

LECTURE SCHEDULE 9

Use of in-built functions and writing expressions

In-built Functions

- A function is an in-built program, which is used to do a particular task.
- Functions take the input the input and will give the result as the output.
- Based on the input and output data the functions are categorized as
 - String functions
 - Arithmetic functions
 - Date functions
 - Logical functions
 - Group functions

Use of in-built function SUM()

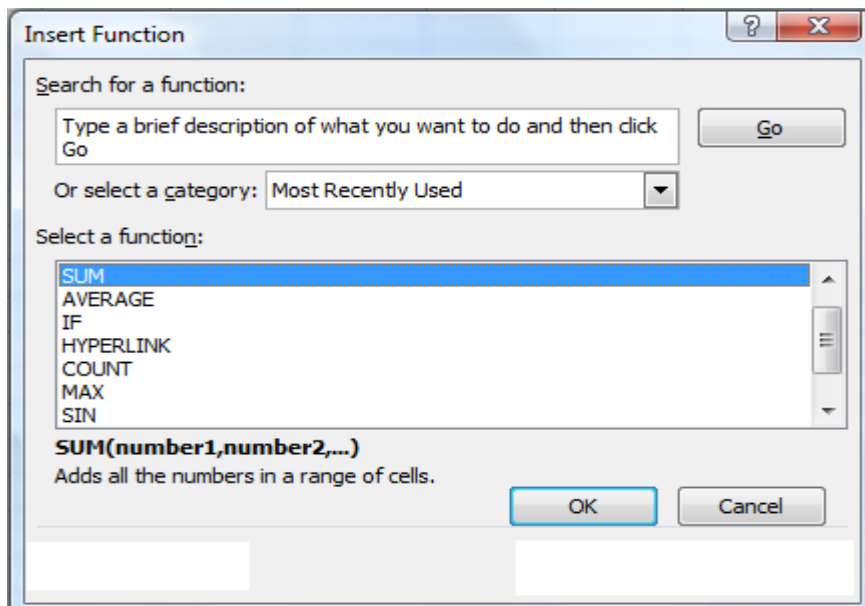
To use in-built functions enter the data to prepare mark list of the I- B.Sc.(Agriculture) students in the spreadsheet.

	A	B	C	D	E
1	I-B.Sc.(Agri.) Mid Semester Mark List				
2	Name	STAM101 Mark	STAM102 Mark	AGR101 Mark	PBG101 Mark
3	Angaleeswari	87	85	86	84
4	Bharathi Raja	92	94	96	97
5	Covardhanan	73	90	64	58
6	Dananjayen	54	58	60	63
7	Elevanthan	78	76	77	75
8	Gayathri	66	56	57	86
9	Hariprasad	61	65	66	64

- Using the in-built function SUM() we can calculate the total scored by each and every student in I-B. Sc. (Agri.).
- Add Total column in the spreadsheet as shown below:

	A	B	C	D	E	F
1	I-B.Sc.(Agri.) Mid Semester Mark List					
2	Name	STAM101 Mark	STAM102 Mark	AGR101 Mark	PBG101 Mark	Total
3	Angaleeswari	87	85	86	84	
4	Bharathi Raja	92	94	96	97	
5	Covardhanan	73	90	64	58	
6	Dananjayen	54	58	60	63	
7	Elevanthan	78	76	77	75	
8	Gayathri	66	56	57	86	
9	Hariprasad	61	65	66	64	

- Place the mouse pointer in the cell with the address F3
- The F3 cell is the one which should display the total mark scored by the student namely Angaleeswari in the above example.
- Click on Insert Menu → Function
- or Select f_x in the Formula bar
- Insert Function dialog box will get displayed as shown below:



- Select SUM function and click OK button in the Insert Function dialog box.
- The function Argument dialog box will be displayed with the automatically assumed range of cells to be added(B3 to E3)

	A	B	C	D	E	F	G	H	I	J	K	L	
1	I-B.Sc.(Agri.) Mid Semester Mark List												
2	Name	STAM101 Mark	STAM102 Mark	AGR101 Mark	PBG101 Mark	Total							
3	Angaleeswari	87	85	86	84	=SUM(B3:E3)							
4	Bharathi Raja	92	94	96	97								
5	Covardhanan	73	90										
6	Dananjayen	54	58										
7	Elevanathan	78	76										
8	Gayathri	66	56										
9	Hariprasad	61	65										
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
21													

Function Arguments

SUM

Number1: = {87,85,86,84}

Number2: = number

= 342

Adds all the numbers in a range of cells.

Number1: number1,number2,... are 1 to 255 numbers to sum. Logical values and text are ignored in cells, included if typed as arguments.

Formula result = 342

[Help on this function](#)

OK Cancel

- Click OK. The result is displayed as shown. We can even choose the range of cells added manually.

	A	B	C	D	E	F
1	I-B.Sc.(Agri.) Mid Semester Mark List					
2	Name	STAM101 Mark	STAM102 Mark	AGR101 Mark	PBG101 Mark	Total
3	Angaleeswari	87	85	86	84	342
4	Bharathi Raja	92	94	96	97	
5	Covardhanan	73	90	64	58	
6	Dananjayen	54	58	60	63	
7	Elevanathan	78	76	77	75	
8	Gayathri	66	56	57	86	
9	Hariprasad	61	65	66	64	

- The total marks scored by the other students have to added in the same way by making use of the SUM() function.
- Instead entering the same function for all the students in the example we can copy the formula to the cells in the total column to add B4:E4, B5:E5, B6:E6 and so on.
- When we copy the SUM() function formula from the cell F3 to F4 the SUM function will automatically taking the input range of numbers to be added is B4:E4.
- The same is applicable to the rest of the cells in the total column.
- To copy down the formula place the mouse pointer at the bottom right corner of the cell F3.

- The mouse pointer now automatically changes into + symbol.
- Now drag + symbol down the cells in the Total column.
- We can see the total marks of all the students in the example as shown below.

	A	B	C	D	E	F
1	I-B.Sc.(Agri.) Mid Semester Mark List					
2	Name	STAM101 Mark	STAM102 Mark	AGR101 Mark	PBG101 Mark	Total
3	Angaleeswari	87	85	86	84	342
4	Bharathi Raja	92	94	96	97	379
5	Covardhanan	73	90	64	58	285
6	Dananjayen	54	58	60	63	235
7	Elevanthan	78	76	77	75	306
8	Gayathri	66	56	57	86	265
9	Hariprasad	61	65	66	64	256

Use of in-built function AVERAGE()

- To calculate the average marks scored by the students in the example we can make use of average function AVERAGE().
- Enter Average column in the spreadsheet.
- Place the mouse pointer in the cell with the address G3
- The F3 cell is the one which should display the total mark scored by the student namely Angaleeswari in the above example.
- Click on Insert Menu → Function
- or Select f_x in the Formula bar
- Insert Function dialog box will get displayed as shown below. Choose AVERAGE() function and click OK.

	A	B	C	D	E	F	G	H	I	J	K
1	I-B.Sc.(Agri.) Mid Semester Mark List										
2	Name	STAM101 Mark	STAM102 Mark	AGR101 Mark	PBG101 Mark	Total	Average				
3	Angaleeswari	87	85	86	84	342	=				
4	Bharathi Raja	92	94	96							
5	Covardhanan	73	90	64							
6	Dananjayen	54	58	60							
7	Elevanthan	78	76	77							
8	Gayathri	66	56	57							
9	Hariprasad	61	65	66							
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22											

Insert Function

Search for a function:

Type a brief description of what you want to do and then click Go

Or select a category: Most Recently Used

Select a function:

- SUM
- AVERAGE**
- IF
- HYPERLINK
- COUNT
- MAX
- SIN

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

[Help on this function](#)

OK Cancel

- Click OK button in the Insert Function dialog box.
- In the Function Argument dialog box enter F3/4 then click OK button. The average scored is displayed.

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	I-B.Sc.(Agri.) Mid Semester Mark List												
2	Name	STAM101 Mark	STAM102 Mark	AGR101 Mark	PBG101 Mark	Total	Average						
3	Angaleeswari	87	85	86	84	342	=E(F3/4)						
4	Bharathi Raja	92	94	96	97	379							
5	Covardhanan	73	90										
6	Dananjayen	54	58										
7	Elevanthan	78	76										
8	Gayathri	66	56										
9	Hariprasad	61	65										
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22													

Function Arguments

AVERAGE

Number1: F3/4 = 85.5

Number2: = number

= 85.5

Returns the average (arithmetic mean) of its arguments, which can be numbers or names, arrays, or references that contain numbers.

Number1: number1,number2,... are 1 to 255 numeric arguments for which you want the average.

Formula result = 85.5

[Help on this function](#)


OK Cancel

- Copy the AVERAGE formula as we copied the SUM().

	A	B	C	D	E	F	G
1	I-B.Sc.(Agri.) Mid Semester Mark List						
2	Name	STAM101 Mark	STAM102 Mark	AGR101 Mark	PBG101 Mark	Total	Average
3	Angaleeswari	87	85	86	84	342	85.5
4	Bharathi Raja	92	94	96	97	379	94.75
5	Covardhanan	73	90	64	58	285	71.25
6	Dananjayen	54	58	60	63	235	58.75
7	Elevanthan	78	76	77	75	306	76.5
8	Gayathri	66	56	57	86	265	66.25
9	Hariprasad	61	65	66	64	256	64

Writing Expressions

- The total marks can be calculated by writing expressions.
- Place the cursor the cell F3.
- To enter expression, enter the equal sign first.

AVERAGE  =							
	A	B	C	D	E	F	G
1	I-B.Sc.(Agri.) Mid Semester Mark List						
2	Name	STAM101 Mark	STAM102 Mark	AGR101 Mark	PBG101 Mark	Total	Average
3	Angaleeswari	87	85	86	84	=	
4	Bharathi Raja	92	94	96	97		
5	Covardhanan	73	90	64	58		
6	Dananjayen	54	58	60	63		
7	Elevanthan	78	76	77	75		
8	Gayathri	66	56	57	86		
9	Hariprasad	61	65	66	64		

- Choose the cells with the cursor as shown

	A	B	C	D	E	F	G
1	I-B.Sc.(Agri.) Mid Semester Mark List						
2	Name	STAM101 Mark	STAM102 Mark	AGR101 Mark	PBG101 Mark	Total	Average
3	Angaleeswari	87	85	86	84	=B3+C3+D3+E3	
4	Bharathi Raja	92	94	96	97		
5	Covardhanan	73	90	64	58		
6	Dananjayen	54	58	60	63		
7	Elevanthan	78	76	77	75		
8	Gayathri	66	56	57	86		
9	Hariprasad	61	65	66	64		

- Press enter. The result will be displayed in F3. Copy the expression down the Total column to find the total mark scored by all the students in the example.
- To calculate the averages place the G3.
- Enter the equal sign first in the cell G3.
- Enter F3/4 which is the average to be calculated.

	A	B	C	D	E	F	G
1	I-B.Sc.(Agri.) Mid Semester Mark List						
2	Name	STAM101 Mark	STAM102 Mark	AGR101 Mark	PBG101 Mark	Total	Average
3	Angaleeswari	87	85	86	84	342	=F3/4
4	Bharathi Raja	92	94	96	97	379	
5	Covardhanan	73	90	64	58	285	
6	Dananjayen	54	58	60	63	235	
7	Elevanathan	78	76	77	75	306	
8	Gayathri	66	56	57	86	265	
9	Hariprasad	61	65	66	64	256	

- Press enter. The average will be displayed. Copy the expression down the cells in the Average column to calculate the rest of the averages.

	A	B	C	D	E	F	G
1	I-B.Sc.(Agri.) Mid Semester Mark List						
2	Name	STAM101 Mark	STAM102 Mark	AGR101 Mark	PBG101 Mark	Total	Average
3	Angaleeswari	87	85	86	84	342	85.5
4	Bharathi Raja	92	94	96	97	379	94.75
5	Covardhanan	73	90	64	58	285	71.25
6	Dananjayen	54	58	60	63	235	58.75
7	Elevanathan	78	76	77	75	306	76.5
8	Gayathri	66	56	57	86	265	66.25
9	Hariprasad	61	65	66	64	256	64