

ASSIGNMENT 3

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1) How do you handle date and time calculations in DAX ?

There are many functions in DAX to handle date and time :

- TODAY() -It will return the current date .
- DATE () - Returns the specified date in datetime format.
- DATEDIF() - Returns the number of interval boundaries between two dates.
- DAY() – Returns the day of a month,a number from 1 to 31.
- FILTER () and CALCULATE() - filter data based on date ranges .

2) How do you use the IF functions in DAX ? Provide an example.

IF function is used to perform conditional logic. It evaluates a condition and returns one value if the condition is true and another value if it is false.

Eg : Category = IF(Data[Units Sold]<5000,"Small",IF(Data[Units Sold]<10000,"Medium","Large"))

3) Difference between SUM and SUMX functions in DAX ?

- **SUM** function is used to add up all the values in a single column.
SUM(<column>)
- **SUMX** processes each row of the specified table, applying the provided expression to compute a value for each row.
SUMX(<table>, <expression>)

4) Difference between SUMMERIZE and ADDCOLUMNS functions in DAX ?

SUMMERIZE :

- Create a summary table that groups data by specified columns .
- SUMMARIZE(<table>, <groupBy_columnName1>, <groupBy_columnName2>, ..., [<name>, <expression>])

ADDCOLUMNS :

- Add calculated columns to an existing table or to a table expression.

- ADDCOLUMNS(<table>, <name>, <expression>, ...)

5) How do you calculate the number of days between two dates using DAX ?

- Use DATEDIF function
 - DATEDIFF(<start_date>, <end_date>, DAY)
- By Subtracting Dates
 - DaysBetween = Sales[EndDate] - Sales[StartDate]

6) How do you add or subtract a specific number of days from a date using DAX ?

Using the DATEADD function or using Arithmetic operations.

- DATEADD(<dates>, <number_of_intervals>, <interval>)
- NewDate = DATEADD(Order[Delivery date], 5, DAY)

7) How do you format a date value using DAX ?

- Using the **FORMAT** function.
- Eg: FormattedDate = FORMAT(Orders[DeliveryDate], "DD-MM-YYYY")

8) How do you remove leading or trailing values from a text string using DAX ?

- Using the **TRIM** function
TRIM(<text>)

9) How can you apply multiply filters to a table using DAX ?

- Using the FILTER Function
FILTER(<table>, <filter_expression>)
- Using the CALCULATE Function with multiple filters .
CALCULATE(<expression>, <filter1>, <filter2>, ...)

10) What is DAX and how it is used in Power BI ?

DAX (Data Analysis Expression) is a formula language used primarily in Microsoft Power BI and Excel for data modeling and analysis.

How DAX is Used in Power BI ?

- Creating Calculated Columns
- Measures

- Implementing Time Intelligence

11) Explain the difference between calculated columns and measures in DAX ?

Calculated column : A calculated column is a new column that we create in a table using a DAX formula. The values in this column are calculated row by row based on other columns in the same table.

Eg: Category = IF(Data[Units Sold]<5000,"Small",IF(Data[Units Sold]<10000,"Medium","Large"))

Measures : A measure is a calculation that is evaluated based on the context of the report or visualization.

Eg: Profit = SUM(Data[Revenue])-SUM(Data[Expenses])

12) What is row context and filter context in DAX ?

- **Row context** is defined as the current row being evaluated in a table when the DAX expression is applied .When DAX evaluates a calculated column, it does so for each row in the table.
- **Filter Context** : Filter context refers to the set of filters applied to a data model that affect the results of a calculation.

13) How is RELATED function works in DAX ?

- The **RELATED** function in DAX (Data Analysis Expressions) is used to retrieve a value from a related table in a data model.
- This is used when we have a established relationship between tables .

14) What is the purpose of CALCULATE function in DAX ?

The **CALCULATE** function is used to modify the filter context of a calculation.

- Combine multiple filters within a single **CALCULATE** function.
- Change the context in which a DAX expression is evaluated, enabling responsive calculations to different filters and conditions.
- Use **CALCULATE** to remove existing filters from certain columns or tables.

15) Describe the difference between ALL and ALLEXCEPT functions in DAX .

- **ALL()** : Remove all filters from a specified table or column(s) in the data model. This allows us to perform calculations without any filters applied to the specified context.
 - ALL(<table_or_column>)
- **ALLEXCEPT()** : Remove all filters from a specified table except for the filters on the specified columns. This allows you to maintain certain filters while ignoring others.
 - ALLEXCEPT(<table>, <column1>, <column2>, ...)

16) Explain the difference between VALUES and DISTINCT functions in DAX .

VALUES	DISTINCT
Returns unique values, including blanks	Returns unique values, excluding blanks
Useful for retrieving unique values with context	Useful for retrieving unique values without context

17) What is the role of SUMMERIZE function in DAX ?

- Group data by one or more columns.
- define new columns that calculate sums, count, or other aggregation based on grouped data .
- Create summary tables.