

# Excel – Level 2

Computer Training Solutions





## 1. Sorting Data

- ◆ Single-Level Sort
  - ◆ Multiple-Level Sort
  - ◆ Sort Options
  - ◆ Subtotals
  - ◆ Import Data from Access
  - ◆ Data Validation
  - ◆ Design Considerations
- 

## 2. Filtering Data

- ◆ Single-Column Filter
  - ◆ Multiple-Column Filter
  - ◆ Custom Criteria
  - ◆ Create a Criteria Range
  - ◆ Multiple-Condition Criteria
  - ◆ Manage a Filtered List
  - ◆ Data Forms
- 

## 3. Creating Charts

- ◆ Create a Chart Sheet
  - ◆ Create an Embedded Chart
  - ◆ Compare Chart Sheets with Embedded Charts
- 

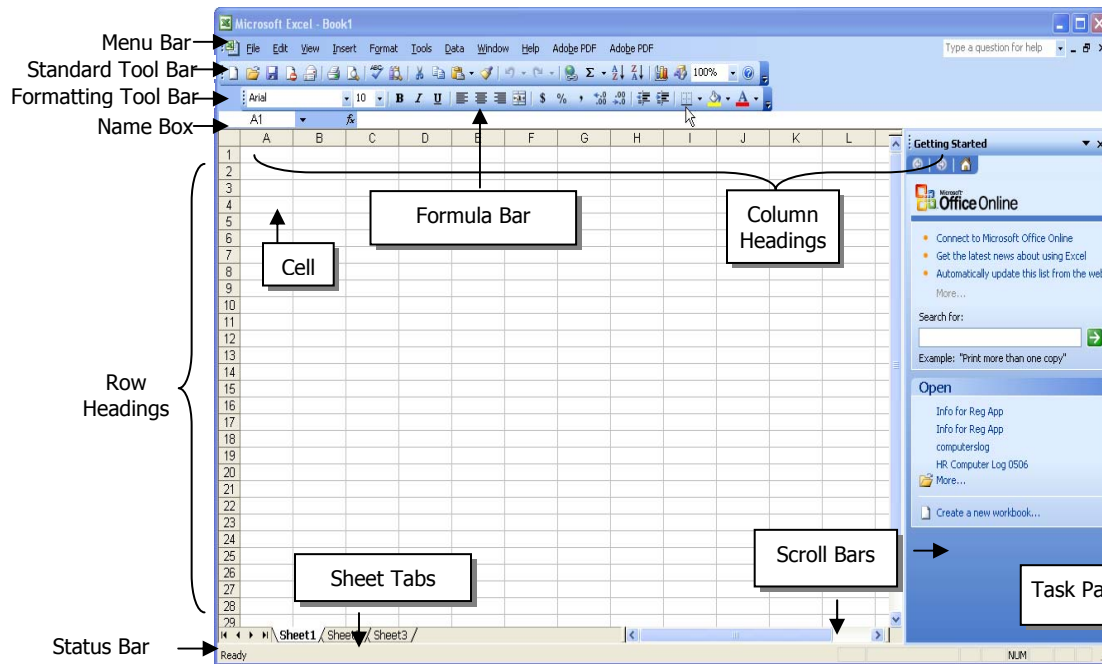
## 4. Modifying Charts

- ◆ Chart Types
  - ◆ Change Chart Type
  - ◆ Exploding Pie Chart
  - ◆ Add and Delete Chart Items
  - ◆ Link Chart Text to Worksheet Data
  - ◆ Move and Size Chart Items
- 

## 5. Formatting a Chart

- ◆ Format Chart Text
- ◆ Format Labels
- ◆ Format Chart Objects
- ◆ Printing a Chart Sheet

### Excel Application Window



### Excel Facts

- Column headings are designated letters A – IV for a total of 256 columns.
- Row headings are designated numbers from 1 to 65, 536.
- The intersection of a column and a row is called a cell.
- Cells store data entered into a spreadsheet.
- One worksheet has 16,777,216 cells.
- By default, a workbook contains 3 worksheets.
- You can have up to 255 separate worksheets in a workbook.




### General Keyboard Shortcuts

New workbook	Ctrl + N
Open a workbook	Ctrl + O
Save a workbook	Ctrl + S
Close all workbooks	Shift + File/Close All
Undo	Ctrl + Z
Redo	Ctrl + Y
Repeat last function	F4
Cancel	Esc
Help	F1
New chart	F11
Show formulas in cells	Ctrl + ~ (Tilde)

### Navigation & Editing Shortcuts

Go to cell A1	Ctrl + Home
Beginning of row	Home
To the last cell with data	Ctrl + End
To go to a specific cell	F5 or Ctrl + G
One cell left, right, up, down	Arrow keys
Scroll down one screen	Page Down
Scroll up one screen	Page Up
Screen left	Alt + Page Down
Screen right	Alt + Page Up
Edit active cell	F2
Absolute Reference	F4
Cut	Ctrl + X
Copy	Ctrl + C
Paste	Ctrl + V
Select all	Ctrl + A
Format selected cell(s)	Ctrl + 1

### Mouse Shapes

-  When you point in the middle of a cell, the mouse pointer looks like a thick cross, it can be used to select a single cell or a block of cells for editing purposes.
-  The "11 O'Clock" arrow pointer allows you to move the selected cell(s) to another location on the worksheet by dragging or copies the cell by holding the CTRL key in conjunction with the click and drag.
-  The thin cross-hair shaped mouse is used with the fill/copy handle at the bottom right corner of the cell. You can fill in a series or copy the cell contents to adjacent cells.

### Formulas

To create a basic formula:

1. Select the cell in which you would like the formula to appear.
2. In the formula bar, type an equal sign, and then type the formula you would like to perform.
3. Press enter.

Symbols used to calculate: add (+), subtract (-), multiply (\*), divide (/),

### Built-in Functions

Function	Description
=SUM(C1:C9)	Adds the contents of the range
=AVERAGE(C1:C9)	Calculates the average
=MAX(C1:C9)	Returns the highest value
=MIN(C1:C9)	Returns the lowest value
=COUNT(C1:C9)	Counts the number of values in a range
=COUNTA(C1:C9)	Counts the number of non-blank cells in a range
=COUNTIF(C1:C9,10)	Counts the number of 10's in the selected range
=NOW()	Returns the current date

### Sort Data Lists

A sort is a method of viewing data that arranges all the data into a specific sort order. Data can be sorted in either ascending order or descending order, based on numeric or alphabetic information. Data can be sorted on a single criterion or multiple criteria.

### Quick Sorting Data

1. Select a cell within the column you want to sort by.
2. Click **Sort Ascending** or **Sort Descending** button



### Multiple-Level Sorting

Choose **Data**→**Sort**.

1. From the **Sort By** drop-down list, choose the primary sort order.
2. From the **Then By** drop-down list, choose the second sort order.
3. From the second **Then By** drop-down list, choose the last sort order.

### Creating Subtotals

1. Choose **Data**→**Subtotals**.
2. From the **At each change In** drop-down list, select an item to subtotal.
3. From the **Use Function** drop-down list, select a function.
4. From the **Add subtotal** to list box, choose the item to add.

### Import Data from an Access Database

1. Create a new workbook and verify that cell A1 is selected.
2. Choose **Data**→**Import External Data**→**New Database Query**.
3. From the Databases tab, select **MS Access Database**.
4. Verify that **Use the Query Wizard** to create/edit queries is checked, click **OK**.
5. From the **Select Databases** dialog box, select the appropriate file folder location and filename of the database file to be imported, click **OK**.
6. From the **Available Tables and Columns** list, select the appropriate table and click the Right Arrow button.
7. Click **Next**
8. Click **Next**
9. Verify that **Return Data to Microsoft Excel** is selected and click **Finish**.
10. Verify that Existing Worksheet is selected and click **OK**.

### Create a Data Validation Rule

1. Select the data that will be part of the data validation rule.
2. Choose **Data**→**Validation**.
3. Using the **Settings** tab, set your criteria for a valid entry.
4. If desired, create an optional message on the Input Message tab,
5. If desired, make changes to the default error message by using the Error Alert tab.
6. Click **OK**.

### Filter Data Lists

A filter is a method of viewing data that shows only the data that meets a criterion. Data can be filtered on a single criterion or multiple criteria using numeric and alphabetic information. Drop-down arrows for each column heading indicate the list is ready to be filtered. When data does not meet the filter criteria, the entire row is hidden. A filter can rearrange the data in the worksheet or copy the information to another location in the worksheet. Filtered data is restored to its original format by removing the filter.

### Single-column Filtering

1. Place the active cell anywhere within the list.
2. Choose **Data**→**Filter**→**AutoFilter**.
3. Click on the drop-down arrow to the right of the column you want to filter and choose the desired item.

### Multiple-column Filter

1. Place the active cell anywhere within the list.
2. From the drop-down arrow to the right of the column you want to filter, choose the desired item.
3. From the drop-down arrow to the right of the additional column you want to filter, choose another item.

### Custom Criteria

1. From the drop-down arrow to the right of the column you want to filter, choose **Custom**.
2. From the First operator drop-down list, choose an operator.
3. From the First criteria drop-down list, select an item.
4. From the Second operator drop-down list, choose an operator.
5. From the Second criteria drop-down list, select an item and click **OK**.

### Turn Off AutoFilter

1. Choose **Data**→**Filter**.
2. Choose **AutoFilter** to deactivate the choice.

### Create a Criteria Range

1. Enter one row of criteria labels and at least one row of criteria.
  - For an AND condition, enter all criteria that you want the sets of data to meet in the same row.
  - For an OR condition, enter all criteria that you want the sets of data to meet in the same column.

### Define a Criteria Range

1. Choose **Data**→**Filter**→**Advanced Filter** to display the Advanced Filter dialog box.
2. In the Criteria Range text box, enter the range of cells in the criteria (type in the range or use the Selection arrow to drag the selection) and click **OK**.

### Charts

- Data Range:** Range of cells that contains the actual data being charted
- Data Point:** One item of data (one cell) in a data range
- Data Row:** Row of cells where each cell contains a unique piece of information such as item, cost and quantity. A data row contains several different data points
- Data Series:** One column containing the same data point (piece of information) from each data row
- Data Markers:** The graphic representation of a data point in a chart such as one bar in a bar chart or one slice in a pie chart

### Create a basic chart:

1. Select the worksheet data to chart.
2. Select the rows or columns containing the numeric and label text you want to include.
3. Click on the **Chart Wizard** button.
4. Follow the ChartWizard prompts:
  - Step 1: Select Chart Type
  - Step 2: Check Chart Source Data
  - Step 3: Select Chart Options
  - Step 4: Select Chart Location



*Note: Charts may be located on a separate chart sheet or as an embedded object on the worksheet.*

### Modify Chart Objects:

1. Select the object on the chart you want to modify,
2. Double-click on the chart object.
3. Enter desired changes.
4. Choose **OK**.

### Change the Chart Type:

1. Select the chart.



2. Click on the **Chart Type** button on the Chart toolbar.
3. Select a chart type.

### Change the Chart Subtype:

1. Select the chart.
2. Choose **Chart→Chart Type**
3. Select a new chart type.
4. Select the desired Chart subtype button.
5. Choose **OK**.

### Modify the Legend Format:

1. Select the legend object on the chart.
2. Double-click on the legend.

### Modify the Legend Text:

Select the chart.

1. Choose **Chart→Source Data**.
2. Click on the Series tab.
3. Click **Setup** to change print options such as margins, paper size, orientation, scaling, headers/footers, print titles, grid lines, sheet options
4. Click **Margins** to show margin lines
5. Click **Close** to close Print Preview
6. Enter the desired series names in the appropriate Name text box.
7. Choose **OK**.

### Format an Axis:

1. Double-click the axis you want to format.
2. Make the desired changes
3. Choose **OK**.

### Change Orientation Of Axis Labels:

1. Double-click the axis you want to change.
2. Click on the **Alignment** tab.
3. Select the desired text orientation.
4. Choose **OK**.

### Redefine Data Series:

1. Select the chart.
2. Choose **Chart→Source Data**.
3. Click on the **Data Range** tab.
4. Click in the **Data Range** text box.
5. Enter a new data range or select a new data range from the worksheet.
6. Choose **OK**.

### Start a Combination Chart:

1. Select the rows and columns containing the numeric and label text you want to include in the chart.
2. Click on the **Chart Wizard** button.
3. Click on the **Custom Types** tab in Step 1 of the Wizard.
4. Select a custom chart type.
5. Choose **Next**.
6. Enter selections for plotting data series, x-axis labels, and legend text.
7. Choose **Next**.
8. Add the desired titles.
9. Choose **Finish**.

### Change Chart Type of Series:

1. Select the chart.
2. Select a series on the chart.
3. Choose **Chart→Chart Type**.
4. Click on the **Standard Types** tab.
5. Change the chart type for the series.
6. Choose **OK**.

### Adjust Page Setup for Chart Sheet:

1. Activate the chart sheet.
2. Choose **File→Page Setup**.
3. Click on the **Chart** tab.
4. Choose Full Page to stretch the chart horizontally and vertically to cover the entire page.
5. Choose **OK**.

### Print the Chart Sheet:

1. Activate the chart sheet.
2. Choose **File→Print**.
3. Enter the desired changes to the Print Dialog box.
4. Choose **OK**.
5. *Note: You can also select the Print button from the Page Setup dialog box*

### Exercise 1 – Sorting and Subtotals

1. Open **Practice – Sort Data**.
2. Use the **Data** → **Sort** command to enter the following information in the Sort dialog box, and then perform the sort.  
 Sort By **BALANCED OWED**, Ascending order  
 Then By **CASE TYPE**, Ascending order  
 Then By **LAST NAME**, Ascending order
3. Use the **Data** → **Sort** command to enter the following information in the Sort dialog box, and then perform the sort.  
 Sort by **CASE TYPE**, Ascending order  
 Then by **LAST NAME**, Ascending order  
 From the second Then By drop-down list, select **(None)**
4. Create a subtotal and add the balance owed for each case type.
5. Widen column E to view the subtotal labels.
6. Display outline – level 2 (the subtotals and grand total – compare to figure below).
7. Compare your worksheet to Figure 5 – 3.
8. Display outline-level 3 (the detail level).
9. Save the file in the Student folder as **My Practice – Sort Data**.
10. Close the file.

1	2	3	A	B	C	D	E	F	G
	1		<b>DOUGLAS, LINCOLN, BRYANT, AND DARROW -- ATTORNEYS AT LAW</b>						
	2								
	3		Case Listing - Balances Owed						
	4								
	5		<b>CASE #</b>	<b>LAST NAME</b>	<b>FIRST NAME</b>	<b>CASE TYPE</b>		<b>BALANCE OWED</b>	
	10					<b>collections Total</b>		\$ 7,609	
	18					<b>corporate Total</b>		\$ 53,000	
	20					<b>disability Total</b>		\$ 12,500	
	25					<b>real estate Total</b>		\$ 13,690	
	26					<b>Grand Total</b>		\$ 86,799	
	27								

The worksheet after step 6 is complete.

### Exercise 2 – Filtering

1. Open the file **Practice – Filter**. (**Do not remove filter between steps.**)
2. Filter the list to display only the **collection** case types (There are 4).
3. Filter the list to display only the **real estate** case types that owe **\$1,000 or more**. (There are 2.)
4. In cell **F22**, use the **AutoSum** button to add the **Balanced Owed** amounts for the filtered list. (The total is \$13,590.)
5. Filter the list to show **corporate** case types owning **\$10,000 or more**. (There are 4.)
6. Sort the filtered list alphabetically by last name.
7. Compare your list to the figure below.

Save the file as **My Practice – Filter** and close the file.

	A	B	C	D	E	F	G
1		<b>DOUGLAS, LINCOLN, BRYANT, AND DARROW -- ATTORNEYS AT LAW</b>					
2							
3		Case Listing - Balances Owed					
4							
5		CASE	LAST NAM	FIRST NAM	CASE TYF	BALANCE	
						OWED	
12		A3456	Bunker	Hillary	corporate	\$ 12,000	
16		D4537	Difasi	Angie	corporate	\$ 12,000	
17		A3423	Eschel	Monica	corporate	\$ 13,000	
18		A3421	Lajoie	Gerald	corporate	\$ 12,000	
22						\$49,000	

### Exercise 3 – Custom Filtering

1. Open the file **Practice – Filter and Sort**. (Remove filter between steps.)
2. Filter the list to include only those employees who live in Shortsville. (There are 2.)
3. Filter the list to include only those employees who earn more than \$19. (There are 9.)
4. Filter the list to include only those employees who live in Holley and earn \$22 or more (There are 4.)
5. Filter the list to include those employees who live in Rose or Walworth. (There are 6.)
6. Filter the list to include those employees with last names that begin with m or s. (There are 6.)
7. Sort the filtered list by Last Name and then by First Name, both in ascending order.
8. Save the file as **My Practice – Filter and Sort** and close the file.

### Exercise 4 – Creating Charts

1. Open the file **B&B Charts**.
2. Create a chart sheet that represents the data for each person for quarters 1-4. Use the default clustered column chart type.
3. Rename the Chart1 sheet tab to B&B Chart.
4. Change the chart type to a clustered column with a 3-D visual effect.
5. Create an embedded chart that represents each person's totals for the year. Use the default line chart type and display the value only.
6. Add a title called Yearly Sales.
7. Move and resize the embedded chart to the range A16:F30.
8. Change the chart type to a 3-D visual effect pie chart.
9. Change the data label to show percent.
10. Save the file as **My B&B Chart**.

### Exercise 5 – Changing Chart Types

1. Open the file **NE Charts**.
2. Change the embedded chart type to an exploded pie chart with 3-D visual.
3. Preview the chart and data.
4. Center the chart and data horizontally on the page.
5. Add a chart title to Chart-All Qtrs called Books & Beyond – All Quarters.
6. Add a chart title to Chart-Qtrs 1&4 called Books & Beyond –Quarters 1 & 4.
7. Show the value on the Chart-Qtrs 1&4 chart.
8. On the Chart – All Qtrs chart, move the legen to the bottom of the chart.
9. Save the file as **My NE Charts**.