

# Microsoft Excel Functions



Microsoft  
Office Exc...

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## What is Microsoft Excel?

Ms excel is an excellent program which is used for accounting and calculation.

⇒ Accounting (rules and condition)

⇒ Excel depends on functions and formulas.

## How to open Microsoft Excel?

### Step 1

Start ORB or Start Menu → All Programs → Microsoft Office → Microsoft Excel

### Step 2

Run → type the code → EXCEL → Press Enter

### Step 3

Start ORB or Start Menu → All Programs → Microsoft Office → Right click on Microsoft excel → Properties → General Tab

Give A\_Z or 1\_9 in Shortcut key → press ok

**Example:** - I give "E" letter it will become as Ctr+Alt+W shortcut for Excel.\

## Microsoft Excel Environment:

1. Title bar
  - a. Caption Buttons (Close, Restore Down/Maximize, Minimize)
  - b. Office Button
2. Quick Access Toolbar
3. Ribbons
  - a. Sub grouped command
  - b. Ribbon Dialog Launcher
4. Name Box
5. Formula bar
6. Rows and Column
7. Workbook
8. Worksheet
9. Vertical Horizontal Scroll Bars
10. Zoom Slide Bar
11. Page Layout Sections
12. Status bar

## What is workbook?

Workbook is the collection of worksheets.

There are three worksheets in a single workbook.

We can take 256 sheets in a single workbook.

## How to get many sheets?

1. Office button → Excel options → Popular → include this many sheets → give the number of sheets → OK

## What is worksheet?

⇒ Active worksheet

⇒ Spread sheet

⇒ Electronic spread sheets

⇒ Sheets

Worksheet is the collection of rows and columns.

## What is Row?

⇒ Rows are collection of horizontal cells.

⇒ There are 1048576 rows in a single worksheet.

## What is Column?

⇒ Columns are collection of vertical cells.

⇒ There are 16384 columns in a single worksheet.

## How to change column text to number?

1. Office button → excel options → formulas → check on R1C1 reference style → OK
- ⇒ To go last row (CTR + Arrow DOWN key)
- ⇒ To go first row (CTR + Arrow UP key)
- ⇒ To go last column (CTR + Arrow RIGHT key)
- ⇒ To go first column (CTR + Arrow LEFT key)

## Rows and Column heading:

The rows and column heading is called rows and columns heading.

⇒ Column heading are shown with alphabet letters e.g. (A B C D E F....)

⇒ Rows heading are shown with Numeric letters e.g. (1 2 3 4 5 6 7...)

## What is Function?

Function is the collection of special characters, which perform a special task, is called function.

There are two types of functions:

⇒ Internal functions

⇒ External functions

1. **Internal functions:** - Those functions, which are installed with Microsoft excel is called internal functions.

**Example:** - Microsoft excels formulas ribbon functions.

2. **External Functions:** - Those functions, which are come from another sources.

**Example:** - Internet download, CD, Made by a user or programmer.

**Programmer means someone who creating the software and do coding.**

## What is formula?

When two or more than two internal functions combined with each other and makes a new function is called formula.

## What is Name Box?

Name box shows row and column headings.

## Excel Calculation:

We can do calculation by two methods.

⇒ Direct Method

We did calculation like this:

In this method with the value of cells

**=value (operation) value (result)**

**Example:** -  $=900+800=1700$

|   | A       | B                              |
|---|---------|--------------------------------|
| 1 | Name    | Salary                         |
| 2 | Ab.Hai  | 1000                           |
| 3 | Mahmoud | 1300                           |
| 4 | Total   | <b><math>=1000+1300</math></b> |

**⇒ Indirect Method**

In this method we use cell references instead of cell value.

|   | A       | B      | C |
|---|---------|--------|---|
| 1 | Name    | Salary |   |
| 2 | Ab.Hai  | 1000   |   |
| 3 | Mahmoud | 1300   |   |
| 4 | Total   | =B2+B3 |   |
| 5 |         |        |   |
| 6 |         |        |   |

**Some useful shortcuts of excel:**

1. Drag Shortcut (CTR + D)
2. Date Shortcut (CTR + ;) )
3. Time Shortcut (CTR + SHF + ;) )
4. To test the text `{=istext(select any cell or cells)}`
5. To test the number `{=isnumber(select any cell or cells)}`
6. To select Column (CTR + Spacebar)
7. To select Row (SHFT + Spacebar)
8. Row or Column inserting (CTR + SHFT ++)
9. Row or Column Deleting (CTR + -)
10. Row Hide (CTR + 9)
11. Row unhide (CTR + SHFT + 9)
12. Column Hide (CTR + 0)
13. Column Unhide (CTR + SHFT + 0)
14. Sum (ALT + ==)

**Some official functions:**

1. **Sum:** - To add some values in excel sheet.
2. **Count:** - To count the numbers only in excel sheet.
3. **Average:** - This function is used to find the average of some values.
4. **Max:** - This function is used to find the maximum value.
5. **Min:** - This function is used to find the minimum value.

**What is Array?**

A collection of same indexes having same properties.

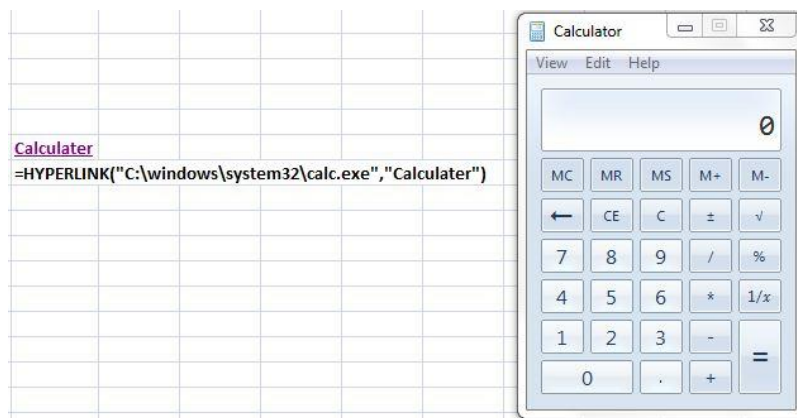
**What is pivot table?**

This command is used to solve a very complex data in a second.

**If hyperlink command is disabled then a user should use the following function:**

**⇒ =hyperlink("the path or location of the file you want make link with","give a name for the link you bring in excel sheet)**

**Example:** - I want to make hyperlink calculator in my excel sheet.



**In excel sheet a single A4 page rows and column:**

Rows: (1-50)

Column: (A-I)

**Note:** In excel portrait page can be used 1% and landscape page can be used 99%.

**E.g:** Attendance sheet, salary sheet, budget sheet

Normally A4 or letter pages are used as portrait

And A6 or legal pages are used as landscape

Tabloid pages and trucker page used for bails or bailing.

**Note:** - In excel function while we give a value we should put it in "Value" format e.g. "zaland"

And if we want to give number we should type that directly. E.g. 69099

## FORMULAS RIBBON



## Some Official Functions:

1. **Sum:** this formula is used to add some values in excel sheet.

Structure is: =sum(select any cells)→press enter or Alt+=+=

2. **Count:** this function is used to count numbers only.
3. **Average:** This function is used to find average of some values.
4. **Max:** This function is used to find the maximum value.
5. **Min:** This function is used to find the minimum value.

**For text in conditional formatting:** =istext(select cells)

**For number in conditional formatting:** =isnumber(select cells)

**What is array?** A collection of same indexes having the same properties is called array.

**Pivot table:** pivot table command is used to calculate a very complex and complicated data inside seconds.

1. We bring name into row labels
2. Bring salary into values
3. Put the other into posts

**What is table?** Table command is used to make a calculation very easier.

When hyperlink is disabled, we use hyperlink function:

=hyperlink("c:\windows\system32\calc.exe",calc")

## What is Function?

Function is the collection of special characters, which perform a special task is called function.

**There are two types of functions:**

⇒ Internal functions

⇒ External functions

1. **Internal functions:** - Those functions, which are installed with Microsoft excel is called internal functions.  
**Example:** - Microsoft excel's formulas ribbon functions.
2. **External Functions:** - Those functions, which are come from another sources.  
**Example:** - Internet download, CD, Made by a user or programmer.



## What is formula?

When two or more than two internal functions combined with each other and makes a new function is called formula.

### Internal function Groups:

1. Text Functions
2. Logical Functions
3. Financial Functions
4. Database Functions
5. Statistical Functions
6. Date and Time Functions
7. Mathematic Functions
8. Engineering Functions
9. Information Functions

### Statistical functions:

➤ Those function which are related to statistics are called statistical functions.

1. Countblank
2. Hyperlink
3. Large
4. Small
5. Sumif
6. Countif

### What is countblank function?

➤ It is a statistical function which is used to count the blank cells in excel sheet.

Its formula is: =countblank(select cells range)→press enter button

### What is hyperlink function?

➤ Hyperlink is a statistical function which is used to link other data or program in excel sheet.

For calculator we are using the following formula:

=hyperlink("c:\windows\system32\calc.exe","calc")→press enter

## What is small function?

- Small is a statistical function which is used to show the smallest value in a range.

Its formula is: =small(select cells range,1,2,3,4,5.....)→press enter

## What is large function?

- Large is statistical function which is used to show the large value in excel sheet.

Its formula is: =large(select cells range,1,2,3,4,5,.....)→press enter

## What is Sumif function?

- This function is used to count the values conditionally.

Its formula is: =sumif(select item range,"item name",sale range)→enter

### Example:

| <i>Item name</i> | <i>Sale</i> |
|------------------|-------------|
| Computer         | 2300        |
| Computer         | 25300       |
| Mouse            | 34340       |
| Computer         | 34000       |
| Mouse            | 56000       |
| computer         | 54450       |

## What is countif functions?

- Countif is a statistical function which is used to count the values conditionally.

| <i>Item name</i> | <i>Sale</i> |
|------------------|-------------|
| Computer         | 2300        |
| Computer         | 25300       |
| Mouse            | 34340       |
| Computer         | 34000       |
| Mouse            | 56000       |
| computer         | 54450       |

Its formula is: =countif(select item range,"item") → press enter button

## 1. Text Functions:

Those functions which are related to text are called text functions.

Examples:

- |                |          |               |
|----------------|----------|---------------|
| A. Upper       | G. Text  | M. Code       |
| B. Lower       | H. Right | N. Len        |
| C. Trim        | I. Left  | O. Clean      |
| D. Proper      | J. Mid   | P. Substitute |
| E. Concatenate | K. Value |               |
| F. Rept        | L. Char  |               |

1. **Upper:** - It makes all characters capital.

| UPPER Function Simple   |                         |
|-------------------------|-------------------------|
| DATA                    | I love afghanistan      |
| APPLY FUCNTION          | =UPPER(select any cell) |
| AFTER APPLYING FUNCTION | I LOVE AFGHANISTAN      |

2. **Lower:** - It makes all characters small.

| LOWER Function Simple   |                         |
|-------------------------|-------------------------|
| DATA                    | I LOVE AFGHANISTAN      |
| APPLY FUCNTION          | =LOWER(select any cell) |
| AFTER APPLYING FUNCTION | i love afghanistan      |

3. **Proper:** - This function is used to make each word first character capital in a sentence.

| PROPER Function Simple  |                                   |
|-------------------------|-----------------------------------|
| DATA                    | zia institute of computer science |
| APPLY FUCNTION          | PROPER(select any cell)           |
| AFTER APPLYING FUNCTION | Zia Institute Of Computer Science |

4. **Trim:** - It is used to remove the extra space any sentence.

| TRIM Function Simple    |                              |
|-------------------------|------------------------------|
| DATA                    | Hello                  World |
| APPLY FUCNTION          | =TRIM(select any cell)       |
| AFTER APPLYING FUNCTION | Hello World                  |

5. Text: - It is used to convert the number formatted Date to text formatted date.

| TEXT Function Simple             |  |
|----------------------------------|--|
| DATA                             | 4/11/2013                                |
| APPLY FUCNTION                   | =TEXT(select date cell,"DDDD-MMMM-YYYY") |
| AFTER APPLYING FUNCTION          | Thursday-April-2013                      |
| Only take day from a date cell   |  |
| DATA                             | 4/11/2013                                |
| APPLY FUCNTION                   | =TEXT(select date cell,"DDDD")           |
| AFTER APPLYING FUNCTION          | Thursday                                 |
| Only take month from a date cell |  |
| DATA                             | 4/11/2013                                |
| APPLY FUCNTION                   | =TEXT(select date cell,"MMMM")           |
| AFTER APPLYING FUNCTION          | April                                    |
| Only take year from a date cell  |  |
| DATA                             | 4/11/2013                                |
| APPLY FUCNTION                   | =TEXT(select date cell,"YYYY")           |
| AFTER APPLYING FUNCTION          | 2013                                     |



6. Rept: - Is used to repeat a value in excel sheet.

| REPT Function Simple    |  |
|-------------------------|--|
| DATA                    | *((( )))*  |
| APPLY FUCNTION          | =REPT(select cell of value,AMOUNT OF REPEATATION e.g 5)<br>OR<br>=REPT("GIVE VALUE",amount of repeation e.g 5) |
| AFTER APPLYING FUNCTION | *((( )))**((( )))**((( )))**((( )))**((( )))*  |

7. Value: - This function is used to convert the number stored as text to number format.

| VALUE Function Simple |  |                         |
|-----------------------|--|-------------------------|
|                       | Data   | AFTER APPLYING FUNCTION |
|                       | 1  | 1                       |
|                       | 2  | 2                       |
|                       | 3  | 3                       |
|                       | 4  | 4                       |
|                       | 5  | 5                       |
| TOTAL                 | 0  | 15                      |
| APPLY FUCNTION        | =VALUE(select any cell of number that stored as text |                         |

8. Clean: - This function is used to clean the comment from any text in a cell.

| CLEAN Function Simple   |  |
|-------------------------|--|
| DATA                    | I am studying in ZICS                              |
| APPLY FUCNTION          | =CLEAN(select any cell on which comment is applied |
| AFTER APPLYING FUNCTION | I am studying in ZICS                              |

Zaland  
Al nasrat

9. Len: - Length function is used to count the number of characters and spaces in a cell.

| LEN Function Simple     |  |
|-------------------------|--|
| DATA                    | Welcome to Excel Class                               |
| APPLY FUCNTION          | =LEN(select any cell you want to apply LEN function) |
| AFTER APPLYING FUNCTION | 22   |

10. Char: - This function is used to find the character of any letter (in code form).

| CHAR Function Simple    |  |
|-------------------------|--|
| DATA                    | 77   |
| APPLY FUCNTION          | =CHAR(select any cell that contain code of letter) |
| AFTER APPLYING FUNCTION | M  |

11. Right, Left, Mid: - These function is used to take characters from Right, Left and Middle position of any word in cell.

| RIGHT Funtion Simple    |  |
|-------------------------|--|
| DATA                    | AFGHANISTAN  |
| APPLY FUCNTION          | =RIGHT(select any cell,amount of chracter want take e.g 3                    |
| AFTER APPLYING FUNCTION | TAN  |
| LEFT Funtion Simple     |  |
| DATA                    | AFGHANISTAN  |
| APPLY FUCNTION          | =LEFT(select any cell,amount of chracter want take e.g 3                     |
| AFTER APPLYING FUNCTION | AFG  |
| MID Funtion Simple      |  |
| DATA                    | AFGHANISTAN  |
| APPLY FUCNTION          | =MID(select any cell,start number e.g. 4, amount of chracter want take e.g 3 |
| AFTER APPLYING FUNCTION | HAN  |

12. Code: - This function is used to show the code of any character.

| CODE Function Simple    |  |
|-------------------------|--|
| DATA                    | M  |
| APPLY FUCNTION          | =CODE(select any cell ) OR =CODE("Chracter") e.g M |
| AFTER APPLYING FUNCTION | 77   |

13. Substitute: - This function is used to replace a full word with another word in a sentence.

| SUBSTITUTE Function Simple |   |
|----------------------------|---|
| DATA                       | I am studying DEL   |
| APPLY FUCNTION             | =SUBSTITUTE(select any cell you want to apply substitute,"old text","new text") |
| AFTER APPLYING FUNCTION    | I am studying DIT   |

14. Concatenate: - This function is used to combine two or more than two cells value with each other.

| SUBSTITUTE Function Simple |  |
|----------------------------|--|
| DATA                       | Ab.Hai is studying DIT.<br>I am studying DEL       |
| APPLY FUCNTION             | =CONCATENATE(select first cell,select second cell) |
| AFTER APPLYING FUNCTION    | Ab.Hai is studying DIT. I am studying DEL          |

## 2. Logical Functions:

Those functions which are related to logics are called logical functions.

Logical functions are:

- A. IF Functions
- B. AND Functions
- C. OR Functions
- D. NOT Functions

**1. IF Functions:** -That kind of Functions, which are used to check condition or conditions.

### We have three kinds of IF Functions:

- A. Simple IF Function
- B. Nested IF Function
- C. Compound IF Function

**A. Simple IF Function:** -That kind of IF Function, which is checks only one condition.

| Simple IF Function Example |   |
|----------------------------|---|
| DATA                       | AFTER APPLYING FUNCTION   |
| enter your age             | Result  |
| 51                         | you are aged  |
| 50                         | FALSE   |
| 100                        | you are aged  |
| APPLY FUNCTION             | e.g<br>=IF(select any cell>=<Number,"put your message for first condition")<br>=IF(select any cell>50,"you are aged") |

**B. Nested IF Function:** - That kind of IF Function which checks two or more than two conditions.

| Nested IF Function Example |   |
|----------------------------|---|
| DATA                       | AFTER APPLYING FUNCTION   |
| enter your age             | Result  |
| 51                         | you are aged  |
| 50                         | your are young  |
| 19                         | your are young  |
| APPLY FUNCTION             | e.g<br>=IF(select any cell>=<Number,"put your message for first condition","put your message for second condition")<br>=IF(select any cell>50,"you are aged","you are young") |

| CHECK PASS FAIL THROUGH NESTED IF FUNCTION |        |       |         |   |  |  |  |
|--|--------|-------|---------|---|--|--|--|
| DATA                                       |        |       |         | AFTER APPLY FUNCTION  |  |  |  |
| NAME                                       | OBTAIN | TOTAL | PERCENT | RESULT  |  |  |  |
| MAHMOUD                                    | 833    | 850   | 98      | PASS  |  |  |  |
| AB.HAI                                     | 810    | 850   | 95      | PASS  |  |  |  |
| ALI  | 750    | 850   | 88      | PASS  |  |  |  |
| EHSAN                                      | 580    | 850   | 68      | FAIL  |  |  |  |
|  |        |       |         | =IF(select percentage cell>=<Number,"put your message for first condition","put your message for second condition") |  |  |  |
| <b>APPLY FUNCTION</b>                      |        |       |         | <b>E.g.</b>   |  |  |  |
|  |        |       |         | =IF(select percentage cell>70,"PASS","FAIL")  |  |  |  |

**C. Compound IF Function:** - When other function combines with if function and makes condition is called compound IF Function.

**2. AND Function:** - Is a logical function, which is used to check two or more than two conditions at the same time.

**3. OR Function:** - This function is same as AND function but there is not restriction either on condition will be true the whole result will be true.

**4. NOT function:** - Is a logical function makes opposite each condition.

Database Functions:

Those functions, which are related to database is called database functions.

## What is database?

Is a place where we store the data is called database.

Data base functions are: Dget, Dsum, Dmin, Dmax, Dcount, Dcounta, Dproduct, Daverage

- Dget:** - This function is used to search or find the data from data base.
- Dsum:** - This function is used to search or find summation or total of sum values conditionally.
- Dmin:** - This function is used to find the minimum numbers conditionally.
- Dmax:** - This function is used to find the maximum numbers conditionally.
- Dcount:** - This function is used to count the numbers conditionally.
- Dcounta:** - This function is used to count the numbers as well as text conditionally.
- Dproduct:** - This function is used to find the multiplication of values conditionally.
- Daverage:** - This function is used to find the average of some values conditionally.



## Financial functions:

- Those function which are related to finance or banking are called financial functions.
- Most financial function are related to loan.

### Types of financial functions:

1. Pmt
2. Rate
3. Nper
4. Pv
5. Ppmt
6. Pnper
7. Balancing
8. Loan amortized
9. Loan amortization table and process
10. Sln
11. Db
12. Ddb

### What is PMT function?

- Pmt is a financial function that means payment to bank or loan returning to bank.
  - Rate
  - Nper
  - Pv

Its applying method is:

1. First take some sort of rate → (interest)
2. Then nper → (Number of period)
3. At the end PV → (present value or loan).
4. Then type: =pmt(select rate cell,select npre cell,select PV cell) → enter
5. You are going to get the annual amount of payment.

We can also get the monthly amount of loan payment:

- ❖ =pmt(rate\*12,nper\*12,-pv)
- ❖ The monthly amount is going to be gotten

## How to find the interest?

Per year interest amount:

- $=pv \times \text{rate}$  or  $PV \times 6/100$

## How To Find Per Month Interest?

- Per year interest/12
- The targeted interest is going to be given

## How to find the loan?

- Per mount payment-per mount interest

## What is rate function?

- Rate is a financial function which is used to find the interest of a given PMT (Payment).
1. Nper=4
  2. Pmt= 7,214.79
  3. Pv= 25000\$
  4. Rate=?

Its function is:  $=\text{rate}(\text{select nper cell}, \text{select PMT cell}, \text{select PV cell}) \rightarrow$  press enter button

## What is PV function?

- PV is a financial function which is used to find the given PMT (payment).
- Rate= 6%
- NPER= 4
- PMT= 7,214.79
- Pv=?

Its function is:  $=\text{pv}(\text{select rate cell}, \text{select nper cell}, \text{select pmt cell}) \rightarrow$  enter button.

## What is Nper function?

- Nper is a financial function which is used to find the numbers of years of a given PMT.
- Rate=6%
- Pmt= 7,214.79
- Pv=25000\$

Its function is:  $=\text{nper}(\text{select rate cell}, \text{select pmt cell}, \text{select pv cell}) \rightarrow$  press enter

Mostly financial functions related to loan.

**Example: -**

PMT, RATE, NPER, PV, PPMT, PNPV, BALANCING, Loan Amortized amount, Loan Amortization table and process, SLN, DB, DDB.

1. **PMT Financial function:** - Means payment to bank or loan return to bank.

| PMT Function Simple                      |                         |
|--|-------------------------|
| Function                                 | Meaning                 |
| Rate                                     | interest                |
| Nper                                     | Number of period (year) |
| PV                                       | Present Value or (Loan) |
| Example of PMT Financial function        |                         |
| if some one take \$ 25000 loan from bank |                         |
| Rate                                     | 6%                      |
| Nper                                     | 4                       |
| PV                                       | 25000                   |
| <b>PMT</b>                               | (\$7,214.79)            |
|  | =pmt(Rate,Nper,PV)      |

## date & time functions:

those functions which are related to date and time are called date and time functions

example"

today      now      month      day      year      minute      hour      second

## today:

this function is used to find the current date of today

=today()

7/22/2012

## now:

this function is used to show the date and time of current system date and time

```
=now()  
7/22/2012  
7:47  
date shortcut: ctrl+;  
time shortcut ctrl+shift+;
```

## month:

this function shows the current month from a date

=month(select date cell) enter

```
7/7/2012  
7
```

## day:

this function is used to show the current day from a date

=day(select day cell)

```
7/7/2012  
7 Saturday
```

## year:

this function is used to show the current year from the date

=year(select date cell)

```
7/7/2012  
2012
```

## hour;

this function is used to find the hour from any time cell

=hour(select any time cell)

```
7:16 PM  
19 7
```

## minute"

this function is used to find the minutes from any time cell

=minute(select any time cell)

```
7:17 PM  
17
```

## second:

this function is used to take second from any time cell

=second(select any time cell)

```
7:19 PM
```

0 the result will give us 0 because the second is not perfect and it is changing

## a general example:



## In Net Café Poroject

| name  | s.time  | end time | total hours | chargers/hour | total amount |
|-------|---------|----------|-------------|---------------|--------------|
| ahmad | 7:22 PM | 9:22 PM  | 2           | 90            | 180          |

### days 360:

this function is used to find the total days between start and end date

=days360(select start date,select end date)

| name  | start date | end date | total days |
|-------|------------|----------|------------|
| wahid | 7/7/2002   | 7/7/2012 | 3600       |

### networkdays:

this function is used to find the networking days of an employee, means that in this function the two holidays (saturdat,sundat) are not calculated

=networkdays(start date,end date)

| name | stard date | ending date | networkdays |
|------|------------|-------------|-------------|
|      | 7/7/2001   | 7/7/2012    | 2870        |

## Database functions:

- Those functions which are related to database are called database functions.

### What is database?

- The place where the data is stored is called database.

### Types of database functions:

1. Dget function
2. Dsum function
3. Dmin
4. Dmax
5. Dcount
6. Dcounta
7. Dproduct
8. davergae

## What is dget function?

- Dget is a database function which is used to search the data in database.

Its applying method is:

1. First rename a database
2. Then copy its first two rows
3. Rename the copied two rows
4. Then copy them and paste them as transpose
5. After that apply the following formula:

=dget(select the first renamed cell,select name cell,select the second renamed data)→enter

| Name   | position | Salary |
|--------|----------|--------|
| Jalil  | doctor   | 9000   |
| khalil | engineer | 23000  |
| saleh  | officer  | 1000   |
| asad   | cook     | 5000   |
| ali    | teacher  | 8000   |
| khan   | scoller  | 4000   |
| belal  | student  | 3500   |
| jan    | piolat   | 15000  |
| essa   | driver   | 1000   |
| shafiq | servent  | 7000   |
| aman   | solider  | 2000   |

| Name  | position | Salary |
|-------|----------|--------|
| Jalil | doctor   | 9000   |

=dget(data1select,select name,date 2)

Dget: Dget Function function is used to find or Search Data from Database

| Dget | Dsum | Dcount   | Dcounta  |
|------|------|----------|----------|
| Dmin | Dmax | Dproduct | Daverage |

دگیت پنشن : ہفتہ پنشن دی چی دیتا ہ دیتا بیس خخہ سرچ کوی  
دیتا بیس دیتا بیس یو خای دیتا ہ ستور کولو تہ دیتا بیس ویل کیڑی

## What is Dsum function?

- Dsum is a database function which is used to find the summation or total conditionally

## What is Dmin Function?

- Dmin is a database function which is used to find the minimum numbers conditionally.

## What is Dmax function?

- Dmax function is a database function which is used to find the maximum numbers conditionally.

## What is Dcount function?

- Dcount function is a database function which is used to count the numbers conditionally.

## What is Dcounta function?

- Dcounta function is a database function which is used to count the numbers as well text conditionally.

For Dsum function we apply the following methods:

1. First rename a database
2. Then copy its first two rows
3. Rename the copied two rows
4. Then copy them and paste them as transpose
5. After that apply the following formula:

=dsum (select the first rename data,select name cell,select the second renamed data)→press enter

## WHAT IS Daverage Function?

- This is a database function which is used to find the average of values conditionally.

## What is Dproduct function?

- It is a database function which is used to find the multiplication of some values conditionally.

For simple average:

- =average(select cells)→ok

For simple multiplication:

- =product(select cells)→press enter

## Note:

- ❖ There applying methods are same only the formula has difference and also we can't use Dget function when there is a duplicate name in a database except from its serial number.

## Zakat farmula

| Name    | Gender |  | Post     | SALARY | Zakat |
|---------|--------|--|----------|--------|-------|
| Ali     | Male   |  | Doctor   | 100000 | 2500  |
| Imad    | Male   |  | Engineer | 1200   | 30    |
| Adil    | Male   |  | Clerk    | 1400   | 35    |
| Kashif  | Male   |  | Teacher  | 1600   | 40    |
| Fawad   | Male   |  | Driver   | 1800   | 45    |
| Nailla  | Female |  | Teacher  | 2000   | 50    |
| Fazilat | Female |  | Engineer | 2200   | 55    |

$$=\text{Rupees} \times 2.5 / 100$$

### Mathematical functions:

- Those function which are related to mathematic are called mathematical functions.

Examples of mathematical functions:

1. Sum
2. Pi
3. Radian
4. Degree
5. SQRT
6. ABS
7. COS
8. SIN
9. TANG
10. SUMSQ
11. SUMPRODUCT
12. FACT
13. QUTIENT
14. ODD
15. EVEN



### What is sum function?

- Sum function is a mathematical function which is used to find the summation or total of values.

Its formula is: =sum(select any value cells)➔press enter button

Note: we can also find the summation of values by pressing alt+=+=.

### What is PI function?

- Pi function is a mathematical function which is used to find the value of PI.

Its formula is: =PI()➔press enter button

### What is degree function?

- Degree function is a mathematical function which is used to find the degrees of a radian or to convert radian into degree.

Its formula is: =degree(select any pi value cell)➔press enter button

### What is Radian function?

- Radian function is mathematical function which is used to change degree value into radian.

Its formula is: =radian(select any degree value)➔press enter button

### What is SQRT function?

- SQRT means the square root of a value and this function is used to find the square root of a value.

Its formula is: =SQRT(select or write any value)➔press enter button

### What is SUMSQ function?

- SUMSQ is a mathematical function which is used to find the square roots of and then make its summation or total.

Its formula is: =sumsq(select values)➔press enter

### What is sumproduct function?

- Sumproduct is a mathematical function which is used to first find the total or summation and then multiply the values.

Its formula is: =sumproduct(value(2+2))→press enter button

### What is ABS function?

- ABS is a mathematical function which is used to find the absolute value.

Its formula is: =ABS(select negative value)→enter=(positive value)

### What is even function?

- Even function is a mathematical function which is used to convert the odd value into nearest even value.

Its formula is: =even(odd value)→press enter

### What is odd function?

- Odd function is a mathematical function which is used to convert the even value into nearest odd value.

Its formula is: =odd(select even value)→press enter button

### What is FACT function?

- Factorial function is a mathematical function which is used to find the factorization of the given values.

Its formula is: =fact(select any value)→press enter button

### What is MOD function?

- Mod is a mathematical function which is used to find the remainder of the dividend and divisor.

Its formula is: =mod(values:12,3.....)→enter

### What is quotient function?

- Quotient is a mathematical function which is used to find the quotient of given dividend and divisor.

Its formula is: =quotient(values:12,3.....)→enter

## What is product function?

- Product function is a mathematical function which is used to find the product or multiplication of values.

Its formula is: =product(number,number)➔enter button

## What is Sin function?

- Sin is a mathematical function which is used to find the Sin Theta of a value.

Its formula is: =Sin(any value)➔ press enter

## What is Cos function?

- Cos is a mathematical function which is used to find the Cosine Theta of A value.

Its formula is: =cos(select any value)➔press enter

## Logical functions:

- Those functions which are related to logics are called logical functions.

## Types of logical functions:

1. If function
2. And function
3. Or function
4. Not function

## If function:

- It is a logical function which is used to check condition or conditions.

Types of If function:

1. Simple if function
2. Nested if function
3. Compound if function

## Simple if function:

- Simple if function is used to check only one condition.

Enter you age                      result

28                      you are allowed

12                      false

=if(select age cell>20,"you are allowed")→press enter button

### Nested if function:

This function is used to check two or more than two conditions.

|               |                     |
|---------------|---------------------|
| Enter you age | result              |
| 28            | you are allowed     |
| 12            | you are not allowed |

=if(select age>20,"you are allowed","you are not allowed")press enter button

### Compound if function:

When two functions are combined and make a condition is called compound if function.

And function: it is a logical function which is used to check two or more than two conditions at the same time.

And truth table:

| Condition1 | Condition2 | Result |
|------------|------------|--------|
| true       | True       | True   |
| False      | False      | False  |
| true       | False      | False  |
| false      | true       | False  |

Example: =and(2+2=4,4+5=9)enter→true

=and(2+2=4,3\*2=9)→false

Compound if function example:

=if(And(select age cell>18,select grade cell=12),"you are allowed","you are not allowed")→press enter

| Enter you age | grade | result                |
|---------------|-------|-----------------------|
| 20            | 12    | You are confirmed     |
| 22            | 11    | You are not confirmed |

## Or function:

- Or is a logical function which is same with if function, but there is no restriction and if only one condition is true, the whole result will be true.

Example: =or(2+2=4,12-2=10,20\*2=32,12/2=3)➔enter, so the result will be true.

### Or truth Table

| Condition1 | Condition2 | Result |
|------------|------------|--------|
| true       | True       | True   |
| False      | True       | True   |
| True       | False      | True   |
| False      | True       | True   |

Its function: =if(or(select age cell>20,select certificate cell=12),"you are allowed","you are not allowed").

| Age | Certificate | Result          |
|-----|-------------|-----------------|
| 20  | 12          | You are allowed |
| 20  | 11          | You are allowed |

Not function:

Not is a logical function which is used to make every condition opposite.

Example: =not(true)➔enter, the result will be false

Its composition example:

=if(not(select age cell>50),"you are young","you are old")➔press enter button so the result will be overturned and give you wrong result.

| age | result        |
|-----|---------------|
| 20  | You are young |
| 55  | You are old   |
| 23  | You are young |

dollar      afghani      kaldari      euro  
1              100              165              2

dollar      afghani      kaldari      euro  
2              200              330              4

=dollar\*afghani

=dollar\*kaldari

=dollar\*euro

| Name   | Post     | Address   | Salary | Bonus | Total |
|--------|----------|-----------|--------|-------|-------|
| Kamal  | Doctor   | Kabul     | 1000   | 500   | 1500  |
| Umer   | Engineer | Jalalabad | 1200   | 0     | 1200  |
| nasrt  | Clerk    | Kunar     | 1400   | 0     | 1400  |
| Saeed  | Teacher  | Kabul     | 1600   | 0     | 1600  |
| Noor   | Doctor   | Kabul     | 1800   | 500   | 2300  |
| khalil | Engineer | Kunar     | 2000   | 0     | 2000  |
| Zalmy  | Clerk    | Kabul     | 2200   | 0     | 2200  |

Post= Doctor  
Add=Kabul

|        |        | sa   | su | mo | tu | we | th | fr | sa | su | mo | tu | we | th | fr | sa | su | mo | tu | we | th | fr | sa | su | mo | tu | we | th | fr | sa | sur  |   |
|--------|--------|--|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--|---|
| Name   | F/name | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30   | Result  |
| khan   | ali    | 1  | 0  | 1  | 1  | 1  | 1  | 0  | 1  | 1  | 1  | 1  | 1  | 1  | 0  | 1  | 1  | 1  | 1  | 1  | 1  | 0  | 1  | 1  | 1  | 1  | 1  | 1  | 0  | 1  | 1  | dearkhanyourpresent for25days in this monthselect   |
| naqeeb | naseeb | 1  | 1  | 1  | 1  | 1  | 1  | 0  | 1  | 1  | 1  | 1  | 1  | 1  | 0  | 1  | 1  | 1  | 1  | 1  | 1  | 0  | 1  | 1  | 1  | 1  | 1  | 1  | 0  | 1  | 1  | dearnaqeebyourpresent for26days in this monthselect |
| hazrat | jan    | 1  | 1  | 1  | 1  | 1  | 1  | 0  | 1  | 1  | 1  | 1  | 1  | 1  | 0  | 1  | 1  | 1  | 1  | 1  | 1  | 0  | 1  | 1  | 1  | 1  | 1  | 1  | 0  | 1  | 1  | dearhazratyourpresent for26days in this monthselect |
| kasim  | kabir  | 0  | 1  | 1  | 0  | 1  | 1  | 0  | 1  | 1  | 1  | 1  | 1  | 1  | 0  | 1  | 1  | 1  | 0  | 1  | 1  | 0  | 1  | 1  | 1  | 1  | 1  | 1  | 0  | 1  | 1  | dearkasimyourpresent for23days in this monthselect  |
| khalil | monib  | 1  | 1  | 1  | 1  | 1  | 1  | 0  | 1  | 1  | 1  | 1  | 1  | 1  | 0  | 1  | 1  | 1  | 1  | 1  | 1  | 0  | 1  | 1  | 1  | 1  | 1  | 1  | 0  | 1  | 1  | dearkhalilyourpresent for26days in this monthselect |
| ahmad  | nasir  | 1  | 1  | 1  | 1  | 1  | 1  | 0  | 1  | 1  | 1  | 1  | 1  | 1  | 0  | 1  | 1  | 1  | 1  | 1  | 1  | 0  | 1  | 1  | 1  | 1  | 1  | 1  | 0  | 1  | 1  | dearahmadyourpresent for26days in this monthselect  |
|        |        | 1  | 1  | 1  | 1  | 1  | 1  | 0  | 1  | 1  | 1  | 1  | 1  | 1  | 0  | 1  | 1  | 1  | 1  | 1  | 1  | 0  | 1  | 1  | 1  | 1  | 1  | 1  | 0  | 1  | 1  | dearyourpresent for26days in this monthselect       |
|        |        | 1  | 1  | 1  | 1  | 1  | 1  | 0  | 1  | 1  | 1  | 1  | 1  | 0  | 0  | 1  | 1  | 1  | 1  | 1  | 1  | 0  | 1  | 1  | 1  | 1  | 1  | 1  | 0  | 1  | 1  | dearyourpresent for25days in this monthselect       |
|        |        | 1  | 1  | 0  | 1  | 1  | 1  | 0  | 1  | 1  | 1  | 1  | 0  | 1  | 0  | 1  | 1  | 1  | 1  | 0  | 1  | 0  | 1  | 1  | 1  | 0  | 1  | 1  | 0  | 1  | 1  | dearyourpresent for22days in this monthselect       |
|        |        | 1  | 1  | 1  | 1  | 1  | 1  | 0  | 1  | 1  | 1  | 1  | 1  | 1  | 0  | 1  | 1  | 1  | 1  | 1  | 1  | 0  | 1  | 1  | 1  | 1  | 1  | 1  | 0  | 1  | 1  | dearyourpresent for26days in this monthselect       |
|        |        | ="dear",&onenameselect&,"yourpresentfor",&sum(all the month days select)&"days in this month select" |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | dearyourpresent for0days in this monthselect |   |
|        |        |  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | dearvourpresent for0days in this monthselect |   |



ليکوال حاجي محمد خلاند

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