

MODULE III

ADVANCED MS-EXCEL

6

Advanced Microsoft Excel – Functions

SOME MORE FUNCTIONS IN EXCEL

We have already studied a few functions in Excel in previous chapter. In this chapter we study a few more functions that are extremely useful for commercial applications. At the end of this chapter, you will be able to :

- Use functions for working with date and time.
- Use statistical functions.

DATE & TIME FUNCTIONS

Excel treats date and time as numbers. Excel provides many functions dealing with date and time. Let us see some of these functions :

TODAY

Purpose : Returns the current date (i.e., system date)

Syntax : TODAY()

Arguments : None

Example : = TODAY(), (in mm/dd/yyyy format)

Output : 10/15/2013 (Assume this is today's date, as per the computer system)

Example : = TODAY() + 1

Output : 10/16/2013

Example : = TODAY() - 7

Output : 10/8/2013

NOW

Purpose : Returns the current date and time

Syntax : NOW()

Arguments : None

Example : = NOW(),

Output : 10/15/2013 11:23

DATE

Purpose : Displays a date based on its three arguments.

Syntax : DATE(year, month, day)

Example : = DATE(2013,10,04), will display the date as October 4, 2013 or 4-Oct-2013, depending on the cell formatting.

Example : = DATE(2013,23,25)

Output : 11/25/2014

Since we have put month as 23, it will be treated as month 11 of next year, (23 = 11 + 12)

TIME

Purpose : Returns the particular time in hh:mm AM/PM form.

Syntax : TIME(hours, minutes, seconds).

Example : =TIME(15, 12,35)

Output : 3:12 PM

Example : =TIME(25,0,0)

Output : 1:00 AM

Since we have given hours as 25, it will be converted as follows : 25 - 24 = 1

DAY

Purpose : Returns the day of the month for a date. This will be a value between 1 and 31

Syntax : DAY(serial number).

Example : =DAY("3/1/2013") returns the value 3.

Example : =DAY(TODAY()) will return, for example, 25, if today's date is Oct 25, 2013

WEEKDAY

Purpose : Returns the day of the week for a date.

Syntax : WEEKDAY(date, return_type)

Return_type is a number that determines the type of return value

Returns type number returned

1 or omitted number 1 (Sunday) through 7(Saturday)

2 number 1 (Monday) through 7(Sunday)

3 number 0 (Monday) through 6(Sunday)

Examples : (assuming dd/mm/yyyy format)

= WEEKDAY("12/10/2013", 1) will display 7 (Saturday)

If you get the error message #VALUE!, it means that the system is set for dd/mm/yyyy format but you have entered the date in mm/dd/yyyy format.

DAYS360

Purpose : Returns the number of days between two dates based on a 360-day year (twelve 30-day months), which is used in some accounting calculations.

Syntax : DAYS360(start_date, end_date, method). Usually, the argument for method can be omitted.

Example : =DAYS360("1/1/1990", "1/1/2000") returns the value 3600

Example : =DAYS360("01/01/2013", "25/10/2013") returns the value 294

MONTH

Purpose : Returns the month corresponding to the date

Syntax : MONTH(date)

Example : =MONTH("3/4/2013") returns the value 4 corresponding to the 4th month (April).

Example : =MONTH("08-JULY-1960") returns the value 7 corresponding to the month of July.

YEAR

Purpose : Returns the year corresponding to serial number or data text. The year is given as an integer.

Syntax : YEAR(serial_number)

Examples :

= YEAR("12/25/2013") will display 2013

= YEAR(TODAY()) will display 2013 if today's date is 25-Oct-2013

STATISTICAL FUNCTIONS

COUNTA

Purpose : This function counts the number of cells that are not empty and the values within the list of arguments. It is used to count the number of cells that contain data in a range.

Syntax : COUNTA (value1,value2,...). Here, value, value2,... are values that we want to count.

Examples : Consider part of a worksheet as shown below:

In cell A15, we have used the formula =COUNTA(A2:A14). This returns the value 8 as there are 8 non-empty cells in the range A2:A14.

	A
1	Name
2	Amita
3	Pooja
4	
5	Sneha
6	Prerana
7	
8	Deepa
9	Manju
10	
11	Geeta
12	
13	Seema
14	
15	8

Fig. 6.1 :

COUNTBLANK

Purpose : This function counts the number of empty cells within a range.

Syntax : COUNTBLANK(range).

Examples : Consider part of a worksheet as shown below:

In cell A16, we have used the formula =COUNTBLANK(A2:A14). This returns the value 5 as there are 5 non-empty cells in the range A2:A14.

	A
1	Name
2	Amita
3	Pooja
4	
5	Sneha
6	Prerana
7	
8	Deepa
9	Manju
10	
11	Geeta
12	
13	Seema
14	
15	8
16	5

Fig. 6.2

CORREL

Purpose : This function returns the correlation coefficient of two ranges. Use the correlation coefficient to determine the relationship between two properties.

Syntax : CORREL(array1,array2)

Array1 is a range of values.

Array2 is another range of values.

Examples : Consider part of a worksheet as shown below :

	A	B	C	D	E	F	G
1	Data1	Data2					
2	3	9					
3	2	7					
4	4	12					
5	5	15					
6	6	17					
7							
8	0.997054	Correlation coefficient of the two data sets above (0.997054)					

Fig. 6.3

Cell A8 contains the formula =CORREL(A2:A6, B2:B6). The result of this is shown in cell A8.

LARGE

Purpose : This function returns the k-th largest value in a data set. This function can be used to select the first, second, third, or say, the 10th position in a list of numbers.

Syntax : LARGE (array, k)

Examples : Consider part of a worksheet as shown below:

Cells A2 to A9 contain the data. In cell A10, we have used the formula =LARGE(A2:A9, 1). This returns the largest value (1 = "first", i.e. maximum value) in the range. In cell A11, the formula is =LARGE(A2:A9, 2); this returns the value 16 as it is the second largest number. Can you guess what formula is used in cell A12?

	A	B	C	D
1	Data1			
2	3			
3	2			
4	4			
5	5			
6	6			
7	21			
8	13			
9	16			
10	21 <--- Largest no			
11	16 <--- Second largest no			
12	6 <--- Fourth largest no			

Fig. 6.4

Remember, in the formula, k should always be greater than zero.

SMALL

Purpose : This function returns the k-th smallest value in a data set.

Syntax : SMALL (array, k)

Examples : Consider part of a worksheet as shown below:

Cell A10 has the formula =SMALL(A2:A9, 1). It returns the smallest number in the range A2:A9. Cell A11 contains the formula =SMALL(A2:A9, 2) and it gives the second smallest number. Can you guess what formula is used in cell A12?

	A	B	C	D
1	Data1			
2	3			
3	2			
4	4			
5	5			
6	6			
7	21			
8	13			
9	16			
10	2 <--- Smallest no			
11	3 <--- Second smallest no			
12	21 <--- guess the formula			

Fig. 6.5

OBJECTIVE QUESTIONS

- I. State whether the following are true or false :
 1. NOW() function returns only the current system time.
 2. WEEKDAY() returns the day of the week such as "Sun", "Mon", etc
 3. COUNTA and COUNTBLANK functions applied over a range, will always return the same value.