

**University of Babylon**  
**College of Engineering**  
**Electrical Department**



# **Microsoft Excel 2007**

**Assis. Lect. Abeer Abd Alhameed Alsallami**

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## **Objectives:**

- Understand the use of spreadsheets and Excel
- Learn the parts of the Excel window
- Scroll through a worksheet and navigate between worksheets
- Create and save a workbook file
- Enter text, numbers, and dates into a worksheet
- Insert, and remove columns and rows
- Insert formulas and functions
- Insert, delete, move, and rename worksheets
- Preview and print a workbook

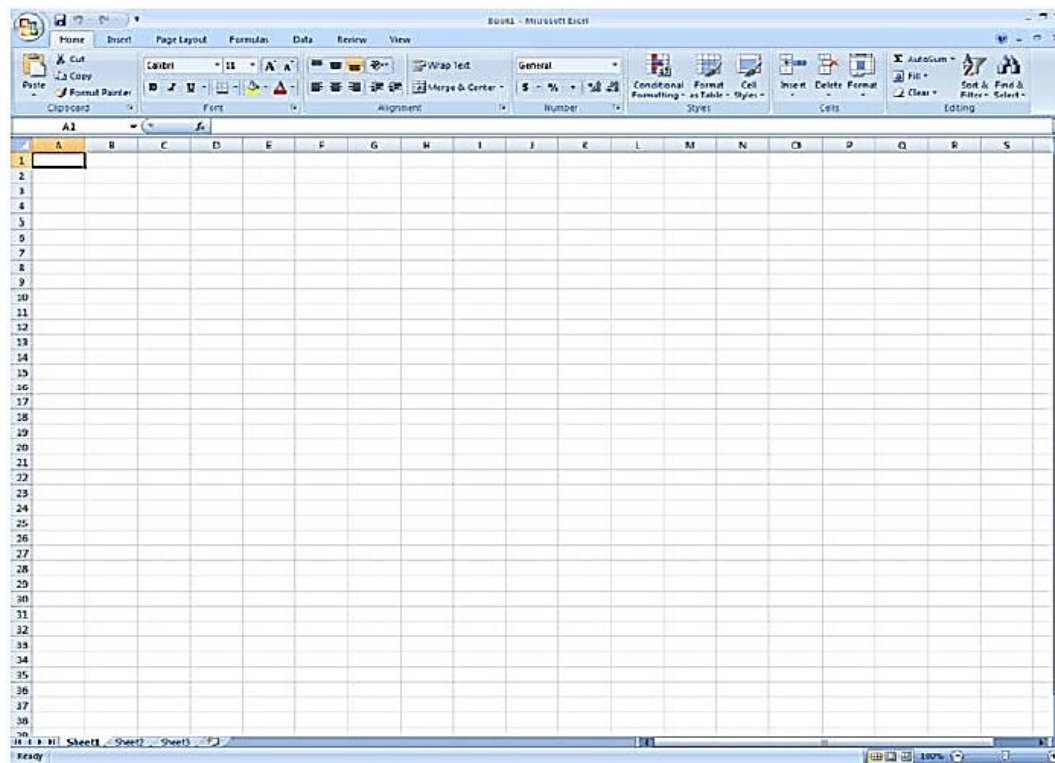
## Introduction to Microsoft Excel 2007

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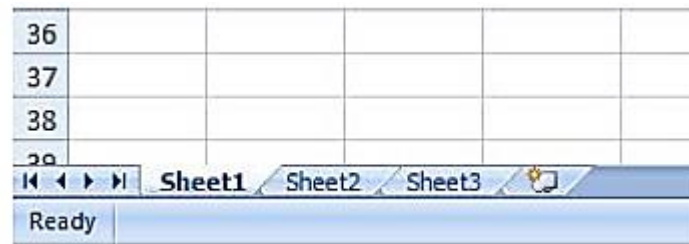
Microsoft Excel is a very powerful tool for you with too many features used to enter and analyze data. A Microsoft Office Excel spreadsheet looks a lot like a table you might see in a word processing package, but it has some very important features. In Excel each document is referred to as a **workbook**. Within each workbook you can have multiple **spreadsheets**.

### What do I see first?

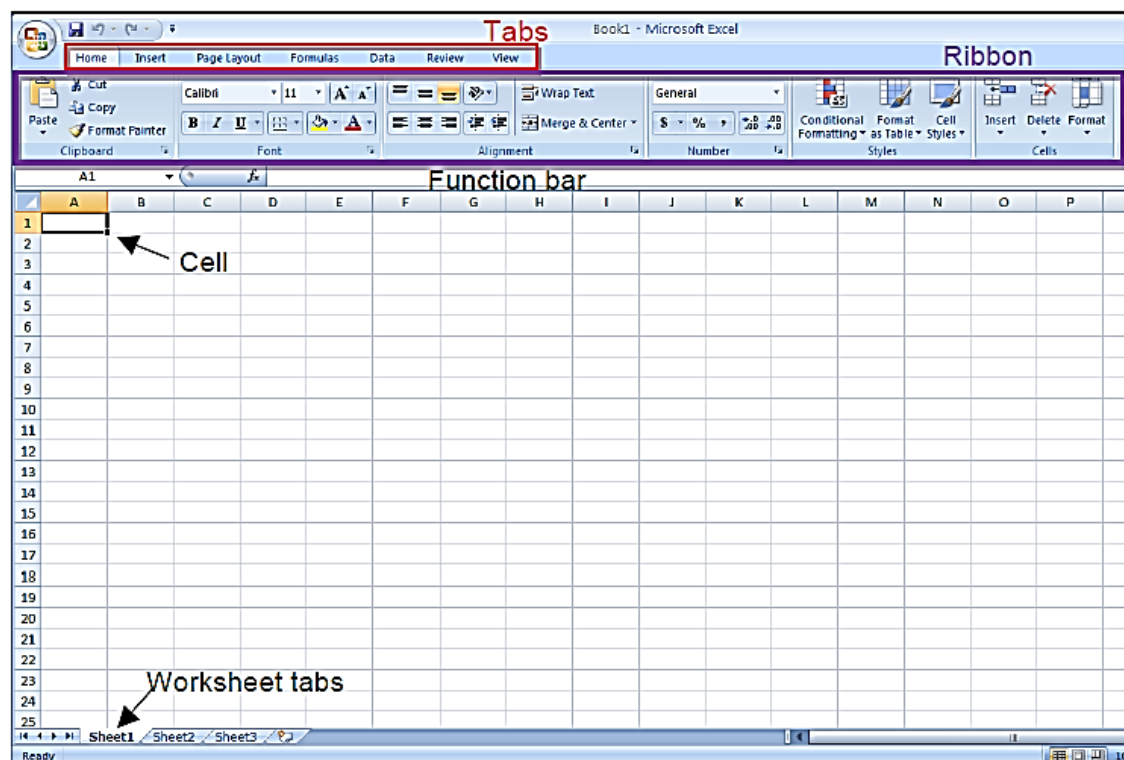
When you start up Excel, the first thing that you see is this:



This is a workbook. A workbook is a collection of worksheets (spreadsheets) and macros. By default, Excel creates 3 worksheets in a new workbook. The worksheets are designated at the bottom part of the window where you see the file folder-like tabs. The tabs are named **Sheet1**, **Sheet2**, and **Sheet3**. If you click on Sheet2, you will be in Sheet2 and not Sheet1, so you need to be aware of which worksheet you are in.



## Exploring Excel 2007



**Figure 1 The Excel window**

In figure 1, immediately below the Ribbon is the **Function Bar** (or formula bar). The left portion of the function bar shows you what cells are currently active. In Figure 1e the active cell is A1. The right part of the bar displays the contents of the cell, and more importantly, if a function has been entered the function is displayed. The cell within the spreadsheet normally shows the result of the function.

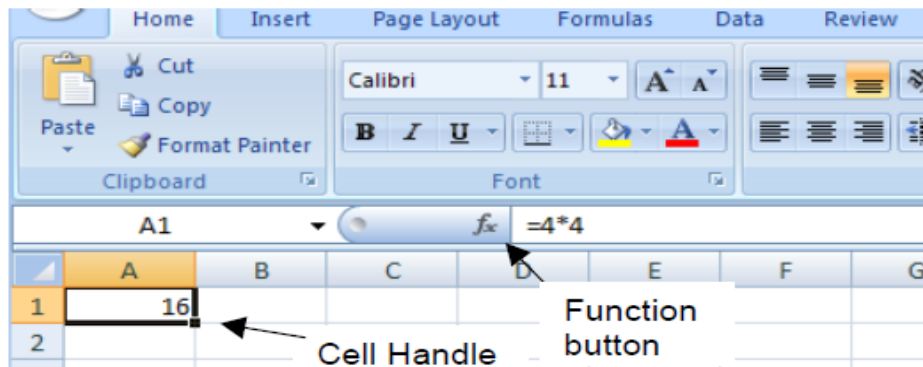


Figure 2 The Function Bar

In Figure 2 the cell A1 shows 16, while the function window shows the formula (=4\*4).

The Function Bar, Cell A1 contains the function 4\*4. The result of the function is displayed on the sheet (16) and the function itself is shown in the function window (=4\*4).

### Exercise 1: renaming a worksheet

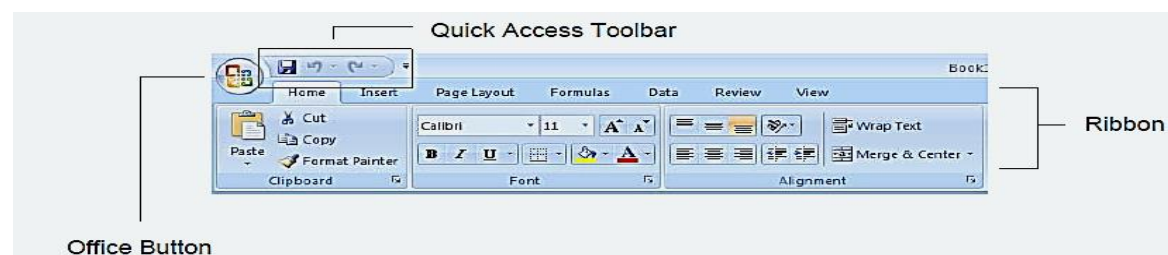
I suspect that you will want to rename the worksheet(s) to something more relevant to your needs. To rename a worksheet:

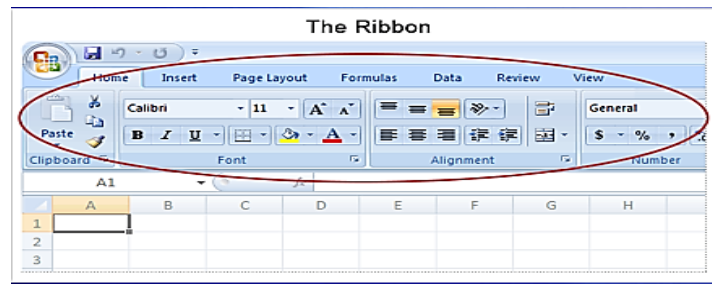
1. Double click on the sheet's tab (notice the name becomes highlighted)
2. Type in the new name
3. Hit enter to complete the rename process

## Office Fluent user interface

In Excel 2007, the new help users to find the right features more efficiently.

The interface contains three main components; The Office Button, The Quick Access Toolbar, and The Ribbon.





**Title bar** is a bar that displays the name of the active workbook and the Excel program name.

**Ribbon** is the main set of commands organized by task into tabs and groups.

**Workbook window** is a window that displays an Excel workbook.

**Sheet tabs**, the tabs that displays the names of the worksheets in the workbook.

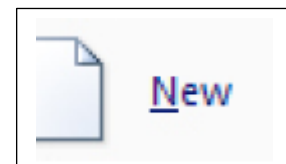
**Formula Bar** is a bar that displays the value of formula entered in the active cell.

**Office Button** is a button that provides access to the workbook-level features.

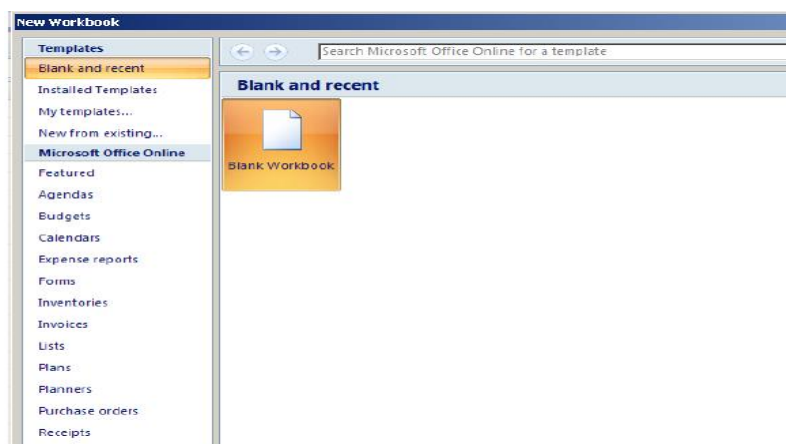
## Open a New Workbook

Sometimes you have to create a new workbook.

1. Click on the Office Button
2. Click on New



You are now able to open recently used or new workbooks from this panel. If you click on Blank Workbook, Excel will create a new workbook for you.



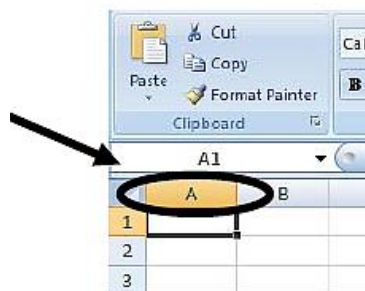
(You could also open a new workbook by hitting CTRL-N, or by adding New to the Quick Access Toolbar. Both of these methods open a blank workbook without going through the New Workbook wizard.)

## What are Columns, Rows, and Cells?

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- Columns are the vertical markers in the worksheet and are denoted by the alphabet i.e. A, B, C.
- The rows are the horizontal markers in the worksheet and are denoted by numbers i.e. 1, 2, 3.
- Cells are the single box that you get where the column and row intersect i.e. A1, B3, and C2.

You will often need to know the cell reference. The cell reference is the cell's name and you can find that by looking at the toolbar. This means that the cell that is selected is named A1.



## Entering Text, Numbers, and Dates in Cells

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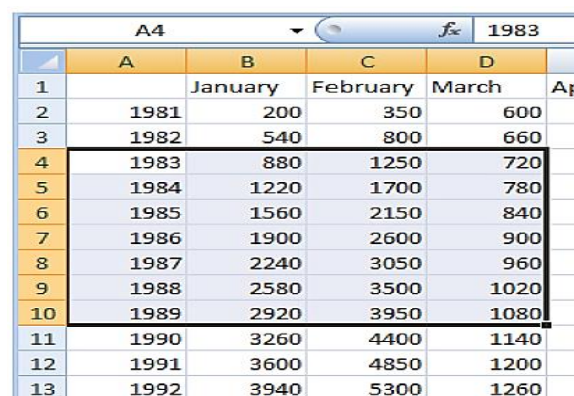
- The **formula bar** displays the content of the active cell
- **Text data** is a combination of letters, numbers, and some symbols
- **Number data** is any numerical value that can be used in a mathematical calculation
- **Date and time data** are commonly refer for date and time values

### Selecting a cell:

1. We are going to select **C28**. Look for the **C column**.
2. Look for the **Row number 28**.
3. Once you have located it, click on it.
4. Look at the toolbar; the cell reference box should say C28. If it does not, try again.
5. After you have done this, click on a different cell and note the cell reference box.

### Selecting a group of cells A4 to D10:

1. Click on the first cell A4
2. Click and Hold the mouse button down. Drag the cursor down to D10.
3. Let go of the mouse button.
4. If you did it correctly, you should see a Highlighted box around those cells. If not, try again. Please see the picture below.



	A	B	C	D	E
1		January	February	March	Apr
2	1981	200	350	600	
3	1982	540	800	660	
4	1983	880	1250	720	
5	1984	1220	1700	780	
6	1985	1560	2150	840	
7	1986	1900	2600	900	
8	1987	2240	3050	960	
9	1988	2580	3500	1020	
10	1989	2920	3950	1080	
11	1990	3260	4400	1140	
12	1991	3600	4850	1200	
13	1992	3940	5300	1260	

Selecting cells A4 to D10

### Basic data entry, fill handle:

From the example above, we have numeric (year, numbers) and text (months) entered as data in our worksheet. Let us practice by re-creating the example on our own.

#### Method 1:

1. Click on cell A2 to select it.
2. Type in 1981 and hit Enter. Notice by hitting Enter, we automatically move down to the next row.
3. Click on cell B1 to select it.

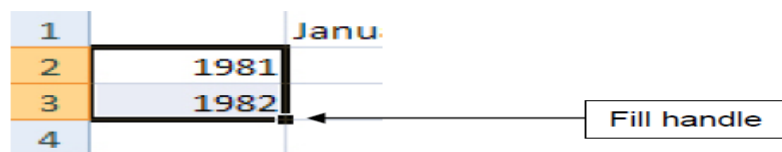


4. Type in January and hit Tab. By hitting Tab (or right arrow), we move to the next column.

We can continue to doing this to enter the data from 1981 to 1992 and so on, but Excel provides us with a tool to complete sequences.

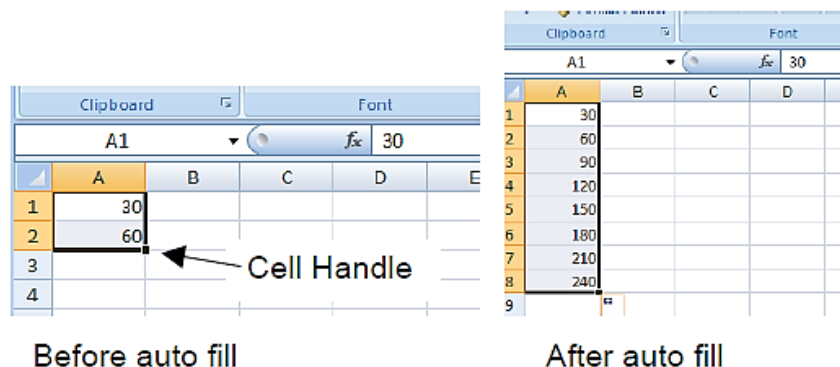
### **Method 2:**

1. Click on cell A2 to select it.
2. Type in 1981 and hit Enter.
3. Type in 1982, and then select both cells A2 and A3.
4. Move your mouse cursor over the fill handle (small black box on the bottom right of the active cell) so that the cursor turns into a cross.
5. Click and drag the fill handle down to the cell desired

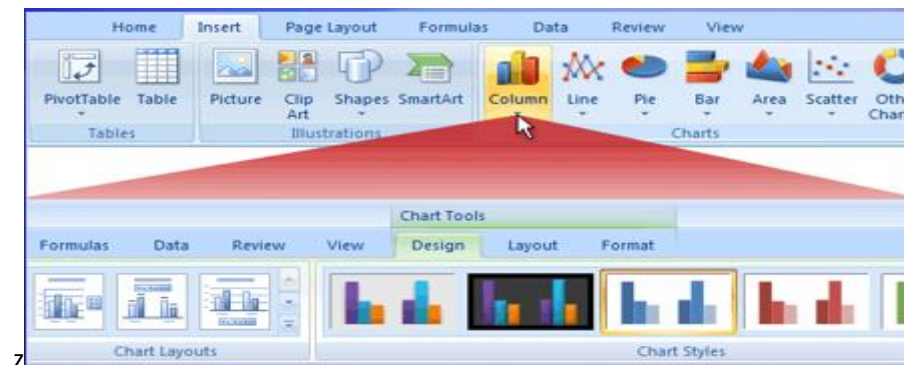


### **An Auto Fill Cells**

If you wish to enter a series of numbers you can speed up the process by using the **auto fill** capability. To use auto fill, enter the first two numbers in the series in **adjoining** cells. Select both cells, grab the common **handle** (the little black box in the bottom right hand corner of the selected cells – see Figure below) and drag down as far as needed. You should now have a series of numbers, following the pattern of the first two you entered. This trick will work for letters and formulas as well as numbers, and works for columns and rows. As shown in figures below.



## More commands are used only when you need them



Instead of showing every command all the time, Excel 2007 shows some commands only when you may need them, in response to an action you take.

So don't worry if you don't see *all* the commands you need at all times.

## Copy, Cut and Paste commands

You can Copy, Cut and Paste anything into your worksheet. You can copy from one worksheet to another worksheet in another book. Let's concentrate on the basics. In next exercise are going to copy cells D4 into H9.

### **Exercise1: Cut/Copy and Paste to the same worksheet**

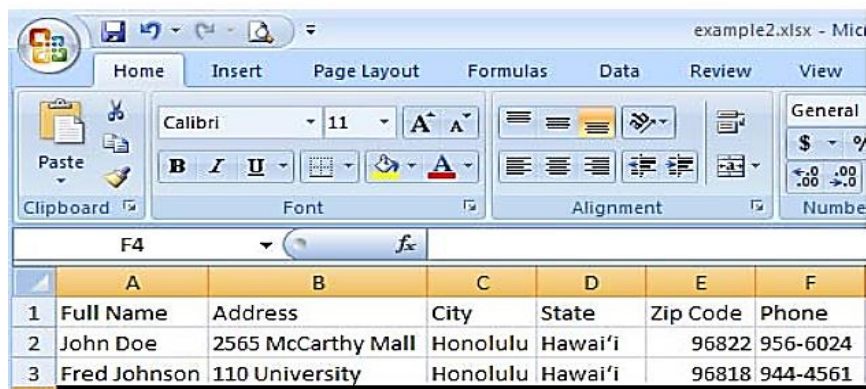
1. Using the same worksheet, select cells A4 to D10.
2. Use CTRL-c to copy and CTRL-x to cut the selected cells.
3. Click on cell D10. It should be blank
4. Use CTRL-v to paste the data. You can also use the toolbar shortcuts for cut/copy/paste as the functionality is the same.



## Exercise 2:

Re-create the example worksheet shown below with your own data

2. In cell A1, type Full Name and hit Tab
3. In cell B1, type Address and hit Tab
4. In cell C1, type City and hit Tab
5. In cell D1, type State and hit Tab
6. In cell E1, type Zip Code and hit Tab
7. In cell F1, type Phone and hit Return.
8. Continue and add a few examples (do not worry about the content).



	A	B	C	D	E	F
1	Full Name	Address	City	State	Zip Code	Phone
2	John Doe	2565 McCarthy Mall	Honolulu	Hawai'i	96822	956-6024
3	Fred Johnson	110 University	Honolulu	Hawai'i	96818	944-4561

## Insert & delete columns, rows, and cells

Have you ever entered all of your data and realized that you are missing an entry in the middle of the worksheet? If yes and you did not know how to add columns or rows, it would be really difficult to fix. Well, there is an easier method.

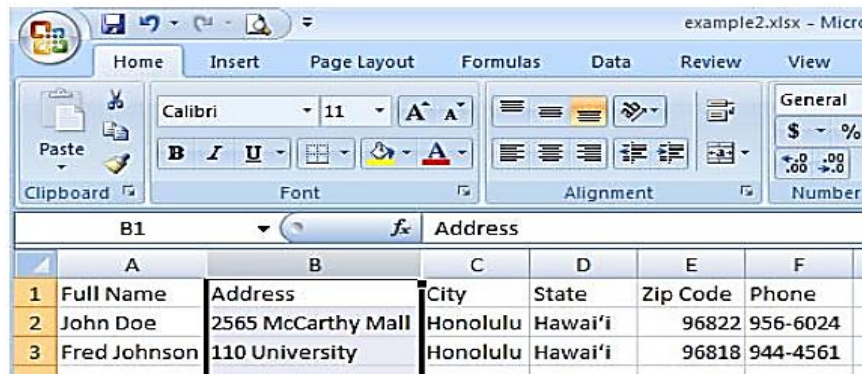
You can insert columns, rows, or cells in any spot on your worksheet.

### Insert columns:

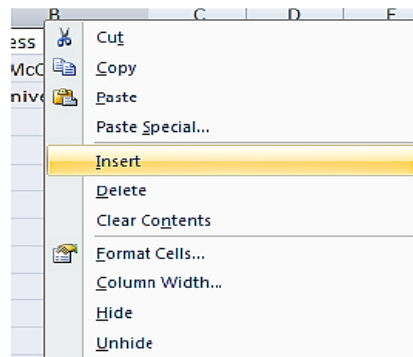
Now you want to add a column to your worksheet to identify specific categories. It should go between **two existing columns** of data.

Before you can insert a column or row, you need to know how Excel inserts a column or a row.

- For **columns**, Excel inserts new column(s) to the left of the selected column(s).
  - For **rows**, Excel inserts new row(s) above the selected row.
1. We want to insert a **new column** for Last Name between **Full Name** and **Address**.



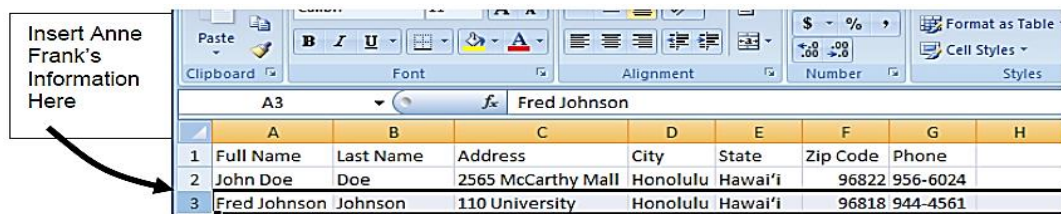
2. Since Excel inserts to the left, you need to click on the column letter B. Column B should be highlighted.
3. Point (do not left click) the arrow at the B column and then right click.
4. A pop-up menu should appear. In the menu you should see Insert.



5. Click on the word **Insert**. Excel will insert a **blank column** between Full Name and Address.
6. Click on **B1** and type in **Last Name**.

### Insert rows:

1. We want to insert a new row for **Anne Frank's** contact information between John Doe and Fred Johnson.



2. Since Excel inserts rows above the selection, you need to click on row number 3. Row 3 should be highlighted.
3. **Right** click while pointing at the number 3
4. A pop-up menu should appear. In the menu you should see Insert.
5. Click on the word **Insert**. Excel will insert a blank row between John Doe and Fred Johnson.
6. Click on A3 and type in Anne Frank's contact information

In this example we inserted Anne Frank manually to keep records in order by Last Name, but let us do this more efficiently.

## Deleting and Clearing a Row or Column

- **Clearing** data from a worksheet removes the data but leaves the blank cells
- **Deleting** data from the worksheet removes both the data and the cells

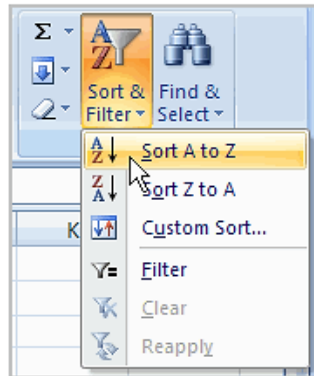
## Using the Sort feature:

You can rearrange, or sort, the records in a table or range based on the data in one or more fields. The fields you use to order the data are called sort fields and you can sort data in ascending or descending order.

### To sort in alphabetical order:

- Select a cell in the column you want to sort (In this example, we choose a cell in column A).

- Click the **Sort & Filter** command in the **Editing** group on the Home tab.
- Select **Sort A to Z**. Now the information in the Category column is organized in **alphabetical order**.



You can Sort in **reverse alphabetical** order by choosing **Sort Z to A** in the list.

#### To sort from smallest to largest:

- Select a cell in the column you want to sort (a column with numbers).
- Click the **Sort & Filter** command in the **Editing** group on the Home tab.
- Select **From Smallest to Largest**. Now the information is organized from the **smallest to largest** amount.

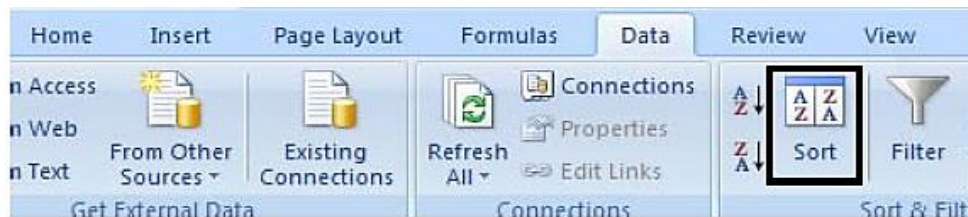
You can sort in **reverse numerical order** by choosing **From Largest to Smallest** in the list.

#### Example:

	A	B	C	D	E	F	G
1	Full Name	Last Name	Address	City	State	Zip Code	Phone
2	John Doe	Doe	2565 McCarthy Mall	Honolulu	Hawai'i	96822	956-6024
3	Fred Johnson	Johnson	110 University	Honolulu	Hawai'i	96818	944-4561
4							
5	Anne Frank	Frank	21-215 Hilo Road	Hilo	Hawai'i	96714	757-4444
6							



1. Select cells **A1 to G5**
2. Go to the Data tab, then click on Sort



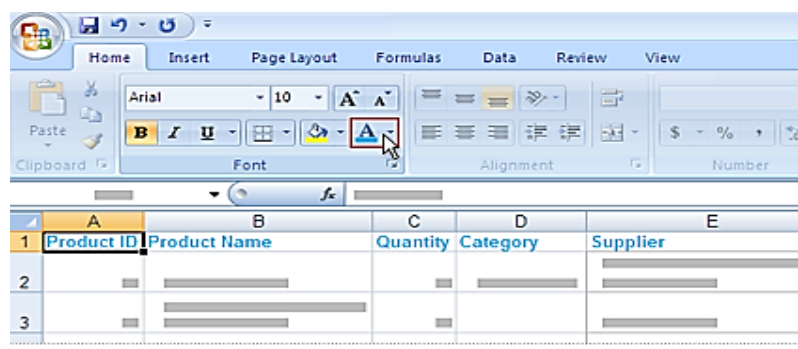
3. In the sort option window, use the pull down boxes to select the sort criteria. In this case we want to sort by Last Name, ascending order A-Z, then click on OK.
4. Your data should look like this.

	A	B	C	D	E	F	G
1	Full Name	Last Name	Address	City	State	Zip Code	Phone
2	John Doe	Doe	2565 McCarthy Mall	Honolulu	Hawai'i	96822	956-6024
3	Anne Frank	Frank	21-215 Hilo Road	Hilo	Hawai'i	96714	757-4444
4	Fred Johnson	Johnson	110 University	Honolulu	Hawai'i	96818	944-4561
5							

### Format and edit data:

You format and edit data by using commands in groups on the **Home** tab. For example, the column **titles** will stand out better if they are in **bold** type.

To make it so, select the row with the **titles** and then on the **Home** tab, in the Font group, click **Bold**.



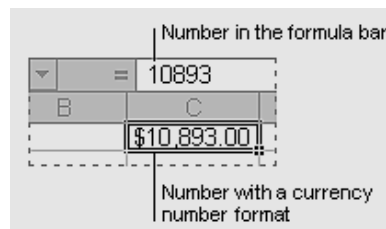
## Formatting Cell's Number:

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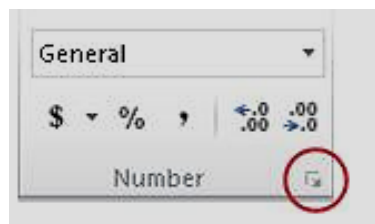
Excel 2007 provides a variety of number formats that you can apply to the values (numbers) you enter in a worksheet to make the data easier to interpret. These number formats include currency, accounting, percentage, date, time, fraction, and scientific, as well as a few special formats.

The following variables provide a summary of the number formats that are available on the **Home** tab in the **Number** group. To see all available number formats.

- **Currency:** If you enter a financial value complete with the dollar sign and two decimal places.



- **Percentages:** If you enter a value representing a percentage as a whole number followed by the percent sign without any decimal places.



- **Dates:** If you enter a date (dates are values, too) that follows one of the built-in Excel number formats, such as 11/10/09 or 10-Nov-09, the program assigns a Date number format that follows the pattern of the date.



## Delete columns and rows

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We all make mistakes. It is very easy to remove a column or rows.

1. Select the column or row that you want to delete.
2. Point at the highlighted column name or row name and **right click**.
3. A pop-up menu should appear
4. Select **Delete**
5. The column or row should be **gone**.

## Insert and delete cells

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The insertion or deletion of columns and rows are easy to keep track of. However, when you insert or delete a cell or a group of cells, you need to be mindful of where these cells are. The reason is that the inserted or deleted cells will shift information in the direction of the insertion or Deletion.

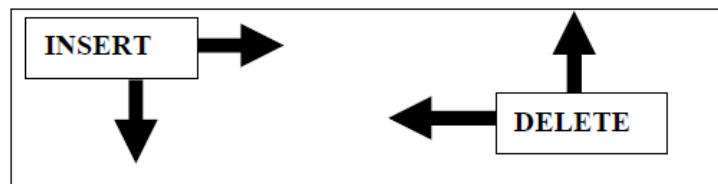
1. Select cells B3 to C4. (Click on B3 and hold the **left** mouse button. Drag the cursor to point at C4.)
2. **Right** click while pointing anywhere in the highlighted area.
3. A pop-up menu should appear and select insert or delete. In the example, I selected the Insert function
4. The next window will ask you in which direction would you like to shift the cells. If you selected delete, you will see the same options.

Shift cells right will shift the cells in columns to the right by the number of Columns in the highlighted selection.

For example, if you select B3 to C4, we have 2 columns so the Shift cells right will move the selection 2 columns to the right or if it is a deletion, 2 columns to the left.

- Shift cells down will shift the cells in rows downward by the number of rows in the highlighted selection. For example, if you select B3 to C4 we have 2 rows so the Shift cells down will move the selection 2 rows downward or if it is a deletion, 2 rows upward.

- Entire row and entire column is like using the insert a row or column discussed earlier.



## Entering a Formula

Excel refers to formulas as functions. There are two ways to enter formulas in Excel, either use one of the functions already programmed in Excel, or enter your own from scratch.

- A **formula** is an expression that returns a value
- A formula is written using **operators** that combine different values, returning a single value that is then displayed in the cell
  - The most commonly used operators are **arithmetic operators**

Arithmetic operators			
Operation	Arithmetic Operator	Example	Description
Addition	+	=10+A1 =B1+B2+B3	Adds 10 to the value in cell A1 Adds the values in cells B1, B2, and B3
Subtraction	-	=C9-B2 =1-D2	Subtracts the value in cell B2 from the value in cell C9 Subtracts the value in cell D2 from 1
Multiplication	*	=C9*B9 =E5*0.06	Multiplies the values in cells C9 and B9 Multiplies the value in cell E5 by 0.06
Division	/	=C9/B9 =D15/12	Divides the value in cell C9 by the value in cell B9 Divides the value in cell D15 by 12
Exponentiation	^	=B5^3 =3^B5	Raises the value of cell B5 to the third power Raises 3 to the value in cell B5

## Using Excel's functions:

The easiest way to understand the implementation of Excel functions is by following a step by step example.

There are three ways to access Excel's functions, click the function button

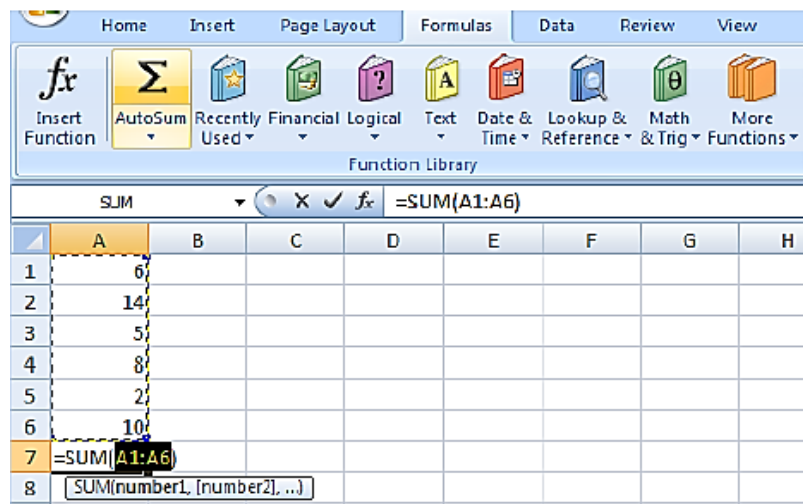


next to the function window (a popup window appears), find the function on the Formulas Ribbon, or type = followed by the function name and a bracket {e.g. =sum( )}.

**Exercise:** It's easy; Use the **Sum** button

Place the cursor in the last cell in the Quantity column, and then click the **Sum** button on the **Home** tab. (It's in the **Editing** group.)

Press ENTER to see the formula result.



## Introducing Functions:

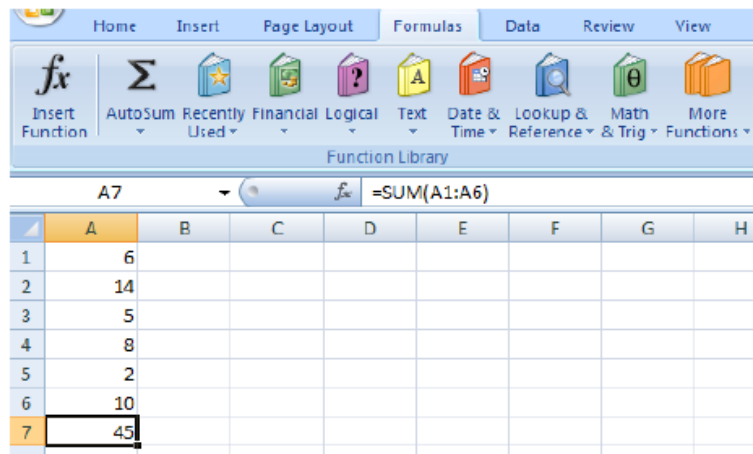
- A **function** is a named operation that returns a value
- For example, to **add** the values in the range A1:A6, you could enter the following long formula:

=A1+A2+A3+A4+A5+A6

Or, you could use the **SUM** function to accomplish the same thing:

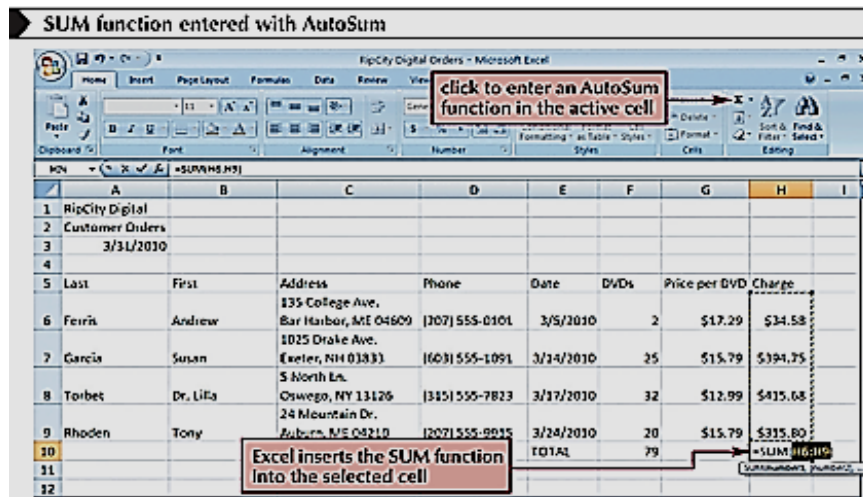
=SUM(A1:A6)

The result will appear in **A7**, as shown in figure below.



## Entering Functions with AutoSum:

- The **AutoSum** button quickly inserts Excel functions that summarize all the values in a column or row using a single statistic
  - **Sum** of the values in the column or row
  - **Average** value in the column or row
  - **Minimum** value in the column or row
  - **Maximum** value in the column or row



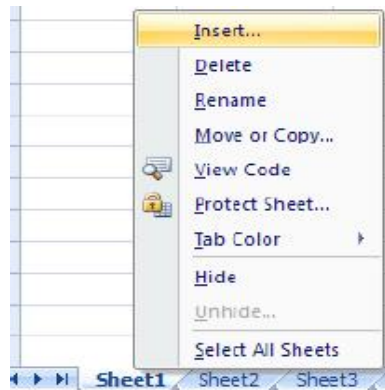
## Inserting & deleting new worksheets

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There will be many times when you need to add a whole worksheet rather than columns or rows.

### Exercise: Insert a worksheet

1. **Right** Click on the tabs where the name of the worksheets is.
2. Click on **Insert**



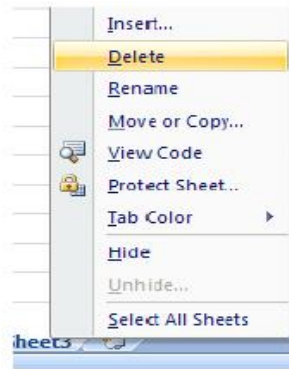
3. Select what kind of insert you want from the window.



4. To move the worksheet, click and hold the left mouse button on the worksheet tab, drag the tab to where you want it to be placed. Note: you can only move the worksheet tabs to the left or right.

### Delete a worksheet:

1. Click on the tab of the worksheet that you want to delete.
2. **Right Click** on the same tab of the worksheet
3. Click on **Delete**



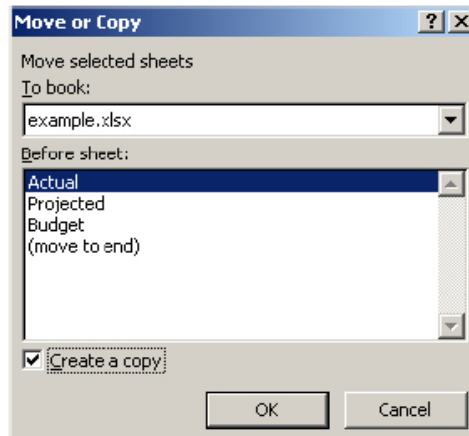
4. A warning window will appear to ask you if you are sure about the deletion.
5. If you select OK, the worksheet will be removed and if you select Cancel, the worksheet will not be removed.

### Copying worksheets:

You may want to copy the whole worksheet rather than selecting the cells in the old worksheet to copy to a new one. Besides being easier to do, there might be some links in the cells that do not transfer well.

#### Exercise: Move or copy a worksheet

1. Click on the tab of the worksheet that you want to Move or Copy.
2. **Right Click** on the same tab of the worksheet
3. Click on **Move or Copy**
4. Select where you want the worksheet to go



5. If you want to COPY, you must click in the Create a copy box; otherwise, Excel will move the worksheet.
6. Click on OK

## Printing

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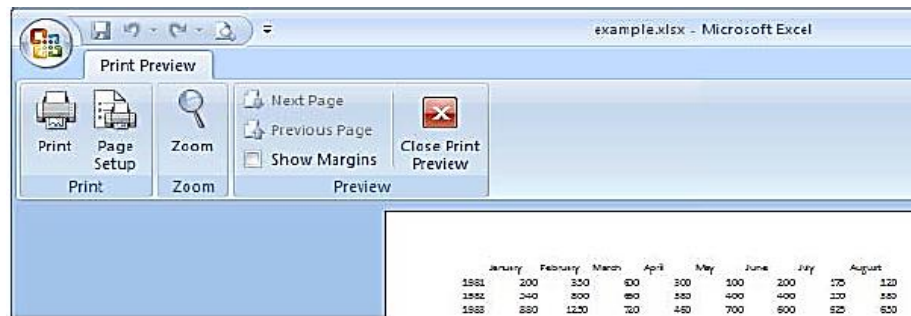
Printing your worksheets out to a printer would be a nice thing to know how to do. If the information that you have on the worksheet fits on an 8.5"x11" paper, you have no trouble printing your worksheet out. The problem arises when you have a larger worksheet. You may have noticed that your worksheet has dashed lines running down and across it; this is your print area.

### Exercise: Setting the print area

1. On your worksheet, click on the Page Layout tab.
2. Click and drag to select the range of cells that you would like to print.
3. Under Page Layout, click on Print Area, then Set Print Area.

### Exercise: How to print with Print Preview

1. You may click on the paper with the magnifying glass icon or click on the Office Button and click on Print, then Print Preview.



2. The menu at the top is important because there are many print functions that you can use for your worksheet. Here are some examples, turn on the gridlines; shrink to fit one page, print headers or footers.
3. Click on **Print**. You will be at the Print menu.
4. Click Page Setup. You will see a control panel that will allow you to make some cosmetic changes to the way the worksheet prints.



**Thanks for you're following it**

**Have a good luck**