# ASSIGNMENT :- 1

# VLOOKUP FUNCTION

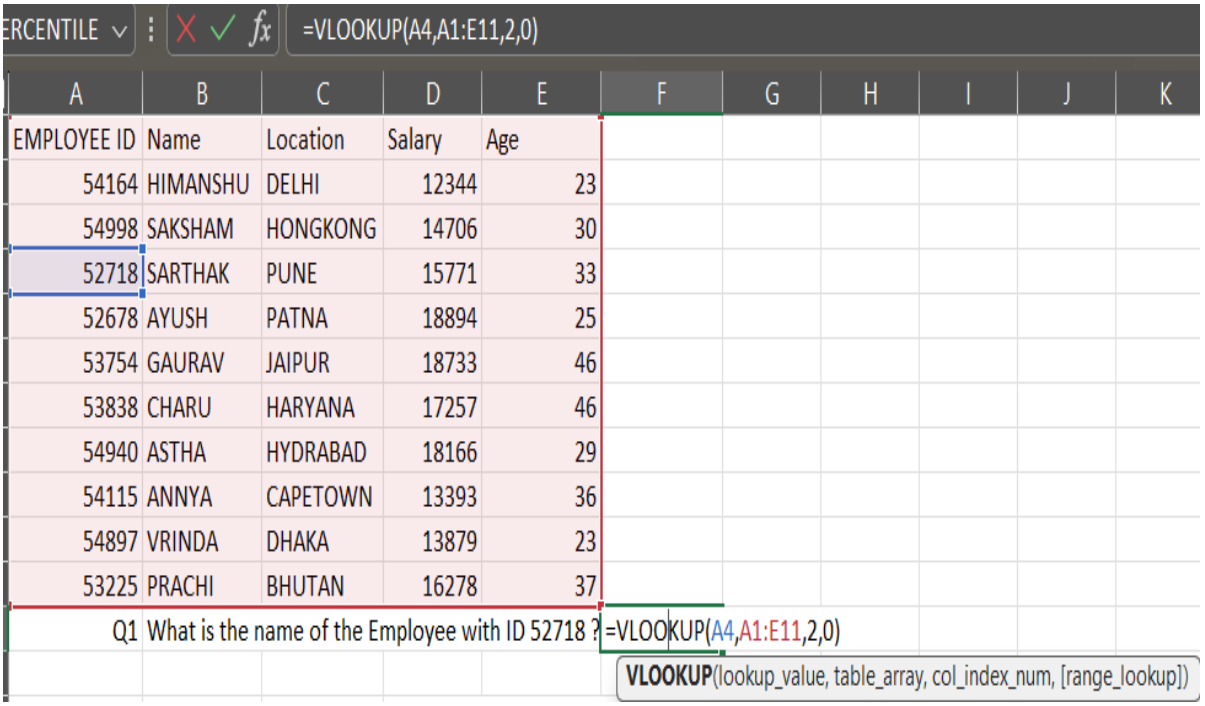
## VLOOKUP FUNCTION

VLOOKUP in Excel is a powerful function that searches for a value in the first column of a range (table or array) and returns a corresponding value in the same row from a specified column. The "V" in VLOOKUP stands for "Vertical," indicating that it searches vertically (downward) in a table.

## SYNTAX

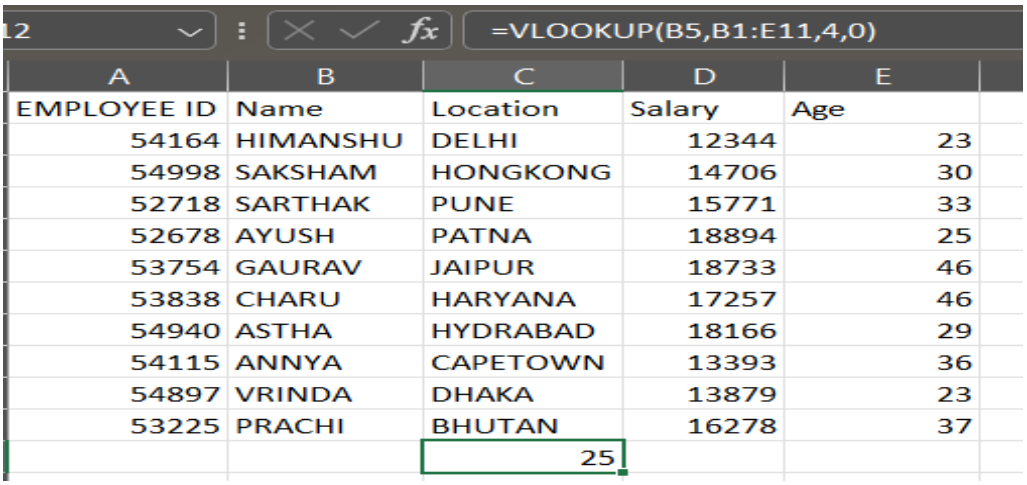
=VLOOKUP(lookup_value,table_array,column_index_num,[range_lookup])

Q1 :- What is the name of the Employee with ID 52718 ?




ANS. = “SARTHAK”

Q2 :- What is the age of Ayush ?




| | A | B | C | D | E |
|---|---|---|---|---|---|
| 1 | EMPLOYEE ID | Name | Location | Salary | Age |
| 2 | 54164 | HIMANSHU | DELHI | 12344 | 23 |
| 3 | 54998 | SAKSHAM | HONGKONG | 14706 | 30 |
| 4 | 52718 | SARTHAK | PUNE | 15771 | 33 |
| 5 | 52678 | AYUSH | PATNA | 18894 | 25 |
| 6 | 53754 | GAURAV | JAIPUR | 18733 | 46 |
| 7 | 53838 | CHARU | HARYANA | 17257 | 46 |
| 8 | 54940 | ASTHA | HYDRABAD | 18166 | 29 |
| 9 | 54115 | ANNYA | CAPETOWN | 13393 | 36 |
| 10 | 54897 | VRINDA | DHAKA | 13879 | 23 |
| 11 | 53225 | PRACHI | BHUTAN | 16278 | 37 |
| 12 | | | 25 | | |

Q3 :- Return the location of the following employees .

| Name | Location |
|---|---|
| HIMANSHU | =VLOOKUP(C15,$B$1:$C$11,2,0) |
| SAKSHAM | =VLOOKUP(C16,$B$1:$C$11,2,0) |
| GAURAV | =VLOOKUP(C17,$B$1:$C$11,2,0) |
| CHARU | =VLOOKUP(C18,$B$1:$C$11,2,0) |
| ASTHA | =VLOOKUP(C19,$B$1:$C$11,2,0) |

| | A | B | C | D | E |
|---|---|---|---|---|---|
| 1 | EMPLOYEE ID | Name | Location | Salary | Age |
| 2 | 54164 | HIMANSHU | DELHI | 12344 | 23 |
| 3 | 54998 | SAKSHAM | HONGKONG | 14706 | 30 |
| 4 | 52718 | SARTHAK | PUNE | 15771 | 33 |
| 5 | 52678 | AYUSH | PATNA | 18894 | 25 |
| 6 | 53754 | GAURAV | JAIPUR | 18733 | 46 |
| 7 | 53838 | CHARU | HARYANA | 17257 | 46 |
| 8 | 54940 | ASTHA | HYDRABAD | 18166 | 29 |
| 9 | 54115 | ANNYA | CAPETOWN | 13393 | 36 |
| 10 | 54897 | VRINDA | DHAKA | 13879 | 23 |
| 11 | 53225 | PRACHI | BHUTAN | 16278 | 37 |
| 12 | Q3 | Return the location of following employees . | | | |
| 13 | | | | | |
| 14 | | | Name | Location | |
| 15 | | | HIMANSHU | DELHI | |
| 16 | | | SAKSHAM | HONGKONG | |
| 17 | | | GAURAV | JAIPUR | |
| 18 | | | CHARU | HARYANA | |
| 19 | | | ASTHA | HYDRABAD | |

# ASSIGNMENT:- 2
# VL00KUP + IF FUNCTION

## IF FUNCTION

The IF function is a logical function in Excel that compares a value to an expected value and returns a result based on whether the comparison is true or false.

### Syntax

=IF(Logical_test,[value_if_true],[value_if_false]

Q1:- Using VLOOKUP + IF Function, check the availability of products.

### SYNTAX

=VLOOKUP (lookup_value, table_array, col_index_num, [range_lookup]).

| J | K |
|---|---|
| PRODUCT | AVAILABLE QYT. |
| A | =IF(VLOOKUP(J2,$G$1:$H$11,2,0)>0,"AVAILABLE","NOT AVALIABLE") |
| E | =IF(VLOOKUP(J3,$G$1:$H$11,2,0)>0,"AVAILABLE","NOT AVALIABLE") |
| I | =IF(VLOOKUP(J4,$G$1:$H$11,2,0)>0,"AVAILABLE","NOT AVALIABLE") |
| D | =IF(VLOOKUP(J5,$G$1:$H$11,2,0)>0,"AVAILABLE","NOT AVALIABLE") |
| B | =IF(VLOOKUP(J6,$G$1:$H$11,2,0)>0,"AVAILABLE","NOT AVALIABLE") |

| J | K |
|---|---|
| **PRODUCT** | **AVAILABLE QYT.** |
| A | AVAILABLE |
| E | AVAILABLE |
| I | AVAILABLE |
| D | NOT AVALIABLE |
| B | AVAILABLE |
| | |

# ASSIGNMENT:- 3
# VLOOKUP + MATCH FUNCTION

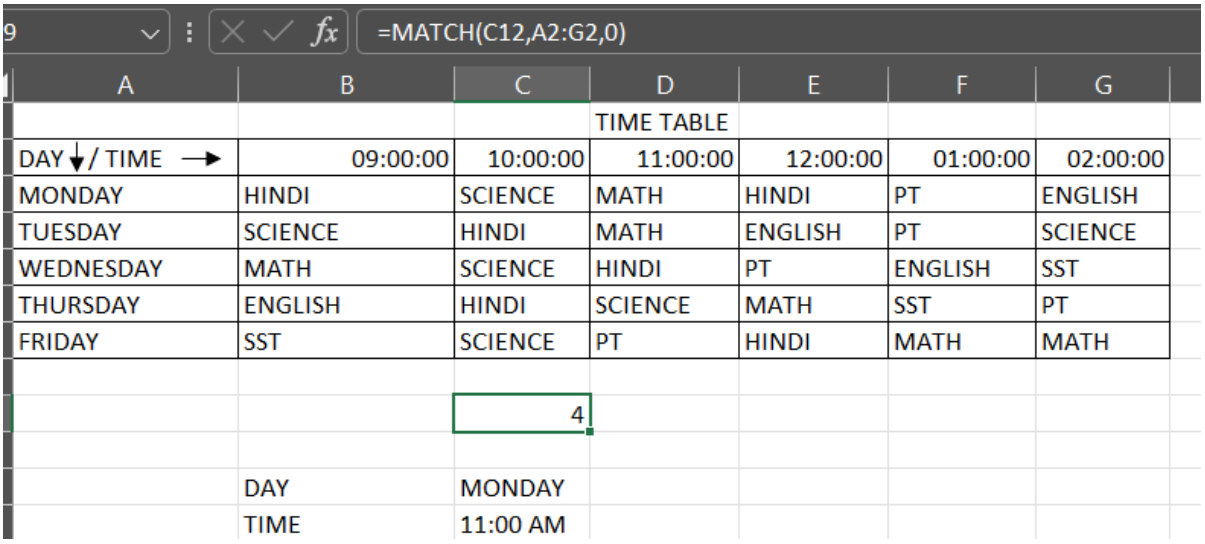
## Match function

The MATCH function in Excel finds a value in a range of cells and returns its relative position. It can be used to find the row or column number of a value.

## SYNTAX

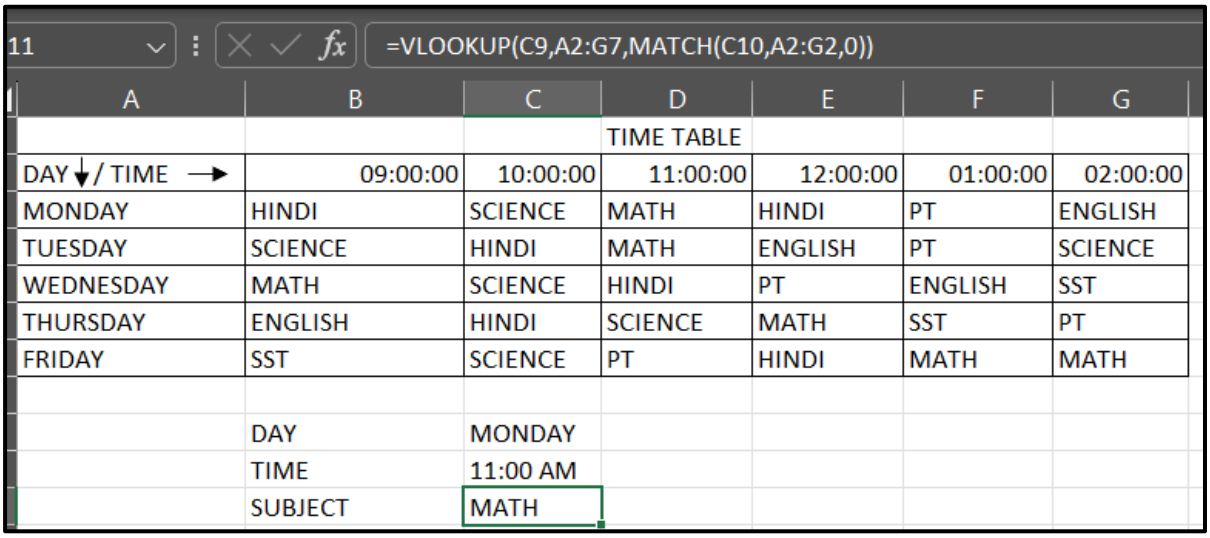
=MATCH(=MATCH(lookup_value, lookup_array, [match_type]).

Q1:- Represent the column no. of Time “11:00 AM” using the match function.



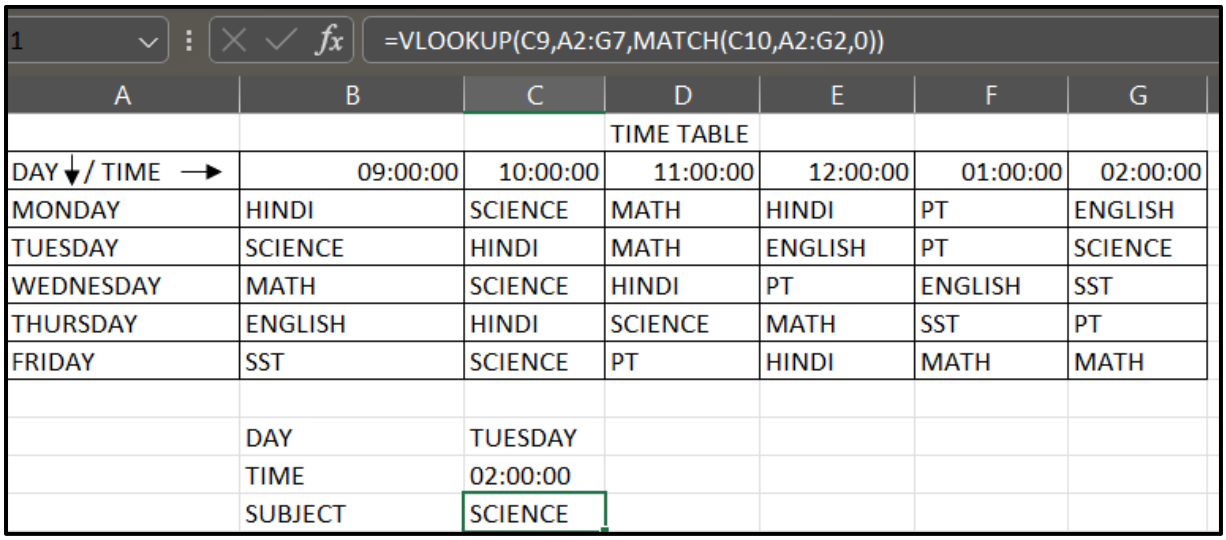

| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| | | | | TIME TABLE | | | |
| | DAY ↓ / TIME → | 09:00:00 | 10:00:00 | 11:00:00 | 12:00:00 | 01:00:00 | 02:00:00 |
| | MONDAY | HINDI | SCIENCE | MATH | HINDI | PT | ENGLISH |
| | TUESDAY | SCIENCE | HINDI | MATH | ENGLISH | PT | SCIENCE |
| | WEDNESDAY | MATH | SCIENCE | HINDI | PT | ENGLISH | SST |
| | THURSDAY | ENGLISH | HINDI | SCIENCE | MATH | SST | PT |
| | FRIDAY | SST | SCIENCE | PT | HINDI | MATH | MATH |
| | | | | | | | |
| | | | 4 | | | | |
| | | | | | | | |
| | | DAY | MONDAY | | | | |
| | | TIME | 11:00 AM | | | | |

Q2:- Using Day and Time, find out the Subject name with vlookup + match function.



11 =VLOOKUP(C9,A2:G7,MATCH(C10,A2:G2,0))

| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| | | | | TIME TABLE | | | |
| | DAY ↓ / TIME → | 09:00:00 | 10:00:00 | 11:00:00 | 12:00:00 | 01:00:00 | 02:00:00 |
| | MONDAY | HINDI | SCIENCE | MATH | HINDI | PT | ENGLISH |
| | TUESDAY | SCIENCE | HINDI | MATH | ENGLISH | PT | SCIENCE |
| | WEDNESDAY | MATH | SCIENCE | HINDI | PT | ENGLISH | SST |
| | THURSDAY | ENGLISH | HINDI | SCIENCE | MATH | SST | PT |
| | FRIDAY | SST | SCIENCE | PT | HINDI | MATH | MATH |
| | | | | | | | |
| | | DAY | MONDAY | | | | |
| | | TIME | 11:00 AM | | | | |
| | | SUBJECT | MATH | | | | |



1 =VLOOKUP(C9,A2:G7,MATCH(C10,A2:G2,0))

| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| | | | | TIME TABLE | | | |
| | DAY ↓ / TIME → | 09:00:00 | 10:00:00 | 11:00:00 | 12:00:00 | 01:00:00 | 02:00:00 |
| | MONDAY | HINDI | SCIENCE | MATH | HINDI | PT | ENGLISH |
| | TUESDAY | SCIENCE | HINDI | MATH | ENGLISH | PT | SCIENCE |
| | WEDNESDAY | MATH | SCIENCE | HINDI | PT | ENGLISH | SST |
| | THURSDAY | ENGLISH | HINDI | SCIENCE | MATH | SST | PT |
| | FRIDAY | SST | SCIENCE | PT | HINDI | MATH | MATH |
| | | | | | | | |
| | | DAY | TUESDAY | | | | |
| | | TIME | 02:00:00 | | | | |
| | | SUBJECT | SCIENCE | | | | |

# ASSIGNMENT:- 4
# HLOOKUP + MATCH FUNCTION

## HLOOKUP FUNCTION

HLOOKUP stands for Horizontal Lookup.
The HLOOKUP function in Excel searches for a value in a table's top row and returns a value from a specified row in the same column.

## SYNTAX

=HLOOKUP( lookup_value ,table_array ,row_index_number,[range_lookup]

Q1:- Show the department of the employees using their name with “HLOOKUP Function”

| A | B | C | D | E | F | G | H | I | J | K |
|---|---|---|---|---|---|---|---|---|---|---|
| EMPLOYEE ID | 101 | 102 | 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 |
| EMPLOYEE NAME | HIMANSHU | SAKSHAM | SARTHAK | AYUSH | GAURAV | CHARU | ASTHA | ANNYA | VRINDA | PRACHI |
| DEPARTMENT | HR | MARKETING | IT | FINANCE | HR | MARKETING | IT | FINANCE | HR | MARKETING |
| SALARY | 52267 | 53137 | 51637 | 58713 | 54239 | 52040 | 52207 | 55714 | 54782 | 54233 |
| BONUS | 4373 | 3390 | 4099 | 2424 | 4236 | 4768 | 3494 | 4984 | 3737 | 3834 |
| TOTAL PAY | 56640 | 56527 | 55736 | 61137 | 58475 | 56808 | 55701 | 60698 | 58519 | 58067 |

| EMPLOYEE NAME | DEPARTMENT |
|---|---|
| =B2 | =HLOOKUP(B12,$A$2:$K$6,2,0) |
| AYUSH | =HLOOKUP(B13,$A$2:$K$6,2,0) |
| ASTHA | =HLOOKUP(B14,$A$2:$K$6,2,0) |
| CHARU | =HLOOKUP(B15,$A$2:$K$6,2,0) |

| EMPLOYEE NAME | DEPARTMENT |
|---|---|
| HIMANSHU | HR |
| AYUSH | FINANCE |
| ASTHA | IT |
| CHARU | MARKETING |

## MATCH FUNCTION

The MATCH function in Excel finds a value in a range of cells and returns its relative position. It can be used to find the row or column number of a value.

## SYNTAX

=MATCH(=MATCH(lookup_value, lookup_array, [match_type])

Q2:- Find the total pay of the departments using the "HLOOKUP and MATCH FUNCTION"

| DEPARTMENT | TOTAL PAY |
|---|---|
| =HLOOKUP(B2,A2:K6,2,0) | =HLOOKUP(B19,$B$3:$K$6,MATCH($A$6,$A$3:$A$6,0),FALSE) |
| MARKETING | =HLOOKUP(B20,$B$3:$K$6,MATCH($A$6,$A$3:$A$6,0),FALSE) |
| =D3 | =HLOOKUP(B21,$B$3:$K$6,MATCH($A$6,$A$3:$A$6,0),FALSE) |

| DEPARTMENT | TOTAL PAY |
|---|---|
| HR | 56640 |
| MARKETING | 56527 |
| IT | 55736 |

Q3:- Find the department of the different EMAIL IDs using "HLOOKUP and MATCH FUNCTION" .

| EMPLOYEE ID | DEPARTMENT |
|---|---|
| 101 | =HLOOKUP(F12,$A$1:$K$3,MATCH($G$11,$A$1:$A$3,0)) |
| 104 | =HLOOKUP(F13,$A$1:$K$3,MATCH($G$11,$A$1:$A$3,0)) |
| 102 | =HLOOKUP(F14,$A$1:$K$3,MATCH($G$11,$A$1:$A$3,0)) |
| 109 | =HLOOKUP(F15,$A$1:$K$3,MATCH($G$11,$A$1:$A$3,0)) |

| EMPLOYEE ID | DEPARTMENT |
|---|---|
| 101 | HR |
| 104 | FINANCE |
| 102 | MARKETING |
| 109 | HR |

# ASSIGNMENT:- 5

# INDEX + MATCH FUNCTION

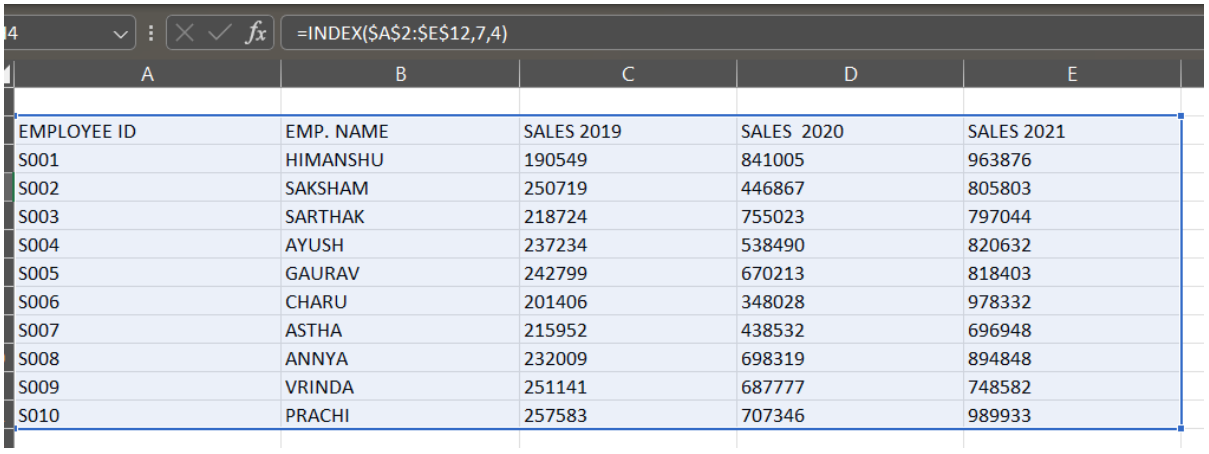
## INDEX FUNCTION

The INDEX function in Excel returns a value or reference to a cell within a range or table.

## SYNTAX

INDEX(array, row_num, [column_num])

Q1:- Return the sales of the Year 2019,2020, and 2021 of 7th row number .




| | |
|---|---|
| =D2 | =INDEX($A$2:$E$12,7,4) |
| =D2 | =INDEX($A$2:$E$12,7,3) |
| =E2 | =INDEX($A$2:$E$12,7,5) |

| G | H |
|---|---|
| SALES 2020 | 348028 |
| SALES 2020 | 201406 |
| SALES 2021 | 978332 |

**Match function**

The MATCH function in Excel finds the location of a value in a range of cells. It returns the position of the value relative to the range.

**Syntax**

=MATCH(lookup_value, lookup_array, [match_type]).

Q2:- Return the sales of the years 2019,2020,2021 with the name using "INDEX AND MATCH FUNCTION" .

| SALES | HIMANSHU |
|---|---|
| SALES 2019 | 190549 |
| SALES 2020 | 841005 |
| SALES 2021 | 963876 |

| | |
|---|---|
| SALES | =B3 |
| =C2 | =INDEX($A$2:$E$12,MATCH($K$4,$B$2:$B$12,0),MATCH(J5,$A$2:$E$2,0)) |
| =D2 | =INDEX($A$2:$E$12,MATCH($K$4,$B$2:$B$12,0),MATCH(J6,$A$2:$E$2,0)) |
| =E2 | =INDEX($A$2:$E$12,MATCH($K$4,$B$2:$B$12,0),MATCH(J7,$A$2:$E$2,0)) |

# ASSIGNMENT: 6
# CORRELATION

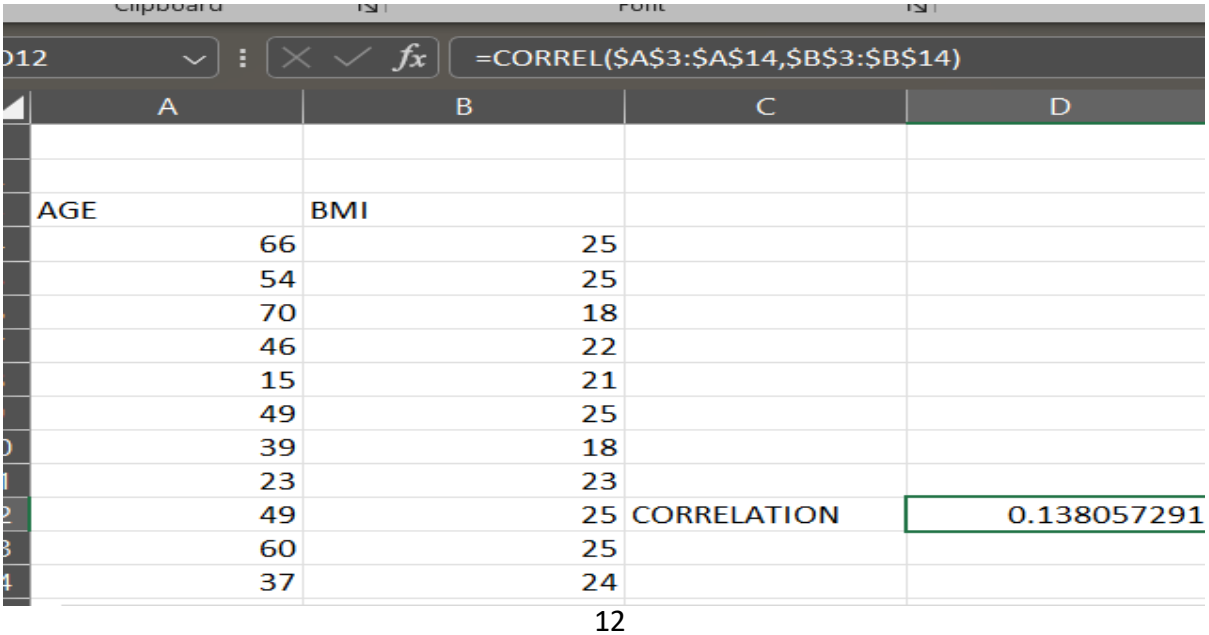
## CORRELATION

- Correlation in Excel is a statistical measure that shows the relationship between two or more variables.
- The correlation coefficient ranges from -1 to 1.
- A correlation coefficient of 1 indicates a perfect positive correlation, meaning that the variables increase at the same rate.
- A correlation coefficient of -1 indicates a perfect negative correlation , meaning that one variable increases while the other variable decreases at the same rate .
- A correlation coefficient of 0 indicates no relationship between the variables .
- In Excel , CORREL Function is used to calculate the correlation coefficient between two cell ranges.

SYNTAX

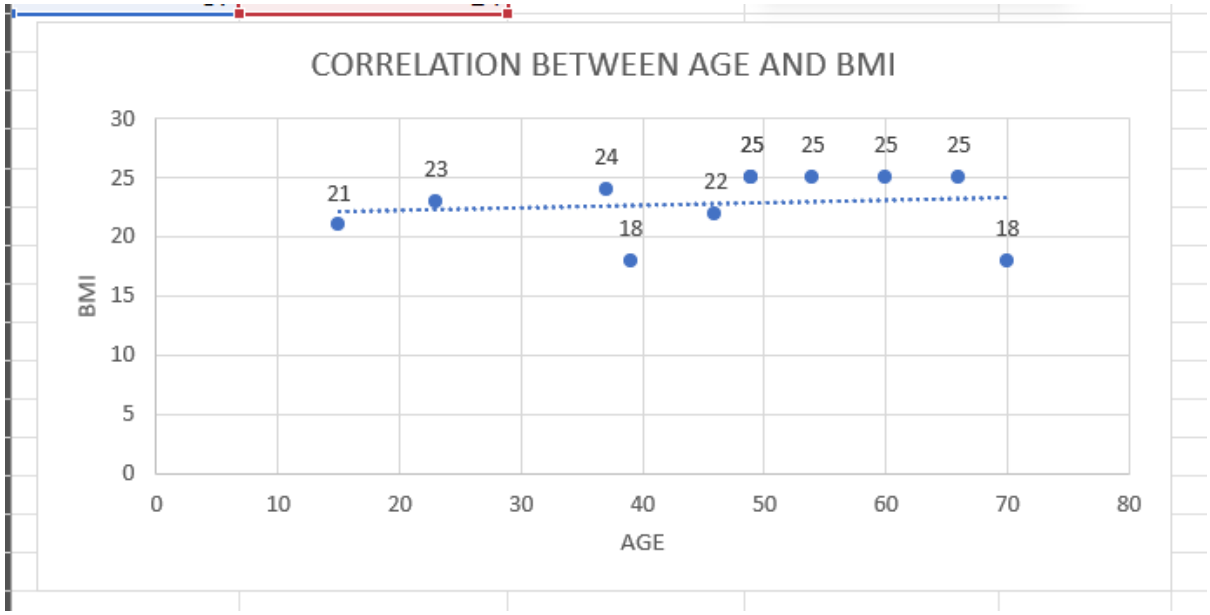
=CORREL(array1,array2)

Q1:- Find the correlation between the AGE and BMI .



| AGE | BMI | | | |
|---|---|---|---|---|
| 66 | 25 | | | AGE |
| 54 | 25 | | | BMI |
| 70 | 18 | | | |
| 46 | 22 | | | |
| 15 | 21 | | | |
| 49 | 25 | | | |
| 39 | 18 | | | |
| 23 | 23 | | | |
| 49 | 25 | CORRELATION | =CORREL($A$3:$A$14,$B$3:$B$14) | |
| 60 | 25 | | | |
| 37 | 24 | | | |

CORREL(array1, array2)



# ASSIGNMENT :- 7

# (REGRESSION)

## REGRESSION

Regression analysis is a statistical method that analyses the relationship between variables in a data set. It's used to predict or explain how one variable changes based on another variable.

## Output of Regression

1. **Multiple R.** This is the correlation coefficient . It tells you how strong the linear relationship is. For example, a value of 1 means a perfect positive relationship and a value of zero means no relationship at all. It is the square root of r squared .
2. **R squared**. This is $r^2$, the Coefficient of determination . It tells you how many points fall on the regression line. for example, 80% means that 80% of the variation of y-values around the mean are explained by the x-values. In other words, 80% of the values fit the model.
3. **Adjusted R Square** The adjusted R-square adjusts for the number of terms in a model.
4. **Standard Error of Regression:** An estimate of the standard deviation of the error μ. This is *not* the same as the Standard Error in descriptive statistics. The standard error of the regression is the precision that the regression coefficient is measured; if the coefficient is large compared to the standard error , then the coefficient is probably different from 0.
5. **Observations**. Number of observations in the sample .

**CORREL FUNCTION**

=CORREL(B3:B21,C3:C21)

**INTERSEPT FUNCTION**

=INTERCEPT(B3:B21,C3:C21)

## Linear Regression

When there is one independent variable and one dependent variable or data set , we perform linear regression .

| 20 years mortgage | | | |
|---|---|---|---|
| | | Assignment :- 7 (regerssion) | Q1 :- Linear Regression |
| Year | Int. rate | Median Home Price | -0.245198835 |
| 1988 | 10.0 | 171253 | |
| 1989 | 10.0 | 287083 | |
| 1990 | 10.0 | 341882 | |
| 1991 | 9.0 | 216295 | |
| 1992 | 10.0 | 199840 | |
| 1993 | 10.0 | 192636 | |
| 1994 | 10.0 | 194889 | |
| 1995 | 8.0 | 239558 | |
| 1996 | 7.0 | 204197 | |
| 1997 | 7.0 | 330433 | |
| 1998 | 9.0 | 307017 | |
| 1999 | 7.0 | 253662 | |
| 2000 | 10.0 | 157271 | |
| 2001 | 9.0 | 191869 | |
| 2002 | 10.0 | 348541 | |
| 2003 | 7.0 | 338586 | |
| 2004 | 8.0 | 174743 | |
| 2005 | 8.0 | 325606 | |

## Multiple regression

multiple regression is a statistical technique that analyzes the relationship between one dependent variable and two or more independent variables to make predictions or understand how different factors influence a specific outcome.

| | Q2 | multiple regression |
|---|---|---|
| Home work Score(X1) | no. of hour studied(X2) | test score (Y) |
| 57 | 3 | 65 |
| 98 | 7 | 87 |
| 95 | 9 | 98 |
| 80 | 5 | 72 |
| 86 | 6 | 82 |
| 0 | 1 | 25 |
| 46 | 2 | 50 |

SUMMARY OUTPUT

| *Regression Statistics* | |
|---|---|
| Multiple R | 0.990063 |
| R Square | 0.980225 |
| Adjusted R Square | 0.970338 |
| Standard Error | 4.250019 |
| Observations | 7 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *ignificance F* |
|---|---|---|---|---|---|
| Regression | 2 | 3581.463637 | 1790.732 | 99.13997204 | 0.000391 |
| Residual | 4 | 72.25064852 | 18.06266 | | |
| Total | 6 | 3653.714286 | | | |

| | *Coefficients* | *Standard Error* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
|---|---|---|---|---|---|---|---|---|
| Intercept | 23.48325 | 3.664782036 | 6.407817 | 0.003047145 | 13.30819 | 33.65832 | 13.30818755 | 33.65832 |
| Home work Score(X1) | 0.442585 | 0.115465876 | 3.833035 | 0.018569813 | 0.122 | 0.763169 | 0.122000025 | 0.763169 |
| no. of hour studied(X2) | 3.33767 | 1.403028703 | 2.378903 | 0.076079977 | -0.55776 | 7.233102 | -0.557762579 | 7.233102 |

# ASSIGNMENT :- 8

# (WHAT IF ANALYSIS)

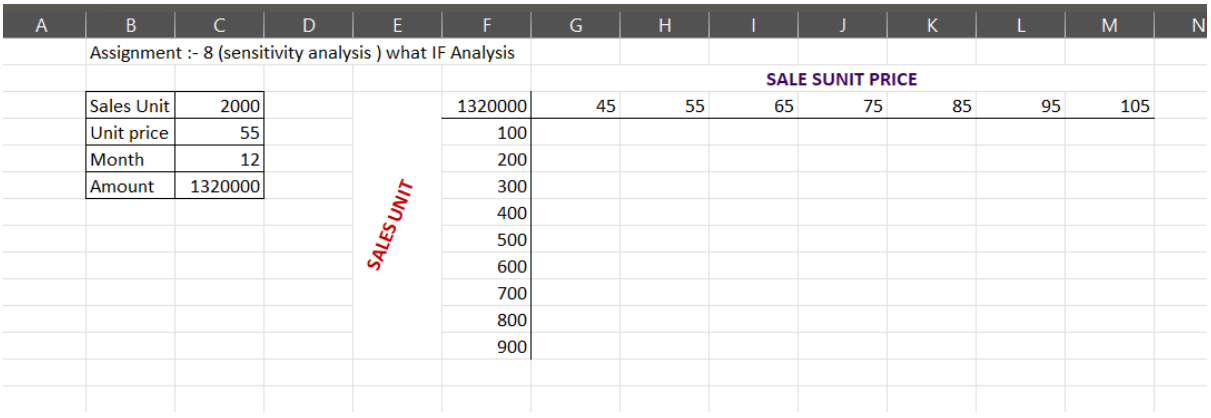
## WHAT IF ANALYSIS

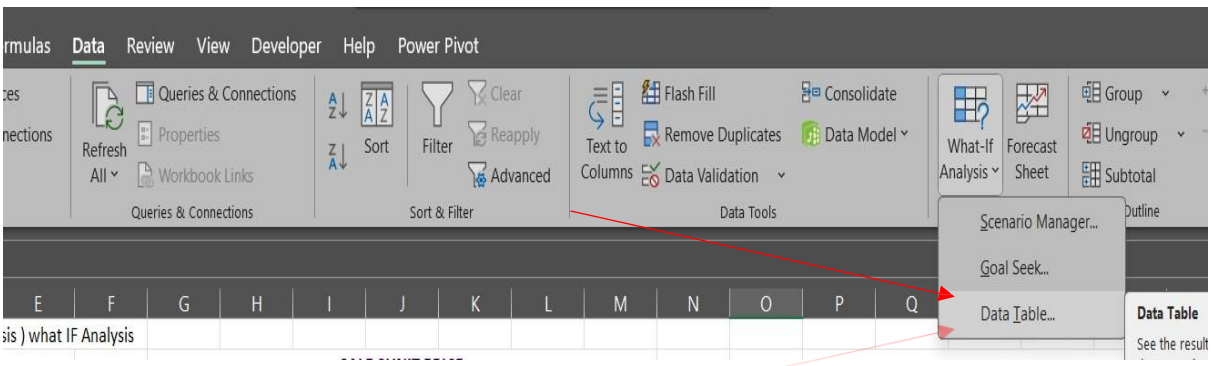
What-if analysis in Excel is a way to experiment with different values in a spreadsheet to see how they affect the results.

## STEPS TO APPLY

1. Choose your variables
2. Select the What-if Analysis tool under the Data tab
3. Choose the tool you want to use, such as Scenario Manager or Data Tables
4. Enter the variables for your scenario
5. Enter the desired change for each cell
6. Hit “OK” when complete

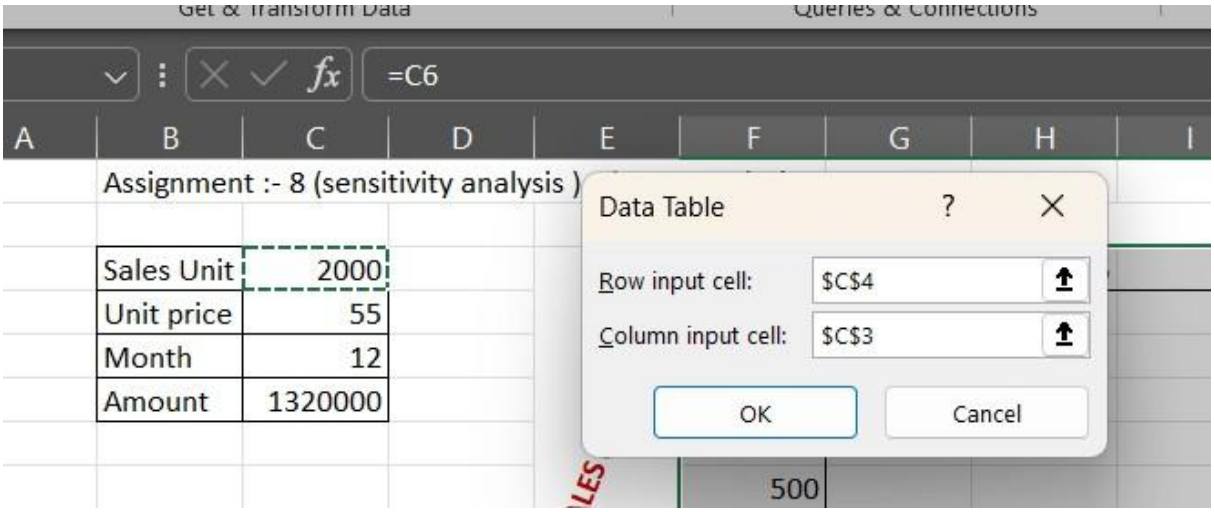
## Application if What IF Analysis






SAKSHAM SHARMA // 80314788822




ysis ) what IF Analysis

| SALES UNIT \ SALE SUNIT PRICE | 45 | 55 | 65 | 75 | 85 | 95 | 105 |
|---|---|---|---|---|---|---|---|
| 100 | 54000 | 66000 | 78000 | 90000 | 102000 | 114000 | 126000 |
| 200 | 108000 | 132000 | 156000 | 180000 | 204000 | 228000 | 252000 |
| 300 | 162000 | 198000 | 234000 | 270000 | 306000 | 342000 | 378000 |
| 400 | 216000 | 264000 | 312000 | 360000 | 408000 | 456000 | 504000 |
| 500 | 270000 | 330000 | 390000 | 450000 | 510000 | 570000 | 630000 |
| 600 | 324000 | 396000 | 468000 | 540000 | 612000 | 684000 | 756000 |
| 700 | 378000 | 462000 | 546000 | 630000 | 714000 | 798000 | 882000 |
| 800 | 432000 | 528000 | 624000 | 720000 | 816000 | 912000 | 1008000 |
| 900 | 486000 | 594000 | 702000 | 810000 | 918000 | 1026000 | 1134000 |

2.

| | |
|---|---|
| QYT. | 500 |
| PRICE | 5 |
| GM | 60% |
| PROFIT | 1500 |

| PRICE \ QYT. | 300 | 400 | 500 | 600 | 700 |
|---|---|---|---|---|---|
| 3 | 540 | 720 | 900 | 1080 | 1260 |
| 4 | 720 | 960 | 1200 | 1440 | 1680 |
| 5 | 900 | 1200 | 1500 | 1800 | 2100 |
| 6 | 1080 | 1440 | 1800 | 2160 | 2520 |
| 7 | 1260 | 1680 | 2100 | 2520 | 2940 |
| 8 | 1440 | 1920 | 2400 | 2880 | 3360 |

# ASSIGNMENT :- 9

# (DYNAMIC CHARTS)

## DYNAMIC CHARTS

Dynamic charts in Excel are charts that automatically update when the data they display changes. They can be used to visualize data that changes over time, such as sales data , stock prices , etc .

## STEPS TO CREATE DYNAMIC CHARTS

1. Click on an empty cell on your datasheet
2. Go to the Insert tab
3. Select Chart
4. Select 2D Charts
5. Click on the border of the chart
6. Go to Chart Design
7. Select Data
8. Select the data range
9. Click on OK

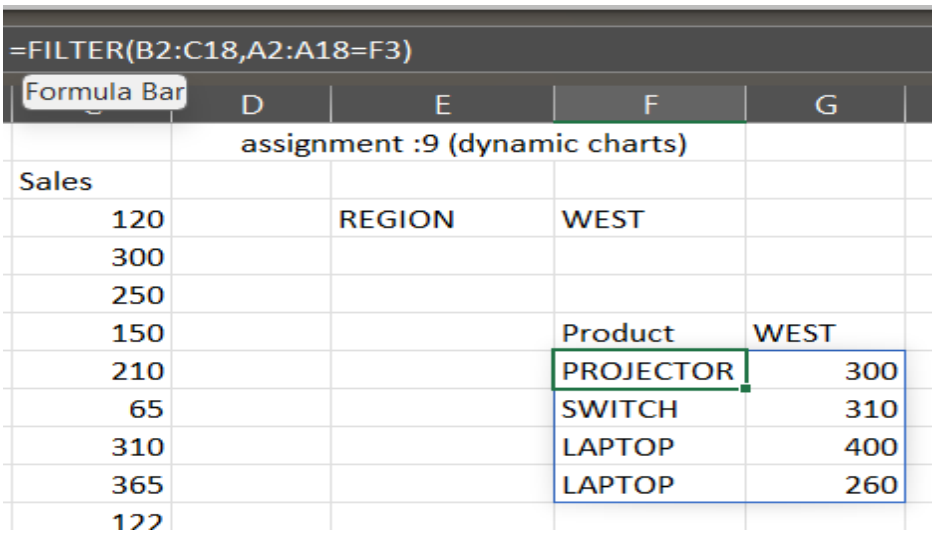
## FILTER FUNCTION

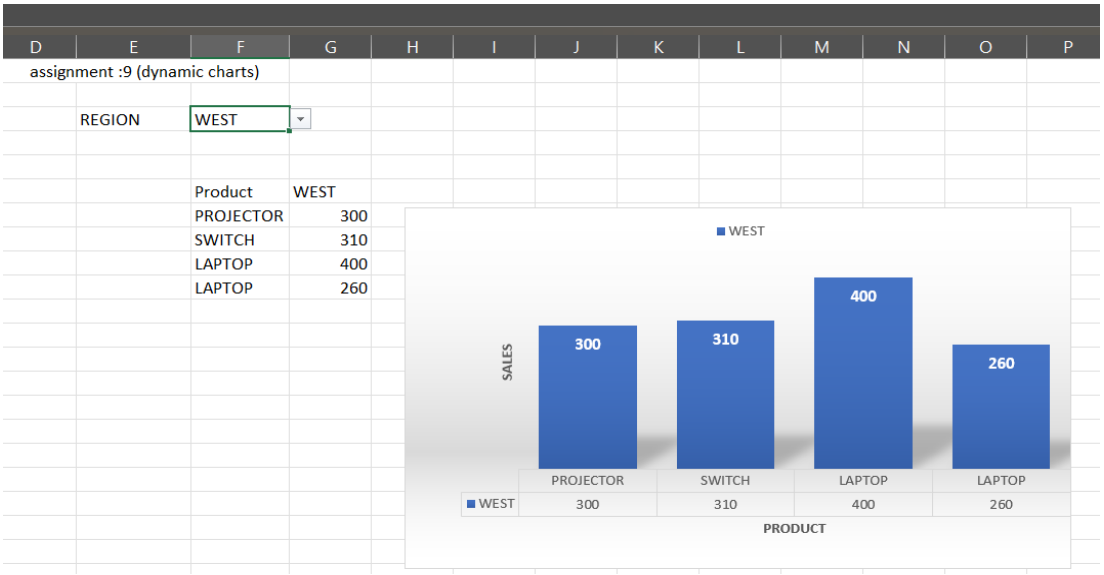
The FILTER function in Excel allows you to filter data in a range or table based on specific conditions. It's a useful tool for analysing and reporting data.

## SYNTAX

=FILTER(array ,include[if _empty]

Q1:- Represent the "**product name**" with their "**sales**" using Filter function . And also represent DYNAMIC CHARTS. (REGION :- WEST AND SOUTH)

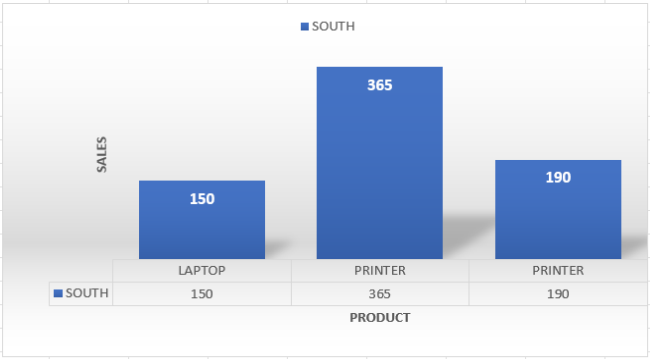


assignment :9 (dynamic charts)

| | |
|---|---|
| REGION | SOUTH |

| Product | SOUTH |
|---|---|
| LAPTOP | 150 |
| PRINTER | 365 |
| PRINTER | 190 |



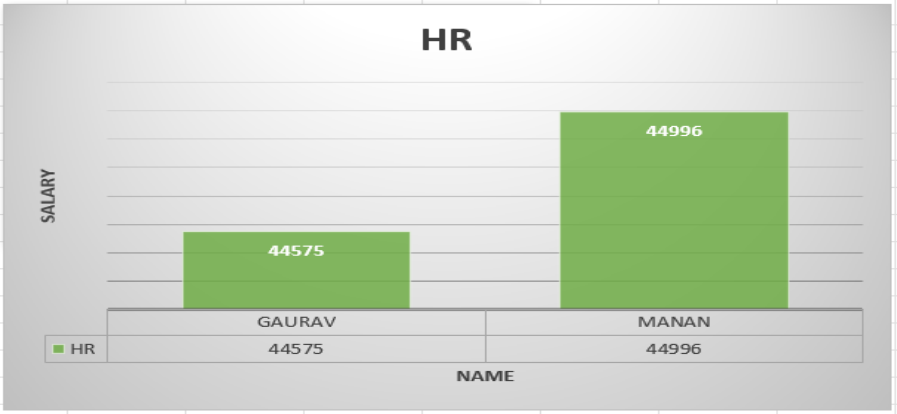

Q2 :- Represent the "**name**" with their "**salary**" using Filter function . And also represent DYNAMIC CHARTS. (Department :- IT , SALES , HR)

=FILTER(B24:C42,A24:A42=F25)

| | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | Q2: | | | | |
| | DEPARTMENT | NAME | SALARY | | | |
| | IT | HIMANSHU | 21511 | | DEPARTMENT | IT |
| | FINANCE | SAKSHAM | 27981 | | | |
| | SALES | SARTHAK | 34147 | | NAME | IT |
| | PROCUREMENT | AYUSH | 49358 | | HIMANSHU | 21511 |
| | HR | GAURAV | 44575 | | CHARU | 36667 |
| | IT | CHARU | 36667 | | PRACHI | 22719 |
| | SALES | ASTHA | 26874 | | KARAN | 24912 |
| | FINANCE | ANNYA | 39184 | | | |
| | PROCUREMENT | VRINDA | 44691 | | | |
| | IT | PRACHI | 22719 | | | |

| DEPARTMENT | HR |
|---|---|

| NAME | HR |
|---|---|
| GAURAV | 44575 |
| MANAN | 44996 |

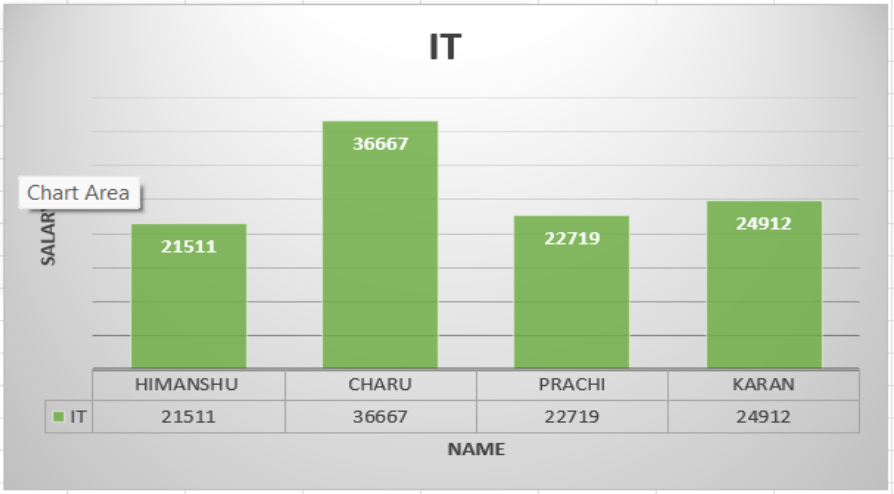



| DEPARTMENT | SALES |
|---|---|

| NAME | SALES |
|---|---|
| SARTHAK | 34147 |
| ASTHA | 26874 |
| DIYANSHI | 29302 |
| REETI | 30486 |
| RAM | 33008 |


| DEPARTMENT | IT |
|---|---|

| NAME | IT |
|---|---|
| HIMANSHU | 21511 |
| CHARU | 36667 |
| PRACHI | 22719 |
| KARAN | 24912 |



# ASSIGNMENT :- 10

# (WATERFALL CHARTS)

WATERFALL CHARTS

A waterfall chart is a data visualization technique that shows how an initial value is affected by a series of positive and negative values.

STEPS TO CREATE IT :-

1. Select your data series, which should include a starting value, end value, and any incremental changes.
2. Go to the Insert tab.
3. In the Charts command group, click the Waterfall chart dropdown.
4. Excel will insert the chart on the spreadsheet with your data.

Q1:- Create waterfall chart of Profit and Loss Statement of a company .

| | A | B | C | D |
|---|---|---|---|---|
| | | | ASSIGNMENT :- 10 | |
| | PROFIT AND LOSS OF COMPANY | | | |
| | | NET CASH FLOW | | |
| | INITIAL BAL. | 8000 | | |
| | JANUARY | -2000 | | |
| | FEBRUARY | 2500 | | |
| | MARCH | 1500 | | |
| | APRIL | -1000 | | |
| | MAY | 2500 | | |
| | JUNE | -1000 | | |
| | JULY | 3500 | | |
| | AUGUST | 900 | | |
| | SEPTEMBER | -2000 | | |
| | OCTOBER | -3000 | | |
| | NOVEMBER | 4500 | | |
| | DECEMBER | 1000 | | |
| | TOTAL | 14400 | | |



SAKSHAM SHARMA // 80314788822

# ASSIGNMENT :- 11

# (NOW AND THEN ANALYSIS)

## NOW AND THEN ANALYSIS

A "Now and Then" analysis in Excel, also known as a trend analysis, involves comparing current data to historical data to identify patterns and forecast future growth by using functions like "TREND" or by visually adding trendlines to charts .

## Trend Analysis

Trend analysis in Excel is a way to use past data to predict future patterns .

## Syntax

=TREND(known_y_values, [known_x_values], [new_x_values], [const])

## Growth Analysis

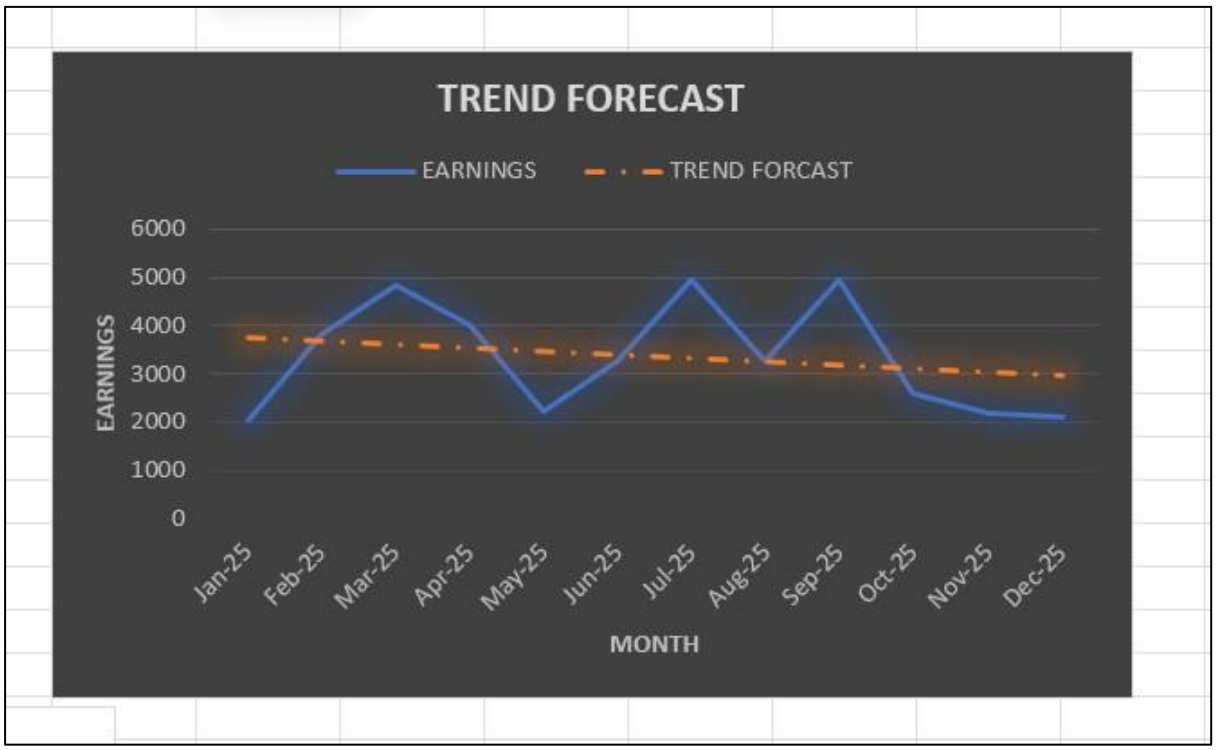
=GROWTH(known_y's, [known_x's], [new_x's])

Q1 :- Calculate the trend and growth forecast using earnings .

=TREND(B3:B14)

| | A | B | C | D |
|---|---|---|---|---|
| | | Assignment:- 11 NOW AND THEN ANALYSIS | | |
| | MONTH | EARNINGS | TREND FORCAST | GROWTH FORECAST |
| | Jan-25 | 2036.8 | 3745.607051 | 3592.379354 |
| | Feb-25 | 3837.76 | 3675.483345 | 3513.819538 |
| | Mar-25 | 4845.44 | 3605.359639 | 3436.977705 |
| | Apr-25 | 4009.28 | 3535.235932 | 3361.816284 |
| | May-25 | 2229.76 | 3465.112226 | 3288.298529 |
| | Jun-25 | 3265.56 | 3394.98852 | 3216.388493 |
| | Jul-25 | 4956.56 | 3324.864814 | 3146.05102 |
| | Aug-25 | 3268.46 | 3254.741107 | 3077.251719 |
| | Sep-25 | 4956.37 | 3184.617401 | 3009.956953 |
| | Oct-25 | 2596.63 | 3114.493695 | 2944.13382 |
| | Nov-25 | 2196.56 | 3044.369988 | 2879.750138 |
| | Dec-25 | 2119.94 | 2974.246282 | 2816.774428 |

TREND FORECAST



GROWTH FORECAST

# ASSIGNMENT :- 12

# (SENSTIVITY ANALYSIS)

## SENSTIVITY ANALYSIS

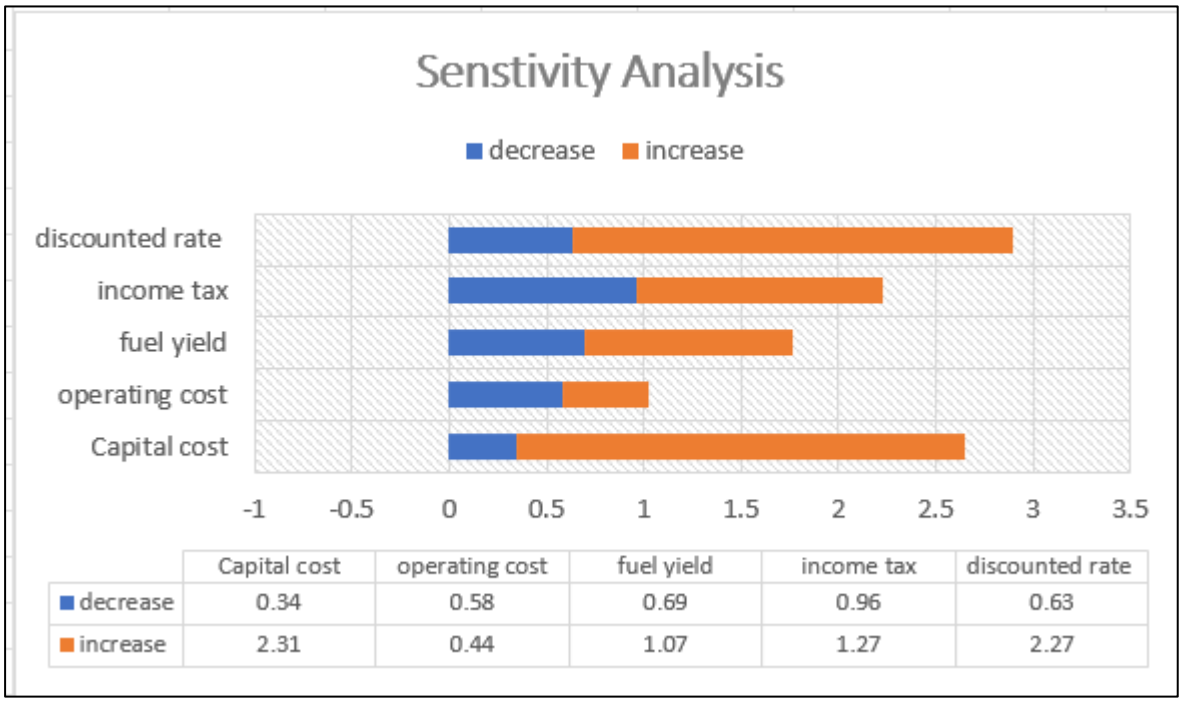
| | ASSIGNMENT :- 12 SENSTIVITY ANALYSIS | | | | |
|---|---|---|---|---|---|
| | min. | actual | max | decrease | increase |
| Capital cost | 2.4 | 2.74 | 5.05 | 0.34 | 2.31 |
| operating cost | 2.16 | 2.74 | 3.18 | 0.58 | 0.44 |
| fuel yield | 2.05 | 2.74 | 3.81 | 0.69 | 1.07 |
| income tax | 1.78 | 2.74 | 4.01 | 0.96 | 1.27 |
| discounted rate | 2.11 | 2.74 | 5.01 | 0.63 | 2.27 |

For finding out the Decrease column value ,we use the formula

=C3-B3 (Actual column – Min. column )

For finding out the Increase column value ,we use the formula

=D3 -C3 (Max. column – Actual column )



# Assignment :- 13

# Tornado charts

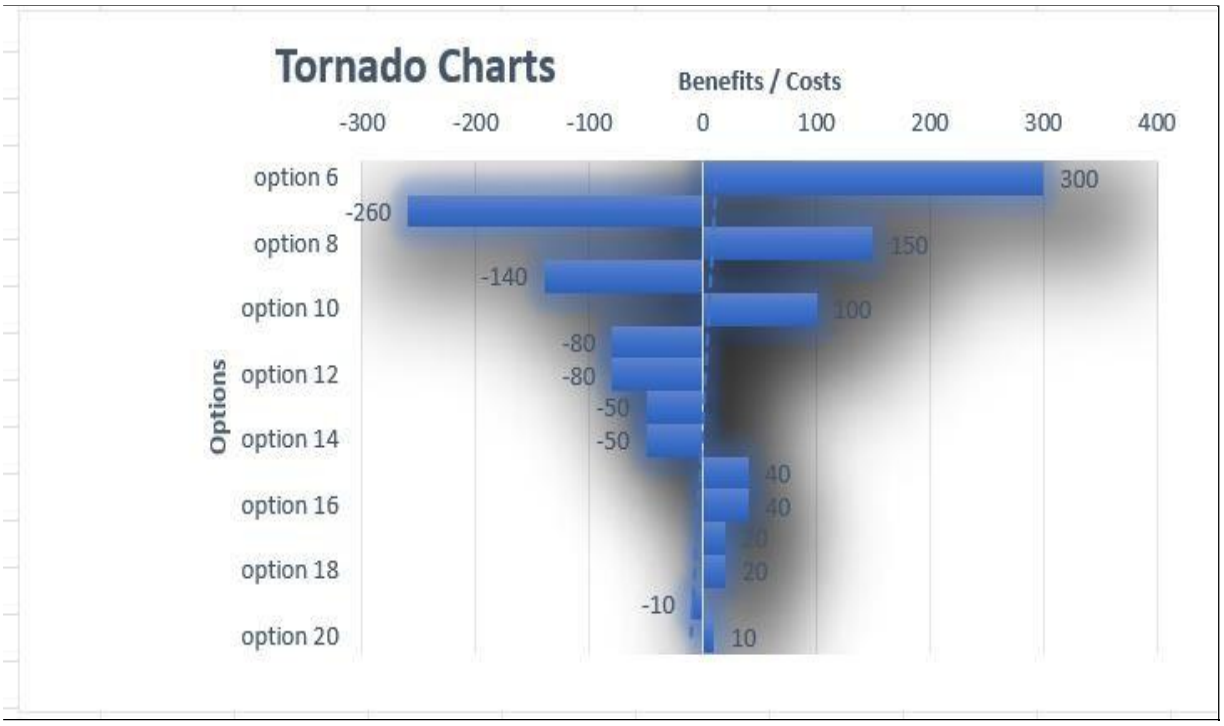
## TORNADO CHARTS

A tornado diagram in Excel is a bar chart that shows data in descending order, with the most significant values at the top. This creates an upside-down pyramid or tornado shape.

### Steps to create a tornado diagram in Excel

1. Select the data
2. Go to Insert
3. Select Charts
4. Select Insert Column or Bar Chart
5. Select Stacked Bar Chart
6. Right-click on the y-axis
7. Select any bar and go to Formatting
8. Change the series gap and gap width to streamline the data bars
9. Add data labels

| | tornado Charts | |
|---|---|---|
| Options | Benefits/Costs | Priortizer Coloumn |
| option 6 | 300 | 300 |
| option 7 | -260 | 260 |
| option 8 | 150 | 150 |
| option 9 | -140 | 140 |
| option 10 | 100 | 100 |
| option 11 | -80 | 80 |
| option 12 | -80 | 80 |
| option 13 | -50 | 50 |
| option 14 | -50 | 50 |
| option 15 | 40 | 40 |
| option 16 | 40 | 40 |
| option 17 | 20 | 20 |
| option 18 | 20 | 20 |
| option 19 | -10 | 10 |
| option 20 | 10 | 10 |


Tornado Charts
Benefits / Costs
-300
-200
-100
0
100
200
300
400
Options
option 6
option 8
option 10
option 12
option 14
option 16
option 18
option 20
-260
-140
-80
-80
-50
-50
-10
300
150
100
40
40
20
10

# ASSIGNMENT :- 14

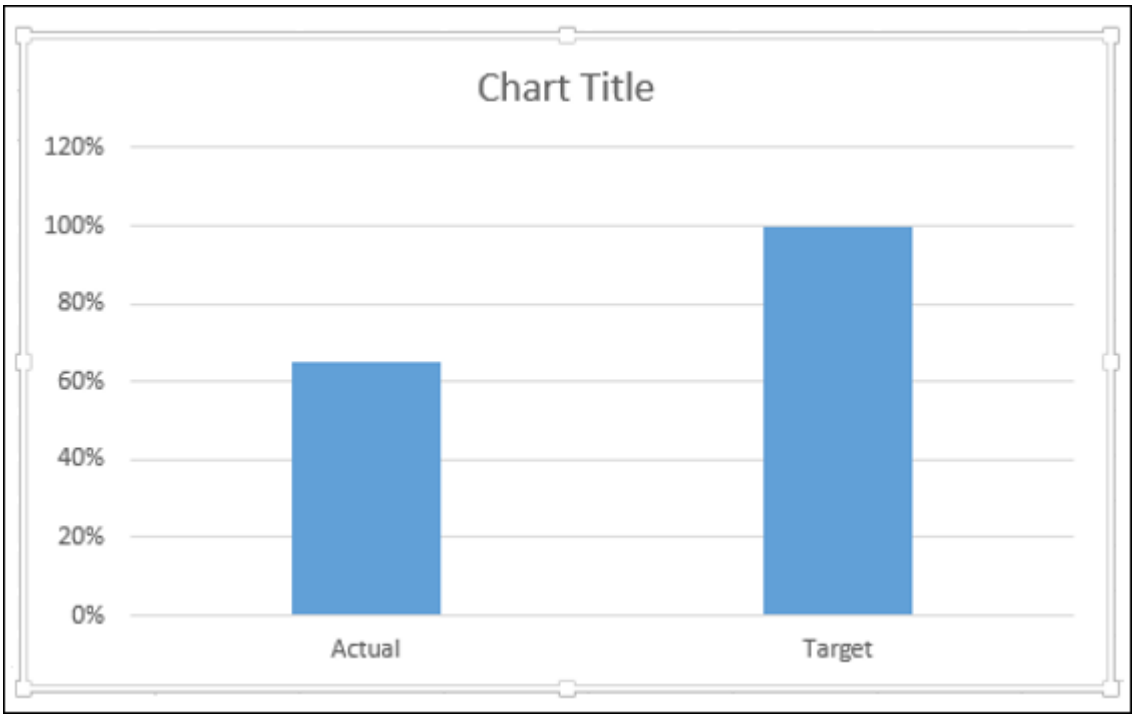
# THERMOMETER CHART

## Thermometer Chart

To create a thermometer chart in Excel, you can use a clustered column chart and then format it to resemble a thermometer, including adding a shape for the bulb .

**Step 1** − Select the data.

**Step 2** − Insert a Clustered Column chart.

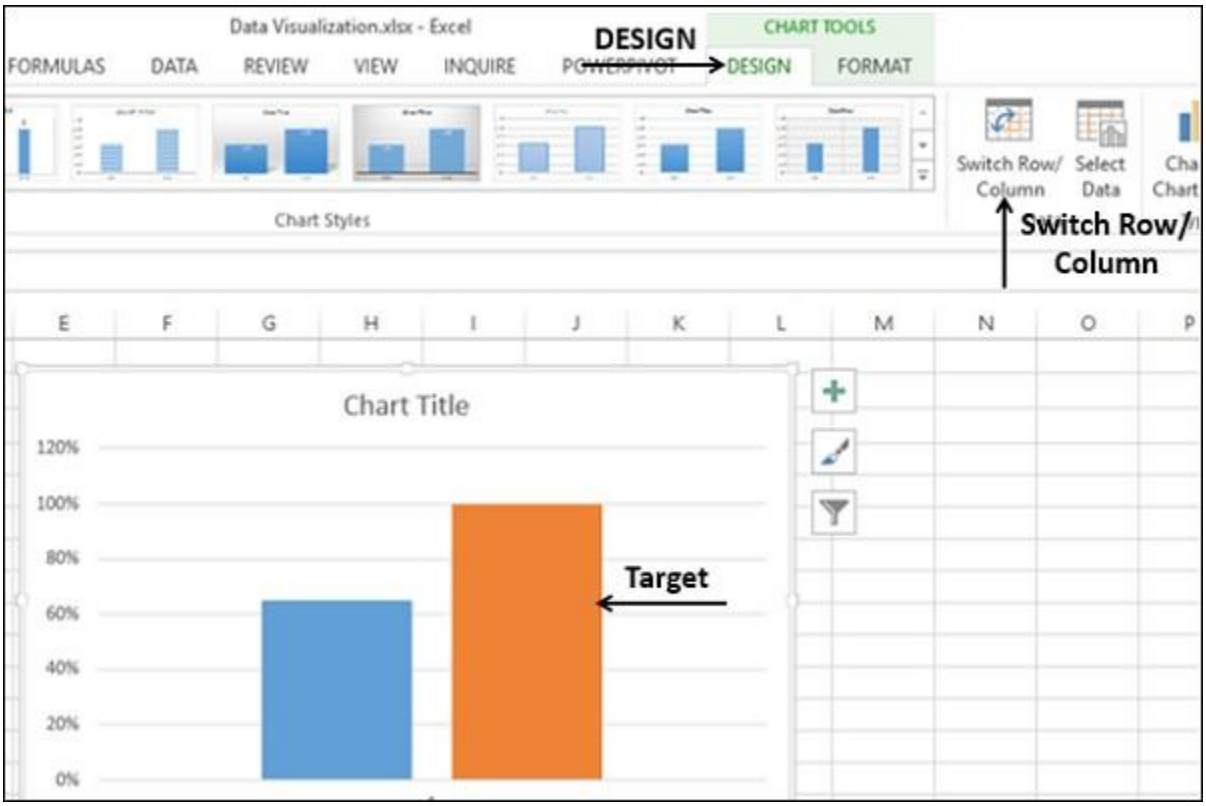



As you can see, the right Column is Target.

**Step 3** − Click on a Column in the chart.

**Step 4** − Click the DESIGN tab on the Ribbon.

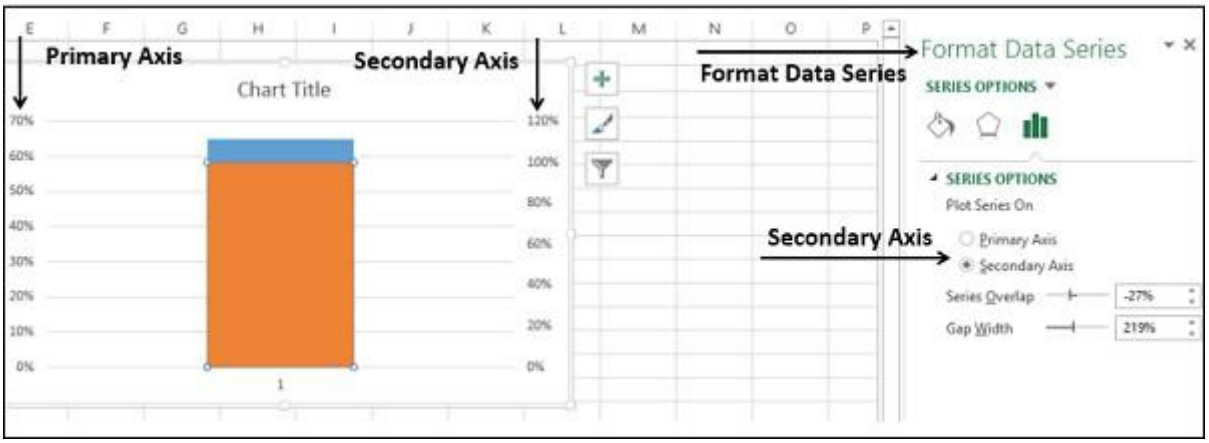
**Step 5** − Click the Switch Row/ Column button.




**Step 6** − Right click on the Target Column.

**Step 7** − Select Format Data Series from the dropdown list.

**Step 8** − Click on Secondary Axis under SERIES OPTIONS in the Format Data Series pane.



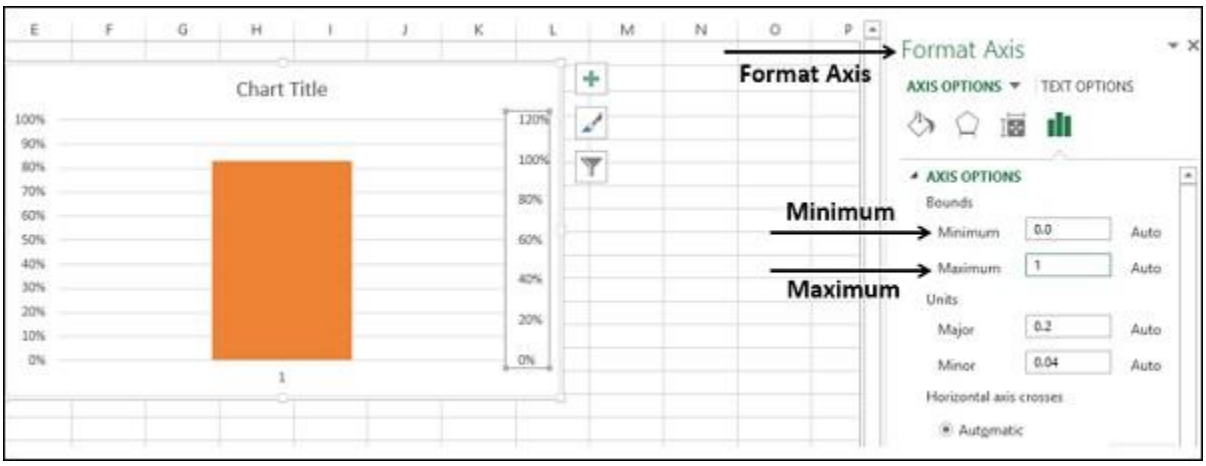

As you can see, the Primary Axis and the Secondary Axis have different ranges.

**Step 9** − Right click on the Primary Axis. Select Format Axis from the dropdown list.

**Step 10** − Type the following in Bounds under AXIS OPTIONS in the Format Axis pane −

- 0 for Minimum.
- 1 for Maximum.

Repeat the steps given above for the Secondary Axis to change the Bounds to 0 and 1.




Both the Primary Axis and Secondary Axis will be set to 0% - 100%.

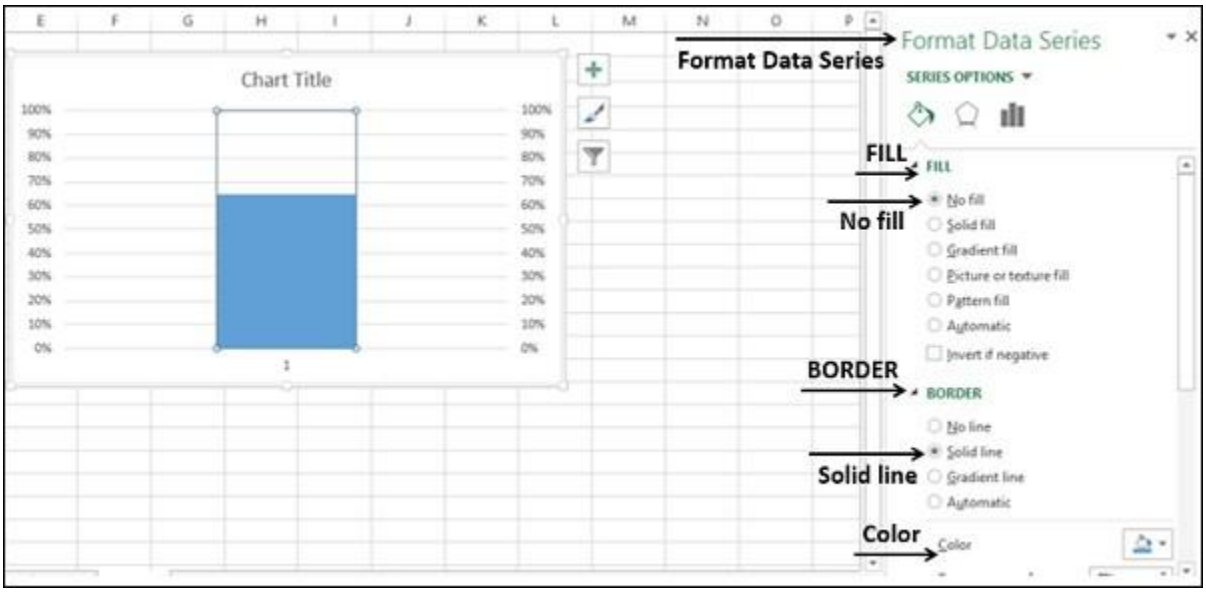
As you can observe, the Target Column hides the Actual Column.

**Step 11** − Right click on the visible Column, i.e. Target.

**Step 12** − Select Format Data Series from the dropdown list.

In the Format Data Series pane, select the following −

- No fill under the FILL option.
- Solid line under the BORDER option.
- Blue under the Color option.




**Step 13** − In Chart Elements, deselect the following −

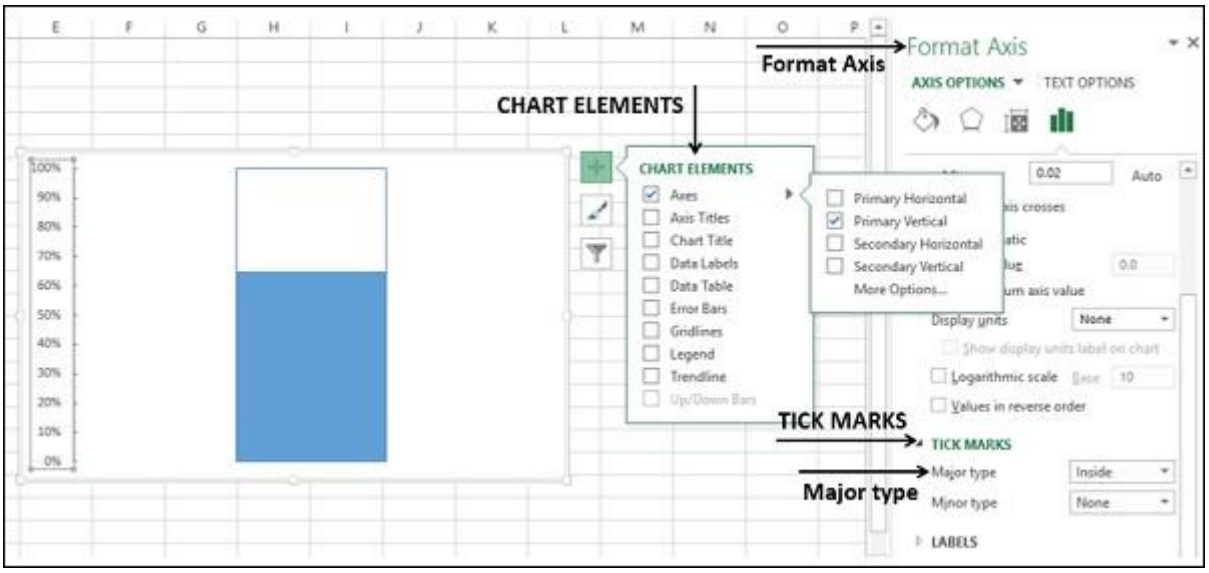
- Axis → Primary Horizontal.
- Axis → Secondary Vertical.
- Gridlines.
- Chart Title.

**Step 14** − Right click on the Primary Vertical Axis.

**Step 15** − Select Format Axis from the dropdown list.

**Step 16** − Click TICK MARKS under the AXIS OPTIONS in the Format Axis pane.

**Step 17** − Select the option Inside for Major type.

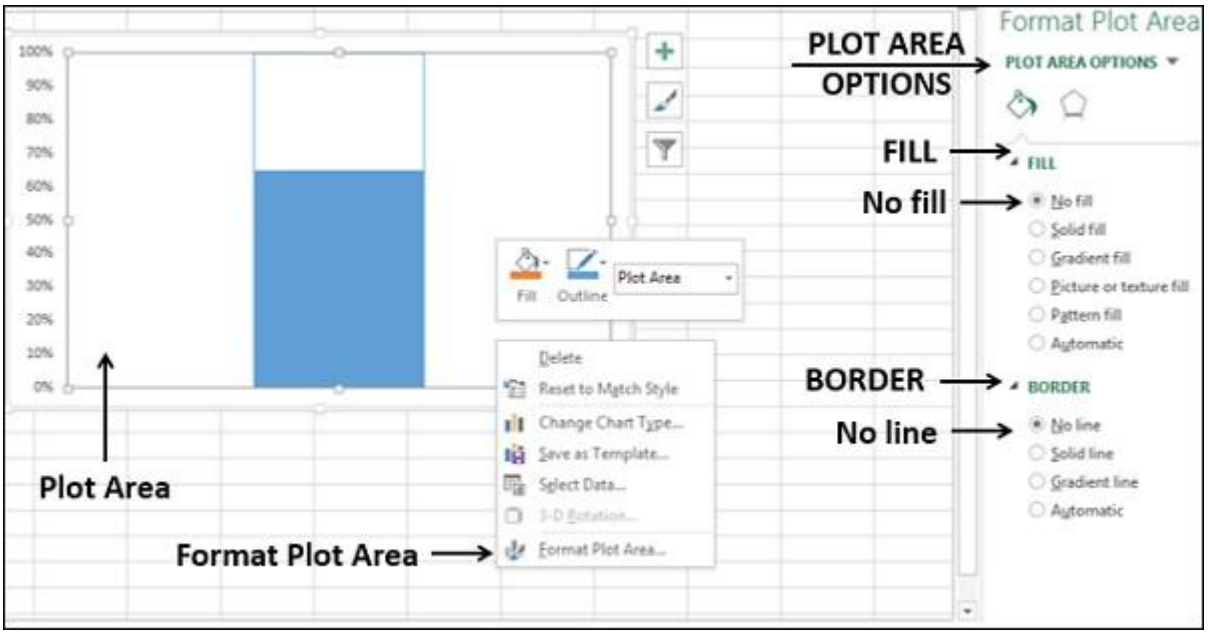



**Step 18** − Right click on the Chart Area.

**Step 19** − Select Format Plot Area from the dropdown list.

**Step 20** − Click Fill & Line in the Format Plot Area pane. Select the following –

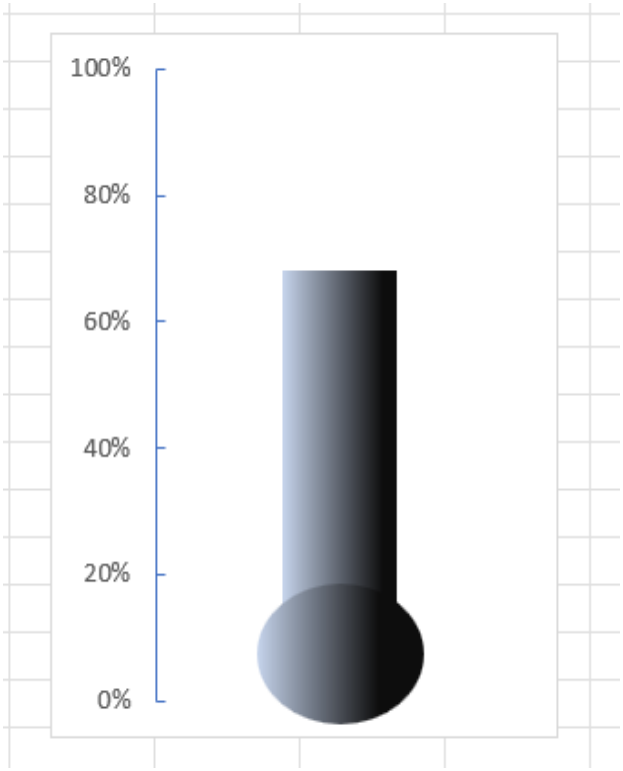
- No fill under the FILL option.
- No line under the BORDER option.




**Step 21** − Resize the Chart Area to get the Thermometer shape for the chart.

**Step 22** – Add the oval shape at the bottom the bar chart .

| | Assignment :- 14 |
|---|---|
| Actual | Target |
| 68% | 100% |



# ASSIGNMENT :- 15

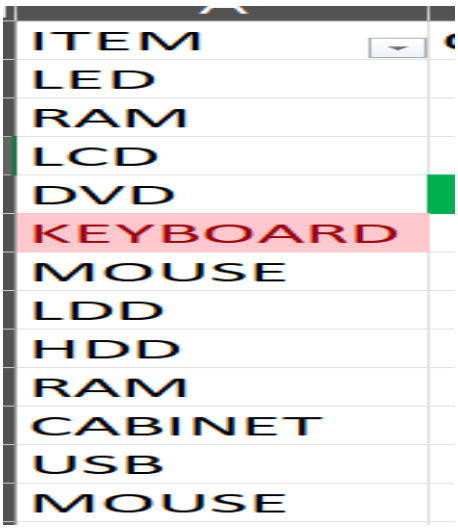
# CONDITIONAL FORMATTING AND PIVOT TABLE

## Conditional Formatting

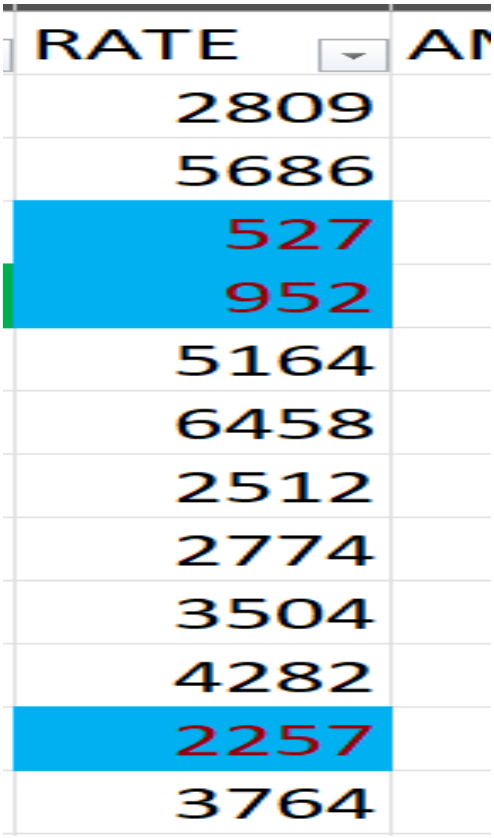
Conditional formatting in Excel allows you to automatically highlight or format cells based on specific criteria, making it easy to identify and analyse data.

| ITEM | QUANTITY | RATE | AMOUNT |
|---|---|---|---|
| LED | 16 | 2809 | 44944 |
| RAM | 20 | 5686 | 113720 |
| LCD | 67 | 527 | 35309 |
| DVD | 60 | 952 | 57120 |
| KEYBOARD | 41 | 5164 | 211724 |
| MOUSE | 53 | 6458 | 342274 |
| LDD | 42 | 2512 | 105504 |
| HDD | 65 | 2774 | 180310 |
| RAM | 72 | 3504 | 252288 |
| CABINET | 59 | 4282 | 252638 |
| USB | 22 | 2257 | 49654 |
| MOUSE | 44 | 3764 | 165616 |

**Q1**:- Highlight cell that contain "keyboard" .

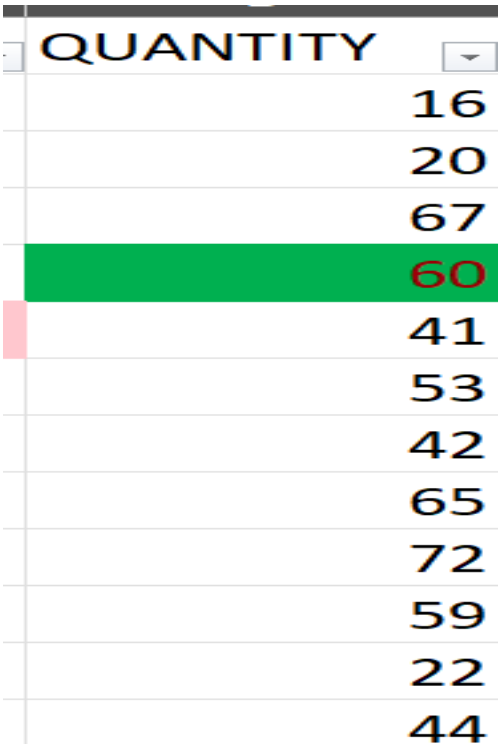


**Q2** :- Highlight  cells where the rate of an item is below Rs. 2500 .



| RATE | AM |
|---|---|
| 2809 | |
| 5686 | |
| 527 | |
| 952 | |
| 5164 | |
| 6458 | |
| 2512 | |
| 2774 | |
| 3504 | |
| 4282 | |
| 2257 | |
| 3764 | |

Q 3:- Highlight cells where the quantity of an item is equal to 60 .



| QUANTITY |
|---|
| 16 |
| 20 |
| 67 |
| 60 |
| 41 |
| 53 |
| 42 |
| 65 |
| 72 |
| 59 |
| 22 |
| 44 |