Excel: The Basics

To enter data/information in an Excel **Worksheet**, simply click on a space (known as a cell) and enter content on the worksheet. To move to the next cell hit **TAB** (to go to the right) or **RETURN/ENTER** or the down arrow (to go down). With Excel, you can enter in the following types of content:

- Numbers
- Currency
- Date
- Time
- Percentages
- Fractions
- Text
- Customized Information

**A Worksheet**

In Excel, the page that you are looking at with all of the cells is a single Worksheet. The file that you are saving is a workbook. A workbook can contain one or more worksheets. You will see at the bottom of the screen that when you create/open a new Excel file, there are usually three worksheets created. You can add/delete worksheets as necessary.
Format a Cell
If you right-click on any cell and select **Format Cells** you can see the different types of formats available to you, and the ways in which you can choose to display that format. For example, if you right-click on a cell – choose **Format Cells** – and then select the **Date** Option on the left (beneath Category), you will see the different types of ways that the date can be displayed. See below.

There are many different date formats available to you. Select the one that you prefer and hit OK at the bottom. Now when you enter in a date in that cell, it will be listed in that format. You may also select multiple cells and adjust the format of multiple cells at one time. Oftentimes this is done when you want a column or row to all be formatted similarly.
Formatting Multiple Cells

In the screen below, I selected the entire time column (by right-clicking on the letter B at the top of the column and selecting **Format Cells**) and am formatting all cells in that column to a specific time format.

Once you select the specific time format that you would like. **Click OK.** You should see your current times listed in Column B change to the new format.
### Entering Text & Expanding Column Size

In Excel you are not just limited to numbers. You can enter text where necessary. Oftentimes, you will need to expand the column width to include all entered text. There are two ways to expand a column, automatically and manually. As you can see below, I entered in text and because there was more text than space in the cell I cannot read everything that was entered.

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td>1</td>
<td>Date</td>
<td>Time</td>
<td>Text</td>
</tr>
<tr>
<td>2</td>
<td>9/1/2011</td>
<td>13:00</td>
<td>Hard Drive</td>
</tr>
<tr>
<td>3</td>
<td>9/2/2011</td>
<td>14:00</td>
<td>Laptop Computer</td>
</tr>
<tr>
<td>4</td>
<td>9/3/2011</td>
<td>16:00</td>
<td>Desktop Computer</td>
</tr>
<tr>
<td>5</td>
<td>9/4/2011</td>
<td>17:00</td>
<td>Phone Charger</td>
</tr>
<tr>
<td>6</td>
<td>9/5/2011</td>
<td>11:00</td>
<td>iPhone</td>
</tr>
<tr>
<td>7</td>
<td>9/6/2011</td>
<td>9:30</td>
<td>iPad</td>
</tr>
<tr>
<td>8</td>
<td>9/7/2011</td>
<td>4:30</td>
<td>Laptop</td>
</tr>
</tbody>
</table>

As you can see here, when you enter in text (or any content for that matter) if it does not fit in the current cell space it will “spill over” into other cells (that do not have content) or it will be hidden underneath cells that do have content. You need to expand the column manually or automatically to view all text.

#### To Manually Expand the Column:

Bring your cursor up to the top of the column (in this example, to the line indicating the right-side of Column D). Click on the right line (between Column D and E) and manually drag that line to the right until the column is at a desired width. Now all text should fit comfortably within the cell.

#### To Automatically Expand the Column:

Bring your cursor up to the top of the column to the line on the right-side of the column. In this example, bring your cursor to the line between Column D and E. Double-click on that line and the column will expand to exactly the right width that would include your longest text string. See below.

Click on this line at the top of the worksheet, on the right-side of the cell that you want to expand. Single click and drag to expand manually or double-click to expand automatically.
Entering & Formatting Currency

When you enter in currency, you have the option to:

- Display a symbol ($) next to each dollar amount
- Adjust the number of decimal places (choose 0 if you want to round to whole numbers)
- And adjust how negative numbers are displayed (see choices below)

As always, select the cell(s) that you would like to format, right-click on your mouse, and choose **Format Cells**. Select the **Currency** option from the Category choices and then select the desired options. Click **OK** when finished. See below for more details.

These are the numbers that I want to format. I want to add a $ symbol, I want two decimal places to be displayed, and I want negative numbers to have a – symbol in front of them. I selected the entire column by right-clicking on the “F” cell at the top of the column and selecting **Format Cells**. I then selected the Currency option on the left-hand side and adjusted my settings as you see below.

This is where you adjust your options for how the currency will be displayed depending on your preferences.
Basic Formulas

Excel can do all the calculations for you. In the current example I have a list of purchased items and the number of each item that was purchased. I now want to calculate the total price for each component. For example, I purchased two external hard drives at $89.99 each. What is the total cost for both? Luckily, Excel can do the calculations for you IF you enter in the formula to compute that value. In this case you want to use a Multiplication Formula to multiply the # of items (items in Column E) by the price for each item (amounts listed in Column F).

To enter in a formula, click the cell in which you want to enter the formula. In this case it is Cell G4. Then click on the Insert Function button on the Formula Bar. See below. Excel will insert an = sign for you, which is the beginning of the formula that you will choose.
Select the function that you want to use. If you don’t know what function you want to use you can type in a question that describes what you want to do in the Search for a function box (for example, “multiply numbers” returns the PRODUCT function), or you can browse from the categories in the **Or Select a category box**.

Enter the arguments (cell numbers that you want to use). In this example the Product function multiples two or more numbers together. You must select the cells which contain the numbers that you want to multiply.

First, click on the **Expand Dialogue** button to select the cell that you want to use as your first number. See below.
Then click on the cell that you want to use as your first number. Then click on the Close Dialogue button. You will now see the cell number that you selected listed for Number 1. You can also manually enter in the cell number in that space as well. Repeat for Number 2 (and number 3, 4, 5, ... if applicable). Click OK. You will now see the final product. In this example, the final product is listed in cell G4. It contains the product of Cell E4 multiplied by Cell F4. =PRODUCT(E4, F4).

Here I clicked on Cell E4. You can see that when I clicked on it, it was highlighted with a dotted line AND it entered in the cell information in the Function Argument Space below. You can now click on the Close Dialogue button.

This is the Close Dialogue button. Click on this when you are done selecting the Function Argument.

You now have selected both Function Arguments and this window also lets you see what the final result will be (in this case $179.98. Click OK to insert this function into your Excel worksheet.
Now in the worksheet you can see the Total appear in Cell G4. Also, if you click on that cell, you can see the function used in the **Formula Bar**. See below.

### Enter a Formula Manually
If you know the exact formula that you want to enter, you do not need use the Insert Function feature. You can simply click on the cell, then manually enter in the function, in this case `=PRODUCT(E4, F4)` Then hit RETURN/ENTER and the result will be displayed in that cell.

### Common Formulas
- `=AVERAGE(number1,number2,number3,.....)`
- `=MEDIAN(number1,number2,number3,.....)`
- `=MODE(number1,number2,number3,.....)`
- `=SUM(number1,number2,number3,.....)` or `=SUM(firstNumberInColumn:lastNumberInColumn)`
- `=QUOTIENT(numerator, denominator)` – returns the integer portion of the division

Also, if you select cells and then click on the **AutoSum** button, you can choose from popular formulas such as Sum, Average, Count Numbers, Min, Max, etc.
Copying & Pasting Formulas

Lastly, as you know, we want to repeat this formula for all rows in this column. Essentially, we want to multiply the contents in Column E by the contents in Column F for Rows 5 – 10. Rather than have to enter each formula manually and select cells manually, we can simply copy Cell G4 and paste that content into Cells G5 – G10. This is because we are not copying the Value ($179.98) we are copying the Formula (=PRODUCT(Num1, Num2)). Excel will automatically take the product of the two cells to the right of Column G.

Select Cell G4. Then copy that cell by hitting **CTRL-C** or clicking on the **Copy** Button in the top left-hand corner. Then select all the cells in Column G beneath cell G4 that you want to paste the function into. To paste, hit **CTRL-V** or Select **Paste** from the menu bar in the top left-hand corner.

Now you have all of the totals for each item listed based on the number of items purchased for that item.
Challenge Activity: The Sum Formula

Now, can you figure out how to display the Final Total (as shown below)? This final total is the SUM of all amounts listed in Column G. Are you going to enter in the function manually? Or use the Insert Function button to find and use the appropriate function? If you don’t know what function to use, what would you enter in the search bar to find that function? There are many ways to insert a function!! GOOD LUCK!!

Consider this Useful Formula: Combine First and Last Name

How can you get this total to display through the use of a Formula in excel??

$14,950.17 Total

=CONCATENATE(A2," "&B2)

Combines the names above, separated by a space (Nancy Davolio)
Creating a Basic Chart using the Chart Wizard

In Excel, you have the option of displaying your content as a chart. The following charts are available to you:

- Column
- Line
- Pie
- Bar
- Area
- Scatter
- Other Charts: Stock, Surface, Doughnut, Bubble, and Radar

First, select the content in your worksheet (by highlighting it) that you would like to turn into a chart. In this example, we will select all elements in the total option to create a Pie Graph of the totals. So I will select Cells D4 – D10 because that has the name of the items, and then I will also select Cells G4 – Cells G10. Since these cells are not all next to each other, I use the \textit{CTRL} button to copy both cells. First I highlight Cells D4 – D10, then press \textit{CTRL} and highlight Cells G4 - G10.

Then, I want to select the appropriate chart for my data. I click on the \textbf{Insert} tab, and then select \textbf{Pie}. You will see that when you choose Pie, you have 2D and 3D options. Choose the Pie graph that best suits your needs and continue.
Moving Your Chart
Once you select the appropriate graph, it will now display on that worksheet. You can move the graph to another location on that worksheet by clicking on the border and dragging it to a desired location. You can also move the graph to its own worksheet (this will display a larger graph). To move a chart to its own worksheet, right-click on the chart and select **Move Chart**. Then select **New Sheet** and pick a new sheet to add it to.

Customizing Your Chart
Once your chart is created you may want to customize it. This may include (but is not limited to):

- Adding a title, legend, or data labels
- Changing the colors
- Adding percentage values or numbers

When you click on the chart you will see that you have a variety of Chart Tools at your disposal. You can edit the design, layout, and format.

Here you can choose a Chart Layout that suits your needs. These layouts will add titles, data labels, a legend, and /or percentages/values depending on the option that you choose. Test out the different options before settling on one.

Here you can switch between Design, Layout, and Formatting Options for your Chart.
You can further customize your Chart options by clicking on the **Layout** tab in the **Chart Tools** area.

Here you can select options such as **Chart Title** and decide whether you want a Chart Title and/or where it should be located on the Chart. You can turn Data Labels off or on, and/or decide the location of the Legend. Experiment with these options until you find one that suits your needs.

Another way to format your Chart is to right-click on the chart area and select **Format Chart Area**. Additional options will be available.
Changing the Chart Colors
If you would like to change the colors of the chart, simply click on the section of the chart that you wish to change (in this example – one of the pie pieces). You will notice that the Format tab is now selected in the Chart Tools area. Now you can click on Shape Fill and select the color of your choice.

![Chart Tools](chart_tools.png)

New Colors & A Chart Title Added Below

![Purchased in September Chart](chart.png)

Changing the Chart Type
If you want to change the Chart Type, right-click on the chart and select Change Chart Type.

Copy Chart into Word Document
Copying a chart into a Word document is quite easy. Simply click on the chart (so that it is selected), click on the Copy button in the top-left corner (or press CTRL-C). Then, open up your word document and bring your cursor to the space in the Word document where you want to insert the chart. Select Paste (in the top-left corner of Word) or press CTRL-V.