



# Principles of Accounting LAB 2

First stage

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# Formula and Function

# Agenda

- Function and formula.
- Formula.
- Formula Bar.
- Function.
  - Function syntax.

# Function and Formula

In excel we can make simple calculations such as finding the sum of numbers in a row or column or make more complex calculations, such as solving engineering or math problems, and creating financial models by using Formulas and functions.

- **Formula** is a user-defined expression which returns a specific result, while **Function** is a built-in formula that performs calculations using specific values in a particular order
- Formula can consist of one function or more.

### Formula

=4+3  
=A3+C9  
=B7+B8-(4\*2)+1  
= SUM (B1:B6)+5

### VS

### Function

=SUM(A3:A27)  
=AVERAGE(F4:F8)  
=INT(5,6)  
=MIN(C2:C20)

# Formula

- To type a simple Formula we must begin with the equal sign (=) in a blank cell, then type the first number, the sign of the mathematic operation such as (-) then the second number. When we press enter the result appear.

B	C	D
	= 30-15	

B	C	D
	15	

**Figure (1)**

- In this example the formula subtract the arguments in the column A and B, we typed the equal (=) sign in a blank cell and clicked the cell of the first argument, then typed the operation's sign minus (-), then click the second argument as shown below.

	A	B	C	D
1	100	50	=B1-	
2	88	59		
3	67	34		
4	98	84		
5				

	A	B	C	D
1	100	50	=B1-A1	
2	88	59		
3	67	34		
4	98	84		
5				
6				

	A	B	C	D
1	100	50	-50	
2	88	59		
3	67	34		
4	98	84		
5				

Figure (2)

- We can apply the formula to the other cells by drag the rectangular corner of the formulas cell to the rest of the cells, in which you want to apply the formula.

	A	B	C	D
1	100	50	-50	
2	88	59	-29	
3	67	34	-33	
4	98	84	-14	
5				
6				

Figure (3)



- In this example we wrote a formula to calculate the average by adding value of the cells and divide the result of the cells number.
- We typed the equal sign and an open parenthesis then click the first cell (B1) to enter the cell reference in the formula then typed the sign (+) then clicked the second cell (B2) and repeat for the rest cells, closed the parenthesis and dived it by cells number.

	A	B	C	D	E
	100	50			
	88	59			
	67	34			
	98	84			
	Average	=(B1+B2+B3+B4)/4			

Figure (4)

- A **formula** could use just a single **function**. For example, if you enter **=AVERAGE(A1:A56)** , that is a **formula**, using the AVERAGE **function**.
- Another Example shows the use of two functions (**SUM and MAX**) in the Formula **=SUM(MAX(B4:B10),MAX(D4:D10))**, which calculates the **sum** of the maximum value in the Argument **Team A** and the **maximum** value in the Argument **Team B**.

	A	B	C	D	E	F
1		Team A		Team B		
2		90		66		
3		22		89		
4		85		97		
5		70		90		
6		95		88		
7		67		93		
8		50		86		
9		88		100		
10						
11						
12	Average of the Top	=SUM(MAX(B2:B9),MAX(D2:D9))				

Figure (5)

- This example shows a formula used two functions **SUM** and **INT** beside the mathematic operation multiplication, the function has been applied for the Arguments in columns A and B.

	A	B	C	D	E
1	group A	group B	Sum		
2	50.55	77.8896	=SUM(INT(A2);INT(B2))*0.5		
3	100.9	89.4	94.5		
4	84.76	59.05	71.5		
5	74.9	88.334	81		
6	93.01	76.9	84.5		
7	45.65	77.98	61		
8					

Figure (6)

# Formula Bar

- In Excel We can write Formula and Function directly in a cell or in Formula Bar.
- We can show Formula Bar from view Tab.
- As shown in the figure in Formula Bar there are the name box, insert Function and Formula box.

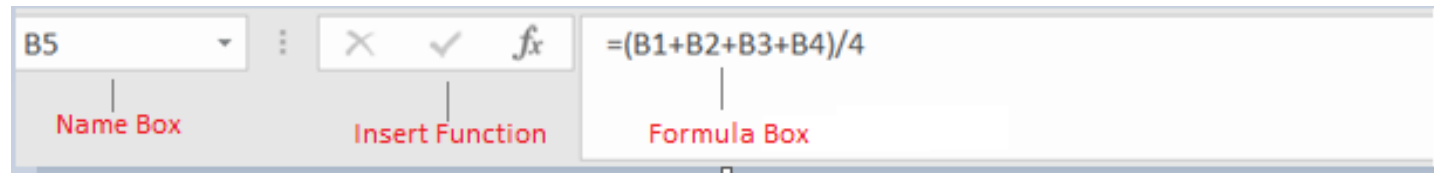


Figure (7)

In formula box we can type formulas and functions directly or pick one of the 10 recently used functions from drop-down menu of the Name Box as shown in figure(7) or choose a function by clicking **fx** Bottom.

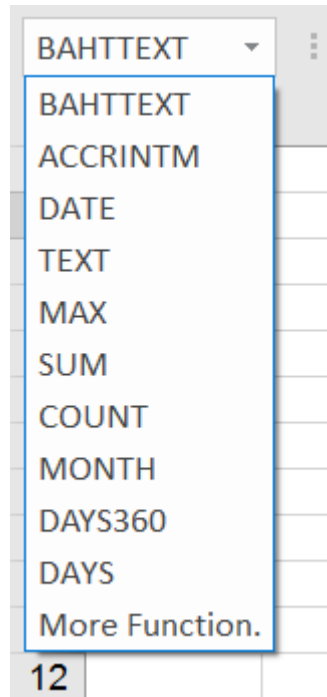


Figure (8): Text Box menu

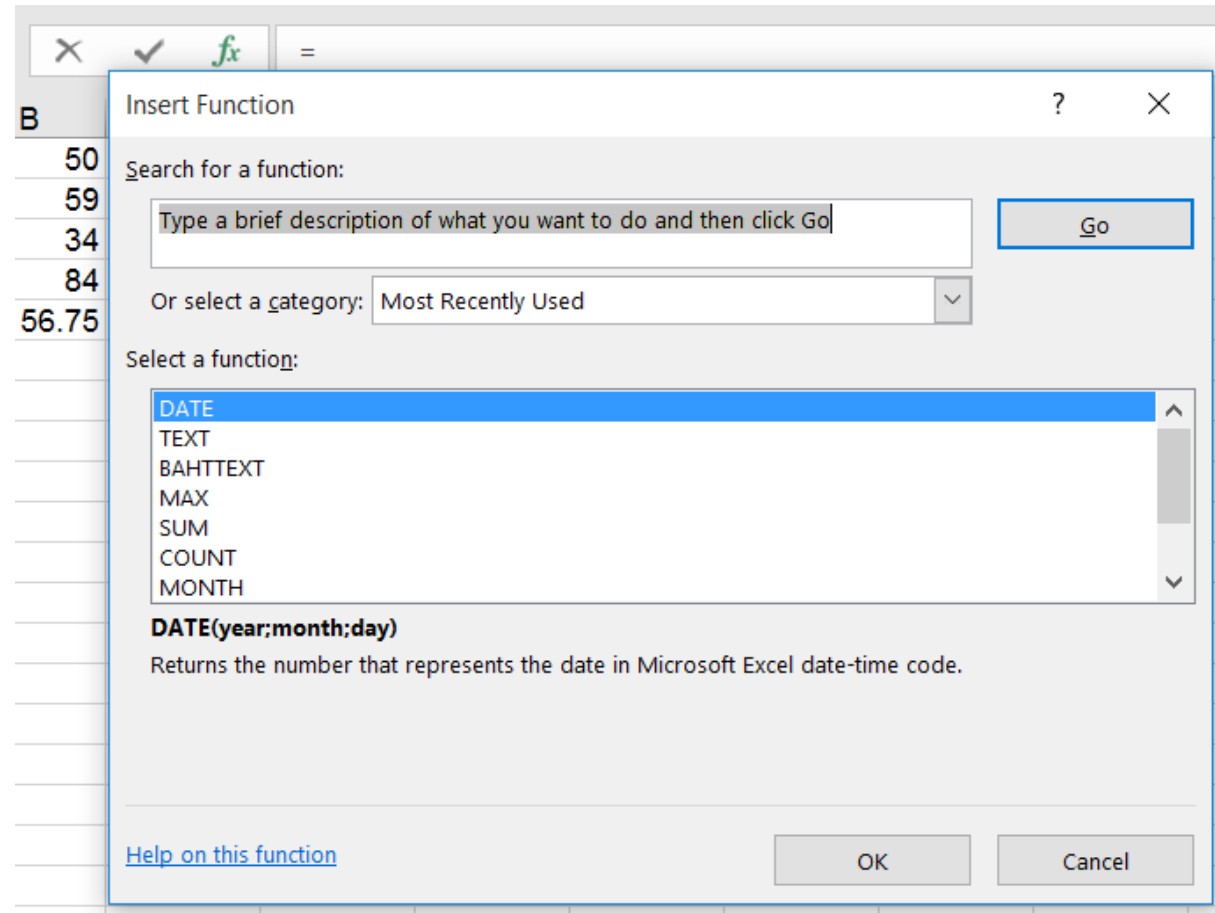


Figure (9): *Insert Function* wizard

By clicking  $f_x$  Bottom the **Insert Function** wizard appears, then we can insert a Function we want by follow the step bellow:

- When we know the function name, type it in the **Search for a function** field and click **Go**, when not type a very brief description of the task you want to solve ( for example "*sum cells*", or "*count* ) and click **Go**, a list of functions belonging to the selected category will appear in the **Select a function** list.

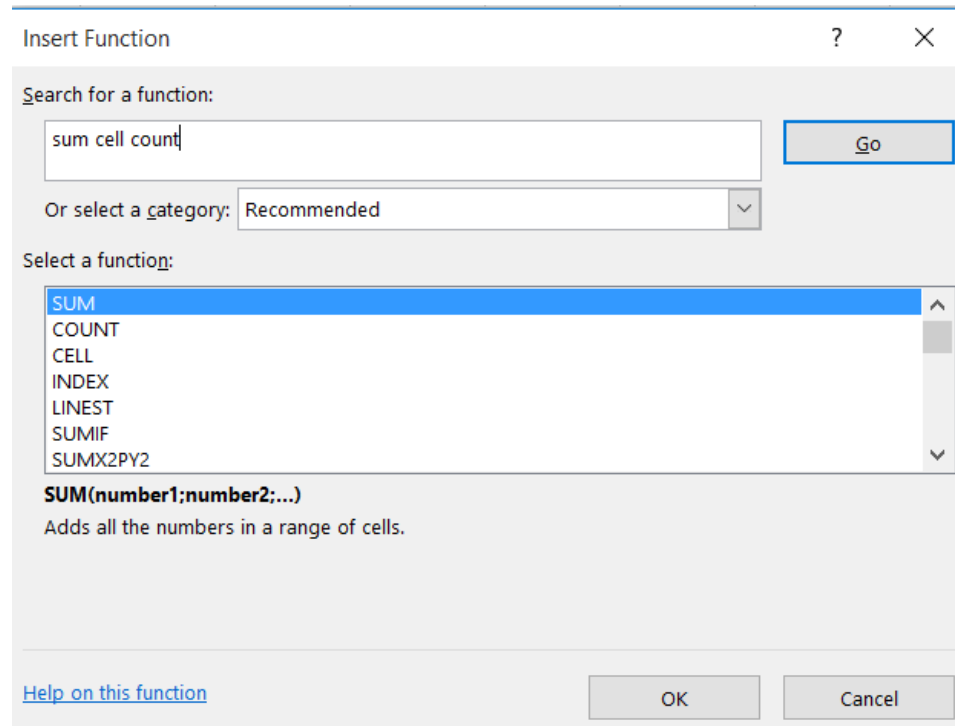


Figure (10)

- If we know the function's category we can choose one of the 13 categories functions from the **Select a category** drop down menu, then the functions belonging to the selected category will appear in the **Select a function** list.

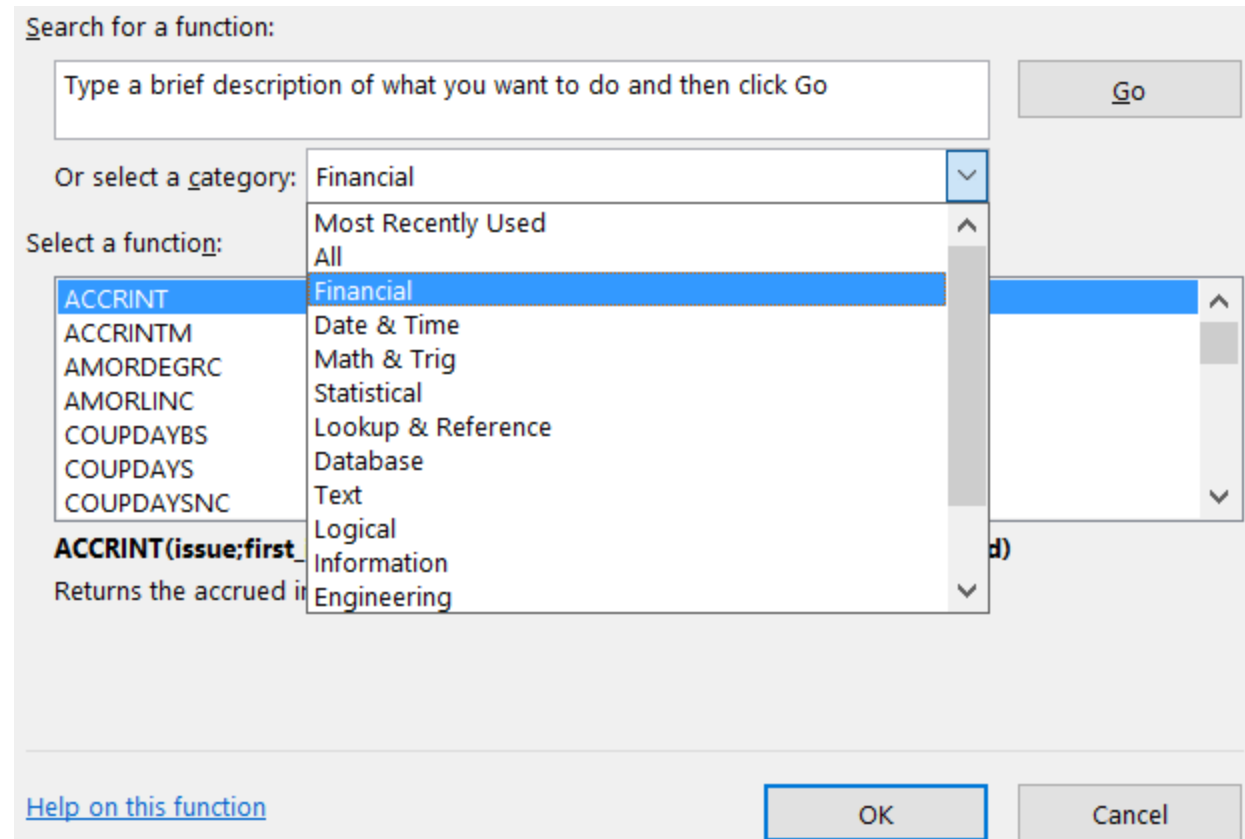


Figure (11)



- We can assign a name for a cell in the Name Box to refer to the cell by name in function and formula instead of the cell reference. For example we select the cells B2, C2, D2, E2 and type a name such as (Ahmed) in the Name Box and press enter, to use this name in the function sum and average as shown in the figure.

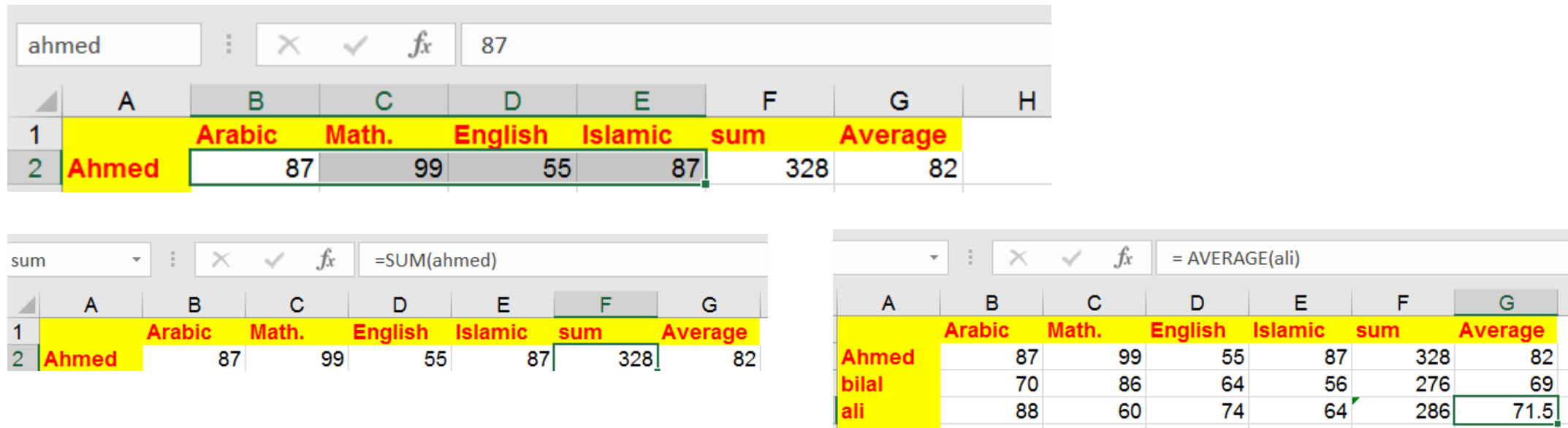


Figure (12)

# Function

A **Function** is a **predefined formula** that performs calculations using specific values in a particular order.

Excel includes many functions that can be used to quickly find the **Sum, Average, Count, Maximum value, and Minimum value** for a range of cells.

A list of the common functions:

- **SUM:** **adds** all of the values of the cells in the argument.
- **AVERAGE:** determines the **average** of the values included in the argument.
- **COUNT:** **counts** the number of cells with numerical data in the argument.
- **MAX:** determines the **highest cell value** included in the argument.
- **MIN:** determines the **lowest cell value** included in the argument.
- **POWER:** Returns the result of a number raised to a power.
- **INT:** Rounds a number down to the nearest integer.
- **SUMIF:** Sum the values in a range that meet Criteria.

# Function Syntax

- Functions have Syntax which is the layout of the function and its arguments.
- The basic Function Syntax of a function is the **Equals Sign (=)**, the **Function Name** for example **(SUM, AVERAGE, MAX, etc.)**, and one or more **Arguments** enclosed within an parenthesis.

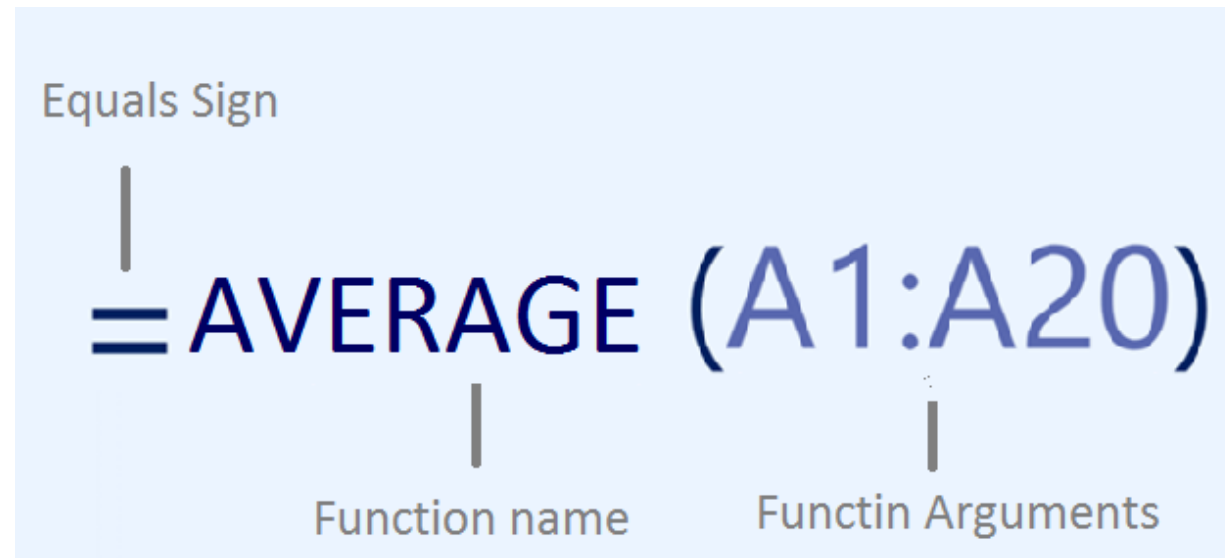


Figure (13)

**The End**

