

PowerBI DAX Functions

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Power BI's DAX (Data Analysis Expressions) is a collection of functions, operators, and constants that can be used in formulas or expressions to perform various calculations and data manipulation tasks within Power BI. DAX functions are used to perform calculations and data manipulation within Power BI reports and models.

DAX functions can be used for various purposes:

1. **Calculations Functions**
2. **Filtering Functions**
3. **Aggregations Functions**
4. **Date and Time Calculations Functions**
5. **Text Manipulation Functions**
6. **Statistical Functions**
7. **Time Intelligence Functions**

1. **SUM:** Calculates the sum of a numeric column.
Example: Total Sales = SUM(Sales[Amount])
2. **AVERAGE:** Calculates the average of a numeric column.
Example: Average Age = AVERAGE(Customer[Age])
3. **COUNTROWS:** Counts the number of rows in a table or a filtered table.
Example: Number of Orders = COUNTROWS(Orders)
4. **CALCULATE:** Modifies filter context and evaluates an expression.
Example: Total Sales 2023 = CALCULATE(SUM(Sales[Amount]), 'Date'[Year] = 2023)
5. **FILTER:** Filters a table based on specified conditions.
Example: Expensive Products = FILTER(Products, Products[Price] > 50)
6. **RELATED:** Retrieves a related value from another table.
Example: Customer Name = RELATED(Customer[Name])

7. **DIVIDE**: Divides two numbers, handling divide-by-zero errors.
Example: Profit Margin = `DIVIDE(Sales[Profit], Sales[Revenue])`
8. **SUMMARIZE**: Creates a summary table with aggregated values.
Example: Total Sales by Category = `SUMMARIZE (Sales, Products [Category], "Total Sales", SUM(Sales[Amount]))`
9. **CONCATENATEX**: Concatenates text values into a single string with a delimiter.
Example: Product List = `CONCATENATEX (Products, Products [Name], ", ")`
10. **ALL**: Removes filters from a table or column.
Example: All Sales = `ALL(Sales)`
11. **MAX**: Returns the maximum value from a column.
Example: Highest Temperature = `MAX(Weather [Temperature])`
12. **MIN**: Returns the minimum value from a column.
Example: Lowest Stock Price = `MIN(Stock [Price])`
13. **RANKX**: Calculates the rank of values in a column.
Example: Rank by Sales = `RANKX(Products, Products[Sales])`
14. **SWITCH**: Implements conditional logic with multiple cases.
Example: Customer Type = `SWITCH(TRUE(), Customer[Purchases] >= 10, "Frequent", Customer[Purchases] >= 5, "Regular", "Infrequent")`
15. **DISTINCTCOUNT**: Counts the number of unique values in a column.
Example: Unique Customers = `DISTINCTCOUNT(Sales[CustomerID])`
16. **VALUES**: Returns a table of unique values from a column.
Example: Unique Categories = `VALUES(Products[Category])`
17. **COUNTBLANK**: Counts the number of blank values in a column.
Example: Blank Notes = `COUNTBLANK(Sales[Notes])`

18. BLANK: Returns a blank value.

Example: `MyBlankValue = BLANK()`

19. COALESCE: Returns the first non-blank value from a list of expressions.

Example: `Discount = COALESCE(Sales[Discount], 0)`

20. DATEADD: Adds a specified number of units to a date.

Example: `Next Week = DATEADD(Dates[Date], 7, DAY)`

21. LASTDATE: Returns the latest date from a column.

Example: `Latest Order Date = LASTDATE(Orders[OrderDate])`

22. EARLIER: References a previous row context value.

Example: `Running Total = SUMX(FILTER(Sales, Sales[Date] <= EARLIER(Sales[Date])), Sales[Amount])`

23. LOOKUPVALUE: Retrieves a value from a column based on a condition.

Example: `Customer Name = LOOKUPVALUE(Customer[Name], Customer[CustomerID], 12345)`

24. COVAR: Calculates the covariance between two columns.

Example: `Covariance = COVAR(Sales[Amount], Expenses[Amount])`

25. UPPER: Converts text to uppercase.

Example: `Uppercase Text = UPPER("hello")`

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