

Excel: Excel is an integrated electronic worksheet program developed by Microsoft Corporation in USA. It includes three components – Worksheet, Graph and Database Management. It lets you create your worksheet and enter information. It performs all kinds of calculations and displays results on the screen in the form of figures or graphs. You can perform various database management functions on the data entered in the worksheet. Extension name of Excel is *. XLS or xlsx.

Feature of Excel

1. Date and Time Related Function
2. Manipulation of Character Data (String)
3. Database Management
4. Keyboard Macros to Automate Task
5. Drawing Toolbar to Create Graphics
6. Each worksheet can have multiple sheets.
7. Scientific Calculation

Advantage of Electronic Worksheet

1. The Result are accurate
2. The Worksheet can be quite big in size and any part of it can be viewed or edit
3. Data entered in worksheet can be formatted in several ways to give it a professional look
4. The information entered in a worksheet can be sorted in a desired format

Some Word About Excel

1. There are Seven Ribbon button in Ms-Excel named as- Home, Insert, Page Layout, Formula, Data, Review and View
2. The workspace area is a grid of rows and column. It has a order on the top and on the left. This border is called the worksheet frame. That are column letters A, B, C etc. and row numbers 1, 2, 3, etc in the worksheet border
3. At the bottom left of the worksheet frame, you find a few tabs, Marked Sheet1, Sheet1, Sheet2, Sheet3.
4. A Worksheet is made up of rows and columns

5. 16384 columns and 10,48,576 Row in each sheet
6. The Excel Worksheet is more than 28 meters wide and 1600 meters long.
7. The first row is called row 1, Second is 2, fifth row is called 5 hundredth row is called row 100 and so on.
8. The first 26 columns are called referred to by letters A through Z. 27th column is called AA, 28th column AB and so on.
9. In Worksheet there is a thick border around one of the cells. Cells A1 has a border around it. This cell is called the active or current cell
10. The Maximum length of a text entry can be 32,000 character; each cell of the worksheet can hold a maximum of 32000 character.
11. Each Cell can have an unique address, where address embedded with Name of Column and Number of Row.
12. Excel Support different type of Function such as Financial, Date and Time, Math & Trig, Statistical, Lookup and Reference, Database, Text, Logical, Information, Engineering, & Cube Function.
13. Each Function Started with = and @

Starting Microsoft Excel

You Can Also Start Ms-Excel Pressing with Start → Programs → Microsoft Office → Microsoft Office Excel 2007

Another Way for Starting Ms-Excel

Clicking With Start → Run → Excel

Making Shortcut Icon of Microsoft Excel on Desktop

1. First To Right click on the desktop in blank area
2. Point Move on New, Point Move on Shortcut and click left button of mouse, then Shortcut Wizard window/Dialog box appear on screen, Write accurate location of Microsoft Excel if you remember otherwise click Browse.
3. Open My Computer, Open Local Disk 'C', Open Programs File, Open Microsoft Office, Open Office10/11/12, Select Excel and click ok button
4. Click Next and Click on Finish button

Note: Then Shortcut of Microsoft Excel appear on the desktop, you start Microsoft excel with double click.

Making Shortcut Key of Microsoft Excel

Pressing with Start → Programs → Microsoft Office → Microsoft Office Excel 2003, Right click on it, Click on Properties, Write Shortcut key do you want in Shortcut Key Text Box and click ok

First Project of Microsoft Excel

	A	B	C	D	E	F	G
1	Name	Phy	Che	Bio	Math	Total	%age
2	Ram	45	85	85	47		
3	Satish	52	65	35	85		
4	Ganesh	85	74	85	75		
5	Pawan	65	85	75	85		
6	Sujeet	85	65	85	75		
7	Amit	85	85	96	85		
8	Rani	85	75	85	95		

To Find Total with Sum Function

Sum : This function are use for add or sum of given cell value or given range.

Syntax:

=sum(Num1, num2,num3.....)

=sum(Ad1, Ad2, Ad3, Ad4...)

=sum(Starting Address : Ending Address)

Example

=sum(45, 85, 85, 47)

Result will be: 262

=sum(b2, c2, d2, e2)

Result will be: 262

=sum(B2:E2)

Result will be: 262

To Find Percentage or Average using with Average Function, This function are use for find the Average of Give Cell Value.

Syntax:

- =Average (Num1, num2, num3.....)
- =Average (Ad1, Ad2, Ad3, Ad4...)
- =Average (Starting Address: Ending Address)

Example

- =Average (45, 85, 85, 47)
Result will be: 65.50
- =Average (b2, c2, d2, e2)
Result will be: 65.50
- =Average (B2:E2)
Result will be: 65.50

Second Project of Excel

	A	B	C	D	E	F	G	H
1	Name	Phy	Che	Bio	Math	Total	%age	Division
2	Ram	45	85	85	47			
3	Satish	52	65	35	85			
4	Ganesh	85	74	85	75			
5	Pawan	65	85	75	85			
6	Sujeet	85	65	85	75			
7	Amit	85	85	96	85			
8	Rani	85	75	85	95			

To Find Total, Total, %age using with given above Formula like this Sum and Average.

To Also Find Division using with If Function base of given condition-

- If %age>=60 then Division will FIRST
- If %age>=45 then Division will SECOND
- If %age>=33 then Division will THIRD
- If %age<33 then Division will FAIL

Syntax of IF Formula-

=If(Address of %age>=60,"Division", if(Address of %age>=45,"Division",if(Address of %age>=33,"Division",if(Address of %age<33,"Division"))))

Example For Find Division

=If(G2>=60,"First",if(G2>=45,"Second",if(G2>=33,"Third",if(G2<33,"Fail"))))

To Find Blank Field Value with given condition From Given Database, in Excel Condition:

1. IF Employee Designation is Clerk, then Basic Salary is 4550, DA is 25% of Basic Salary, TA is 12.22 % of Basic Salary, HRA is 2.9% of Basic Salary, Medical is 2.1% of Basic Salary
2. If Employee Designation is Manager, then Basic Salary is 5550, DA is 35% of Basic Salary, TA is 18.23% of Basic Salary, HRA is 6.5% of Basic Salary and Medical is 4.2% of Basic Salary
3. If Employee Designation is Peon, then Basic Salary is 3550, DA is 18.8% of Basic Salary, TA is 11.23% of Basic Salary, HRA is 0.9% of Basic Salary and Medical is 1.8% of Basic salary
4. Total is the Sum of Basic + DA + TA + HRA + Medical
5. Gross is the Total – (HRA + Medical)

	A	B	C	D	E	F	G	H	I
1	E_Name	Designation	Basic	DA	TA	HRA	Medical	Total	Gross Total
2	Mohan	Clerk							
3	Rani	Clerk							
4	Madan	Peon							
5	Subash	Manager							
6	Geeta	Clerk							
7	Mamta	Manager							
8	Sushma	Peon							
9	Ganesh	Clerk							
10	Hari	Peon							
11	Babli	Clerk							
12	Anish	Manager							
13	Kanishk	Peon							
14	Mirtunjay	Clerk							

15	Shashi	Manager							
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To Find the Value of Basic with above given Condition: To Find the Value of Basic using with IF function, you write this function look like-

=if(B2="Manager",5550,if(B2="Clerk",4550,if(B2="Peon",3550)))

To Find the Value of DA with above given Condition: To Find the Value of DA using with IF function, you write this function look like-

=If(B2="Manager",C2*35%,if(B2="Clerk",C2*25%,if(B2="Peon",C2*18.8%)))

To Find the Value of TA with above given Condition: To Find the Value of TA using with IF function, you write this function look like-

=If(B2="Manager",C2*18.23%,if(B2="Clerk",C2*12.22%,if(B2="Peon",C2*11.23%)))

To Find the Value of HRA with above given Condition: To Find the Value of HRA using with IF function, you write this function look like-

=If(B2="Manager",C2*6.5%,if(B2="Clerk",C2*2.9%,if(B2="Peon",C2*0.9%)))

To Find the Value of Medical with above given Condition: To Find the Value of Medical using with IF function, you write this function look like-

=If(B2="Manager",C2*4.2%,if(B2="Clerk",C2*2.1%,if(B2="Peon",C2*1.8%)))

To Find the Value of Total: To Find the Value of Total using with SUM function, you write this function look like-

=SUM(Address of Basic, DA, TA, HRA, Medical)

=SUM(C2, D2,E2,F2, G2)

Or

=SUM(C2:G2)

To Find the Value of Gross Total: To Find the Value of Gross Total using with subtract sign, you write this function look like-

=Address of Total – (Sum of HRA + Medical)

=H2-SUM (F2, G2)

VLOOKUP: You can use the VLOOKUP function to search the first column of a range of cells, and then return a value from any cell on the same row of the range. For example, suppose that you have a list of employees contained in the range A2:C10. The employees Code numbers are stored in the first column of the range, To Make the following Employee Data Base in Sheet1. Where DA 25%, TA 35%, and HRA 54% of Basic Salary.

	A	B	C	D	E	F	G
1	E_Code	E_Name	Basic	DA	TA	HRA	Total
2	DET1001	Rakesh					
3	DET1002	Mohan					
4	DET1003	Sohan					
5	DET1004	Ranjeet					
6	DET1005	Akash					
7	DET1006	Raju					
8	DET1007	Pawan					
9	DET1008	Anil					
10	DET1009	Mahesh					
11	DET1010	Deepak					
12	DET1011	Anuj					
13	DET1012	Praveen					
14	DET1013	Kamlesh					
15	DET1014	Dilip					
16	DET1015	Anil					
17	DET1016	Ranjeet					
18	DET1017	Pooran					
19	DET1018	Kabir					
20	DET1019	Komal					
21	DET1020	Ramesh					
22	DET1021	Kiran					
23	DET1022	Kishore					
24	DET1023	Dinesh					
25	DET1024	Ashok					

If you know the employee's Code number, you can use the **VLOOKUP** function to return either the department or the name of that employee. To obtain the name of employee Code **DET1015**, you can use the formula **=VLOOKUP(A16, A2:G25, 2, 0)**. This formula searches for the **Code DET1015** in the first column of the range **A2:G25**, and then returns the value that is contained in the Second column of the range and on the same row as the lookup value ("**Anil**").

The V in VLOOKUP stands for vertical. Use VLOOKUP instead of HLOOKUP when your comparison values are located in a column to the left of the data that you want to find.

Syntax:

VLOOKUP(lookup_value, table_array, col_Index_num, 0)

The **VLOOKUP** function syntax has the following arguments:

- ☞ **lookup_value** Required. The value to search in the first column of the table or range. The **lookup_value** argument can be a value or a reference. If the value you supply for the **lookup_value** argument is smaller than the smallest value in the first column of the **table_array** argument, **VLOOKUP** returns the **#N/A** error value.
- ☞ **table_array** Required. The range of cells that contains the data. You can use a reference to a range (for example, **A2:G25**), or a range name. The values in the first column of **table_array** are the values searched **bylookup_value**. These values can be text, numbers, or logical values. Uppercase and lowercase text are equivalent.
- ☞ **col_index_num** Required. The column number in the **table_array** argument from which the matching value must be returned. A **col_index_num** argument of 1 returns the value in the first column in **table_array**; a **col_index_num** of 2 returns the value in the second column in **table_array**, and so on.

Search For Employee Details From Employee Database with the help of **VLOOKUP** Function, For **Design** the following Employee Entry Form in **Sheet2** For Search the Employee Details-

Enter Employee Code						
DET1024						
E_Code	E_Name	Basic	DA	TA	HRA	Total
DET1024	Ashok	8546	2136.5	2991.1	4614.8	18288

USING FINANCIAL FUNCTION IN EXCEL

- Future Value (FV):** if you want to find out the future value of a particular investment which has a constant interest rate and periodic payment, then you use the following formula:-

Syn: FV (Rate, NPER, PMT, PV, TYPE)

- ✓ Rate: It is the interest rate/Period
- ✓ NPER: Number of Periods
- ✓ PMT: Payment/Period/Installment
- ✓ PV: Present Value
- ✓ TYPE: When the payment is made (If nothing is mentioned, it's assumed that the payment has been made at the end of period)

Example: You invest 100 in 2016. The Payment has been made yearly. The interest rate is 10% p.a what would be the FV in 2019.

=FV(10%, 3, 1,-100, 0)

	A	B
1	Rate	10%
2	NPER	3
3	PMT	1
4	PV	-100
5	Type	0
6		
7	=FV(B1,B2,B3,B4,B5)	
8		

- FVSCHEDULE:** This Financial function is important when you need to calculate future value with the variable interest rate.

Syn: FVSCHEDULE (Principal, Schedule)

- ✓ Principal: Principal is the present value of a particular investment
- ✓ Schedule: A series of interest rate put together (in case of excel, when will use different boxes and select the range)

Example: Ram has invested the Rs. 100 at the end of 2016. It is expected that the interest rate will change every year. In 2017, 2018 & 2019, the interest rates would be 4%, 6% & 5% respectively. What would be the FV in 2019?

	A	B
1	Principal	100
2	2017	4%
3	2018	6%
4	2019	5%
5		
6	=FVSCHEDULE(B1,B2:B4)	
7		

3. **Present Value (PV):** If you know how to calculate FV, it is easier for you to find out PV

Syn: PV (Rate, NPER, PMT, FV, TYPE)

- ✓ Rate: It is the interest rate/Period
- ✓ NPER: Number of Periods
- ✓ PMT: Payment/Period/Installment
- ✓ PV: Present Value
- ✓ TYPE: When the payment is made (If nothing is mentioned, it is assumed that the payment has been made at the end of period)

Example: The Future value of an investment is 100 in 2016. The Payment has been made yearly. The interest rate is 10% p.a what would be the PV as of now?

	A	B
1	Rate	10%
2	NPER	3
3	PMT	1
4	FV	-100
5	Type	0
6	=PV(B1,B2,B3,B4,B5)	

4. **PMT:** In excel, PMT denotes the periodical payment required to pay off for a particular period of time with a constant interest rate. Lets have a look at how to calculate in excel

Syn: PMT (Rate, NPER, PV, FV, TYPE)

- ✓ Rate: It is the interest rate/period
- ✓ NPER: Number of periods
- ✓ PV: Present Value
- ✓ FV: An optional argument which is about the future value of a loan (if nothing is mentioned, FV is considered as 0)
- ✓ Type: When the payment is made (if nothing is mentioned, it is assumed that the payment has been made at the end of the period)

Example: The Rs 1000 needs to be paid in full in 3 years. The interest rate is 10% p.a and the payment needs to be done yearly. Find out the PMT.

Result: 402.11

	B	C	D
Rate		10%	
NPER		3	
PV		1000	
FV			
Type			
	=pmt(C2,C3,C4,C5,C6)		

5. **PPMT:** It is another version of PMT. The only different is this – PPMT calculates payment on principal with a constant interest rate and constant periodic payments. Here is how to calculate PPMT:-

Syn: PPMT (Rate, Per, NPER, PV, FV, TYPE)

- ✓ Rate: It is the interest rate/period
- ✓ Per: The period for which the principal is to be calculated
- ✓ NPER: Number of Periods
- ✓ PV : Present Value
- ✓ FV: An optional argument
- ✓ Type: When the payment is made (if nothing is mentioned, it is assumed that the payment has been made at the end of the period)

Example: The Rs 1000 needs to be paid in full in 3 years. The interest rate is 10% p.a and the payment needs to be done yearly. Find out the PPMT in the first year and Second year.

1st year Result: 302.11

A	B	C
First Year		
	Rate	10%
	NPER	3
	PV	1000
	FV	
	TYPE	
	=PPMT(C2,1,C3,C4)	

2st year Result: 332.33

Second Year		
	Rate	10%
	NPER	3
	PV	1000
	FV	
	TYPE	
	=PPMT(C10,2,C11,C12)	

A PivotTable is a powerful tool to calculate, summarize, and analyze data. In others Word a Pivot Table is a summary of Data. Pivot Tables are particularly useful if you have long rows or columns that hold values you need to track the sum of and easily compare to one another. The purpose of pivot tables is to offer user friendly ways to quickly summarize large amount of data. They can be used to better understand, display and analyze numerical data.

Example: To create Bharat Sales Corporation sells three product such as TV, VCR and PC. It has three sales person- Ramesh, Kundan and Kamlesh, salesman sales the item and the company create a manages a record in an Excel database. The simple database display the sales record during March and April for the three sales persons the first Record indicate Ramesh sold 10 VCR in March. A salesman can make the sale of the same product like VCR more than one In that situation, the sales is done on different Rate, Qunt, Month by the sales persons. The company creates the separate record for each sales, the company want to know the total number of product sold with the sales for each product in both month. It want to find out which were the product sold by each person for each month and how many. The company also wants to know the total quantity sold by all sales person for each month and the combined quantity sold for both months. This can achieved very easily with the help of pivot table. The pivot Table wizard can help us to create a Pivot Table base on the database in an Excel Worksheet.

To Create this Database In Excel

S_Man	Month	Item	Quantity
Ramesh	March	VCR	10
Kundan	April	TV	20
Kundan	March	VCR	30
Kamlesh	April	TV	40
Ramesh	April	TV	20
Kundan	March	VCR	52
Kamlesh	April	TV	56
Ramesh	March	VCR	65
Ramesh	April	VCR	68
Kamlesh	March	VCR	90
Kundan	March	PC	70
Ramesh	April	PC	20
Kundan	March	VCR	60
Ramesh	April	VCR	10

How To Create a Pivot Table

1. Entry Your data into a range of row and Columns
2. Highlight your cells to create your pivot table.
3. Drag and Drop a field into the "Row Labels" area
4. Drag and drop a field into the "Values" area.
5. Finally your calculation will done.