Introduction to Excel

MS EXCEL

1. Store and organize data,
2. Analyze data, *and*
3. Represent data graphically (e.g., in bar graphs, histograms, and scatterplots)

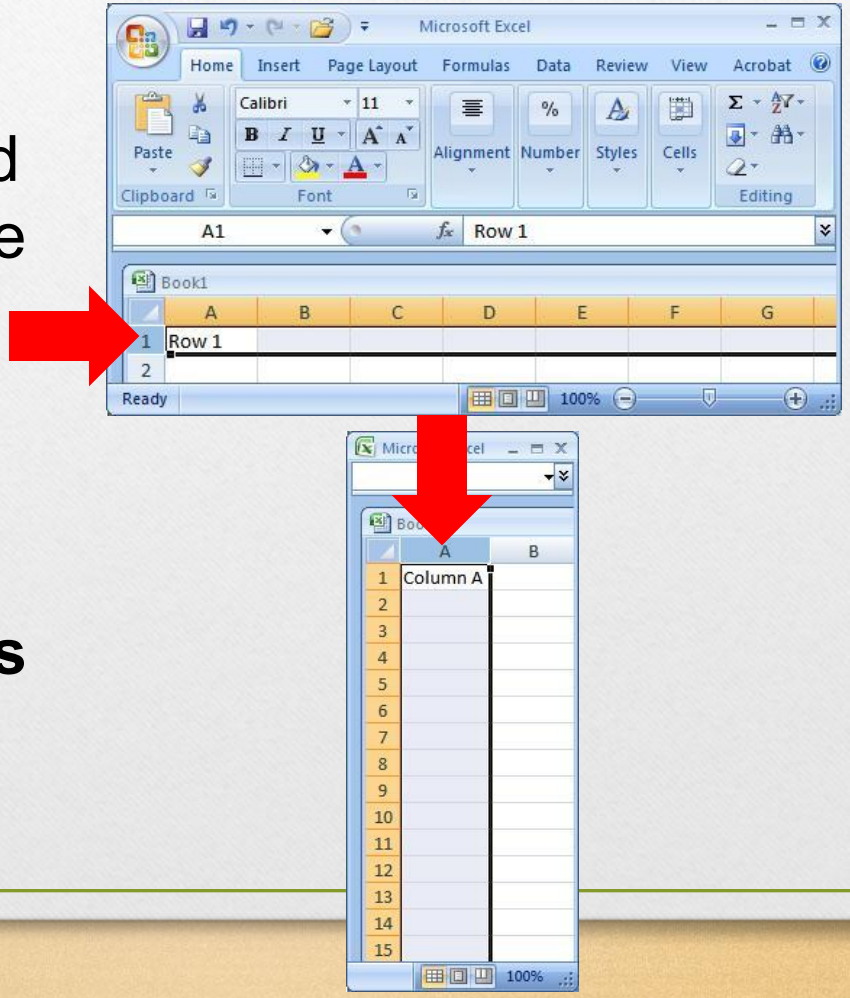
Excel Basics

- Microsoft Excel consists of Workbooks
- Each Workbook is made up of an infinite number of worksheets
- It is possible to name each worksheet to aid in organizing your data

Excel Basics

Excel spreadsheets organize information (text and numbers) by rows and columns:

This is a **row**.
Rows are represented by **numbers** along the side of the sheet.

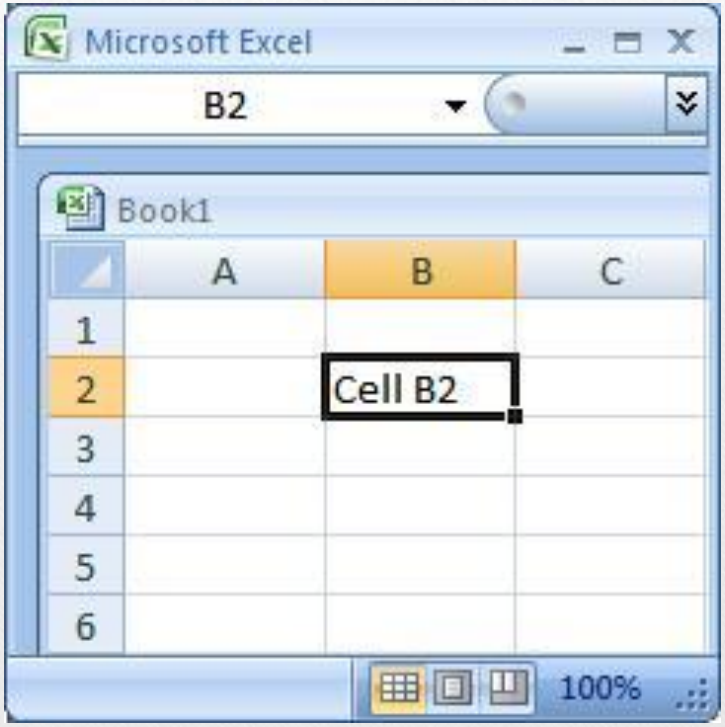


This is a **column**.
Columns are represented by **letters** across the top of the sheet.

Excel Basics

A **cell** is the intersection between a column and a row.

Each cell is named for the column letter and row number that intersect to make it.

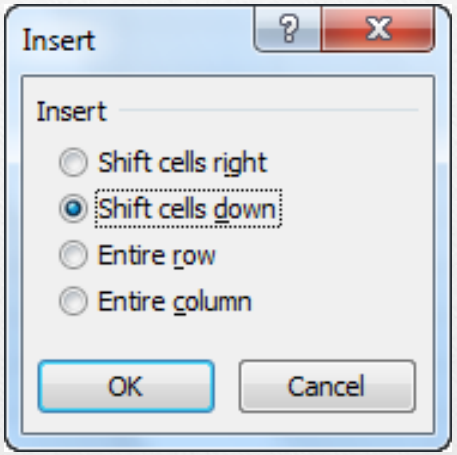


Excel Basics

- Excel allows for some basic actions that we have used before in other programs
- Copy/Paste (Rows, Columns, Cells, etc.)
- Insert (Rows and Columns)
- Sort (Alphabetically, Numerically, Chronologically, etc.)

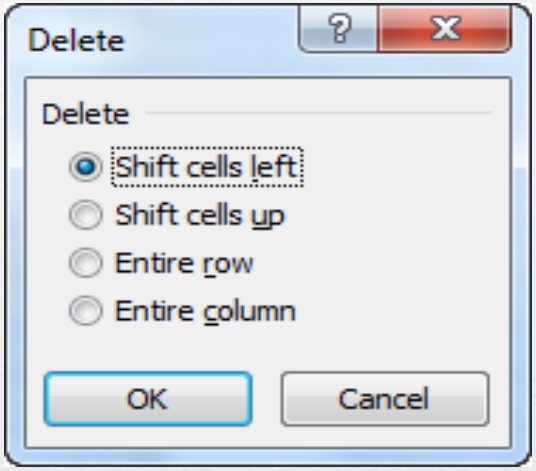
Inserting Rows and Columns

- The **Insert** command offers several techniques to insert rows, columns, and cells



Deleting Rows and Columns

- The **Delete** command offers several techniques to remove rows, columns, and cells



Formatting

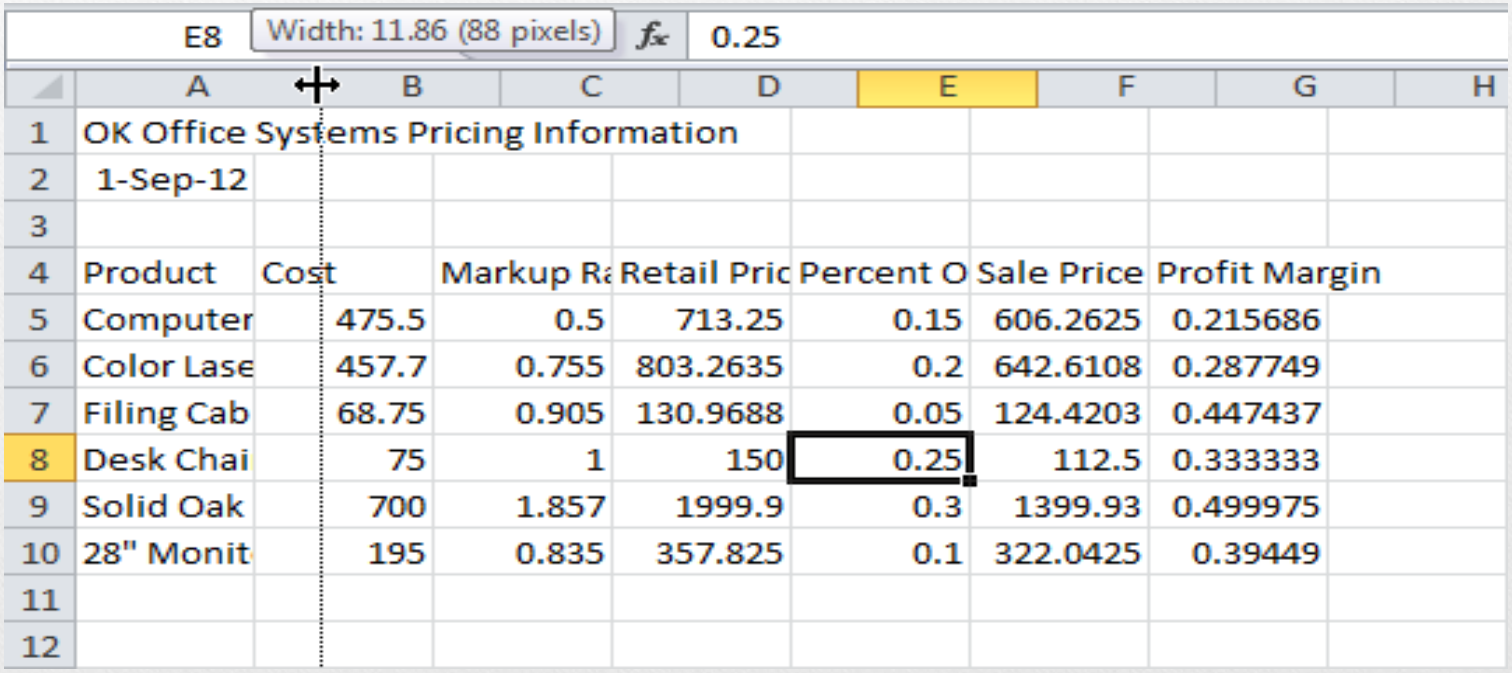
- **Merging** allows us to combine two or more adjacent cells physically (disregarding contents)
  - To merge cells highlight the cells to be merged and select the merge option from the home menu
- Cells can also be formatted with options you are probably familiar with (bold, font size, borders, etc.)
  - These options can be found scattered on the home menu or under the format cells menu via the right-click list. Even whole rows and columns can be formatted.

Formatting

- Excel also allows us to format cells by their data types. This is useful for a variety of reasons (sorting, manipulating, rounding, etc.)
- To format the cell's data type, in the numbers section of the home menu, select the number drop-down menu (defaults to General) and select the new type desired

Adjusting Column Width

- **Column width** is the horizontal measurement of a column



	A	B	C	D	E	F	G	H
1	OK Office Systems Pricing Information							
2	1-Sep-12							
3								
4	Product	Cost	Markup Ra	Retail Pric	Percent O	Sale Price	Profit Margin	
5	Computer	475.5	0.5	713.25	0.15	606.2625	0.215686	
6	Color Lase	457.7	0.755	803.2635	0.2	642.6108	0.287749	
7	Filing Cab	68.75	0.905	130.9688	0.05	124.4203	0.447437	
8	Desk Chai	75	1	150	0.25	112.5	0.333333	
9	Solid Oak	700	1.857	1999.9	0.3	1399.93	0.499975	
10	28" Monit	195	0.835	357.825	0.1	322.0425	0.39449	
11								
12								

Adjusting Row Height

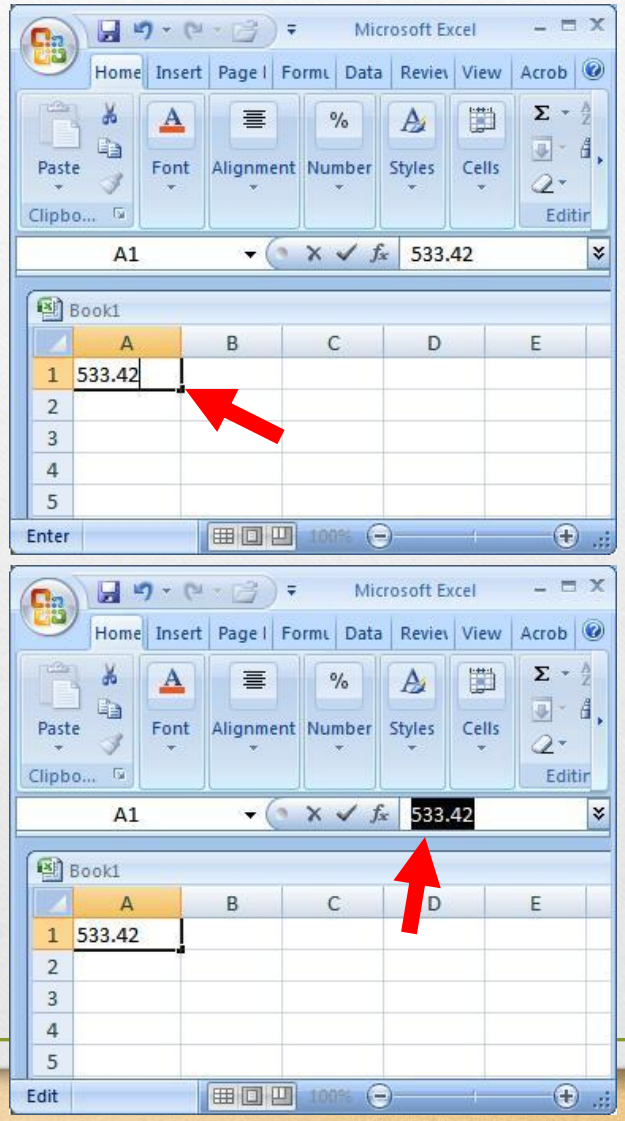
- **Row height** is the vertical measurement of a row
  - The row height is automatically adjusted with a font size increase
  - Using ALT+Enter to create multiple lines may require a row height adjustment
  - Select Row Height from the Format menu

Data Entry

There are two ways to enter information into a cell:

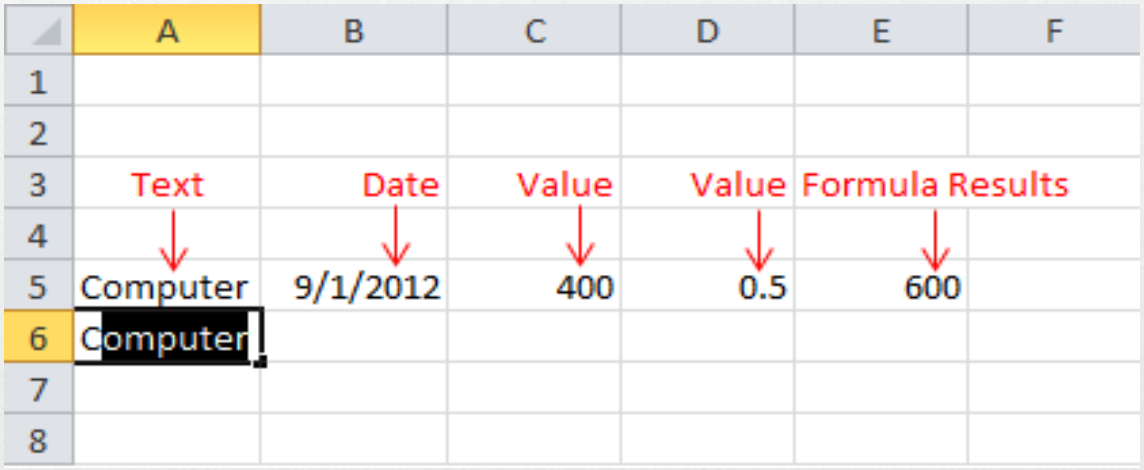
1. Type directly into the cell.
Click on a cell, and type in the data (numbers or text) and press Enter.

2. Type into the formula bar.
Click on a cell, and then click in the formula bar (the space next to the). Now type the data into the bar and press Enter. f_x



Entering and Editing Cell Data

- Excel supports text, values, dates, and formula results



Numeric Formats

Format Style	Display
General	A number as it was originally entered.
Number	A number with or without the 1,000 separator
Currency	A number with the 1,000 separator and with an optional dollar sign to the immediate left.
Accounting	A number with the 1,000 separator and with an optional dollar sign at the left cell border.
Date	The date in different ways, such as March 14, 2012 or 3/14/12.
Time	The time in different ways, such as 10:50 PM or 22:50 (24-hour time).

Numeric Formats Continued

Format Style	Display
Percentage	A value as it would be multiplied by 100 with the percent sign.
Fraction	A number as a fraction; appropriate when there is no exact decimal equivalent.
Scientific	A number as a decimal fraction followed by a whole number exponent of 10.
Text	The data left-aligned; is useful for numerical values that have leading zeros and should be treated as text.
Special	A number with editing characters, such as hyphens.
Custom	Predefined customized number formats or special symbols to create your own format.

Numeric Formats Continued

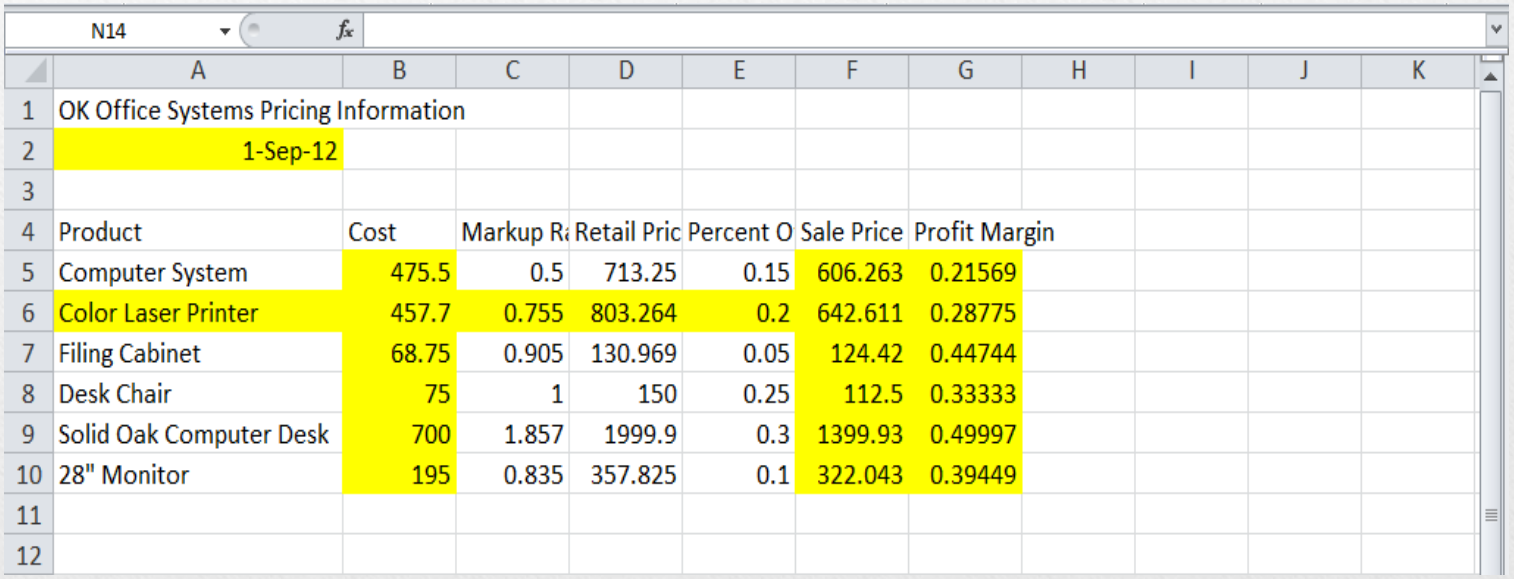
	A	B	C
1	General	1234.56	
2	Number	1234.56	
3	Currency	$1,234.56	
4	Accounting	$ 1,234.56	
5	Comma	1,234.56	
6	Percent	12.34%	
7	Short Date	3/1/2012	
8	Long Date	Thursday, March 01, 2012	

Data Removal

- Data can be removed from a cell, column, or row easily
- Here are a few methods:
  - Click the column or row heading that you want deleted, then click the Delete in the Cells group on the Home tab
  - Another method for entire row/column deletion is to click a cell in the row or column and follow the above method respectively
  - Delete methods are also found via the right-click menu
  - To remove data from a cell or group of cells, simply highlight those to be deleted and press delete

Selecting a Cell Range

- A **range** is a rectangular group of cells
- A **nonadjacent range** contains a group of ranges that are not next to each other



N14

	A	B	C	D	E	F	G	H	I	J	K
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2	1-Sep-12										
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4	Product	Cost	Markup Ra	Retail Pric	Percent O	Sale Price	Profit Margin				
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9	Solid Oak Computer Desk	700	1.857	1999.9	0.3	1399.93	0.49997				
10	28" Monitor	195	0.835	357.825	0.1	322.043	0.39449				
11											
12											

Auto Fill

- Auto Fill enables us to copy the contents of a cell or a range of cells by dragging the *fill handle* over adjacent cells or a range
- To use Auto Fill:
  - 1. Click the cell with the content you want to copy to make it the active cell
  - 2. Position the pointer over the bottom-right corner of the cell until it changes to the fill pointer (a thin black plus sign)
  - 3. Drag the fill handle to repeat the content in other cells

Formulas and Functions

- Formulas are equations that perform calculations in your spreadsheet. Formulas always begin with an equals sign (=). When you enter an equals sign into a cell, you are basically telling Excel to "calculate this."

- Functions are Excel-defined formulas. They take data you select and enter, perform calculations on them, and return value(s).

Formulas

Mathematical Symbols

Operation	Common Symbol	Symbol in Excel
Addition	+	+
Subtraction	-	-
Multiplication	X	*
Division	÷	/
Exponentiation	^	^

Order of Precedence

- **Order of precedence** (operations) controls the sequence in which math operators are computed
  - Parentheses
  - Exponentiation
  - Multiplication and Division
  - Addition and Subtraction

Cell References in Formulas

- It is best to use cell addresses in formulas versus actual data
  - If cell A1 contains value 5 and you need to add B1 to this value, use =A1+B1 versus =5+B1
- If the data changes, Excel will recalculate the result

Functions

- All functions have a common format – the equals sign followed by the function name and input in parentheses.
- The input for a function can be either:
  - A set of numbers (e.g., "=AVERAGE(2, 3, 4, 5)")
    - This tells Excel to calculate the average of these numbers.
  - A reference to cell(s) (e.g., "=AVERAGE(B1:B18) or "=AVERAGE (B1, B2, B3, B4, B5, B6, B7, B8)"
    - This tells Excel to calculate the average of the data that appears in all the cells from B1 to B8.
    - You can type these cell references in by hand or by clicking and dragging with your mouse to select the cells.

Functions for Descriptive Statistics

=AVERAGE(first cell:last cell): calculates the mean

=MEDIAN(first cell:last cell): calculates the median

=MODE(first cell:last cell): calculates the mode

=VAR**P**(first cell:last cell): calculates the variance

=STDEV**P**(first cell:last cell): calculates the standard deviation

- You may directly write the functions for these statistics into cells or the formula bar, OR
- You may use the function wizard ( in the toolbar)