

Lab 05

Understanding spreadsheets and workbook in Microsoft EXCEL

OBJECTIVE:

- Understanding spreadsheets and workbook in Microsoft EXCEL.

MICROSOFT EXCEL:

Excel is a spreadsheet program in the Microsoft Office system. You can use Excel to create and format workbooks (a collection of spreadsheets) in order to analyze data and make more informed business decisions. Specifically, you can use Excel to track data, build models for analyzing data, write formulas to perform calculations on that data, pivot the data in numerous ways, and present data in a variety of professional looking charts.

GETTING STARTED

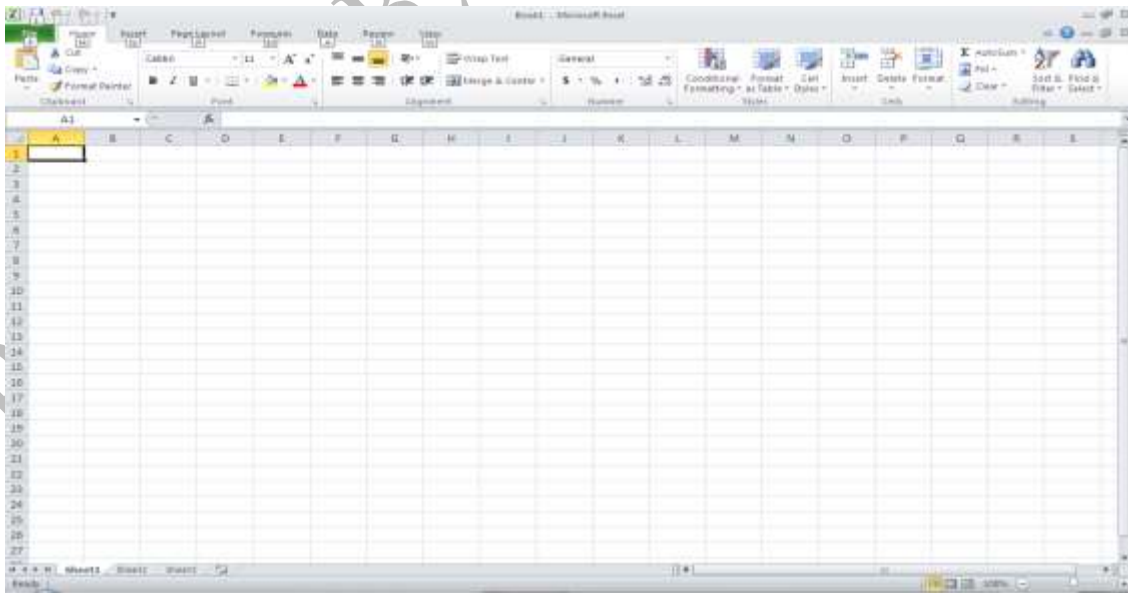
Now that you have an understanding of where things are located, let's look at the steps needed to create an Excel document.

OPENING OUTLOOK

You may have a shortcut on your desktop, if so double click the icon and excel will open. If not follow the steps below:

1. Click on the Start button
2. Highlight Programs
3. Highlight Microsoft Office
4. Click on Microsoft Excel 2013

MS EXCEL



The Ribbon

- **Home Tab :**

This is the most used tab; it incorporates all text and cell formatting features such as font and paragraph changes. The Home Tab also includes basic spreadsheet formatting elements such as text wrap, merging cells and cell style.



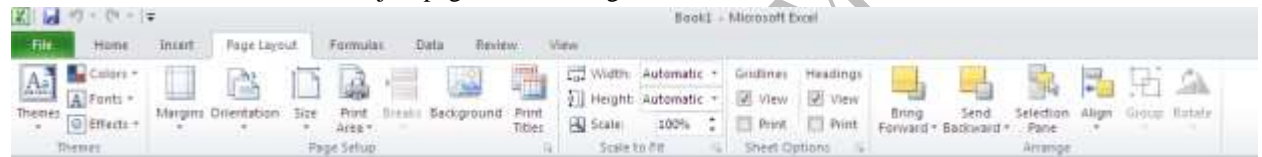
- **Insert Tab :**

This tab allows you to insert a variety of items into a document from pictures, clip art, and headers and footers.



- **Page Layout Tab :**

This tab has commands to adjust page such as margins, orientation and themes.



- **Formulas Tab**

This tab has commands to use when creating Formulas. This tab holds an immense function library which can assist when creating any formula or function in your spreadsheet.



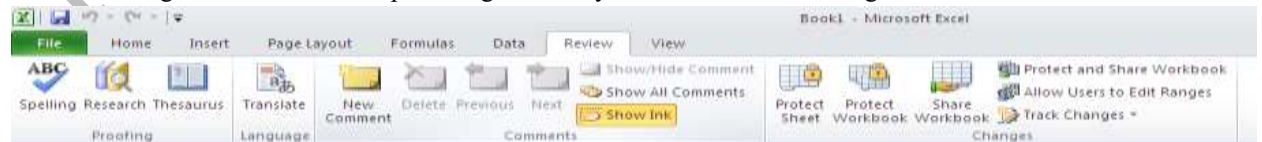
- **Data Tab**

This tab allows you to modifying worksheets with large amounts of data by sorting and filtering as well as analyzing and grouping data.



- **Review Tab**

This tab allows you to correct spelling and grammar issues as well as set up security protections. It also provides the track changes and notes feature providing the ability to make notes and changes someone's document.



- **View Tab**

This tab allows you to change the view of your document including freezing or splitting panes, viewing gridlines and hide cells.



Create a New Workbook

1. Click the **File** tab and then click **New**.
2. Under **Available Templates**, double click **Blank Workbook** or Click **Create**.

Enter Data in a Worksheet

1. Click the cell where you want to enter data.
2. Type the data in the cell.
3. Press enter or tab to move to the next cell.

Modifying Spreadsheets

In order to create an understandable and professional document you will need to make adjustments to the cells, rows, columns and text. Use the following processes to assist when creating a spreadsheet.

Cut, Copy, and Paste Data

You can use the Cut, Copy, and Paste commands in Microsoft Office Excel to move or copy entire cells or their contents.

NOTE: Excel displays an animated moving border around cells that have been cut or copied. To cancel a moving border, press ESC.

Move/Copy Cells

When you move or copy a cell, Excel moves or copies the entire cell, including formulas and their resulting values, cell formats, and comments.

1. Select the cells that you want to move or copy.
2. On the **Home** tab, in the **Clipboard** group, do one of the following:
 - a. To move cells, click **Cut**.
 - b. To copy cells, click **Copy**.
3. Click in the center of the cell you would like to Paste the information too.
4. On the **Home** tab, in the **Clipboard** group, click **Paste**.

Column Width and Row Height

On a worksheet, you can specify a column width of 0 to 255 and a row height of 0 to 409. This value represents the number of characters that can be displayed in a cell that is formatted with the standard font. The default column width is 8.43 characters and the default row height is 12.75 points. If a column/row has a width of 0, it is hidden.

Set Column/Row Width/Height

1. Select the column(s) or row(s) that you want to change.
2. On the **Home** tab, in the **Cells** group, click **Format**.
3. Under **Cell Size**, click **Column Width** or **Row Height**.
4. A **Column Width** or **Row Height** box will appear.
5. In the **Column Width** or **Row Height** box, type the value that you want your column or row to be.

Merge or Split Cells

When you merge two or more adjacent horizontal or vertical cells the cells become one larger cell that is displayed across multiple columns or rows. When you merge multiple cells, the contents of only one cell appear in the merged cell.

Merge and Center Cells

1. Select two or more adjacent cells that you want to merge.
2. On the Home tab, in the Alignment group, click Merge and Center.
3. The cells will be merged in a row or column, and the cell contents will be centered in the merged cell.

Merge Cells

To merge cells only, click the arrow next to Merge and Center, and then click Merge Across or Merge Cells.

Split Cells

1. Select the merged cell you want to split
2. To split the merged cell, click Merge and Center. The cells will split and the contents of the Merged cell will appear in the upper-left cell of the range of split cells.

Automatically Fill Data

To quickly fill in several types of data series, you can select cells and drag the fill handle. To use the fill handle, you select the cells that you want to use as a basis for filling additional cells, and then drag the fill handle across or down the cells that you want to fill.

1. Select the cell that contains the formula that you want to be brought to other cells.
2. Move your cursor to the small black square in the lower-right corner of a selected cell also know as the fill handle. Your pointer will change to a small black cross.
3. Click and hold your mouse then drag the fill handle across the cells, horizontally to the right or Vertically down, that you want to fill.
4. The cells you want filled will have a gray looking border around them. Once you fill all of the cells let go of your mouse and your cells will be populated.

Formatting Spreadsheets

To further enhance your spreadsheet you can format a number of elements such as text, numbers, coloring, and table styles. Spreadsheets can become professional documents used for company meetings or can even be published.

Wrap Text

You can display multiple lines of text inside a cell by wrapping the text. Wrapping text in a cell does not affect other cells.

1. Click the cell in which you want to wrap the text.
2. On the **Home** tab, in the **Alignment** group, click **Wrap Text**.
3. The text in your cell will be wrapped.

NOTE: If the text is a long word, the characters won't wrap (the word won't be split); instead, you can widen the column or decrease the font size to see all the text. If all the text is not visible after you wrap the text, you might have

to adjust the height of the row. On the **Home** tab, in the **Cells** group, click **Format**, and then under **Cell Size** click **AutoFit Row**

Format Numbers

In Excel, the format of a cell is separate from the data that is stored in the cell. This display difference can have a significant effect when the data is numeric. For example, numbers in cells will default as rounded numbers, date and time may not appear as anticipated. After you type numbers in a cell, you can change the format in which they are displayed to ensure the numbers in your spreadsheet are displayed as you intended.

1. Click the cell(s) that contains the numbers that you want to format.
2. On the **Home** tab, in the **Number** group, click the arrow next to the **Number Format** box, and then click the format that you want.

If you are unable to format numbers in the detail you would like that you can click on the **More Number Formats** at the bottom of the **Number Format** drop down list.

In the Category list, click the format that you want to use, and then adjust settings to the right of the Format Cells dialog box. **For example**, if you're using the Currency format, you can select a different currency symbol, show more or fewer decimal places, or change the way negative numbers are displayed.

Cell Borders

By using predefined border styles, you can quickly add a border around cells or ranges of cells. If predefined cell borders do not meet your needs, you can create a custom border.

Apply Cell Borders

1. On a worksheet, select the cell or range of cells that you want to add a border to, change the border style on, or remove a border from.
2. Go to the **Home** tab, in the **Font** group
3. Click the arrow next to **Borders**
4. Click on the border style you would like
5. The border will be applied to the cell or cell range

Remove Cell Borders

1. Go to the **Home** tab, in the **Font** group
2. Click the arrow next to **Borders**
3. Click **No Border**.

Cell Styles

You can create a cell style that includes a custom border, colors and accounting formatting.

1. On the **Home** tab, in the **Styles** group, click **Cell Styles**.
2. Select the different cell style option you would like applied to your spreadsheet.

Cell and Text Coloring

You can also modify a variety of cell and text colors manually.

Cell Fill

1. Select the cells that you want to apply or remove a fill color from.
2. Go to the **Home** tab, in the **Font** group and select one of the following options:

- To fill cells with a solid color, click the arrow next to **Fill Color**, and then under **Theme Colors** or **Standard Colors**, click the color that you want.
- To fill cells with a custom color, click the arrow next to **Fill Color**, click **More Colors**, and then in the **Colors** dialog box select the color that you want.
- To apply the most recently selected color, click **Fill Color**.

Remove Cell Fill

- Select the cells that contain a fill color or fill pattern.
- On the **Home** tab, in the **Font** group, click the arrow next to **Fill Color**, and then click **No Fill**.

Text Color

- Select the cell, range of cells, text, or characters that you want to format with a different text color.
- On the **Home** tab, in the **Font** group and select one of the following options:
 - To apply the most recently selected text color, click **Font Color**.
 - To change the text color, click the arrow next to **Font Color**, and then under **Theme Colors** or **Standard Colors**, click the color that you want to use.

Bold, Underline and Italics Text

- Select the cell, range of cells, or text.
- Go to the **Home** tab, in the **Font** group
- Click on the Bold (**B**) Italics (*I*) or Underline (U) commands.
- The selected command will be applied.

Customize Worksheet Tab

- On the **Sheet tab** bar, right-click the sheet tab that you want to customize
- Click **Rename** to rename the sheet or **Tab Color** to select a tab color.
- Type in the name or select a color you would like for your spreadsheet.
- The information will be added to the tab at the bottom of the spreadsheet.

Formulas in Excel

Formulas are equations that perform calculations on values in your worksheet. A formula always starts with an equal sign (=). An example of a simple is $=5+2*3$ that multiplies two numbers and then adds a number to the result. Microsoft Office Excel follows the standard order of mathematical operations. In the preceding example, the multiplication operation ($2*3$) is performed first, and then 5 is added to its result.

You can also create a formula by using a function which is a prewritten formula that takes a value, performs an operation and returns a value. **For example, the formulas =SUM(A1:A2) and SUM(A1,A2) both use the SUM function to add the values in cells A1 and A2.**

Depending on the type of formula that you create, a formula can contain any or all of the following parts.

The diagram shows the formula $=PI() * A2 ^ 2$ with numbered callouts: 1 points to the equals sign, 2 points to the PI() function, 3 points to the multiplication sign, and 4 points to the exponent 2.

Functions A function, such as **PI()** or **SUM()**, starts with an equal sign (=).

Cell references

You can refer to data in worksheet cells by including cell references in the formula. **For example**, the cell reference **A2** returns the value of that cell or uses that value in the calculation.

Constants

You can also enter constants, such as numbers (such as **2**) or text values, directly into a formula.

Operators

Operators are the symbols that are used to specify the type of calculation that you want the formula to perform.

Create a Simple Formulas

1. Click the cell in which you want to enter the formula.
2. Type = (equal sign).
3. Enter the formula by typing the constants and operators that you want to use in the calculation.
4. Press ENTER.

EXAMPLE FORMULA	WHAT IT DOES
=5+2	Adds 5 and 2
=5-2	Subtracts 2 from 5
=5/2	Divides 5 by 2
=5*2	Multiplies 5 times 2
=5^2	Raises 5 to the 2nd power

Create a Formula with Cell References

- The first cell reference is B3, the color is blue, and the cell range has a blue border with square corners.
- The second cell reference is C3, the color is green, and the cell range has a green border with square corners.

To create your formula:

1. Click the cell in which you want to enter the formula.
2. In the **formula bar**, at the top of the Excel window that you use, , type = (equal sign).
3. Click on the 1st cell you want in the formula.
4. Enter an Operator such as +, or *.
5. Click on the next cell you want in the formula. Continue steps 3 – 5 until the formula is complete
6. Hit the **ENTER** key on your keyboard.

EXAMPLE FORMULA	WHAT IT DOES
=A1+A2	Adds the values in cells A1 and A2
=A1-A2	Subtracts the value in cell A2 from the value in A1
=A1/A2	Divides the value in cell A1 by the value in A2
=A1*A2	Multiplies the value in cell A1 times the value in A2
=A1^A2	Raises the value in cell A1 to the exponential value specified in A2

Create a Formula with Function

1. Click the cell in which you want to enter the formula.
2. Click **Insert Function** on the formula bar. Excel inserts the equal sign (=) for you.
3. Select the function that you want to use.
 1. Enter the arguments.
5. After you complete the formula, press ENTER

Use Auto Sum

To summarize values quickly, you can also use **AutoSum**.

1. Select the cell where you would like your formulas solution to appear.
2. Go to the **Home** tab, in the **Editing** group,
3. Click **AutoSum**, to sum your numbers or click the arrow next to **AutoSum** to select a function that you want to apply.

Delete a Formula

When you delete a formula, the resulting values of the formula is also deleted. However, you can instead remove the formula only and leave the resulting value of the formula displayed in the cell.

- To delete formulas along with their resulting values, do the following:
 1. Select the cell or range of cells that contains the formula.
 2. Press DELETE.
- To delete formulas without removing their resulting values, do the following:
 1. Select the cell or range of cells that contains the formula.
 2. On the **Home** tab, in the **Clipboard** group, click **Copy**.
 3. On the **Home** tab, in the **Clipboard** group, click the arrow below **Paste**, and then click **Paste Values**.

Assignment

1. Make mark sheet on excel, and find more formulas also apply them.