Describe the usage of Excel String functions LENGTH, MID, RIGHT, LEFT using the below excel sheet.

	A	B	C	D	E	F
1	FinShiksha					
2						
3						
4	**Part #**	**Length**	**Extract first two characters**	**Extract last two characters**	**Extract middle characters**	
5	9C0K904	7	9C	04	C0K9	
6	ABCPC1212K	10	AB	2K	P	
7	INV201415011	12	IN	11	201415	

Aim: To describe the usage of Excel String functions LENGTH, MID, RIGHT, LEFT for the given data.

Len ()

Len function in Excel helps you to know the length of a string that is number of characters in a string. Syntax = LEN (String, Number of Characters)

Spaces are included while calculating length.

=Len (A5) is 7

Left ()

Use the Left function when you want to extract the leftmost characters from a string.

Syntax:
=left (String, Number of Characters)

Example:
=Left (A5, 2) is "9C"

Right ()

Use the Right function when you want to extract the rightmost characters from a string.

Syntax:
=Right (String, Number of Characters)

Example:
=Right (A5, 2) is "04"

Mid ()

Mid function in Excel is used to extract the characters from the middle of a string.

Syntax:
=MID (String, start_char, num_chars)

Example:
=Mid (A5, 2, 4) is "C0K9".

OUTPUT:

B2 =LEN(A2)

	A	B	C	D	E
1		Length	First 2	Last 2	Middle
2	9C0K904	7	9C	04	0K9
3	ABCPC121	10	AB	2K	CPC
4	INV201415	12	IN	11	V20

Illustrate the way to perform SUMPRODUCT function in the below excel sheet.

	A	B	C	D	E	F
1	FinShiksha					
2						
3						
4	Product	Quantity	Price		Revenue	
5	Computer	2	1000		2000	
6	Keyboard	4	250		1000	
7	Mouse	4	100		400	
8	Printer	2	50		100	
9						
10	Total Revenue				3500	
11	3500					

Aim: Using SUMPRODUCT command to minimize the manual effort of using multiplication and Summation of values

- The **SUMPRODUCT** function returns the sum of the products of corresponding ranges or arrays.
- Instead of using the above method, excel having a function called SUMPRODUCT to calculate that result. We can use the formula in cell E8as below:

Step 1: Open Ms- Excel by using the command **Start -> All programs -> Microsoft Office -> MS Excel.**

Step 2: Use the SUMPRODUCT formula in the below manner:

=SUMPRODUCT (B3:B6, C3:C8)

- This will give you your result 3500 in a single command.

OUTPUT:

E8 f_x =SUMPRODUCT(B3:B6,C3:C6)

	A	B	C	D	E
1					
2	Product	Quantity	Price		Revenue
3	Computer	2	1000		2000
4	Keyboard	4	250		250
5	Mouse	4	100		100
6	Printer	2	50		50
7					
8	Total Revenue				3500

Use Match and Index functions to show the students mark of a specific subject for the below data:

	A	B	C	D	E	F
1	MATCH INDEX FUNCTIONS					
2						
3	NAME	LAN	ENG	MATHS	SCIENCE	SOCIAL
4	Arun	98	56	78	45	34
5	Balu	90	78	90	67	76
6	Charan	78	45	89	98	98
7	David	69	53	69	100	70
8	Gokul	58	72	59	98	67
9	Hari	79	89	45	90	89

Aim: Using the Match and Index functionalities to get an expected result with minimum effort.

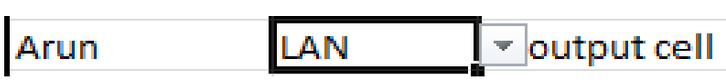
Step 1: Open Ms- Excel by using the command **Start -> All programs -> Microsoft Office -> MS Excel.**

Step 2: Type the given data

Step 3: Select a cell near to the typed data and first create a list box for the name of the students using the **data validation->allow-list->source select from A3:A9** where the name of the students availed,

Step 4: Follow the same for the subjects also in the next cell to the name list box and select the source from **A3:E3**.

Step 5:
Select any one cell we need the output next to the list boxes as below:



Step 6:
And use the index formula in the output cell by selecting the **entire table as array**, then use **match** to identify the **position** of the student by selecting student name list box value as **lookup value**, range is A3:A9 and close bracket and give a comma to use match function for the subject by giving subject list box as lookup value,A3:E3 as range and give exact match and give enter.

OUTPUT:

Name	LAN	ENG	MATHS	SCIENCE	SOCIAL
Arun	98	56	78	45	34
Balu	90	78	90	67	76
Charan	78	45	89	98	98
David	69	53	69	100	70
Gokul	58	72	59	98	67
Hari	79	89	45	90	89

NAME	SUBJECT	MARKS
Arun	LAN	98

NOTE: According to the change in the student name list box and subject list box the marks will be changed.

Describe the data formatting techniques for the below excel sheet

	A	B	C	D	E	F	G	H	I
1	FinShiksha								
2									
3									
4	**Date**	**Product**	**Region**	**Amount**					
5	9-Apr-15	Dairy	Gujarat	1,148.00					
6	26-May-15	Produce	Gujarat	1,530.00					
7	7-Dec-15	Produce	Gujarat	1,423.50					
8	5-Nov-15	Dairy	Maharashtra	192.10					
9	12-Jul-15	Dairy	Maharashtra	351.00					
10	2-Jun-15	Grain	Maharashtra	560.40					

Aim: Using the Conditional formatting to create a rule and formatting the data in an expected manner.

Step: 1

Open Ms- Excel by using the command **Start -> All programs -> Microsoft Office -> MS Excel.**

Step: 2

Enter the given values in sheet correctly.

Step: 3To show the amounts in the highlighted color Select the entered amoumt column data click **Home->conditinal formatting->New rule**

Step:4

Select the first rule which is **Rule no:3->Format only top or bottom ranked values->format values that rank in the:->select top->set the value as wanted->format->fill color->select wanted color->ok.**

Step: 5

To show the diary product in the highlighted color Select the entire product column data click **Home-> Condtional Formatting->Highlight Cell Rules->Equal to->and in the enter diary->select the color and give ok.**

OUTPUT:

Date	Product	Region	Amount
09-Apr-15	Diary	Gujarat	1140.00
26-May-15	Produce	Gujarat	1530.00
07-Dec-15	Produce	Gujarat	1423.50
05-Nov-15	Diary	Maharash	192.10
12-Jul-15	Diary	Maharash	351.00
02-Jun-15	Grain	Maharash	560.40

Write down the steps to Calculate the Depreciation value for the below worksheets

	A	B	C	D	E	F
1	FinShiksha					
2						
5	Asset Price	1,000,000				
6	Salvage Value	590,490				
7	Life in Years	5				
8	**Straight Line Depreciation**	₹ 81,902.00		SLN		
9				DB		
10	**Written Down Value Depreciation**					
11		Year	Beginning Value	Depreciation	Ending Value	
12		1	1,000,000	100,000	900,000	
13		2	900,000	90,000	810,000	
14		3	810,000	81,000	729,000	
15		4	729,000	72,900	656,100	
16		5	656,100	65,610	590,490	

Aim: Using the Excel functions to Calculate the depreciation values.

Step: 1

Open Ms- Excel by using the command **Start -> All programs -> Microsoft Office -> MS Excel.**

Step:2

Enter the given data to calculate Depreciation in the order in excel sheet.

NOTE: There are two methods to calculate the depreciation

- ✓ Straight Line Method (SLN)
- ✓ Declining Balance Method (DB)

Step:3

To calculate the depreciation in straight line method use the formula:

= SLN(cost,salvage,life)

Step:4

Give the appropriate values in the formula.

OUTPUT:

Asset price	1000000
Salvage value	590490
Life in years	5
SLN Depreciation	₹ 81,902.00

Step:5

Other method is DB (Declining balance) method to calculate depreciation .The formula is

DB(cost,salvage,life,Period)

OUTPUT:

C7 =DB($B$2,$B$3,$B$4,A7)

	A	B	C	D
1				
2	Asset price	1000000		
3	Salvage value	590490		
4	Life in years	5		
5	DB			
6	Year	Beginning value	Depreciation	Ending value
7	1	1000000	100000	900000
8	2	900000	90000	810000
9	3	810000	81000	729000
10	4	729000	72900	656100
11	5	656100	65610	590490

Write down the steps to create a line chart for the following data

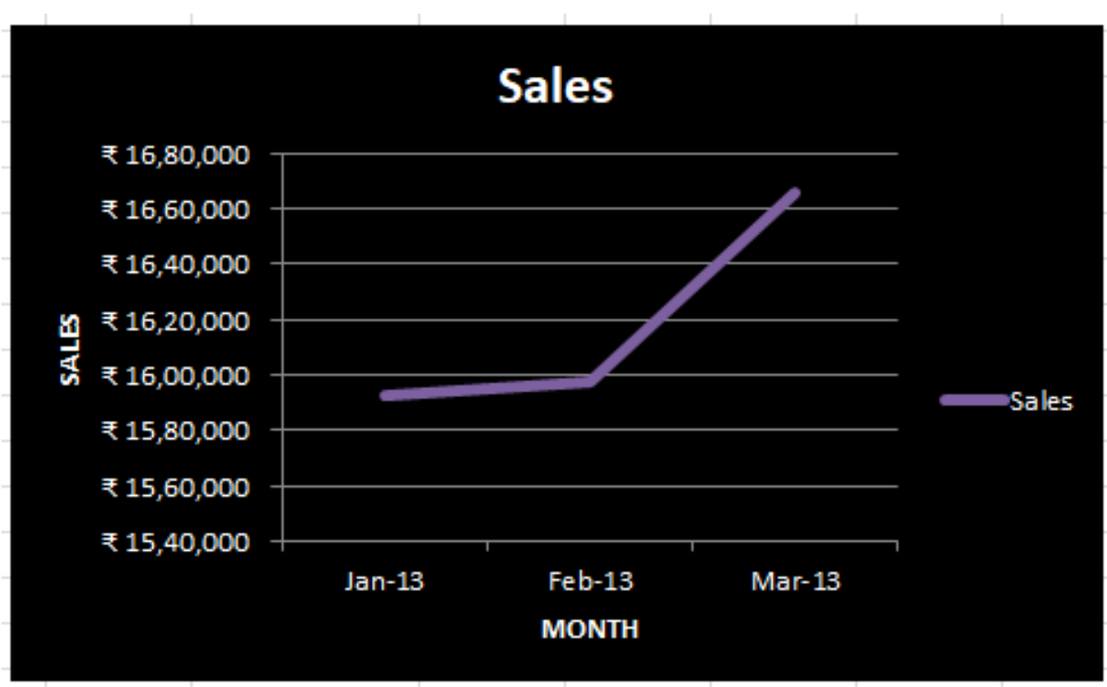
	A	B	C	D	E	F
1	FinShiksha					
2						
3						
4	**Month**	**Sales**				
5	Jan-2013	1,592,398				
6	Feb-2013	1,597,197				
7	Mar-2013	1,666,080				

Aim: Creating a line chart for the given data.

Step: 1

Open Ms- Excel by using the command **Start -> All programs -> Microsoft Office -> MS Excel.**

Step:2
Type the given **Month** and **Sales** Values.
Step:3
Select the **values of Month** and **Sales Price** .
Step:4
Create a Line chart.
Step:5
To create a **line chart** click **Insert -> line chart icon.** You will find a line chart.
Step:6
To add labels right click the data points and then enable **Data Labels** check box.
Step:7
Add chart title by clicking on it and type your chart name.
OUTPUT:



Write down the steps to create a column chart for the following data

Home Products								
World-wide Sales - Million								
	Jan	Feb	Mar	Apr	May	Jun	Total	% of Total
Asia	80	130	125	130	140	180	785	33.1%
Europe	60	80	80	100	90	100	510	21.5%
Africa	110	120	110	120	120	130	710	29.9%
Latin America	40	60	70	60	60	80	370	15.6%
Total	290	390	385	410	410	490	2,375	100.0%
Average	73	98	96	103	103	123	594	

Aim : **Creating a column chart for the given data.**

Step: 1

Open Ms- Excel by using the command **Start -> All programs -> Microsoft Office -> MS Excel.**

Step:2

Type the given **world wide sales data** Values.

Step:3

Select the **values of world wide sales data**

Step:4

Create a column chart.

Step:5

To create a **column chart** click **Insert -> column chart icon.** You will find a line chart.

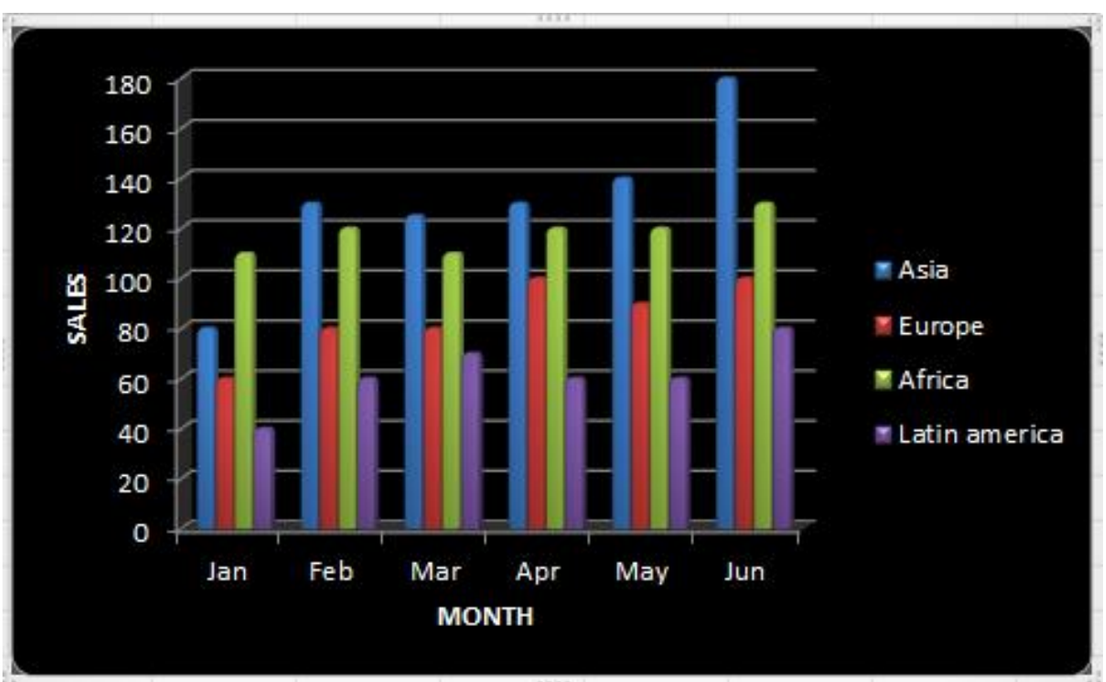
Step:6

To add labels right click the data points and then enable **Data Labels** check box.

Step:7

Add chart title by clicking on it and type your chart name.

OUTPUT:



Write down the steps to create Bar Chart for the following data

	A	B
1	Home Products	
2	World-wide Profits - Million	
3		Profits
4	India	80
5	USA	60
6	China	110
7	Sri Lanka	10
8	Germany	120
9	Turkey	30
10	Iran	44
11	Australia	78
12	Russia	54
13	Brazil	38
14	South Africa	(25)
15	New Zealand	67
16	Bangladesh	40
17	Total	706
18	Average	54

Aim: **Creating a Bar Chart with classification of positive and negative values.**

Step :1

Open Ms- Excel by using the command **Start -> All programs -> Microsoft Office -> MSExcel**

Step:2.

Select the entire row of **Home productsof world wide profits-million.**

Step:3

Then select **the Insert->bar chart** and select the desiredbar chart.

Step:4

To add labels right click the data points and then enable **Data Labels** check box.

Step:5

To show the negative value seperately selesct the bar and right click and from the menu select low **format axis->axis options->axis label->low.**

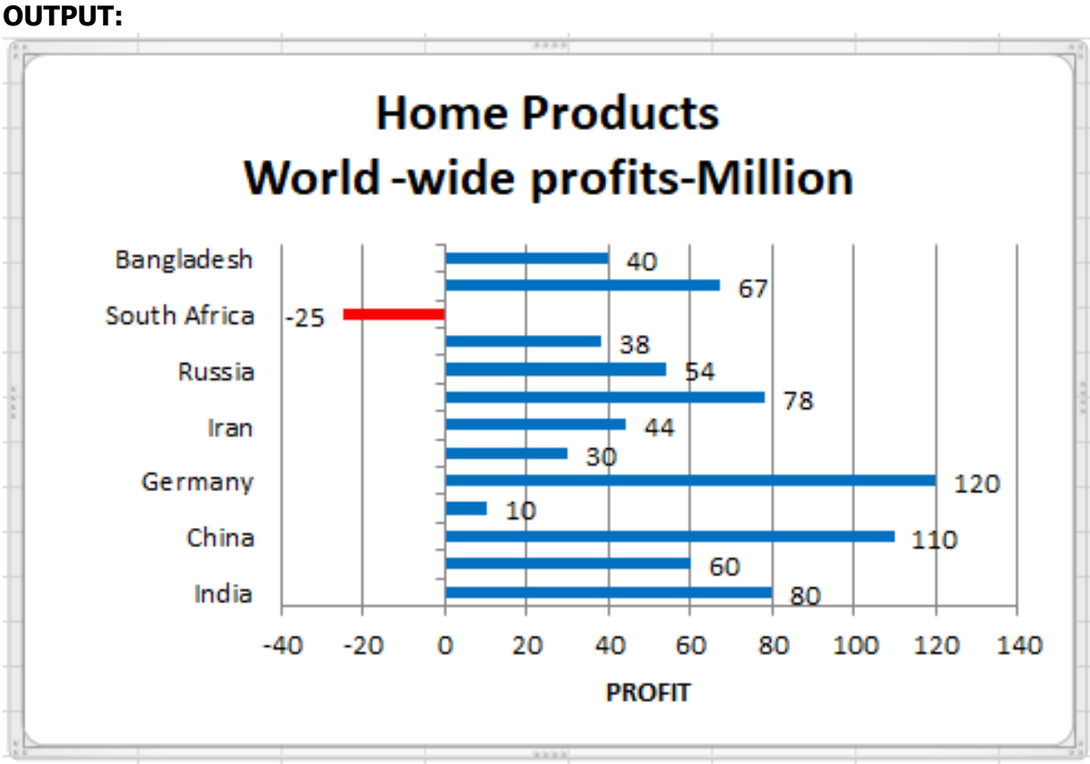
Step:6

To change the nagative bar **colour select data->right click ->format data series->fill->solid fill->invert if negative->change the second colour as red.**

Step:7

Add title to the chart by clicking on the **chart Title section.**

OUTPUT:



Given below is the height and weight of a group of 8 people. Plot this on one single chart

Person	Weight	Height
A	77	1.72
B	69	1.72
C	100	1.78
D	75	1.65
E	93	1.76
F	86	1.55
G	89	1.64
H	75	1.77

Aim: Understanding the given data and create a Scatter Plot.

Step: 1

Open Ms- Excel by using the command **Start -> All programs -> Microsoft Office -> MS Excel.**

Step:2

Select the data and click **Insert->Scatter plot**

Step:3

To change the chart title ,click on it and type the necessary chart title.

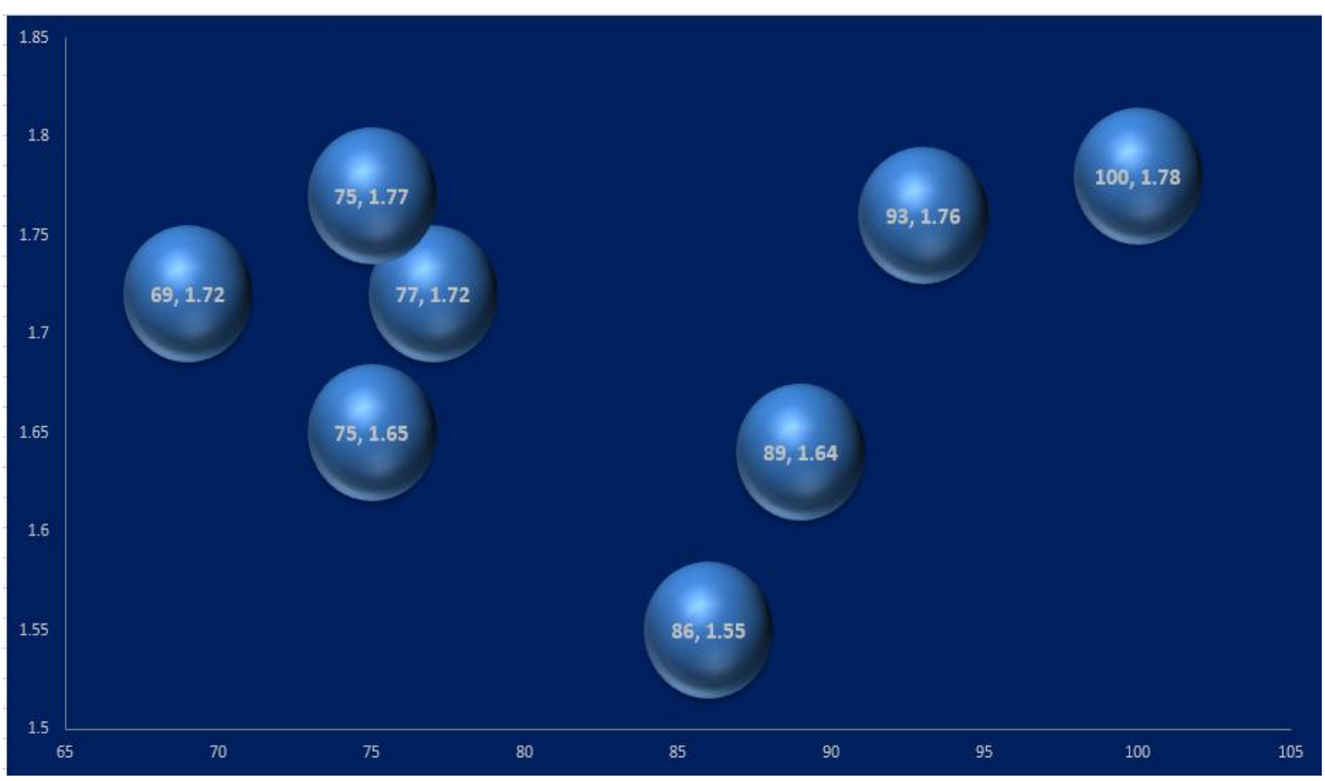
Step:4

To change the chart style,select the style from **Format tab**.

Step:5

By adding a data label we will get the expected outcome.

OUTPUT:



Given here is a relationship between car density per thousand population and pollution levels in various cities, in ascending order of car density. Plot a chart to show the relationship

Car Density per 1000 population	Pollution Levels
15.0	20%
15.6	20%
15.9	21%
16.4	21%
18.0	22%
19.1	22%
19.3	23%

Aim: Understanding the given data and creating the combo chart for representing the given data.

Step: 1

Open Ms- Excel by using the command **Start -> All programs -> Microsoft Office -> MS Excel**

Step:2

Type the given fields **car density and population** and its values.

Step:3

Select the values of **density and population** data.

Step:4

Create a combo Chart.

Step:5

To create a combo chart click **Insert -> column chart(basic chart).**

Step:6

Select **data points ->change series chart type->line chart->secondary axis.**

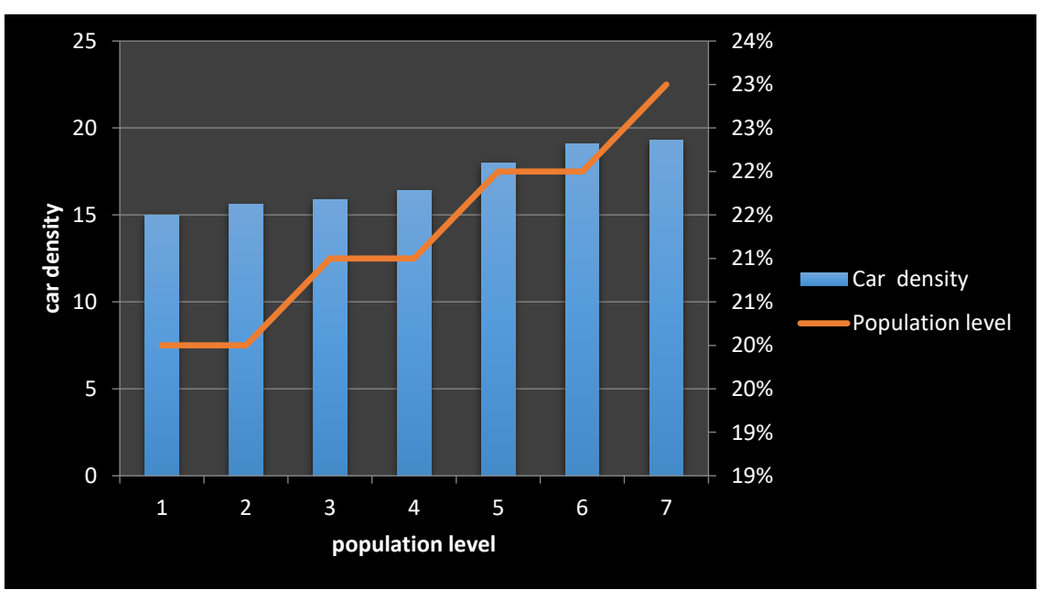
Step:7

To add labels right click the data points and then enable **Data Labels** check box.

Step:8

Add title to the chart by clicking on the **chart Title section.**

OUTPUT:



Given below are some investment details. Calculate the returns on them

Date	Amount			
1-Jan-11	100,000			
8-Aug-11	20,000			
5-Jan-12	400,000		IRR	11.66%
12-Mar-13	120,000		XIRR	12.51%
20-Jun-14	80,000			
30-Jan-15	75,000			
1-Jan-16	-1,201,000			

Aim: Calculating the Investment Returns based on the Regular Interval / Irregular Interval.

Step: 1

Open Ms- Excel by using the command **Start -> All programs -> Microsoft Office -> MS Excel**

Step:2

Type the given investment details of columns which include date and amount and its values.

Step:3

Select the given investment details of columns which include date and amount and its values.

Step:4

Firstly to calculate IRR use the formula IRR in which we need output.

IRR(values,[guess])

Step:5

Next to calculate XIRR use the formula XIRR in the cell where we need output.

XIRR(values,dates,[guess])

Step:6

In XIRR formula select all the cashflows including final rerturns,dates.

Step:7

You will get the output.

OUTPUT:

	A	B	C	D
1	DATE	AMOUNT		
2	01-Jan-11	100000		
3	08-Aug-11	20000		
4	05-Jan-12	400000	IRR	11.66%
5	12-Mar-13	120000	XIRR	12.51%
6	20-Jun-15	80000		
7	30-Jan-15	75000		
8	01-Jan-16	-1201000		
9				

If a person starts saving Rs 100,000 today, and continue to do it for the next 10 years, when she retires, what is her investment corpus going to be, assuming a 12% return?

Aim:

Using the FV function to calculate the Final Value of an Investment in 10 years with 12% of investment returns of Rs 10000.

Step: 1

Open Ms- Excel by using the command **Start -> All programs -> Microsoft Office -> MS Excel**

Step:2

Type the given savings,no.of years and return percentage data in the new excel spread sheet.

Step:3

Select the given i savings,no.of years and return percentage data in the new excel spread sheet.

Step:4

Calculate FV for yearly investment using =investment*(1+Yearly returns).

Step:5

Specify in the first cell as =B2*(1+$C$12)^D2 and use =sum() for sum of total.

Step:6

To avoid these n number of steps we can easily calculate by using FV formula as below:

=FV(rate,Nper,-pmt,pv,type)

Step:7

Specify the needed cell in the formula as per needed.

Step:8

Output :

	A	B	C	D
1	Year	Investment	Total	Number of years invested
2	1	100000	310585	10
3	2	100000	277308	9
4	3	100000	247596	8
5	4	100000	221068	7
6	5	100000	197382	6
7	6	100000	176234	5
8	7	100000	157352	4
9	8	100000	140493	3
10	9	100000	125440	2
11	10	100000	112000	1
12	Returns		12%	
13	FV of the savings		1965458	
14	FV using the formula		=FV(C12,A11,-B11,0,1)	

Assume a person pays taxes on his income at 30%, and there is a surcharge applicable based on certain conditions. How can we consider the various scenarios

Tax Burden		Tax Due	
Year	2015		**300,000**
Surcharge	0%	1%	310,000
Taxable Income	1,000,000	2 %	320,000
Tax Rate	30%	3 %	330,000

Aim:

Using the What-if Analysis -> Data Table function of Excel to calculate the Tax Due dynamically.

Step: 1

Open Ms- Excel by using the command **Start -> All programs -> Microsoft Office -> MS Excel**

Step:2

Type the given income and tax rate in the new excel spread sheet as below:

	A	B
1	**Tax burden**	
2	Year	2015
3	Surcharge	0%
4	Taxable Income	100000
5	Tax rate	30%

Step:3

Select the given income and tax rate in the new excel spread sheet.

Step:4

Fill the cell upto 15 % and calucale tha tax due amount in the before cell by multiplying taxable income * (tax rate+surcharge).

Step:5

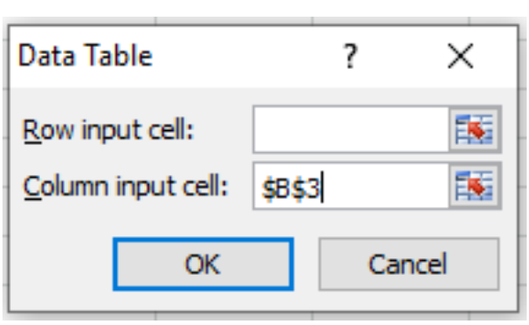
Enter % values for Surcharge from cell C3:C17

Step 6:

Select the data range **C2:E17 and select the menu data tab->what-if-analysis->data table.**

Step:6

A box will be displaying after selecting data table from what-if-analysis as shown below:



Step:7

Specify the surcharge cell in column input cell and click ok.

Step:8

Output will be displayed.

	A	B	C	D
1	**Tax burden**		**Tax Due**	
2	Year	2015		30000
3	Surcharge	0%	1%	31000
4	Taxable Income	100000	2%	32000
5	Tax rate	30%	3%	33000
6			4%	34000
7			5%	35000
8			6%	36000
9			7%	37000
10			8%	38000
11			9%	39000
12			10%	40000
13			11%	41000
14			12%	42000
15			13%	43000
16			14%	44000
17			15%	45000

Ajay has taken a loan of Rs 17 lakhs to buy a car, and is expected to pay a 12% interest on it over 7 years. Calculate the equated monthly installments (EMIs)

Car Loan	1,700,000	
Interest Rate	12%	1%
Tenure (Years)	7	

Aim:

Calculating the EMI and Principal Repayment Amount using the Excel Functions.

Step: 1

Open Ms- Excel by using the command **Start -> All programs -> Microsoft Office -> MS Excel**

Step:2

Type the monthly installments in the new excel sheet with necessary details.

Step:3

Create the column as below :

Month	Principal outstanding	Interest repayment	Principal repayment	EMI	PPMT

Step:4

To specify the month here sum the total years is 7 and the number of month is 12 =84 and drag upto 84 months.

Step:5

Specify the principal outstanding by giving =car loan the in the first cell of principal outstanding.

Step:6

Specify the intrest repayment by multiplying =principal outstanding*intrest rate of month that is 1%.

Step:7

Before calculating principal repayment calulate EMI by using the formula =PMT() specify the needed ranges and in the next row give =first cell of EMI and drag for the rest.

Step:8

Now calculate principal repayment by =EMI-Intrest.

Step:9

Specify the ppmt column by using the ppmt formula.

Step:10

NOTE:

- Use the PMT function for payment of EMI calculation.
- **=pmt(intrest rate,repayment period,-loancamount)**
- For intrest calculation=principal outstanding*intrest rate
- For principal calculation=EMI-intrest
- For PPMT calculation=**PPMT(intrest rate,repayment period in range,no.of.months,-loan amount).**

Output :

	A	B	C	D	E	F
1	Car Loan	17,00,000				
2	Interest Rate	12%	1%			
3	Tenure (Years)	7				
4	Tenure(months)	84				
5	Month	Principal outstanding	Intrest repayment	Principal repayment	EMI	PPMT
6	1	17,00,000	17000	13010	30010	13010
7	2	16,86,990	16870	13140	30010	13140
8	3	16,73,851	16739	13271	30010	13271
9	4	16,60,579	16606	13404	30010	13404
10	5	16,47,176	16472	13538	30010	13538
11	6	16,33,638	16336	13673	30010	13673
12	7	16,19,964	16200	13810	30010	13810
13	8	16,06,154	16062	13948	30010	13948
14	9	15,92,206	15922	14088	30010	14088
15	10	15,78,119	15781	14228	30010	14228
16	11	15,63,890	15639	14371	30010	14371
17	12	15,49,520	15495	14514	30010	14514
18	13	15,35,005	15350	14660	30010	14660
19	14	15,20,346	15203	14806	30010	14806
20	15	15,05,539	15055	14954	30010	14954
21	16	14,90,585	14906	15104	30010	15104
22	17	14,75,481	14755	15255	30010	15255

NOTE: Output will be extended here for space convenient few out is only given.

Given below are details of values of 3 stock market indices, India, Japan and the USA. Based on the values available - create a table with the details represented in an error free format, calculate statistical parameters for the indices - such as returns and risk, and represent the relative movement in the form of a chart

Date	Nifty
1/4/2010	5232.2
1/5/2010	5277.9
1/6/2010	5281.8
1/7/2010	5263.1
1/8/2010	5244.75
1/11/2010	5249.4
1/12/2010	5210.4
1/13/2010	5233.95
1/14/2010	5259.9
1/15/2010	5252.2
1/18/2010	5274.85
1/19/2010	5225.65
1/20/2010	5221.7
1/21/2010	5094.15
1/22/2010	5036

Date	Nikkei
1/4/2010	10654.79
1/5/2010	10681.83
1/6/2010	10731.45
1/7/2010	10681.66
1/8/2010	10798.32
1/12/2010	10879.14
1/13/2010	10735.03
1/14/2010	10907.68
1/15/2010	10982.1
1/18/2010	10855.08
1/19/2010	10764.9
1/20/2010	10737.52
1/21/2010	10868.41
1/22/2010	10590.55
1/25/2010	10512.69

Date	Dow Jones
1/4/2010	10583.96
1/5/2010	10572.02
1/6/2010	10573.68
1/7/2010	10606.86
1/8/2010	10618.19
1/11/2010	10663.99
1/12/2010	10627.26
1/13/2010	10680.77
1/14/2010	10710.55
1/15/2010	10609.65
1/18/2010	#N/A
1/19/2010	10725.43
1/20/2010	10603.15
1/21/2010	10389.88
1/22/2010	10172.98

Aim:

Organize and Process the Share market Data and Perform Statistical Measures and Prepare a Chart for Representation of the Data.

Step: 1

Open Ms- Excel by using the command **Start -> All programs -> Microsoft Office -> MS Excel**

Step:2

Type the entire shares values of Nifty,Nikai and Dow Jones in the new excel sheet.

Step:3

First give the heading in the new sheet as below:

	Index Values			**Index Returns**			**Normalized Index**		
Date	**Nifty**	**Nikkei**	**Dow Jones**	**Nifty**	**Nikkei**	**Dow Jones**	**Nifty**	**Nikkei**	**Dow Jones**

Step:4

First copy the all three shares date in the date cell and remove duplicate and sort the date column.

Step:5

Use the VLOOKUP formula to fill the share values in all three shares in Index Values as below
vlookup formula

=VLOOKUP(A3,Sheet10!$A$2:$B$1429,2,0)

=VLOOKUP(A3,Sheet10!$D$3:$E$1429,2,0)

=VLOOKUP(A3,Sheet10!$G$3:$H$1429,2,0)

Step:5

In the Index Returns in all three shares subratct the second share value from each shares by previous day shares.

=(B4-B3)/B3

=(C4-C3)/C3

=(D4-D3)/D3

Step:6

Atlast in the Normalised Index Values asuume 10000 in all shares and calculate as below in all the three shares:

=H3*(1+E4)

=I3*(1+F4)

=J3*(1+G4)

Step:7

Drag it for all the below cells and get the output.

Step : 8

Calculate the Statistical Values and Draw Line Chart for the Organized Data.

OUTPUT:

	A	B	C	D	E	F	G	H	I	J
1		Index Values			Index Returns			Normalized Index		
2	Date	Nifty	Nikkei	Dow Jones	Nifty	Nikkei	Dow Jones	Nifty	Nikkei	Dow Jones
3	01-04-2010	5232.20	10654.79	10583.96				10000	10000	10000
4	01-05-2010	5277.90	10681.83	10572.02	0.87%	0.25%	-0.11%	10087	10025	9989
5	01-06-2010	5281.80	10731.45	10573.68	0.07%	0.46%	0.02%	10095	10072	9990
6	01-07-2010	5263.10	10681.66	10606.86	-0.35%	-0.46%	0.31%	10059	10025	10022
7	01-08-2010	5244.75	10798.32	10618.19	-0.35%	1.09%	0.11%	10024	10135	10032
8	01-11-2010	5249.40	10798.32	10663.99	0.09%	0.00%	0.43%	10033	10135	10076
9	01-12-2010	5210.40	10879.14	10627.26	-0.74%	0.75%	-0.34%	9958	10211	10041
10	1/13/2010	5233.95	10735.03	10680.77	0.45%	-1.32%	0.50%	10003	10075	10091
11	1/14/2010	5259.90	10907.68	10710.55	0.50%	1.61%	0.28%	10053	10237	10120
12	1/15/2010	5252.20	10982.10	10609.65	-0.15%	0.68%	-0.94%	10038	10307	10024
13	1/18/2010	5233.66	10855.08	10609.65	-0.35%	-1.16%	0.00%	10003	10188	10024
14	1/19/2010	5230.15	10764.90	10725.43	-0.07%	-0.83%	1.09%	9996	10103	10134
15	1/20/2010	5226.64	10737.52	10603.15	-0.07%	-0.25%	-1.14%	9989	10078	10018

Given below are details of financials of a company's various subsidiaries. The subsidiaries operate in different business segments, and you are supposed to represent the data in the best possible manner so as to derive meaningful information out of this

Subsidiary 1 - Foods and Beverages

	2010	2011	2012	2013	2014	2015
Sales	950	1044	1200	1300	1280	1331
Operating Profits	123	125	144	169	179	159
Net Profit	60	67	72	73	77	74
Marketing Expenses	150	170	200	210	223	187
Market Share in segment	2.20 %	2.40 %	2.50 %	2.40 %	2.30%	2.40 %

Subsidiary 2 - Media

	2010	2011	2012	2013	2014	2015
Sales	670	740	800	900	1100	990
Operating Profits	13	15	16	14	21	19
Net Profit	-10	-15	-20	-43	-25	-24
Marketing Expenses	200	250	300	350	400	384
Market Share in segment	10.00 %	11.00 %	12.00 %	11.00 %	12.50 %	11.00 %

Subsidiary 3 - Infrastructure

	2010	2011	2012	2013	2014	2015
Sales	7680	8000	7569	7430	6900	7935
Operating Profits	376	392	454	409	338	298
Net Profit	200	187	227	178	144	133
Marketing Expenses	900	800	1023	1090	1200	1044
Market Share in segment	5.00 %	5.00 %	6.00 %	6.50 %	7.20%	8.00 %

Subsidiary 4 - Cement

	2010	2011	2012	2013	2014	2015
Sales	1600	1700	2000	1900	1800	1818
Operating Profits	272	323	360	380	342	294
Net Profit	139	166	189	165	190	194
Marketing Expenses	80	80	100	100	100	94
Market Share in segment	3.40 %	3.60 %	4.00 %	4.00 %	4.50%	4.20 %

Aim: Prepare and Process the Data and Present the data as a Dashboard

Step 1: Open Ms- Excel by using the command **Start -> All programs -> Microsoft Office -> MS Excel.**

Step 2: Type the given data as a data named excel sheet.

Step 3: Type the title of four subsidiaries from the data in the other excel sheet named dashboard next by next.

Step 4: Create a list box for subsidiary, their parameter and for the year.

Step 5: Create a other sheet named organize data and copy and paste the values from the data as below:

	A	B	C	D	E	F	G	H	I
1									
2	V Lookup Value	Subsidiary	Information	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**

Step 6:
Copy and paste the values from the data sheet as below :

	A	B	C	D	E	F	G	H	I
1									
2	V Lookup Value	Subsidiary	Information	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
3	Foods and Beverages Sales	Foods and Beverages Sales	Sales	950	1,044	1,200	1,300	1,280	1,331
4	Foods and Beverages Operating Profits	Foods and Beverages Sales	Operating Profits	123	125	144	169	179	159
5	Foods and Beverages Net Profit	Foods and Beverages Sales	Net Profit	60	67	72	73	77	74
6	Foods and Beverages Marketing Expenses	Foods and Beverages Sales	Marketing Expenses	150	170	200	210	223	187
7	Foods and Beverages Market Share in segment	Foods and Beverages Sales	Market Share in segment	2.20%	2.40%	2.50%	2.40%	2.30%	2.40%
8	Media Sales	Media	Sales	670	740	800	900	1,100	990
9	Media Operating Profits	Media	Operating Profits	13	15	16	14	21	19
10	Media Net Profit	Media	Net Profit	-10	-15	-20	-43	-25	-24
11	Media Marketing Expenses	Media	Marketing Expenses	200	250	300	350	400	384
12	Media Market Share in segment	Media	Market Share in segment	10%	11%	12.00%	11.00%	12.50%	11%
13	Infrastructure Sales	Infrastructure	Sales	7680	8000	7,569	7,430	6,900	7,935
14	Infrastructure Operating Profits	Infrastructure	Operating Profits	376	392	454.14	409	338	298
15	Infrastructure Net Profit	Infrastructure	Net Profit	200	187	227	178	144	133
16	Infrastructure Marketing Expenses	Infrastructure	Marketing Expenses	900	800	1,023	1,090	1,200	1,044
17	Infrastructure Market Share in segment	Infrastructure	Market Share in segment	5%	5%	6.00%	6.50%	7.20%	8.00%
18	Cement Sales	Cement	Sales	1600	1700	2,000	1,900	1,800	1,818
19	Cement Operating Profits	Cement	Operating Profits	272	323	360	380	342	294
20	Cement Net Profit	Cement	Net Profit	139	166	189	165	190	194
21	Cement Marketing Expenses	Cement	Marketing Expenses	80	80	100	100	100	94
22	Cement Market Share in segment	Cement	Market Share in segment	3.40%	3.60%	4.00%	4.00%	4.50%	4.20%

Step 7:
Fill the year column in the dashboard by preferring the previous cell+1

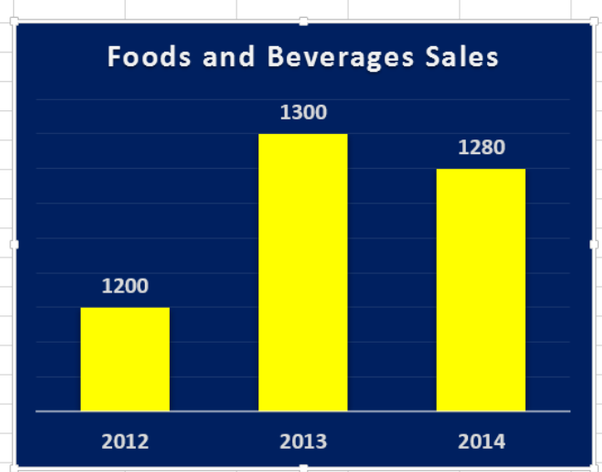
Step 8:
Select the cell where we need the output and use VLOOKUP formula as below:

VLOOKUP ($B$13, 'ORGANISEDATA'!$A$3:$I$22, MATCH(DASHBOARD!C10, 'ORGANISE DATA'!$A$2:$I$2), 0)

Step 9:
Then drag it for rest of the cells and create a basic 2D column chart.

OUTPUT:

	A	B	C
1			
9			
10			
11	**Dashboard**		
12	**Subsidiary**	**Informations**	**Year**
13	Foods and Beverages	Sales	2012
14			
15	**Dashboard Chart Comparsion**		
16	Year	Foods and Beverages Sales	
17	2012	1200	
18	2013	1300	
19	2014	1280	
20			
21			
22			
23			
24			
25			



Describe the Exact VLOOKUP using the below excel sheet.

	A	B	C	D	E	F
1	FinShiksha					
2						
3						
4	RateTable			Name	Rating	Numerical Score
5	Excellent	99		Babbitt, George	Fair	71
6	Very Good	92		Checker, Charles	Satisfactory	78
7	Good	85		Belli, Melvin	Satisfactory	78
8	Satisfactory	78		Bench, John	Good	85
9	Fair	71		Bickle, Travis	Poor	65
10	Poor	65		Martinet, Jean	Satisfactory	78
11	Fail	50		Cabot, Sebastian	Very Good	92
12				Carson, Kit	Fail	50

Aim:

Using the VLOOKUP function to calculate the Numerical Score Based on the Rating.

Step 1: Open Ms- Excel by using the command **Start -> All programs -> Microsoft Office -> MS Excel.**

Step 2: Type the given data

Step 3: To calculate the above data use the formula VLOOKUP formula

=VLOOKUP (**lookup value**, **table array**, **col_index_num**, [**range_lookup**])

Step 4:

Lookup value: Select the cell where search values will be entered.

Table array: The table range, including all cells in the table.

Col_index_num: The data which is being looked up. The input is the number of the column, counted from the left:

Range lookup: TRUE if numbers (1) or FALSE if text (0).

Step 5: Enter the appropriate values in the formula

Step 6: Press Enter Button.

OUTPUT:

Rate Table	
Excellent	99
Very good	92
Good	85
Satisfactory	78
Fair	71
Poor	65
Fail	50

Name	Rating	Numerical score
Babbit,george	Fair	71
Checker,charles	Satisfactory	78
Belli,Melvin	Satisfactory	78
Bench,John	Good	85
Bickle,Travis	Poor	65
Martinet,jean	Satisfactory	78
Cabot,sebastian	Very good	92
Carson,kit	Fail	50

For Kannan Departmental Stores, dynamically visualize the sales data details for the given date interval item wise input criteria

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Bill Date	Customer Name	Mobile No	Item Name	Item Cat	Item Rate	Item Qty	Item Amount	COGS	Item Profit	Sales_Man	Area	Bill Date	Bill Month	Bill Year
2	01-01-2017	Rajesh singh	9876548767	Cinthol 100 GM	Cosmetics	45.00	3	135.00	94.50	40.50	Rajesh kumar	Sulur	1	Jan	2017
3	01-01-2017	Rajesh singh	9876548767	Rexona 150 GM	Cosmetics	55.00	6	330.00	231.00	99.00	Rajesh kumar	Sulur	1	Jan	2017
4	02-01-2017	Sundar	8976789056	Bread Sandwich	Groceries	70.00	1	70.00	49.00	21.00	Ranjith	Sulur	2	Jan	2017
5	02-01-2017	Sundar	8976789056	Milk (1 Ltr)	Groceries	40.00	2	80.00	56.00	24.00	Ranjith	Sulur	2	Jan	2017
6	02-01-2017	Sundar	8976789056	Rexona 150 GM	Cosmetics	55.00	1	55.00	38.50	16.50	Ranjith	Sulur	2	Jan	2017
7	02-01-2017	Rakson	8976789057	Milk (1 Ltr)	Groceries	40.00	1	40.00	28.00	12.00	Rajesh kumar	Sulur	2	Jan	2017
8	03-01-2017	suma ranjan	8976789077	Bread Sandwich	Groceries	70.00	1	70.00	49.00	21.00	Rajesh kumar	Sulur	3	Jan	2017
9	03-01-2017	suma ranjan	8976789077	Rexona 150 GM	Cosmetics	55.00	3	165.00	115.50	49.50	Rajesh kumar	Sulur	3	Jan	2017
10	03-01-2017	suma ranjan	8976789077	Cinthol 100 GM	Cosmetics	45.00	3	135.00	94.50	40.50	Rajesh kumar	Sulur	3	Jan	2017
11	03-01-2017	suma ranjan	8976789077	Milk (1 Ltr)	Groceries	40.00	1	40.00	28.00	12.00	Rajesh kumar	Sulur	3	Jan	2017

Aim:

Prepare the Sales Dashboard using the SUMIFS function with Sales Date and Item Name input Parameters.

Step: 1

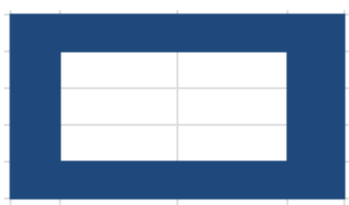
Open Ms- Excel by using the command **Start -> All programs -> Microsoft Office -> MS Excel.**

Step: 2

Type the given data of monthly wise sales data including all columns.

Step: 3

Create a boundary by filling color in a box shaped as below:



Step:4

In the first three rows give from date,to date and items name next to next and give their value .

Step:5

Date for from date is specify from day 1

Step:6

Date for to day is from date+7

Step:7

Item name filter and remove duplicate values and create a list box by clicking data tab->data validation=> list and mention the source.

Step:8

To design the header Insert->shapes->Drawing tools->format->bevel and same as for text.

Step:9

Now populate the data as date and sales in the corner of the created border color filled box

Step:10

Date is specify from date in the first date cell and drag for the remaining cells.

Step:11

For sales use SUMIFS formula as below:

Sumifs(sum_range,creiteria_range[criteria1,creiteria2..])

Step:12

Sum range is Item amount from the data,criteria range is date column from the data and criteria1 will be the from data from the dashboard and criteria 2 will be item name cell from the dashboard cell and freeze the necessary cells.

Step:13

Then by selecting the data and sales data in the dashboard create a column chart which will fit the dashboard.

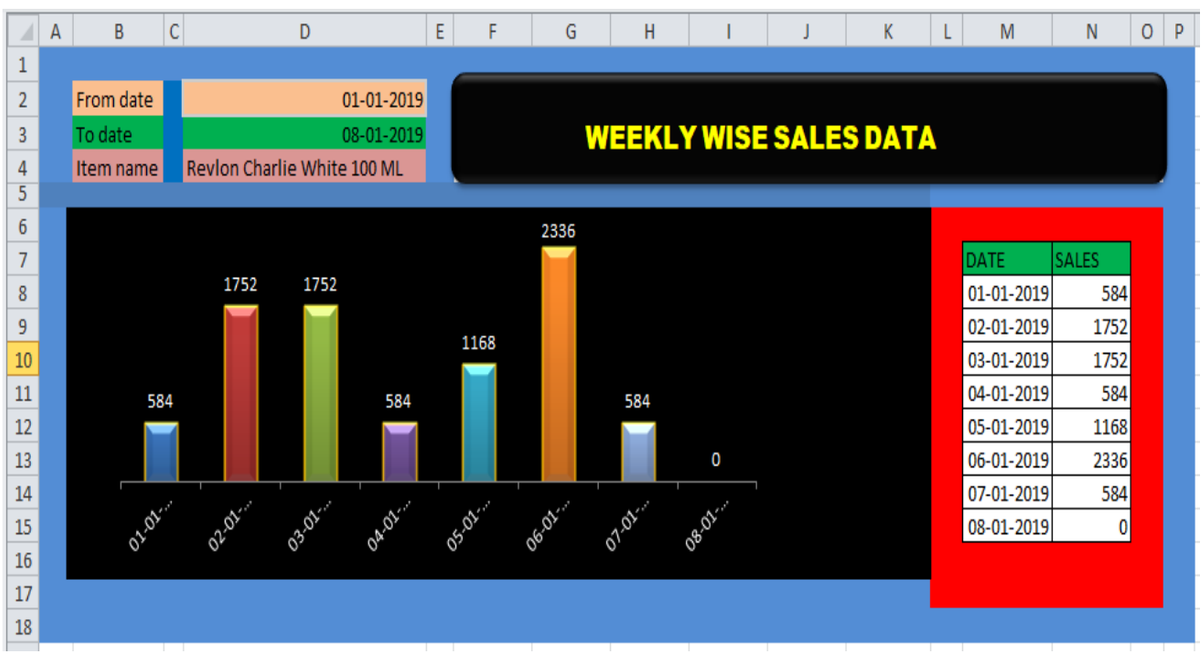
Step:14

Add data labels by right click on the chart and add data label

Step:15

Select the bar in the chart and right click->format data series->fill->vary by colors.

Output :



Write down the steps for create an Item wise Sales Report and present in Column Chart using Pivot table concept

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Bill Date	Customer Name	Mobile No	Item Name	Item Cat	Item Rate	Item Qty	Item Amount	COGS	Item Profit	Sales_Man	Area	Bill Date	Bill Month	Bill Year
2	01-01-2017	Rajesh singh	9876548767	Cinthol 100 GM	Cosmetics	45.00	3	135.00	94.50	40.50	Rajesh kumar	Sulur	1	Jan	2017
3	01-01-2017	Rajesh singh	9876548767	Rexona 150 GM	Cosmetics	55.00	6	330.00	231.00	99.00	Rajesh kumar	Sulur	1	Jan	2017
4	02-01-2017	Sundar	8976789056	Bread Sandwich	Groceries	70.00	1	70.00	49.00	21.00	Ranjith	Sulur	2	Jan	2017
5	02-01-2017	Sundar	8976789056	Milk (1 Ltr)	Groceries	40.00	2	80.00	56.00	24.00	Ranjith	Sulur	2	Jan	2017
6	02-01-2017	Sundar	8976789056	Rexona 150 GM	Cosmetics	55.00	1	55.00	38.50	16.50	Ranjith	Sulur	2	Jan	2017
7	02-01-2017	Rakson	8976789057	Milk (1 Ltr)	Groceries	40.00	1	40.00	28.00	12.00	Rajesh kumar	Sulur	2	Jan	2017
8	03-01-2017	suma ranjan	8976789077	Bread Sandwich	Groceries	70.00	1	70.00	49.00	21.00	Rajesh kumar	Sulur	3	Jan	2017
9	03-01-2017	suma ranjan	8976789077	Rexona 150 GM	Cosmetics	55.00	3	165.00	115.50	49.50	Rajesh kumar	Sulur	3	Jan	2017
10	03-01-2017	suma ranjan	8976789077	Cinthol 100 GM	Cosmetics	45.00	3	135.00	94.50	40.50	Rajesh kumar	Sulur	3	Jan	2017
11	03-01-2017	suma ranjan	8976789077	Milk (1 Ltr)	Groceries	40.00	1	40.00	28.00	12.00	Rajesh kumar	Sulur	3	Jan	2017

Aim:

Prepare the Monthly Sales Dashboard using the Pivot Table Concepts.

Step: 1

Open Ms- Excel by using the command **Start -> All programs -> Microsoft Office -> MS Excel.**

Step: 2

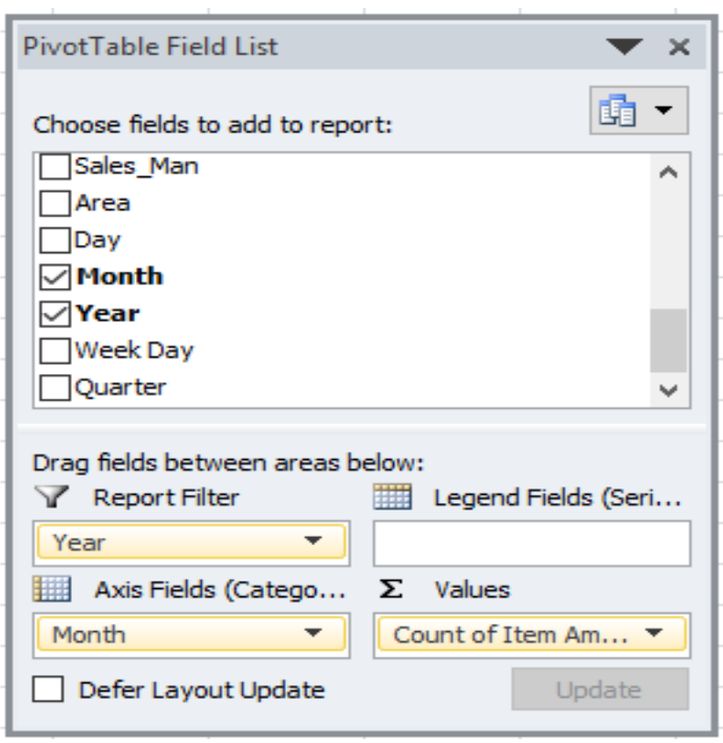
Type the given data of monthly wise sales data including all columns.

Step: 3

Select the entire data sheet **Insert->Pivot table**

Step: 4

A new sheet will be created with pivot table details as below:



Step: 5

Specify bill month column in rows category.

Step: 6

Specify Item amount in values by changing the values from count to sum by right clicking value field Change.

Step: 7

Also specify bill year in filter section.

Step: 8

Then by selecting analyze tab create a pivot chart .So a chart will be displayed with several field buttons.

Step: 9

To remove the field buttons select the field button right click and click hide axis or hide all field button.

Step: 10

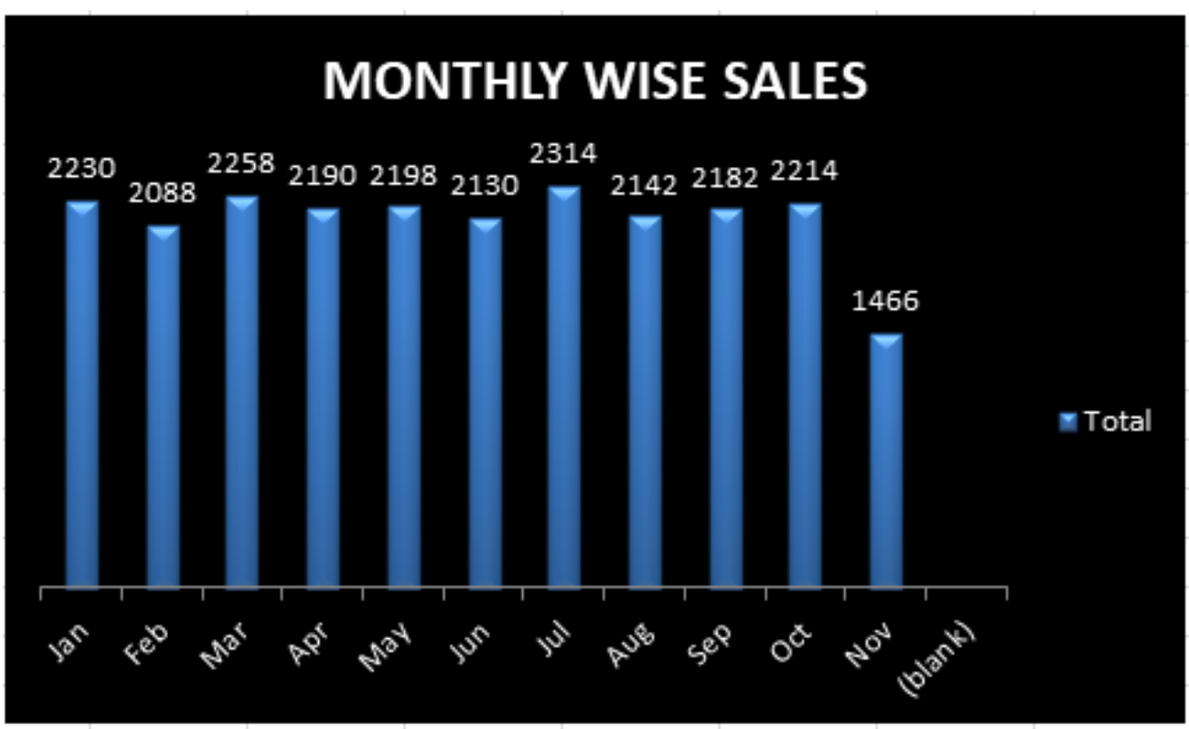
After creating the chart give the needed designs by selecting the design tab.

OUTPUT:

Table:

	A	B
1	Year	(All)
2		
3	Row Labels	Count of Item Amount
4	Jan	2230
5	Feb	2088
6	Mar	2258
7	Apr	2190
8	May	2198
9	Jun	2130
10	Jul	2314
11	Aug	2142
12	Sep	2182
13	Oct	2214
14	Nov	1466
15	(blank)	
16	Grand Total	23412

Pivot chart:



Assuming below are your scores in 4 matches, how much would you have to score in the next cricket match to reach an overall average of 55 using Goal Seek Analysis.

Match 1	55.00
Match 2	43.00
Match 3	23.00
Match 4	12.00
Match 5	
Average	33.25

Aim:

Using Goal Seek Analysis to Calculate the Match 5 Score

Step: 1

Enter the data in the Excel Sheet as shown above.

Step 2:

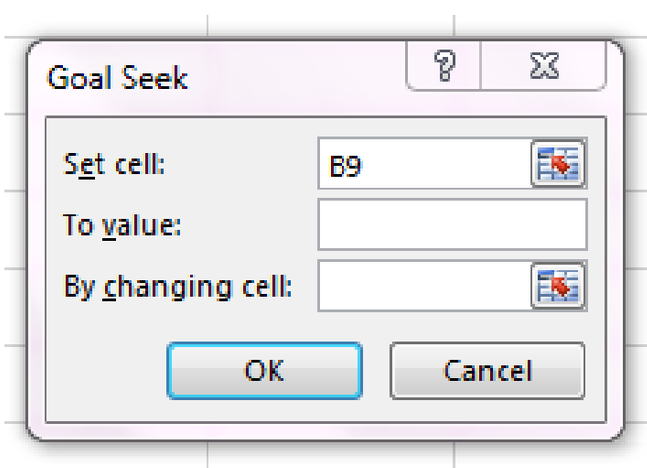
Calculate the Average using the below formula:

=AVERAGE(B3:B7)

Step 3:

Use the below Menu we will get the below sub menu.

Data -> What-If Analysis -> Goal Seek



Step 4:

Set Cell value has been entered cell address B9 which has the average formula entered.

Step 5:

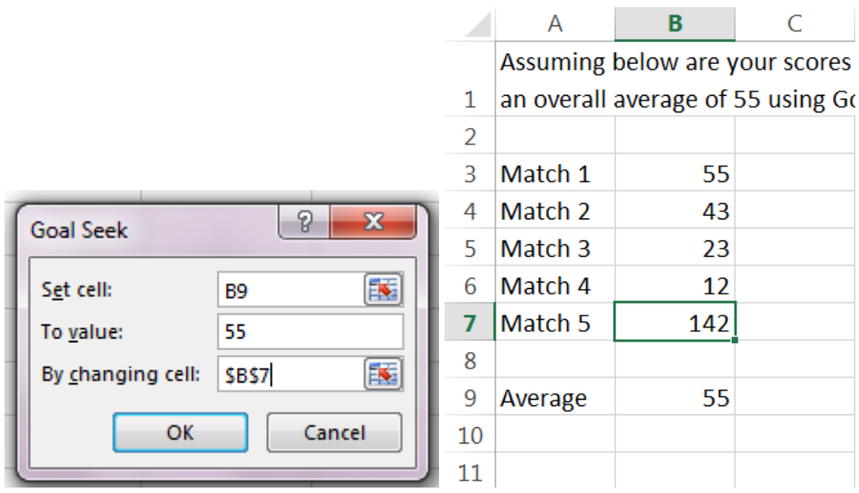
To Value to be entered should be 55, since the expected overall score as 55.

Step 6:

By changing Cell should be entered as B7 which is currently does not have any value and it should be calculated.

Step 7:

Click the Ok button we will get the expected result.



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Case Study

Northwestern Kellogg School of Management

This spreadsheet solution relates to the case *Excel(lence) with Interest*, Case #KE1053.

Input Data	
Principal	$ 10,00,000
Interest Rate	5.50%
Marginal Tax Rate	35%
Marginal Tax Rate within Limit	28%
Limit	$ 1,00,000

1	Calculate Interest earned each year. (Assume all interest is reinvested.)
2	Compute Principal balance at the end of each year. (Assume all interest is reinvested.)
3	Mesure Taxes paid each year. (Assume all interest earned is taxable at a marginal rate of 35% and that taxes are paid from interest earned.)
4	Calculate After-tax account balance at the end of each year
5	Draw Graph of items 1, 3, and 4.
6	Calculate Total interest earned over twenty years after taxes.
7	Find Total taxes paid over twenty years.
8	Perform Recalculation of taxes owed each year (item 3), after-tax account balance at the end of each year (item 4), graph (item 5), total taxes owed over twenty years (item 7) based on new tax information from Fernandez, who tells Lee that special tax shelters give the trust a marginal tax rate of 28% for annual interest income under $100,000; over this limit, the marginal tax rate is 35%.

Aim: To Calculate the Interest earned and Principal balance without Tax / With Marginal Interest Rate / With Marginal Tax within Limit.

1. **Calculate Interest earned each year. (Assume all interest is reinvested.)**

Scenario I - No Tax

Perform the below calculation for Interest Earned

=C14*$D$4

IF =C14*$D$4

	A	B	C	D	E	F
1						
2			Input Data			
3			Principal	$ 10,00,000		
4			Interest Rate	5.50%		
5			Marginal Tax Rate	35%		
6			Marginal Tax Rate within Limit	28%		
7			Limit	$ 1,00,000		
8						
11			**Scenario I - No Tax**			
12		Year	Beginning Principal	Interest Earned	Ending Principal	
13		0	$ 10,00,000.00	0	$ 10,00,000.00	
14		1	$ 10,00,000.00	=C14*$D$4	$ 10,55,000.00	

2. Compute Principal balance at the end of each year. (Assume all interest is reinvested.)

Perform Principal Balance at the end of the year using the below command:

= C14 + D14

IF =C14+D14

	A	B	C	D	E
1					
2			Input Data		
3			Principal	$ 10,00,000	
4			Interest Rate	5.50%	
5			Marginal Tax Rate	35%	
6			Marginal Tax Rate within Limit	28%	
7			Limit	$ 1,00,000	
8					
11			**Scenario I - No Tax**		
12		Year	Beginning Principal	Interest Earned	Ending Principal
13		0	$ 10,00,000.00	0	$ 10,00,000.00
14		1	$ 10,00,000.00	$ 55,000.00	=C14+D14
15		2	$ 10,55,000.00	$ 58,025.00	$ 11,13,025.00
16		3	$ 11,13,025.00	$ 61,216.38	$ 11,74,241.38

3. Measure Taxes paid each year. (Assume all interest earned is taxable at a marginal rate of 35% and that taxes are paid from interest earned.)

Taxes paid each year calculated using the below command:

= H14 + I14

IF =H14*I14

	F	G	H	I	J	K
8						
11		**Scenario II - 35% Marginal Tax Rate**				
12		Beginning Principal	Interest Earned	Tax Rate	Taxes Paid	Ending Principal
13		$ 10,00,000.00	0	35%	0	$ 10,00,000.00
14		$ 10,00,000.00	$ 55,000.00	35%	=H14*I14	$ 10,35,750.00
15		$ 10,35,750.00	$ 56,966.25	35%	$ 19,938.19	$ 10,72,778.06
16		$ 10,72,778.06	$ 59,002.79	35%	$ 20,650.98	$ 11,11,129.88
17		$ 11,11,129.88	$ 61,112.14	35%	$ 21,389.25	$ 11,50,852.77
18		$ 11,50,852.77	$ 63,296.90	35%	$ 22,153.92	$ 11,91,995.76
19		$ 11,91,995.76	$ 65,559.77	35%	$ 22,945.92	$ 12,34,609.61
20		$ 12,34,609.61	$ 67,903.53	35%	$ 23,766.23	$ 12,78,746.90

4. **Calculate After-tax account balance at the end of each year**

Account Balance after-tax at the end of the year has calculated using the below command:

= G14 + H14 – J14

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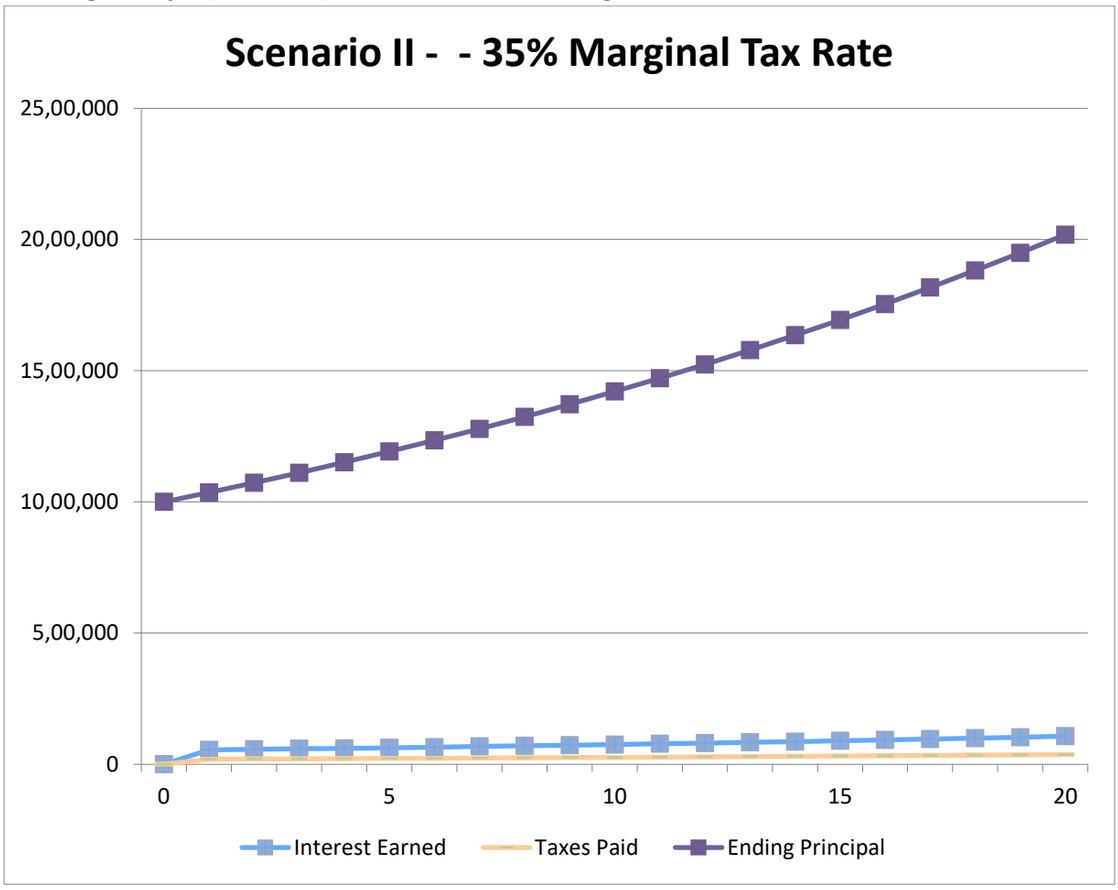
IF =G14+H14-J14

	F	G	H	I	J	K
8						
11		**Scenario II - 35% Marginal Tax Rate**				
12		Beginning Principal	Interest Earned	Tax Rate	Taxes Paid	Ending Principal
13		$ 10,00,000.00	0	35%	0	$ 10,00,000.00
14		$ 10,00,000.00	$ 55,000.00	35%	$ 19,250.00	=G14+H14-J14
15		$ 10,35,750.00	$ 56,966.25	35%	$ 19,938.19	$ 10,72,778.06
16		$ 10,72,778.06	$ 59,002.79	35%	$ 20,650.98	$ 11,11,129.88
17		$ 11,11,129.88	$ 61,112.14	35%	$ 21,389.25	$ 11,50,852.77

5. **Draw Graph of items 1, 3, and 4.**

   Use the Line Graph select the required columns Interest Earned (H Column), Taxes Paid (J Column) and Ending Principal (K Column) of Scenario II - 35% Marginal Tax Rate



6. **Calculate Total interest earned over twenty years after taxes.**

   Perform the below calculation for Total Interest earned over 20 years after taxes:

   =SUM (Calculations! H13:H33)

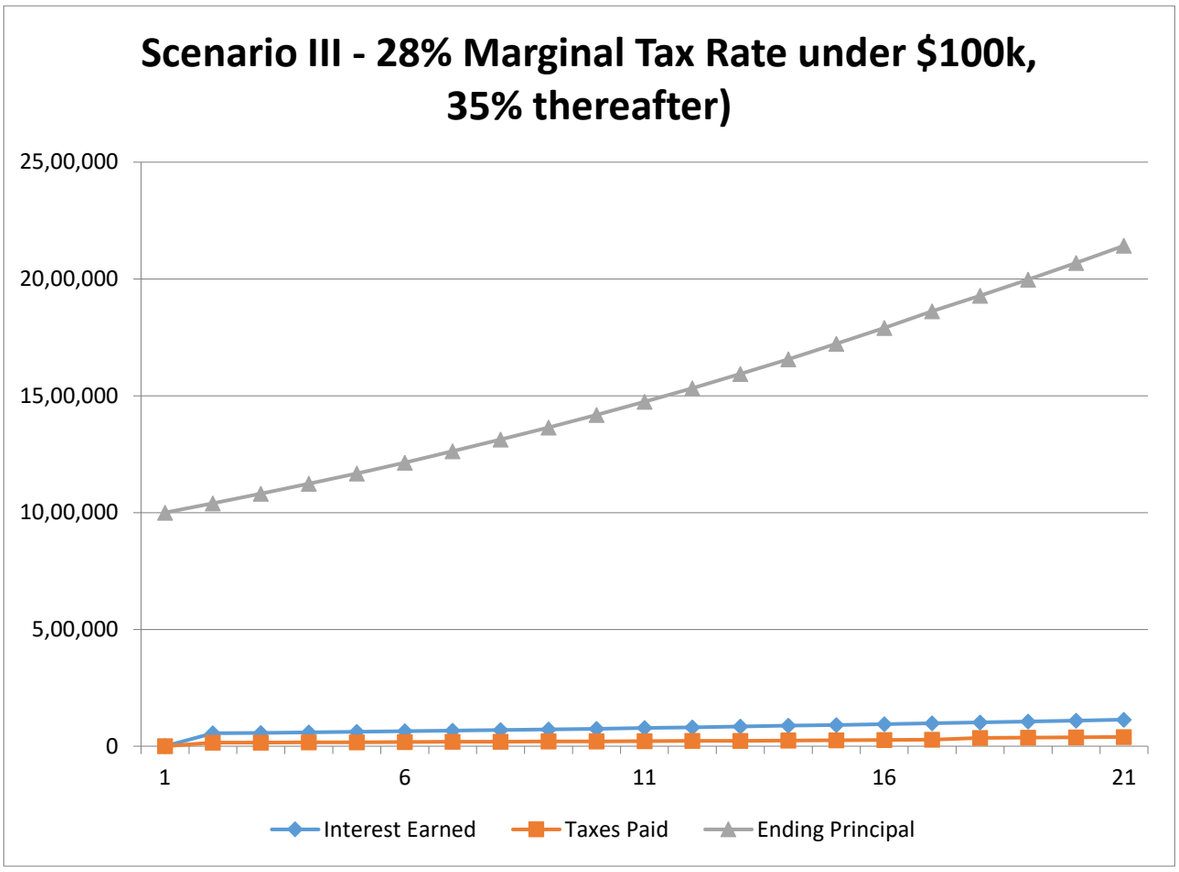
7. **Find Total taxes paid over twenty years.**

   Perform the below calculation for Total taxes paid over 20 years:

   =SUM (Calculations! J13:J33)

8. **Perform Recalculation of taxes owed each year (item 3), after-tax account balance at the end of each year (item 4), graph (item 5), total taxes owed over twenty years (item 7) based on new tax information from Fernandez, who tells Lee that special tax shelters give the trust a marginal tax rate of 28% for annual interest income under $100,000; over this limit, the marginal tax rate is 35%.**

For this , use the Scenario III - 28% Marginal Tax Rate under $100k, 35% thereafter) select the Interest Earned (Column N), Taxes Paid (Column P) and Ending Principal (Column Q). Select the Line Graph and use the above mentioned data we will get the below Chart



TOTAL ACHIEVED VALUE BASED ON THE SALESMAN AND PRODUCT

Using the Array concepts in Excel find the Total Archived value based on the Salesman and Product for the below data.

	A	B	C	D	E	F	G
5	Sales	Product	Target	Achieved		Salesman	A
6	A	Mouse	648	915		Product	Laptop
7	B	Laptop	609	871		Total Achieved	557
8	C	Keyboard	737	544			
9	A	Laptop	986	557			
10	B	Mouse	526	670			
11	C	Paper	572	755			
12	A	Keyboard	748	783			
13	B	Bottles	958	698			
14	C	Mobiles	589	489			

Aim:

To find the total archived value based on the Salesman and Product for the given data using the array concepts in excel.

Algorithm:

Step 1: Open MS-EXCEL using the below menu, we can open the MS Excel.

Start -> All Programs -> Microsoft Office -> MS-Excel.

Step 2: Enter the given Salesman Name in Column A, Product in column B, Target Sales in Column C and Sales Achieved detail in Column D in the excel sheet.

Step 3: As an Input Parameter, enter the Salesman Name "A" in Cell G5

Step 4: Enter the Product details cell G3, for an example enter as "laptop".

Step 5: To find the value achieved by salesman "A" for the Product "laptop", Enter the below formula in cell B4 as below

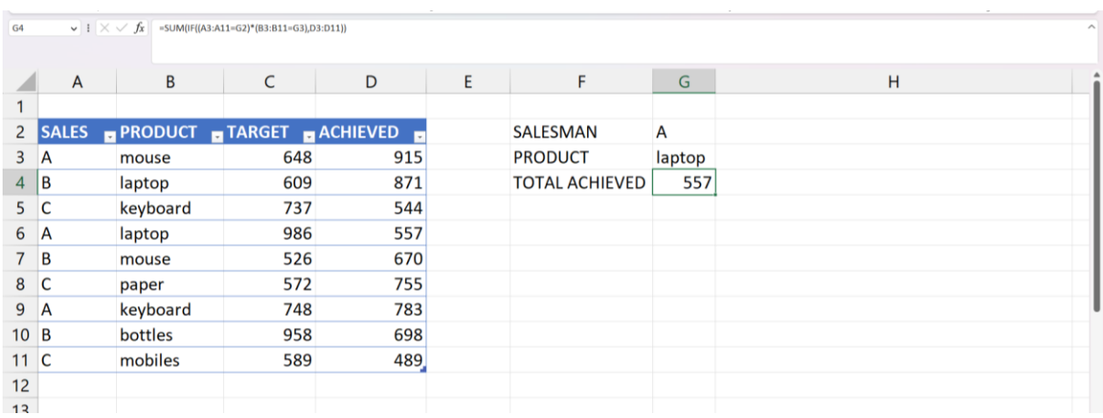
=SUM (IF ((A3:A11=G2)*(B3:B11=G3), D3:D11))

Step 6: Alter entering the above formula in cell B4 and Click "**Ctrl + Shift + Enter**" we will get the expected output.

Step 7: We will get the expected output **557** in the cell B4.

Step 8: With the help of this formula, we can find the total value achieved by different salesman for different products. Save and Close the File.

Output:



	A	B	C	D	E	F	G	H
1								
2	SALES	PRODUCT	TARGET	ACHIEVED		SALESMAN	A	
3	A	mouse	648	915		PRODUCT	laptop	
4	B	laptop	609	871		TOTAL ACHIEVED	557	
5	C	keyboard	737	544				
6	A	laptop	986	557				
7	B	mouse	526	670				
8	C	paper	572	755				
9	A	keyboard	748	783				
10	B	bottles	958	698				
11	C	mobiles	589	489				
12								

SUM OF OUTPUT OF A PERSON A

Calculate the Sum of Output of a person A, for the month of Jan, Feb and Mar using the below data dynamically.

	A	B	C	D	E	F	G	H	I	J	K	L	M
6	Sales Person	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
7	A	67	69	60	87	54	87	93	90	68	84	70	50
8	B	84	94	91	66	98	73	99	77	56	90	60	50
9	C	62	51	77	91	56	91	74	54	68	96	54	54
10	D	80	66	90	80	92	55	74	84	57	75	86	71
11	E	63	65	96	95	55	59	60	100	93	63	98	92
12	F	93	52	64	81	92	57	56	90	95	63	76	62
13	G	73	96	82	79	61	71	86	74	93	97	51	96
14	H	78	70	66	80	85	80	65	92	56	63	76	56
15													
16	Sales Person	A											
17	Output	196											
18													

Aim: To calculate the sum of output of a person A, for the month Jan, Feb and Mar using the given data, with the help of MS- EXCEL.

Algorithm:

Step 1: Open MS-EXCEL by using the command start- all programs- Microsoft office- MS-Excel

Start -> All Programs -> Microsoft Office -> MS-Excel.

Step 2: Type the given salesperson field and month's field with its values.

Step 3: In cell B16 type as salesperson and in cell C16 type as A and in cell B17 type as output.

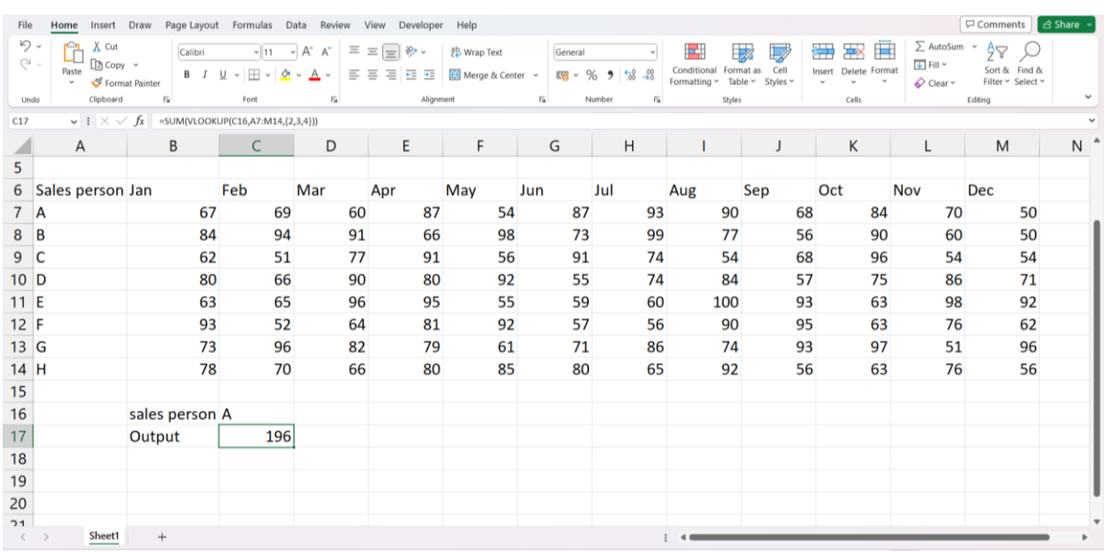
Step 4: To find the sum of sales made by salesperson A for the month Jan, Feb and Mar type formula as below:

{=SUM (VLOOKUP (C16, A7:M14, {2, 3, 4}, 0))}

Step 5: Click **"Ctrl+ Shift+ Enter"** buttons.

Step 6: Now you can find the value **196**. With the help of this formula you can dynamically calculate the sales amount of a sales person for first 3 months.

Output:



CIRCULAR REFERENCE USING ARRAY CONCEPTS

Aim: To simulate the circular reference for the given data using array concepts in excel.

Algorithm:

Step 1: Open MS-EXCEL using the below menu, we can open the MS Excel.

Start -> All Programs -> Microsoft Office -> MS-Excel.

Step 2: Enter the Sales and Expense details in the cell B6 and B7.

Step 3: Enter the Tax details in the cell B9

Step 4: Enter the profit details formula as below:

= Sales – Expenses – Other Expenses - Tax

= C6 – C7 – C9 – C9

Step 5: Enter the formula for Other Expenses as below:

= 10% of Profit

= (10/100) * C10

Step 6: While entering the formula and Profit and Other Expenses, the Other Expense is not calculated.

Step 7: For that we need to enable the Circular Reference option using the below menu:

File –> Options –> Formulas – Enable iterative calculation

Check box to be clicked.

Step 8: We will get the expected outcome.

OUTPUT:

F12

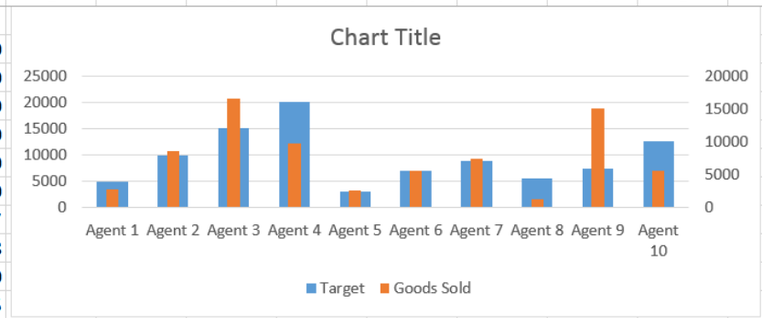
	A	B	C	D	E	F
1		FinShiksha				
2						
3						
4		Sales	10,000.00			
5		Expenses	4,000.00			
6		Other Expenses (10% on Profit)	363.64			
7		Tax	2,000.00			
8		Profit	3,636.36			
9						

	A	B	C	D	E	F
1		FinShiksha				
2						
3						
4		Sales	10,000.00			
5		Expenses	4,000.00			
6		Other Expenses (10% on Profit)	363.64			
7		Tax	2,000.00			
8		Profit	3,636.36			
9						
10						

THERMOMETER CHART

Generate the below Thermometer Chart for the following data:

	B	C	D
3		Target	Goods Sold
4	Agent 1	5000	2800
5	Agent 2	10000	8600
6	Agent 3	15000	16500
7	Agent 4	20000	9800
8	Agent 5	3000	2670
9	Agent 6	7000	5530
10	Agent 7	8900	7387
11	Agent 8	5600	1288
12	Agent 9	7500	15000
13	Agent 10	12500	5625



Aim: To generate Thermometer chart for the given data using MS Excel.

Algorithm:

Step 1: Open MS Excel by using the command start – All Programs – Microsoft office – MS Excel.

Start -> All Programs -> Microsoft Office -> MS-Excel

Step 2: Type the given Agent name, Target and Goods sold fields and its values.

Step 3: Select the values of Agents, Target and Goods sold. Create a Column chart.

Step 4: To create a Column chart click

Insert -> Column chart.

Step 5: Now you can find two different bar charts for each agent. The Blue bar represents Target and the Orange bar represents Goods sold.

Step 6: Select the goods sold bar and right click the mouse. A popup menu appears. Select "Format Data Series" option from the menu.

Step 7: Enable **"Secondary axis"** radio button. Now you can find the orange bar overlaps the blue bar.

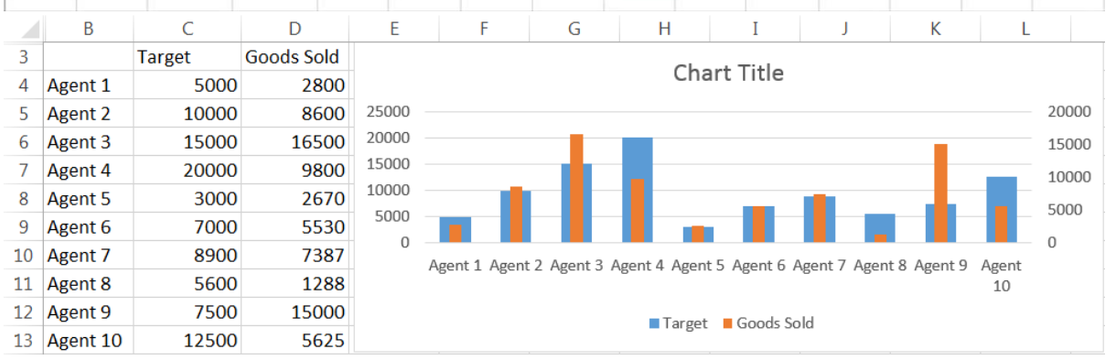
Step 8: Adjust its size by using "**gap width"** option to get the shape of Thermometer.

Step 9: Type the chart title as "Thermometer Chart".

Output:

FinShiksha
Target
Goods Sold
Agent 1 5000 2800
Agent 2 10000 8600
Agent 3 15000 16500
Agent 4 20000 9800
Agent 5 3000 2670
Agent 6 7000 5530
Agent 7 8900 7387
Agent 8 5600 1288
Agent 9 7500 15000
Agent 10 12500 5625
Chart Title
25000
20000
15000
10000
5000
0
Agent 1
Agent 2
Agent 3
Agent 4
Agent 5
Agent 6
Agent 7
Agent 8
Agent 9
Agent 10
Target
Goods Sold

FinShiksha
Target
Goods Sold
Agent 1 5000 2800
Agent 2 10000 8600
Agent 3 15000 16500
Agent 4 20000 9800
Agent 5 3000 2670
Agent 6 7000 5530
Agent 7 8900 7387
Agent 8 5600 1288
Agent 9 7500 15000
Agent 10 12500 5625
Chart Title
25000
20000
15000
10000
5000
0
20000
15000
10000
5000
0
Agent 1
Agent 2
Agent 3
Agent 4
Agent 5
Agent 6
Agent 7
Agent 8
Agent 9
Agent 10
Target
Goods Sold


B C D E F G H I J K L
3 Target Goods Sold
4 Agent 1 5000 2800
5 Agent 2 10000 8600
6 Agent 3 15000 16500
7 Agent 4 20000 9800
8 Agent 5 3000 2670
9 Agent 6 7000 5530
10 Agent 7 8900 7387
11 Agent 8 5600 1288
12 Agent 9 7500 15000
13 Agent 10 12500 5625
Chart Title
25000
20000
15000
10000
5000
0
20000
15000
10000
5000
0
Agent 1
Agent 2
Agent 3
Agent 4
Agent 5
Agent 6
Agent 7
Agent 8
Agent 9
Agent 10
Target
Goods Sold

BULLET CHART

Aim: Generate the Bullet Chart for the below data:

	A	B	C	D
1				
2			Delivery Time	
3		Before Time	60%	
4		Just on Time	25%	
5		Late	7%	
6		Not Delivered	8%	
7		Target	90%	
8				

Algorithm:

Step 1: Open MS-EXCEL using the below menu:

Start -> All Programs -> Microsoft Office -> MS-Excel

Step 2: Enter the data into the worksheet.

Step 3: Select the entire data and use the below menu to create a Bar Chart

Insert -> Column Chart -> 2D Stacked Column Chart

Step 4: Using the menu change the Chart Type as Stacked Column Chart

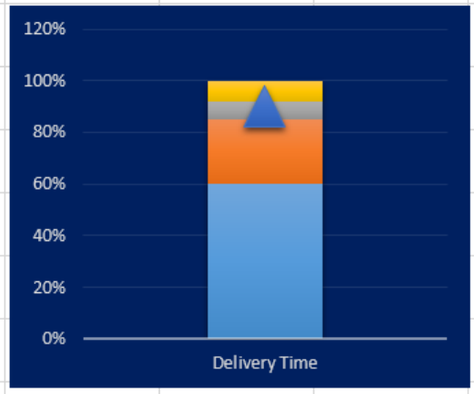
Step 5: Choose the Target Data Value and Change Series Chart Type -> Select Target Data Point and changed the Chart type as Line chart with Markers

Step 6: Select the Target Data Point and right click and Format Data Series menu. In that select Fill and Marker option, select the Built-in option and select the Symbol we want and select the Marker Size.

Step 7: Now we will get the Expected Results.

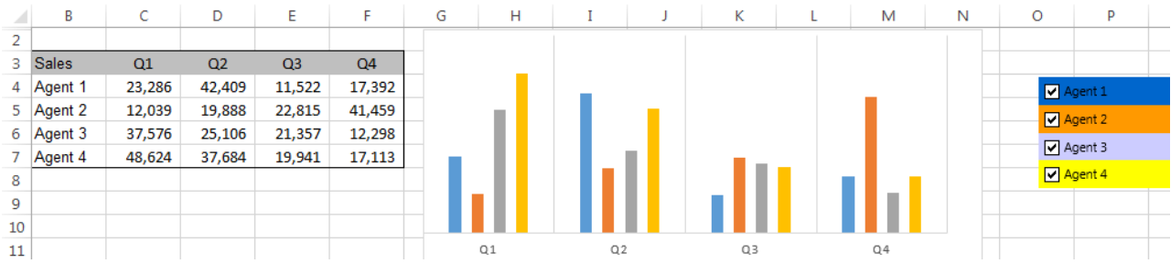
OUTPUT:

	Delivery Time
Before Time	60%
Just on Time	25%
Late	7%
Not Delivered	8%
Target	90%



DYNAMIC LINKED LEGEND CHART

Create the below Dynamic Linked Legend Chart for the following data.



Sales	Q1	Q2	Q3	Q4
Agent 1	23,286	42,409	11,522	17,392
Agent 2	12,039	19,888	22,815	41,459
Agent 3	37,576	25,106	21,357	12,298
Agent 4	48,624	37,684	19,941	17,113

Aim: **T**o create Dynamic Linked legend chart for the given data using MS Excel.

Algorithm:

Step 1: Open MS Excel by using the command start – All Programs – Microsoft office – MS Excel.

Start -> All Programs -> Microsoft Office -> MS-Excel

Step 2: Type the given Sales of agents for different quarters ie., Q1, Q2, Q3, Q4

Step 3: Select the values of sales, Q1, Q2, Q3 and Q4. Paste the values in another worksheet.

Step 4: Create checkbox for each Agents.

Step 5: To create a checkbox, use the command

Developer –> Insert –> Form controls –> Checkbox.

Step 6: Select the check box, drag it int the sheet. Name the check box as "Agent1". Like this, create checkbox for Agent 2, Agent 3 and Agent 4.

Step 7: Assign a cell as cell link, Right click the mouse button and do as follows

Format control –> Cell link –>Select a cell.

Step 8: Set the cell A4 as a cell link for Agent 1 checkbox, A5 for Agent 2, A6 for Agent 3 and A7 for Agent 4.

Step 9: In the cell which is referred as cell link, it shows TRUE when the checkbox is enabled.

Step 10: To find the value of Agent 1 for Q1 type formula as below:

=IF (A4=TRUE, Data! C4, NA())

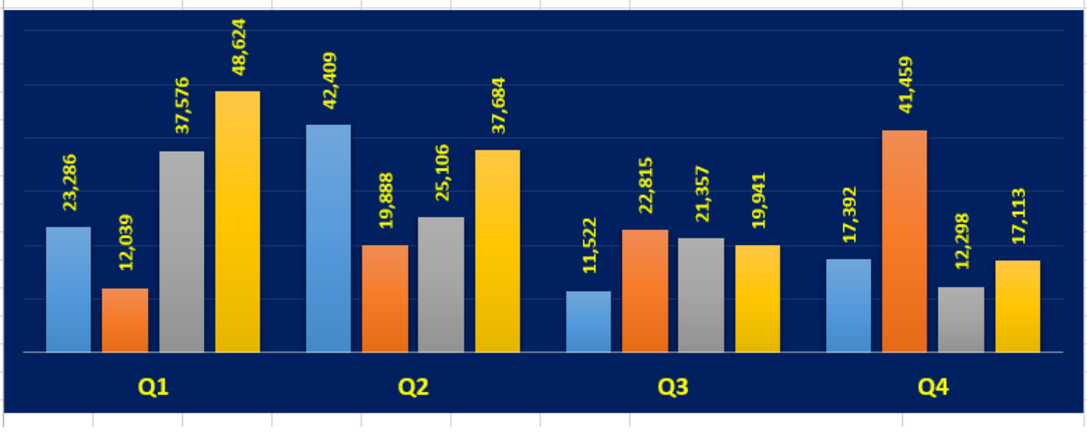
Step 11: By using the above formula, find the values of sales for all the Agents in different quarters.

OUTPUT:

FinShiksha

	Sales	Q1	Q2	Q3	Q4
TRUE	Agent 1	23,286	42,409	11,522	17,392
TRUE	Agent 2	12,039	19,888	22,815	41,459
TRUE	Agent 3	37,576	25,106	21,357	12,298
TRUE	Agent 4	48,624	37,684	19,941	17,113

- ☑ Agent 1
- ☑ Agent 2
- ☑ Agent 3
- ☑ Agent 4



DYNAMIC GRAPH CONTROL CHART

Aim: Generate the dynamic graph control chart for the below given data:

	A	B	C	D	E	F
1	FinShiksha					
2						
3						
4						
5			Q1	Q2	Q3	Q4
6		Sales	23,286	42,409	11,522	17,392
7		Profit	2,341	2,432	1,146	1,508

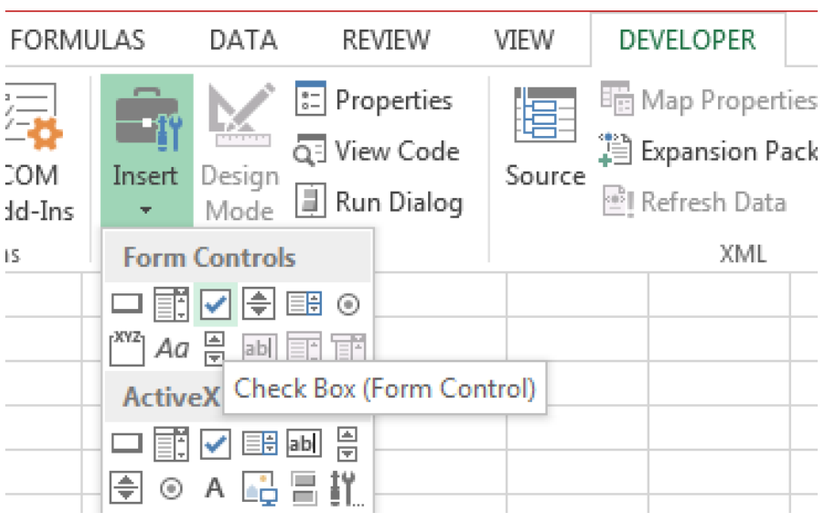
Algorithm:

Step 1: Open MS-EXCEL by using the command start- all programs- Microsoft office- MS-excel.

Start -> All Programs -> Microsoft Office -> MS-Excel.

Step 2: Enter the above data in the Excel.

Step 3: Using Developer Menu, select the Form Control and pick the Check Box control and place it in the excel sheet.



Step 4: Change the Label as "Agent 1"

Step 5: Right click the control and select the Format Control Menu -> Control tab select the cell link for the Unchecked option as A4. This means while selecting the check box checked then the value "TRUE" will be placed in the cell A4. Similarly do the same steps for Profit.

Step 6: Use below if condition to link the values with checkboxes and show the Agent 1 Sales data or show as "#NA".

=IF ($A4=TRUE, 'Data 1'! C6, NA ())

Step 7: Copy the above formula to Q2, Q3 and Q4 and check the values are shown as well as NA shown for unchecked option chosen.

Step 8: Follow the same steps for Profit

Step 9: After populating the data select the Data Range and use the below menu to generate the column chart.

Insert - > Charts -> 2D Column Charts

Step 10: Now the Sales and Profit will be shown as Column data bars

Step 11: Select the Profit Data Points and select "Change Series Chart Type" menu

Step 12: We can see the Chart Type and Secondary Axis check Box. Change the Chart type of Profit into "Line Chart" and click the Secondary Axis check box

Step 13: Select Profit and Sales Data Points and enable the data labels.

Step 14: We will get the expected Output.

OUTPUT:

FinShiksha

		Q1	Q2	Q3	Q4
TRUE	Sales	23,286	42,409	11,522	17,392
TRUE	Profit	2,341	2,432	1,146	1,508

Sales

Profit

DASHBOARD CREATION

Create a Dashboard for the below data:

	FinShiksha			
Economic Strength	Unemployment	10.50%	10.90%	44
	Gross Domestic Product (GDP)	-5.20%	2.90%	25
	Percent of Structurally Deficient Bridges	13.50%	13.20%	25
	Real Personal Income per Capita	$ 28,250	$ 27,558	25
	Children Living in Poverty	19%	23%	25
Health and Education	Infant Mortality (per 1,000 births)	7.6	7.7	25
	Obesity in Population	30.30%	31.70%	43
	3rd Graders Reading at Grade Level	90%	87%	
	ACT College Readiness Benchmarks	16%	17.30%	
	Population with Bachelor's Degree or Higher (25+ years old)	24.70%	24.60%	21
Value for Money Government	Bond Rating (S&Ps)	AA-	AA-	
	Government Debt Burden per Capita	$ 748	$ 762	29
	State Government Operating Cost as a Percent of GDP	11.90%	12.50%	
	State and Local Government Operating Cost as a Percent of GD	20.90%	21.90%	
	Access to State Government - Number of Online Services	325	357	
Quality of Life	State Park Popularity - Annual visits per citizen	2.1	2.1	
	Population Growth (Ages 25-34)	-1.90%	-1.60%	
	Clean and Safe Water Resources - water quality index	83	88	
Public Safety	Violent Crimes per 100,000	502	497	25
	Property Crimes per 100,000	2,935	2,838	25
	Individuals fatally or serious injured in traffic accidents	7,382	6,917	

Economic Strength	Prior	Current	Rank	Progress
Unemployment	10.5%	10.9%		⇩
Gross Domestic Product (GDP)	-5.2%	2.9%		⇧
Percent of Structurally Deficient Bridges	13.5%	13.2%		⇧
Real Personal Income per Capita	$28,250	$27,558		⇩
Children Living in Poverty	19.0%	23.0%		⇩

Quality of Life	Prior	Current	Rank	Progress
State Park Popularity - Annual visits per citizen	2	2		⇔
Population Growth (Ages 25-34)	0	0		⇧
Clean and Safe Water Resources - water quality	83	88		⇧

Aim: To create a Dashboard for the given data using MS – Excel.

Step 1: Open MS Excel by using the command start – All Programs – Microsoft office – MS Excel.

Start -> All Programs -> Microsoft Office -> MS-Excel.

Step 2: Create a separate sheet called Dashboard.

Step 3: Type the given area separately and type subtopics under each area.

Step 4: To copy the value of metric for Economic strength type formula as below

='Data Dashboard'! B5

By using the above steps create separate table for each area and copy its metric value.

Step 5: To get the value of prior for each table, type formula as below:

=VLOOKUP (metric value, 'Data Dashboard'! $B$5:$E$25, 2, 0)

By using the given formula retrieve the value of prior for each metric.

Step 6: To get the value of current for each table, type formula as below:

=VLOOKUP (Metric Value, 'Data Dashboard'! $B$5: $E$25, 3, 0)

Step 7: To get the value of Rank for each table, type formula as below:

=VLOOKUP (Metric Value, 'Data Dashboard'! $B$5:$E$25, 4, 0)

Step 8: To find the value of progress type formula as below:

= Current - Prior.

By using the given formula retrieve the value of progress for each area.

Step 9: To set icons, select the Rank value do as follows,

Home –> Conditional formatting –> Icon sets –> Shapes –> Circle.

To set Icons, select the Progress and do as follows,

Home –> Conditional formatting –> Icon sets –> Shapes –> Arrows.

By using the above steps set Icons for Rank and Progress in each area.

OUTPUT:

FinShiksha

Economic Strength	Prior	Current	Rank	Progress
Unemployment	10.50%	10.90%		
Gross Domestic Product (GDP)	-5.20%	2.90%		
Percent of Structurally Deficient Bridges	13.50%	13.20%		
Real Personal Income per Capita	$ 28,250.00	##########		
Children Living in Poverty	19.00%	23.00%		

Health and Education	Prior	Current	Rank	Progress
Infant Mortality (per 1,000 births)	7.60	7.70		
Obesity in Population	30.30%	31.70%		
3rd Graders Reading at Grade Level	90.00%	87.00%		
ACT College Readiness Benchmarks	16.00%	17.30%		
Population with Bachelor's Degree or Higher (25+ years old)	24.70%	24.60%		

Value for Money Government	Prior	Current	Rank	Progress
Bond Rating (S&Ps)	AA-	AA-		#VALUE!
Government Debt Burden per Capita	$ 748.00	$ 762.00		14.00
State Government Operating Cost as a Percent of GDP	11.90%	12.50%		0.01
State and Local Government Operating Cost as a Percent of GDP	20.90%	21.90%		0.01
Access to State Government - Number of Online Services	325.00	357.00		32.00

Quality of Life	Prior	Current	Rank	Progress
State Park Popularity - Annual visits per citizen	2.10	2.10	0	
Population Growth (Ages 25-34)	-1.90%	-1.60%	0	
Clean and Safe Water Resources - water quality index	83.00	88.00	0	

Public Safety	Prior	Current	Rank	Progress
Violent Crimes per 100,000	502.00	497.00		
Property Crimes per 100,000	2935.00	2838.00		
Individuals fatally or serious injured in traffic accidents	7382.00	6917.00		

DASHBOARD CREATION USING COMPANY AND VARIABLE COST

AIM:

To create a dashboard for the following data:

	A	B	C	D	E	F	G
1	Company	Variable	2011	2012	2013	2014	2015
2	ACC Ltd	Fixed Cost	27	26	29	29	30
3	ACC Ltd	Freight & Forwarding	20	20	21	22	23
4	ACC Ltd	Other variable cost	15	18	22	20	19
5	ACC Ltd	Power & Fuel	23	21	21	21	20
6	ACC Ltd	Profit	15	15	7	8	8
7	Ambuja Cement	Fixed Cost	25	25	27	27	30
8	Ambuja Cement	Freight & Forwarding	23	23	25	24	27
9	Ambuja Cement	Other variable cost	11	9	13	12	11
10	Ambuja Cement	Power & Fuel	23	24	22	23	22
11	Ambuja Cement	Profit	18	19	13	14	10
12	JK Lakshmi Cement	Fixed Cost	19	20	19	19	18
13	JK Lakshmi Cement	Freight & Forwarding	20	19	21	22	22
14	JK Lakshmi Cement	Other variable cost	23	25	26	30	29
15	JK Lakshmi Cement	Power & Fuel	30	24	20	21	21
16	JK Lakshmi Cement	Profit	8	12	14	8	10
17	Ultratech Cement	Fixed Cost	24	22	22	24	24
18	Ultratech Cement	Freight & Forwarding	22	20	21	23	24
19	Ultratech Cement	Other variable cost	16	17	18	19	18
20	Ultratech Cement	Power & Fuel	23	24	21	20	21
21	Ultratech Cement	Profit	17	17	8	9	9

Data | Working Sheet | DB

ALGORITHM:

Step 1: Open MS-EXCEL using the below menu:

Start -> All Programs -> Microsoft Office -> MS-Excel

Step 2: Enter the data in the Excel Sheet.

Step 3: Select the entire data and use the below menu to create the Pivot table in the working sheet:

Insert -> Pivot Table

Step 4: Select Company in the Filter option the Pivot table will be created.

Step 5: Now insert slicer using Analyze menu for company & variable fields

Step 6: Again create a pivot table for year wise data based on the company and variable cost

Step 7: For that select variable cost in filters, Company in Rows and Year 2011 data in Σ Values.

Step 8: Proceed with the same process for 2012, 2013, 2014 and 2015 data in the similar manner.

Step 9: The above things has been done in working sheet. Now we have to create a Dashboard Sheet and copy the Variable Cost Slicer and Company Slicers.

Step 10: Now use the Vlookup formula to get values from pivot table for each year for the Dashboard Sheet.

Step 11: After completing that process, we need to attach the variable cost slicer with the year 2011, 2012, 2013, 2014 and 2015 pivot tables. For that select the variable cost slicer then the Options menu has been enabled. From that Options menu, select the Report Connections, that will show the pivot tables created for year wise data. Click that check box and click Ok, then the Slicer will be connected with the Year wise Pivot tables and show the related data.

Step 12: Using the Conditional Formatting Techniques, we will highlight the selected company. This will be the expected result.

OUTPUT:

Company	Variable	2011	2012	2013	2014	2015
ACC Ltd	Fixed Cost	27	26	29	29	30
ACC Ltd	Freight & Forwarding	20	20	21	22	23
ACC Ltd	Other variable cost	15	18	22	20	19
ACC Ltd	Power & Fuel	23	21	21	21	20
ACC Ltd	Profit	15	15	7	8	8
Ambuja Cement	Fixed Cost	25	25	27	27	30
Ambuja Cement	Freight & Forwarding	23	23	25	24	27
Ambuja Cement	Other variable cost	11	9	13	12	11
Ambuja Cement	Power & Fuel	23	24	22	23	22
Ambuja Cement	Profit	18	19	13	14	10
JK Lakshmi Cement	Fixed Cost	19	20	19	19	18
JK Lakshmi Cement	Freight & Forwarding	20	19	21	22	22
JK Lakshmi Cement	Other variable cost	23	25	26	30	29
JK Lakshmi Cement	Power & Fuel	30	24	20	21	21
JK Lakshmi Cement	Profit	8	12	14	8	10
Ultratech Cement	Fixed Cost	24	22	22	24	24
Ultratech Cement	Freight & Forwarding	22	20	21	23	24
Ultratech Cement	Other variable cost	16	17	18	19	18
Ultratech Cement	Power & Fuel	23	24	21	20	21
Ultratech Cement	Profit	17	17	8	9	9

Data | Working Sheet | DB

Company

ACC Ltd | Ambuja Cement | JK Lakshmi Cement | Ultratech Cement

Variable

Fixed Cost | Freight & Forwarding | Other variable cost | Power & Fuel | Profit

2011		2012		2013		2014		2015	
ACC Ltd	15	ACC Ltd	15	ACC Ltd	7	ACC Ltd	8	ACC Ltd	8
Ambuja Cement	18	Ambuja Cement	19	Ambuja Cement	13	Ambuja Cement	14	Ambuja Cement	10
JK Lakshmi Cement	8	JK Lakshmi Cement	12	JK Lakshmi Cement	14	JK Lakshmi Cement	8	JK Lakshmi Cement	10
Ultratech Cement	17	Ultratech Cement	17	Ultratech Cement	8	Ultratech Cement	9	Ultratech Cement	9

DASHBOARD CREATION USING SLICER

Write down the complete steps to create a Dashboard for the below data:

	A	B	C	D	E	F	G
6	Company	Variable	2011	2012	2013	2014	2015
7	ACC Ltd	Other variable cost	15	18	22	20	19
8	ACC Ltd	Power & Fuel	23	21	21	21	20
9	ACC Ltd	Freight & Forwarding	20	20	21	22	23
10	ACC Ltd	Fixed Cost	27	26	29	29	30
11	ACC Ltd	Profit	15	15	7	8	8

Aim: To Create a Dashboard for the given data using MS – Excel.

Algorithm:

Step 1: Open MS – Excel by using the command Start – All programs – Microsoft Office – MS-Excel.

Start -> All Programs -> Microsoft Office -> MS-Excel

Step 2: Type the given company field, Variable field, 2011, 2012, 2013, 2014, 2015 and its values.

Step 3: Create a Pivot Chart by selecting the value form **A6:A26** and click

Insert –> Pivot Chart –> Pivot table –> Pivot chart.

Step 4: Select new worksheet Radio button and click OK.

Step 5: Create Slicer for Company and variable by using the command select the below:

Pivot table –> Analyze –> Insert slicer –> Enable company check box.

Step 6: Create another pivot table for variable by using the command

Insert – Pivot chart – Pivot table – Pivot chart.

Step 7: Select Existing worksheet Radio Button select Location and click OK button.

Step 8: Create a slicer for variable by using the command select the variable

Pivot table – Analyze – Insert slicer – Enable company check box.

Step 9: Cut the slicers of Company and variable and paste it in a new sheet.

Step 10: Type 2011, 2012, 2013, 2014, 2015 as field names.

Step 11: Create a separate table for variable from O8 to O12 consists of Fixed Cost, Freight and Forwarding, Other variable cost, power and fuel, profit.

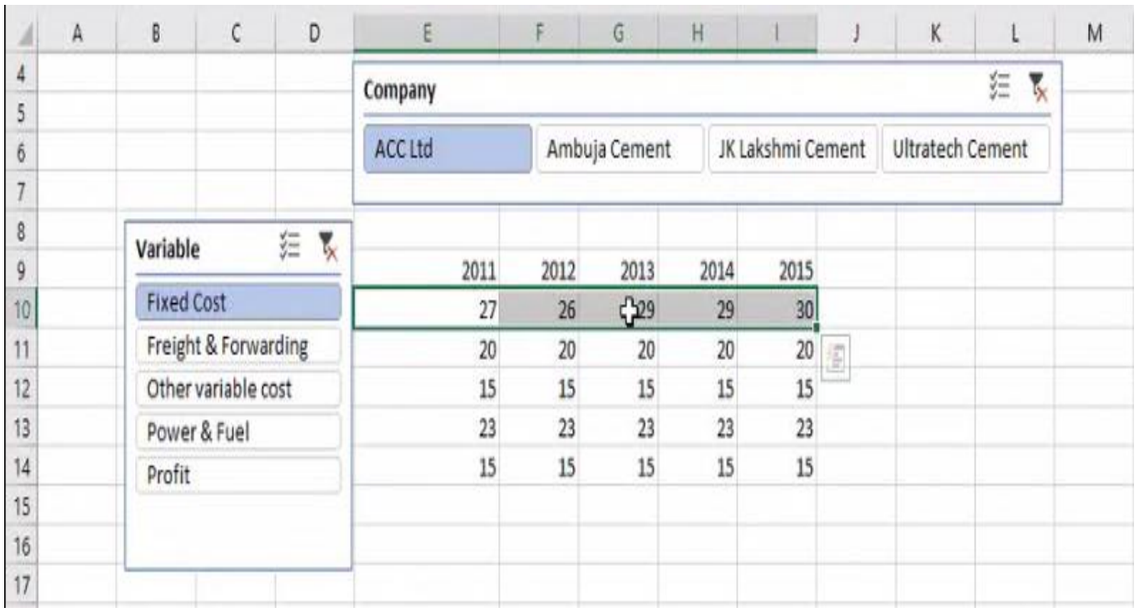
Step 12: To get the values for 2011 type formula as below:

= OFFSET (INDEX (Data! $A$6:$A$25, MATCH ('Workingsheet2'! $B$1, Data! $A$6:$A$25, 0),), MATCH (08, Data! $B$6:$B$25, 0)-1, 2)

Use the same formula for all the columns, except the column number and variable reference. Change the column number to 3 when you drag and copy the formula to the next column and after O12, O8, O9, and O10. When you copy the formula to other rows.

Step 13: Now based on the selections in company and variable slicers, the value changes dynamically.

Output:


Company
ACC Ltd
Ambuja Cement
JK Lakshmi Cement
Ultratech Cement
Variable
Fixed Cost
Freight & Forwarding
Other variable cost
Power & Fuel
Profit
2011 2012 2013 2014 2015
27 26 29 29 30
20 20 20 20 20
15 15 15 15 15
23 23 23 23 23
15 15 15 15 15

PERFORMING MATEMATICAL AND STATISTICAL CALCULATIONS USING MACRO

Create a macro called basic_math to perform mathematical functions like product, sum and Statistical measures like average and standard deviation of an Array using the below data:

	A	B	C	D	E	F
1	FinShiksha					
2	Array 1	Array 2				
3	100	1		Total Output		
4	400	56		Mean 1		
5	200	78		Mean 2		
6	45	90		SD 1		
7	34	34		SD 2		

Aim: To create a macro called Basic_math to perform mathematical functions like Product, Sum, Average and Standard deviation of an array for the given data.

Algorithm:

Step 1: Open MS – Excel by using the command Start – All programs – Microsoft Office – MS-Excel.

Start -> All Programs -> Microsoft Office -> MS-Excel

Step 2: Type the given values of array1 and array2.

Step 3: To create a basic_math macro click the below:

Developer tab –> Record Macro

Step 4: Type the Macro name as Basic_math.

Step 5: Set a shortcut key like ctrl+L

Step 6: Set description and click OK button. Now your actions get recorded.

Step 7: Find the sum of two arrays by using the below function:

= SUM (Array1, Array2)

Step 8: To find Mean1, type formula as below:

=AVERAGE (Array1)

Step 9: To find Mean2, type formula as below:

=AVERAGE (Array2)

Step 10: To find the Total Output, type formula as below:

=SUMPRODUCT (Array1, Array2)

Step 11: To find SD1 type formula as below:

=STDEV (Array1)

Step 12: To find SD2 type formula as below:

=STDEV (Array2)

Step 13: To stop Macro recording, click Developer – Stop Macro.

Step 14: Now you can use the Basic_math macro to get the values whenever it's needed.

OUTPUT:

	A	B	C	D	E	F	G
1	FinShiksha						
2							
3							
4							
5							
6	Array 1	Array 2					
7	100	1		Total Output	43306		
8	400	56		Mean 1	155.8		
9	200	78		Mean 2	51.8		
10	45	90		SD 1	151.5031		
11	34	34		SD 2	35.56965		
12							
13							
14							

CALCULATE THE EMI USING MACRO

Create a macro to calculate the EMI and repayment schedule for the below data:

	A	B	C	D	E	F
1	FinShiksha					
2	Loan Amount	10000				
3	Interest	10%				
4	Tenure	10				
5	EMI					
6						
7	Years	Loan Amount	EMI	Interest	P Payment	
8	1					
9	2					
10	3					
11	4					
12	5					
13	6					
14	7					
15	8					
16	9					
17	10					
18						

Aim: To Create a macro to calculate EMI and repayment schedule for the given data.

Algorithm:

Step 1: Open MS – Excel by using the command Start – All programs – Microsoft Office – MS-Excel.

Start -> All Programs -> Microsoft Office -> MS-Excel

Step 2: Type the given Loan amount, Interest, Tenure and its values.

Step 3: Type field names as years, Loan amount, EMI, Interest, p payment

Step 4: Create a Macro in the name of Amortization_Schedule.

Step 5: To create a Macro, click the below menu.

Developer –> Record Macro.

Step 6: Set Macro name as "Amortization_Schedule", set a shortcut key and description, then click OK.

Step 7: To find EMI using the below formula:

=PMT (Interest Rate, Tenure, -loan amount, 0)

Step 8: Type 1 to 20 in year's column.

Step 9: To find loan amount, type formula as below:

=loan amount

Step 10: To find EMI, type formula as below:

=PMT.

Step 11: To calculate Interest type formula as below:

=Interest rate * loan amount

Step 12: To calculate P.Payment, type formula as below:

=EMI – Interest amount

Step 13: To calculate loan amount for 2nd year, type formula as below:

=1st year loan amount – P.Payment

Step 14: To stop Macro recording, click

Developer –> stop Macro.

OUTPUT:

E20 =C20-D20

	A	B	C	D	E
1	FinShiksha				
2					
3					
4					
5	Loan Amount	10000			
6	Interest	10%			
7	Tenure	10			
8	EMI	₹ 1,627.45			
9					
10	Years	Loan Amount	EMI	Interest	P Payment
11	1	₹ 10,000.00	₹ 1,627.45	₹ 1,000.00	₹ 627.45
12	2	₹ 9,372.55	₹ 1,627.45	₹ 937.25	₹ 690.20
13	3	₹ 8,682.35	₹ 1,627.45	₹ 868.23	₹ 759.22
14	4	₹ 7,923.13	₹ 1,627.45	₹ 792.31	₹ 835.14
15	5	₹ 7,087.99	₹ 1,627.45	₹ 708.80	₹ 918.66
16	6	₹ 6,169.33	₹ 1,627.45	₹ 616.93	₹ 1,010.52
17	7	₹ 5,158.81	₹ 1,627.45	₹ 515.88	₹ 1,111.57
18	8	₹ 4,047.24	₹ 1,627.45	₹ 404.72	₹ 1,222.73
19	9	₹ 2,824.51	₹ 1,627.45	₹ 282.45	₹ 1,345.00
20	10	₹ 1,479.50	₹ 1,627.45	₹ 147.95	₹ 1,479.50
21					
22					

... | Macro 2 | Pivot | Macro 3 | Form Control | Graph using Macro | AMortization

SEARCHING A STRING / VALUE USING MACROS

Aim: To search a given string / value from the list of values using Macros.

Algorithm:

Step 1: Open MS-EXCEL by using the below menu:

Start -> All Programs -> Microsoft Office -> MS-Excel

Step 2: Enter the list of values in the excel sheet.

Step 3: Create a Command Button using the Developer Menu **and name it as "Find String"**

Step 4: Using the view Code option write the below VBA Code for searching a given string from a set of values.

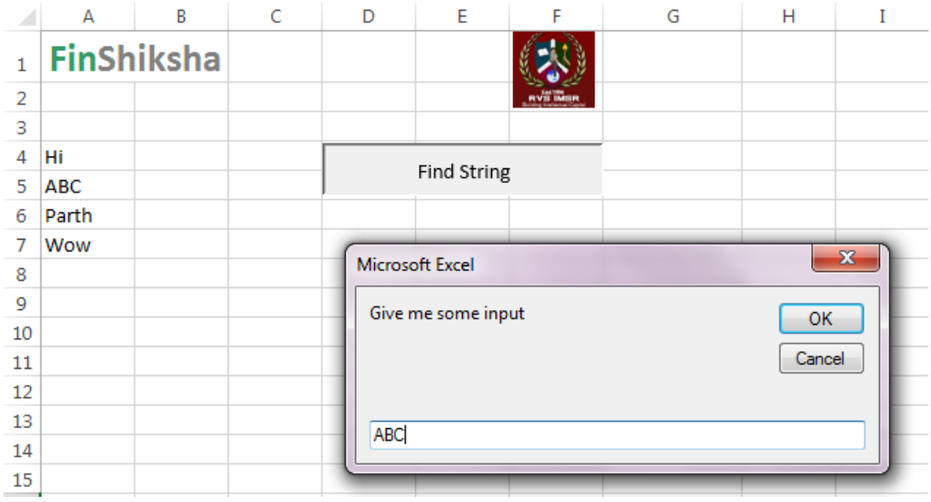
```
Sub FindString()
    Dim i As Integer            ' Integer used in 'For' loop
    Dim iRowNumber As Integer   ' Integer to store result in
    Dim sFindText As String
    iRowNumber = 0
    ' Loop through cells A1-A100 until 'sFindText' is found
    sFindText = InputBox("Give me some input")
    For i = 1 To 100
        If Cells(i, 1).Value = sFindText Then
            ' A match has been found to the supplied string
            ' Store the current row number and exit the 'For' Loop
            iRowNumber = i
            Exit For
        End If
    Next i
    ' Pop up a message box to let the user know if the text
    ' string has been found, and if so, which row it appears on
    If iRowNumber = 0 Then
        MsgBox "String " & sFindText & " not found"
    Else
    MsgBox "String " & sFindText & " found in cell A" & iRowNumber
    End If
End Sub
```

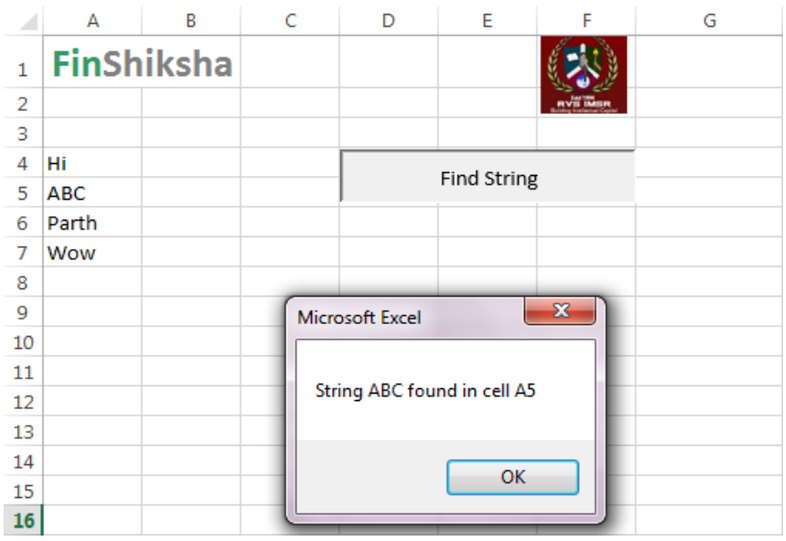
Step 5: Map this Function with the Command Button Find String and click on that button, the system will show a dialogue box and expect the input value which has to be search.

Step 6: Enter the input value and click Ok the system will check that value is available in the list of values. If that value found in the list, the system will show the cell address which the value will be present. Otherwise the system will show the message that the given input value is not present in the list.

Step 7: This is the expected output.

OUTPUT:





CALCULATING THE STATISTICAL MEASURES USING DATA ANALYSIS MENU

Calculate the Mean, Standard Deviation etc. mentioned in the below excel with the sample data:

	A	B	C	D	E
1	FinShiksha				
2					
3					
4		x	y		x
5		45	33		
6		99	72		Mean
7		31	19		Standard Error
8		57	27		Median
9		37	23		Mode
10		85	62		Standard Deviation
11		21	24		Sample Variance
12		64	32		Kurtosis
13		17	18		Skewness
14		41	36		Range
15		103	76		Minimum
16					Maximum
17					Sum
18					Count

Aim:

To calculate statistical measures for the given data using MS – Excel.

Algorithm:

Step 1: Open MS – Excel by using the command Start – All programs – Microsoft Office – MS-Excel.

Start -> All Programs -> Microsoft Office -> MS-Excel.

Step 2: Type the given values of X and Y.

Step 3: To calculate Descriptive statistics for the given data, click the below:

Data –> Data Analysis –> Descriptive Statistics

Step 4: Select the values of X as Input range.

Step 5: Select output range and enable Summary statistics check box.

Step 6: Click OK Button. Now the output will be displayed in the selected Output range.

OUTPUT:

E4 | x

	A	B	C	D	E	F	G
1	FinShiksha						
2							
3							
4		x	y		x		
5		45	33				
6		99	72		Mean	54.54545	
7		31	19		Standard Error	9.054746	
8		57	27		Median	45	
9		37	23		Mode	#N/A	
10		85	62		Standard Deviation	30.0312	
11		21	24		Sample Variance	901.8727	
12		64	32		Kurtosis	-1.014802	
13		17	18		Skewness	0.53356	
14		41	36		Range	86	
15		103	76		Minimum	17	
16					Maximum	103	
17					Sum	600	
18					Count	11	
19							
20							

MULTIPLE REGRESSION

Calculate the Multiple Regression for the following data:

FinShiksha

Color	Quality	Price
7	5	65
3	7	38
5	8	51
8	1	38
9	3	55
5	4	43
4	0	25
2	6	33
8	7	71
6	4	51
9	2	49

Aim: To Calculate Multiple Regression for the given data using MS – Excel.

Algorithm:

Step 1: Open MS – Excel by using the command Start – All programs – Microsoft Office – MS-Excel.

Start -> All Programs -> Microsoft Office -> MS-Excel.

Step 2: Type the given Color, Quantity, Price fields and its values.

Step 3: To calculate multiple regression for the given data, click the below:

Data -> Data Analysis -> Regression

Step 4: We will get the dialogue box for providing the Input values as below:

Input Y range : **Select the Price Column Values**

Input X range : **Select the color and quantity column range values.**

Step 5: Check the Label check box if we are selecting the Color, Quality and Price column headings.

Step 6: Select Output range in the Same Sheet means, mention the Cell address.

Step 7: Select the Output range as New Worksheet, we will get the output in the new sheet.

Step 8: Select the Residual check box if we want to calculate the residual values.

Step 9: Click OK button, we will get the Statistical Summary, ANOVA and Residual Output.

Step 10: From this data we can get the Intercept and Coefficient of Color and Quantity variables.

Step 11: Using the Intercept, Coefficient of Color and Quantity variables we can compute the calculated value of Price. From the given price and the calculated Price we can measure the Residual values.

Step 12: From this we can identified the Best Fit Line values of Intercept and Coefficient of Color and Quantity variables can be identified.

OUTPUT:

FinShiksha

Y = mX1 + nX2 + C	Color	Quality	Price
	7	5	65
	3	7	38
	5	8	51
	8	1	38
	9	3	55
	5	4	43
	4	0	25
	2	6	33
	8	7	71
	6	4	51
	9	2	49

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.922330727
R Square	0.850693971
Adjusted R Square	0.813367463
Standard Error	5.888084465
Observations	11

FinShiksha

Regression Statistics		
Multiple R	0.922330727	Correlation
R Square	0.850693971	
Adjusted R Square	0.813367463	
Standard Error	5.888084465	
Observations	11	

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	2	1580.280054	790.1400271	22.79061267	0.000496946
Residual	8	277.3563093	34.66953867		
Total	10	1857.636364			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	1.751403659	6.960202671	0.251631129	0.807669624	-14.29885248	17.8016598	-14.29885248	17.8016598
Color	4.895288365	0.820229778	5.968191467	0.000335084	3.003835104	6.786741625	3.003835104	6.786741625
Quality	3.758415483	0.756510987	4.968091073	0.00109572	2.013898018	5.502932948	2.013898018	5.502932948

Price = 1.7514 + 4.8952 * Color + 3.7584 * Quality			Color	Quality	Price
			9	2	53.32582991

FinShiksha

Price = 1.7514 + 4.8952 * Color + 3.7584 * Quality			Color	Quality	Price
			9	2	53.32582991

RESIDUAL OUTPUT

Observation	*Predicted Price*	*Residuals*
1	54.81049962	10.18950038
2	42.74617713	-4.746177133
3	56.29516934	-5.295169345
4	44.67212606	-6.672126058
5	57.08424539	-2.084245388
6	41.26150741	1.738492587
7	21.33255712	3.667442883
8	34.09247329	-1.092473285
9	67.22261896	3.777381045
10	46.15679578	4.843204223
11	53.32582991	-4.325829905