



E-LEARNING

Level 2



WA09: ICT Skills

UNIT 2.12: Use spreadsheets to produce routine and non-routine sheets

LO2.12: Demonstrate the ability to use a spreadsheet safely and securely to enter, edit and organise numerical and other data including simple and more advanced formulas to meet the routine and non-routine requirements of the office.



What is a spreadsheet?

- A spreadsheet is a computer application that simulates a paper accounting worksheet.
 - It displays multiple cells usually in a two-dimensional matrix or grid consisting of rows and columns.
 - Each cell contains alphanumeric text, numeric values or formulas.
 - A formula defines how the content of that cell is to be calculated from the contents of any other cell (or combination of cells), each time a cell is updated.
 - Spreadsheets are frequently used for financial information, because of their ability to re-calculate the entire sheet automatically after a change to a single cell is made.
 - A pseudo third dimension to the matrix is sometimes applied as another layer, or layers/sheets, of two-dimensional data.

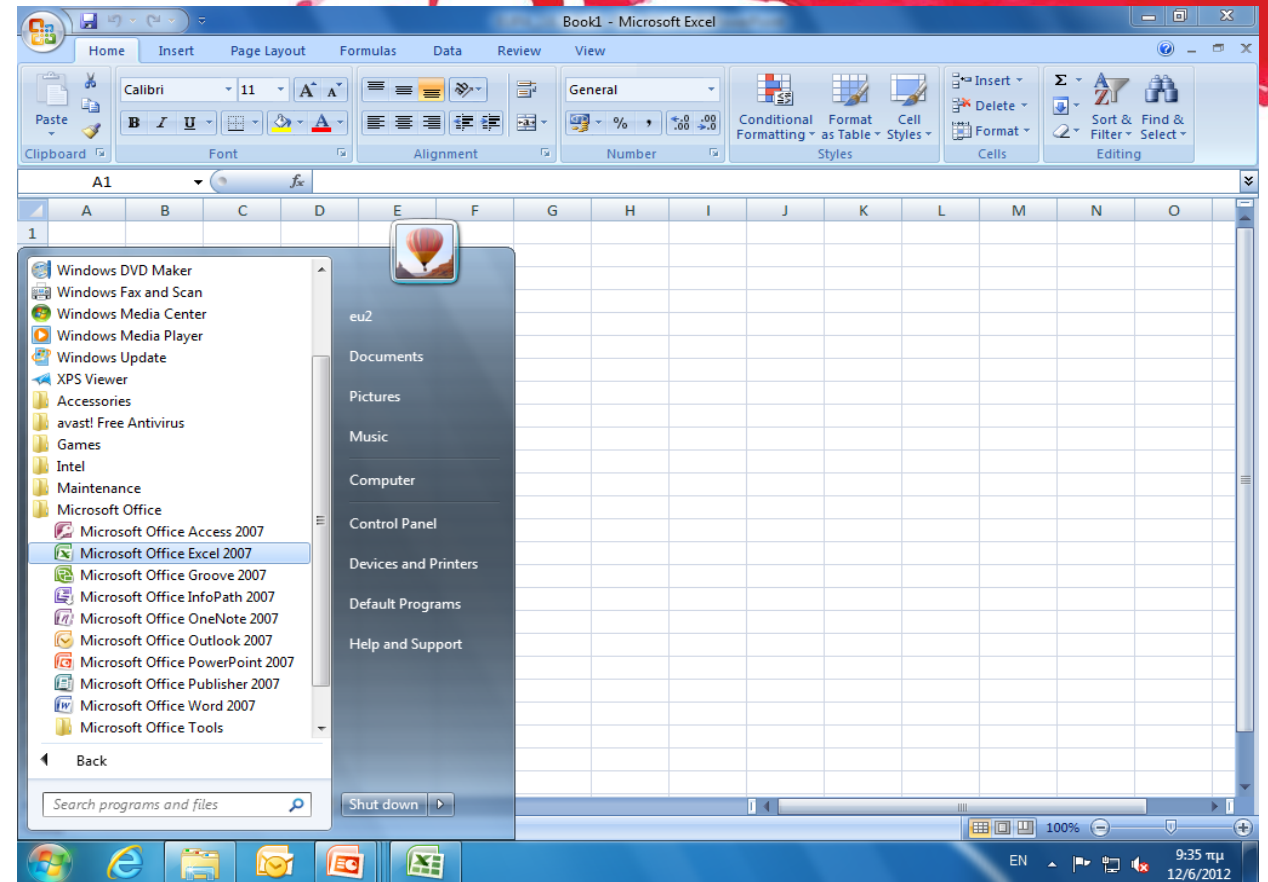


What is Excel?

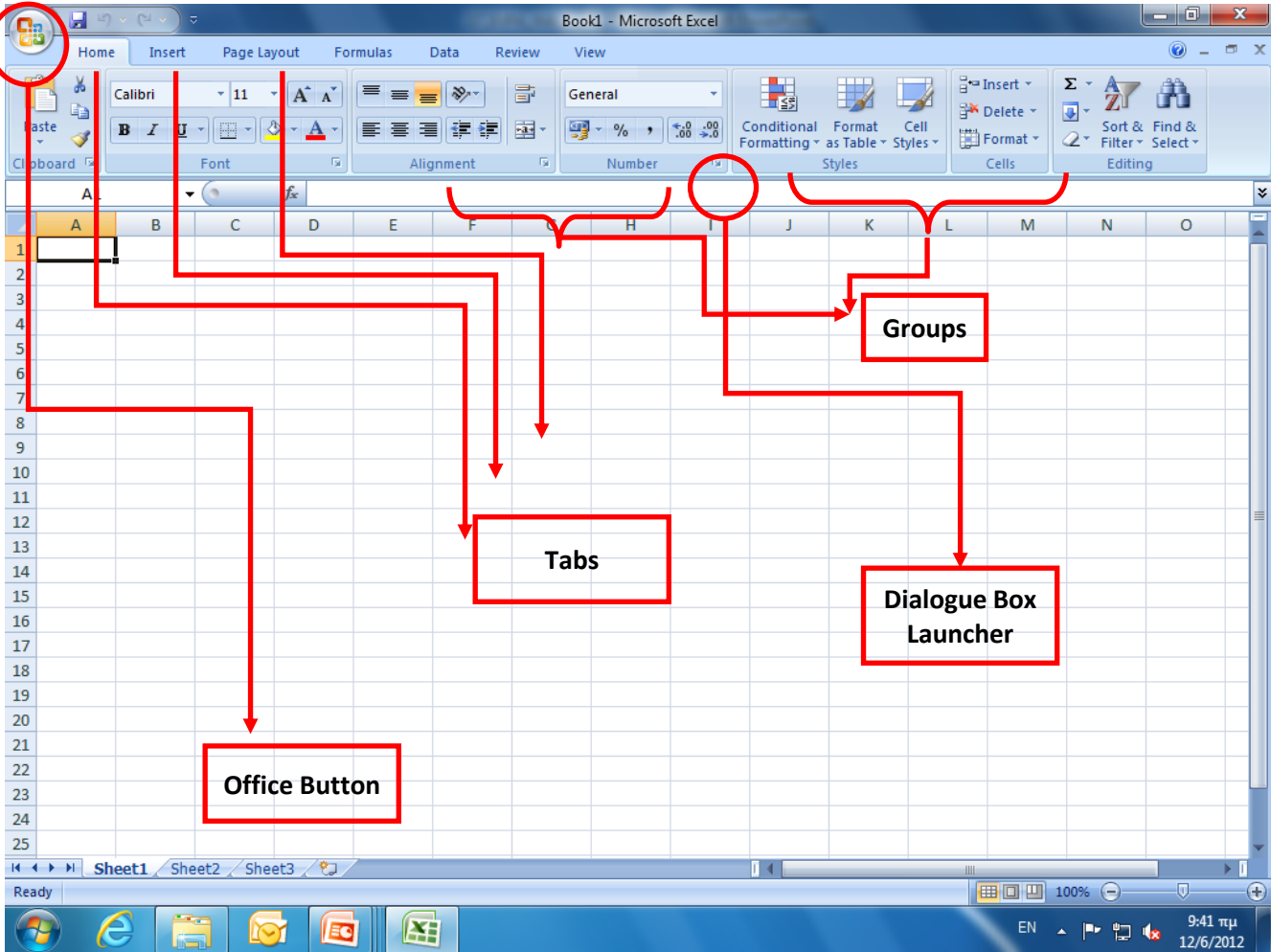
- Excel is a computerized spreadsheet, which is an important business tool that helps you report and analyze information.
- Excel stores spreadsheets in documents called workbooks.
- Each workbook is made of individual worksheets, or sheets.
- Because all sorts of calculations can be made in the Excel spreadsheet, it is much more flexible than a paper spreadsheet.
- The Excel window has some basic components, such as an Active cell, Column headings, a Formula bar, a Name box, the mouse pointer, Row headings, Sheet tabs, a Task Pane, Tab scrolling buttons and the Ribbon with the Tabs (Group).



- **Microsoft Excel** automatically opens a blank spreadsheet when you start the program.
- **Start → All Programs → Microsoft Office → Microsoft Office Excel 2007**

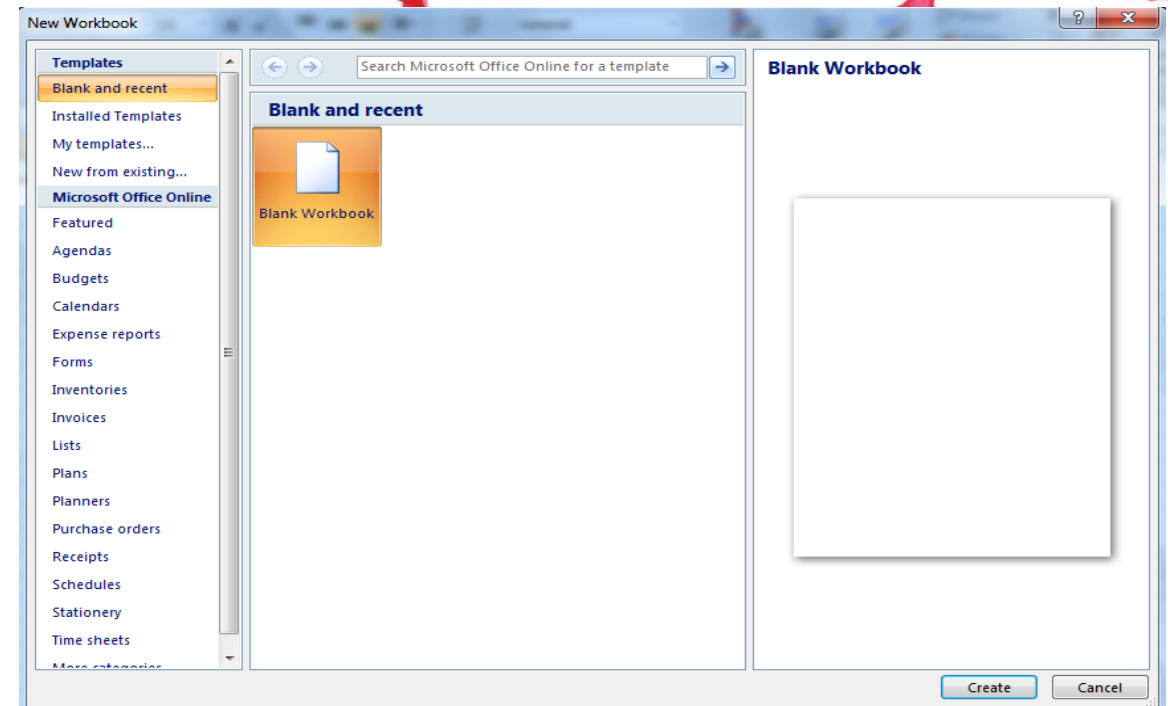


Microsoft Excel Environment



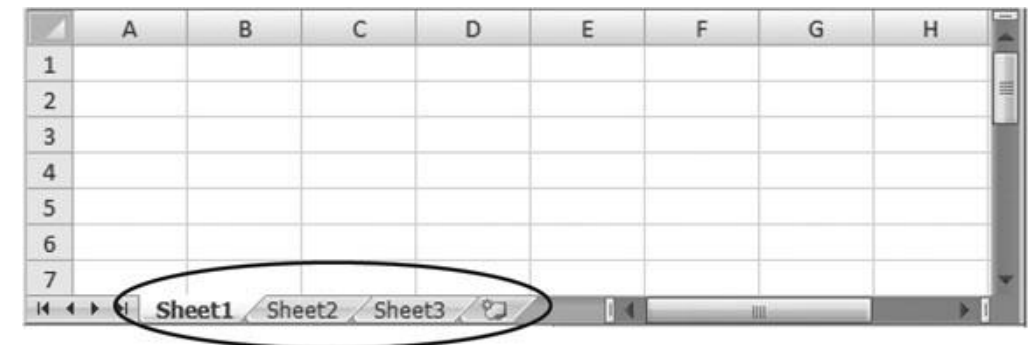
- **To Create a New, Blank Workbook:**

- Click the **Microsoft Office Button**.
- Select **New**. The New Workbook dialog box appears.
- Select **Blank Workbook** under the **Blank and recent** section. It will be highlighted by default.
- Click **Create**. A new, blank workbook appears in the Excel window.

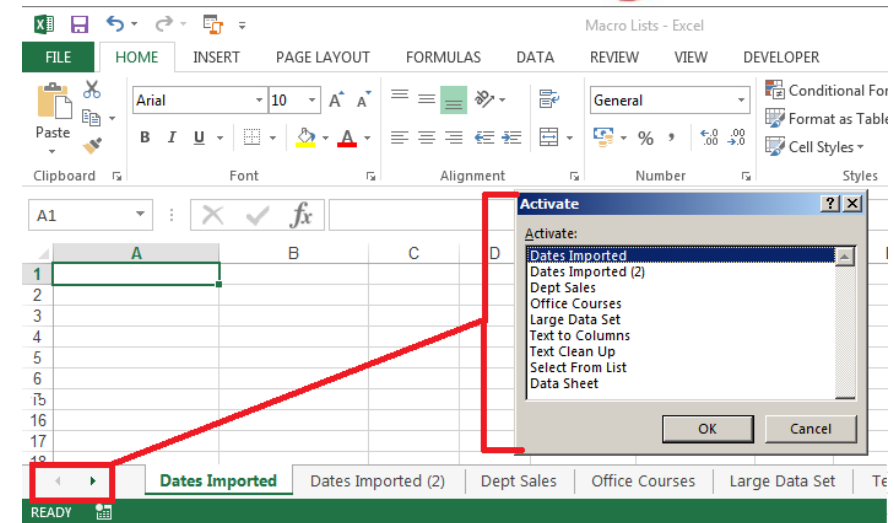


- When you set up **calculations** in a worksheet, if an entry is changed in a cell, the spreadsheet will automatically update any calculated values that were based on that entry.
- When you open Excel, by default it will open a **blank workbook** with three blank worksheets.
- When you **save** a **workbook**, you have a Save As option that can save the spreadsheet to earlier versions of Excel or to Quattro Pro, Lotus 123 formats, dBase formats, and even to a comma or tab-delimited text file.

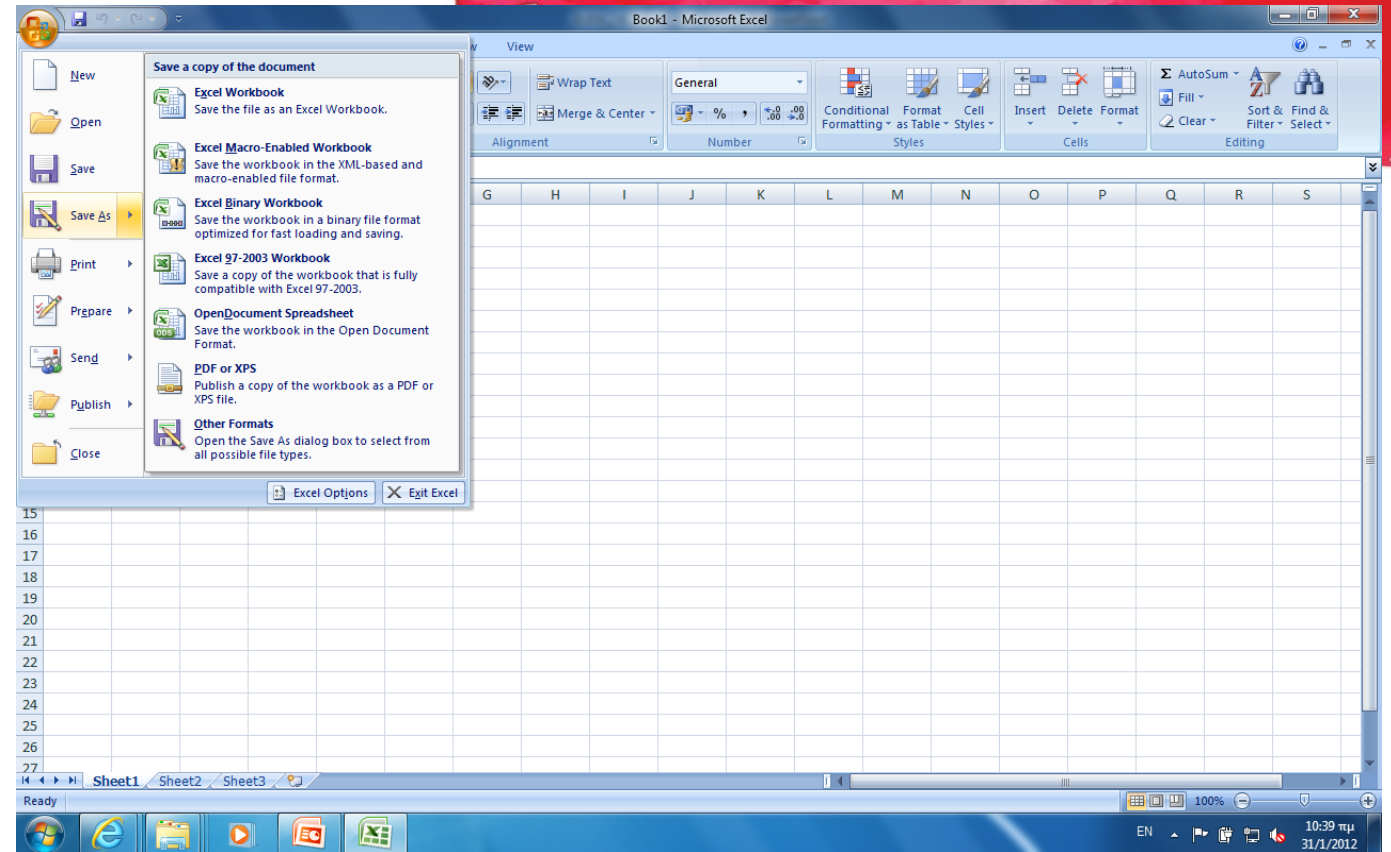
- A **workbook** consists of **three spreadsheets**.
- Each spreadsheet consists of 16,384 columns and 1,048,576 rows.
- The size of the worksheet is predefined, therefore a worksheet will always have the same number of rows and columns with another worksheet. However, the size of the workbook is not predefined, therefore one can add any number of new spreadsheets.
- To navigate within a workbook, you can use the arrow keys, PageUp, PageDown, or the Ctrl key in combination with the arrow keys to make larger movements.
- The most direct means of navigation is with your mouse.
- Scroll bars are provided, which work the same way in all Windows applications.



- To move to other Worksheets, you can:
 - Click their tab with the mouse
 - Use the Ctrl key with the Page Up and Page Down keys to move sequentially up or down through the worksheets
- If you are familiar with Microsoft Access, you will find the tab scrolling buttons for moving between worksheets to be similar to record browsing on an Access form or datasheet.

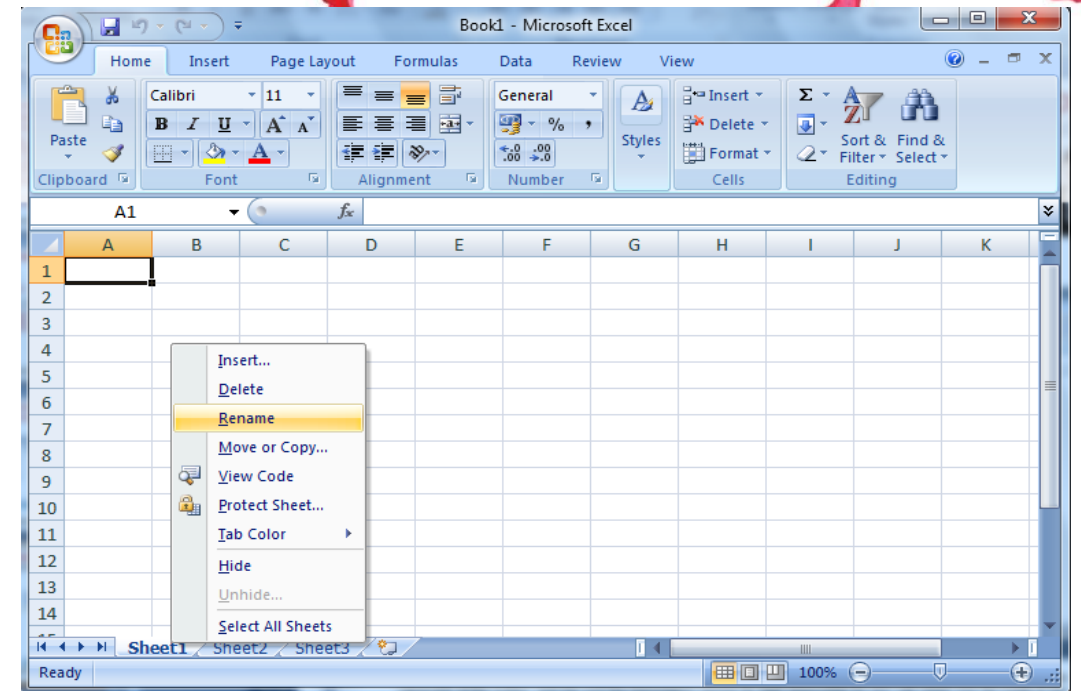


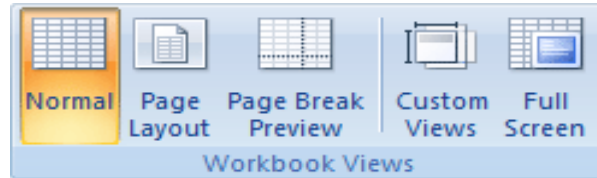
- Office Button
- Save or Save As
- Name the file (XXX.xls)
- Save



- **Save** will save your current state.
- **Save as** will allow you to change parameters.
 - Therefore, if you had a spreadsheet or a picture open, **save** would save it in its current state, but **save as** would allow you to change its name or, in the case of a picture, it would allow you to transfer it into another file type (ABC instead of abc, for example).

- Worksheets are much like pages within a book; you pass through them like you flip the pages of a book.
- There are several ways to move, copy and work with worksheets.
 - **Right click on the sheet tab** and choose **Move or Copy**. Select a new position in the workbook for the worksheet or click the Create a copy checkbox and Excel will paste a copy of that worksheet in the workbook.
 - The same shortcut menu for the sheet tab also gives you the option to insert, delete or rename a worksheet.





- **Normal** - View the document in Normal view.
- **Page Layout** - View the document as it will appear on the printed page. Use this view to see where pages begin and end, and to view any headers or footers on the page.
- **Page Break Preview** - View a preview of where pages will break when this document is printed.
- **Custom Views** - Save a set of display and print settings as a custom view. Once you have saved the current view, you can apply it to the document by selecting it from the list of available custom views.
- **Full Screen** - View the document in full screen mode.

- **Price:**

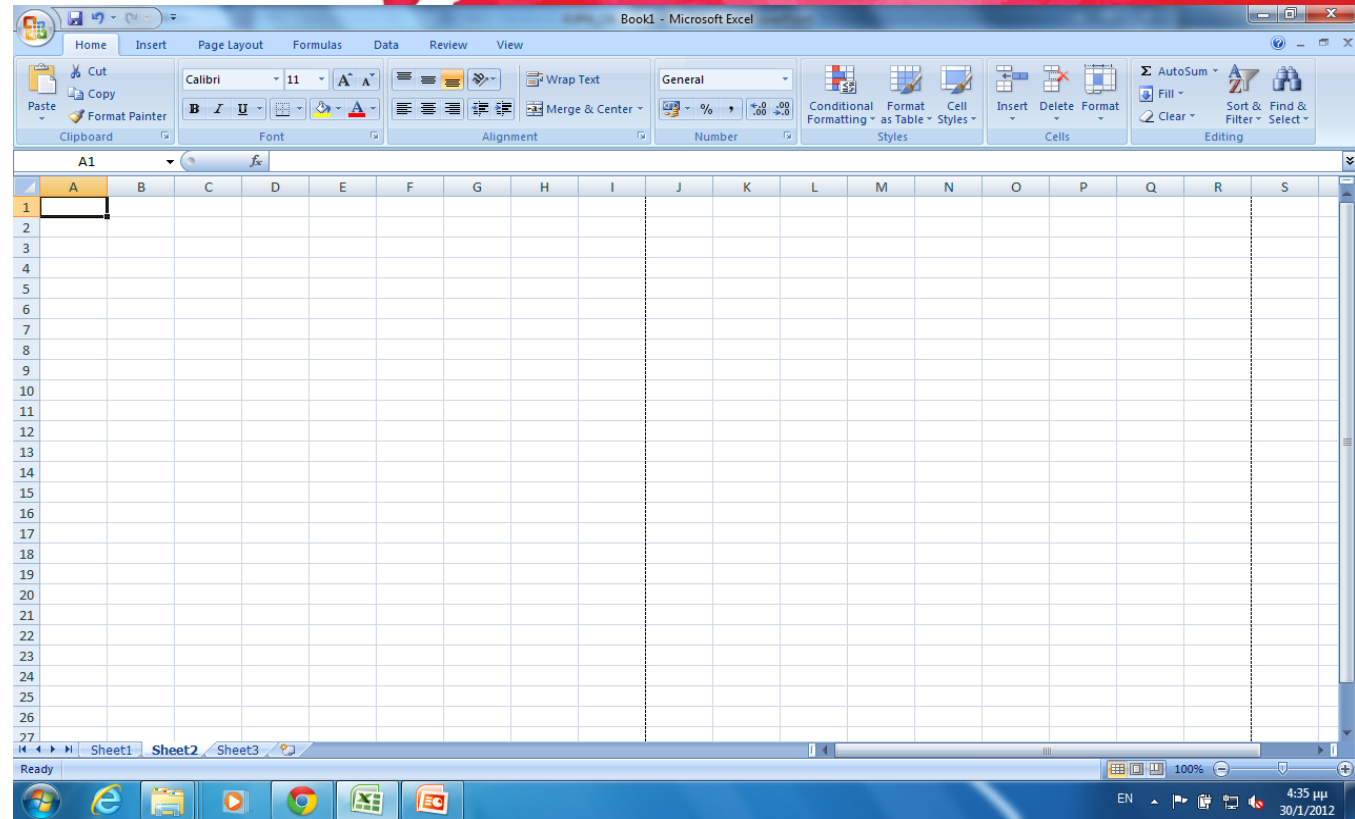
- Can be a date: 6/9/95, or a time: 3:24 a.m.

- **Text:**

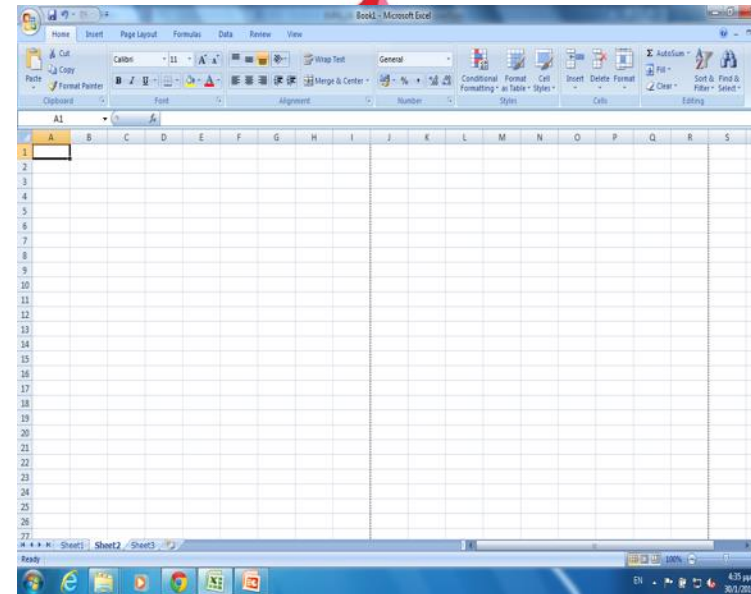
- Text with numbers. E.g. 16, Imvrou Str.

- **Formula:**

- The best part of the excel sheets.
Formulas are entries which form an equation calculating the value to display.



- Put your mouse into the cell and press the F2 Button.
- Double click the cell and press the Delete Button.
- Use the undo and redo buttons for your last action in the document.



- **Value:** A number representing a quantity of some kind: sales, weight, competition grades and so on. Value may also be a date like 6/9/95 or time like 3:24.
- **Text:** A series of characters and numbers. The address 16 Invrou Street is a text, regardless of the fact that it starts with a number.
- **Formulas/ Formulas:** These make electronic sheets different. If these were not used, then the use of a word processor would make no difference.

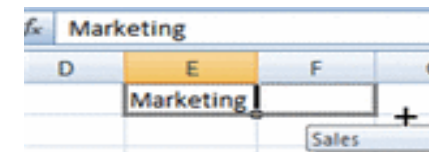
By default, numbers are aligned on the right side of a cell, whilst text aligns on the left.

- When you create a workbook, and then save it as an Excel file, you can share it with your colleagues and reuse it more than once.
 - Click the **Microsoft Office Button**, and then click **Save as**.
 - In the File name box, type a file name, or do nothing to accept the suggested file name.
 - In the Save as type list, click Excel Template, and then click **Save**.

- **Opening a workbook**
 - To open an Excel workbook, take the standard route - click the Office button and choose Open.
- **Closing a workbook**
 - To close an Excel workbook, save your file and use one of these techniques:
 - Click the Office button and choose Close on the drop-down list. The Excel program remains open although the workbook is closed.
 - Click the Close button marked with an X in the upper-right corner of the Excel window. Clicking the X button closes Excel as well as your workbook.

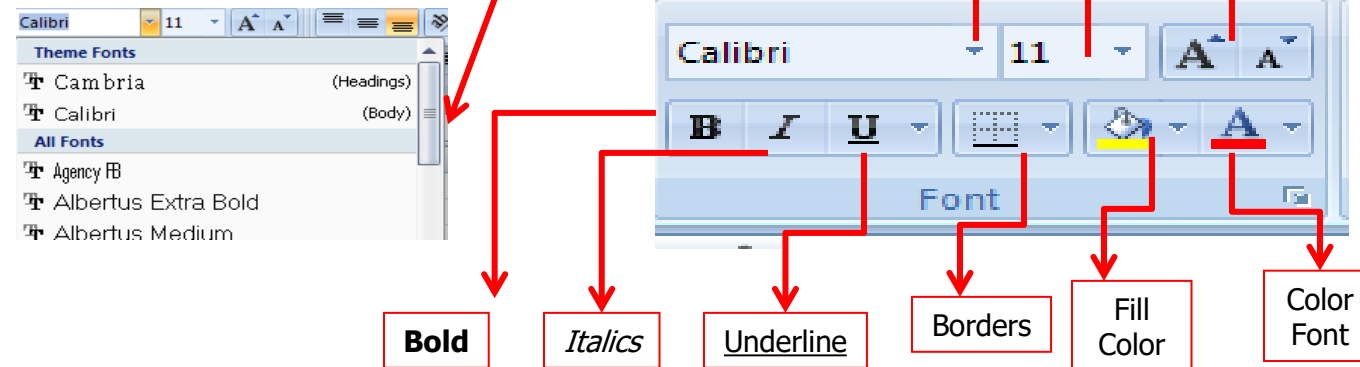


- If you have added lists of custom data to the fill handle, this tip explains how easy it is to add that data to your spreadsheet.
 1. Click on the cell where you want the list to start.
 2. Type in the first name in the list.
 3. Press the **ENTER** key on the keyboard.
 4. Click on the cell containing the first name in the list.
 5. Click and hold down the mouse pointer on the fill handle in the bottom right corner of the active cell.
 6. Drag the fill handle to autofill as many cells as needed.



Adding lists of data with the Fill Handle

- To format characters, you can use the tools of the group **Font** located on the **Home Tab**.
- Using these tools, you may format the whole of your table, or only one cell, to change its appearance.

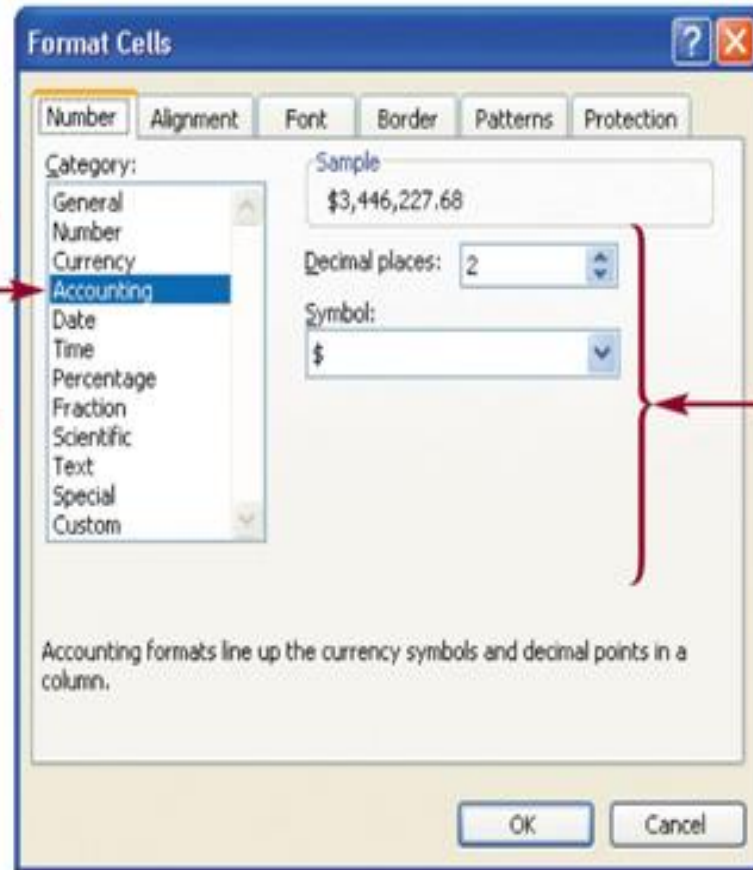


- Formatting is the process of changing the appearance of your workbook.
- A properly formatted workbook can be easier to read, appear more professional, and help draw attention to important points.
 - The Home Tab is the fastest way to format your worksheet.
 - With groups on this tab, you can apply a comma format, adjust the number of decimal places in a number, apply Currency and Percent formats and even quickly copy formats.
 - If you select a cell or range, right click on the cell and then click the Format Cells and the dialog box opens.



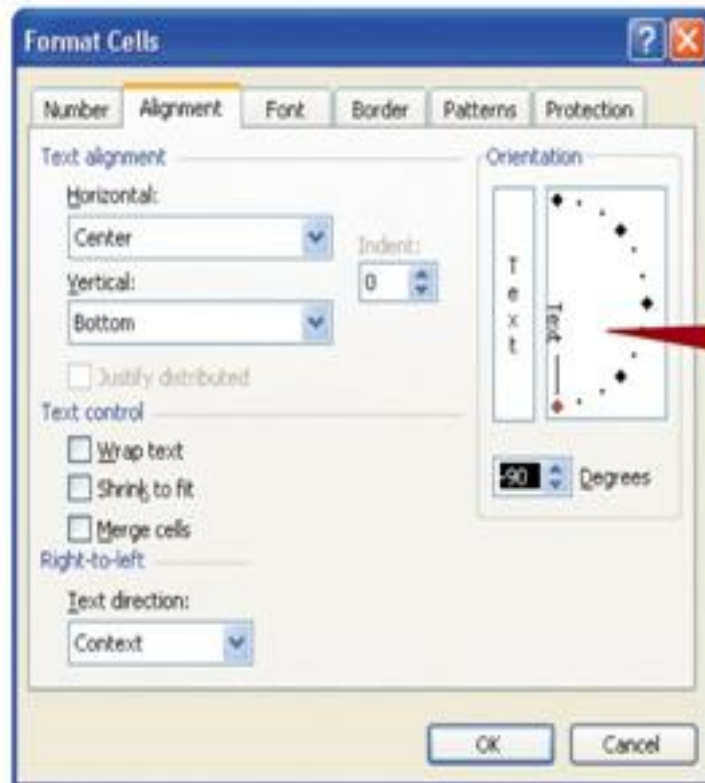
The Format Cells dialog box “Number Tab”

indicates category of formatting currently applied to the active cell



options related to the selected category appear here

The Format Cells dialog box “Alignment Tab”

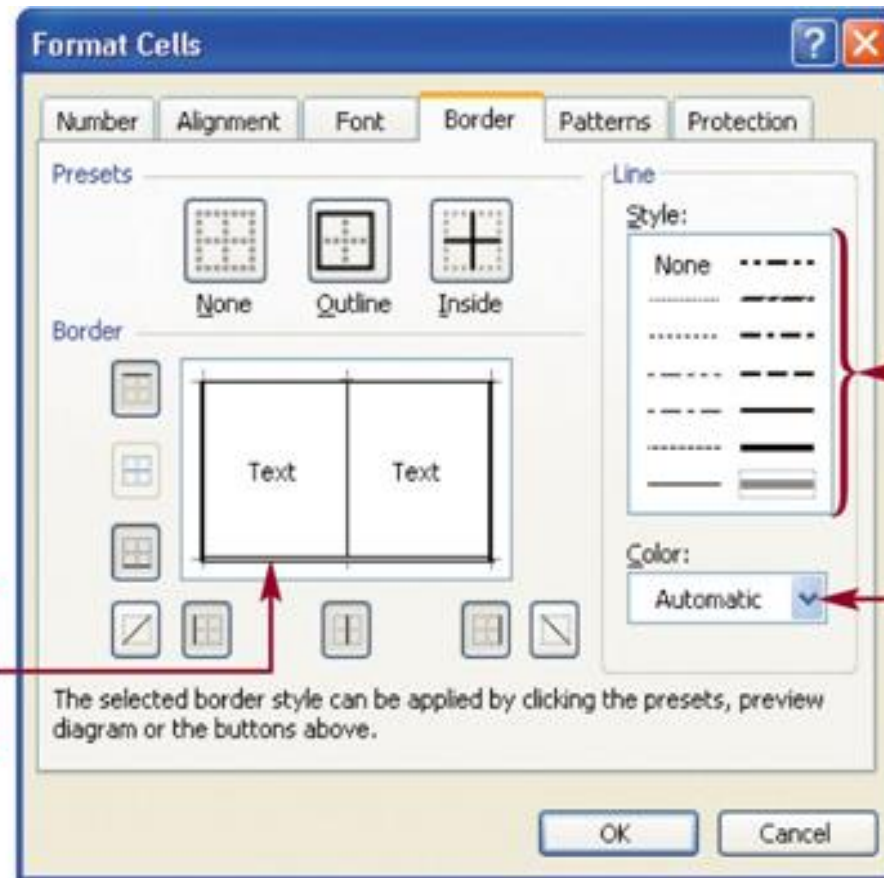


| | A | B | C | D | E | F |
|---|------------------------|-------|-------|------------|-------|---|
| 1 | NewGeneration Monitors | | | | | |
| 2 | Sales Data | | | | | |
| 3 | 1/1/2006 - 12/31/2006 | | | | | |
| 4 | Monthly Sales Data | | | | | |
| 5 | | | | | | |
| 6 | Month | VX100 | VX300 | FlatScreen | Total | |
| 7 | January | 1,410 | 1,860 | 435 | 3,705 | |

...you can display text vertically within a cell.

By rotating the orientation of the text...

The Format Cells dialog box “Border Tab”

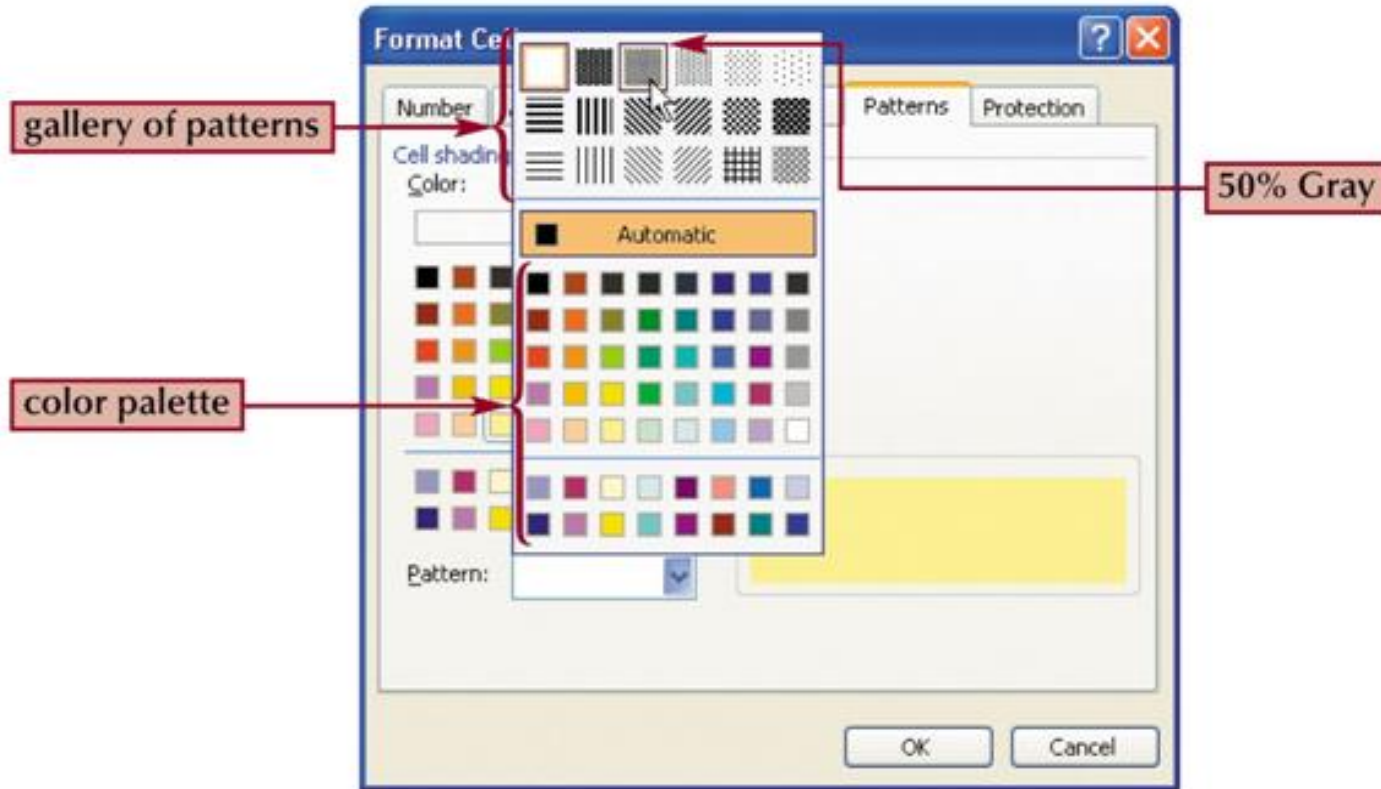


preview of the placement of the double-line border

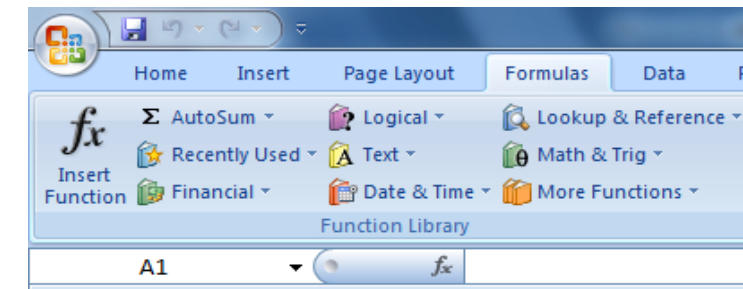
line style options

click to specify line color

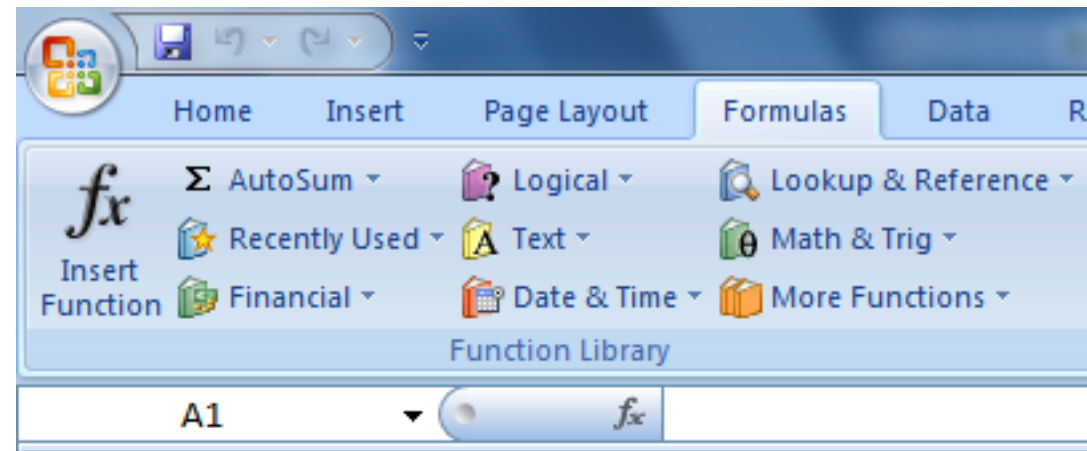
The Format Cells dialog box "Patterns Tab"



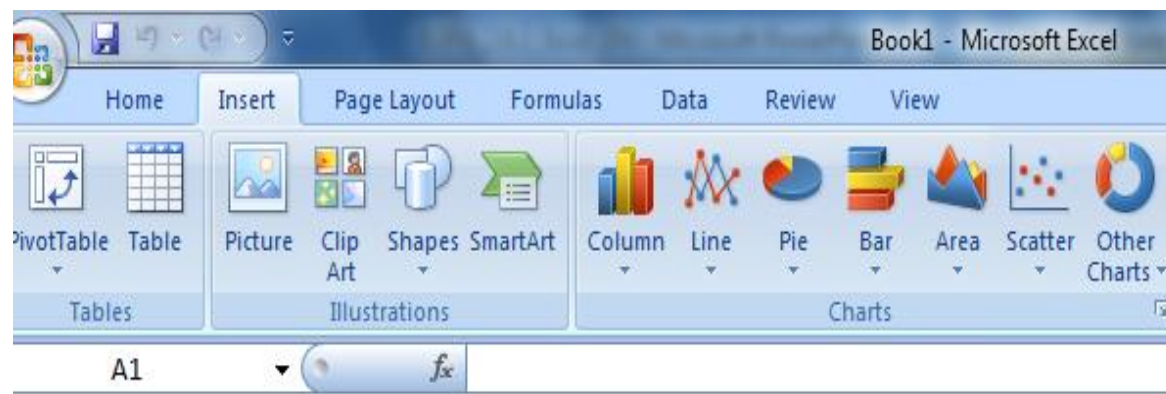
- In Excel there are hundreds of functions which can be used.
- These functions can be formulas used to carry out some operations.
- These formulas already exist in the program.
 - For instance, the function **Average (C22:C26)** calculates the average value of the values located in cells C22:C26. All you have to do to be able to use the formula, is define the area in which the values are located. If you were to create the formula for the average value, however, you would type “=(C22+C23+C24+C25=C26)/5”. It is obvious that using the existing formula is much easier than creating the formula.



- There are also other functions which only give information, like the current date, time and so on.
- In addition, there are functions which act like small programs like the functions of min, max, lookup, and so on. These functions cannot be replaced by any other formula.



- A **worksheet** may contain various relationships, like differences between numbers and changes in numbers according to year. A visual picture of these relationships may be more effective in order to understand them, therefore the use of charts is one of the most dynamic tools MS Excel 2007 has to offer.



Some simple formulas: SUM

The screenshot shows the Microsoft Excel interface with the 'Formulas' ribbon selected. The 'AutoSum' button (Σ) is highlighted, and a dropdown menu is open, showing the 'Sum' function selected. A 'Sum (Alt+=)' dialog box is displayed, showing a grid of cells with values 3, 6, 5, and 5. The formula bar shows '=SUM(J5:J8)'. The background features a red watercolor splash.

File Home Insert Page Layout Formulas Data Review View

fx Insert Function

Σ AutoSum

Recently Used

Financial

Logical

Text

Date & Time

Lookup & Reference

Math & Trig

More Functions

Σ Sum

Average

Count Num

Max

Min

More Funct

Sum (Alt+=)

Display the sum of the selected cells directly after the selected cells.

3

6

5

5

=SUM(J5:J8)

Some simple formulas: AVERAGE

Book1 - Microsoft Excel

File Home Insert Page Layout Formulas Data Review View Developer Nitro Pro 9 Acrobat

fx Σ Recently Used Financial Logical Text Date & Time Lookup & Reference Math More Functions Name Manager

Function Library

A1 fx

A B C D E F G L M N

1 2 3 4 5 6 7 8

Statistical Engineering Cube Information Compatibility

AVEDEV
AVERAGE
AVERAGEA
AVERAGEIF
AVERAGEIF
BETA.DIST
BETA.INV
BINOM.DIST
BINOM.INV
CHISO.DIST

AVERAGE(number1;number2;)
Returns the average (arithmetic mean) of its arguments, which can be numbers or names, arrays, or references that contain numbers.
Press F1 for more help.

Some simple formulas: COUNT

The screenshot shows the Microsoft Excel interface with the 'Formulas' ribbon selected. The 'More Functions' dropdown menu is open, displaying a list of functions. The 'COUNT' function is highlighted. A tooltip for the 'COUNT' function is visible, providing its syntax and description.

Function Library

- Insert Function
- AutoSum
- Recently Used
- Financial
- Logical
- Text
- Date & Time
- Lookup & Reference
- Math & Trig
- More Functions

Function List:

- Statistical
- Engineering
- Cube
- Information
- Compatibility

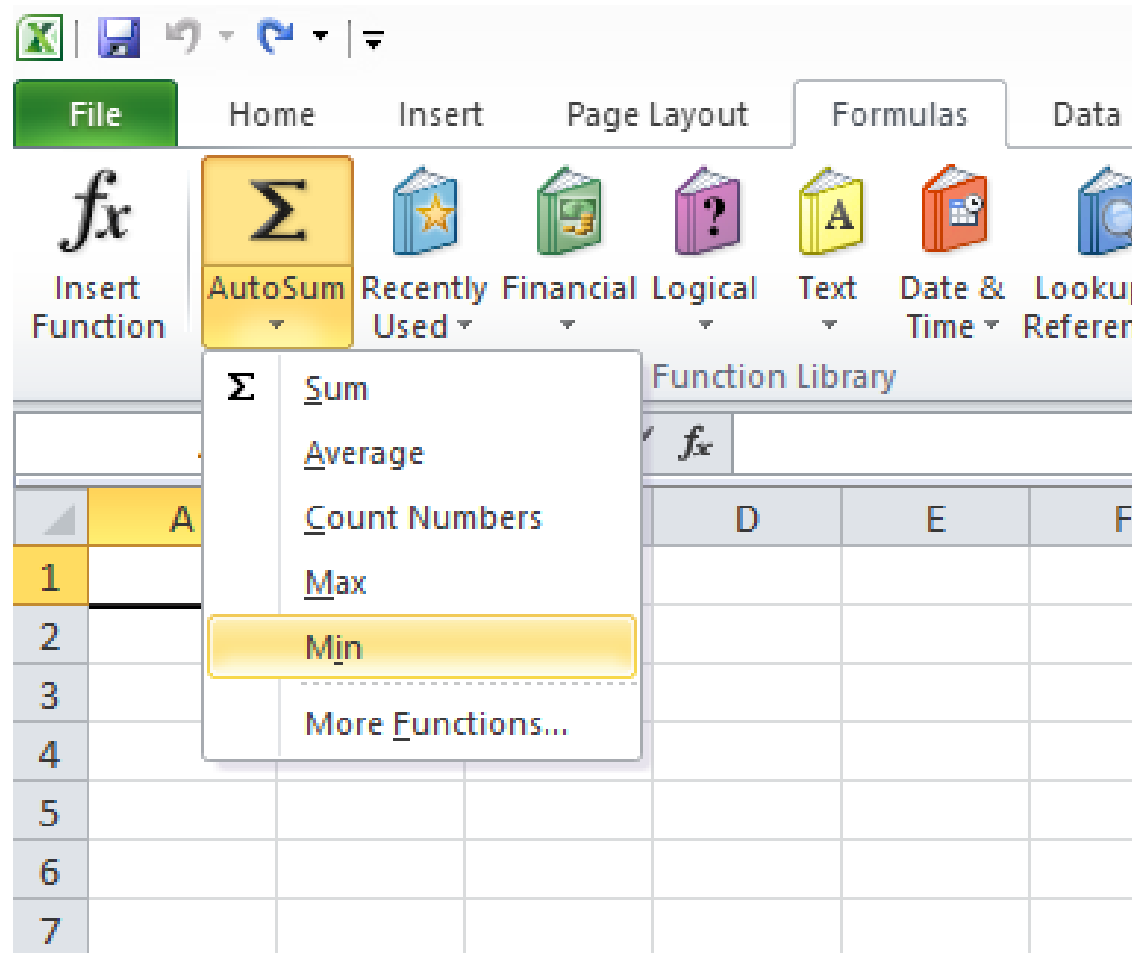
Function List:

- AVEDEV
- AVERAGE
- AVERAGEA
- AVERAGEIF
- AVERAGEIFS
- BETA.DIST
- BETA.INV
- BINOM.DIST
- BINOM.INV
- CHISQ.DIST
- CHISQ.DIST.RT
- CHISQ.INV
- CHISQ.INV.RT
- CHISQ.TEST
- CONFIDENCE.NORM
- CONFIDENCE.T
- CORREL
- COUNT**
- COUNTA

Tooltip for COUNT:

COUNT(value1;value2;)
Counts the number of cells in a range that contain numbers.
Press F1 for more help.

Some simple formulas: MIN/MAX





**Practice the creation of
spreadsheets with formulas**

E-EUPA_LO_2.12_M_001

To freeze rows:

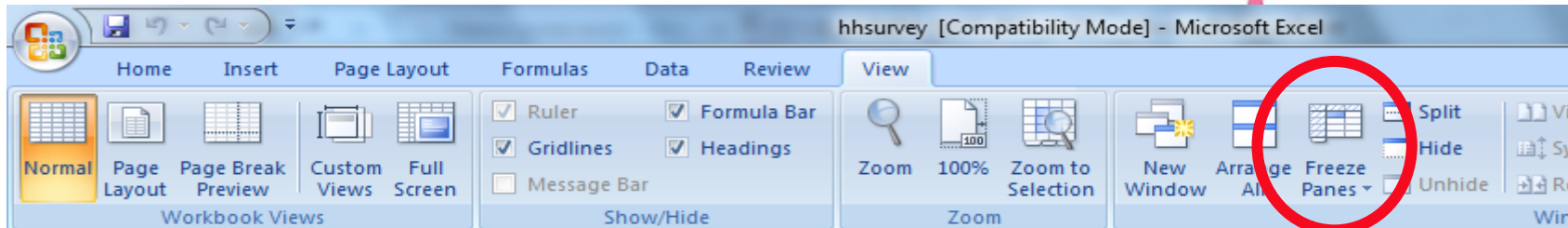
- You may want to see certain rows or columns all the time in your worksheet, especially **header cells**.
- By **freezing** rows or columns in place, you'll be able to scroll through your content while continuing to view the frozen cells.

1. Select the **row** below the row(s) you want to **freeze**

(continue)

Freeze rows function

2. Click the **View** tab on the **Ribbon**.
3. Select the **Freeze Panes** command, then choose **Freeze Panes** from the drop-down menu.

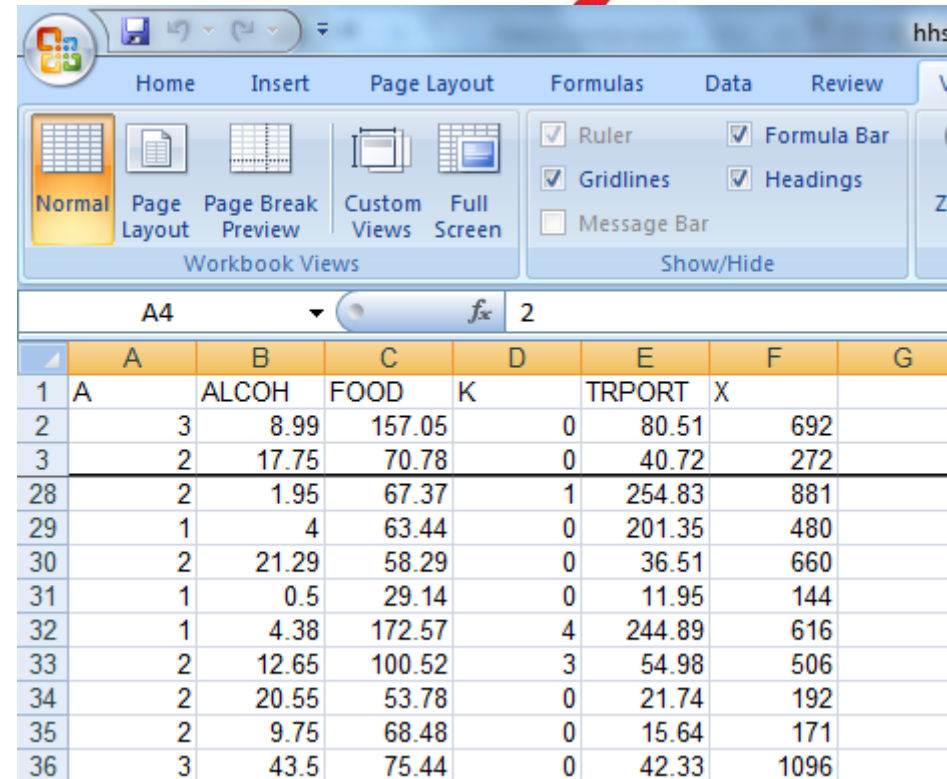


The screenshot shows the Microsoft Excel interface with the 'View' tab selected on the ribbon. The 'Freeze Panes' button is circled in red. Below the ribbon, the worksheet 'hhsurvey' is visible, showing a table with columns A through M and rows 1 through 12. The data in the table is as follows:

| | A | B | C | D | E | F | G | H | I | J | K | L | M |
|----|---|-------|-------|--------|--------|--------|------|---|---|---|---|---|---|
| 1 | A | ALCOH | FOOD | K | TRPORT | X | | | | | | | |
| 2 | | 3 | 8.99 | 157.05 | 0 | 80.51 | 692 | | | | | | |
| 3 | | 2 | 17.75 | 70.78 | 0 | 40.72 | 272 | | | | | | |
| 4 | | 2 | 2.97 | 177.2 | 0 | 29.31 | 1130 | | | | | | |
| 5 | | 2 | 13.5 | 75.11 | 2 | 38.11 | 535 | | | | | | |
| 6 | | 2 | 47.41 | 147.89 | 0 | 108.27 | 767 | | | | | | |
| 7 | | 2 | 49.73 | 116.94 | 0 | 503.75 | 682 | | | | | | |
| 8 | | 2 | 58.07 | 74.85 | 2 | 76.15 | 1008 | | | | | | |
| 9 | | 2 | 34.56 | 101.24 | 0 | 27.22 | 1132 | | | | | | |
| 10 | | 2 | 29.1 | 68.49 | 2 | 64.76 | 891 | | | | | | |
| 11 | | 2 | 2.2 | 190.3 | 0 | 57.57 | 1264 | | | | | | |
| 12 | | 2 | 17.95 | 45.29 | 0 | 78.86 | 738 | | | | | | |

Freeze rows function

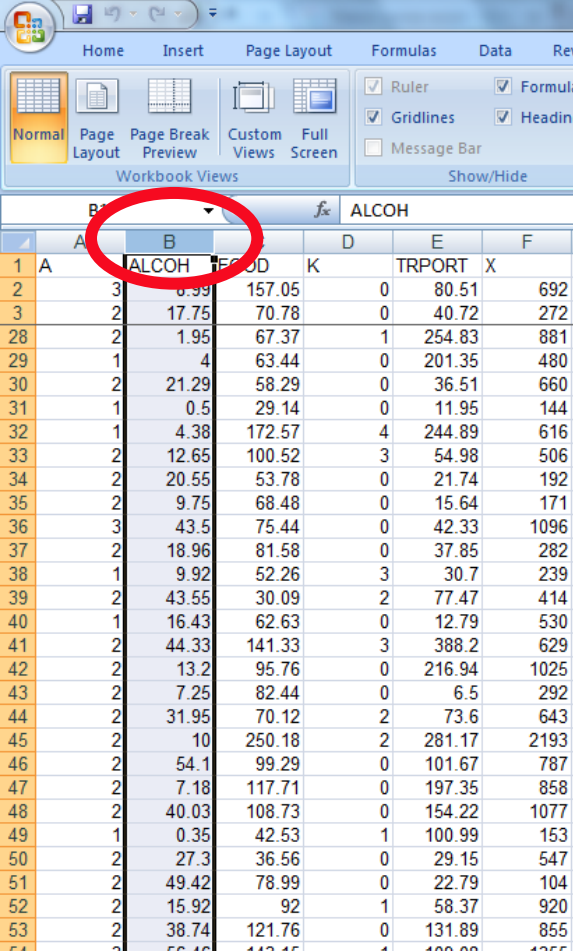
4. The rows will be **frozen** in place, as indicated by the **grey line**. You can **scroll down** the worksheet while continuing to view the frozen rows at the top. In our example, we've scrolled down to row **28**.



| | A | B | C | D | E | F | G |
|----|---|-------|--------|---|--------|------|---|
| 1 | A | ALCOH | FOOD | K | TRPORT | X | |
| 2 | 3 | 8.99 | 157.05 | 0 | 80.51 | 692 | |
| 3 | 2 | 17.75 | 70.78 | 0 | 40.72 | 272 | |
| 28 | 2 | 1.95 | 67.37 | 1 | 254.83 | 881 | |
| 29 | 1 | 4 | 63.44 | 0 | 201.35 | 480 | |
| 30 | 2 | 21.29 | 58.29 | 0 | 36.51 | 660 | |
| 31 | 1 | 0.5 | 29.14 | 0 | 11.95 | 144 | |
| 32 | 1 | 4.38 | 172.57 | 4 | 244.89 | 616 | |
| 33 | 2 | 12.65 | 100.52 | 3 | 54.98 | 506 | |
| 34 | 2 | 20.55 | 53.78 | 0 | 21.74 | 192 | |
| 35 | 2 | 9.75 | 68.48 | 0 | 15.64 | 171 | |
| 36 | 3 | 43.5 | 75.44 | 0 | 42.33 | 1096 | |

Freeze columns function

1. Select the **column** to the right of the column(s) you want to **freeze**. In our example, we want to freeze **column A**, so we'll select column **B**.

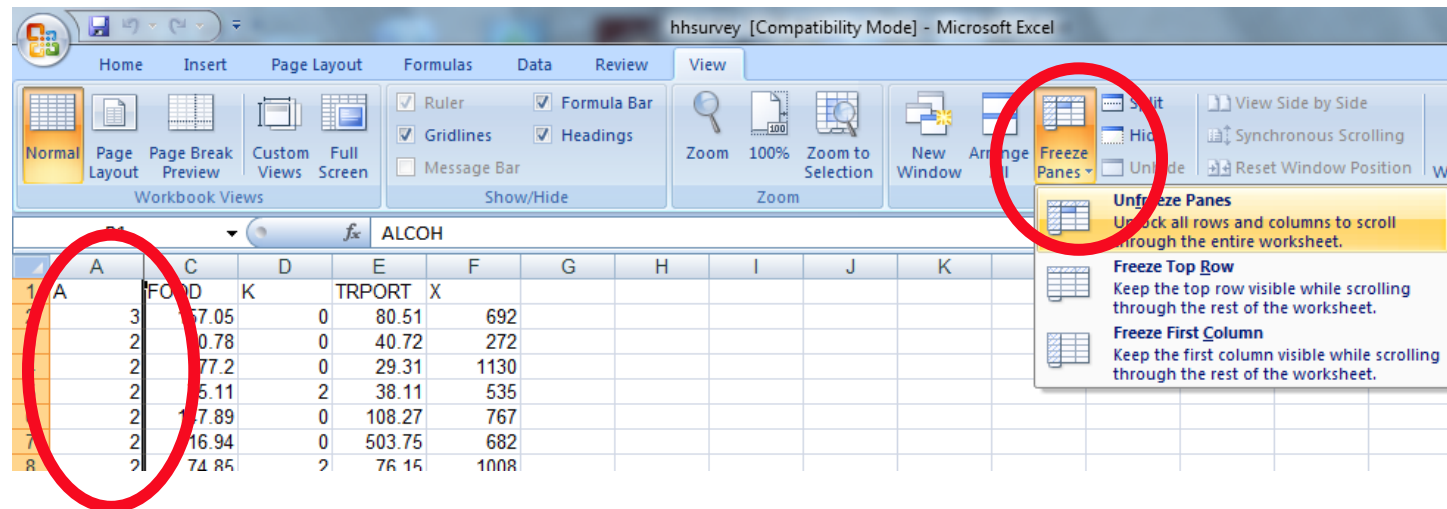


The screenshot shows the Microsoft Excel interface with the 'Formulas' ribbon selected. The 'Freeze Columns' button is circled in red. Below the ribbon, a spreadsheet is visible with columns A through F and rows 1 through 54. Column B is selected, and the data in the spreadsheet is as follows:

| | A | B | C | D | E | F |
|----|---|-------|--------|---|--------|------|
| 1 | A | ALCOH | FOOD | K | TRPORT | X |
| 2 | 3 | 8.99 | 157.05 | 0 | 80.51 | 692 |
| 3 | 2 | 17.75 | 70.78 | 0 | 40.72 | 272 |
| 28 | 2 | 1.95 | 67.37 | 1 | 254.83 | 881 |
| 29 | 1 | 4 | 63.44 | 0 | 201.35 | 480 |
| 30 | 2 | 21.29 | 58.29 | 0 | 36.51 | 660 |
| 31 | 1 | 0.5 | 29.14 | 0 | 11.95 | 144 |
| 32 | 1 | 4.38 | 172.57 | 4 | 244.89 | 616 |
| 33 | 2 | 12.65 | 100.52 | 3 | 54.98 | 506 |
| 34 | 2 | 20.55 | 53.78 | 0 | 21.74 | 192 |
| 35 | 2 | 9.75 | 68.48 | 0 | 15.64 | 171 |
| 36 | 3 | 43.5 | 75.44 | 0 | 42.33 | 1096 |
| 37 | 2 | 18.96 | 81.58 | 0 | 37.85 | 282 |
| 38 | 1 | 9.92 | 52.26 | 3 | 30.7 | 239 |
| 39 | 2 | 43.55 | 30.09 | 2 | 77.47 | 414 |
| 40 | 1 | 16.43 | 62.63 | 0 | 12.79 | 530 |
| 41 | 2 | 44.33 | 141.33 | 3 | 388.2 | 629 |
| 42 | 2 | 13.2 | 95.76 | 0 | 216.94 | 1025 |
| 43 | 2 | 7.25 | 82.44 | 0 | 6.5 | 292 |
| 44 | 2 | 31.95 | 70.12 | 2 | 73.6 | 643 |
| 45 | 2 | 10 | 250.18 | 2 | 281.17 | 2193 |
| 46 | 2 | 54.1 | 99.29 | 0 | 101.67 | 787 |
| 47 | 2 | 7.18 | 117.71 | 0 | 197.35 | 858 |
| 48 | 2 | 40.03 | 108.73 | 0 | 154.22 | 1077 |
| 49 | 1 | 0.35 | 42.53 | 1 | 100.99 | 153 |
| 50 | 2 | 27.3 | 36.56 | 0 | 29.15 | 547 |
| 51 | 2 | 49.42 | 78.99 | 0 | 22.79 | 104 |
| 52 | 2 | 15.92 | 92 | 1 | 58.37 | 920 |
| 53 | 2 | 38.74 | 121.76 | 0 | 131.89 | 855 |
| 54 | 2 | 56.45 | 143.45 | 1 | 100.00 | 1255 |

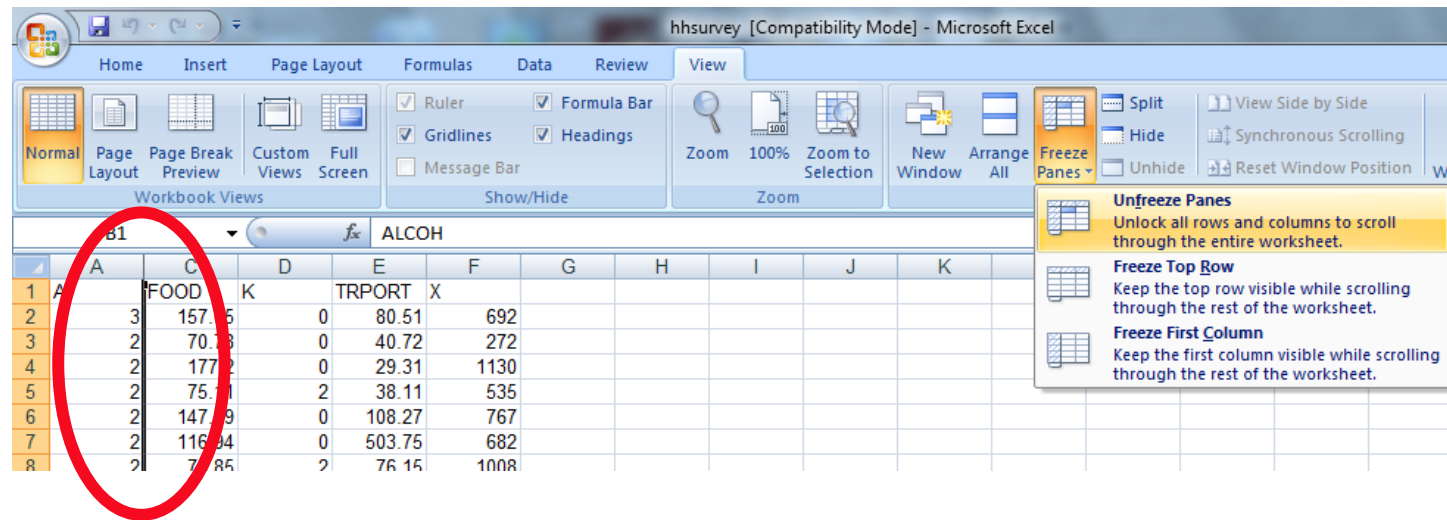
Freeze columns function

2. Click the **View** tab on the **Ribbon**.
3. Select the **Freeze Panes** command, then choose **Freeze Panes** from the drop-down menu.



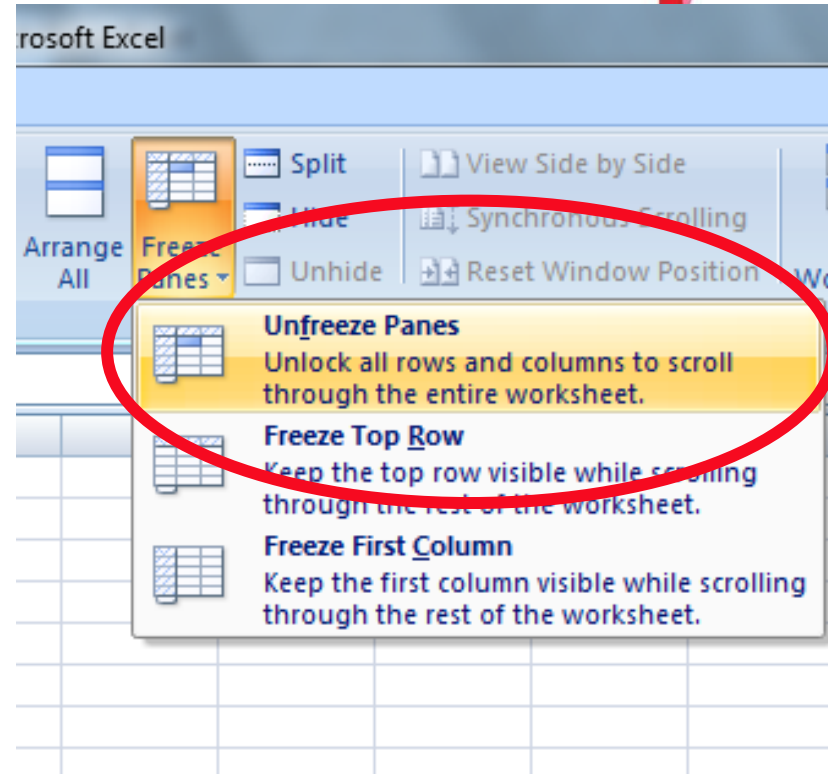
Freeze columns function

4. The column will be **frozen** in place, as indicated by the **gray line**. You can **scroll across** the worksheet while continuing to view the frozen column on the left. In our example, we've scrolled across to column **E**.



Freeze columns function

TIP: To **unfreeze** rows or columns, click the **Freeze Panes** command, then select **Unfreeze Panes** from the drop-down menu.

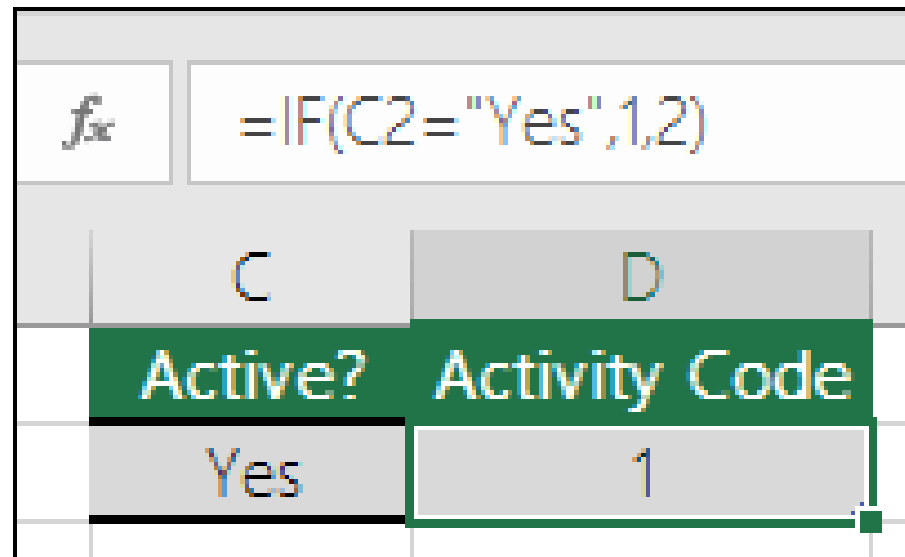


- The IF function allows you to make logical comparisons between a value and what you expect.
- In its simplest form, the IF function says:
 - IF(Something is True, then do something, otherwise do something else)
- So an IF statement can have two results. The first result is if your comparison is True, the second if your comparison is False.

IF function, examples:

=IF(C2="Yes",1,2)

In the example, cell D2 says: *IF(C2 = Yes, then return a 1, otherwise return a 2)*

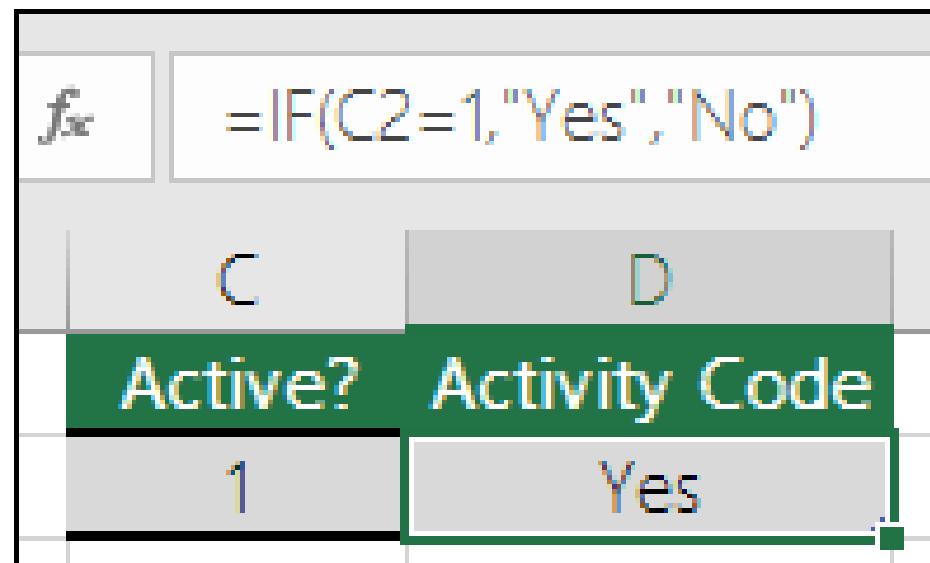


| | C | D |
|--|---------|---------------|
| | Active? | Activity Code |
| | Yes | 1 |

IF function, examples

=IF(C2=1,"Yes","No")

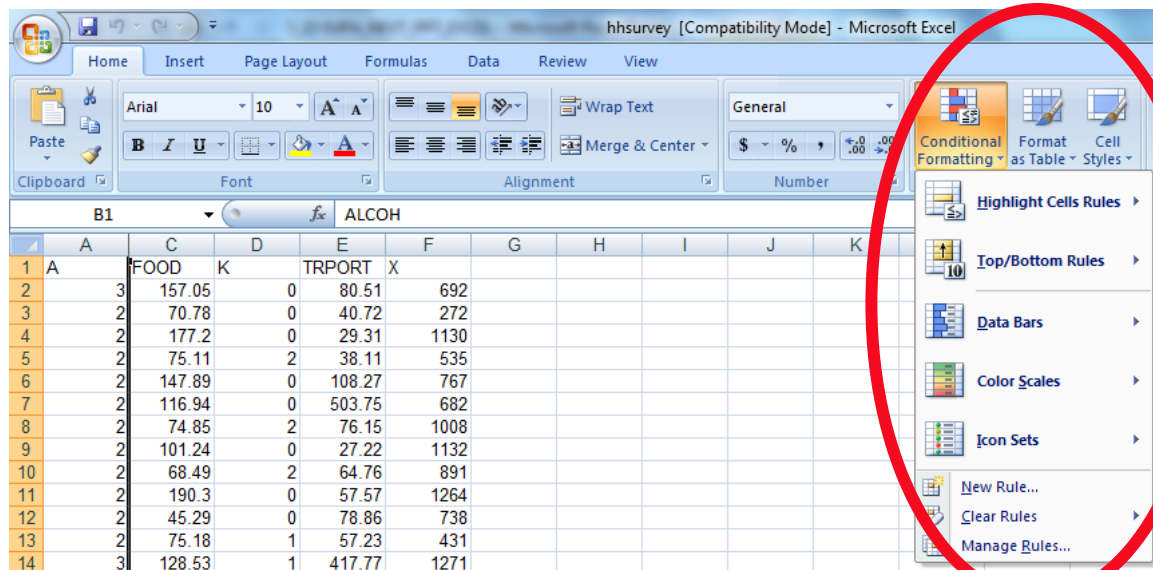
In this example, the formula in cell D2 says: *IF(C2 = 1, then return Yes, otherwise return No)*



| | C | D |
|---------|---|---------------|
| Active? | | Activity Code |
| 1 | | Yes |

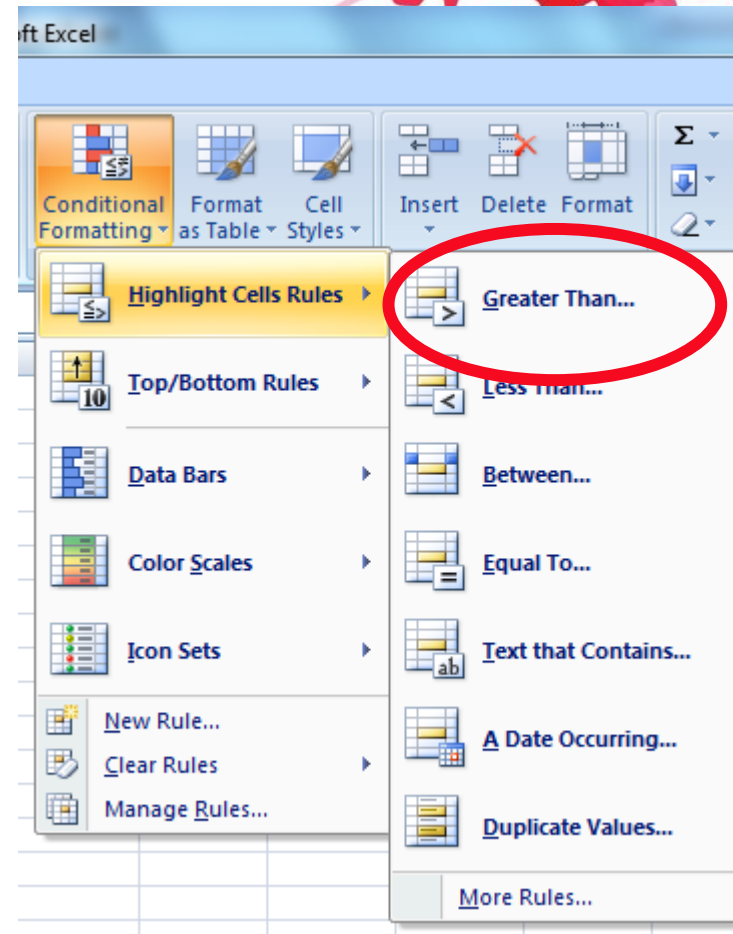
Conditional formatting

- Conditional formatting applies one or more **rules** to any cells you want.
- Access it in the Home tab.



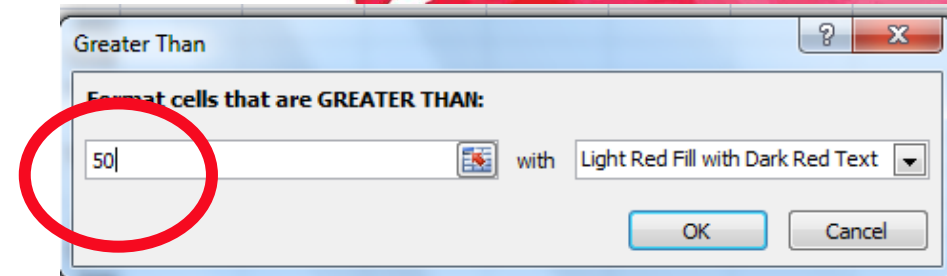
Conditional formatting

- To create a conditional formatting rule:
- Select the **cells** you want to add formatting to.
- Select **Highlight Cells Rules** or **Top/Bottom Rules**. We'll choose Highlight Cells Rules for this example. A menu will appear with several **rules**.
- Select the desired rule (**Greater Than**, for example).



Conditional formatting

- From the dialog box, enter a **value** in the space provided
- In this example, we want to format cells that are greater than 50, so we'll enter 50 as our value.
- Select a formatting style from the drop-down menu.
- Conditional formatting offers many more options and functions. Go ahead and explore!



The image shows a portion of an Excel spreadsheet. The columns are labeled A through F. The rows are numbered 1 through 14. The data in the spreadsheet is as follows:

| | A | B | C | D | E | F | |
|----|---|-------|-------|--------|--------|--------|------|
| 1 | A | ALCOH | FOOD | K | TRPORT | X | |
| 2 | | 3 | 8.99 | 157.05 | 0 | 80.51 | 692 |
| 3 | | 2 | 17.75 | 70.78 | 0 | 40.72 | 272 |
| 4 | | 2 | 2.97 | 177.2 | 0 | 29.31 | 1130 |
| 5 | | 2 | 13.5 | 75.11 | 2 | 38.11 | 535 |
| 6 | | 2 | 47.41 | 147.89 | 0 | 108.27 | 767 |
| 7 | | 2 | 49.73 | 116.94 | 0 | 503.75 | 682 |
| 8 | | 2 | 58.07 | 74.85 | 2 | 76.15 | 1008 |
| 9 | | 2 | 34.56 | 101.24 | 0 | 27.22 | 1132 |
| 10 | | 2 | 29.1 | 68.49 | 2 | 64.76 | 891 |
| 11 | | 2 | 2.2 | 190.3 | 0 | 57.57 | 1264 |
| 12 | | 2 | 17.95 | 45.29 | 0 | 78.86 | 738 |
| 13 | | 2 | 31.79 | 75.18 | 1 | 57.23 | 431 |
| 14 | | 3 | 42.9 | 128.53 | 1 | 417.77 | 1271 |

Conditional formatting is applied to the range A1:F14. The cells containing values greater than 50 are highlighted in light red with dark red text. These cells are: B8 (58.07), C8 (74.85), E8 (76.15), F8 (1008), B14 (42.9), C14 (128.53), and E14 (417.77).

Removing conditional formatting

- Select the cells that have conditional formatting.
- In the **Home** tab, click the **Conditional Formatting** command. A drop-down menu will appear.
- Select **Clear Rules**.
- A menu will appear. You can choose to clear rules from the **Selected Cells, Entire Sheet, This Table,** or **This PivotTable**.

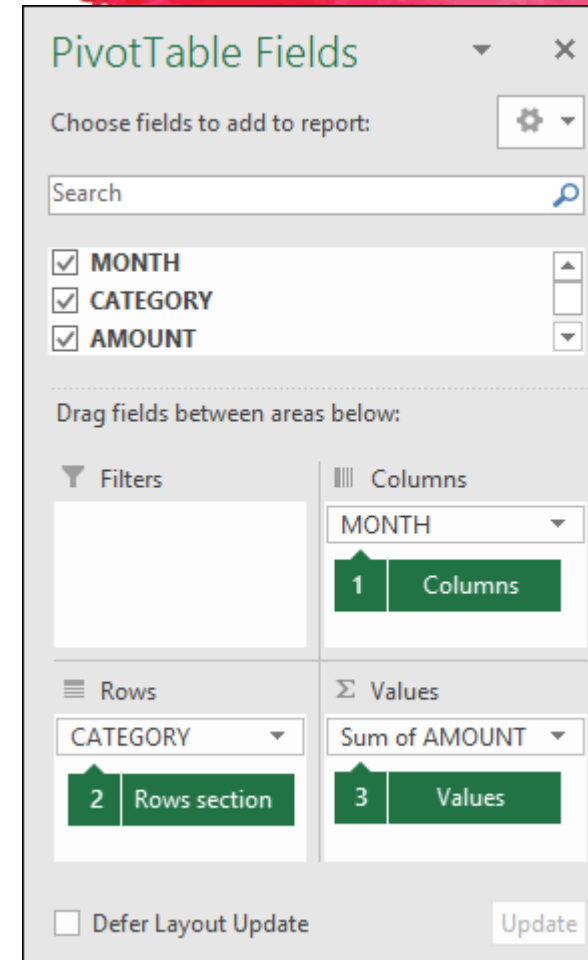


- VLOOKUP lets you **search for specific information** in your spreadsheet.
- There are four pieces of information that you will need in order to build the VLOOKUP syntax:
 - The value you want to look up, also called the lookup value.
 - The range where the lookup value is located. Remember that the lookup value should always be in the first column in the range for VLOOKUP to work correctly.
 - The column number in the range that contains the return value. For example, if you specify B2: D11 as the range, you should count B as the first column, C as the second, and so on.
- The syntax for the VLOOKUP function in Microsoft Excel is:
- VLOOKUP(value, table, index_number, [approximate_match])

- Click a cell in the source data or table range.
- Go to **Insert > Tables > PivotTable**.
- Excel will display the **Create PivotTable** dialog with your range or table name selected.
- In the **Choose where you want the PivotTable report to be placed** section, select **New Worksheet**, or **Existing Worksheet**. For **Existing Worksheet**, you'll need to select both the worksheet and the cell where you want the PivotTable placed.
- If you want to include multiple tables or data sources in your PivotTable, click the **Add this data to the Data Model** check box.
- Click **OK**, and Excel will create a blank PivotTable, and display the **PivotTable Fields** list.

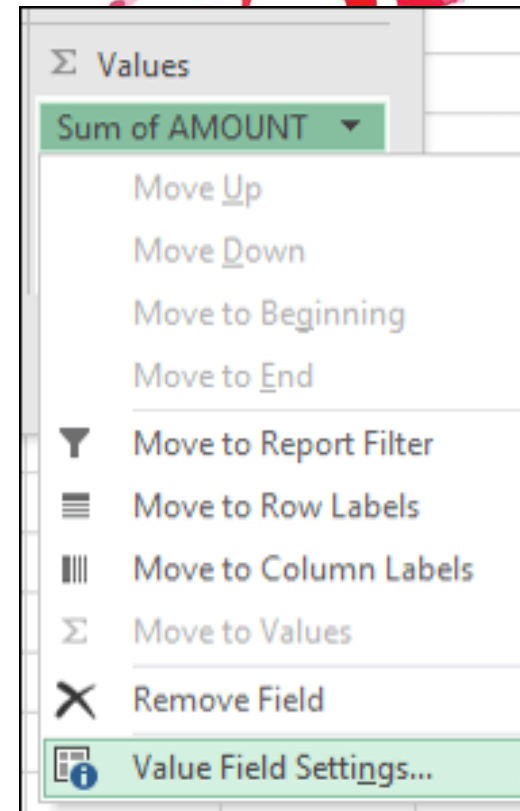
Working with a pivot table

- In the **Field Name** area at the top, select the check box for any field you want to add to your PivotTable.
- By default, non-numeric fields are added to the **Row** area, date and time fields are added to the **Column** area, and numeric fields are added to the **Values** area.
- You can also manually drag-and-drop any available item into any of the PivotTable fields, or if you no longer want an item in your PivotTable, simply drag it out of the Fields list or uncheck it.

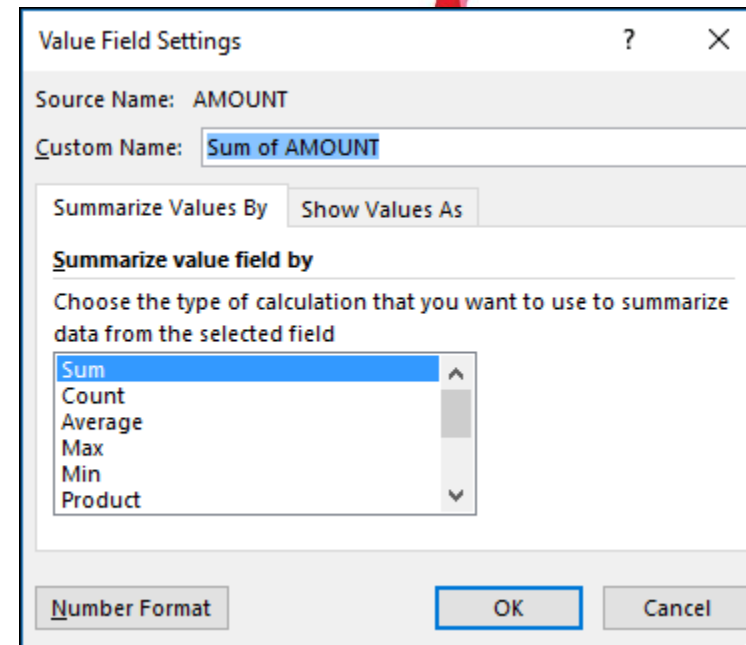


Summarize Values By:

- By default, PivotTable fields that are placed in the **Values** area will be displayed as a **SUM**.
- If Excel interprets your data as text, it will be displayed as a **COUNT**.
- This is why it's so important to make sure you don't mix data types for value fields.
- You can change the default calculation by first clicking on the arrow to the right of the field name, then select the **Value Field Settings** option.



- Next, change the calculation in the **Summarize Values By** section. Note that when you change the calculation method, Excel will automatically append it in the **Custom Name** section, like "Sum of fieldName", but you can change it.
- If you click the **Number Format** button, you can change the number format for the entire field.



1. SUM

- Formula: =SUM(5, 5) or =SUM(A1, B1) or =SUM(A1:B5)
- The SUM formula allows you to add 2 or more numbers together. You can use cell references as well in this formula.

2. COUNT

- Formula: =COUNT(A1:A10)
- The count formula counts the number of cells in a range that have numbers in them.
- This formula only works with numbers. It only counts the cells where there are numbers.

3. COUNTA

- Formula: =COUNTA(A1:A10)
- Counts the number of non-empty cells in a range. It will count cells that have numbers and/or any other characters in them.
- The COUNTA Formula works with all data types.
- It counts the number of non-empty cells no matter the data type.



4. LEN

- Formula: = LEN(A1)
- The LEN formula counts the number of characters in a cell, incl. spaces

5. TRIM

- Formula: = TRIM(A1)
- Deletes spaces in a cell, except for single spaces between words.

6. RIGHT, LEFT, MID

- Formulas: = RIGHT(text, number of characters), =LEFT(text, number of characters), =MID(text, start number, number of characters).
- These formulas return the specified number of characters from a text string.
- RIGHT gives you the number of characters from the right of the text string
- LEFT gives you the number of characters from the left
- MID gives you the specified number of characters from the middle of the word.



7. SUMIF, COUNTIF, AVERAGEIF

- Formulas: =SUMIF(range, criteria, sum_range), =COUNTIF(range, criteria), =AVERAGEIF(range, criteria, average_range)
- These formulas all do their respective functions (SUM, COUNT, AVERAGE) IF the criteria are met.
- There are also the formulas: SUMIFS, COUNTIFS, AVERAGEIFS where they will do their respective functions based on multiple criteria you give the formula.



8. CONCATENATE

- Combining data in 2 (or more) different cells into one cell.
- This can be done with the Concatenate excel formula or it can be done by simply putting the & symbol in between the two cells.
- If I have “EUPA” in cell A1 and “NEXT” in cell B1 I could put this formula: =A1&” “&B1 and it would give me “EUPA NEXT”.



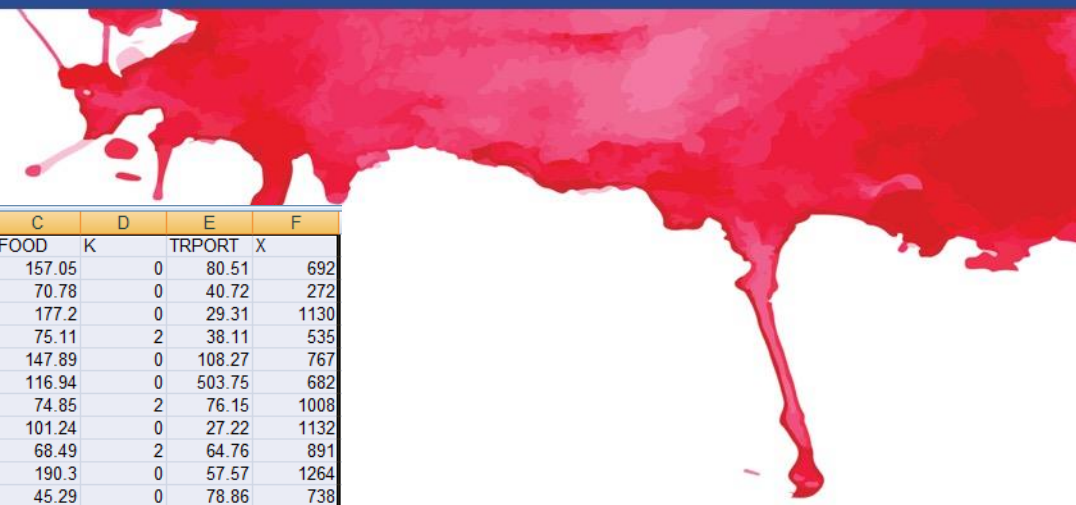
More Excel Formulas

- Time formulas (NOW, TODAY, MONTH, YEAR, DAY, etc.)
- Other formulas like AND and OR



Inserting charts in Excel

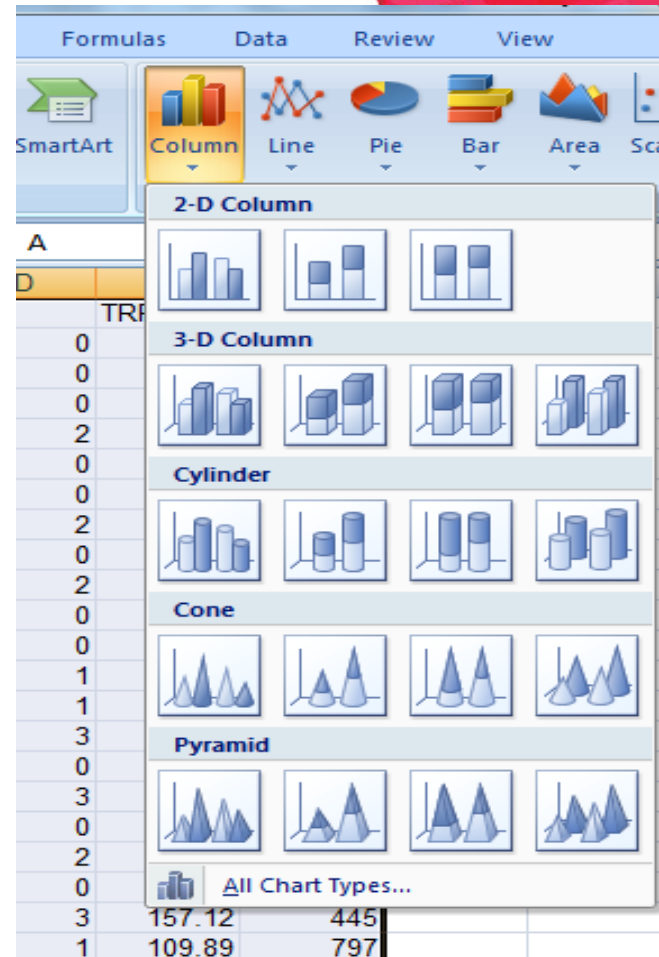
- To insert a chart:
- Select the **cells** you want to chart, including the **column titles** and **row labels**. These cells will be the **source data** for the chart.
- In our example, we have selected cells A1:F24.



| | A | B | C | D | E | F | |
|----|---|-------|-------|--------|--------|--------|------|
| 1 | A | ALCOH | FOOD | K | TRPORT | X | |
| 2 | | 3 | 8.99 | 157.05 | 0 | 80.51 | 692 |
| 3 | | 2 | 17.75 | 70.78 | 0 | 40.72 | 272 |
| 4 | | 2 | 2.97 | 177.2 | 0 | 29.31 | 1130 |
| 5 | | 2 | 13.5 | 75.11 | 2 | 38.11 | 535 |
| 6 | | 2 | 47.41 | 147.89 | 0 | 108.27 | 767 |
| 7 | | 2 | 49.73 | 116.94 | 0 | 503.75 | 682 |
| 8 | | 2 | 58.07 | 74.85 | 2 | 76.15 | 1008 |
| 9 | | 2 | 34.56 | 101.24 | 0 | 27.22 | 1132 |
| 10 | | 2 | 29.1 | 68.49 | 2 | 64.76 | 891 |
| 11 | | 2 | 2.2 | 190.3 | 0 | 57.57 | 1264 |
| 12 | | 2 | 17.95 | 45.29 | 0 | 78.86 | 738 |
| 13 | | 2 | 31.79 | 75.18 | 1 | 57.23 | 431 |
| 14 | | 3 | 42.9 | 128.53 | 1 | 417.77 | 1271 |
| 15 | | 2 | 26.97 | 95.63 | 3 | 70.1 | 709 |
| 16 | | 1 | 18.69 | 81.14 | 0 | 109.1 | 451 |
| 17 | | 2 | 39.73 | 117.34 | 3 | 100.73 | 975 |
| 18 | | 1 | 7.28 | 63.56 | 0 | 18.98 | 309 |
| 19 | | 2 | 46.3 | 110.51 | 2 | 79.34 | 775 |
| 20 | | 1 | 5.13 | 40.64 | 0 | 31.95 | 206 |
| 21 | | 2 | 13.85 | 241.23 | 3 | 157.12 | 445 |
| 22 | | 3 | 26.87 | 158.49 | 1 | 109.89 | 797 |
| 23 | | 2 | 3.6 | 98.25 | 2 | 7.13 | 495 |
| 24 | | 3 | 0.7 | 80.02 | 1 | 26.42 | 732 |
| 25 | | 2 | 3.83 | 115.03 | 3 | 22.6 | 859 |
| 26 | | 2 | 58.13 | 244.31 | 0 | 155.09 | 1903 |
| 27 | | 1 | 5.2 | 60.8 | 0 | 41.65 | 476 |
| 28 | | 2 | 1.95 | 67.37 | 1 | 254.83 | 881 |
| 29 | | 1 | 4 | 63.44 | 0 | 201.35 | 480 |
| 30 | | 2 | 21.29 | 58.29 | 0 | 36.51 | 660 |
| 31 | | 1 | 0.5 | 29.14 | 0 | 11.95 | 144 |
| 32 | | 1 | 4.38 | 172.57 | 4 | 244.89 | 616 |
| 33 | | 2 | 12.65 | 100.52 | 3 | 54.98 | 506 |
| 34 | | 2 | 20.55 | 53.78 | 0 | 21.74 | 192 |

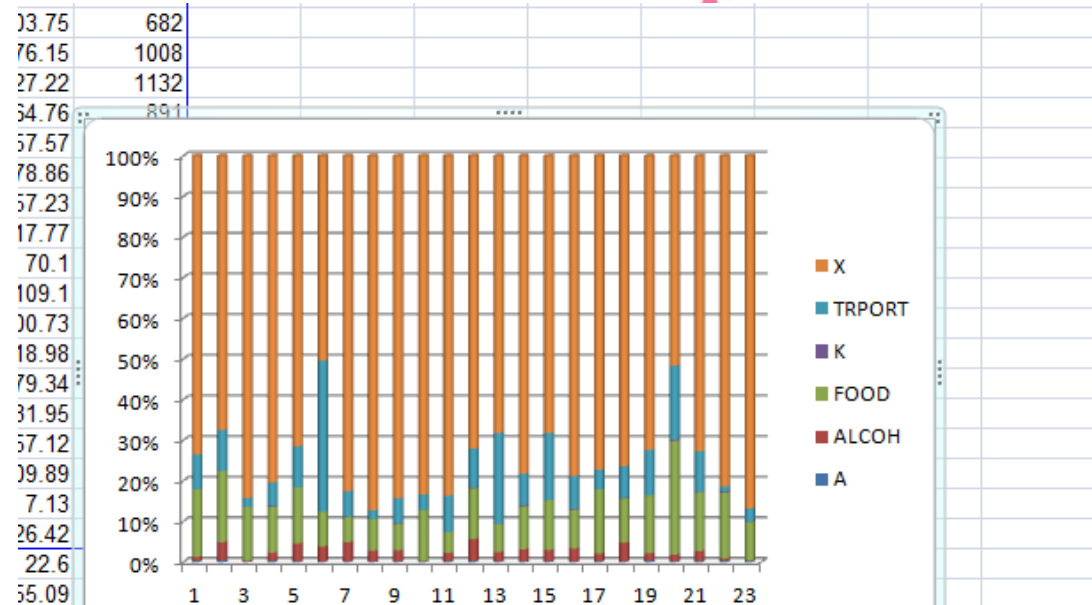
Inserting charts in Excel

- From the **Insert** tab, click the desired **Chart** command. In our example, we'll select **Column**.
- Choose the preferred **chart type** from the drop-down menu



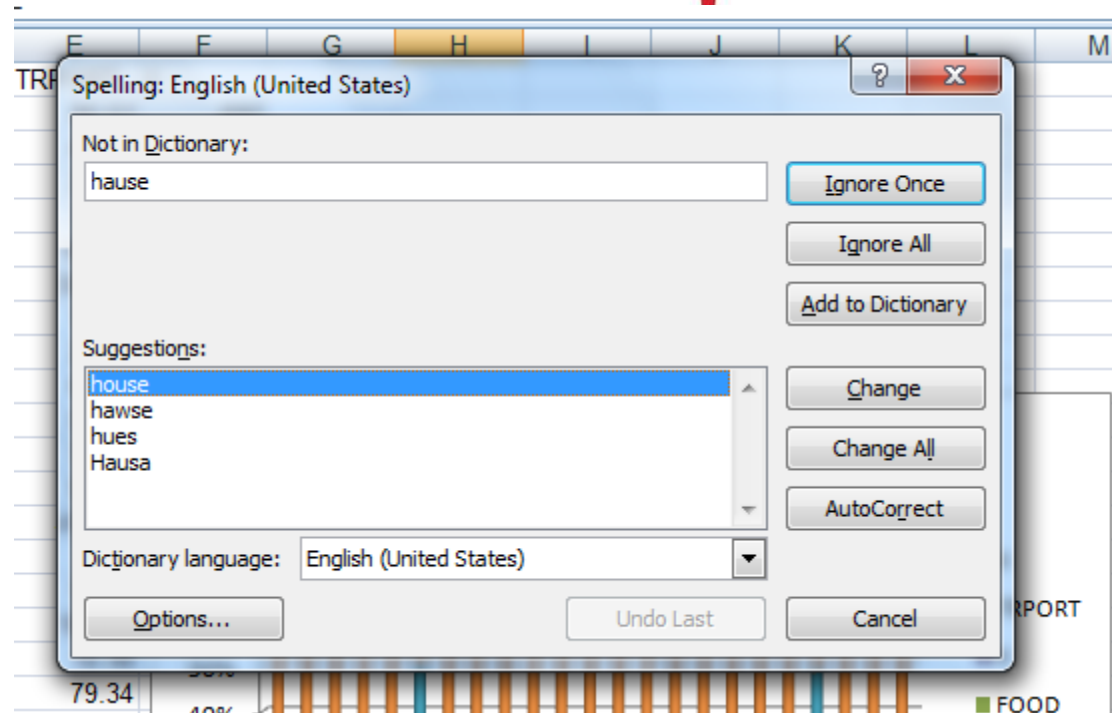
Inserting charts in Excel

- The selected chart will be inserted in the worksheet.
- Excel allows you to add **chart elements**
- To add a chart element, click the **Add Chart Element** command on the **Design** tab, then choose from the drop-down menu.



Spelling and grammar in Excel

- From the Review tab, click Spelling.
- The Spelling dialog box will appear. For each spelling error in your worksheet, Spell Check will try to offer suggestions for the correct spelling
- A dialog box will appear after reviewing all spelling errors. Click OK to close Spell Check.



Module Key points

Excel spreadsheets organize information

Formulas and Functions

- Freeze panes
- If functions
- Conditional formatting
- Vlookup
- Pivot tables
- Other formulas
- Charts
- Spelling and grammar



Create a spreadsheet

E-EUPA_LO_2.12_M_002

Revision Question 1

Which functions of excel are necessary for creating or processing non routine documents?

Revision Question 2

How can we check spelling and grammar of a spreadsheet?

Revision Question 3

How can we add a chart?

Revision Questions

Revision Question 4

Describe the functionality of a spreadsheet and list situations where it is useful.

Revision Question 6

Describe why one can use templates and list the advantages of using templates.

Revision Question 8

Describe the procedure for developing a very simple chart from a ready made table.

Revision Question 5

Identify the functionalities of a spreadsheet that are necessary for the production or amendment of simple spreadsheets.

Revision Question 7

List simple formulas that can be used to sum, average, count, min, max.

Revision Question 9

Describe how you can develop your own formula using spreadsheets.

Module Key points

- A **spreadsheet** is a computer application that simulates a paper accounting worksheet.
- **When you set up calculations** in a worksheet, if an entry is changed in a cell, the spreadsheet will automatically update any calculated values that were based on that entry.
- In Excel there are **hundreds of functions** which can be used. These functions can be **formulas** used to carry out some operations. These formulas already exist in the program.



WELL DONE!

You have completed Unit 2.12



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