Introduction to Microsoft Excel 2007/2010

Abstract: Microsoft Excel is one of the most powerful and widely used spreadsheet applications available today. Excel's functionality and popularity have made it an essential component on computers in countless organizations, businesses, and other institutions throughout the world. If you are new to Excel the extensive array of features and capabilities that it provides may seem daunting at first, but don't worry. The keys to becoming proficient with Excel are patience, practice, and a solid foundation built on the basics.

Introduction to Microsoft Excel 2007/2010

Contents

Introduction to Excel 2007/2010

Learning Objectives

Learning Objectives

Upon completion of this workshop you will be able to:

- Navigate the new "Ribbon" Interface
  - Find the cut, copy, paste commands, etc.
  - Customize the Quick Access Toolbar
- Download and use functional workbook templates
- Save and convert files in old and new Excel formats
  - .xls (old version – 2003 and earlier)
  - .xlsx (new version – 2007/2010 versions)
- Create formulas to add, subtract, multiply, divide
- Use functions to sum values, calculate averages, etc.
- Create simple charts and modify a chart design template
- Sort data according to specific criteria
- Use the Concatenate function to join data in two cells
- Import and Export data to flat text or CSV files

Microsoft Office Excel 2007/2010 Training

Overview

A New Version of Excel

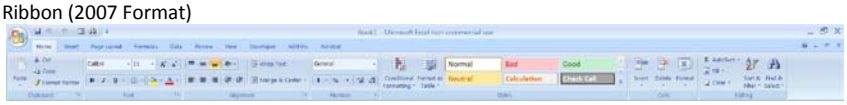
The new version of Excel has a whole new look and feel – along with many new features – but you will not have to worry about spending a lot of time learning a new program.

Instead, the new design and new features will help you organize your work more efficiently and help you complete your everyday tasks quickly.

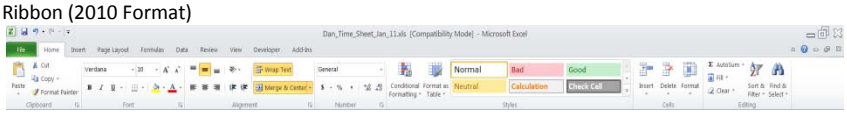
Introducing the Ribbon

The first time you open Excel 2007, you will see **the Ribbon Interface**. It's the band across the top of the application window:

Ribbon (2007 Format)



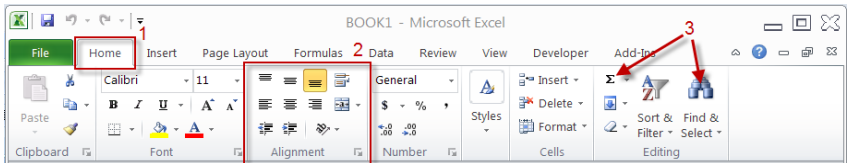
Ribbon (2010 Format)



One of the most dramatic changes in Excel, the Ribbon gives Excel its new look and feel. Some Excel commands are now more prominently displayed, and common commands are grouped into tabs to make them easy to find.

A closer look at the Ribbon

To help you learn how to use the Ribbon, here is a guide to its basic arrangement:



1. **Tabs:** The Ribbon is made up of different tabs, each related to specific kinds of work you do in Excel.
2. **Groups:** Each tab has several groups that show related items together.
3. **Commands:** A command is a button or a menu.

2007 vs. 2010

The main difference between the 2007 and 2010 versions of the Ribbon is the placement of the "File" tab in 2010, which replaces the confusing "Office Button" featured in the 2007 version. The same commands are available in the new "File" tab, as well as a few additional ones, which we will cover later.

Changes to the Help Menu

Microsoft Help has changed as of version 2007. Users may now access Microsoft Office Online Help by selecting the Help Button in the top right corner of the application window: 

Try it!

1. Click the Help Button  then search help with the term "**2003 to 2007**"
2. Choose the **Interactive: Word 2003 to Word 2007 command reference guide**, or simply follow this linked text. (Find the 2010 guide here.)
3. Select Start the guide  to launch the interactive reference guide tool.

Tip!

1. To make the Help window always appear over other windows, click on the pushpin within the Help window toolbar.
2. To allow the Help window move beneath the active window, click on the pushpin to release.

Saving and Printing

But how do you save or print your document?

In Excel 2007: Click the "Microsoft Office Button"

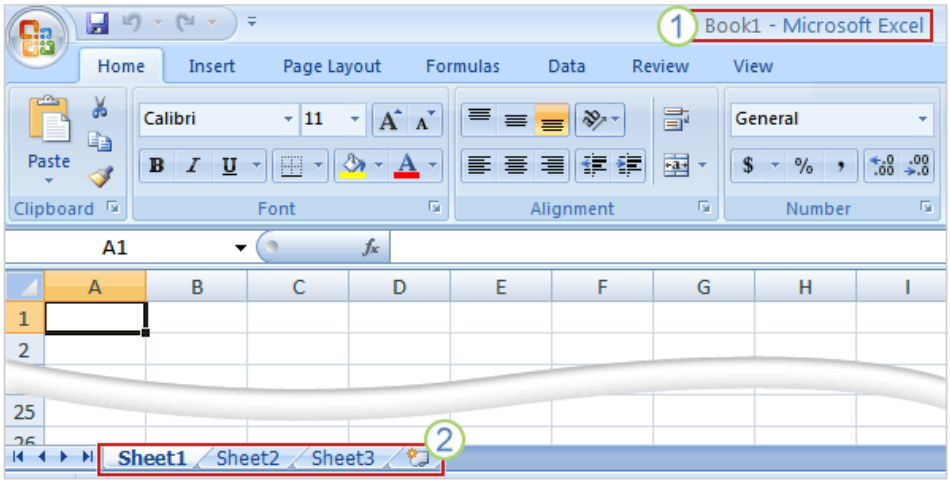
In Excel 2010: Click the "File" Tab

Then select "Save" or "Save As," then "Save As Type" .doc or .docx from the drop down menu.

Getting Started

Getting Started:

Introducing Workbooks and Worksheets



Worksheets are divided into columns, rows, and cells. That's the grid you see when you open up a workbook.

Columns run vertically from left to right. Rows run horizontally from top down on the worksheet. A cell is the space where one column and one row intersect.

Each column has an alphabetical heading at the top. The first 26 columns have the letters from A through Z. After Z the letters begin again in pairs, AA through AZ.

After AZ, the letter pairs start again with columns BA through BZ, and so on, until all columns have alphabetical headings, ending at XFD.

Each row also has a heading. Row headings are numbers.

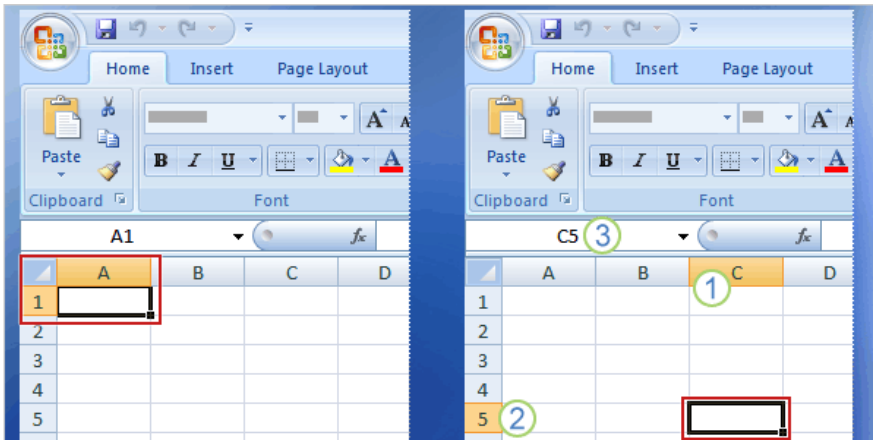
Introducing Cells

Introducing Cells:

When you open a new workbook, the first cell is the active cell. It has a black outline. In the picture below, cell C5 is selected and is the active cell. It is outlined in black.

You have two options: Begin a new worksheet, or open an existing worksheet.

1) To Open a new worksheet, click the Microsoft Office Button/New/Blank Workbook.
2) To Open a preexisting worksheet, simply double-click on any file with an `.xls` or `.xlsx`



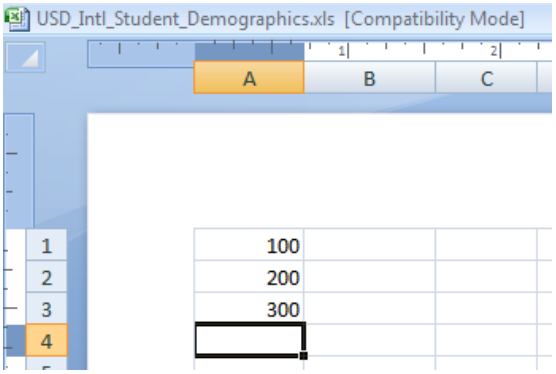
Try It!

Try it!

Opening a new Excel Spreadsheet – Templates & Blank Worksheets

1) **Templates:** Click Microsoft Office Button → New → Installed Templates → Loan Amortization.
   a. Case study: You want to purchase a new hybrid vehicle. Try filling in the template to calculate your payments.
   b. Enter cost ($23,000), interest rate (6%) and term (5 years).

2) **New Spreadsheet:** Click on New → Blank Workbook.
   a. Lets create a simple dataset and chart: When the file opens, type the number 100 in Cell A1, and press the **Enter** key. The heavy black border will move to the cell immediately below the one you were just located.
   b. Type **200** into this cell, press **Enter**. Finally, enter **300** into the cell immediately beneath. Your black border should be surrounding the cell beneath your column of numbers as shown:

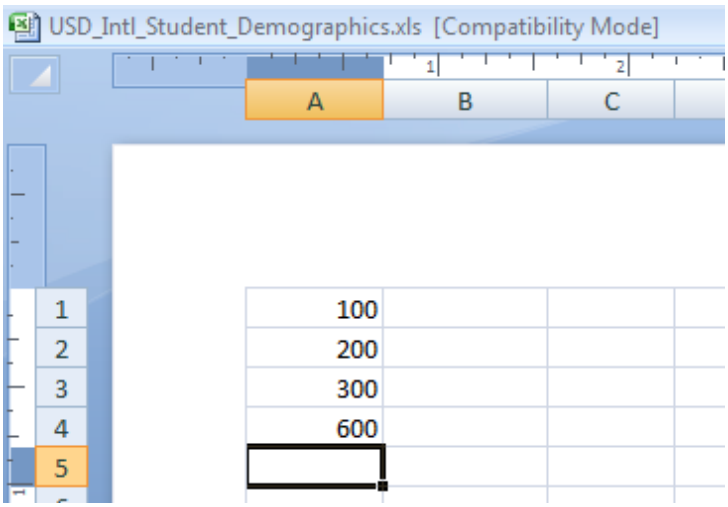


Formulas and Functions

There are two methods to perform calculations:

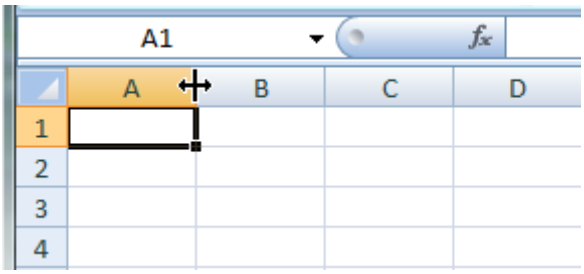
1. **Formulas** and
2. **Functions**.

Let's try a simple function. On the **Home** tab, click the Σ (AutoSum) symbol in the Ribbon's Editing category. You should see a flashing animated border around your column of numbers. In the cell with the heavy border, you should see some text (=SUM), and some cell names corresponding to the cells that you entered your numbers into. Press **Enter** and the sum of your column of numbers will appear in the cell immediately beneath the numbers.



Now let's format the spreadsheet to be more meaningful.

1. Insert a row above your numbers
   a. Right click → Insert → Entire Row
   b. Right click → Insert → Entire Column
2. Create the Headers in Bold
3. To adjust spacing between columns double-click the border between column letters.



Working with Data in Tables

Reproduce the following table in your worksheet by copy/paste or by typing in the column headers and employee names as below

Monthly Sales	Quantity Sold
Jim	100
Cyd	200
Diane	300
Total	**600**

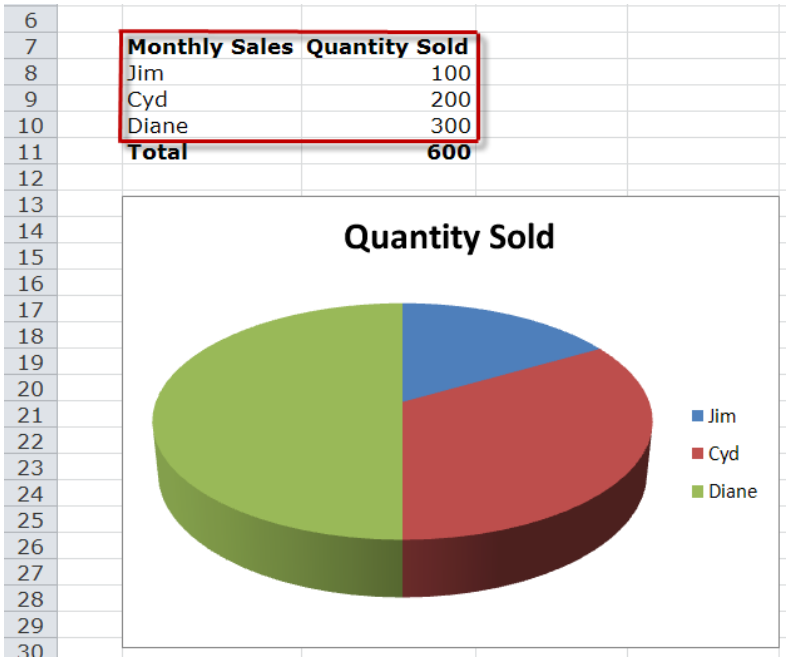
Add the Chart:

1. Select the Data by clicking on Monthly Sales and dragging to Diane's data in cell B4

2. On the **Insert** tab, in the **Charts** group, do one of the following:

   a. Click the chart type, and then click a chart subtype that you want to use. **In this case, select a 3-D pie chart.**

   b. To see all available chart types, click a chart type, and then click **All Chart Types** to display the **Insert Chart** dialog box, click the arrows to scroll through all available chart types and chart subtypes, and then click the ones that you want to use.



Charts and Graphs

Charts and Graphs:

Charts are used to display series of numeric data in a graphical format to make it easier to understand large quantities of data and the relationship between different series of data.

To create a chart in Excel, you start by entering the numeric data for the chart on a worksheet Then you can plot that data into a chart by selecting the chart type that you want to use on the Office Ribbon (Insert tab, Charts group)

Microsoft Office Excel 2007 no longer provides the chart wizard. Instead, you can create a basic chart by clicking the chart type that you want on the Ribbon. To create a chart that displays the details that you want, you can then continue by following a step-by-step process.

Getting to know the elements of a chart

A chart has many elements. Some of these elements are displayed by default, others can be added as needed. You can change the display of the chart elements by moving them to other locations in the chart, resizing them, or by changing the format. You can also remove chart elements that you do not want to display.

Charts and Graphs

Elements of a Chart:

1) **The chart** and all its elements. Can be dragged into position by the frame.
2) The **plot area**: In a 2-D chart, the area bounded by the axes, including all data series. In a 3-D chart, the area bounded by the axes, including the data series, category names, tick-mark labels, axis titles.
3) The **data points**: Individual values plotted in a chart and represented by bars, columns, lines, pie or slices, dots, and various other shapes called data markers. Data markers of the same color constitute a data series. Each data series in a chart has a unique color or pattern and is represented in the chart legend. You can plot one or more data series in a chart. Pie charts have only one.
4) The **axis**, horizontal (category) and vertical (value): A line bordering the chart plot area used as a frame of reference for measurement. The y axis is usually the vertical axis and contains data. The x-axis is usually the horizontal axis and contains categories.
5) The **legend**: A box that identifies the patterns or colors assigned to the data series or categories in a chart
6) A chart and axis **title**: Descriptive text automatically aligned to an axis or centered at the top of a chart.
7) A **data label**: A label that provides additional information about a data marker, which represents a single data point or value that originates from a datasheet cell.

Modifying a basic chart to meet your needs

After you create a chart, you can modify any one of its elements. For example, you might want to change the way that axes are displayed, add a chart title, move or hide the legend, or display additional chart elements.

Descriptions of Popular Chart types in Excel:
Help → Search **Chart Types** in the search area → Select **Enter**

Formulas

Introducing Formulas:

Formulas are visible in the formula bar (as above) when you click a cell that contains a result. If the formula bar is not visible, on the **View** tab on the Ribbon, in the **Show / Hide** group, select the **Formula Bar** check box.

Try it!

1. Click on an empty cell somewhere below the chart you've just created.
2. Type each of the following into the formula bar, beginning each time with an equal sign (**=**), and finally pressing ENTER.
   - =10+5 to add
   - =10-5 to subtract
   - =10*5 to multiply
   - =10/5 to divide

Use cell references in formulas

Entering cell references lets Microsoft® Excel automatically update formula results if cell values are changed. For example, there are three ways to sum a range of cells. Before we begin, type the following values into cells B2, B3, and B4:

Cell B2 = **5**, *Cell B3* = **10**, *Cell B4* = **15**

1. In cell C2, type out by hand "**=B2+B3+B4"** (without the quotes).
2. In cell C3, do the following:
   - type "**=**"
   - select cell B2,
   - type "**+**"
   - select cell B3,
   - type "**+**"
   - select cell B4
   - press **ENTER**
3. In cell C4, do the following:
   - type **"=SUM(**"
   - click down in cell C2 and drag to select the range to cell C4.
   - type "**)**"
   - press **ENTER**

Notice in the third example, Excel inserts a colon to indicate a range of cells.

Working with Formulas

Try it!

Enter the following cell references to view a corresponding selection box:

Cell references	Refer to values in
=A10	the cell in column A and row 10
=A10,A20	cell A10 and cell A20
=A10:A20	the range of cells in column A and rows 10 through 20
=B15:E15	the range of cells in row 15 and columns B through E
=A10:E20	the range of cells in columns A through E and rows 10 through 20

Try it!:

Revise the Sales Table and change the column header **Quantity Sold** to **January** and adding **February** and **Total** headers. Enter the additional data per the example below:

	A	B	C	D
1	**Sales**	**January**	**Febrary**	**Total**
2	**Jim**	100	200	
3	**Cyd**	200	225	
4	**Diane**	300	145	
5	**Mark**	175	125	
6	**Total**			

1. Add Jim's sales from January and February and enter the amount in cell D2 (be sure to use numbers and not cell references)
2. Add Cyd's sales using Cell References within D3.
3. Apply the same formula by dragging the copy handle down from D3 to D4
4. Use the **AutoSum** function to add Mark's sales in **D5** (change the reference cells by highlighting the first, holding shift and highlighting the second, finally pressing **Enter**)
5. Update the graph by right-clicking the data points>**Select Data**
6. Select data including the headers, Sales People and corresponding sales data **(A1:C5)**

Functions

Introducing Functions

Functions are prewritten formulas to add values, calculate averages, find the smallest or largest values in a range, or calculate simple or complex formulas.

Try it!

Use the AVERAGE, MAX, or MIN functions.

1. Click a cell below or to the right of values for which you want to find the AVERAGE, MAX, or MIN. For our example above, select cell E6.
2. Click the arrow next to **Sum** Σ on the **Home** tab, in the **Editing** group. Click **Average**, **Max**, or **Min**, and then press ENTER.

To try other functions, click **More Functions** on the **AutoSum** list or select the **Formulas Tab → Insert Function** button**.**

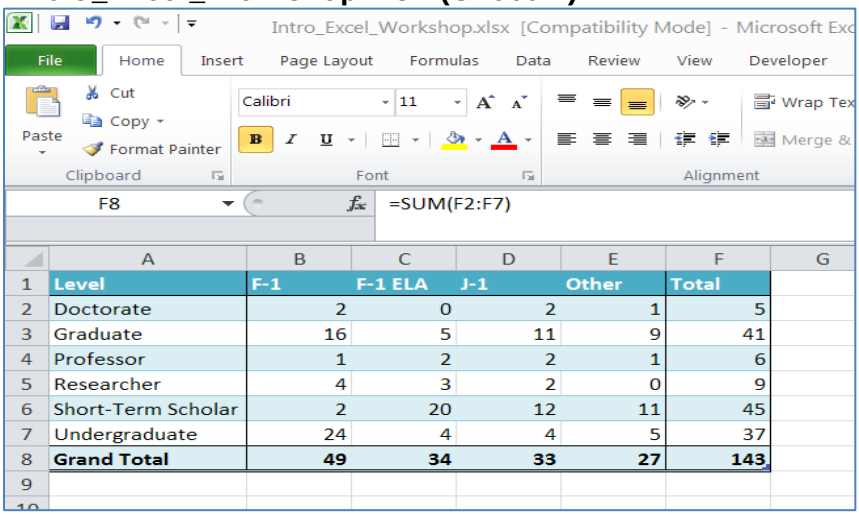
Project

Try it!

Project: You've been asked to create a table and chart reflecting the numbers and types of visas issued for international students here at USD. Click on the links below to open an Excel file containing the information as it was taken from USD's website.

1) Open Intro_Excel_Workshop.xlsx or enter the following URL into your browser to download the file:
   a. http://bliss.sandiego.edu/iteam
   b. select "Introduction to Excel."
2) Open the file by clicking on the Office Button → Open
3) Click on **Sheet 1** tab located at the bottom left.

Intro_Excel_Workshop.xlsx (Sheet 1):



	A	B	C	D	E	F	G
1	**Level**	**F-1**	**F-1 ELA**	**J-1**	**Other**	**Total**	
2	Doctorate	2	0	2	1	5	
3	Graduate	16	5	11	9	41	
4	Professor	1	2	2	1	6	
5	Researcher	4	3	2	0	9	
6	Short-Term Scholar	2	20	12	11	45	
7	Undergraduate	24	4	4	5	37	
8	**Grand Total**	**49**	**34**	**33**	**27**	**143**	
9							

Project

Let's setup the spreadsheet together. What parameters should we consider?

- What columns will we select for our data range?
- What rows will we select for our data range?

Now let's insert a new chart:

1. Select the range A1:E7
2. Select the **Insert Tab** → Chart Group → Column Command → **3D Clustered Column**.
3. Click anywhere within the new chart you just inserted – notice the three new tabs available in the **Chart Tools Tab Group**.
4. Select the **Design Tab**. Change the **Chart Design** to another look and feel.
5. Select the **Layout Tab**.
    a. Add a Chart Title: In the **Labels Group**, select **Chart Title** and Select "Above Chart."
    b. Change the Title to "Visa Status by Type."
    c. Add an Axis Title: In the Labels Group, select **Axis Title → Primary Horizontal Axis Title → Title Below Axis**. Change it to "Constituent Type."
    d. Add a Y Axis Title: In the Labels Group, select **Axis Title → Primary Vertical Axis Title → Rotated Title**. Change it to "Number of Students."
6. Select the **Format Tab**. In the **Shape Styles Group**, select a differed style, such as orange, blue, or gray.
7. Examine your chart. Notice the tallest F-1 status column for the Student Type: Undergraduate. **Right click** on this column, and in the resulting context menu, select "**Add Data Labels**."
8. Continue to modify the chart design until you are satisfied with how it looks!

To view a completed example, navigate to Sheet 2.