Logical Functions and Formulas in Excel

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Logical Functions

- Located at Formulas Tab
- Shortcut keys used: Alt + M + L

LOGICAL FUNCTION IF

- THE FUNCTION IF IS ONE OF THE MOST POPULAR FUNCTION IN EXCEL
- IT ALLOWS US TOO MAKE LOGICAL COMPARISIONS BETWEEN A VALUE AND WHAT YOU EXPECT .
- IN IF FUNCTION WE HAVE TWO RESULTS FIRST RESULT IS IF YOUR COMPARISION IS TRUE THE SECOND IF YOUR COMPARISION IS FALSE.
- HOW TO USE IF IN EXCEL?
- =IF(logical test,[value if true],[value if false])

COUNTIF()

- THE FUNCTION COUNTIF() IS USE TO COUNT THE TOTAL NO OF CELLS WITHIN A RANGE THAT MEET THE GIVEN CONDITION
- COUNTIF(range,criteria)
- THE FIRST ARGUEMENT IN COUNTIF FORMULA IS RANGE .WE HAVE TO SELECT THE RANGE IN WHICH WE HAVE TO COUNT OUR PARTICULAR VALUE.
- THE SECOND ARGUMENT IS THE CRITERIA THAT WE WANT TO COUNT

SUMIF()

- THE SUMIF FUNCTION ADDS THE CELLS SPECIFIED BY A GIVEN CONDITION OR CRITERIA.
- SUMIF(range,criteria,[sum_range]
- THE FIRST ARGUMENT IN THE SUMIF FORMULA IS THE RANGE OF THE SPECIFIC CRITERIA ON WHICH WE TAKE THE SUM.
- THE SECOND ARGUMENT IS THE CRITERIA FOR WHICH WE TAKE THE SUM.
- THIRD ARGUMENT IS THE SUM RANGE MEANS THE RANGE OF THE VALUES ON WHICH WE TAKE THE SUM.

TIME AND DATE FORMULAS

- TODAY()
- DAY()
- DAYS()
- YEAR()
- MONTH()
- HOUR()
- MINUTE()
- SECOND()
- EDATE()
- DATEIF()

FORECAST FORMULA

- IT WILL CALCULATE OR PREDICT THE FUTURE VALUE USING EXISTING VALUE.
- FORECAST(x,known_y's,known_x's)
- IN FORECAST FUNCTION FIRST ARGUMENT IS THE NUMERIC VALUE FOR WHICH WE WANT TO PREDICT THE FORECAST VALUE.
- THE SECOND ARGUMENT IS THE DEPENDENT VALUES OR RANGE OF DATA .
- THE THIRD ARGUMENT IS THE RANGE OF INDEPENDENT VALUES OF THE DATA THAT KNOWN TO US

Thank You

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XOR LOGICAL FUNCTION

- The XOR is introduced in excel 2013 and is available under excel logical functions, It is a logical "exclusive OR" function.
- For two given logical statements, the XOR function would return true if one of the statement is true and false if both statements are true,
- If neither of the statements, is true it also return false.
- FORMULA- =XOR(logical11,[logical2],…)
- Logical1, Logical2- Logical 1 is required argument, whereas logical2 and subsequent logical values are optional.

FORMULAE:

- **THE LEFT FUNCTION-** It returns a given text from the left of our text string based on number of characters specified.
- **SYNTAX-** LEFT(text,[num_chars])
- **RIGHT FUNCTION-** It returns a given text from the right of our text string based on number of characters specified.
- **SYNTAX-** RIGHT(text,[num_chars])
- **THE MID FUNCTION-** It returns the text from any middle part of our text string based on the starting position and no. of character specified.
- **SYNTAX-** MID(text,start_num,num_chars)
- **THE LEN FUNCTION-** It returns the no. of characters in text string.
- **SYNTAX**- LEN(text)
- **THE FIND FUNCTION-** It returns the positionof given text within a text.
- **SYNTAX-** FIND(find_text, within_text,[start_num])

Thank You

Presented by

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1. Nested IF

- Nested if used where conditional statements are defined multiple times
- Example: Categorizing data of marks obtained by students in Grades

2. XOR

- XOR logic is defined as the output is true when only one input is true
- Else, output is false
- Uses
- Example

3. SUMSQ

- Sum of squares gives the sum of the square of observations
- Used during DOE and Sampling Methods experiment
- Example

4. VAR

- Gives the variance of the data
- Variance Formula
- Example

5. EXPONDIST

- Gives the probability of Exponential Distribution.
- Example

6. STANDARDIZE

- STANDARDIZE command standardizes the given data by subtracting by mean and dividing by standard deviation.
- Example

Thank You

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numbers.
=count(row/column/array)

3.power: The Excel POWER function returns a number raised to a given power.
=power(range, pow**er)**

4. concatenate: The word CONCATENATE means to join or combine. The CONCATENATE function in Excel is used to combine the text from different cells into one cell.
example==CONCATENATE("Hello", " ", "World!")

5.substitute: The SUBSTITUTE function in Excel replaces one or more instances of a given character or text string with a specified character(s).
=SUBSTITUTE(text, old_text, new_text, [instance])

- **#logical function**
  And:

  The AND Function in excel is a logical function that tests multiple conditions and returns “true” or “false” depending on whether they are met or not.
  “=AND(logical1,[logical2]…),”

Thank You

Presented by

Sanika Dangat

LOGICAL FUNCTIONS IN EXCEL

OR FUNCTIONS: -

THE OR FUNCTIONS RETURNS TRUE IF ANY OF ITS ARGUMENT EVALUATE TO TRUE, AND RETURNS FALSE IF ALL OF ITS ARGUMENTS EVALUATE TO FALSE. ONE COMMON USE FOR THE OR FUNCTION IS TO EXPAND THE USEFULNESS OF OTHER FUNCTION THAT PERFORM LOGICAL TESTS.

SYNTAX AND OR TABLE: -

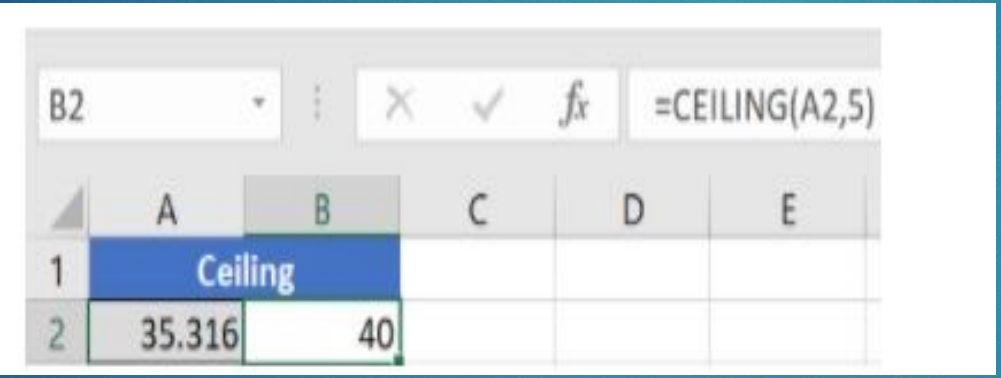
	A	B	C
1	Formula	Description	Result
2	=OR(TRUE,TRUE)	All arguments are TRUE	TRUE
3	=OR(TRUE,FALSE)	One argument is FALSE	TRUE
4	=OR(1=1,2=2,3=3)	All arguments are TRUE	TRUE
5	=OR(1=2,2=3,3=4)	All arguments are FALSE	FALSE

FORMUALS IN EXCEL: -

1. **CEILING: -**

THE CEILING() FUNCTION ROUNDS A NUMBER UP TO ITS NEAREST MULTIPLE OF SIGNIFICANCE.

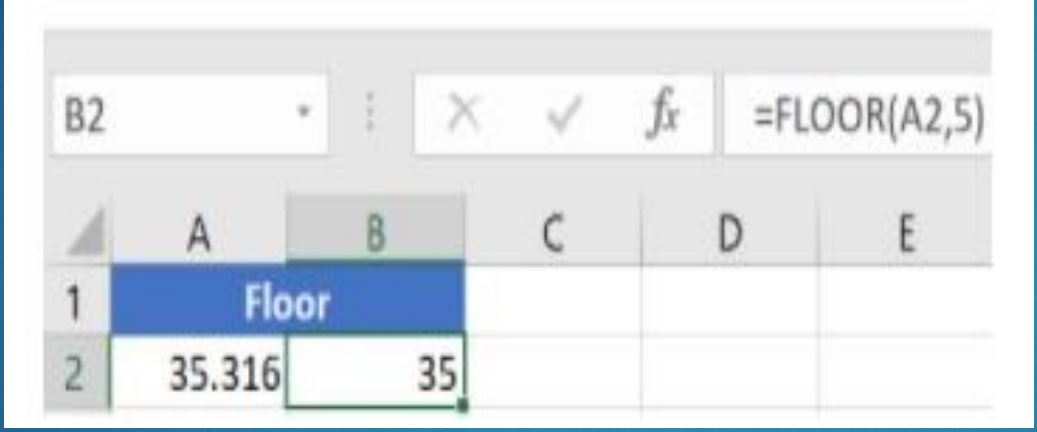
FOR EXAMPLE: - THE HIGHEST MULTIPLE OF 5 FOR 35.316 IS



2. FLOOR: -

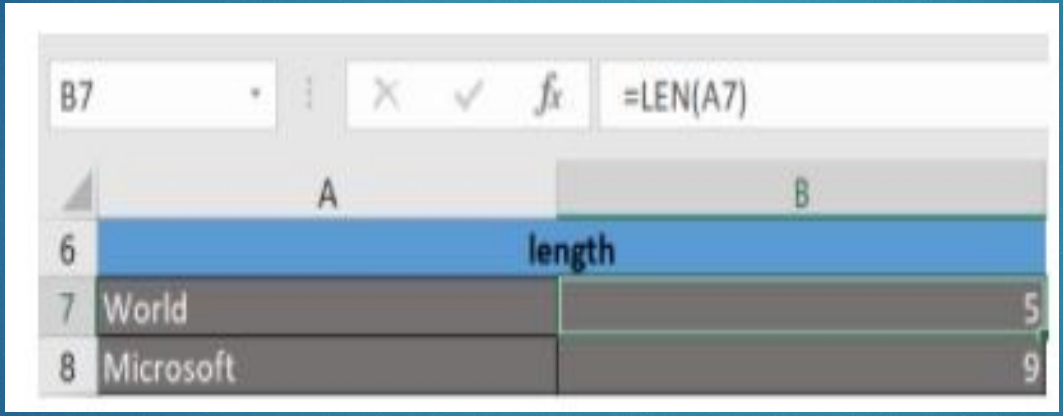
CONTRARY TO THE CEILING FUNCTION, THE FLOOR FUNCTION ROUNDS A NUMBER DOWN TO THE NEAREST MULTIPLE OF SIGNIFICANCE.

FOR EXAMPLE: - THE NEAREST MULTIPLE OF *5* FOR *35.316* IS *35*.



3. LEN: -

THE FUNCTION LEN() RETURNS THE TOTAL NUMBER OF CHARACTERS IN A STRING. SO, IT WILL COUNT THE OVERALL CHARACTERS, INCLUDING SPACES AND SPECIAL CHARACTERS. GIVEN BELOW IS AN EXAMPLE OF THE LEN FUNCTION.



4. NOW(): -

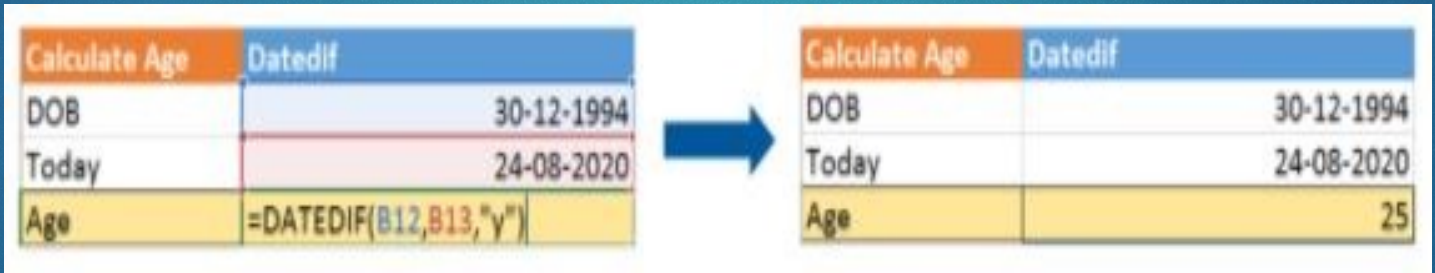
THE NOW() FUNCTION IN EXCEL GIVES THE CURRENT SYSTEM DATE AND TIME.

THE RESULT OF THE NOW() FUNCTION WILL CHANGE BASED ON YOUR SYSTEM DATE AND TIME.

5. DATEDIF(): -

THE DATEDIF() FUNCTION PROVIDES THE DIFFERENCE BETWEEN TWO DATES IN TERMS OF YEARS, MONTHS, OR DAYS.

BELOW IS AN EXAMPLE OF A DATEDIF FUNCTION WHERE WE CALCULATE THE CURRENT AGE OF A PERSON BASED ON TWO GIVEN DATES, THE DATE OF BIRTH AND TODAY'S



Thank You

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