks, worksheets, and cells in Functions and Formulas
= (Equal Sign, =A5 + A6+	Think "Excel I'm, giving you a formula or function." All Formulas and Functions must begin with an equal sign =.
\$ (A Dollar Sign, such as \$B\$5)	Think the word "Only". Only use this cell in a calculation even if the cell's formula is copied to other cells the cell reference will not change. This is the Absolute Reference symbol.

Cell Referencing and Addressing

Aside from entering numbers for calculations, the primary power of Excel is Cell addressing and references: *Cells* have various types of *addresses and references*. I explain them below and demonstrate them in the coming pages. We will be using these types of addressing throughout the course. Please use this information as a reference in the future. As we build various types of formulas we will refer back to this section.

Relative Address

Relative Address: A relative address changes the address of the cell relative to its location. If you enter a formula calculating cell B3 as follows $=B1+B2$ then copy the cell to C3 the formula changes based upon the relative address to $=C1+C2$. You may quickly and easily copy formulas; we discussed this in our previous section *Excel F2 – Fills and will use this in the upcoming exercises*.

Absolute Address

Absolute Address: An absolute address of a cell does not change. The absolute address symbol is the dollar sign (\$). If you enter a formula in B3 as $=\$B\$1+B2$ and then copy the formula to C3 the formula becomes $=\$B\$1+C2$. The absolute address allows you to specify your calculation using a specific cell for all calculations. As an example, if you want your expense items to increase by 3%, you would place 3% in a cell and reference this cell in your expense calculations using the \$ symbol. When you see a \$ in a formula, function, or cell reference think the word “only”, such as if you see $\$A\1 think “*only use Cell A1 – do not change this reference even if I copy it.*”

Mixed Address

Mixed Address: This uses both relative and absolute addresses. If you want the reference in a particular column or row *not to change* And another reference in a particular column or row *to change*, you would use $=\$A1+B1$ in cell C1 (Column A would be used however the row would change). If you copy this cell to C2, the formula becomes $=\$A2+B2$.

3-D References

3-D References: This uses cells in other worksheets. The *exclamation point (!)* separates the worksheet name and actual cell. If you want to add January rent and February rent for a total in March, you would enter a formula in the March worksheet as follows:
 $=January!B5+February!B5$ (Note that your formula bar will guide you through the calculation and illustrate your position in accomplishing the formula or function.

Confused? Dazed? Join the club! Plan your formulas, play around, and at the final straw (usually when you get the #VALUE, #REF, or another error for the 100th time) rely on **Help** by searching on Cell Reference by pressing the F1 key or pressing the Help button.

Since we have had an overview of formulas and cell referencing, we will begin “forming” our

formulas in our *Budget*.

1. With *Budget workbook* Open, we will input a formula in Cell D5.
2. Click in Cell D5 and *Type (or you may click your cell reference) =B5-C5*. This will calculate the difference between our budget and our expense. Notice the information is in your formula bar and cell
3. Press the enter key.
4. Our calculation appears!

5	Lease	\$1,200.00	\$ 1,050.00	=B5-C5
6	Salary	\$5,000.00	\$ 5,000.00	

As you construct your formula, you can type your cell references instead of clicking them if you like. We could use our Fill Handle to copy this formula down through the column, but let's get practice manually inputting formulas. This time instead of typing the formula we will use the click method.

1. Click in Cell D6 and Type =,
2. Click Cell B6, Notice the Cell Reference of B6 appears in your D6 Cell and Formula bar,
3. Type a – dash or minus sign for subtraction,
4. Click Cell C6,
5. Press the Enter key,
6. Our calculation appears.

A Hot Tip! Now, let's use the *Fill Handle* to copy the remaining cells.

1. Click cell D6,
2. Position your cursor over the right, bottom corner of Cell D6 when you see the plus (+) sign Click and Drag down to row 15 or if you double click Dr. Fill in cell D6 our formula will fill to Cell D13 and then we would need to fill through D15 for our Total and Average functions that are upcoming.

		Budget	Expenses	Difference
1				
2	January Budget and Expenses			
3				
4	<i>Items</i>			
5	Lease	\$1,200.00	\$ 1,050.00	\$ 150.00
6	Salary	\$5,000.00	\$ 5,000.00	\$ -
7	Insurance	\$ 450.00	\$ 425.00	\$ 25.00
8	Telecommunications	\$ 375.00	\$ 400.00	\$ (25.00)
9	Education/Training	\$ 350.00	\$ 425.00	\$ (75.00)
10	Supplies	\$ 525.00	\$ 500.00	\$ 25.00
11	Technology	\$ 175.00	\$ 185.00	\$ (10.00)
12	Entertainment	\$ 350.00	\$ 350.00	\$ -
13	Mileage	\$ 200.00	\$ 225.00	\$ (25.00)
14	Total			
15	Average			

👉 A Hot Tip! Simply double click the (+) fill sign in Cell D6 and the formula will fill down automatically to the bottom of the worksheet area. Fill will go down as far as the adjacent column goes. We'll use this in some productive ways in the advanced part of your education. 👉

Fantastic! Excel and Dr. Fill has copied your formula and included the formatting, too.

We have calculated our differences between the budget and the expense items. We will be developing other formulas throughout the course. But we have our foundation for formulating our formulas. *Now, to put the Fun back into Functions!*

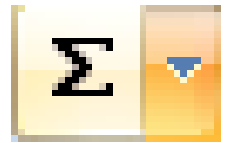
🎵 *Write your notes here:* _____

F4: Putting the Fun into “Fun”ctions

AutoSum

Now, that we can calculate cells based upon data in other cells - let's make life easy and powerful with built in functions. We will be using some of the most popular and easiest to use functions here and some of the more complex functions later in our course.

On your *Home Tab* you will see the *AutoSum* and a *Drop Down Arrow* next to it on your *Editing Group* and is pictured to the right. Use the *AutoSum* key to summarize a cell range. Use the Drop Down arrow to select a common *function* and this offers you other functions that will provide assistance in creating other *functions* . If you are a Liberal Arts Major, don't freak out by all of the functions! If you hate algebra, trigonometry, or other mathematical equations just the names of some of these functions will scare you. If you are an accountant, scientist, engineer, or numbers crunching financial analyst you will love these scientific, financial, and other mathematical wonders, you have found numbers heaven. For the numerical challenged or brave heart take a peek at the Statistical Function category and Function names. This intimidates me, but may thrill you! We will use several of the functions. First, let's use the easy and powerful *AutoSum key*.



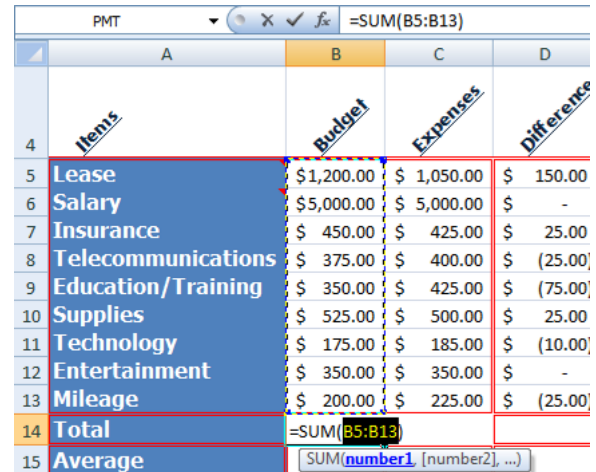
♪♪ Ranges of cells may be selected by typing or selecting the first cell, typing a colon (:), and typing or selecting the final cell to include in your function. For example, notice on the January worksheet that cell B20 Sums cells B5 through B19. We can also select a cell and click and drag for Excel to select the range for us. ♪♪

Sum: You may type **Sum** after entering an equal (=) sign or select the cell in which you want to **Sum** and press the **AutoSum** icon. Like mathematical magic, Excel enters the =SUM formula and will provide the range in which you want to sum! If the cell range is not correct, use your mouse to click and drag the correct range to Sum and press the enter/return key. The result is displayed.

Let's use the Sum function by clicking the AutoSum icon. Here are the steps:



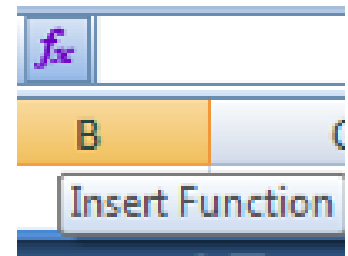
1. Click in Cell B14.
2. Click the AutoSum icon.
3. The formula: ***=SUM(B5:B13)*** should be displayed. If not, you may type the range here or click and drag to select the correct range.
4. Press Enter.
5. Your total appears for this range of cells.



	A	B	C	D
4	Items	Budget	Expenses	Difference
5	Lease	\$1,200.00	\$ 1,050.00	\$ 150.00
6	Salary	\$5,000.00	\$ 5,000.00	\$ -
7	Insurance	\$ 450.00	\$ 425.00	\$ 25.00
8	Telecommunications	\$ 375.00	\$ 400.00	\$ (25.00)
9	Education/Training	\$ 350.00	\$ 425.00	\$ (75.00)
10	Supplies	\$ 525.00	\$ 500.00	\$ 25.00
11	Technology	\$ 175.00	\$ 185.00	\$ (10.00)
12	Entertainment	\$ 350.00	\$ 350.00	\$ -
13	Mileage	\$ 200.00	\$ 225.00	\$ (25.00)
14	Total	=SUM(B5:B13)		
15	Average	SUM(number1 [number2], ...)		

Wow! Even a "Math Challenged" person like me can use this quick and easy icon to perform totals and subtotals in columns or rows.

♪ You may also use the fx - Insert Function button by the Formula bar to activate the Insert Function dialogue box we will use in a moment. The button is pictured at right. ♪





Time to recall our friend the **Calculations in the status bar**. As described earlier, the status will quickly provide you results of **functions**, including **Average** and **Sum**.

1. **With your Budget.xlsx open,**
2. **Click Cell B5 and Drag to Cell B13;**
3. **The Calculations should show on your status bar based upon our selections earlier in the course.**

Average: \$958.33	Count: 9	Numerical Count: 9	Min: \$175.00	Max: \$5,000.00	Sum: \$8,625.00
-------------------	----------	--------------------	---------------	-----------------	-----------------

The syntax for our functions is very important. If proper syntax is not used, Excel will give you error messages or calculate incorrectly. Here are the important notes 🎵 🎵 to remember:

- ✓ *All formulas and functions begin with an equal sign =.*
- ✓ *Parentheses are used in functions to separate the function name from the range of cells or the specific cell(s) that is to be used in the calculation.*
- ✓ *The colon is used to specify a range.*
- ✓ *Other separators such as commas may be needed for a function which we will use later with the PMT function.*

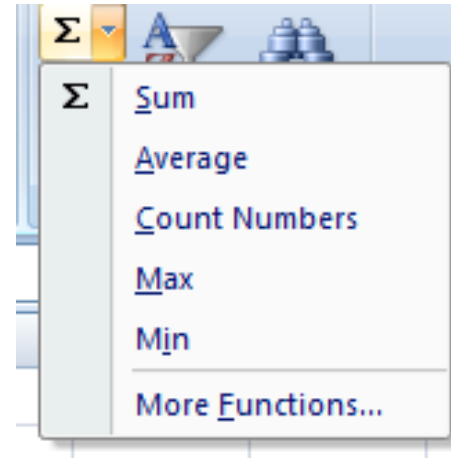
Let's enter the SUM function manually in Cell C20. Here are the steps.

1. **Click in Cell C14.**
2. **Type: =sum(c5:c13)**
3. **(Notice I used lower case letters, Excel will convert the text properly for you.)**
4. **Press Enter.**
5. **Your result appears.**
6. **Click and Drag Cell C5 through C13 and verify the accuracy of the SUM function with the calculation box.**

Let's practice by creating a Sum in cell D20 for the range D5 through D19 either typing in the function or using the AutoSum icon. Note 🎵 We had better hope to see a positive number in this cell or else we have blown our budget! Now, that we have mastered the AutoSum icon and the SUM function, let's use the Average function. 🎵 🎵

Other Functions

Using the **Drop Down arrow** next to your **AutoSum** icon will provide a list of popular functions as well as the ability to activate more complex functions using the **More Functions... item** on this menu. We will use **the More Functions. . .** later. Below are some of the other functions we will use. The **Average** and other functions use the same syntax, instead of **SUM** being in the formula other text is substituted – the rest of the syntax is the same.



Average: Provides the average of selected cells. Formatted as:
=Average(B5:B13) or =AVG(B5:B13). .

Max and Min: Provides the largest (maximum) number in a selected range of cells and the smallest (minimum) number in a selected range of cells. (Duh!)

Count: Will do just that: Count the numbers in your selected list of cells, for example, Cell B5 through B19 is 15 numbers. The function displays as =Count(A5:A19)

Let's use the Average Function in Cell B15 and C15. Here's how:

1. Click Cell B15,
2. Click Drop Down arrow next to the AutoSum icon,
3. Click Average,
4. Excel will "guess" B5:B14 – this is wrong!
5. Edit the function in the Formula Bar as pictured at right or in the Cell B15.
6. Change the Cell reference from 14 to 13 – Select your number 14 and type over it with 13.
7. Excel will provide a Blue Border around your range for you to see the range you have entered.

Items	Budget	Expenses	Difference
Lease	\$1,200.00	\$ 1,050.00	\$ 150.00
Salary	\$5,000.00	\$ 5,000.00	\$ -
Insurance	\$ 450.00	\$ 425.00	\$ 25.00
Telecommunications	\$ 375.00	\$ 400.00	\$ (25.00)
Education/Training	\$ 350.00	\$ 425.00	\$ (75.00)
Supplies	\$ 525.00	\$ 500.00	\$ 25.00
Technology	\$ 175.00	\$ 185.00	\$ (10.00)
Entertainment	\$ 350.00	\$ 350.00	\$ -
Mileage	\$ 200.00	\$ 225.00	\$ (25.00)
Total	\$8,625.00	\$ 8,560.00	
Average		=AVERAGE(B5:B13)	



-
8. Press enter.
 9. Your Function is correct.
 10. Using your fill handle in Cell B15 fill this Function over to Cell C15 and notice that Excel and Dr. Fill will change the reference from B5:B13 to C5:C13 – this is using Relative Cell Addressing or Referencing.

I encourage you to experiment with the functions.

℘ Excel will guess your range of numbers for a Function in the following manner:

- ✓ *If there are numbers to the Left of the function Excel will assume all of the cells with numbers in them to the left.*
- ✓ *If there are no numbers to the left, Excel will assume numbers above it. Excel will use all of the cells with numbers above the cell containing the function – much like the Average function included the wrong Cell in its assumption.*
- ✓ *Excel doesn't usually assume or guess a range if it doesn't "see" numbers to the left or above the function cell.*

⊗ While I like for Excel to assume certain ranges, care must be given in examining Excel's assumption of ranges to ensure that the range is correct. Don't assume that Excel will be correct. Excel is smart, but not that smart. ⊗

So we have begun really *Excelling at Excel*. We will look at several great functions, such as the PMT function. This function will calculate loan payments based upon loan amount, interest, and number of payments. We will build an amortization schedule, too, using all types of formulas.

Great! We have our January budget and expenses completed! We will build February through December after we look at our final F - *Filters and Sorts*.

℘ Write your notes here: _____

F5: Filters and Sorts

Our *final F is Filters and Sorts*. We will learn *Filters and Sorts* using our *Track.xlsm* workbook file. This workbook has an extension of *xlsm* in order for us to accomplish Macros in this workbook. The *m* in *xlsm* is for a macro enabled workbook which we will learn later.

Quickly here are what filters and sorts are:

- ✓ *Filters provide a quick way of viewing certain information and can include criteria for displaying your information.*
- ✓ *Sorts allow you to order your data in various ways.*

Filter is a great way to view information or data based upon criteria and selecting items from a *drop down list or pick list*. We will use several different types of *Filters* such as *Text, Top 10* and *Custom* as well as using the powerful and easy drop down list items.

Here are the ways to access Filter and Sort:

- ✓ *The Home Tab the Editing Group contain Filter and Sort Commands,*
- ✓ *The Data Tab includes a Sort & Filter Group,*
- ✓ *Right clicking and the Filter and Sort items are included in the Short Cut Menu.*

We'll use all these ways to Filter and to Sort.

- 1. First, let's open the Track.xlsm workbook,**
- 2. Click the Jan tab.**

Excel Database

This workbook and worksheets contain a *database* or *data table* of information that begins with the *Header Row* (or *Field Names*) of Order, Date, Customer, etc. The top area of the worksheet is for summary information and titles. Excel works very differently when used as a *database* like this list of customers. This is *a tracking system* or *database* of information about our customer sales and orders. With your information organized in this fashion Excel works great with items such as sorting, filtering, sub-totals, Pivot Tables, and other items we will examine. An Excel database contains a row called *Column Headings*, I like to think of this as our field names, all rows beneath this row contain only data or a calculation, but not sub-totals or blank rows.

⊗ **An Important Gotcha Your Excel table or database should not contain blank rows or columns; you may have blank cells but not blank rows or columns. Excel considers a blank row or column to be the end of your database or table. ⊗**

1. Click the Income Tab in the Track.xlsm file.

This worksheet is not a database and is not good with filtering and sorting. This worksheet is a typical type of Excel worksheet with items being totaled and sub-totaled in rows and columns. You could Sort a specific area, such as A7 – G11, but not a column or other area. Filtering would not be useful in this type of worksheet, either.

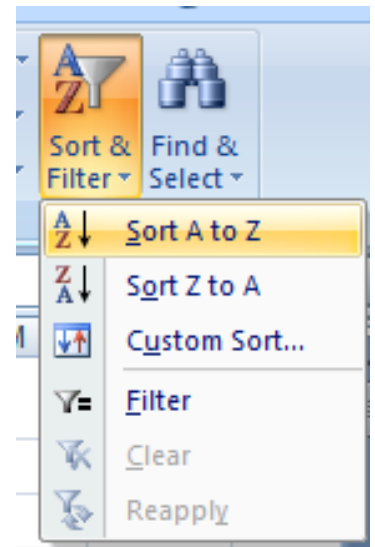
Filter through A List

Let's get ready to Filter

- 1. In your Track workbook,**
- 2. Click the JAN worksheet**
- 3. Click cell C8. – the first cell under your Customer Field name or column heading.**

✍ You should be in your data or table area and near your header row in order for Excel to know how to and what to filter. Otherwise, Excel will give you an error that it could not find a list; therefore, be in your list area. ✍

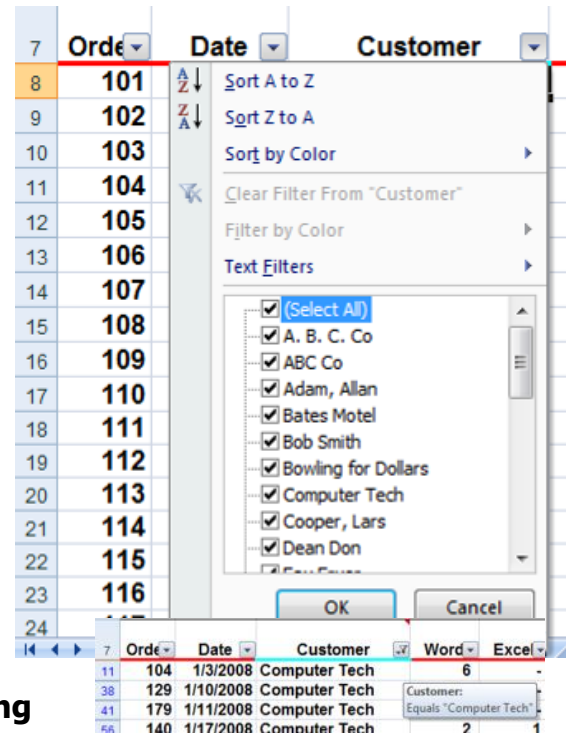
- 1. On Home Tab,**
- 2. Click the Sort & Filter command button,**
- 3. Trace to Filter and Click it.**



As pictured, small drop down arrows appear in your column headers or fields.

1. In the Customer header,
2. Click the Drop Down arrow,
3. A Menu of your Customer Names appears.
4. Click the Select All check mark item to deselect all of your items, next Click the Computer Tech box ,
5. Click OK,
6. Excel Displays only Computer Tech..

Filters will display only certain information for you. The data is not deleted and when we remove the filter all rows will display again.

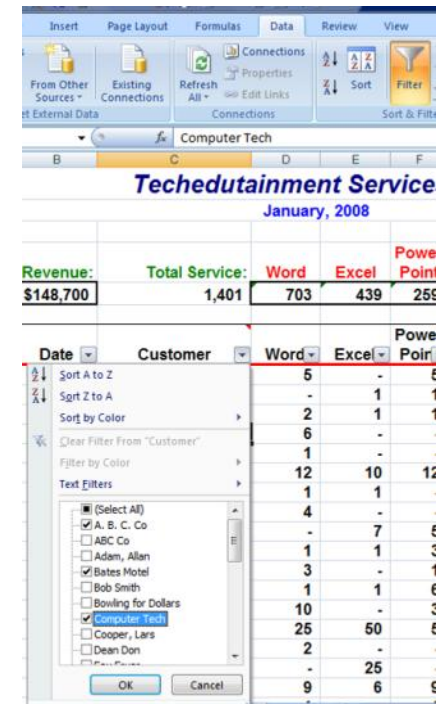
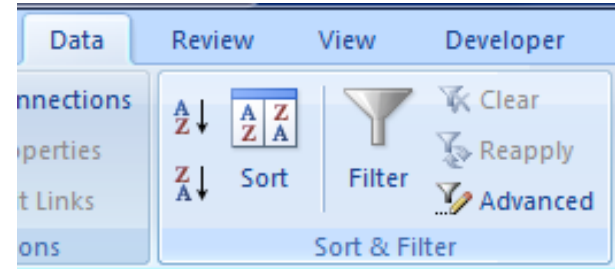


1. Notice the Drop Down arrow has turned to a Filter icon this indicates that a filter is on for this field and when a screen tip appears alerting you to the criteria for this filter as pictured at right,
2. Click the Drop Down arrow,
3. To view all of your data again without turning off the Filter, Click the Select All box – You may need to scroll up to see the All selection.
4. Click OK and All of your customers and their data appear again.
5. Click the Sort & Filter button and from the menu click the Filter item to turn off your filter.
6. Notice that when you have your data filtered, the Sort & Filter button on the Home Tab activates Clear and Reapply for you. You may remove your filter by clicking the Clear button and then you are ready for additional filters.



If you prefer, you could use the Data Tab to Filter, too.

1. Click in your Customer list on the Jan tab,
2. Click Data Tab and Click the Filter Button in the Sort & Filter Group,
3. Excel activates the Drop Down arrows for your Column headers or Field Names.
4. Click the Customer Arrow and Click the Select All box to deactivate your selections.
5. Click a few customers whose data you would like to view.
6. Click OK.
7. To view all of your data again, click the Clear button in the Sort & Filter Group of the Data tab. The Clear button becomes active when you have a filter on.
8. Try several different selections for specific dates, amounts, and other filters based on your selections.

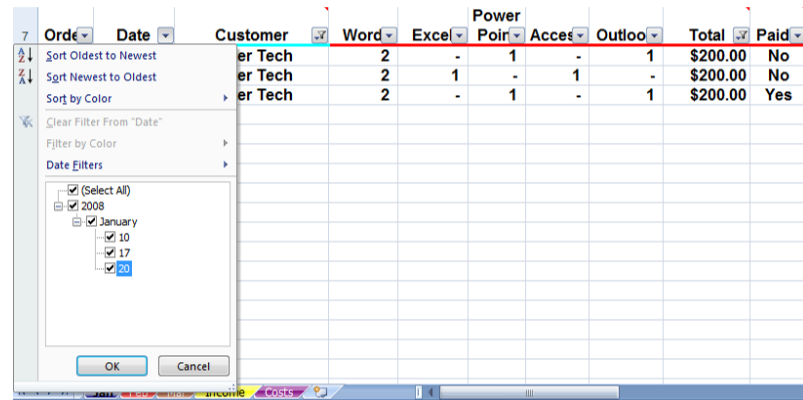


⊗ **An Important Gotcha!** Notice that you have two entries for ABC Co. Databases and data tables are very literal and must have consistency. Databases and Data tables/list won't make assumptions and spaces and periods count in names of items. Excel has a terrific feature entitled AutoComplete. (This item is found under your Office Button and Excel Options and the Advanced section and the Editing Options has the AutoComplete enabled checked for you. We'll look at these options later.) If you begin typing a name that Excel can recognize from your list, Excel will display that for you to press enter to accept the entry automatically for you. For example, if you go to Cell C83 and type Com - Excel will display Computer Tech for you to accept or to continue typing your own name. Please use AutoComplete or be very consistent in your names and other items. ⊗

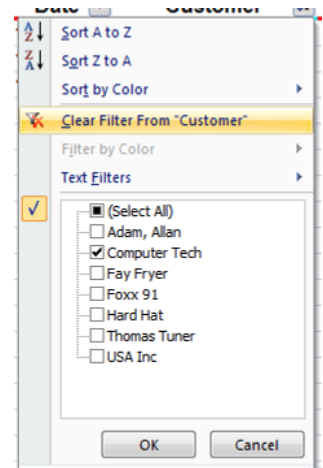
Multiple Filters

Let's filter the filter and then filter our filtered list!

1. Have *Track.xlsx* open and the *Jan* Worksheet is active.
2. Have your *Filter* on.
3. Click the Drop Down Arrow and from the cascading menu Click the **Select All** box to deselect everything. Next, click the **Computer Tech** box to display on Computer Tech's information,
4. Next, Click the Drop Down arrow for **Total** and deselect all of the items and Click **\$200**.
5. Only Computer Tech totals for \$200 appear. We have two criteria, now, for our filter.
6. Click the Drop Down arrow for **Date** and from the list choose **January 20**.
7. You now only see one row that meets the criteria of Computer Tech, \$200, and January 20, 2008. With the date notice the ways you may filter by year, month, and date.



➤ When you have multiple filters on you can remove specific filters easily through the drop down arrow on a field that is filtered. The short cut menu at right appears – notice the **Clear Filter From "Customer"** – Excel would remove this filter but keep the other filters for you. ➤

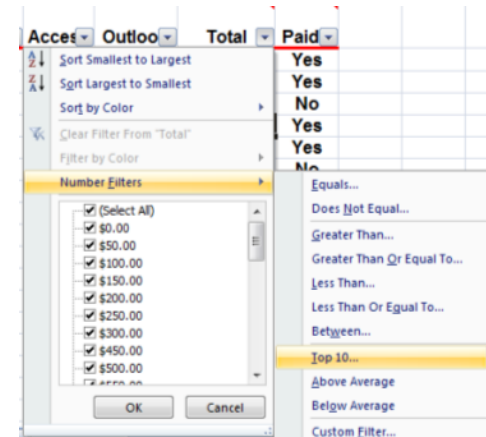


Top 10

Excel's *Filter* can make *Top* and *Bottom* number lists easy. You can specify whether you want *items* or *percentages*. While the name says 10, you can specify the number you wish. For example, if wanted the top 12 revenue producing clients you could specify a total column to show only the top 12 items. If multiple numbers meet the criteria or a tie, Excel will not stop at the number you specified. For Example, if your top 12 list include 3 clients with the same billing in the 12th spot – Excel would display your top 14 instead of 12. Excel won't make the assumption about which client you would prefer to see given a tie.

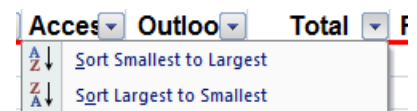
Let's filter for our top 6 billing days.

1. With Filter active on your Jan tab of the Track.xlsm workbook,
2. Click the Drop down arrow for Total,
3. Trace to the Number Filters item,
4. Click the Top 10 item from the list,
5. The Dialogue box at right appears,
6. Ensure Top is displaying – you may also look at the Bottom or lowest items – in our case here we could look at the 6 lowest billing accounts (losers!)
7. Next from the number area change the 10 to a 6 using the spinner control or typing in 6,
8. Next keep the Items displayed as pictured above you may also Show by Percent,
9. Click OK.



Great! Now let's sort the list From Largest to Smallest.

1. Using the Filter Drop Down arrow for Total and clicking Sort Largest to Smallest – Excel sorts this for us from the greatest amount to the least amount.
2. Notice that your list has more than 6 – there are multiple \$5,000 dollars at the 6th mark so the list is expanded.





.....
Remember the Calculations in your status bar? Select your list in the Total column and notice your Sum, Average, and Count functions in the status bar, if you have these items activated.

Write your notes here: _____

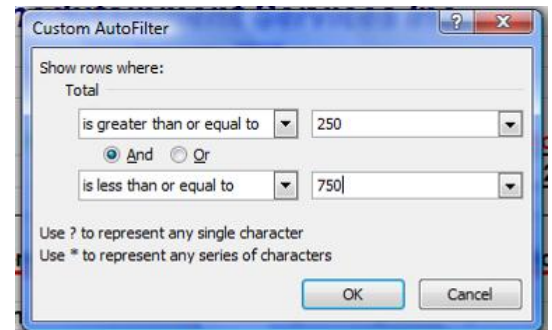
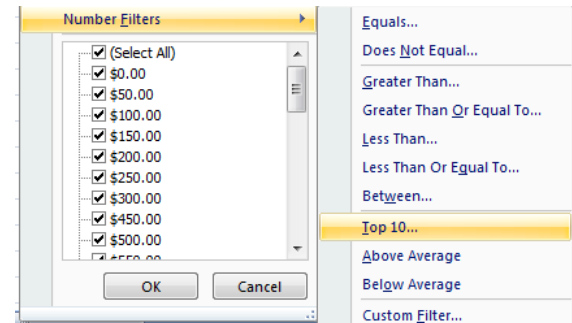
Custom Filters

You can specify a range of items for the filter to apply. You can have dates, numbers, and other items filtered with a range. We will create a filter that will display our mid-range billing clients. Depending upon the type of data that exists in a column Excel provides different type of filters. We'll look at different filters for different types of data such as Text, Numbers, and Dates.

Number Custom Filters

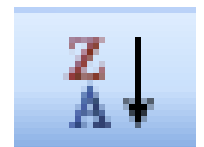
Let's filter for a range using the *Total* column.

1. The *Track.xlsm* file is open and *Filter* is Active,
2. Click on the Drop Down Arrow for *Total* notice all of the number filters such as Great than and so on.
3. Click *Between. . .*,
4. The *Custom AutoFilter* dialogue box at right appears.
5. Using the pictured dialogue box as a guide, ensure Excel provides is greater than or equal to
6. then press *Tab* Key or *Click* the second box,
7. Enter *250*.
8. Ensure the *And* radio button is on.
9. Press the *Tab* key or *Click* in the next box.
10. Ensure "*is less than or equal to*" appears and *Tab* to or *click* the next box,
11. Enter *750*,
12. Click *OK*.



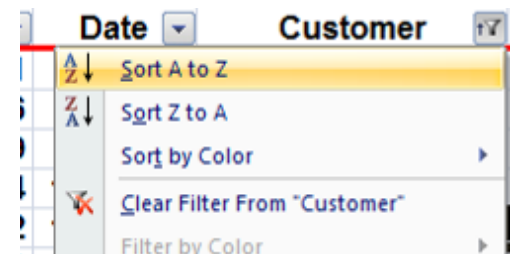
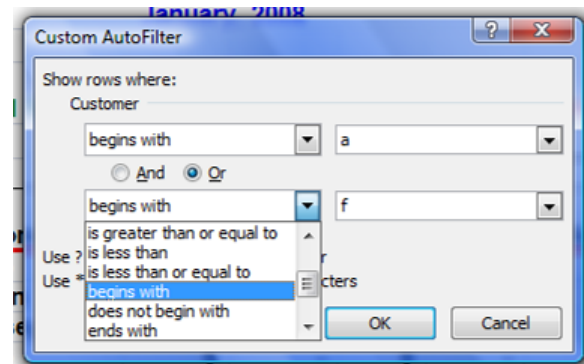
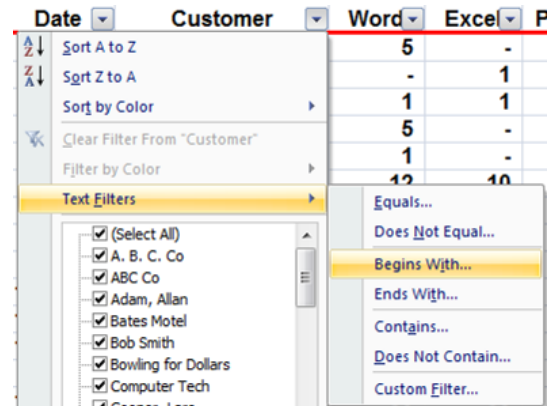
Your range of customers appears.

Sort Descend this column using the *sort descend icon* on the Data Tab or the Filter Drop Down arrow for the Total Column.



Text Custom Filter

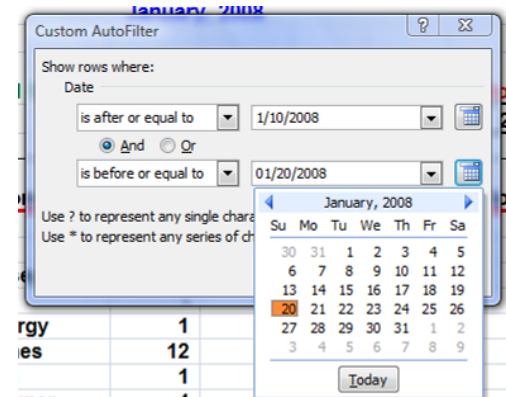
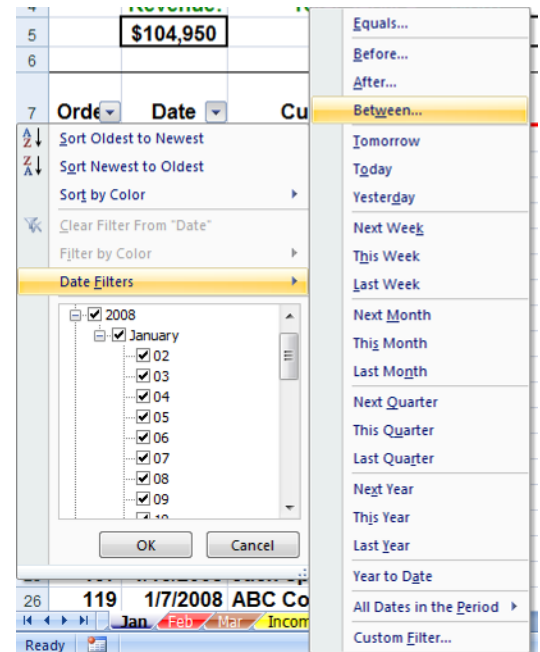
1. Let's use Filter for Text characters.
2. If there are any filters on your Jan tab, click the Clear button in the Data Tab to remove all filtered data.
3. Click the Filter Drop Down Arrow for Customer.
4. Trace to Text Filters and from the cascading menu, notice the different type of text criteria you may provide.
5. Click the Begins with. . . item.
6. The Custom AutoFilter Dialogue box opens.
7. We want to view to different letters for our customer names. We want all customer's whose name begins with an A or a F.
8. Using the picture at right as a guide make your choices and make sure you change the And selection to Or – the Or allows two different criteria for the same filter.
9. Click OK.
10. Only customer's whose name begins with an A or F appear.
11. Click the Sort Ascending button on the Data Tab or using the Filter icon by Customer and from the menu selecting Sort A to Z as pictured at right.
12. You may clear your filter from here or Click the Clear button on the Data Tab. Clear your filter.



Date Custom Filters

Excel 2007 has great built in Date Filters for you.

1. With your Track.xlsm workbook open and at the Jan tab ensure you have no filters on your data but do have filter active.
2. Click the Filter arrow for date and tract to Date Filters. Notice ALL of the ways to filter your date lists.
3. Click the Between. . . item and the Custom AutoFilter Dialogue Box opens.
4. Ensure that the Show rows where: Date item is set to *is after or equal to* and type or use the calendar icon to enter *01/10/2008*.
5. Keep the *And* button selected.
6. In the second set of boxes ensure Date item is set to *is before or equal to* and type or use the calendar icon to enter *01/20/2008*.
7. Click OK.
8. Your data is filtered for that range of dates.
9. Click your Filter arrow for Date and from the Menu Sort Oldest to Newest.
10. Click your Clear icon on your Data Tab to remove all filters.

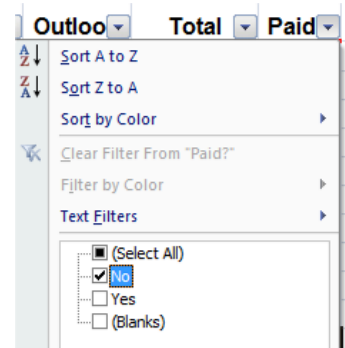


Yes/No Filter

I like to have a yes/no column for many of my worksheets that I use for tracking items. One way I use yes/no is if a customer has paid me or not. This is a very quick and easy way to follow-up on payments. I filter for Yes to send a thank you note and I filter for No to place a follow-up e-mail or phone call.

Let's filter our list for who has not paid us, yet.

1. Click inside our data table in the *Jan* Tab of the *Track.xlsm* file,
2. With all of your records showing, *click* the Drop Down arrow on the *Yes/No Column* and uncheck the **Select All** item.
3. Click the box to check *No*,
4. Click **OK**.



Now, we know who to phone or e-mail a follow-up to.

Let's determine how much we are owed

Click and Drag the Items in the filtered Total Column to select them,

Notice your Calculation area in the status bar, I have all of my functions on.

I think I would get busy calling some clients asking: "Show me the Money!"

Filtering displays only the information you select. *Sorting* displays all of your data arranged in a particularly order.

Time to "sort" things out.

	Ord#	Date	Customer	Word	Excel	Poir	Acces	Outloo	Total	Paid
13	126	1/9/2008	Bates Motel	48	30	39	2	-	\$5,950.00	No
15	114	1/6/2008	Bowling for Dollars	25	50	5	20	-	\$5,000.00	No
24	138	1/16/2008	Pumpkin, Peter	32	52	1	12	-	\$4,850.00	No
29	122	1/7/2008	Madam Salon	32	33	15	2	2	\$4,200.00	No
32	181	1/13/2008	James Jones	12	10	12	10	12	\$2,800.00	No
33	106	1/3/2008	James Jones	12	10	12	5	5	\$2,200.00	No
35	117	1/6/2008	Madam Salon	9	6	9	6	9	\$1,950.00	No
36	124	1/8/2008	InfoMania	8	2	4	2	4	\$1,000.00	No
39	185	1/17/2008	Fay Fryer	1	1	3	1	3	\$450.00	No
46	103	1/2/2008	Smith, Bob	2	1	1	1	1	\$300.00	No
48	178	1/10/2008	Smith, Bob	2	1	1	1	1	\$300.00	No
50	110	1/5/2008	Fay Fryer	1	1	3	-	-	\$250.00	No
52	108	1/3/2008	Thomas Tuner	4	-	-	-	-	\$200.00	No
53	140	1/17/2008	Computer Tech	2	1	-	1	-	\$200.00	No
56	183	1/15/2008	Thomas Tuner	4	-	-	-	-	\$200.00	No
60	135	1/14/2008	Foxx 91	-	2	-	2	-	\$200.00	No
61	129	1/10/2008	Computer Tech	2	-	1	-	1	\$200.00	No
65	127	1/9/2008	Hard Hat	1	1	-	1	-	\$150.00	No
88	125	1/8/2008	Jones James	-	1	-	1	-	\$100.00	No
92	139	1/16/2008	USA Inc	-	1	-	1	-	\$100.00	No
142										

Sorting

⊗ **An Important Gotcha! Always have a backup copy of your Excel file before performing sorting! You can use the Save As feature from you Office Button's menu or pressing the F12 key activates the Save As dialogue box for you, too. While sorting is powerful and easy in Excel, many a new user and us old-timers are frustrated because sometimes you may need to select your entire area of data to be sorted; otherwise Excel will sort only your selected information, such as a single column, and the information will be misplaced in your original data worksheet! Excel 2007 handles this better than previous versions of Excel. If your worksheet is a database then you will not have to select the entire area of the sort – simply by in the column of the field you want sorted. If your worksheet is not in a database or table format, such as a balance sheet or income statement with multiple subtotals, you will need to select an area to be sorted prior to sorting the data area. For example, you may not want a total or sub-total row included in a sort because your information will be distorted. In our worksheet, the Customer data listing is in a continuous list without sub-totals and totals and all rows and columns are together and have data in most cells, so our sorting will be easy. ⊗**

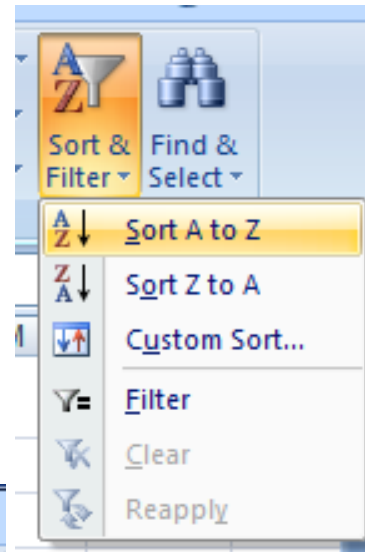
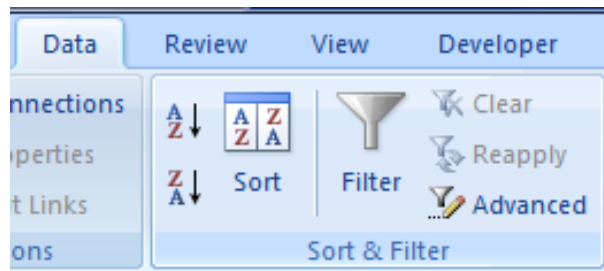
Our first step is to ensure that we have a backup file. You could sort your worksheet incorrectly and click the save icon and you will never be able to return to your original sort unless there is a column that you can sort on and retain. For example, I had a customer that used Excel for tracking invoices, the customer wanted to keep the order of the spreadsheet in order of input – there was no column or field that kept track of the order of input. The client performed a sort on client name, the client accidentally saved the workbook and the customer could not get back to the original order of input. OOPS! Now, the client uses a number field to keep the order of input and to allow a sort on this field.

Unless your worksheet contains a table with no totals or subtotals or other calculated row and no blank rows or columns, you will need to select or highlight the entire area of data on your worksheet leaving no columns or rows unselected or highlighted in our data area. We will sort two ways: First, we will use the *Sorting icons on the Home Tab and Data Tab* as we accomplished with our filtering exercises. Then we will use the *Custom Sort* method in order to sort by more than one field or row header.

Sorting Command Buttons: A Single Sort

Here are the steps for sorting using the Command buttons on the Home Tab and Data Tab.

1. First in our *Track.xls* file and *Jan* Tab,
2. Click cell C8 under the Customer heading,
3. Click the Sort & Filter button as Pictured at right and Click the Sort A to Z item.
4. You may use the Data Tab and the Sort Ascending button in the Sort & Filter Group.
5. Your information is sorted by Customer name in alphabetical order.

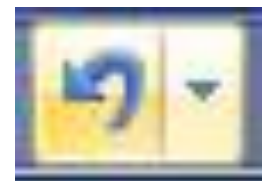


➤ A Hot Tip! Notice that Excel changes your sort to A to Z and Z to A for Text data, Newest to Oldest and Oldest to Newest for Date data, and Largest to Smallest and Smallest to Largest for Numerical data! So this is Sorting for "Dummies" and Liberal Arts people like me. ➤

➤ This worked well because the area we are using is a tracking system type of worksheet. As I related earlier, there will be times when you will need to select the area you want sorted. ➤

Click the Undo button on your Quick Access Toolbar to remove the sort.

Here's one of my favorite icons in the Office suite the *Undo* icon. It should be called the Greg Creech key because I make so many mistakes and say Oops! a lot. Clicking this key can get you out of a mess. Since we clicked it, our sort is removed.

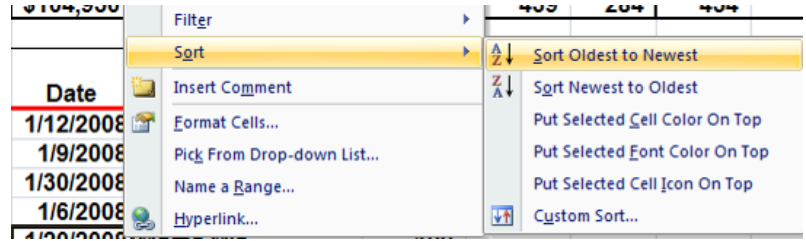


Let's sort in Descending order or from Greatest to Least as we have previously accomplished.

1. Click in Cell G8 we want to view our Totals from Greatest to Least.
2. Click the Z-A button on the Data Tab or the Largest to Smallest button. Excel Sorted our information.

Let's sort in Date order or from Oldest to Newest using the right click method.

1. Right click in the Date Column.
2. From the Short cut menu trace to Sort and from the Cascading menu choose Oldest to Newest as pictured here.



As I related earlier and repeat here, if you include a total row or cells you may not want in your sort, Excel will “mess up” your worksheet – be sure not to save it in this condition. **I always save a copy of my Excel file before I do any sorting activity. I have learned that if I mess up my spreadsheet through sorting and accidentally save my spreadsheet I have lost my good spreadsheet forever and must recreate the original sort and order of my data!** This is only important if you must keep your original worksheet in order of input and there is not a field or column that can be sorted to retrieve the original sort. A couple of messes like this and you will learn as I and my clients have that we should save backup copies of our original Excel files.

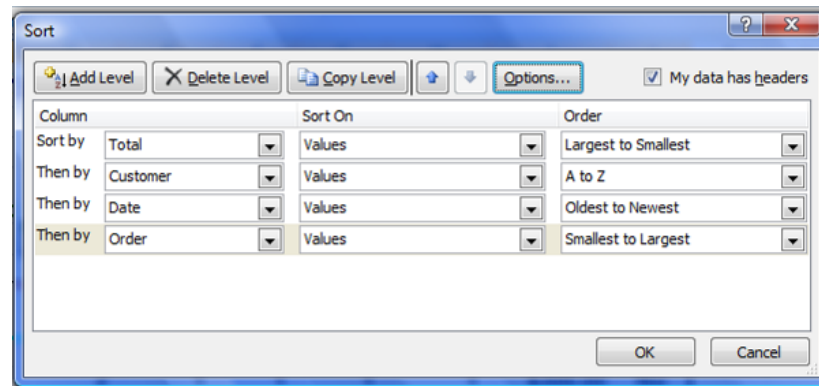
Write your notes here: _____

Custom Sort: Sorting by Multiple Items

Let's use the Custom Sort method of sorting. Although the Sorting Command buttons are quicker, they are designed for sorting by only one item. The *Custom Sort* method of sorting allows you to have a primary sort and other sorts.

Here are the steps to sort using the Custom Sorting:

1. First be in our *Track.xlsxm* file and *Jan* Tab,
2. Click inside your data table.
3. Click on your Data Tab and Click the Sort button and your Sort Pane opens.
4. Click the Drop down arrow for our first sort. Notice you can select different areas to sort by such as Order, Date, etc. Also, in the "My data has headers" is checked. The Header row is important in the ease of sorting; if there were no header row Excel would have Column A, Column B, etc for you choose – Descriptive names are easier for me to relate rather than Column A, Column B.
5. Click Total.
6. Ensure Sort On has values in it.
7. Order should be Largest to Smallest.
8. Click the Add Level Button
9. In the Then by box select Customer, keep sort on Values, and Order should be A to Z.
10. Use the screen above to add sorts for Date and Order.
11. When complete, Click Ok.



Scroll through and notice how your sort works when you see duplicates in the total field. There are records or rows that meet all of the criteria.

Let's Sort the worksheet by Order and then by Date.

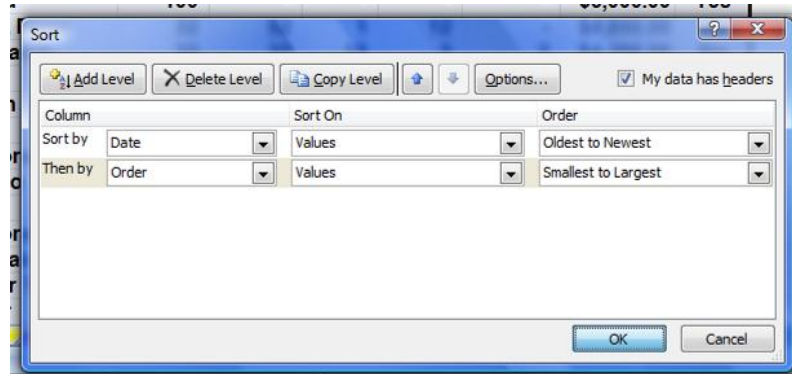
1. Activate your Sort Dialogue box by clicking the Sort Command button on the Data Tab.

2. Sort by Date first in Oldest to Newest order.

3. Then sort by Order in Smalles to Largest Order.

4. Delete the other two levels by clicking in the level and then clicking the Delete Level button.

5. Click OK.



Now, let's select an area to sort.

1. In the Track.xlsm workbook click the Income Tab,

2. This worksheet would not be good to sort without selecting the correct area first. There are no headers or field names and there breaks in the data for calculations – so this is not a database and we must select areas to sort.

3. Select the Expenses area A7 through G12.

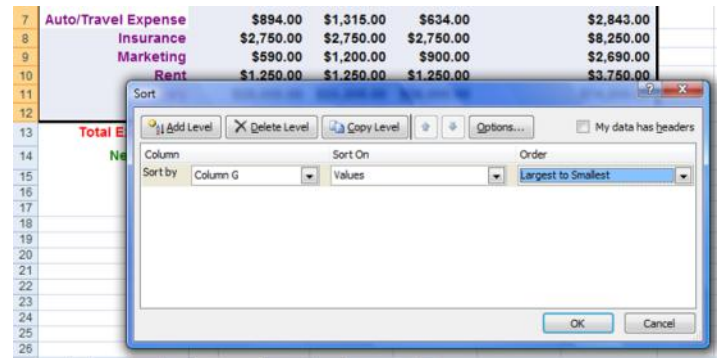
4. Click the Sort Ascending button and Excel sorts your information by the Expense name, since our focus or cursor was in this column. Excel will sort based on the "white" cell as pictured above. You may press tab and the focus leaves this cell and then you can sort by the next column using the icons, but having the area A7 through G12 is the important

Techedutainment Services Inc.					
First Quarter Income					
	Jan-05	Feb-05	Mar-05	Year to Date	
Revenue	\$104,950.00	\$70,400.00	\$70,400.00	\$245,750.00	
Cost	\$20,112.00	\$19,571.00	\$19,171.00	\$58,854.00	
Net Revenue	\$84,838.00	\$50,829.00	\$51,229.00	\$186,896.00	
Auto/Travel Expense	\$894.00	\$1,315.00	\$634.00	\$2,843.00	
Insurance	\$2,750.00	\$2,750.00	\$2,750.00	\$8,250.00	
Marketing	\$590.00	\$1,200.00	\$900.00	\$2,690.00	
Rent	\$1,250.00	\$1,250.00	\$1,250.00	\$3,750.00	
Salary	\$25,000.00	\$23,205.00	\$26,000.00	\$74,205.00	
Utilities	\$322.00	\$387.00	\$293.00	\$1,002.00	
Total Expenses	\$30,806.00	\$30,107.00	\$31,827.00	\$92,740.00	
Net Income	\$54,032.00	\$20,722.00	\$19,402.00	\$94,156.00	

part of this.

5. Click the Sort button and from the Sort Pane Sort by Column G on Values and Order from Largest to Smallest.

Excel sorts your Year-to-Date expenses in descending order for you.



Congratulations! You have survived and thrived through the Five F's of Excel: Formatting, Fills, Formulas, Functions, and Filters/Sorts. We will continue using these Five F's throughout our course. Now, let's turn our attention to some Excel efficiencies and to creating a multiple worksheet file.

Write your notes here: _____

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