MAIN FEATURES AND USES OF MS EXCEL

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Introduction

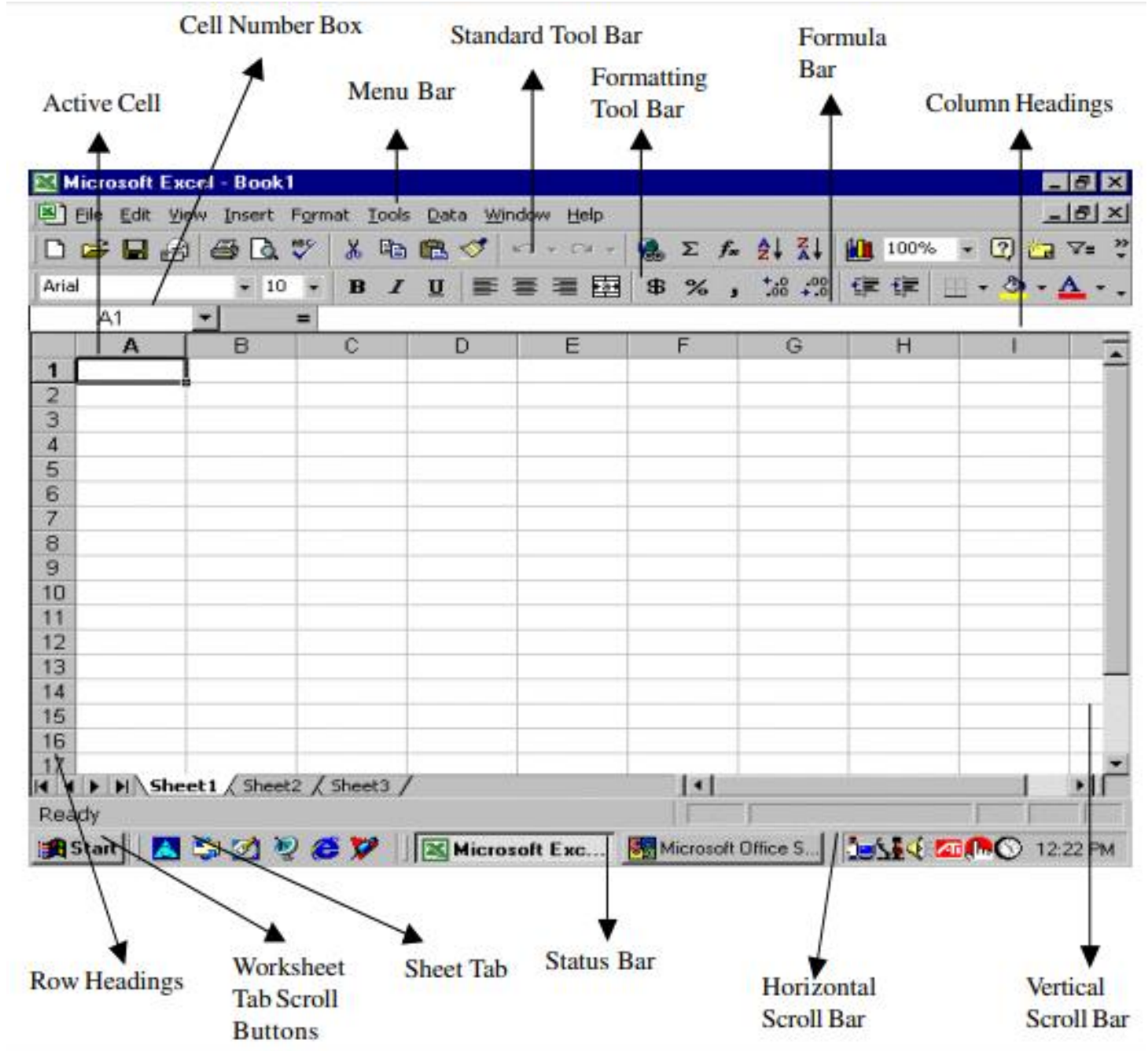
- Microsoft Excel is a software program produced by Microsoft that allows users to organize, format and calculate data with formulas using a spreadsheet system.
- Excel allows to perform calculations (like a calculator) and manipulate text (like a word processor).
- Excel 2016 has 484 functions.
- Of these, 360 existed prior to Excel 2010. Microsoft classifies these functions in 14 categories.
- Of the 484 current functions, 386 may be called from VBA (Visual Basic for Applications) as methods of the object "WorksheetFunction".
- it can be used anywhere for any kind of work.
- For example, it is used for billing, data management, analysis, inventory, finance, business tasks, complex calculations, etc.

Main features

- Microsoft Excel has the basic features of all spreadsheets, using a grid of *cells* arranged in numbered *rows* and letter-named *columns* to organize data manipulations like arithmetic operations.
- It has a battery of supplied functions to answer statistical, engineering and financial needs.
- The distinguishing feature of a spreadsheet program such as Excel is that it allows you to create mathematical formulas and execute functions
- In addition, it can display data as line graphs, histograms and charts, and with a very limited three-dimensional graphical display.

EXCEL WORKSHEET

- Excel allows you to create worksheets much like paper ledgers that can perform automatic calculations.
- Each Excel file is a workbook that can hold many worksheets.
- The worksheet is a grid of columns (designated by letters) and rows (designated by numbers).
- The letters and numbers of the columns and rows (called labels) are displayed in gray buttons across the top and left side of the worksheet.
- The intersection of a column and a row is called a cell.
- Each cell on the spreadsheet has a cell address that is the column letter and the row number.
- Cells can contain either text, numbers, or mathematical formulas.


Cell Number Box
Standard Tool Bar
Formula Bar
Active Cell
Menu Bar
Formatting Tool Bar
Column Headings
Microsoft Excel - Book1
File Edit View Insert Format Tools Data Window Help
Arial
10
100%
A1
Sheet1 Sheet2 Sheet3
Ready
Start
Microsoft Exc...
Microsoft Office S...
12:22 PM
Row Headings
Worksheet Tab Scroll Buttons
Sheet Tab
Status Bar
Horizontal Scroll Bar
Vertical Scroll Bar

ENTERING DATA

- Need a workbook
  - create a new workbook
  - open an existing workbook
- Data types
  - Numbers
  - Text
  - Formulas
- Data entry cell by cell
  - Deleting
  - Moving
  - Copying
  - Autofill

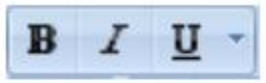
EDITING DATA

- Editing cell contents
- Inserting or deleting cells
- Inserting or deleting rows
- Inserting or deleting columns
- Inserting or deleting a worksheet
- Moving or copying a worksheet
- Renaming a worksheet

FORMATTING DATA

Commonly used formatting attributes include:

Font and size



Bold, Italic, Underline


Cell borders

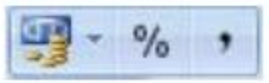

Background and Font colour


Alignment: Left, Centre or Right


Merge text across multiple cells


Wrap text within a cell


Rotate angle of text



Format number as Currency, Percentage or Decimal

Increase or Decrease number of decimal places

- AutoSum - helps you to add the contents of a cluster of adjacent cells.
- List AutoFill - automatically extends cell formatting when a new item is added to the end of a list.
- AutoFill - feature allows you to quickly fill cells with repetitive or sequential data such as chronological dates or numbers, and repeated text. AutoFill can also be used to copy functions. You can also alter text and numbers with this feature.
- AutoShapes toolbar will allow you to draw a number of geometrical shapes, arrows, flowchart elements, stars and more. With these shapes you can draw your own graphs.
- Wizard - guides you to work effectively while you work by displaying various helpful tips and techniques based on what you are doing.
- Drag and Drop - feature will help you to reposition the data and text by simply dragging the data with the help of mouse.

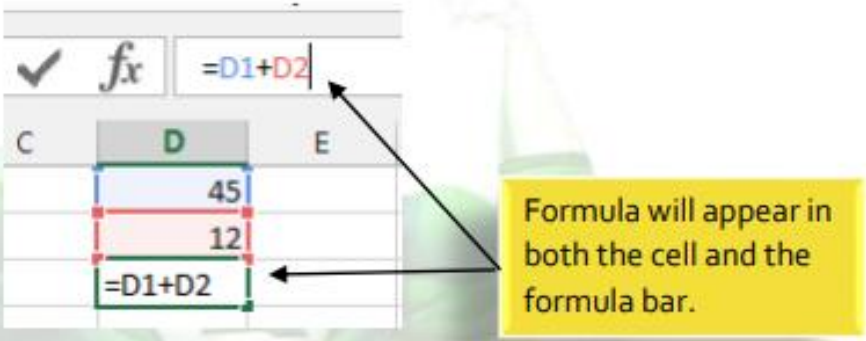
- Charts - features will help you in presenting a graphical representation of your data in the form of Pie, Bar, Line charts and more.
- PivotTable - flips and sums data in seconds and allows you to perform data analysis and generating reports like periodic financial statements, statistical reports, etc. You can also analyse complex data relationships graphically.
- Shortcut Menus - commands that are appropriate to the task that you are doing appear by clicking the right mouse button.

FORMULAS

- Formulas are the key to Excel's amazing power and versatility! By using a formula, we can find the answer to virtually any calculation we can think of!

To create a formula

1. Select the **cell** that will contain the formula.
2. Type the **equals sign (=)**. Notice how it appears in both the **cell** and the **formula bar**.

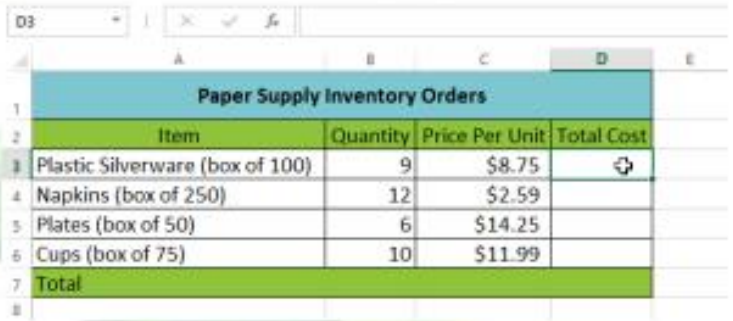


1. Type the **cell address** of the cell you wish to reference first in the formula: cell **D1** in our example. A **blue border** will appear around the referenced cell.
2. Type the **mathematical operator** you wish to use. In our example, we'll type the **addition sign** (**+**).
3. Type the **cell address** of the cell you wish to reference second in the formula: cell **D2** in our example. A **red border** will appear around the referenced cell.
4. Press **Enter** on your keyboard. The formula will be **calculated**, and the **value** will be displayed in the cell.

To create a formula using the point-and-click method

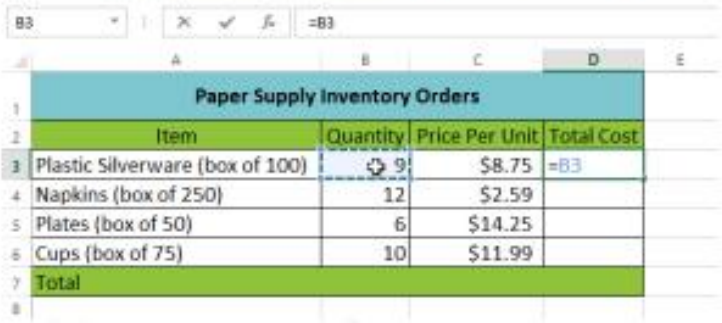
Rather than typing cell addresses manually, you can **point and click** on the cells you wish to include in your formula. This method can save a lot of time and effort when creating formulas. In our example below, we'll create a formula to calculate the cost of ordering several boxes of plastic silverware.

1. Select the **cell** that will contain the formula. In our example, we'll select cell **D3**.



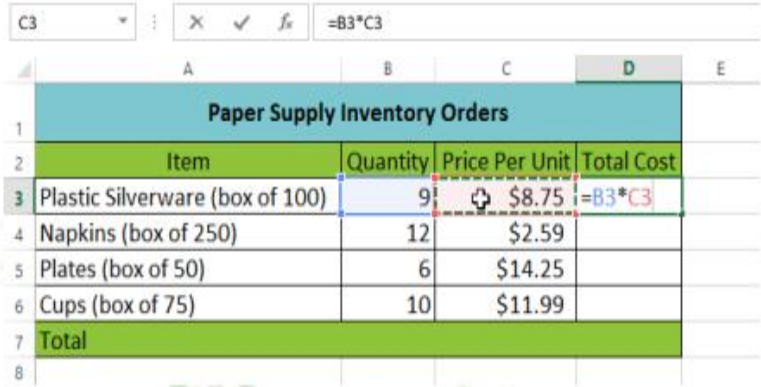
Paper Supply Inventory Orders			
Item	Quantity	Price Per Unit	Total Cost
Plastic Silverware (box of 100)	9	$8.75	
Napkins (box of 250)	12	$2.59	
Plates (box of 50)	6	$14.25	
Cups (box of 75)	10	$11.99	
Total			

2. Type the **equals sign (=)**.
3. Select the **cell** you wish to reference first in the formula: cell **B3** in our example. The **cell address** will appear in the formula, and a **dashed blue line** will appear around the referenced cell.



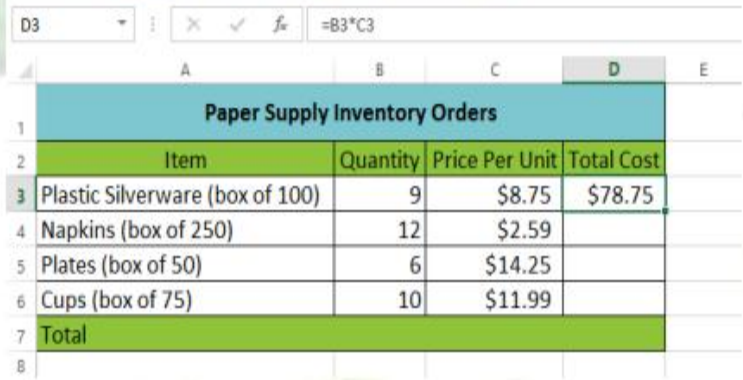
Paper Supply Inventory Orders			
Item	Quantity	Price Per Unit	Total Cost
Plastic Silverware (box of 100)	9	$8.75	=B3
Napkins (box of 250)	12	$2.59	
Plates (box of 50)	6	$14.25	
Cups (box of 75)	10	$11.99	
Total			

4. Type the **mathematical operator** you wish to use. In our example, we'll type the **multiplication sign (*)**.
5. Select the **cell** you wish to reference second in the formula: cell **C3** in our example. The **cell address** will appear in the formula, and a **dashed red line** will appear around the referenced cell.



Paper Supply Inventory Orders			
Item	Quantity	Price Per Unit	Total Cost
Plastic Silverware (box of 100)	9	$8.75	=B3*C3
Napkins (box of 250)	12	$2.59	
Plates (box of 50)	6	$14.25	
Cups (box of 75)	10	$11.99	
Total			

6. Press **Enter** on your keyboard. The formula will be **calculated**, and the **value** will be displayed in the cell.



Paper Supply Inventory Orders			
Item	Quantity	Price Per Unit	Total Cost
Plastic Silverware (box of 100)	9	$8.75	$78.75
Napkins (box of 250)	12	$2.59	
Plates (box of 50)	6	$14.25	
Cups (box of 75)	10	$11.99	
Total			

Formulas can also be **copied** to adjacent cells with the **fill handle**, which can save a lot of time and effort if you need to perform the **same calculation** multiple times in a worksheet.

INSERTING A CHART

Charts are an important part to being able to create a visual for spreadsheet data. In order to create a chart within Excel the data that is going to be used for it needs to be entered already into the spreadsheet document. Once the data is entered, the cells that are going to be used for the chart need to be highlighted so that the software knows what to include. Next, click on the Charts Tab that is located right above the spreadsheet (Figure 14). Once it is clicked the tab will highlight green and all of the various charts within Excel will appear.

Figure 14

You may choose the chart that is desired by clicking the icons that are displayed. Once the icon is chosen the chart will appear as a small graphic within the spredsheet you are working on. To move the chart to a page of its own select the border of the chart and Ctrl > Click. This will bring up a drop down menu, navigate to the option that says Move Chart. This will bring up a dialog box that says Chart Location.
From here you will need to select the circle next to As A New Sheet and name the sheet that will hold your chart. The chart will pop up larger in a separate sheet but in the same workbook as your entered data.

Chart Design

There are various different features that you can change to make your chart more appealing. To be able to make these changes you will need to have the chart selected or view the chart page that is within your workbook. Once you have done that the Formatting Palette will change to show features that were not there before (Figure 16). These features include:

Chart Options:

Titles: Here you can change the Chart Title, Vertical Axis Title, and Horizontal Axis Title by clicking the dro down menu and selecting which one you will change and entering the name into the empty box below.
Axes: You may change which axes are shown on the charts graph and which are not.
Gridlines: This feature allows you to change which gridlines (major and minor) are shown on the charts grap and which are not.

Chart Style:

Here you are able to change the color of the bars that are within your chart.

Quick Styles and Effects:

Here you can add gradients, fill, drop shadows, and reflections to your chart depending on what is desired.

- MS Excel automatically edits the result if any changes are made in any of the cells.

Uses in Physical Education

1. Data storage
   - Raw data on fitness, attendance, skills etc
2. Data Sorting
   - arranging data in some logical order. Allowing to sort data either in ascending or descending order.
3. Calculations for raw data
   - Mean, Median, Mode, Sum, Average, Standard Deviation, ‘t’ test, ‘f’ test, correlation etc.
4. Presentation of results
   - Histogram, pie chart, line graphs, scatter graph etc.