ITEC102 – INFORMATION TECHNOLOGIES

LECTURE 7 – Transaction Tables

EASTERN MEDITERRANEAN UNIVERSITY
SCHOOL OF COMPUTING AND TECHNOLOGY

Aim of The Course

The aim of this course is to provide,

- Transaction tables,
- Main operation tables,
- File operations in Microsoft Excel 2013,
- Data input in Microsoft Excel 2013,
- Calculation with formula in Microsoft Excel 2013,
- Using Functions in Microsoft Excel 2013,

Transaction Tables

- The spreadsheets are one of the applications where the hidden power of computers is best seen.
- With the transaction tables, monthly expenses can be tracked, course passing grades can be calculated for the students, the weekly team status of the football team can be monitored and many mathematical operations can be calculated very quickly.
- The spreadsheet is actually an electronic worksheet created in the computer environment. The spreadsheets are used to present, edit, process and present data in graphical form.

Main Transaction Tables

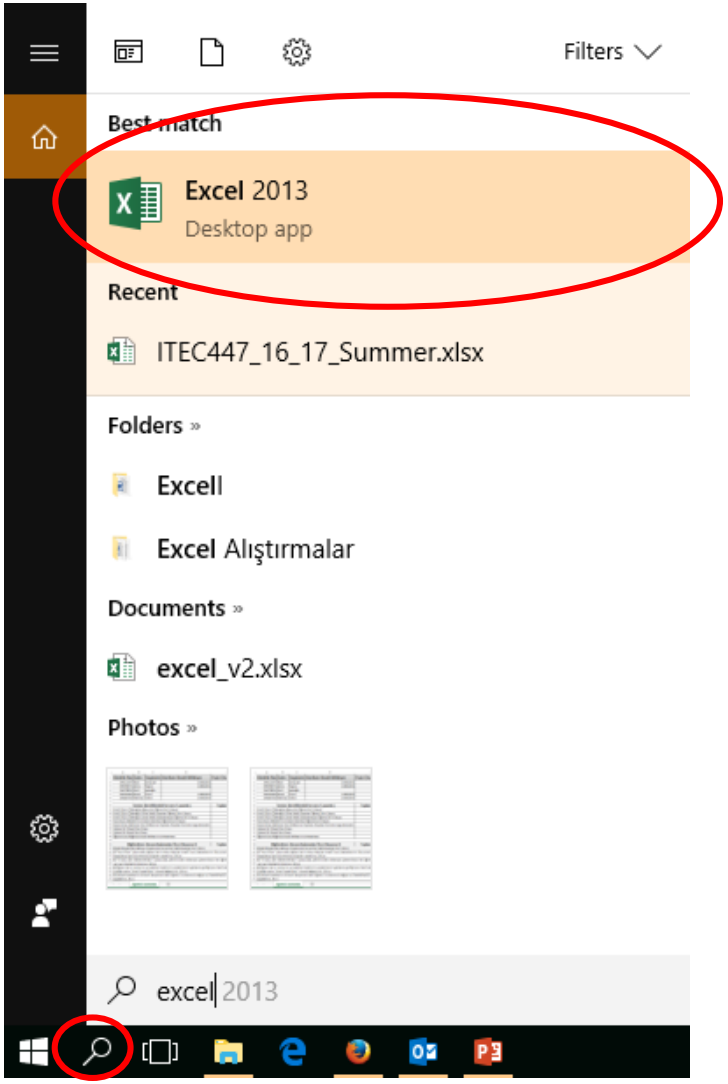
- The spreadsheet programs are usually included in the office suite software.
- The main Office packs are Microsoft Office, Apache OpenOffice and LibreOffice software..
- **Microsoft Excel**, is the most commonly used spreadsheet commercial software.
- The free **Apache OpenOffice Calc** and **LibreOffice Calc** software are also the main transaction tables.

Major Transactions Tables

- There are different versions of the Microsoft Office suite and therefore of the Microsoft Excel program
  - Ex: Microsoft Excel 2003, Microsoft Excel 2007, Microsoft Excel 2010, Microsoft Excel 2013, Microsoft Excel 2016
- The most commonly used excel program is **Microsoft Excel 2013**, which is included in the Microsoft Office 2013 package.

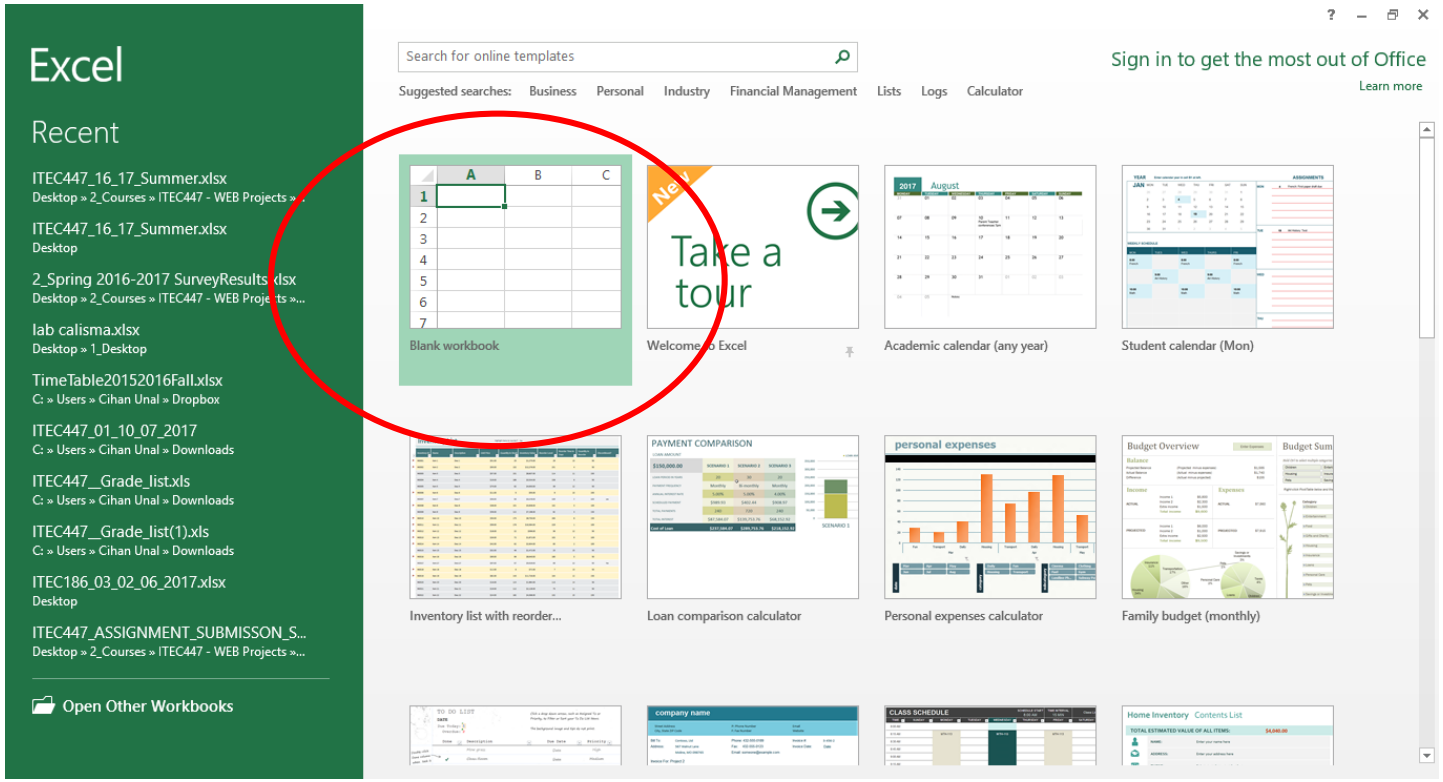
Microsoft Excel 2013

- The easiest method to run Microsoft Excel 2013 is to use the search box.



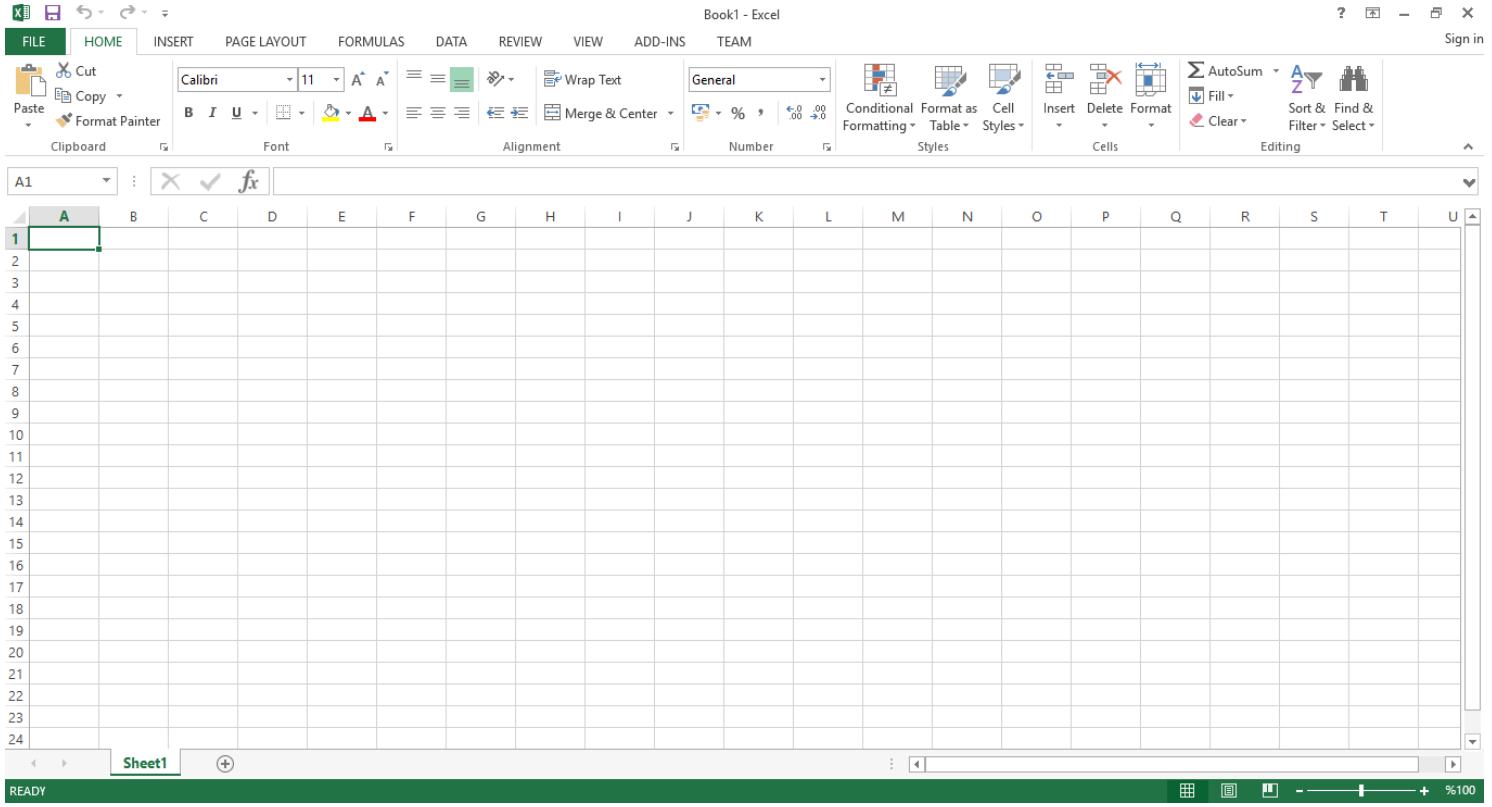
Microsoft Excel 2013

- The following window will open when Microsoft Excel 2013 is run.
- Any draft can be selected from the pop-up window.



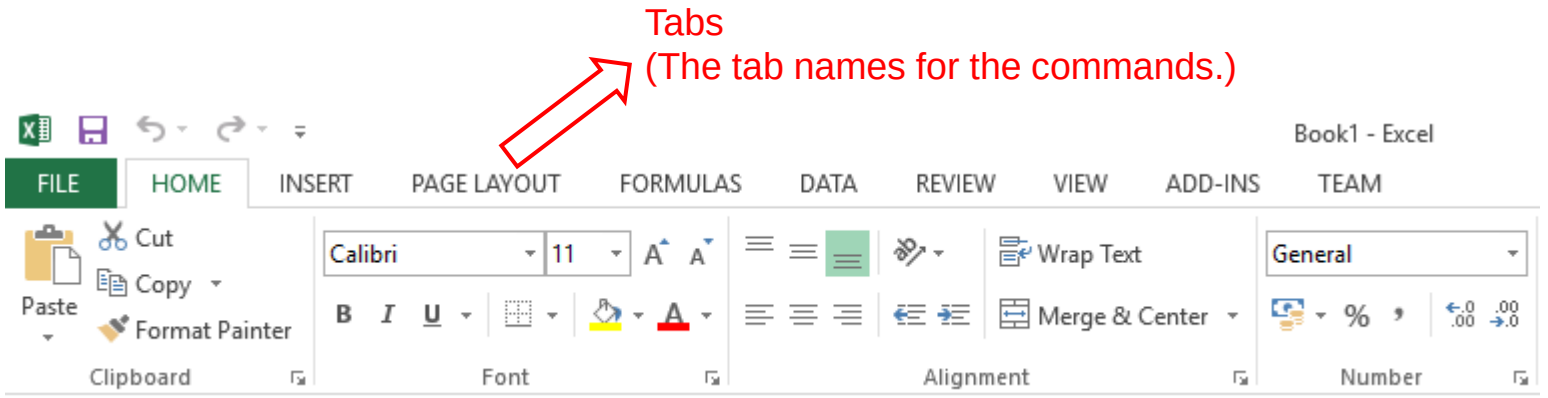
Microsoft Excel 2013

- The first draft in the list is the blank workbook.
- The following window will be obtained when the blank workbook is selected.



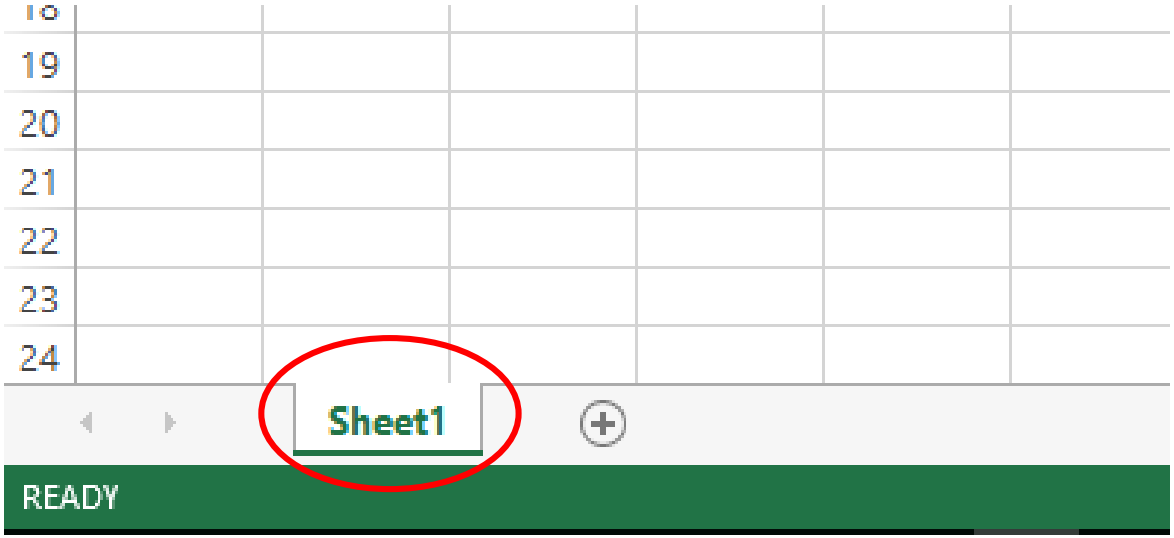
Microsoft Excel 2013

- All menu options, toolbars, buttons, and settings are grouped in **tabs** according to their functionality.
- Related buttons are positioned within each tab.



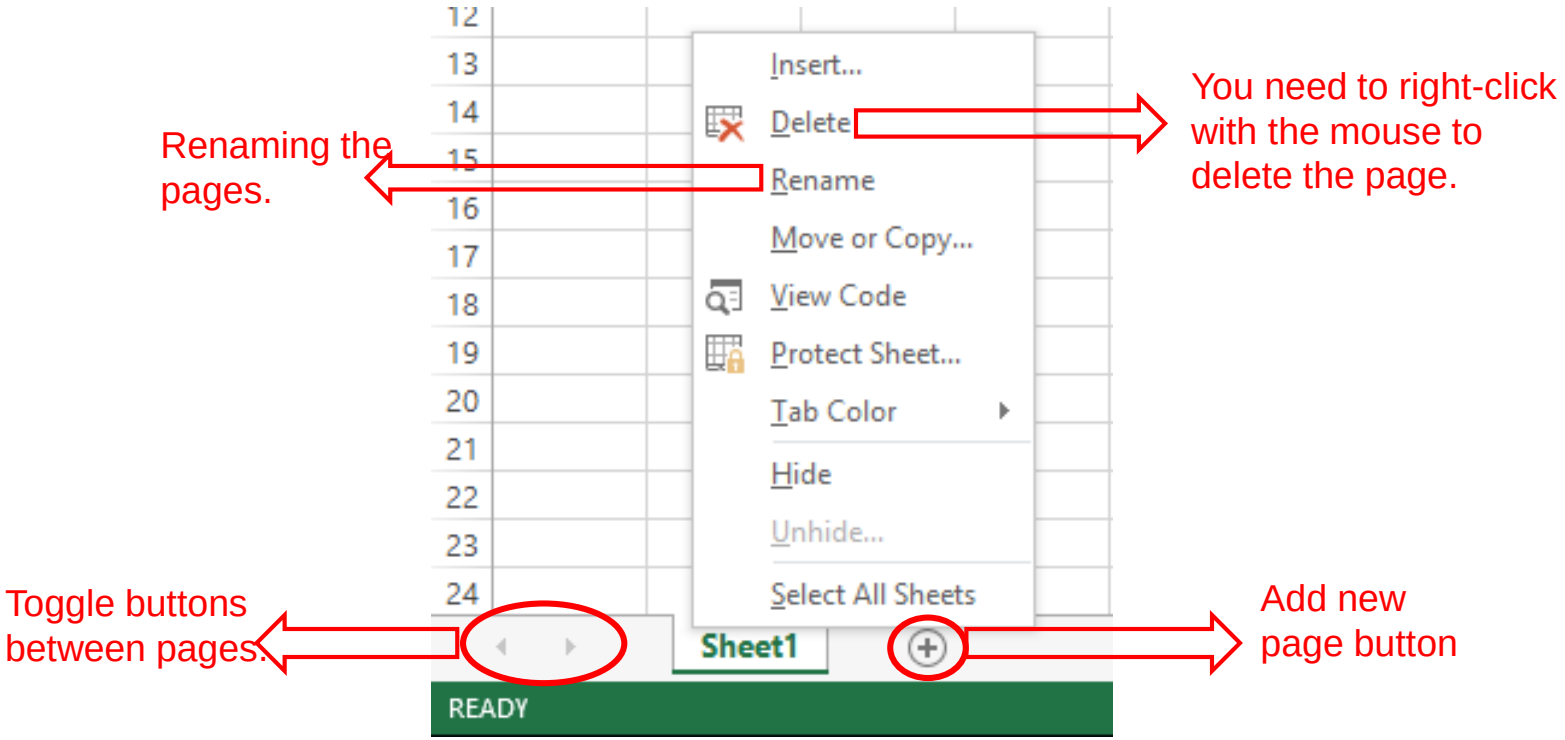
Microsoft Excel 2013

- The spreadsheet programs typically consist of one worksheet when first opened.



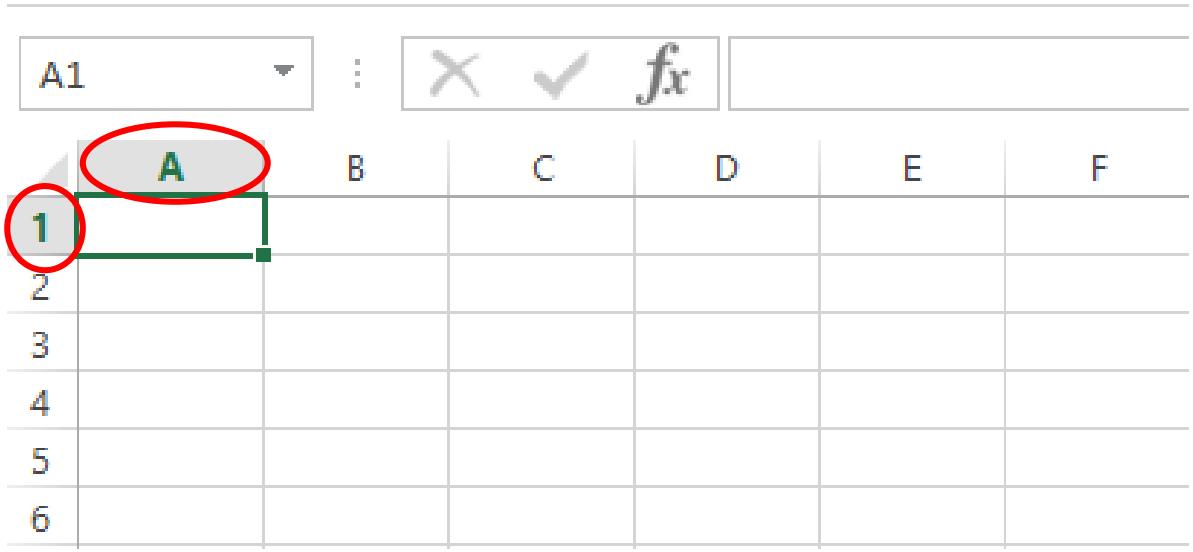
Microsoft Excel 2013

- The number of pages can be increased, reduced, moved between pages, and the order of pages can be changed.



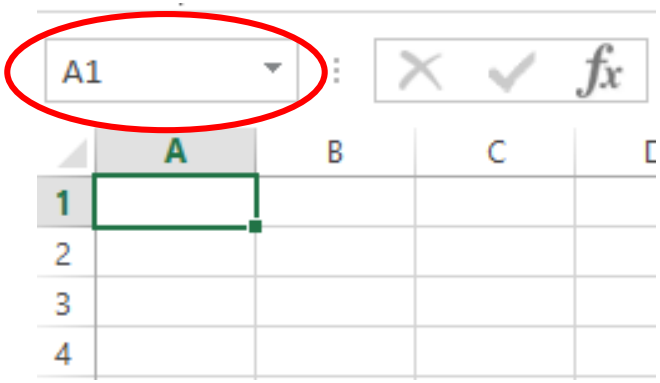
Microsoft Excel 2013

- Each worksheet in the spreadsheet programs consists of rows and columns.
- Columns are given with letters (A, B,...Y, Z, AA, AB,...ZY, ZZ, AAA, AAB, ...), and rows are given with the numbers (1,2,3,...)



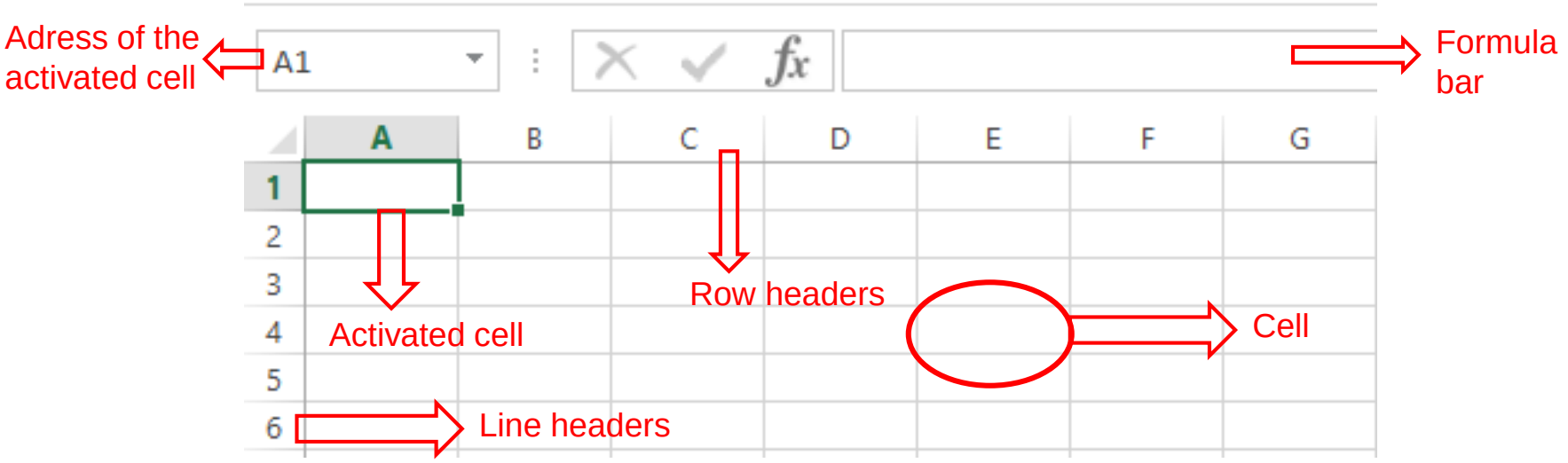
Microsoft Excel 2013

- Each box where rows and columns intersect is called a **cell.**
- Each cell takes an **address** depending on the column and row that make up it. The cell address consists of a row and a column number. As an example, the cell that is created on the second column the third row is **B3**.
- In the process tables, the cell to be input is required to be **activated.** Edge of active cell is **thicker** than other cells. The direction keys on the keyboard or the mouse can be used to change the active cell.



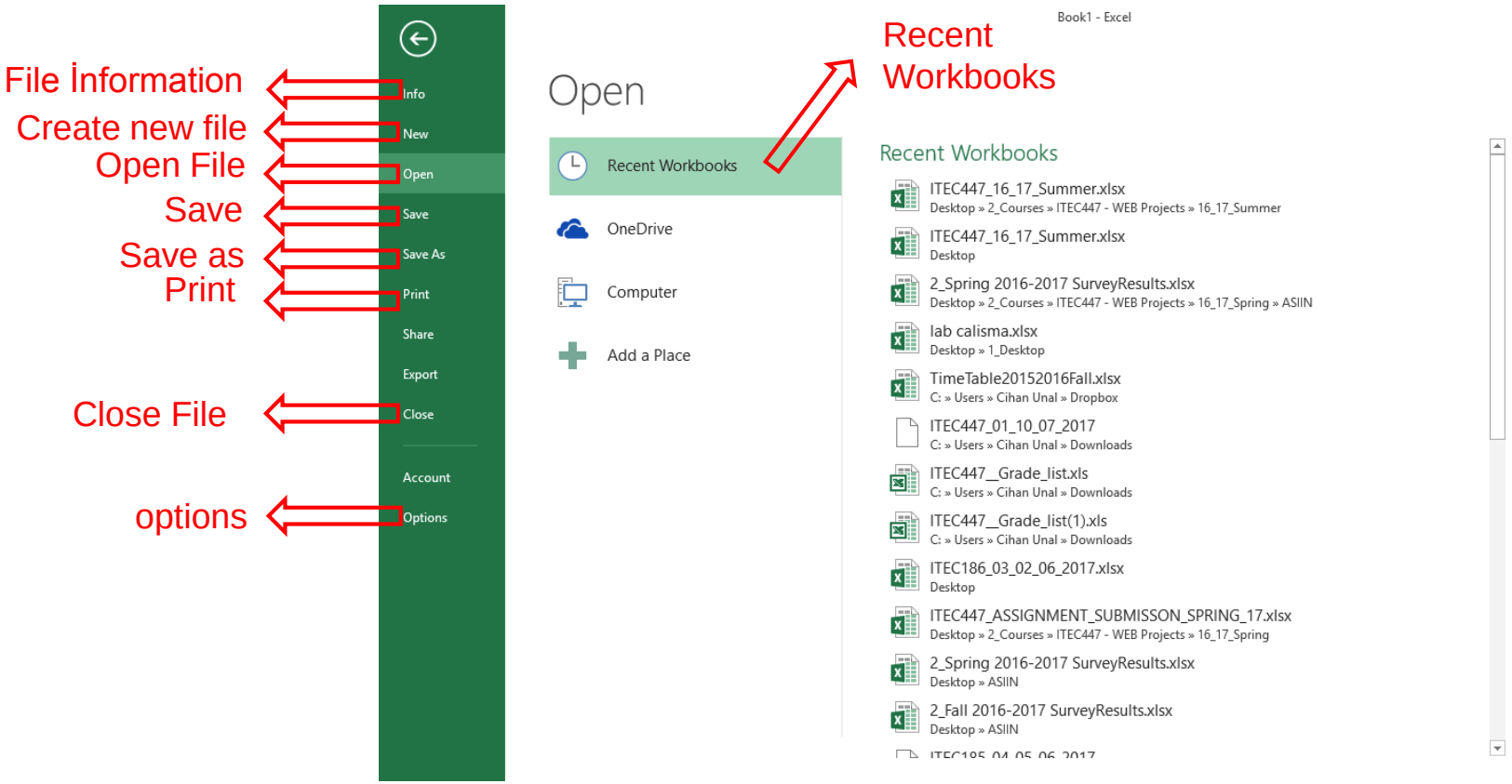
Microsoft Excel 2013

- Sections in the study area are as follows.



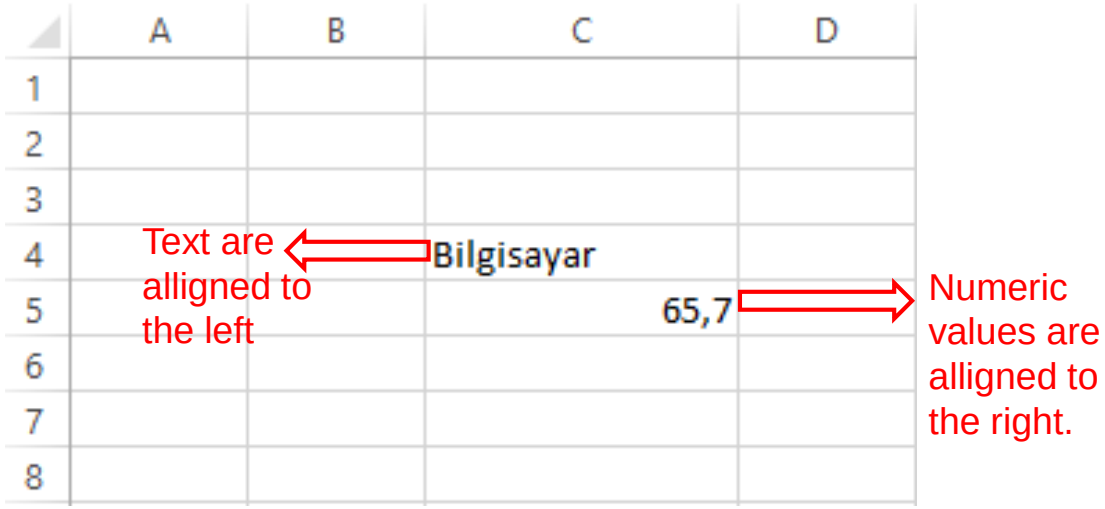
File Operations

- The first tab in the Excel program is the **File** tab.
- File operations can be performed using the options on this tab.



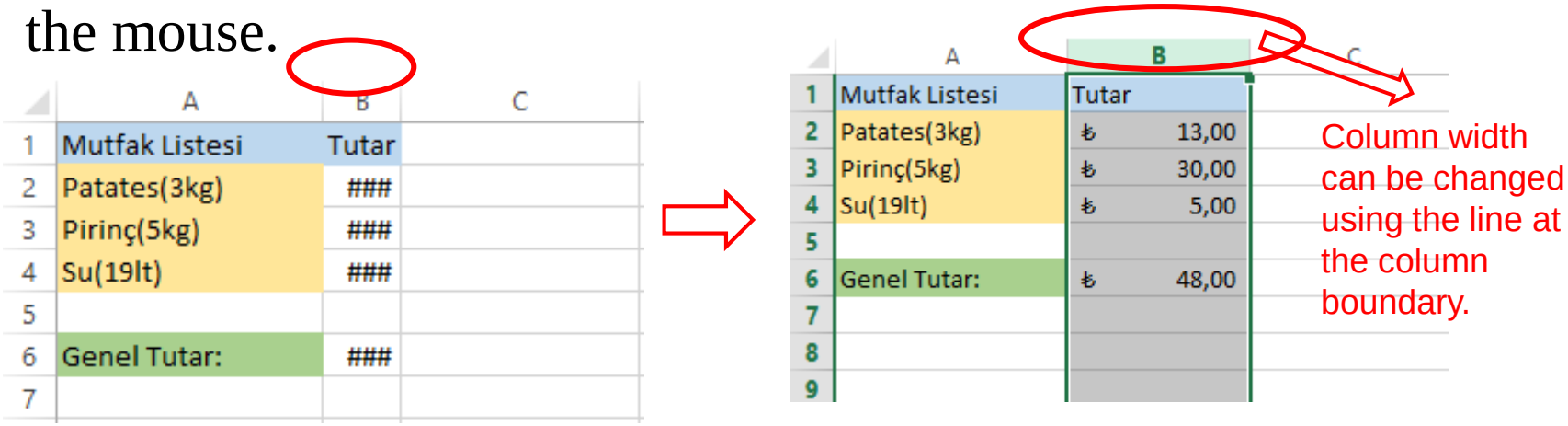
Data Input

- In Excel, text, numeric values and date values can be entered as a **constant data entry** into cells.
- Numeric expressions are written right-aligned and text expressions are left-aligned.



Data Input

- If the numeric values are longer than the cell width, ### can be seen in the cell . To resolve this issue, the width of the column must be increased.
- If the text written to a cell is more than the width of the cell, the text will be overwritten in the column next to it. The width of the column must also be increased. The column width can be changed by holding the boundary line of the column with the mouse.



Data Input

- In Excel, it is possible to **quickly enter information** into cells.
- As an example If 10 consecutive numbers are to be entered in the cells, selecting the cells after the two numbers are entered and dragging them with the mouse will allow the numbers to be entered into the other cells.

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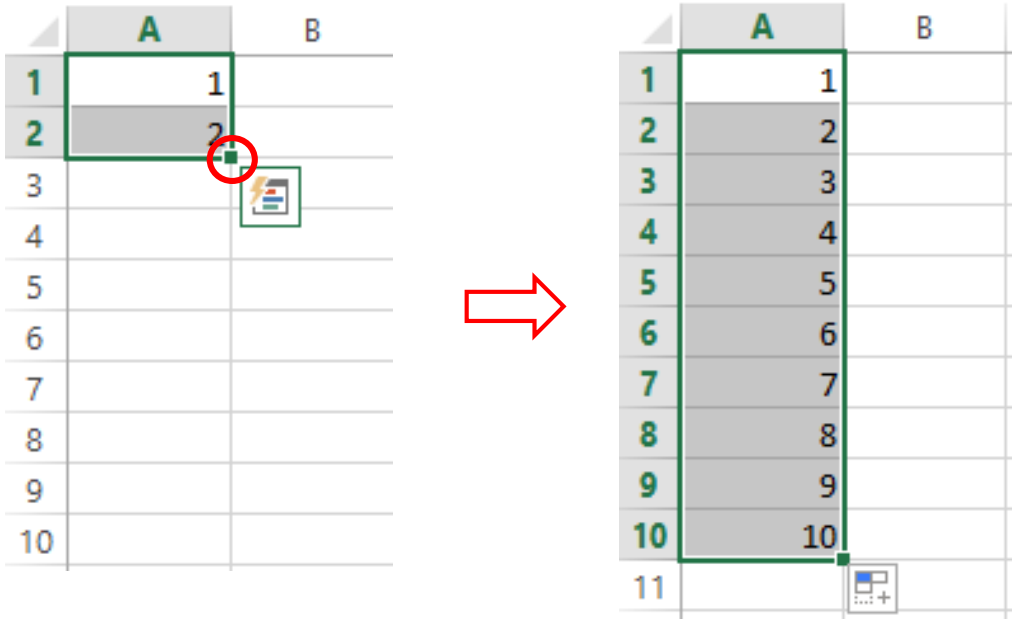
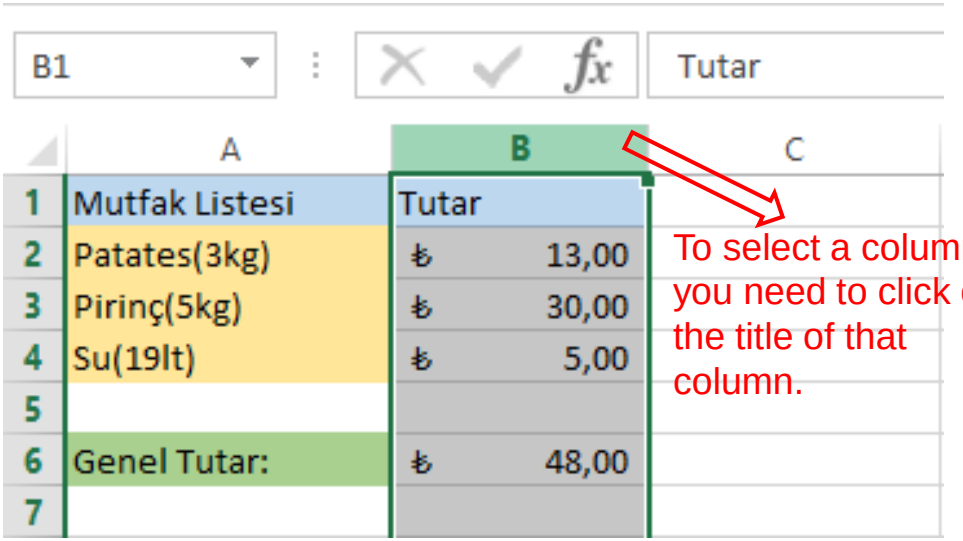


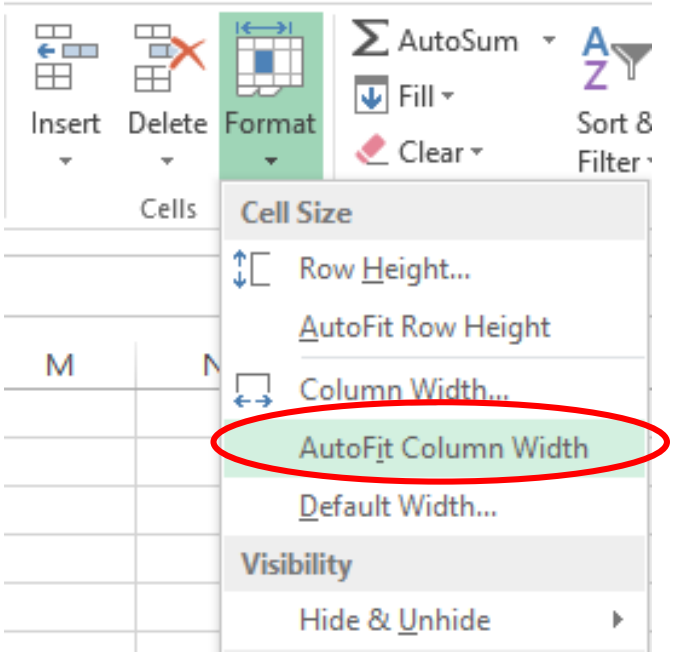
Data Input

- Column headings should be used to select columns. The **CTRL** key on the keyboard must be used to select multiple columns.
- The same method is used to select a row like selecting a column.



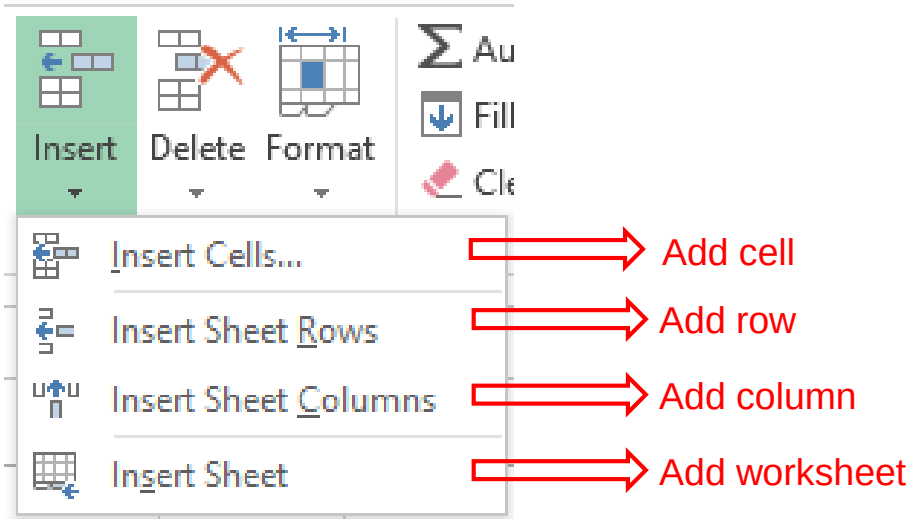
Data Input

- First the columns should be selected inorder to change the column with according to the content of the columns.
- After selecting the columns, the **Format** button should be selected in the **Home** tab.
- The **AutoFit Column Width** option sets the widths of the selected columns to the longest font in the cells.



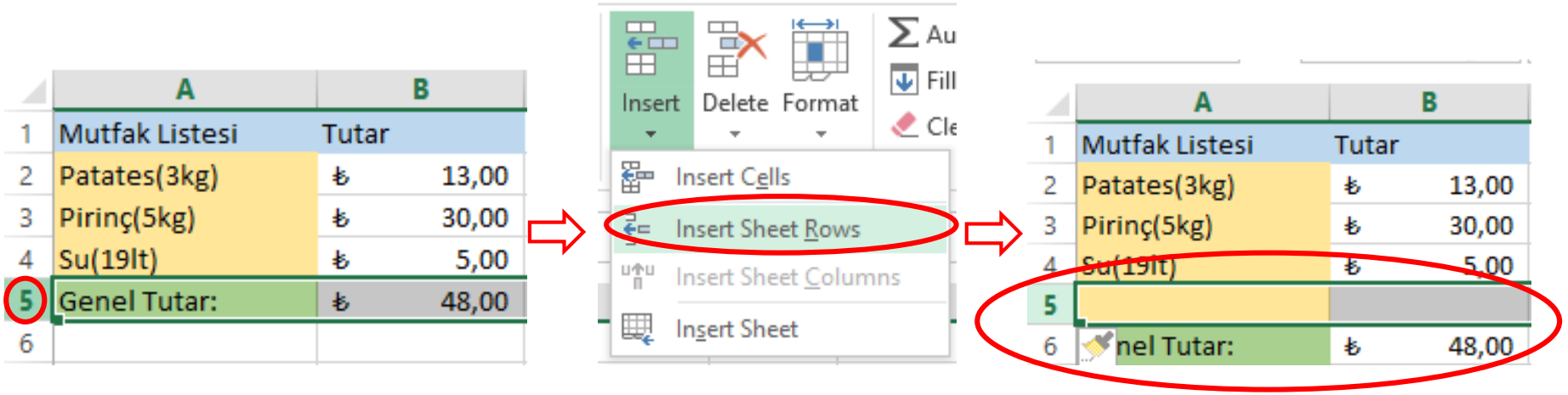
Data Input

- To add a new row or column to the worksheet, the **Insert** button should be selected on the **Home** tab
- The add-on will be made according to the **active cell**.



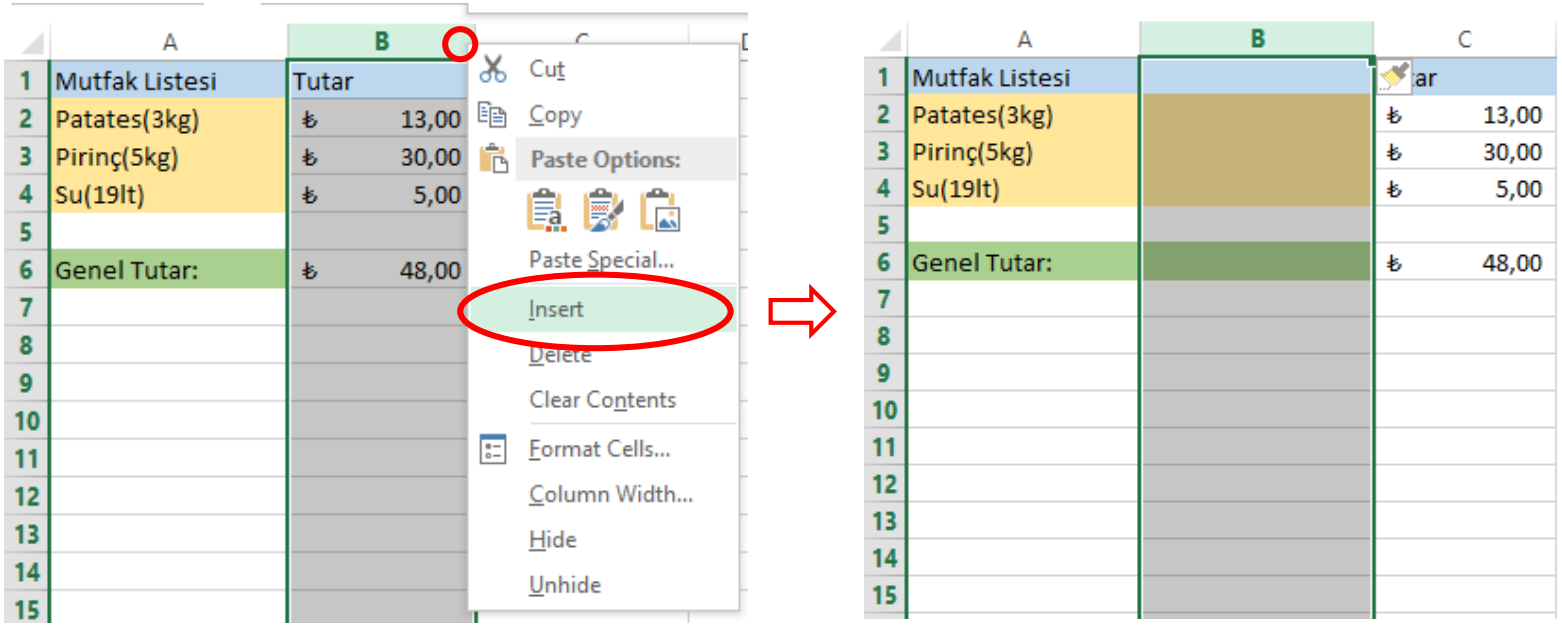
Data Input

- Examle:
- Adding rows is given as an examle below.



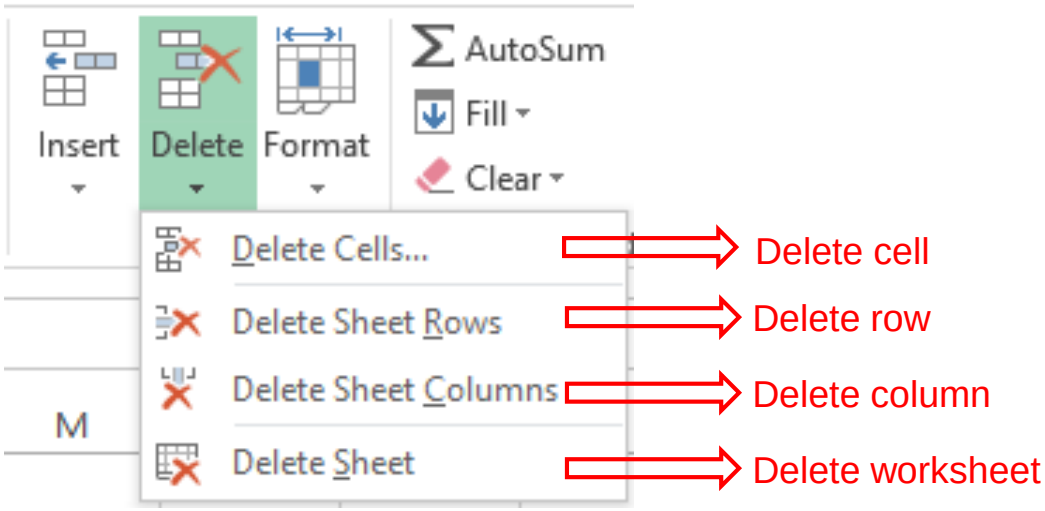
Data Input

- Another method to add rows or columns is by right-clicking the mouse and using the **Insert** option from the pop-up menu.
- To use this method, the row or column must be selected first.



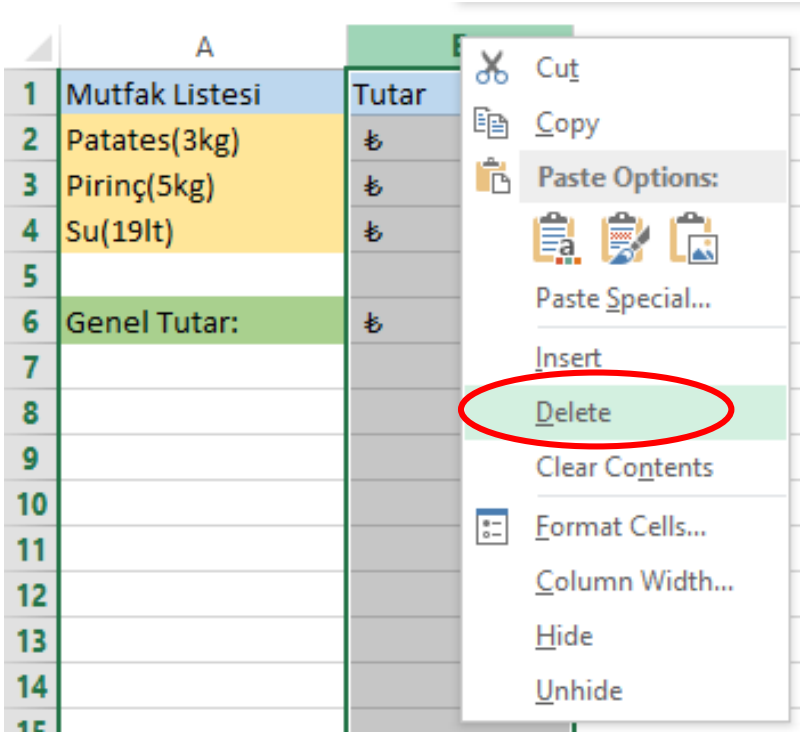
Data Input

- In order to delete row or column from a worksheet, the **Delete** button should be selected on the **Home** tab.
- Delete operation will be performed according to the active cell.



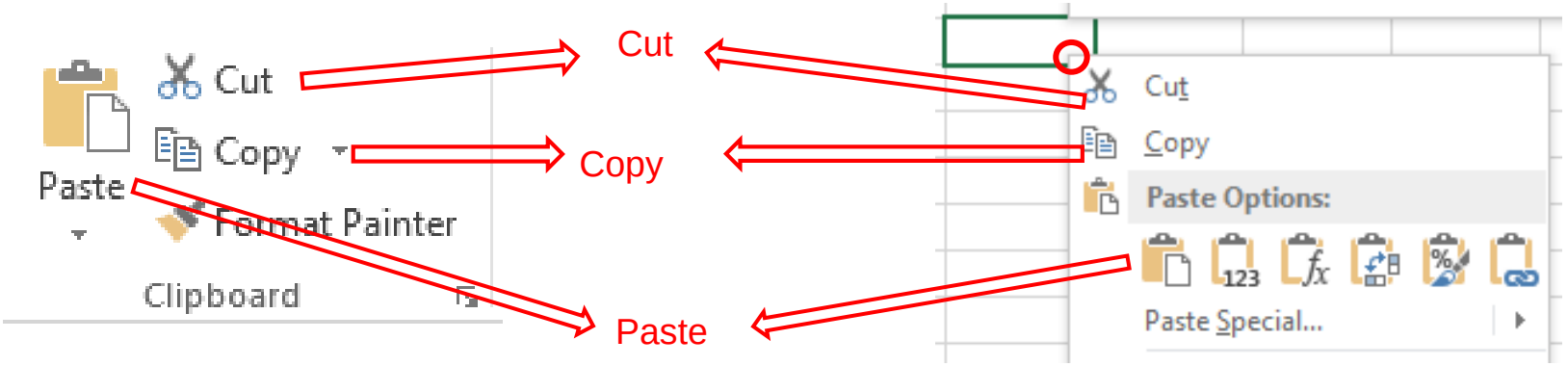
Data Input

- The delete operation can also be done by right-clicking on the **delete** option in the menu to be opened.



Data Input

- The information can be copied or moved from one cell to another. For this, cells must first be selected
- The buttons in the **Clipboard** group on the **Home** tab should be used.
- Another method is to use the options in the drop-down menu by right-clicking the mouse.

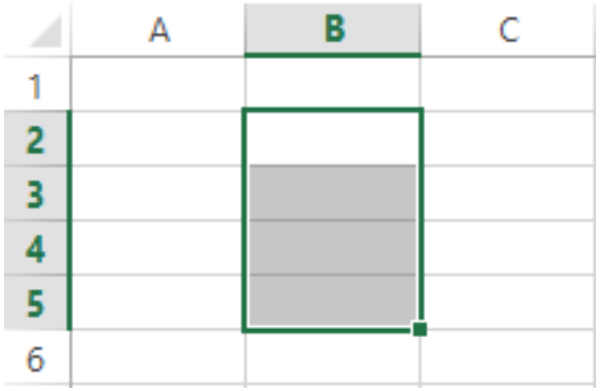


Calculation with Formula

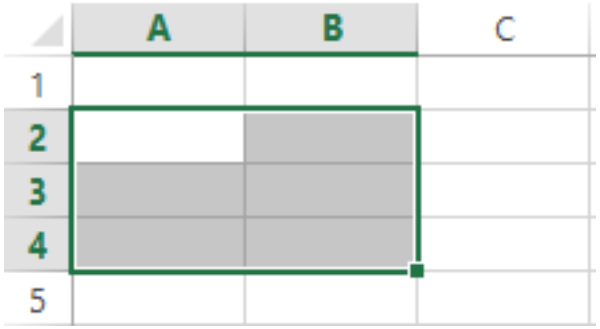
- In Excel, data can be entered into cells or formulas can be written.
- The formulas are particularly useful for quick processing.
- In Excel, all formulas start with the ’=‘ sign.
- ‘:’sign in the formulas is used to specify the range.

Calculation with Formula

- As an example B2:B5 range covers B2,B3,B4,B5 cells

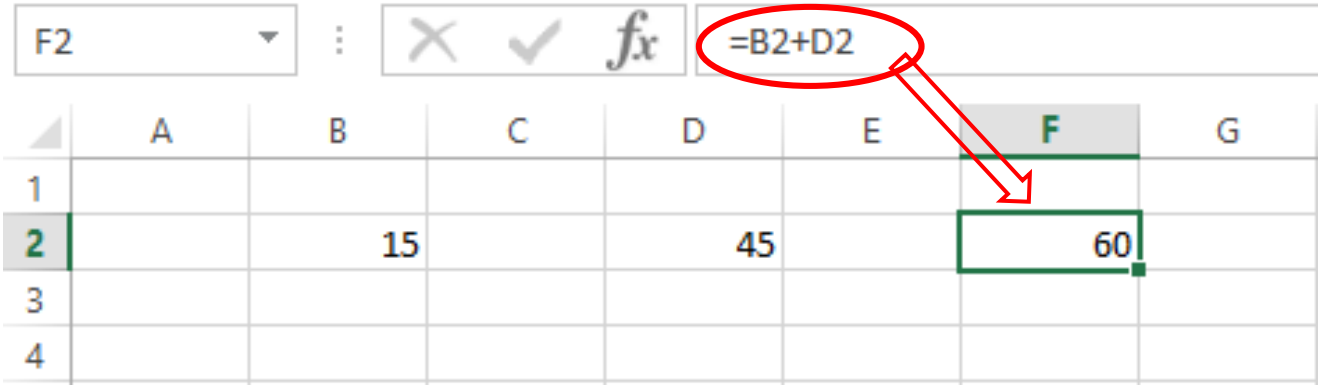


- A2:B4 range covers A2,A3,A4,B2,B3,B4 cells



Calculation with Formula

- The cell adresses are used while the calculation is done in excel,
- For example, suppose that there are numbers in B2 and D2 cells and that the sum of these numbers will be calculated to F2.
- To do this, make F2 active cell and then type = B2 + D2.

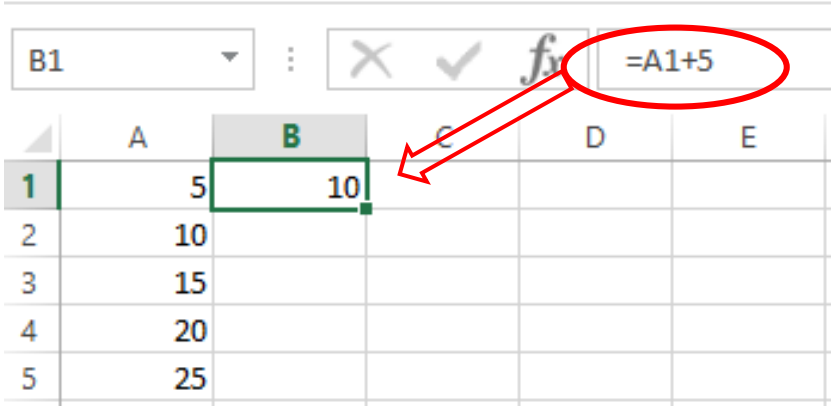


Calculation with Formula

- If instead of F2 = B2 + D2, F2= 15 + 45 was written the result would be 60 again.
- However, if any of the values change, this change would not be reflected in the result.
- In order to understand the formula in a cell, the cell must first be activated and the contents of the formula bar should be checked.

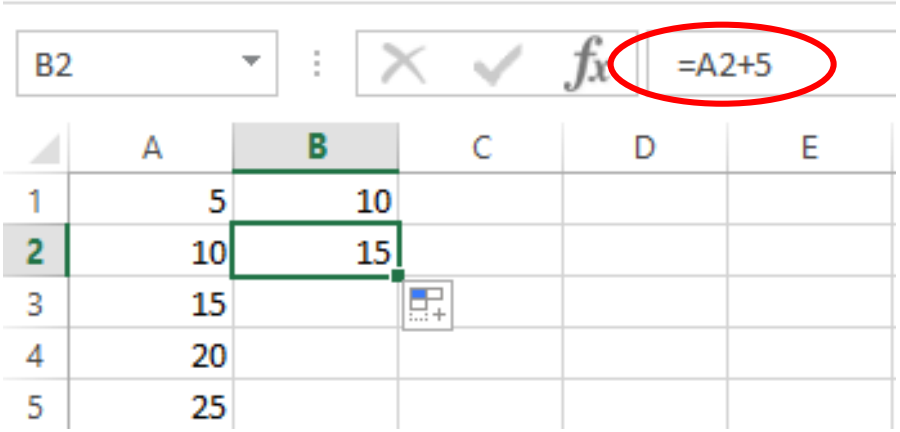
Calculation with Formula

- Example:
  - Enter the values of 5, 10, 15, 20 and 25 starting in cell A1.
  - A formula should be used to print more than 5 numbers of cells per cell.
  - If a formula = A1 + 5 is going to be written to cell B1, 5 is going to be addet to the content of A1 and this value is going to be written to cell B1.
  - If the number in cell A1 is changed, the number in cell B1 will also be updated with the formula.



Calculation with Formula

- Example:
  - Calculations can be made for other cells with the same method.
  - Instead of writing individual formulas for each row, the formula in cell B1 can be copied and pasted into the underlying cells.
  - If the line is changed when the formula is copied to another location, the line information, if the column is changed when the formula is copied to another location the column information will change automatically in the formula.
  - That is, when the formula is copied to cell B2, it will change to "= A2 + 5"



Functions

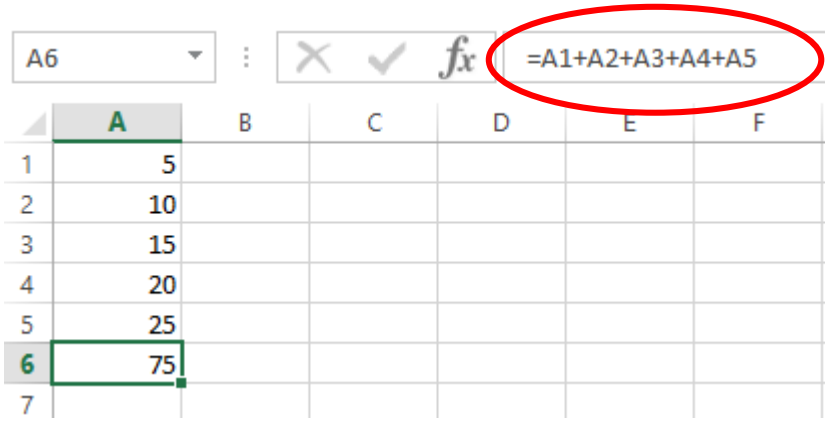
- **Functions** can also be used in addition to addition, subtraction, multiplication and division operations.
- The **SUM** function is used to find the sum of the numerical values.
- Use of the function,

  =SUM(Cell1; Cell2; ...) or =SUM(Cell1 : Cell2)

Functions

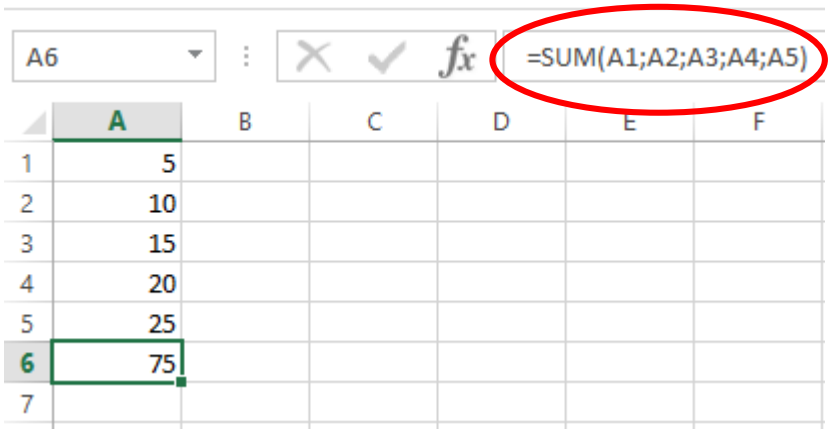
- Example:
  - Enter values 5, 10, 15, 20 and 25 starting in cell A1.
  - There are several methods to calculate the sum of all these numbers in cell A6.

1. method

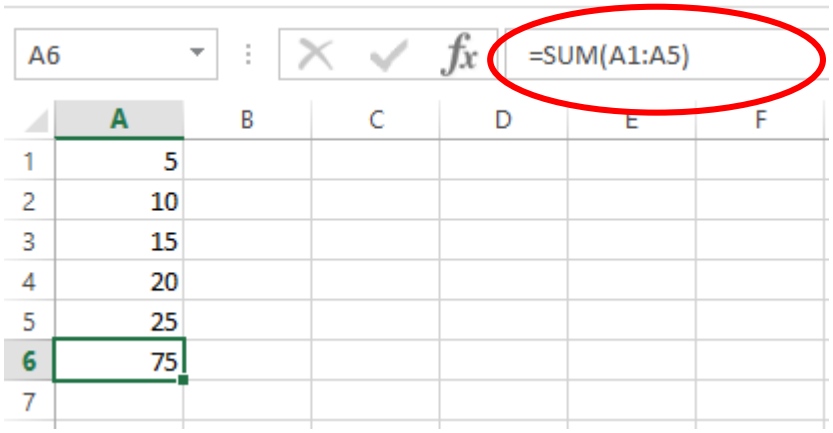


Functions

2. method

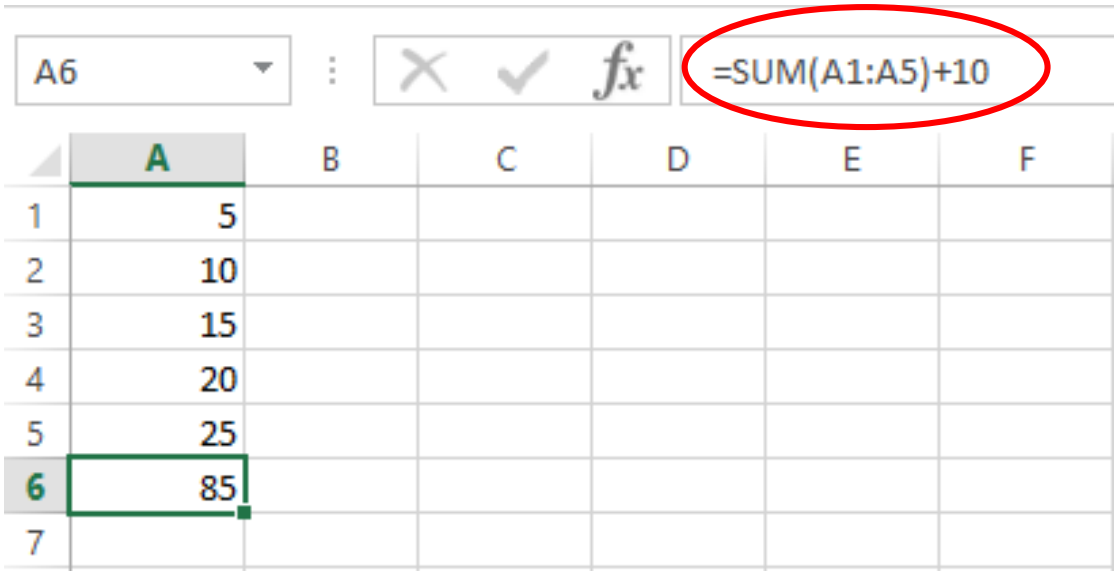


3. method



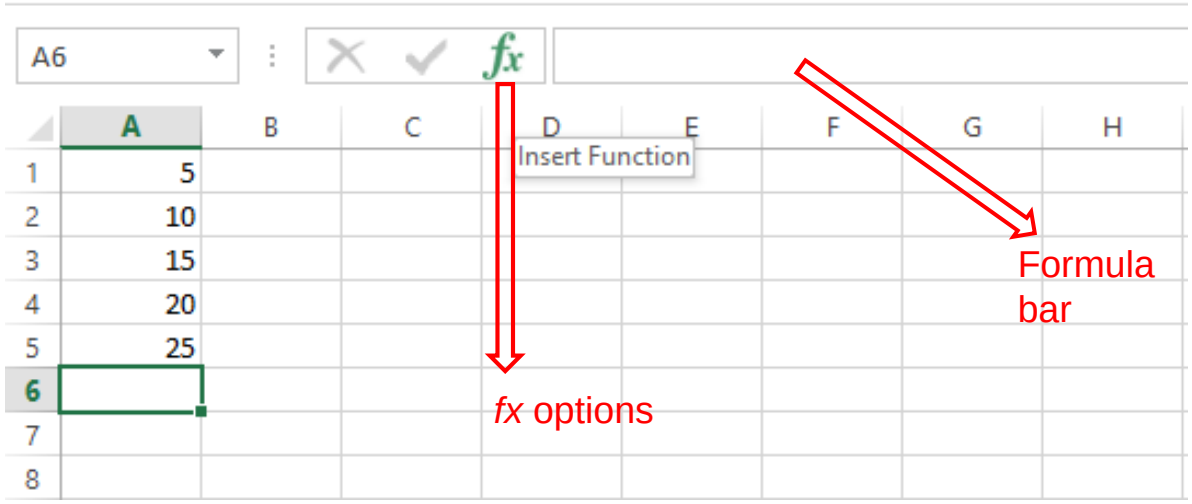
Functions

- The result of the formulas can also be used in other processes.
- Once we have found the total value in the previous example, we will only need to add 10 to the result of the formula to add 10 to this value.



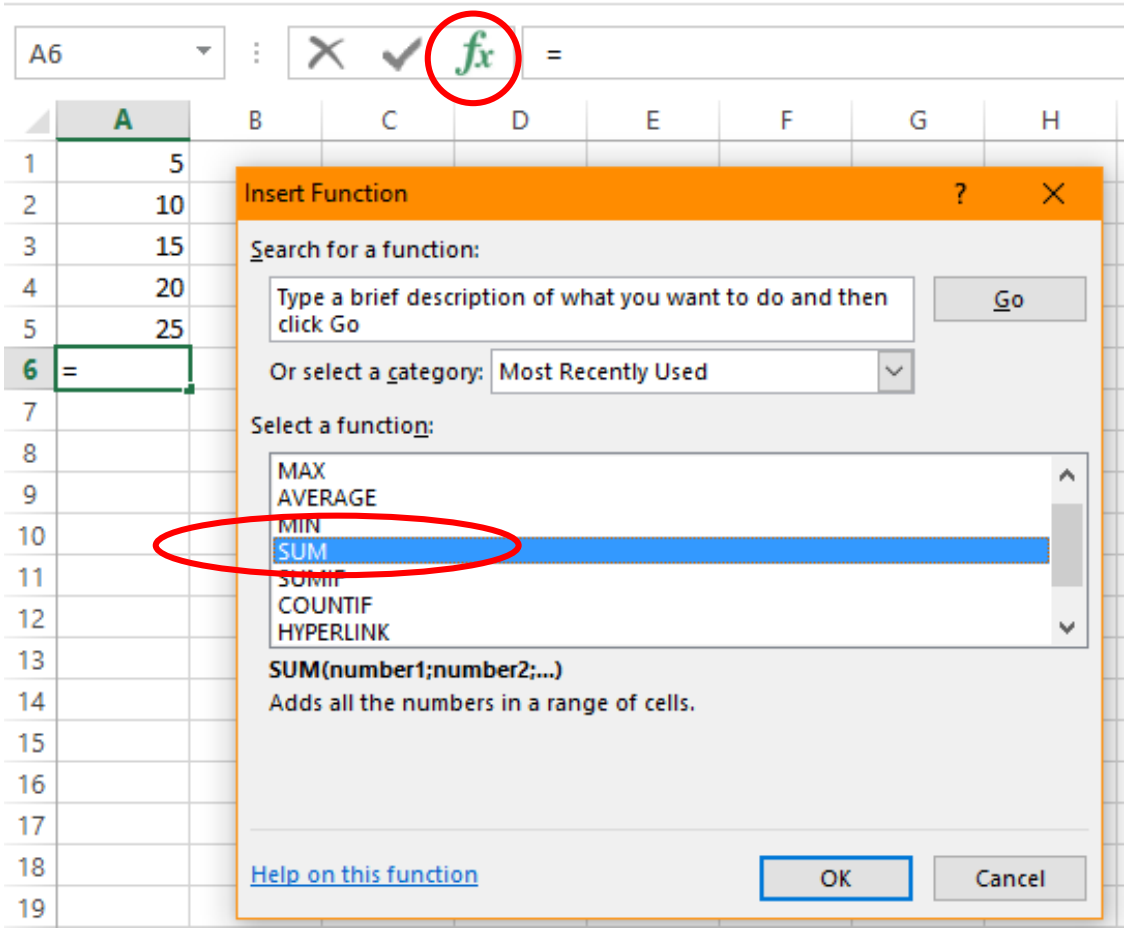
Calculations with Selecting Functions

- Example:
  - Enter 5, 10, 15, 20 and 25 starting from cell A1.
  - Calculate the sum of these entered numbers in cell A6 (can be another cell).
  - Note that the **A6** cell is active when you are able to calculate the sum in cell **A6**.
  - Click on **fx** at the beginning of the formula bar.



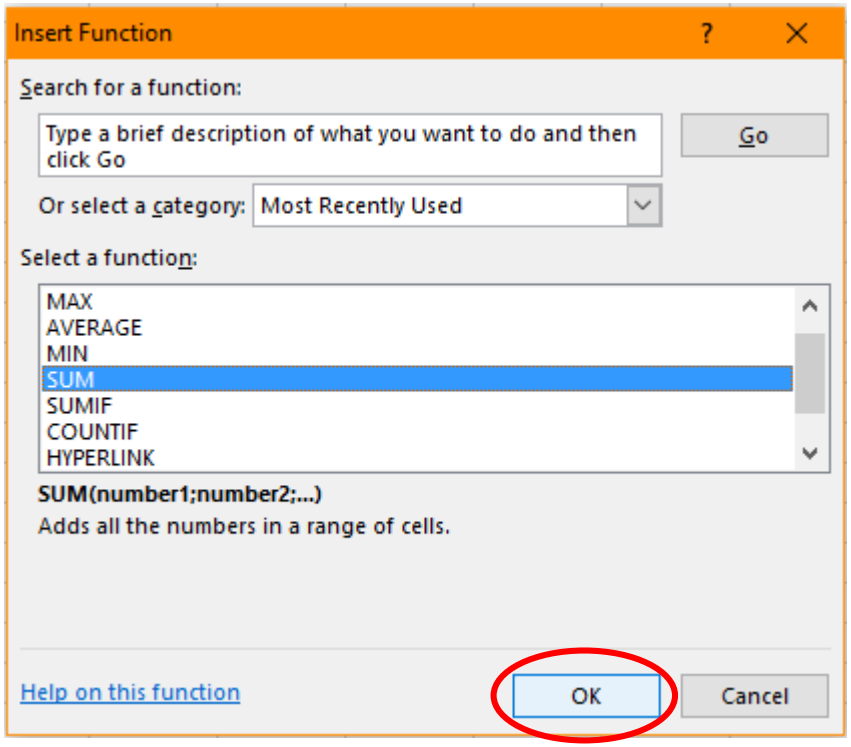
Calculations with Selecting Functions

- **TOTAL (SUM)** should be selected from the most frequently used available functions menu.



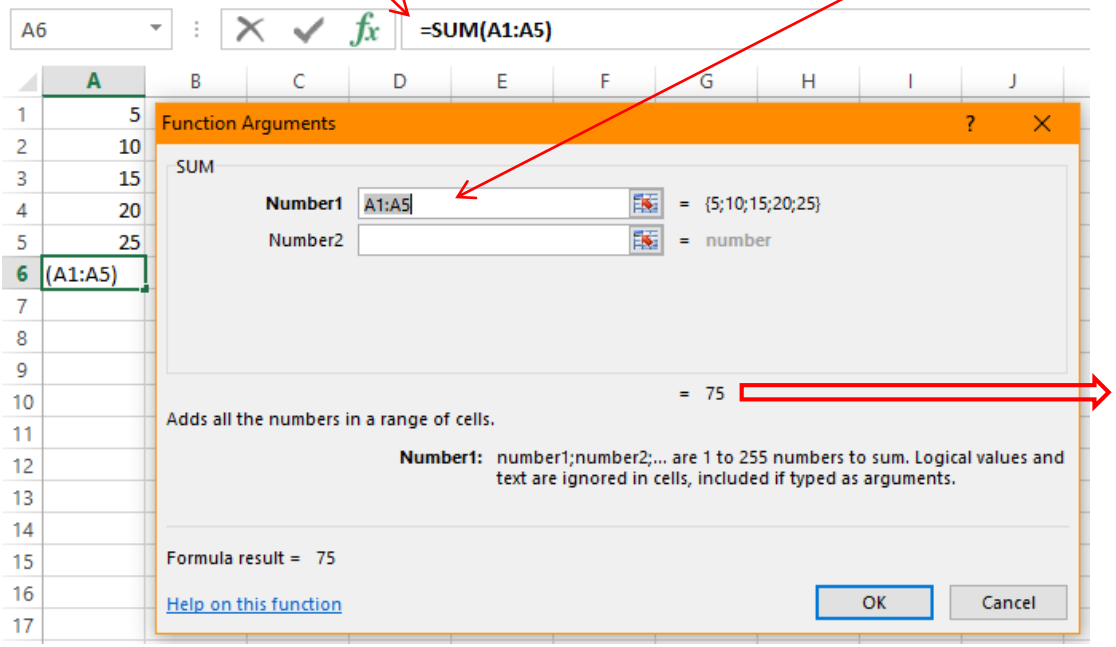
Calculations with Selecting Functions

- After selecting **TOTAL (SUM)** from the menu as follows, click OK.



Calculations with Selecting Functions

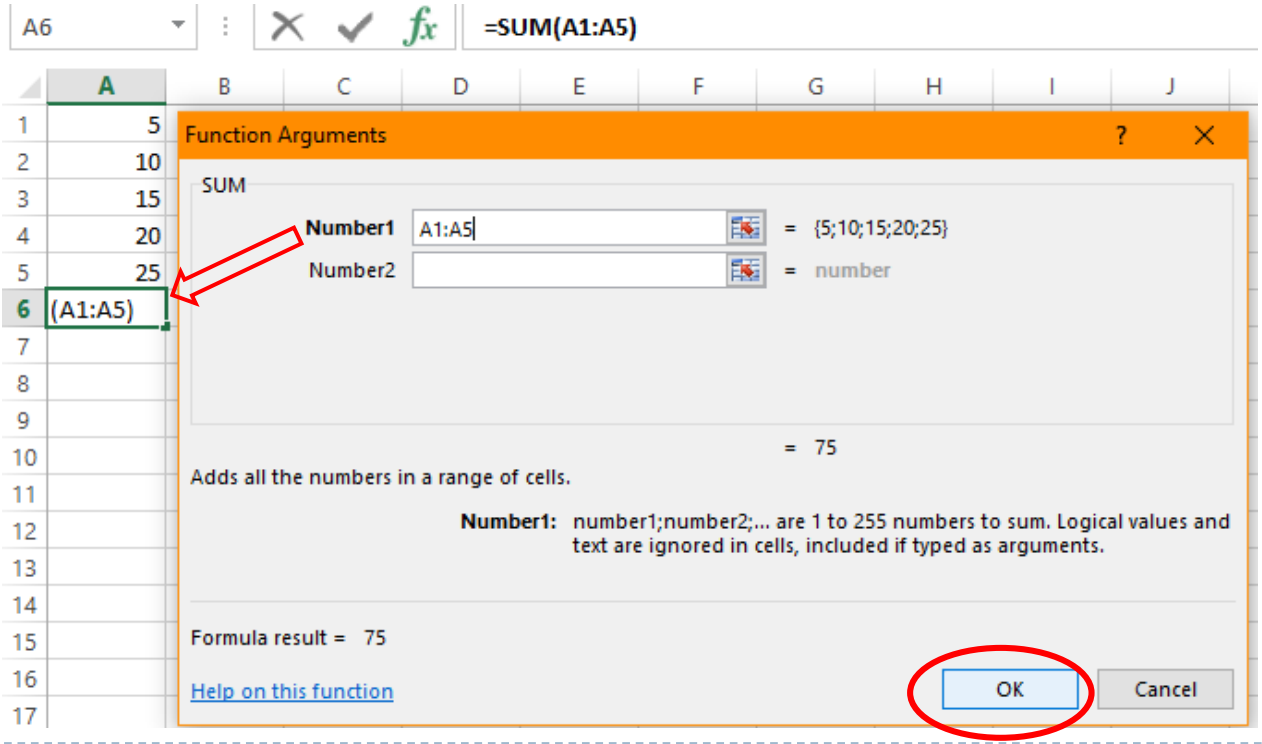
- SUM (A1: A5) will appear in the formula bar as follows when TOTAL (SUM) is selected from the menu. This formula, which means calculating the sum of the lines from A1 to A5, also appears in the configuration dialog box of the function.



Also note that the total is displayed here.

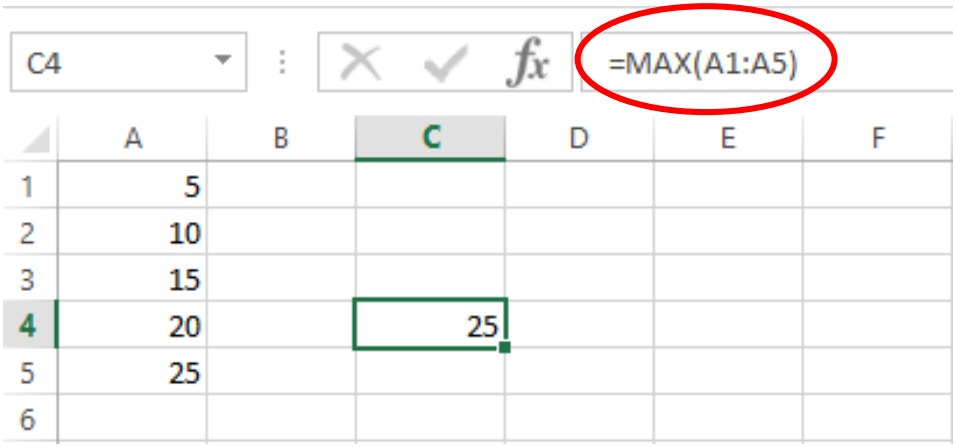
Calculations with Selecting Functions

- You can change this range with the direct writing method with your keyboard, and the necessary changes can be configured by selecting from the excel workspace via mouse. Click OK to complete the transaction.



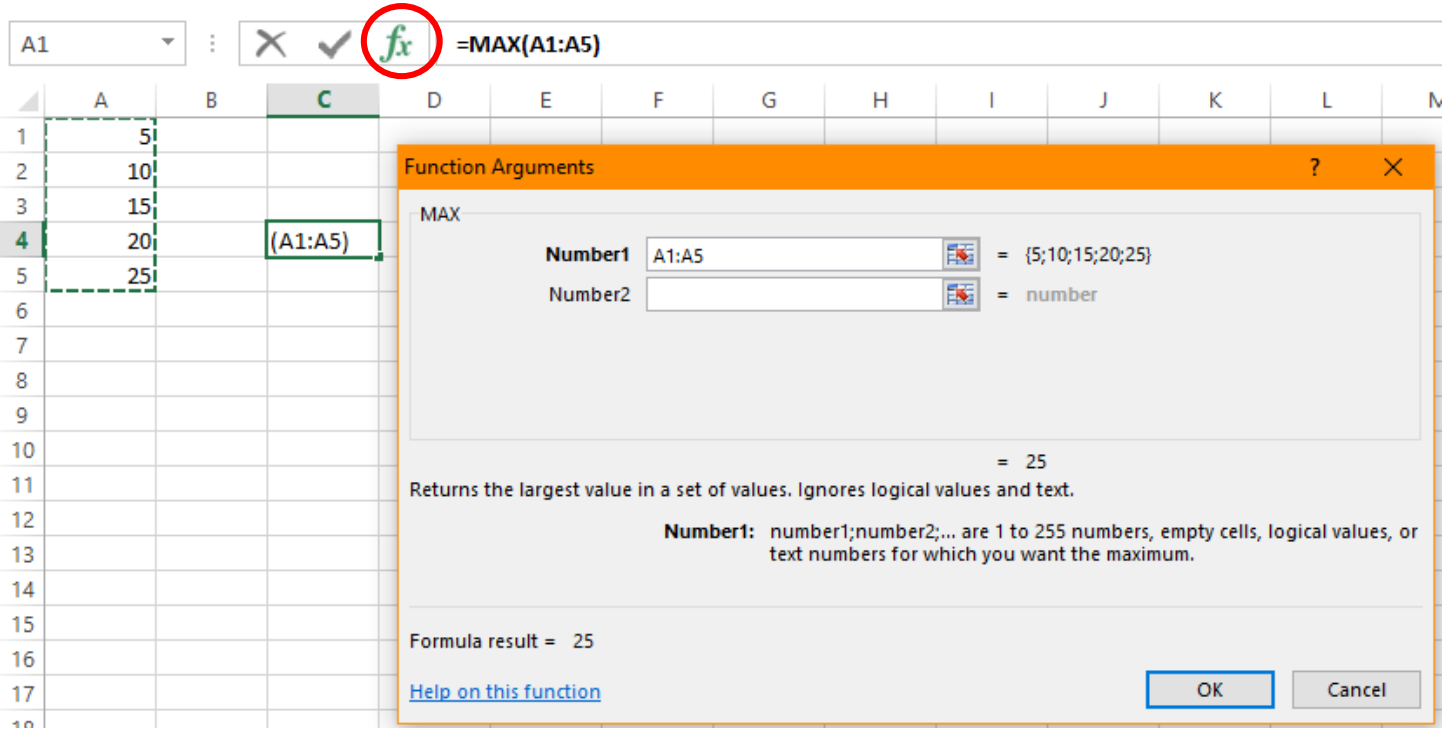
Calculations with Selecting Functions

- **MAX** function is used to find the largest numerical value.
- The function is using like,
- =MAX(Cell1; Cell2;...) or =MAX(Cell1 : Cell2)
- To print the largest value between the numbers in the previous example in cell C4, the following formula must be written.



Calculations with Selecting Functions

- **MAX** function can be selected from ready functions to find the largest numerical value.
- To print the largest value between the numbers in the previous example in cell C4, the following formula must be selected.

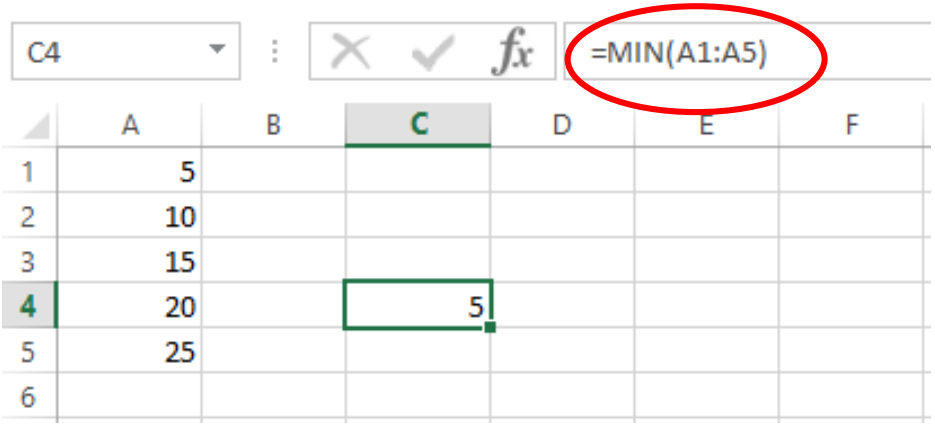


Functions

- The **MIN** function is used to find the smallest numerical value.
- The function is using like,

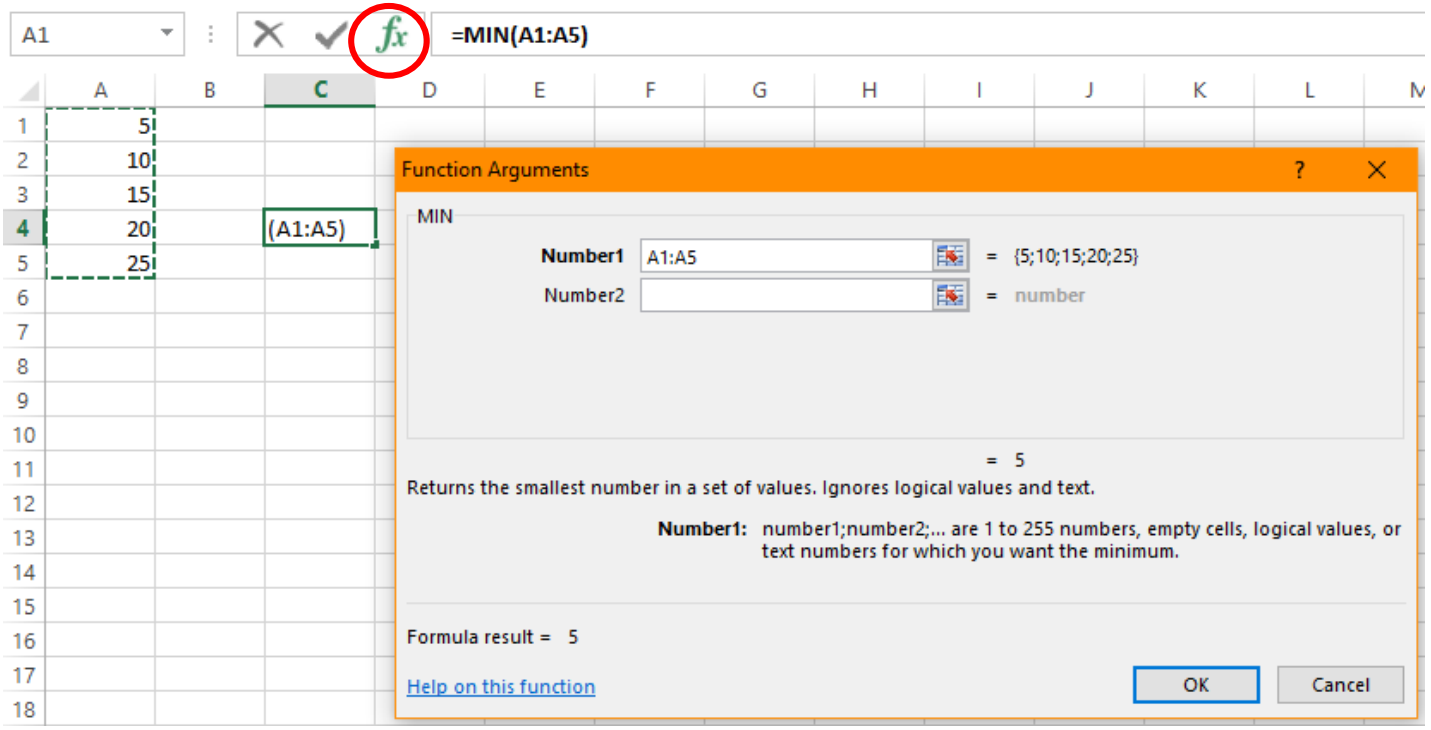
  =MIN(Cell1; Cell2;...) or =MIN(Cell1 : Cell2)

- To print the smallest value between the numbers in the previous example to cell C4, the following formula must be written.



Calculations with Selecting Functions

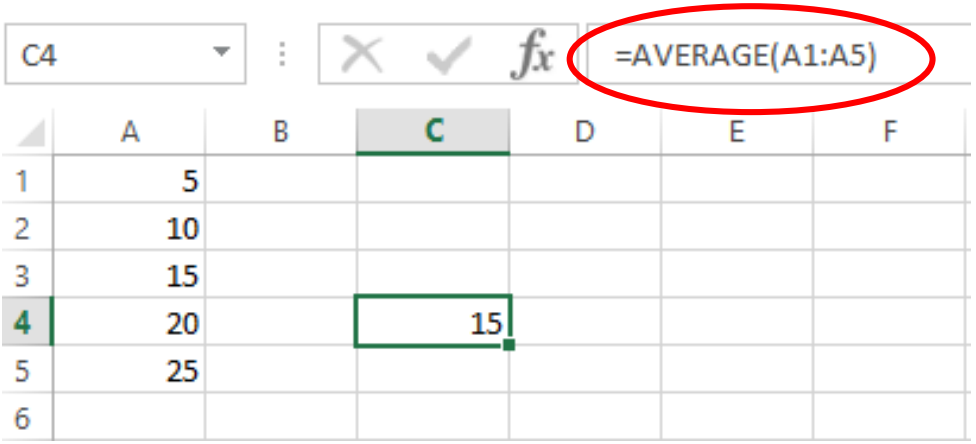
- The **MIN** function can be selected from the preset functions to find the smallest numerical value.
- The following formula must be selected to print the smallest value between the numbers in the previous example in cell C4.



Fonctions

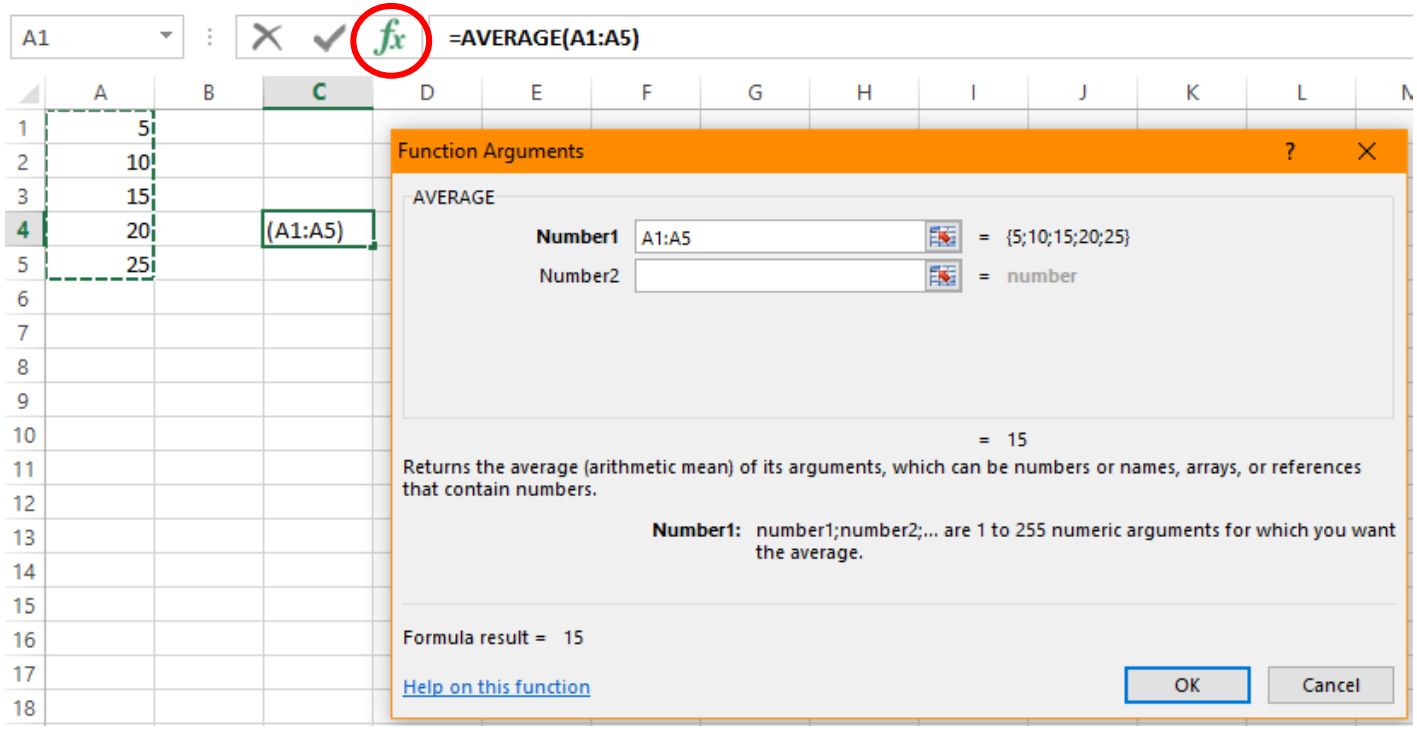
- The **AVERAGE** function is used to find the average of numerical values.
- The function is using like,

  =AVERAGE(Cell1; Cell2;...) or =AVERAGE(Cell1 : Cell2)
- In order to calculate the average of the numbers in the previous example to cell C4, the following formula should be written.



Calculations with Selecting Functions

- The **AVERAGE** function is used to find the average of numerical values.
- To calculate the average of the numbers in the previous example to cell C4, the following formula should be selected.



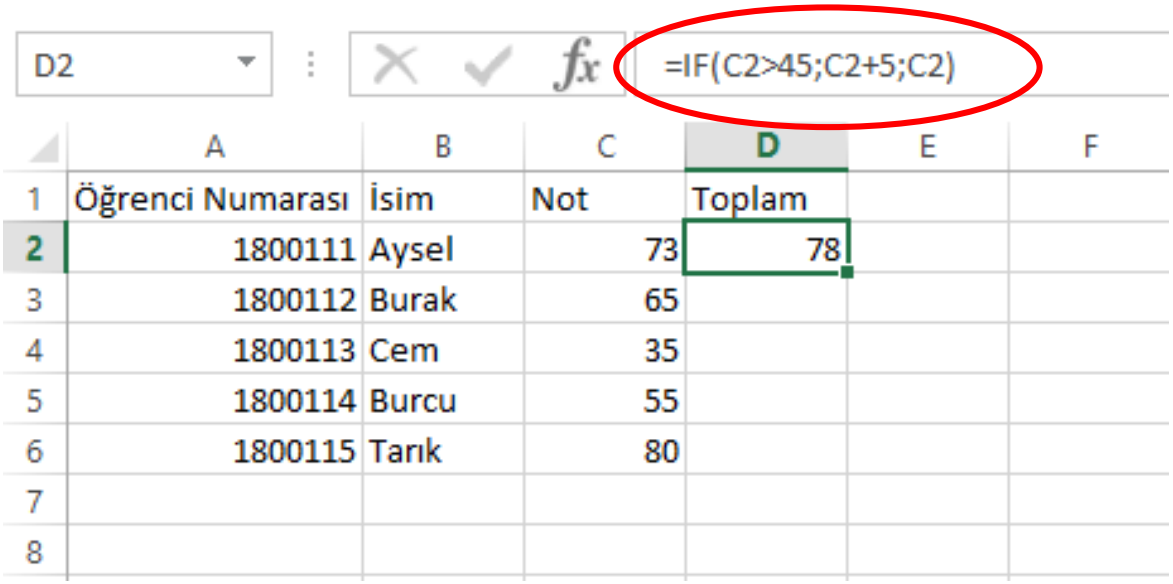
Functions

- The calculations can be done by using with IF function
- The function is using like,

    =IF(logical test; if test is TRUE; if test is FALSE)

Functions

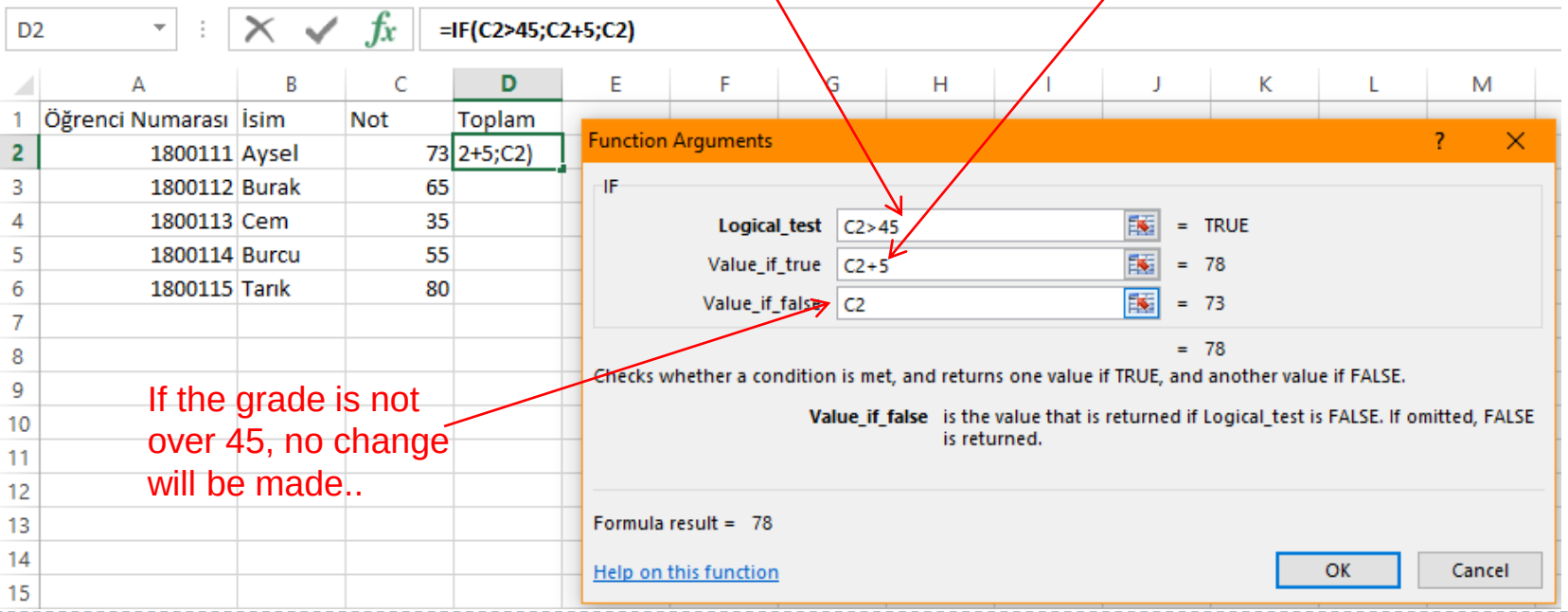
- For example, in a file with the notes of the students, to the right of the notes, if the student's grade is more than 45, the score required to be able to write 5 points added to the grade will be as follows.
- It is possible to obtain the result for other students by copying the written formula to the following cells.



	A	B	C	D	E	F
1	Öğrenci Numarası	İsim	Not	Toplam		
2	1800111	Aysel	73	78		
3	1800112	Burak	65			
4	1800113	Cem	35			
5	1800114	Burcu	55			
6	1800115	Tarık	80			
7						
8						

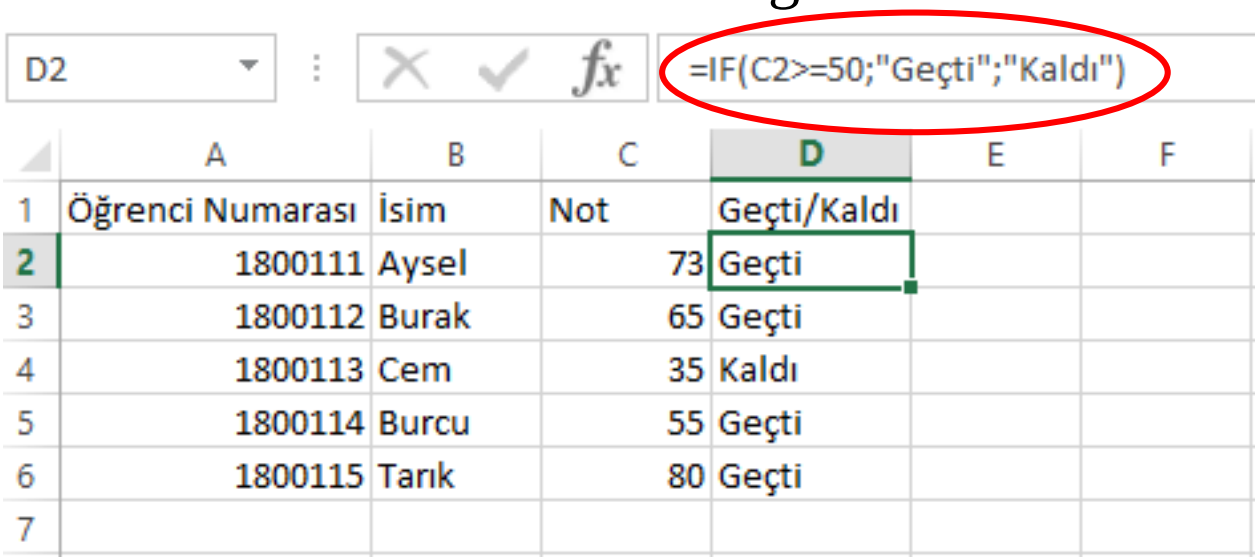
Calculations with Selecting Functions

- To the right of the notes in the file containing the notes of the students, if the grade of the student is over 45, add 5 more points to the grade..
- It is possible to obtain the result for other students by copying the written formula to the following cells.



Functions

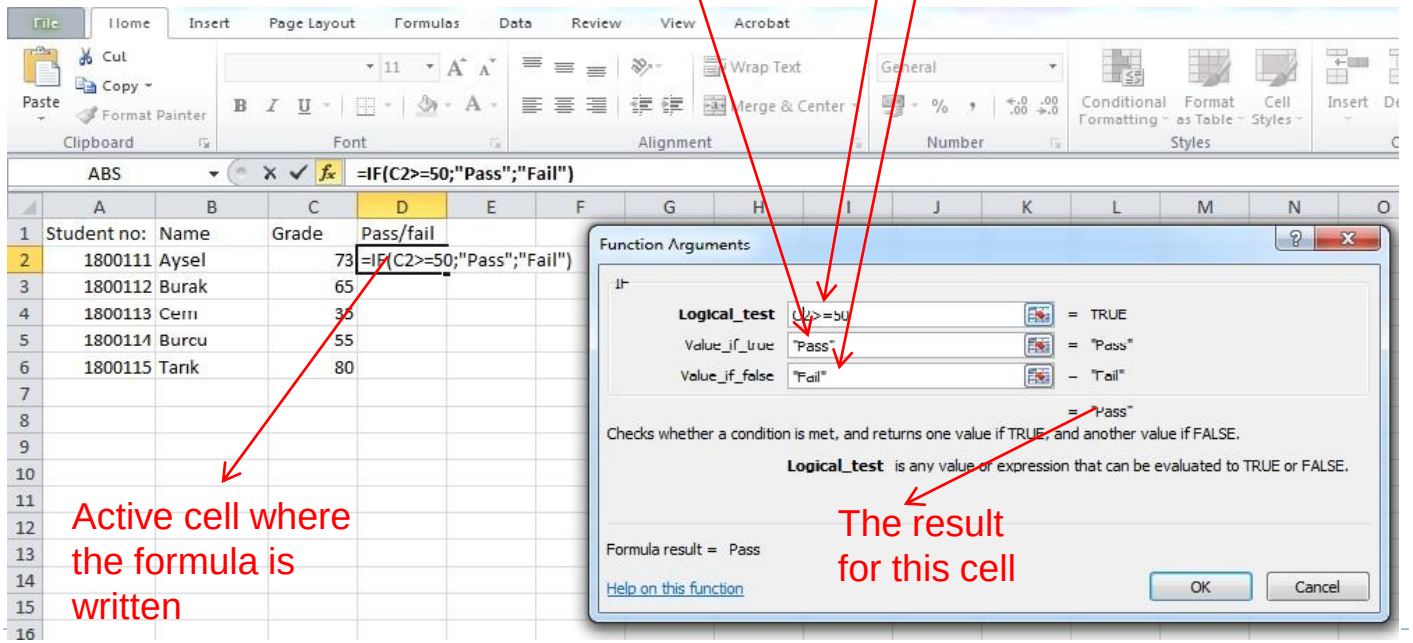
- For example, in a file with the notes of the students, the column to the right of the notes will be as follows. If the student grade is 50 or above it will be written as "pass", if not "fail". So the formula is going to be as follows.
- It is possible to obtain the result for other students by copying the written formula to the following cells.



	A	B	C	D	E	F
1	Öğrenci Numarası	İsim	Not	Geçti/Kaldı		
2	1800111	Aysel	73	Geçti		
3	1800112	Burak	65	Geçti		
4	1800113	Cem	35	Kaldı		
5	1800114	Burcu	55	Geçti		
6	1800115	Tarık	80	Geçti		
7						

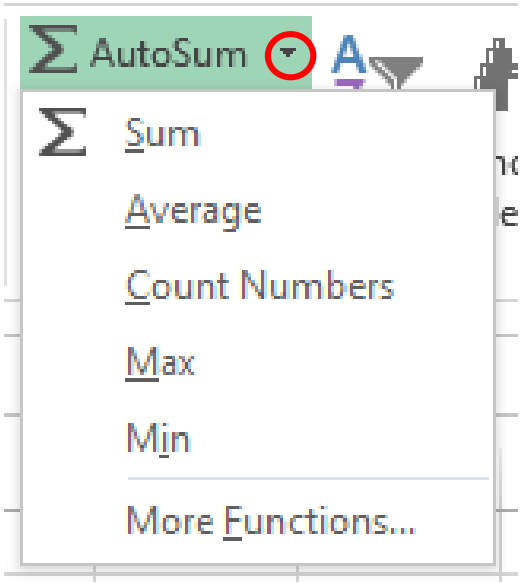
Calculations with Selecting Functions

- For example, in a file with the notes of the students, the column to the right of the notes will be as follows. If the student grade is 50 or above it will be written as "pass", if not "fail". So the formula is going to be as follows.
- It is possible to obtain the result for other students by copying the written formula to the following cells



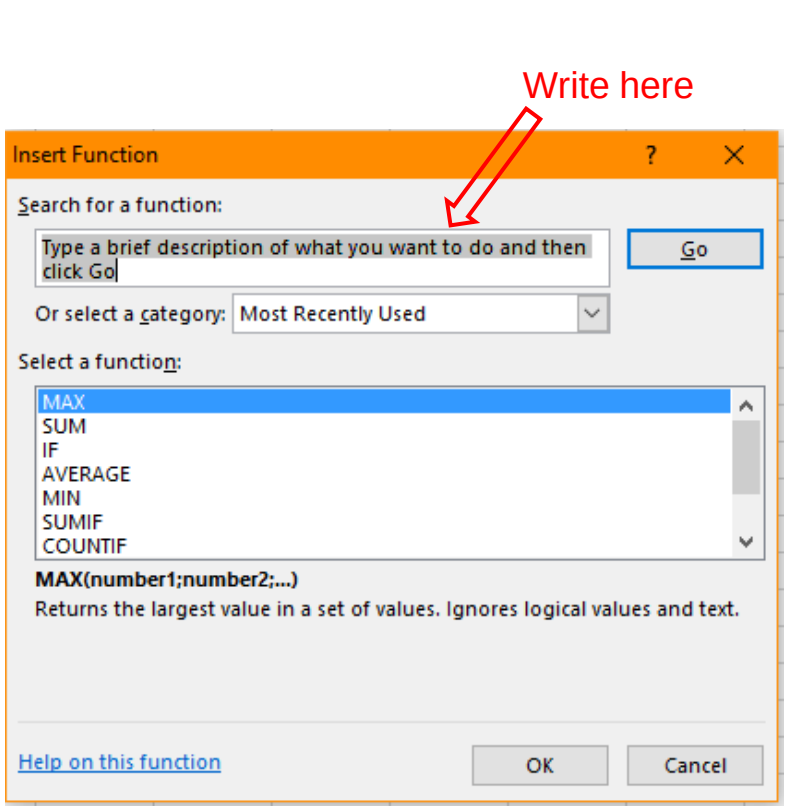
Functions

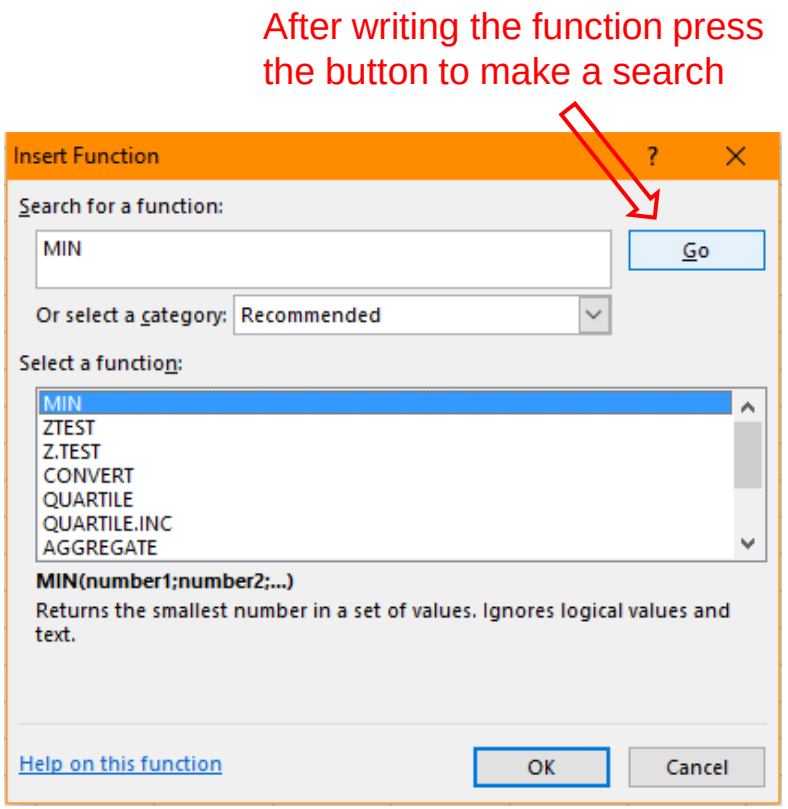
- The sum, max, min, average, and if functions can all be added using the **Functions (AutoSum)** button on the Home tab.



Functions

- If the function you want to use cannot be displayed in the favorites dialog box (usually the MIN function is not displayed in the favorites), you can make a search as shown below.





LECTURE 7
TRANSACTION TABLES
END OF SUBJECT