Kennesaw State University

University Information Technology Services

Microsoft Excel 2010

Level 2

University Information Technology Services

Outreach, Training, Learning Technologies & Video Production

Published by Kennesaw State University – UITS 2010

Excel 2010 - Level 2

Table of Contents

Introduction

Excel 2010 Level 2 is a continuation of the fundamentals learned in Excel 2010 Level 1 and builds on this foundation to provide the user with the necessary skills to create more detailed and extensive spreadsheets, and enhance their visual impact with charts and other graphic objects.

Learning Objectives

- Edit and format large areas of a spreadsheet.
- Streamline calculations by using functions.
- Use data more effectively through sorting.
- Create charts to display data in a graphical format.
- Use drawing objects to add visual appeal to spreadsheets.
- Insert screenshots into the spreadsheet.

Using Ranges

Working with a range allows you to perform operations such as moving, copying, or formatting much faster than working with one cell at a time. *Figure 1* contains terms and definitions encountered when using ranges.

Term	Definition
Range	A group of cells.
Name Box	Allows you to enter a name for a range.
Formula Bar	A bar at the top of the Excel window that you use to enter formulas.

Figure 1 – Definitions

Selecting a Range

To select a range, highlight the cells that you want to include in the range (see *Figure 2*).

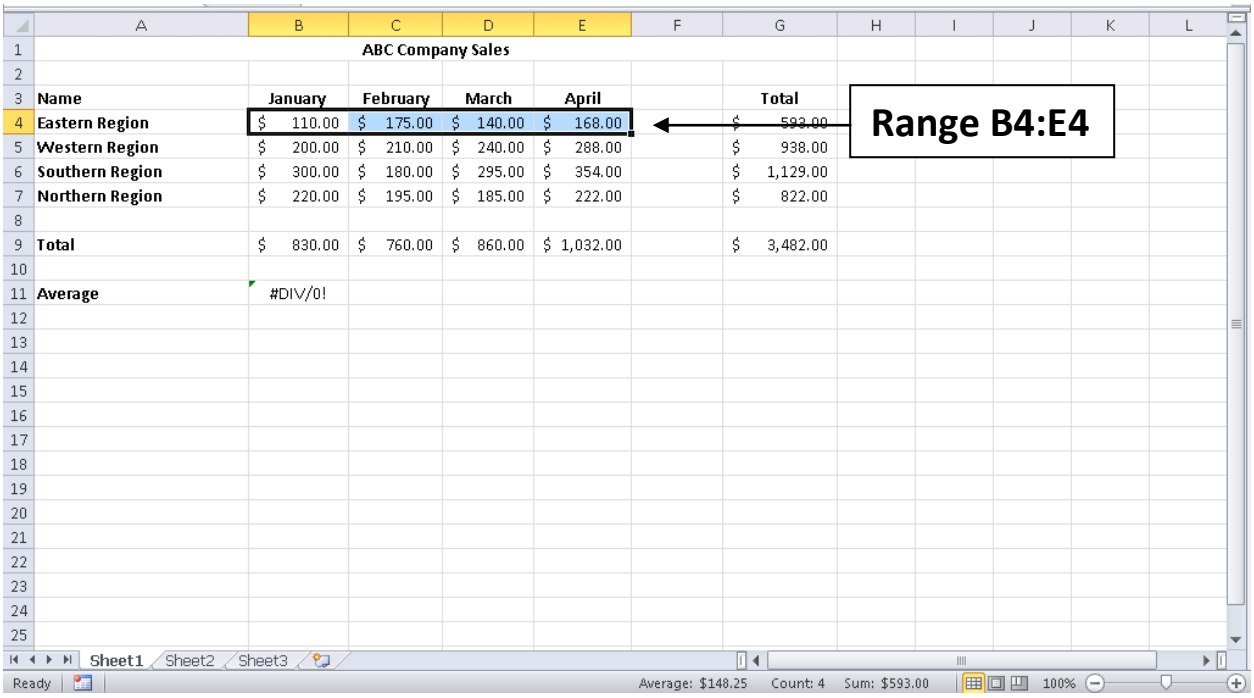


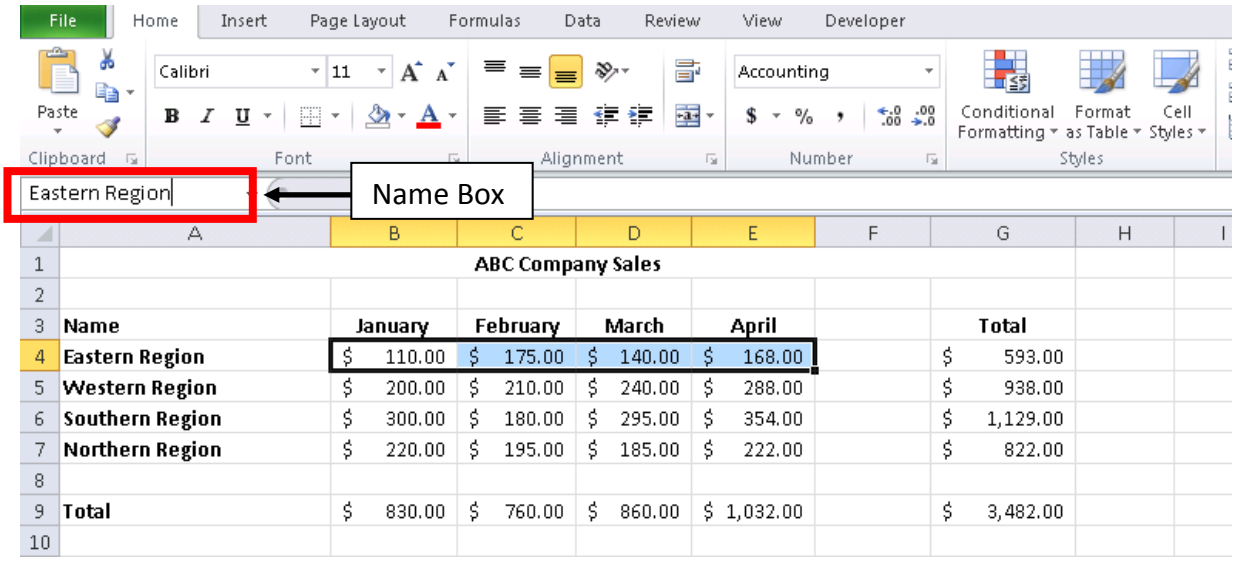
Figure 2 – An Example of a Range

When using ranges in formulas, you may need to define the range by using the cell addresses. In the above example, the *Eastern Region* sales figures would appear in the range as the following: **B4:E4**

Naming a Range

A range can also be defined by giving a "name" to a group of cells. For example, we could name cells B4 through E4 as, "Eastern Region" by doing the following:

1. Highlight cells B4 through E4 (see *Figure 3*).
2. Click in the *Name Box* (see *Figure 3*).
3. Type "Eastern Region" and press the *Enter* key.
4. You can now use the name "Eastern Region" in a formula instead of (B4:E4).



	A	B	C	D	E	F	G	H	I
1	ABC Company Sales								
2									
3	**Name**	**January**	**February**	**March**	**April**		**Total**		
4	**Eastern Region**	$ 110.00	$ 175.00	$ 140.00	$ 168.00		$ 593.00		
5	**Western Region**	$ 200.00	$ 210.00	$ 240.00	$ 288.00		$ 938.00		
6	**Southern Region**	$ 300.00	$ 180.00	$ 295.00	$ 354.00		$ 1,129.00		
7	**Northern Region**	$ 220.00	$ 195.00	$ 185.00	$ 222.00		$ 822.00		
8									
9	**Total**	$ 830.00	$ 760.00	$ 860.00	$ 1,032.00		$ 3,482.00		
10									

Figure 3 – An Example of a Range

Copying and Pasting a Range

The following explains how to copy and paste a range:

1. Click and drag the mouse pointer across the cells to highlight them.
2. Click on *Edit* and select *Copy* (you will see a moving border around the range).
3. Click the mouse pointer in the beginning cell where you want the range to be copied.
4. Click on *Edit* → *Paste*.

Using Functions

Figure 4 shows the definition for a *Function*:

Term	Definition
Function	A predefined formula that can be used to simplify calculations in worksheets.

Figure 4 – Function Definition

In the following example, we'll use a function to find the average quarterly sales figure for the Eastern Region:

1. Click in cell F15.
2. Click the *Insert Function* button which appears as f_x(see *Figure 5*) and the *Paste Function* dialog box will open.

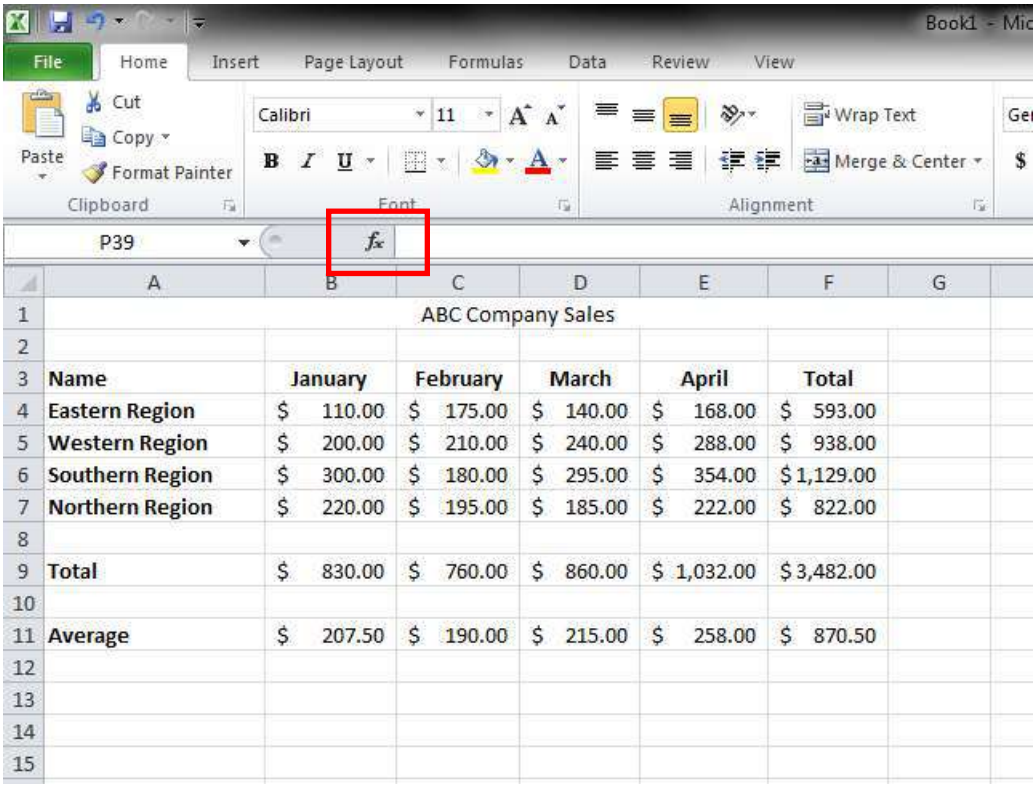


Figure 5 – Insert Function Button

3. Select *Average* from the *Function name* list and click *OK*. The *Function Arguments* dialog box will appear (see *Figure 6*).
4. In the text box for *Number 1*, enter the range (example - B4:E4).

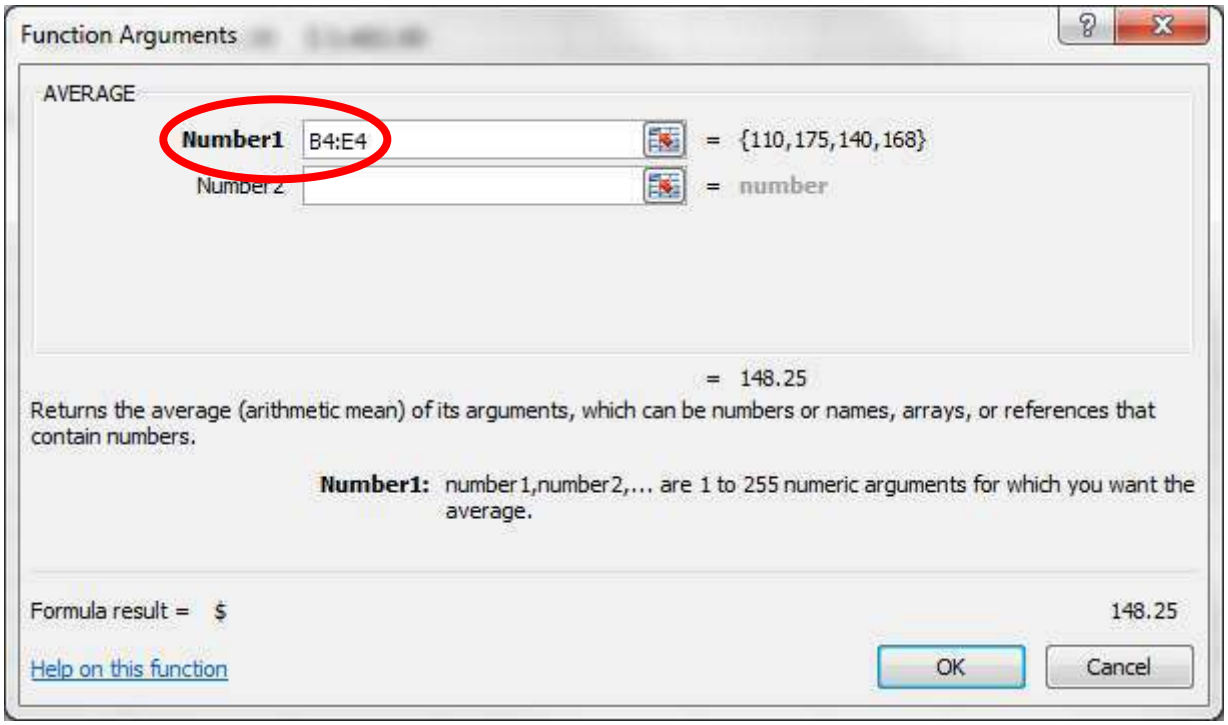


Figure 6 – Function Arguments

Note: If this had not been the range we wanted, we could have typed the correct range in the *Number 1* field in the dialog box.

5. Click *OK*. Excel returns the average of the numbers in cell F15.

Sorting

Excel gives you the ability to sort a list of items, names, or numbers. You can select which field or fields you want to use for the sort, and whether to sort in ascending or descending order. The following explains how to sort the First Names from *Figure 7*:

1. Click in cell A3 to make it the active cell.
2. On the *Home* tab, click on the *Sort & Filter* icon (see *Figure 7*).
3. Select *Sort A to Z*. This will sort the list in ascending order by *First Name*, since the active cell was in the *First Name* column.

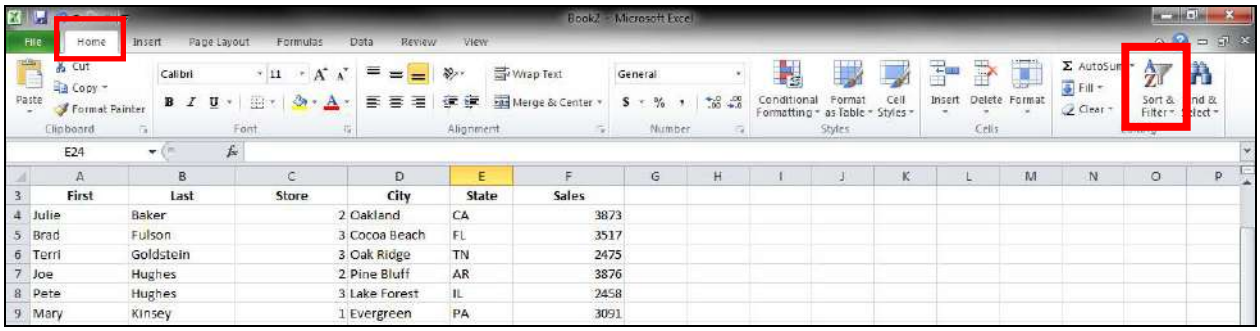


Figure 7 – Sorting

Your list will now be sorted in alphabetical order by *First Name* (see *Figure 8*).

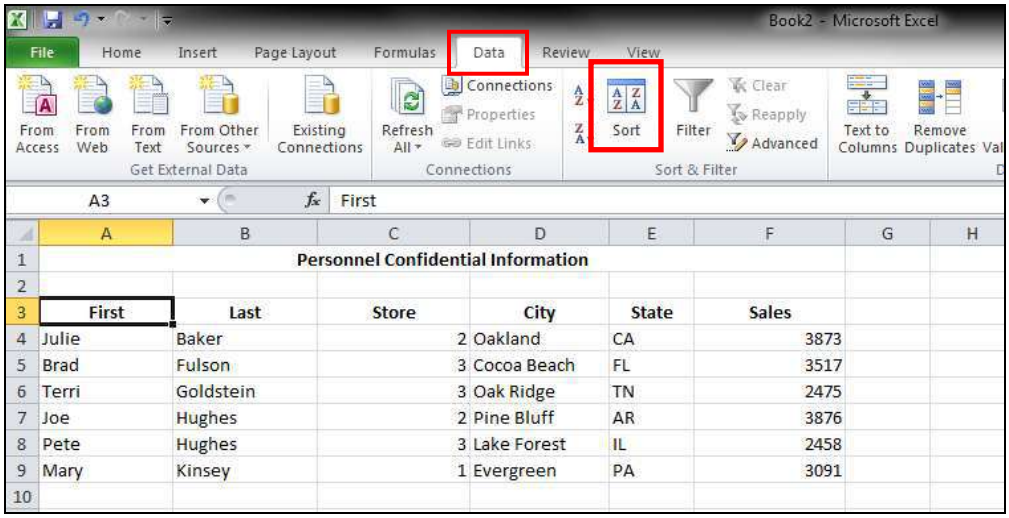
	A	B	C	D	E	F	G
3	First	Last	Store	City	State	Sales	
4	Brad	Fulson	3	Cocoa Beach	FL	3517	
5	Joe	Hughes	2	Pine Bluff	AR	3876	
6	Julie	Baker	2	Oakland	CA	3873	
7	Mary	Kinsey	1	Evergreen	PA	3091	
8	Pete	Hughes	3	Lake Forest	IL	2458	
9	Terri	Goldstein	3	Oak Ridge	TN	2475	
10							

Figure 8 – Sorting

Sorting With the Data Sort Menu Option

Another way to sort in Excel is with the Data Sort menu option. The following explains how to sort by *First Name* using this option:

1. Click on the heading labeled *First* (see *Figure 9*).



	A	B	C	D	E	F	G	H
1	Personnel Confidential Information							
2								
3	First	Last	Store	City	State	Sales		
4	Julie	Baker	2	Oakland	CA	3873		
5	Brad	Fulson	3	Cocoa Beach	FL	3517		
6	Terri	Goldstein	3	Oak Ridge	TN	2475		
7	Joe	Hughes	2	Pine Bluff	AR	3876		
8	Pete	Hughes	3	Lake Forest	IL	2458		
9	Mary	Kinsey	1	Evergreen	PA	3091		
10								

Figure 9 – Sorting

2. From the *Data* tab, Click *Sort* (see *Figure 9*).
3. In the *Sort* dialog box (see *Figure 10*), select the column heading that you want to sort by from the *Sort by* field.

Figure 10 – Sort Dialogue Box

4. Select the order that you want to sort by from the *Order* field (see *Figure 10*).
5. Click *OK*.

Creating Charts

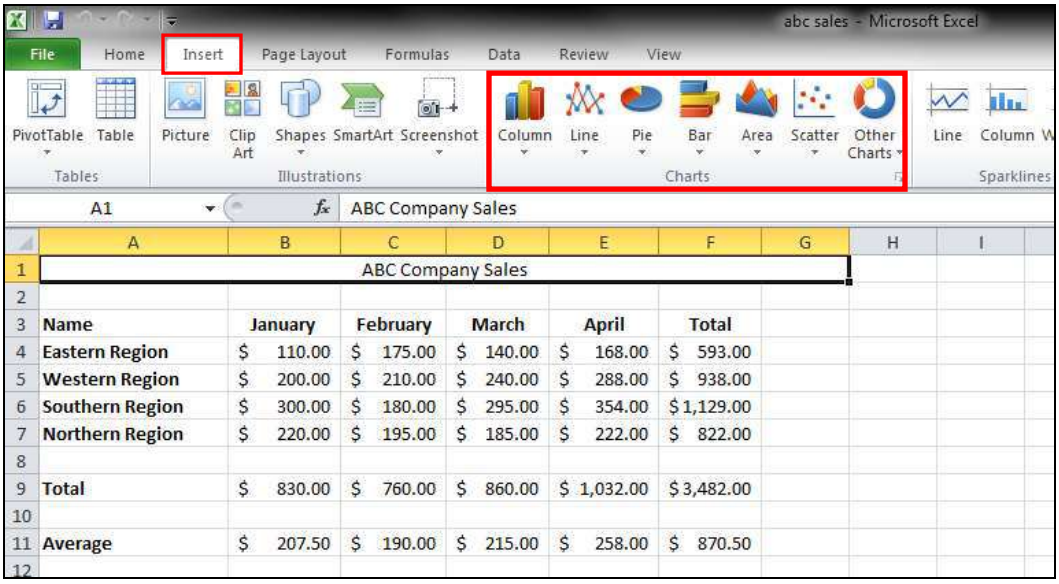
Figure 11 shows the definitions for terms used with charts:

Term	Definition
Chart	A graphical representation of data.
Chart Wizard	Guides you through the steps for creating a chart.
Y Values	In a bar chart, the numerical values displayed on the Y axis.
X Labels	In a bar chart, the text that defines each charted item on the X axis.

Figure 11 – Definitions for Charts

The following shows how to create a chart:

1. Select the cells that contain the data that you want to display in the chart, including column headings. If the data is not in contiguous cells, hold down the CTRL key as you highlight.
2. From the *Insert tab*, select the type of chart that you want to use.



	A	B	C	D	E	F	G	H	I
1	ABC Company Sales								
2									
3	**Name**	**January**	**February**	**March**	**April**	**Total**			
4	**Eastern Region**	$ 110.00	$ 175.00	$ 140.00	$ 168.00	$ 593.00			
5	**Western Region**	$ 200.00	$ 210.00	$ 240.00	$ 288.00	$ 938.00			
6	**Southern Region**	$ 300.00	$ 180.00	$ 295.00	$ 354.00	$ 1,129.00			
7	**Northern Region**	$ 220.00	$ 195.00	$ 185.00	$ 222.00	$ 822.00			
8									
9	**Total**	$ 830.00	$ 760.00	$ 860.00	$ 1,032.00	$ 3,482.00			
10									
11	**Average**	$ 207.50	$ 190.00	$ 215.00	$ 258.00	$ 870.50			
12									

Figure 12 – Chart Types

3. The graphical representation of your data will appear.

Modifying a Chart

An existing chart can be changed to reflect changes or updates to a spreadsheet. The following chart shows the sales figures based on the personnel in the spreadsheet:

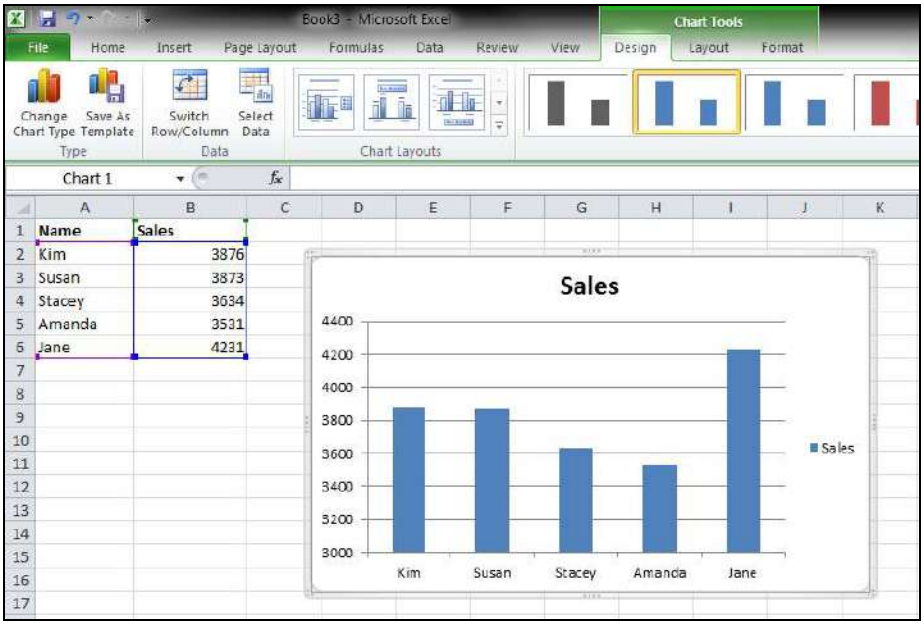


Figure 13 – Bar Chart

The following explains how to add name/data to the spreadsheet and then add the name/data to the chart:

1. Enter the data into the spreadsheet.
2. Right-click on the Chart Area and then select the *Select Data* option.
3. From the *Select Data Source* window, click in the *Chart data range* field (see *Figure 14*).

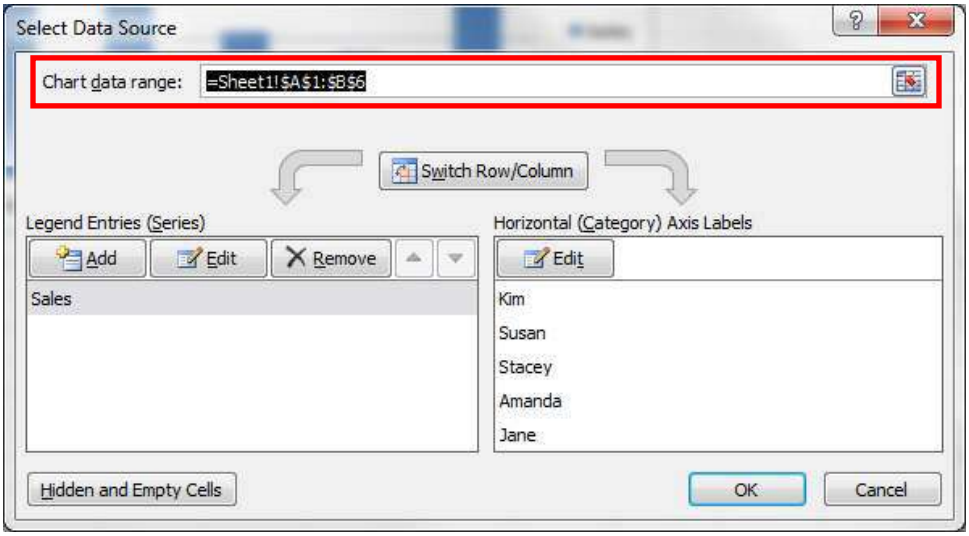


Figure 14 – Select Data Source

4. Select all of the data in the spreadsheet, including the new data that was just added.
5. Click *OK*.

Changing the Appearance of a Chart

To change the appearance of the chart in any way, such as changing the chart font size, color, style, etc., follow the instructions below:

1. Right click on the chart.
2. Select the formatting options that appear on the screen (see *Figure 15*).

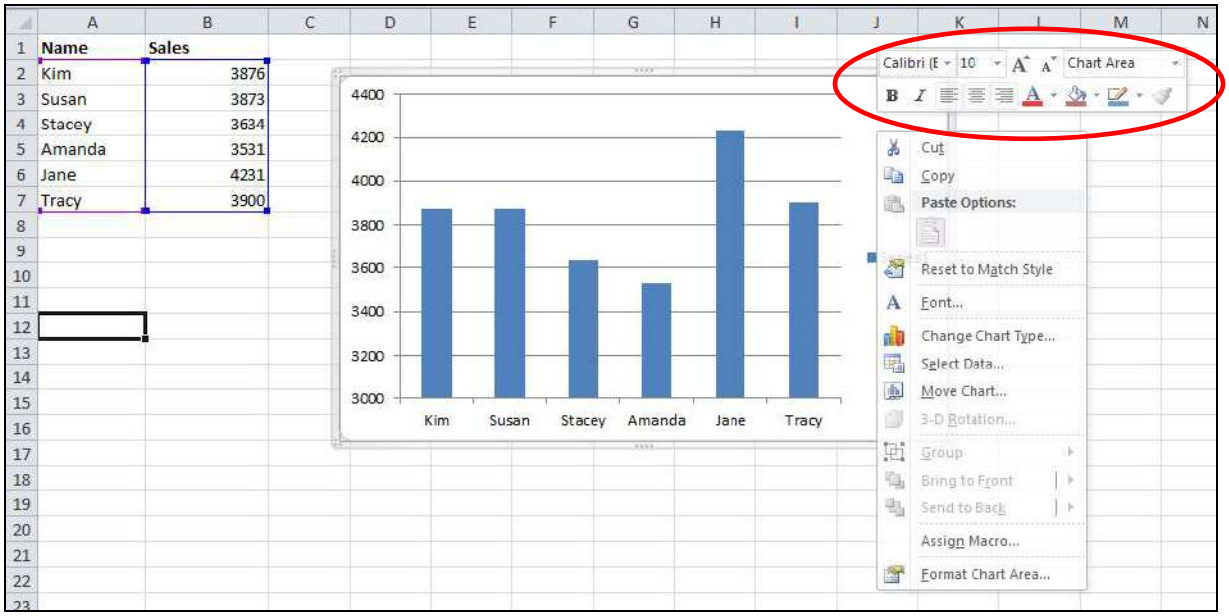


Figure 15 – Appearance Options for Charts

Changing the Chart Type

After you have created a chart, you can change the chart type. The following explains how to change a bar chart:

1. Click on the chart so that it is active.
2. From the *Design* tab, select *Change Chart Type*.
3. Select the chart type that you want to change to (example: *Line Chart*) and click *OK*.

Note: After changing the chart type, you may need to change the size of the chart by dragging the control handles.

Formatting a Chart Object

The following explains how to change an object (example: *chart area, title, etc.*) on the chart. In the example below (see *Figure 16*), we'll change the color of the bar from blue to orange:

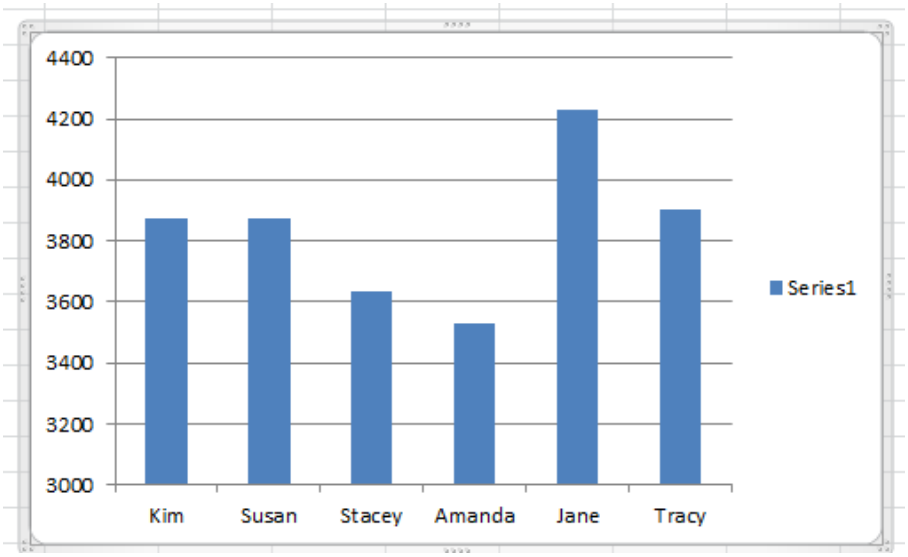


Figure 16 – Bar Chart

1. Point to the bar and right click. A menu will appear (see *Figure 17*) that allows you to format that particular chart object. In the menu that appears, select *Format Data Series*.

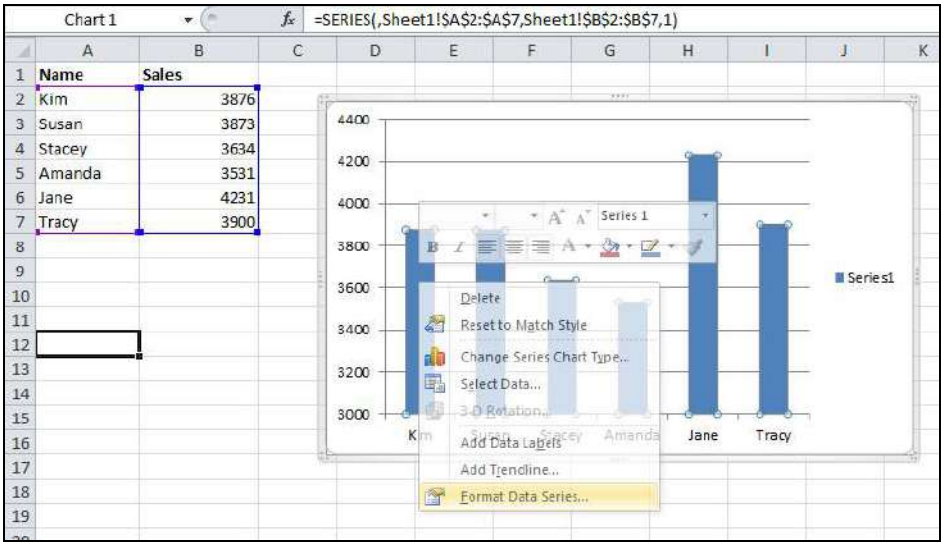


Figure 17 – Bar Chart

2. In the next menu that appears, select *Fill*.
3. Then, select *Solid Fill*.
4. Next, click the box next to the word *Color* (see *Figure 18*). Select the color of your choice.
5. Finally, click the *Close* button.

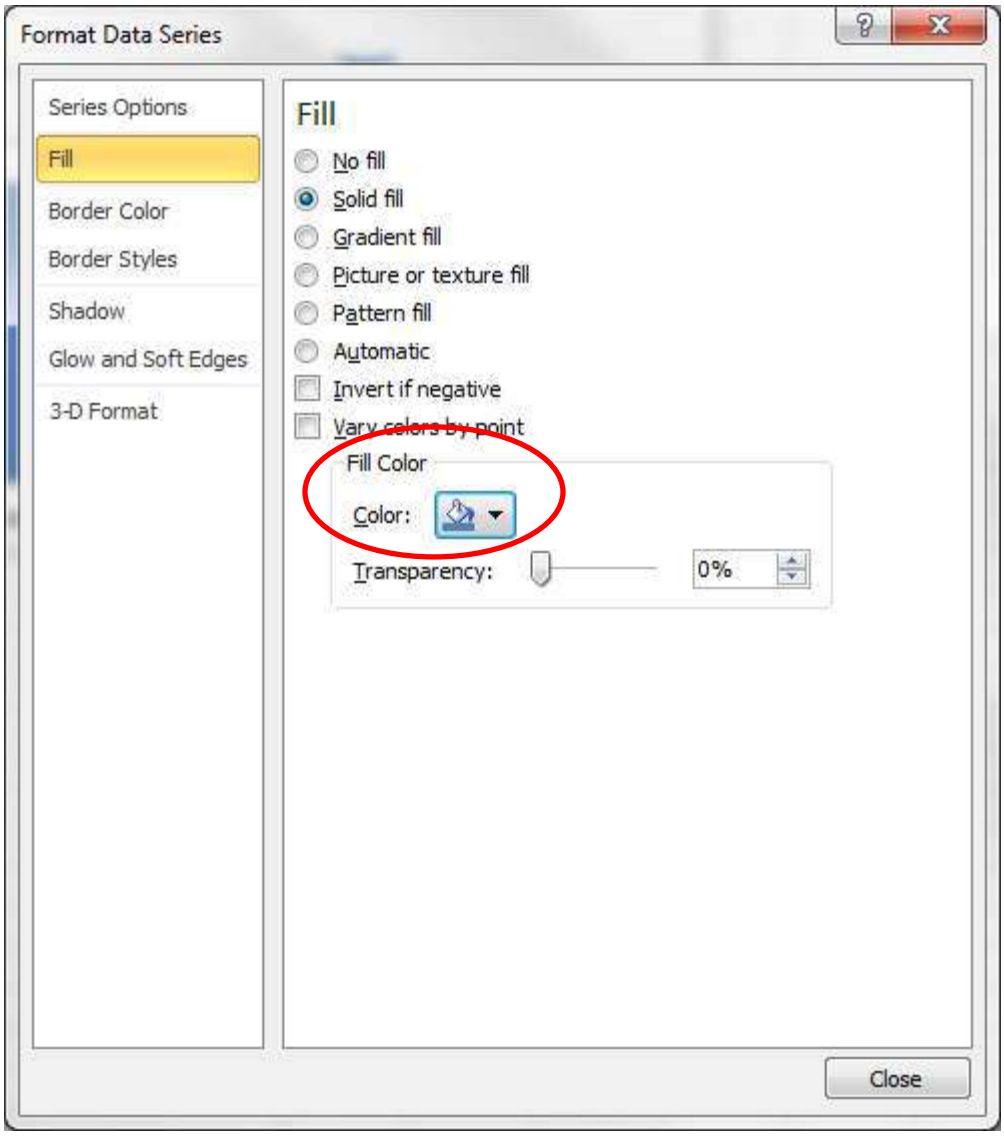


Figure 18 – Format Data Series

Printing Worksheets and Charts

Excel gives you the option to **print a worksheet and chart** or **print just the chart**. The following explains how to do each of these:

Printing a Worksheet and Chart

1. Click anywhere outside the chart area to select the worksheet.
2. Click the *File* tab.
3. Click *Print*.
4. A preview of the spreadsheet and chart will appear on the screen (see *Figure 19*). To print the preview, click the *Print* button. To return to the spreadsheet, click the *Home* tab.

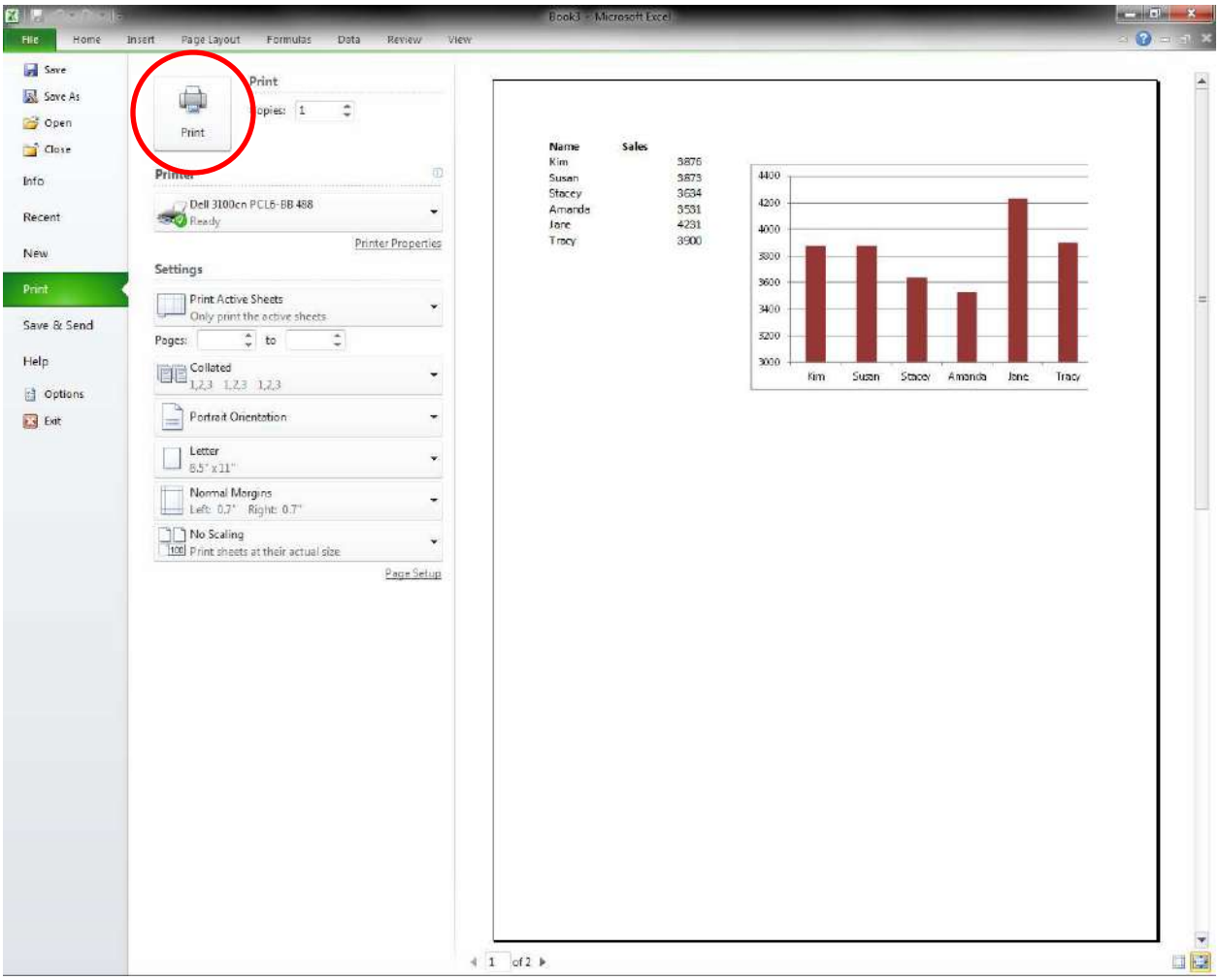


Figure 19 – Printing Charts

Printing a Chart Only

1. Click on the chart.
2. Click on the *File* tab.
3. Click *Print*.
4. A preview of the chart will appear on the screen. To print the preview, click the *Print* button. To return to the spreadsheet, click the *Home* tab.

Using the IF Function

The IF function returns one value if a condition you specify evaluates to TRUE and another value if it evaluates to FALSE. The following explains how to use the IF function:

1. **Logical Test:** *Any value or expression that can be evaluated to TRUE or FALSE* (see *Figure 20*). *Example: A5=100 (True or False?)*
2. **Value_if_True:** *Value that is returned if logical_test is TRUE.*
3. **Value_if_False:** *Value that is returned if logical_test is FALSE.*

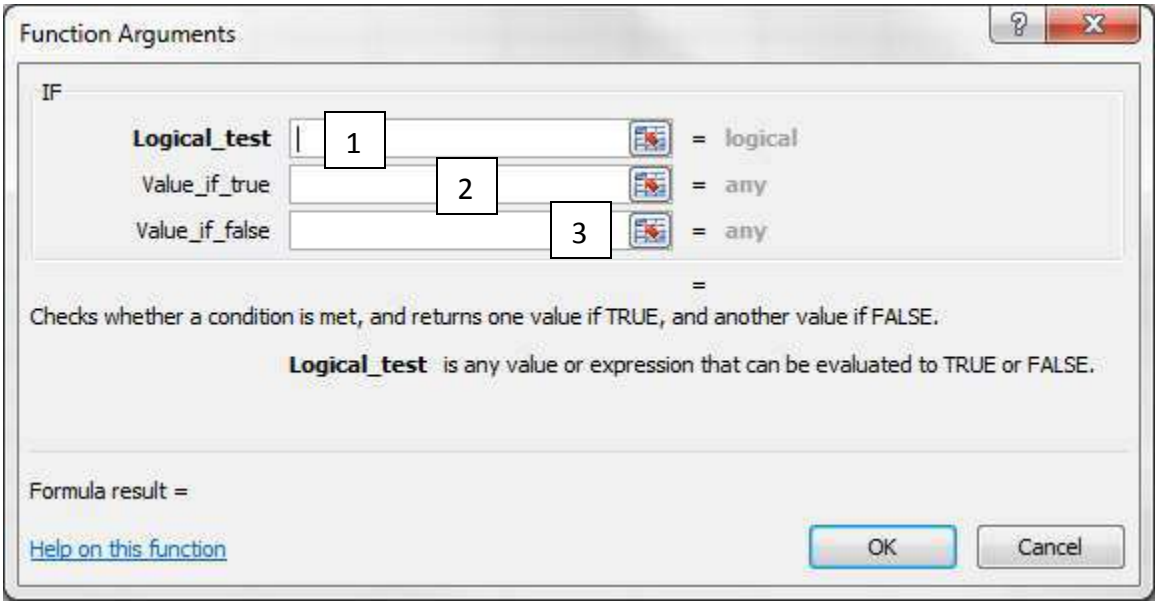


Figure 20 – IF Function

Example:
Create a formula that will calculate the score of an exam and display a "PASS" or "FAIL" text. If the grade in cell A1 is larger than or equal to 85, then the function will display "PASS" in cell B1. Otherwise, the function will display "FAIL" in the same cell.

Note:
1. To construct more of a detailed formula, up to seven IF functions could be nested together.
2. The IF function could be used with other Excel functions.

Using Styles

The use of styles can simplify the formatting of cells. Each style is defined by a name and can be applied to a cell or range of cells. The following explains how to use styles:

Applying a Style

1. Select the cell or range to which you want the style to apply.
2. On the *Home* tab, select the *Cell Styles*.
3. Select the style you want to apply.

Creating Styles

1. On the *Home* tab, select *Cell Styles*.
2. Click *New Cell Style* (see *Figure 21*).

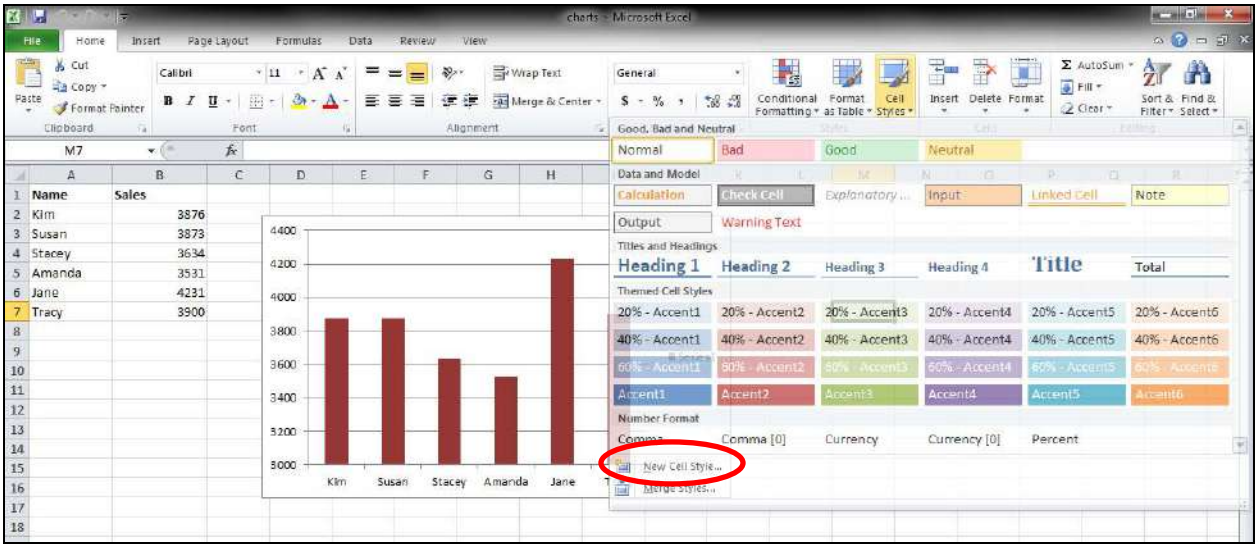


Figure 21 – Cell Styles

3. In the *Style* dialog box that appears, enter a name for the new style (see *Figure 22*).

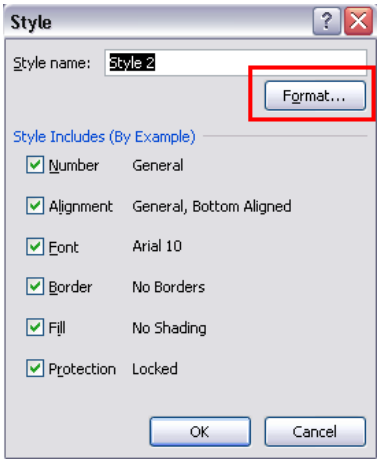


Figure 22 – Style

4. Click on the *Format* button (see *Figure 22*) to create the style you want.
5. Click *Ok*.
6. Your new style will be added to the *Cell Styles* custom list and will be ready for usage.

Headers and Footers

Figure 23 contains terms and definitions for headers and footers:

Term	Definition
Header	A line of information that appears at the top of every page.
Footer	A line of information that appears at the bottom of every page.

Figure 23 – Definitions

To add headers and footers, follow the instructions below:

1. On the *View* tab, select *Page Layout* (see *Figure 24*).

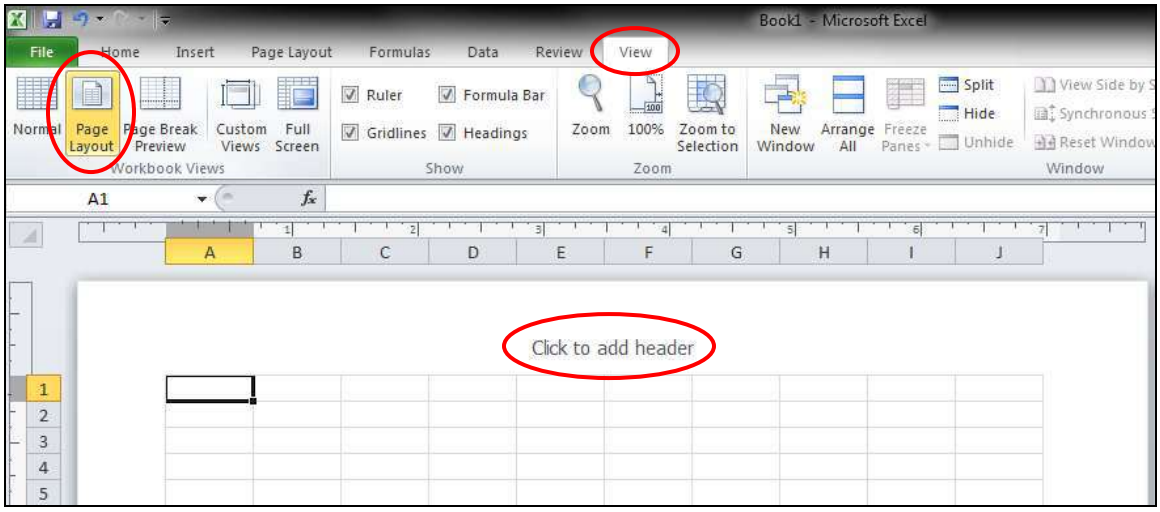


Figure 24 – Headers and Footers

2. Click in the area marked *Click to add header* or *Click to add footer*.
3. Click to enter the text either in the *left*, *center,* or the *right* section.
4. Begin typing your text to enter the header or the footer.
5. Select the text that you typed and click the *Home* tab to format the text (font, bold, color, etc.).

Excel on the Internet

You can save your Excel workbooks or separate spreadsheets and graphs as HTML files (see *Figure 25* for a definition) so that they can be viewed on the Internet.

Term	Definition
HTML	Hypertext Markup Language---the language of the Internet.

Figure 25 – Definition of HTML

Saving the entire work book as HTML

The following instructions explain how to save the entire work book as HTML:

1. Click the *File* tab in the upper-left corner of the screen.
2. Click *Save As*.
3. Enter a new file name if desired.
4. For *Save as type* (see *Figure 26*), change this from *Excel Workbook* to *Web Page*.

Figure 26 – Save As dialogue box

5. Click *Save*. If you receive a message indicating that the file may contain features that are not compatible with a Web Page, click *Yes* to keep the workbook in this format.

When the file is saved two things are created:

a) A web page with the file name.
b) A folder with the same file name.

For example, a file named *Report1* would create the following: a file named *Report1.htm* and a folder named *Report1_files*. The computer needs both of these in order to view the web page.

Saving one sheet and its contents as HTML

The following instructions explain how to save one sheet as HTML:

1. Go to the sheet that is to be saved as HTML.
2. Click the *File* tab in the upper-left corner of the screen.
3. Then, click *Save As*.
4. Click the option *Selection: Sheet* (see *Figure 27*)**.**
5. Enter a new file name.
6. Change *Save as type* to *Web Page*.
7. The title of the web page will be the original file name. If you would like to change the title click the *Change Title* button (see *Figure 27*)**.**
    a. If you click the *Change Title* button, enter the new title and click OK.
8. Choose the location to save the file.
9. Click the *Save* button.

Figure 27 – Save As dialogue box

Inserting a Hyperlink

Hyperlinks, colored and underlined text or graphics that you click to go to a file or a website can be included in regular Excel spreadsheets. The following explains how to create hyperlinks to go to files and websites.

Creating a hyperlink to an existing file

As an example, we will create a link to *Sheet 2*. The following explains how to create a hyperlink to an existing file:

1. On *Sheet 1*, type the following text: *Go to Sheet 2* (see *Figure 28*).
2. Select the cell containing the text to be used as the hyperlink (*Go to Sheet 2*).
3. From the *Insert Tab*, select *Hyperlink* (see *Figure 28*).

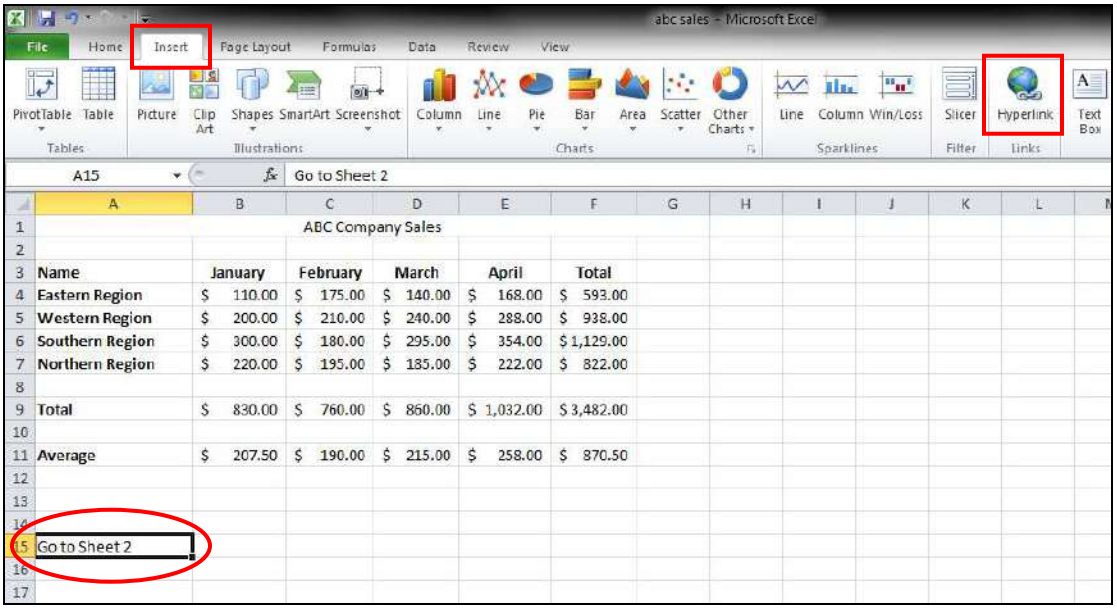


Figure 28 – Hyperlinks

4. From the Insert Hyperlink dialog box (see *Figure 29*), click *Place in this document*.
5. In the list under *Cell Reference*, click *Sheet 2* (see *Figure 29*).
6. Click *OK*.

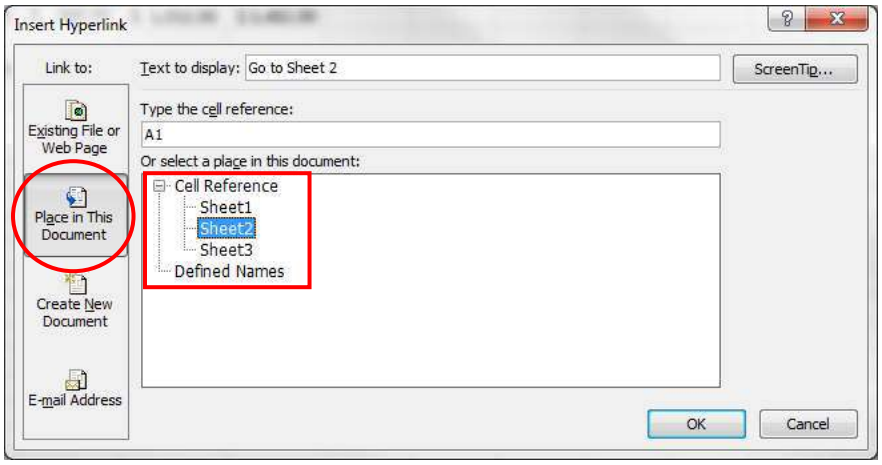


Figure 29 – Insert Hyperlink Dialogue Box

When you hold the mouse pointer over the text *Go to Sheet 2*, the arrow will change to a pointing finger. This indicates that the text is now a hyperlink. If you click on the hyperlinked text, you will be taken to *Sheet 2* of the workbook.

Creating a hyperlink to a web page

The following explains how to create a hyperlink to a web page. As an example, we will create a hyperlink to the Kennesaw State University web site:

1. On *Sheet 1*, type the following text: *Kennesaw State University*
2. Select the cell containing the text to be used as the hyperlink (Kennesaw State University).
3. From the *Insert Tab*, select *Hyperlink*.
4. In the *Insert Hyperlink* dialogue box under *Link to*, click *Existing file or Web page* (see *Figure 30*).

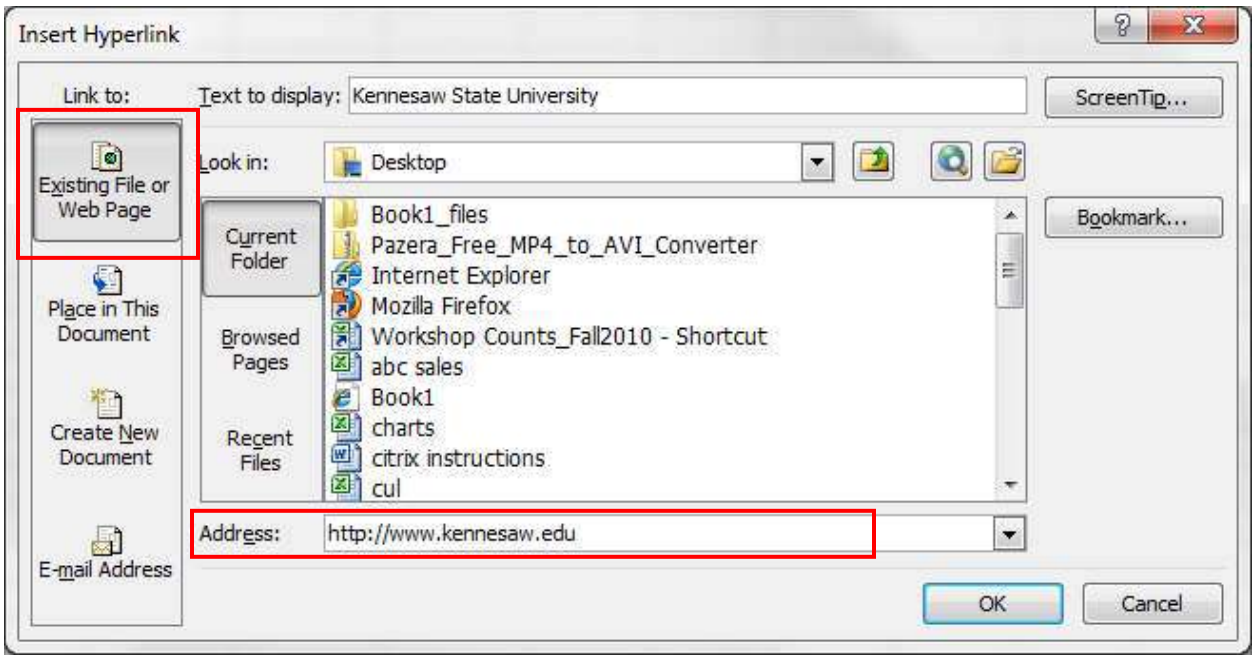


Figure 30 – Insert Hyperlink Dialogue Box

5. In the *Address* field, enter the Kennesaw State University Website address: **http://www.kennesaw.edu**
6. Click *OK*.

When you hold the mouse pointer over the text *Kennesaw State University*, the arrow will change to a pointing finger. This indicates that the text is now a hyperlink. If you click on the hyperlinked text, a browser will open on the computer. The browser will open to the Kennesaw State University website.

Using the Graphical Tools

You can use Excel's graphical tools to enhance the look of a spreadsheet or chart, as well as make it more understandable. With the graphical tools you can add shapes (such as arrows and lines) and text boxes.

Figure 31 is an example of how the arrow and text box can be used in Excel to emphasize the sales for a particular year.

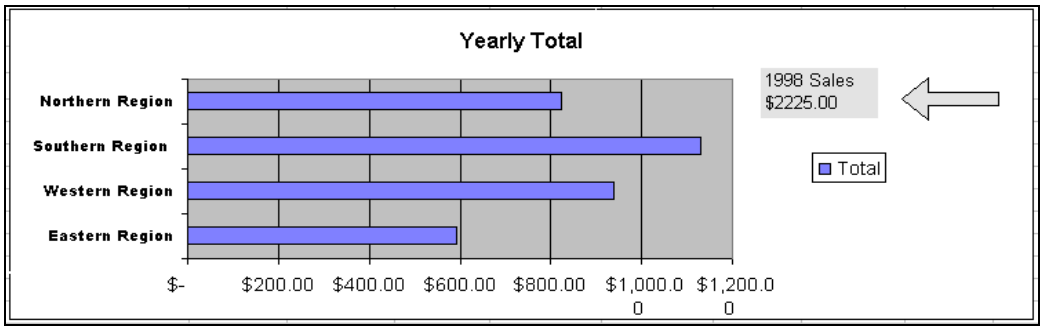


Figure 31 – Insert Hyperlink Dialogue Box

Drawing Shapes

The following section describes how to use Excel's drawing tools:

1. Click the *Insert* tab.
2. In the *Illustrations* group, click *Shapes*.
3. The *Shapes Gallery* will appear. Click the shape that you want to add to the spreadsheet (see *Figure 32*).

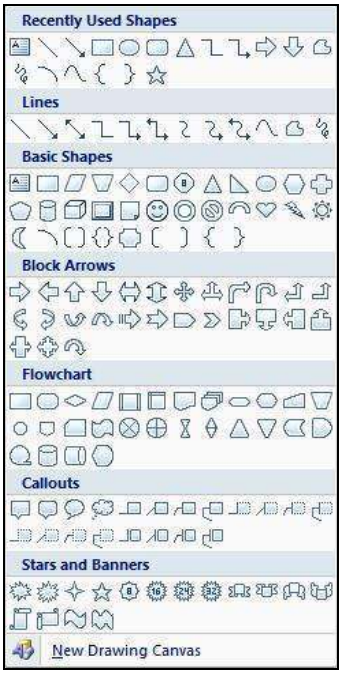


Figure 32 – Shapes Gallery

4. You are now ready to draw the shape on the spreadsheet. As your mouse pointer hovers over the spreadsheet, it will appear as crosshairs.
5. Hold the mouse button down and drag the mouse pointer across the screen to draw the shape.

Modifying Shapes

Once a shape is placed on the spreadsheet, you can modify the shape in a number of ways, such as re-sizing, re-shaping, adding fill and outline colors, adding shadows, and adding text.

Re-sizing

Shapes are re-sized in the same way as clip art and pictures. The following explains how to re-size a shape:

1. Click to select the shape.
2. Anchor points will appear as circles and squares around the shape (see *Figure 33*).
3. Allow your mouse pointer to hover over any of the circles, and the mouse pointer will change its appearance to a double-arrow.
4. As the double-arrow appears, hold down the mouse button. As the mouse button is held down, move the mouse to increase and decrease the size of the shape.
5. Release the mouse button when you have adjusted the shape to a larger or smaller size.

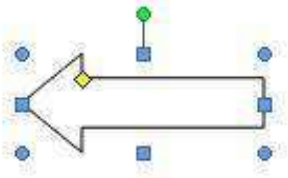


Figure 33 – Arrow

Re-shaping

Some two-and-three-dimensional shapes have a yellow diamond that you can click and drag to alter a certain aspect of the shape, such as the arrow point in the arrow shape (see *Figure 33*).

Adding a Shape Style

The following explains how to add a shape style:

1. Click the shape so that it is selected.
2. Click the *Drawing Tools* contextual tab (see *Figure 34*).
3. In the *Shape Styles* group, click the "More" button (see *Figure 34*) to open the *Shape Styles* gallery.
4. Click the style of your choice.

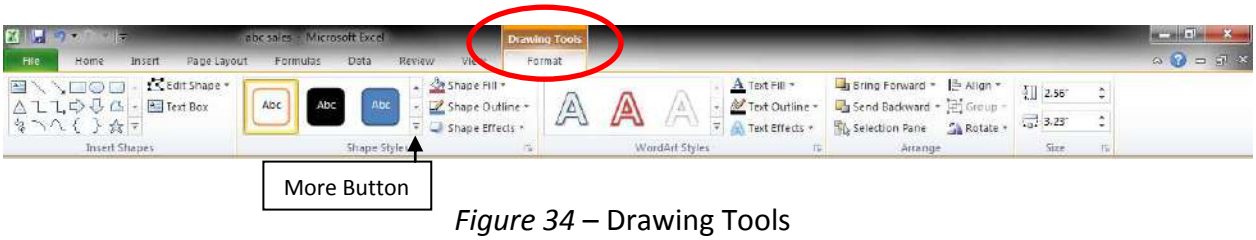


Figure 34 – Drawing Tools

Adding Fill Color

The following explains how to add a fill color to a shape:

1. In the *Shape Styles* group, click the arrow in the *Shape Fill* icon (see *Figure 35*).
2. Click the color of your choice.

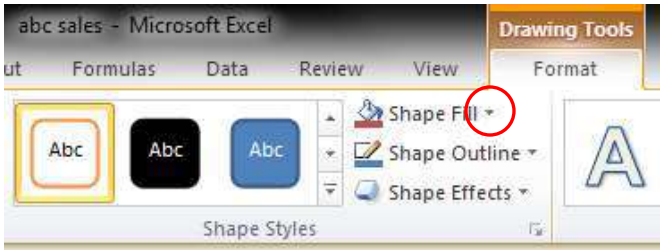


Figure 35 – Shape Fill icon

Changing the Outline of a Shape

The following explains how to change the outline of a shape:

1. In the *Shape Styles* group, click the arrow in the *Shape Outline* icon (see *Figure 36*).
2. Click the outline color, weight, and style of your choice.

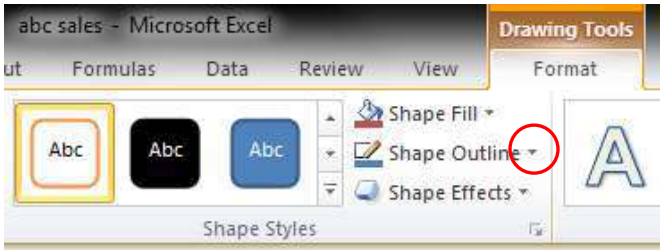


Figure 36 – Shape Outline icon

Changing the Shape

The following explains how to change a shape:

1. In the *Insert Shapes* group, click the arrow for *Edit Shape* (see *Figure 37*).

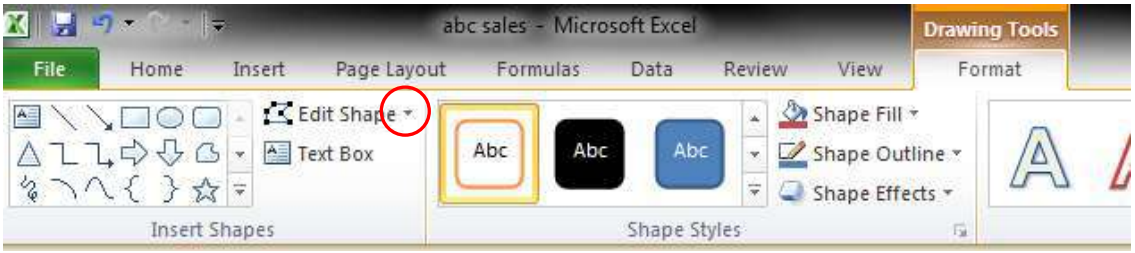


Figure 37 – Edit Shape icon

2. Next, click *Change Shape*.
3. Select the shape of your choice.

Add Text to a Shape

The following explains how to add text to a shape:

1. Select the shape.
2. Click the *Drawing Tools* contextual tab.
3. Click *Text Box* (see *Figure 38*). A text box is overlaid on the shape, and the cursor appears inside the shape.

Figure 38 – Text Box icon

4. Type the text. Text can be formatted just like regular text in the spreadsheet.

Creating WordArt

The following explains how to add WordArt to the spreadsheet:

1. Click *Insert* tab**.**
2. In the *Text* group**,** select *WordArt* (see *Figure 39*)**.**
3. Select the type of WordArt style you prefer.
4. Enter WordArt text when indicated.
5. The new WordArt text appears on the document, and the *WordArt Format Tools* tab appears on the ribbon.

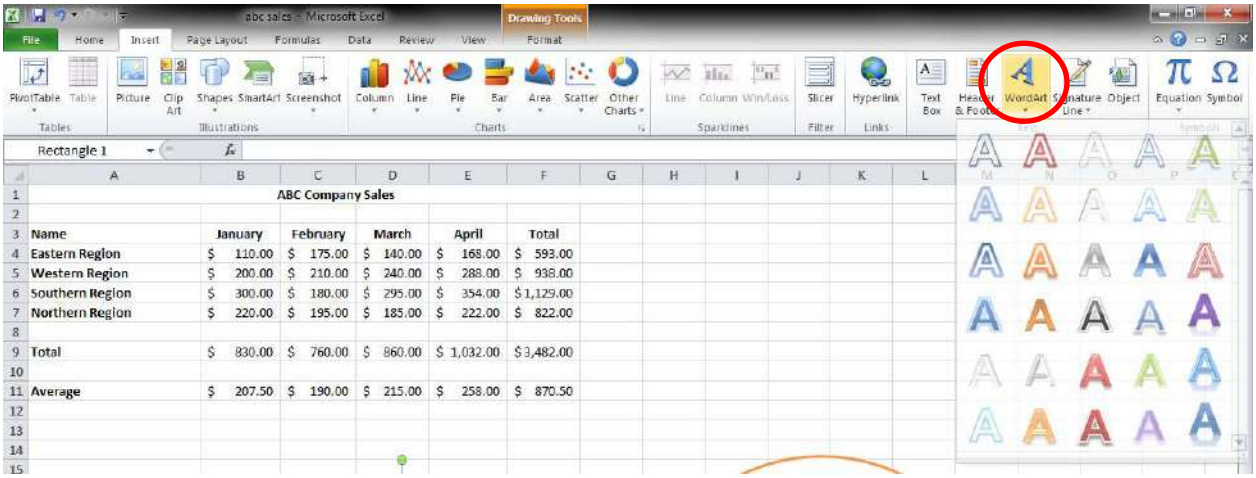


Figure 39 – WordArt

Inserting Screenshots into the Spreadsheet

The following describes two ways to capture and insert screenshots into your spreadsheet.

Inserting Screenshots of an Open Window into Your Spreadsheet

The following describes how to capture and insert the screenshot of an open window:

1. Maximize the window where you want to capture a screenshot.
2. In Excel, select the *Insert* tab.
3. Click *Screenshot* (located in the *Illustrations* section – see *Figure 40*).
4. Click the image that you want to insert into your spreadsheet.

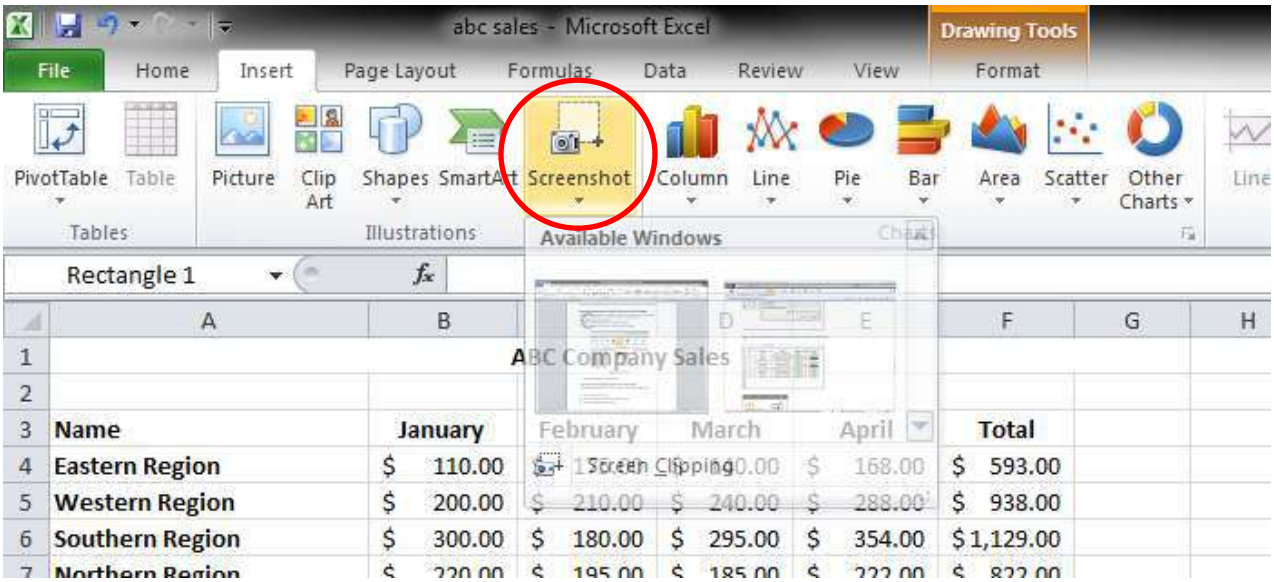


Figure 40—Screenshots

5. The image will appear in your document.

Capturing and Inserting a Specific Area of the Screen

The following describes how to capture and insert a specific area of the screen:

1. In Excel, select the *Insert* tab.
2. Click *Screenshot* (located in the *Illustrations* section).
3. Click *Screen Clipping*.
4. Use your mouse to frame the area of your screen that you want to capture.
5. The image that you captured will appear in your spreadsheet.