# Excel Tutorial

View

Before you start working on any of this tutorial, please ensure that your view options are correct.

- Correcting the layout -

Sometimes the default view is "Page Layout." This display divides up the spreadsheet according to how many pages on which it could be printed. "Normal" layout gives you a full, continuous spreadsheet.
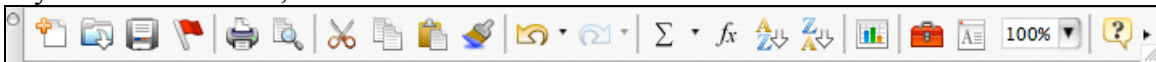
To fix this, select View → Normal in the top menu.

| Page Layout	Normal Layout
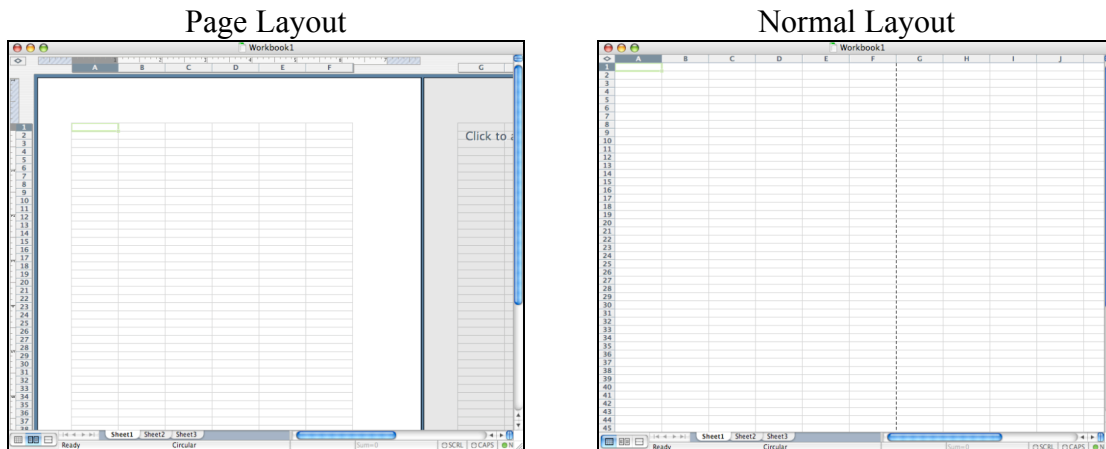
- Adding toolbars -

This is the Standard Bar. Most of the tools on here are fairly familiar (Save, Cut & Paste, etc). There are also shortcuts for things like adding charts.
If you don't have this, select View → Toolbars → Standard.

This is the Formula Bar. The text box on the left is where the names of cells are displayed, and the text box on the right is where formulas are displayed.
If you don't have this, select View → Formula Bar.
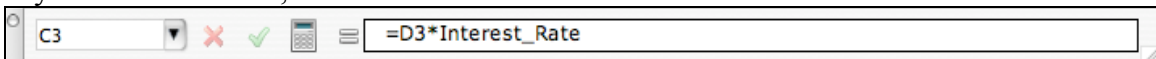
The Status Bar lets you know what is going on (for instance, when a formula is being calculated in the background). It's positioned at the bottom of the page.
If you don't have this, select View → Status Bar.
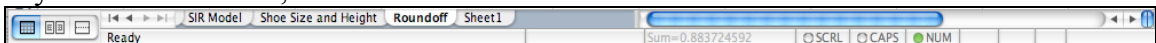
- Other preferences -

If you need to set other preferences, use Excel → Preferences. Some of these will be demonstrated in class.

Questions?
Email Valerie Gartland – valerie@shodor.org

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Names

It's easier to refer to a cell by a name like "Interest_Rate" or "Percentage" rather than "G4" or "A7." This also makes formulas easier to understand.
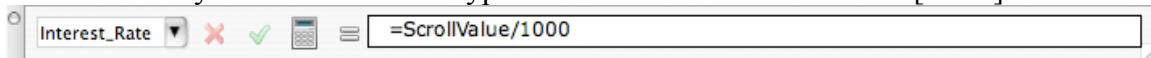
- Adding a name -

Using the menu:
Select the cell you want to name. From then top menu, select Insert → Name → Define. Type a name then click [Ok].

Using the Formula Bar:
Select the cell you want to name. Type a name in the name box.* Hit [Enter].

| Interest_Rate ▼ ✗ ✓ ▦ ≣ | =ScrollValue/1000 |

* Remember, there cannot be any spaces in a cell name.

- Deleting a name -

From then top menu, select Insert → Name → Define. Select the name you want to delete and click [Delete]

Initial_age ▼
Brother1Total
Brother2Total
Initial_age
Interest_Rate
ScrollValue
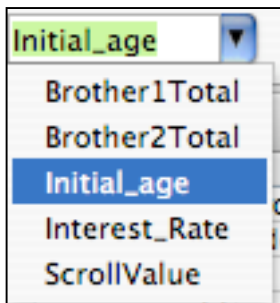
- Jumping to a cell using its name -

← Open the dropdown menu on the name box.

Select the name of the cell where you would like to go.

Scroll Bars

A scroll bar is used to gradually change data by scrolling up and down. This allows you to see how the results change as the data changes.
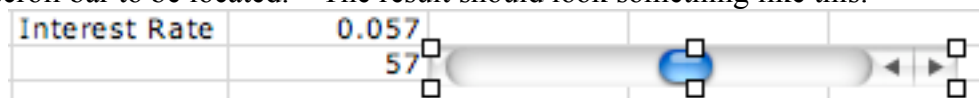
From the top menu, select View → Toolbars → Forms

The Forms toolbar will pop up.

From the Forms toolbar, select the "Scroll Bar" button: ⬍

Your mouse will change to a crosshair. Drag over the area of cells where you would like your scroll bar to be located.* The result should look something like this:

Interest Rate	0.057	
	57	◀ ▶

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* The best place to put a scroll bar is right next to the cells it will be modifying.

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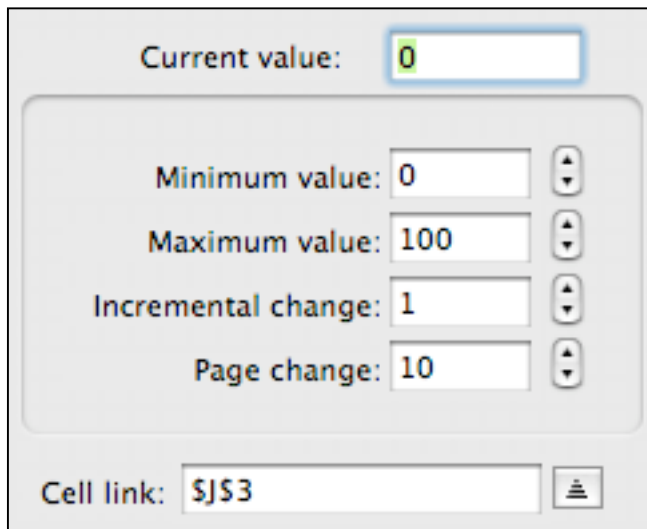
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- Modifying properties of a scroll bar -

Now you need to tell the scroll bar what information it is modifying. Right click (or [ctrl] click) on the scroll bar.

Help	
Cut	⌘X
Copy	⌘C
Paste	⌘V
Save as Picture...	
Grouping	▶
Arrange	▶
Assign Macro...	
Format Control...	
Spotlight	

This menu will pop up →
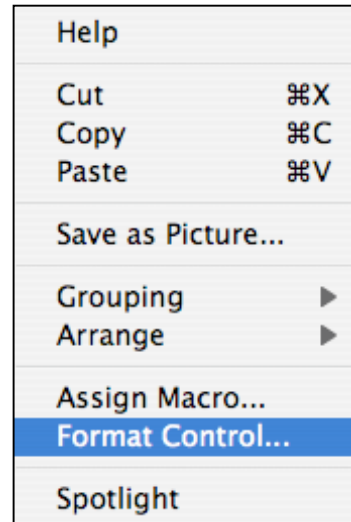
Select [Format Control] from the popup menu.

| Current value:	0
Minimum value:	0
Maximum value:	100
Incremental change:	1
Page change:	10
Cell link:	$J$3

← This window will pop up.

- *Current value*: value right now
- *Minimum value*: the lowest setting
- *Maximum value*: the highest setting
- *Incremental change*: how much the value will change with one click of the arrow buttons
- *Page change:* how much the value will change if you click on the scroll bar itself.
- *Cell link:* the cell whose value will be affected by the scroll bar.

- Linking the scroll bar to a cell -

In the Format Control menu, use the cell link option to tell the scroll bar which cell it is modifying.

Click the button that looks like this:

You will get something that looks like this:

Format Control

$J$3

	Percent	0.22		
0		22		
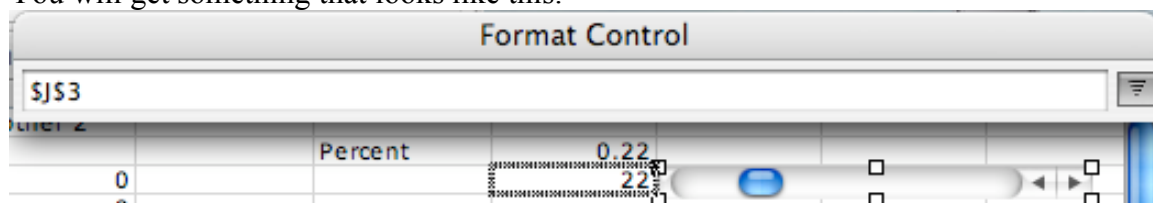
Click on the cell you want the scroll bar to modify, then hit [Enter] or [Return].

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- Limitations of a scroll bar -

A scroll bar cannot handle decimals or negative numbers. This means that we have to make our own formula to convert an integer into whatever we need it to be.

In this case, the actual percentage is 0.22. The value the scroll bar is modifying is 22:

Percent	0.22			
	22			

$$Percent = Scroll\ Value\ /\ 100$$

*General formula for a scroll bar with a range of **A** to **B**: Set the range on the slider from 0 to 100, choose a cell **S** for the slider to control, then build a formula in a different cell:*

$$= (B - A)/100 * S + A$$

Formulas

When you apply a formula to a cell, its value changes in relation to other cells.

Every formula begins with an equals sign (=). This works as a signal to the computer that you are entering a formula.

Formulas look like this:

In order to get this:	Type this:
=B3/2	= (Click on B3) / 2
=B3*10	= (Click on B3) * 10
=B3+C4	= (Click on B3) + (Click on C4)
=Interest_Rate-D3	= (Click on Interest_Rate) – (Click on D3)

"B3", "C4" and "Interest_Rate" are all names of cells in the document. You can either type the name of the cell you want to add to your formula, or you can click on it and the name will be automatically added for you.

Hit [Enter] in order to calculate the formula and escape formula mode.

- Copying Formulas -

What if you wanted to apply the same formula to an entire column? Should you type in the value for every cell? That would be very tedious, and thankfully it's unnecessary.

In order to fill every cell in a column with a formula, click on the bottom right corner of the cell you wish to copy. Drag this corner down along the column, and the formula will be copied into every cell beneath it.

Questions?
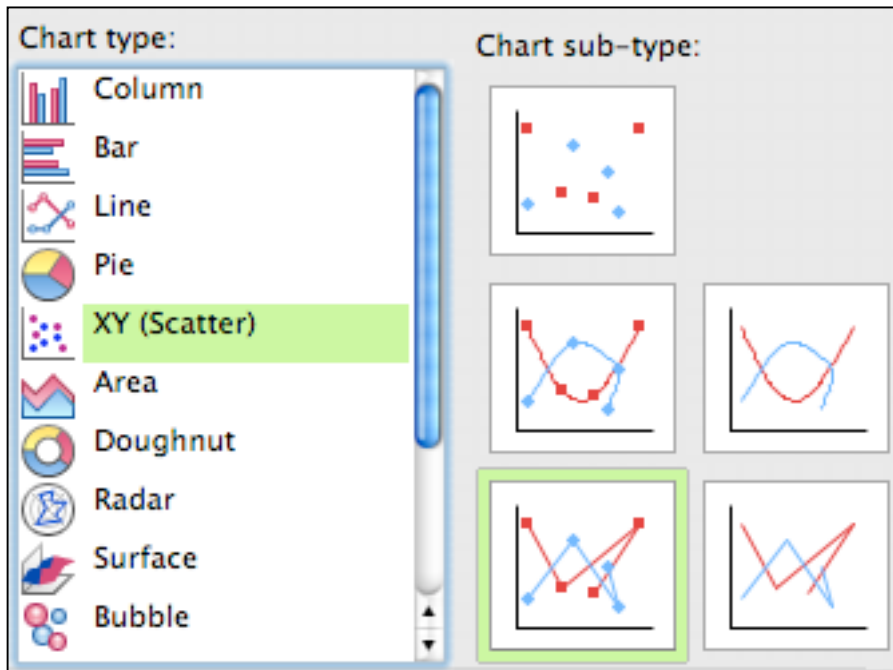### *Email Valerie Gartland – valerie@shodor.org*

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Graphs
Graphs and charts help you to visualize information.

Highlight the information you would like to graph

| Name	Height (in.)	Shoe Size
Harry	60	9
Linda	65	8
Rose	67	9.5
Frank	70	10.5
Glenda	73	11

From the top menu, select Insert → Chart

← This is the first menu you will see

Choose the type of chart you want. In this case, we want XY (Scatter) connected by straight lines.

Hit [Next]

The next menu will include something like this. If you want to change what part of the spreadsheet should be included in the graph, click the button on the right, and select the area you want to use.

Data range: =Sheet1!$J$6:$K$11
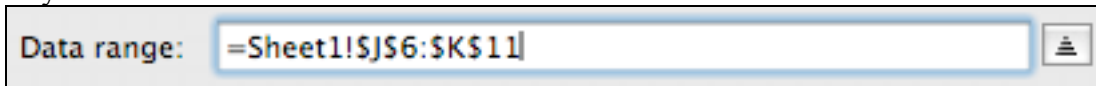
Hit [Next]

The next menu will allow you to enter a chart title and axis titles. Type in the appropriate information.
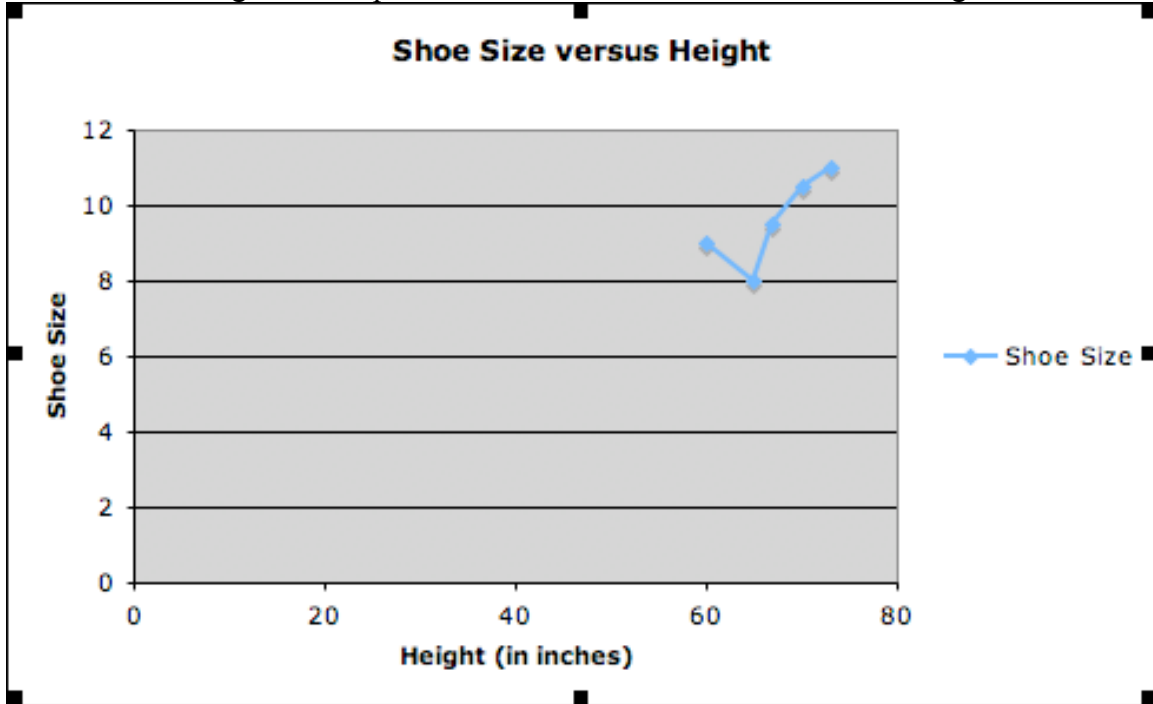
Hit [Next] then [Finish]

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- Changing the appearance of your chart -

The chart resulting from the previous set of information doesn't look that good at first:

Why is the information squished up in the corner? See how the height and shoe size both go all the way down to zero? If the minimum height and shoe size were bigger, then the chart would look better.

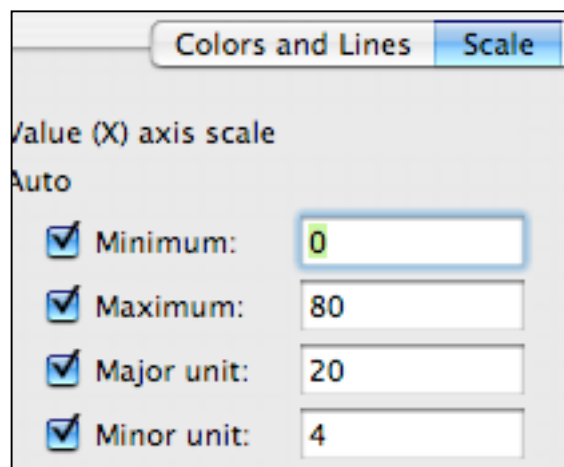Right click (or [Ctrl] click) on the axis. You'll see a popup like this:
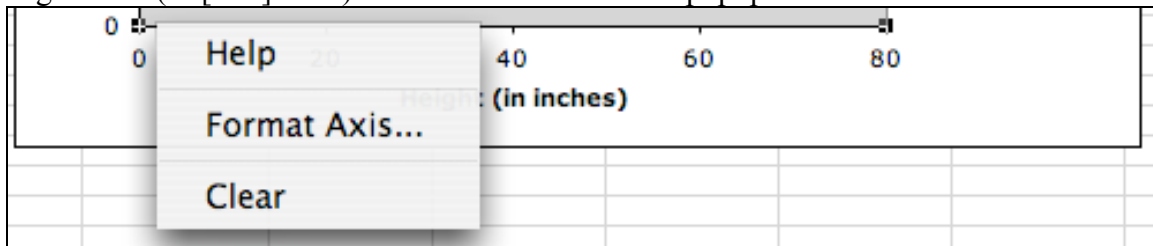
Click [Format Axis]

This menu will pop up →

Select the tab labeled "Scale"

Minimum and Maximum: Determine the limits of the axis
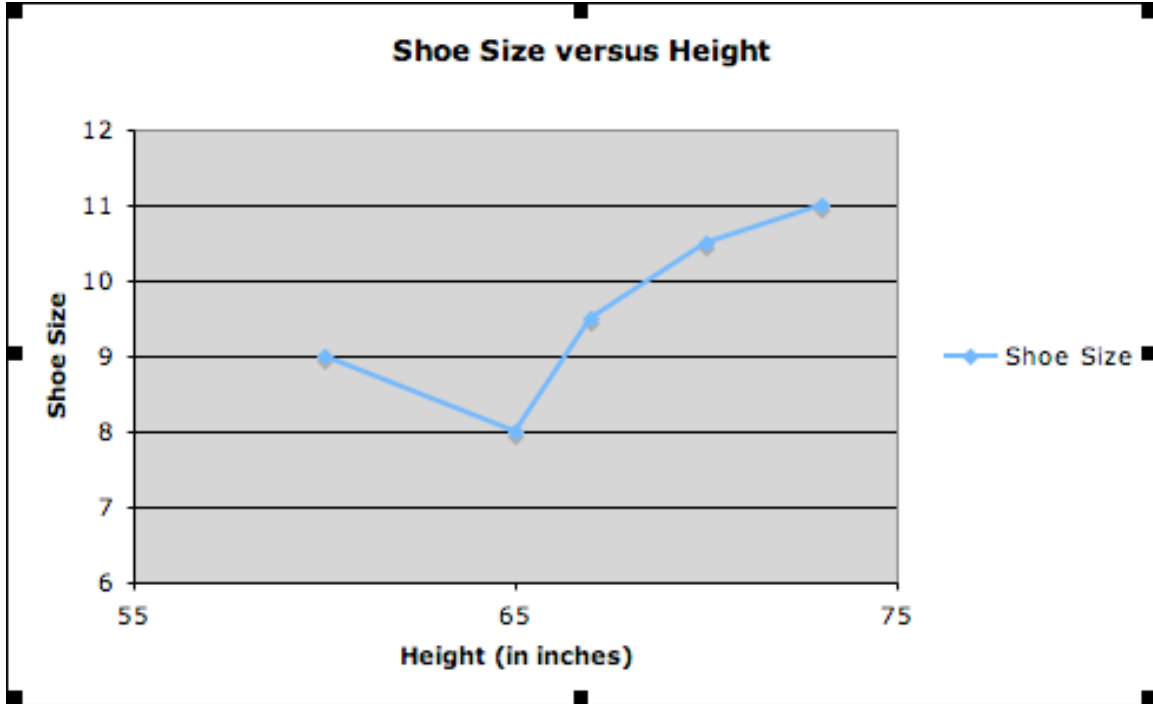*Major unit and minor unit:* Determine how the axis will be divided

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This is how the chart looked after I set the minimum height to 55 and the minimum shoe size to 6:

- Definitions -

Spreadsheet	A rectangular grid for storing information
Cell	Rectangular divisions in a spreadsheet. Data is entered in cells.
Column	Vertical lines of cells. (Labeled by letters)
Row	Horizontal lines of cells (Labeled by numbers)
Scroll bar / Slider bar	A tool which can change the value of a cell by regular increments
Chart / Graph	A way of visualizing information.
Axis	One of the borders of the chart (x or y).

Further Exploration in Excel:

Pre-built models which make use of these skills:

http://www.shodor.org/talks/ncsi/excel/

Questions?
Email Valerie Gartland – valerie@shodor.org