

## Program-01

Conditional Formatting. IF, countIf, SUM IF, Average, count.

## a) conditional formatting

It is used to change the appearance of a cells in a large range based on your specific condition. The condition are rules based on specified numerical value or matching text.

The browser version of Excel Provides a no. of built in condition and appearance.

ie conditional formatting on sample superstore data

Apply the condition formatting on profit columns follows:-

- Select the entire Profit column
- Click on the conditional formatting button from Home tab.
- Select highlight cell Rule option → select greater than option from it → Enter the value in the given text box which profit you want to highlight the cell

## ii) color scale formatting

color scale formatting highlights the scale values of each product with color scale conditional formatting.

color scale conditional formatting on sample Super-stores as follows:-

1. Select the range of scales value R2: Red
2. Click on the condition formatting icon present in the Ribbon from the menu.
3. Select the colour scale from drag down
  - There are 12 colour scale option with different colour variation.
  - Orange is used for highest value and dark Red for the lowest value
  - All the cells in the range, gradually change colour from yellow, orange, pink, dark red etc.



### [b] IF function :-

It is a pre-made function in Excel which returns value based on true/false

Example:-

If on sample - superstore dataset

Syntax:-

=IF (logical\_text, [value - IF - true], [value - if - false])

- if on sample superstore dataset
- create a new column called as discount status and enter the formula.
- implement If condition on discount  
= IF (T2 > 0, "Discount Allowed", "Discount not Allowed")

### [c] COUNTIF function :-

It is a pre-made function in Excel which counts cells as specified numbers (eg: 90) and words (eg "water") can be specified

= COUNTIF (Range, criteria)

where range = set of data on which count function is to be implemented  
criteria = condition that need to be matched.

→ counts the no. of product that have sales more than 50 units  
condition = count of (R2:R25, ">50")

#### [d] SUMIF Function.

It is pre-made function in Excel which calculates the sum of value in range based on true/false.  
syntax:-

= SUMIF (Range, criteria, [sum-range])

on sample - superstore data set

count the total Profit > 1000 units

= SUMIF (U2: (End) U10, ">1000")

#### [e] Average function

It calculate the average (arithmetic mean). It adds the range and divide it by no. of observations.

Syntax:-

= Average (number 1, number 2, .....)

on sample - superstore data set

find the average of profit

= Average (U2:U7)



## (F) CONCATENATE functions

The concatenate function is to be made to used to link multiple cell with out adding any delimited b/w the combined cell value.

Syntax

= CONCATENATE (Text 1, [TEXT2], [TEXT3] .... )

on the Sample data set

Create a new column and name it as product Summary and concatenate product

= CONCATENATE (Q2, R2, V2)

## Program - 02

LEFT, MID, RIGHT, LEN, SUBSTITUTE, SEARCH, ISNUMBER

## [a] LEFT

→ LEFT returns the First character or characters in a text strings, based on number of characters you specify.

## \* syntax

= LEFT (Text, num-chars)

- Text is text string that contains the characters you want to extract
- NUM-chars specifies the no. of character you want left to extract. it must be greater than or equal to zero.
- if num-char is greater than the length of text, left return all of text.
- if num-char is omitted, it is assumed to be till the end of string.



### [b] MID:

MID returns a specific no. of characters from a text-string, starting at the position you specify based on the no. of characters you specify.

Syntax:-

= MID (text, start, num, num-chars)

- Text is the text string containing the character you want to extract
- num-chars specifies the no. of characters you want to extract
- start-num is the position of first character from where you want to extract in that.

### [c] RIGHT

Right returns the last characters or character in a text string, based on the number of character you specify

\* syntax

= RIGHT (text, [num-chars])

- Text is the text string containing characters you want to extract.
- num-char specify the numbers of characters you want RIGHT to extract.



(d) LEN:- returns the number of characters in a text strings.

\* Syntax

= LEN(text)

(e) Substitute

Substitute new-text for old-text in text string, use substitute when you want to replace specific text in a text string, use REPLACE when you want to replace any text that occurs in a specific location in a text string.

Syntax:-

= SUBSTITUTE(text, old-text, new-text [instant-num])

(f) SEARCH

It locates one text string within the second text string and returns the number of starting position.

Syntax:-

= SEARCH(find-text, within-text [start-num])

(g) ISNUMBER

It returns false when cell not containing a number and True if it contains.

Syntax :- = ISNUMBER(Value)



## Program - 03

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INDEX, MATCH, UNIQUE, IFS, COUNTIFS, SUMIFS, AVERAGE-IFS.

### (a) Index:-

The microsoft excel index function returns a value in a table based on intersection of a row and column position within that table.

The index function is a built-in function in excel that is categorised as lookup & reference function.

Syntax:-

= INDEX (table, row-number, column-num).

### (b) Match

It searches for specified item in a range of cell and then returns, the relative position of that item in the range.

Syntax:-

= MATCH (lookup-value, lookup-list, [match-type])  
on a particular data set.

= INDEX (I1:L4, MATCH (13, I2:40, 0), MATCH (J2, I1:L1, 0))

### [c] UNIQUE

It returns a list of unique value in a list or range

Syntax:-

= UNIQUE (array, [by-col], [exactly-once])  
on the particular dataset

= UNIQUE (B2:B44)

### (d) IFS

It checks whether one or more condition are met and returns a value that corresponds to the first true conditions.

Syntax:-

IFS (logical-test 1, value-if-true 1, ... end)

### (e) COUNTIFS

It applies criteria to cell across multiple range & count no. of term all criteria are met.

Syntax:-

= COUNTIFS (criteria - range1, criteria-1,  
[criteria - range2, criteria2] ...)

Eg:- COUNTIFS (B2:B1, I18, C2:(B,H7))



### (f) SUMIFS

It is one of the math and trigo functions, add all of its arguments that meet multiple criteria.

Syntax:-

=SUMIFS (sum-range, criteria-range 1, criteria1, ...)

Eg:- SUMIFS (D2:D13, B2:B13, I18, C2:C13, I17)

### (g) AVERAGEIFS

It returns the average of all that cell that meet multiple criteria.

Syntax:-

=AVERAGEIFS (average-range, criteria-range 1, criteria1, ...)

Eg:- AVERAGEIFS (D2:D13, B2:B13, I18, C2:C13, I17)

## Program - 04

TODAY, Now, Year, month, network days, co month.

### i) Today:

It returns current date.

Syntax:-

= TODAY()

### ii) Now:

It returns current date and time

Syntax:-

= NOW()

### iii) Year:

It returns the year corresponding to a date.

Syntax:-

i) = YEAR (serial-number)

eg:- = YEAR (365)

ii) = YEAR (DATE (YY, MM, DD))

eg:- = YEAR (2024, 03, 13)

iii) = YEAR (today())

eg:- YEAR (today())



iv) = YEAR ("DD/MM/YY")

eg:- = YEAR ("08-08-2021")

(iv) MONTH :

it returns the month of a date represented by serial number.

syntax :-

(a) = MONTH (serial - number)

eg:- = MONTH (365)

(b) = MONTH (today())

eg:- = MONTH (today())

(c) = MONTH (cell - number)

eg:-  
= MONTH (A2)

(v) NETWORK DAYS

It return the no. of whole working day between start date and end date.

working days, exclude weekends and any of dates identified in holidays

syntax :- = NETWORK DAYS (start-date, end-date, [holidays])

eg:-

= NETWORKDAYS (F12, G12, \$H\$10 : \$M\$11)

### vi) EOMONTH:

it returns serial number of the last day of month that is the indicated no. of months, before or after start-date.

Syntax:-

=EOMONTH (start-date, months)

eg:-

=EOMONTH (F12, 3)



## Program - 05

VLOOKUP, HLOOKUP, XLOOKUP, COUNT, COUNTA

### (a) VLOOKUP

It uses to find thing in a table or a range by row.

Syntax:-

= VLOOKUP(lookup-value, table-array, col-index, -num  
[range-lookup])

Eg:- VLOOKUP(C11, \$A\$2:\$C\$6, 2, false)

### (b) HLOOKUP

It search a value in top value in the top row of a table or an array of values and then returns a value in the same column from a row you specify in the table or array. H represents horizontal

Syntax:-

= HLOOKUP(lookup-value, table-array, row-index-num, [range-lookup])

### (c) XLOOKUP

It is used to find things in a table or range by row. It returns the item corresponding to the first match it finds. if no match exists, then XLOOKUP

can return the closest match.

Syntax:-

=XLOOKUP(lookup-value, lookup-array, return-array,  
[if not found], [match-mode], [search-mode])

Eg:- XLOOKUP (E3, A11:A20, K11:K20)

d) count

it counts the number of cell that contain numbers  
and counts number within the list of arguments  
It gets the number of entries in a number field  
that is in a range or array of numbers.

Syntax:-

=COUNT(value1, [value2], ...)

eg:- =COUNT (A8:K19)

(e) countA:-

it counts the no. of cell that are not empty in a  
range.

Syntax:- =COUNTA(value1, [value2], ...)

Eg:- COUNTA (A8:K19)



## Program-06

### (a) Filter :-

The filter function allows you to filter a range of data based on criteria you define.

Syntax:- `= FILTER (array, include, [if-empty])`

eg:- `= FILTER (A2:C21, C2:C21 = 1,)`

### (b) Frequency :-

The frequency function calculate how often values occur within a range of value and then return a vertical array of numbers.

Syntax:- `Frequency (data - array, bins - array)`

eg:- `Frequency (C2:C21, D2:D21)`

### (c) Sequence :-

It allows you to generate a list of sequential number in an array such as 1, 2, 3, 4.

Syntax:-

`= Sequence (rows [columns], [starts], [step])`

eg:- `SEQUENCE (10, 1, 100, 1)`

### (d) Randarray:-

This function returns an array of random numbers. You can specify the no. of rows and columns, to fill, minimum and maximum values, and whether to return whole number or decimal values.

Syntax:-

=RANDARRAY ([rows], [columns], [min], [max],  
[whole-numbers])

Eg:- RANDARRAY (6, 3, 10, 100, TRUE)

### (e) If error:-

You can use this function to trap and handle errors in a formula. It returns a value you specify if a formula evaluates an error, otherwise it returns the result of the formula.

Syntax:-=IFERROR (Value, value-if-error)

Eg:- IFERROR (C2\*2, " ")



## Program - 07

Step 1: write the Problem Statements (Goals)

- 1) category wise Profit
- 2) Region wise Profit
- 3) Segment wise Profit
- 4) What are the total sales by segment in each all years? (Doughnut charts)
- 5) What are the total sales in different/all categories? (Doughnut charts)
- 6) What are the total sales in different regions or all region (Bar chart)
- 7) What are the Profit and Sales in different regions?
- 8) What are the total quantity in different/all regions?

→ Steps to create a dashboard on sample superstore.

### \* Data cleaning

- (a) Add filters to all the columns.
- (b) For each column check the filters for any data, anomaly such as blank cells incorrect data etc.
- (c) If any anomalies correct them manually.



\* For every goal defined above do the analysis in the following manner:-

- a) Insert pivot table in the new sheet and include all the column from data set.
- b) Drag the fields which analysis has to be done into the respective tab of pivot table field.
- c) Remove the grand total from the Pivot data using following step  
select the pivot table from the excel sheet and columns.
- d) select option ribbon → click on pivot chart option from the ribbon → select type of chart from the menu → click on ok.
- e) you will get a desired chart which can be formatted using various option from the pivot chart tools using ribbon.
- f) copy all the chart by following step 2 into a new sheet. Name the sheet as excel Dashboard
- g) In this excel dashboard sheet:



Go to Pivot chart tools ribbon → select Analyze option → select insert slicer → select columns on which you need to insert slicer.

5) connect all slicer using the following steps:-  
Go to slicer tool → click on options → select pivot table connections → check all the Pivot table you need to connect.

6) This dashboard will be interactive

when you select data from the slicer, your charts will dynamically update to display the selected options.