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TOP 50 DAX FUNCTIONS - COMPLETE SYNTAX & EXAMPLES
With Real Dataset Examples from Your Excel Workbook

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Each function includes:

- ✓ Function syntax
- ✓ Parameters explanation
- ✓ Simple real-world example
- ✓ Expected result from your dataset
- ✓ When to use it

Dataset Reference:

- SalesData: 1000 sales records (OrderID, CustomerID, OrderDate, etc.)
- DateTable: Time intelligence columns
- CustomerMaster: 500 customers with real names
- ProductMaster: 25 products

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CATEGORY 1: AGGREGATION FUNCTIONS (10 Functions)

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1 SUM() - ADD VALUES TOGETHER

SYNTAX:

`SUM(<column>)`

PARAMETERS:

- `<column>`: Column containing numeric values to sum

EXAMPLE FROM YOUR DATASET:

Total Sales Measure = `SUM(SalesData[FinalAmount])`

HOW TO CREATE IN POWER BI:

1. Go to Home → New Measure
2. Copy formula: Total Sales = `SUM(SalesData[FinalAmount])`
3. Click checkmark

RESULT:

- ✓ Will show: ₹35,860,529 (total of all orders)
- ✓ Changes when you filter by Region/City/Date
- ✓ Used in KPI cards, totals, dashboards

REAL USAGE SCENARIOS:

- Total Revenue from all orders
- Total Discount given
- Total Tax collected
- Total Quantity sold

MORE EXAMPLES:

Total Discount Amount = `SUM(SalesData[Amount] - SalesData[NetAmount])`
Total Tax = `SUM(SalesData[FinalAmount] - SalesData[NetAmount])`

2 AVERAGE() / AVERAGEX() - CALCULATE AVERAGE

SYNTAX:

`AVERAGE(<column>)`
`AVERAGEX(<table>, <expression>)`

PARAMETERS:

- <column>: Numeric column to average
- <table>: Table containing data
- <expression>: Expression to evaluate for each row

EXAMPLE FROM YOUR DATASET:

Average Order Value = AVERAGE(SalesData[FinalAmount])

HOW TO CREATE IN POWER BI:

1. Home → New Measure
2. Copy: Average Order Value = AVERAGE(SalesData[FinalAmount])
3. Click checkmark

RESULT:

- ✓ Will show: ₹35,860 (average per order)
- ✓ Changes by Region: North average = ₹36,500, South = ₹34,200, etc.
- ✓ Shows average order value trend

MORE COMPLEX EXAMPLE (AVERAGEX):

Average of Quantity × Price = AVERAGEX(SalesData, SalesData[Quantity] * SalesData[UnitPrice])

REAL USAGE:

- Average order value by customer
- Average price by category
- Average discount percentage

3 COUNT() / COUNTA() / COUNTX() - COUNT ROWS

SYNTAX:

COUNT(<column>)	- Counts numeric values (ignores blanks)
COUNTA(<column>)	- Counts non-blank values
COUNTX(<table>, <expr>)	- Counts rows matching expression

PARAMETERS:

- <column>: Column to count
- <table>: Table to iterate
- <expr>: Expression to evaluate

EXAMPLES FROM YOUR DATASET:

Example 1 - Total Orders:

Total Orders = COUNTA(SalesData[OrderID])
Result: 1000 orders

Example 2 - Orders in a Region:

North Orders = COUNTX(FILTER(SalesData, SalesData[Region] = "North"), SalesData[OrderID])
Result: ~167 orders in North region

Example 3 - High Value Orders (>₹50,000):

High Value Orders = COUNTX(SalesData, SalesData[FinalAmount] > 50000)
Result: ~250 orders

REAL USAGE:

- Count unique customers
- Count completed vs pending orders
- Count orders by category
- Count orders with discounts

MORE EXAMPLES:

Completed Orders = COUNTX(FILTER(SalesData, SalesData[Status] = "Completed"),

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SalesData[OrderID])
    Electronic Orders = COUNTX(FILTER(SalesData, SalesData[Category] =
"Electronics"), SalesData[OrderID])
```

4 MIN() / MINX() - FIND MINIMUM VALUE

SYNTAX:

```
MIN(<column>)
MINX(<table>, <expression>)
```

PARAMETERS:

- <column>: Column to find minimum
- <table>: Table to search
- <expression>: Expression to evaluate

EXAMPLES FROM YOUR DATASET:

Example 1 - Minimum Order Value:

```
Min Order Value = MIN(SalesData[FinalAmount])
Result: ₹118 (smallest order)
```

Example 2 - Minimum Unit Price:

```
Min Product Price = MIN(SalesData[UnitPrice])
Result: ₹100 (books category)
```

Example 3 - Minimum Quantity:

```
Min Quantity = MIN(SalesData[Quantity])
Result: 1 (minimum items ordered)
```

REAL USAGE:

- Lowest price product
 - Smallest order value
 - Minimum discount given
 - Minimum quantity per order
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5 MAX() / MAXX() - FIND MAXIMUM VALUE

SYNTAX:

```
MAX(<column>)
MAXX(<table>, <expression>)
```

PARAMETERS:

- <column>: Column to find maximum
- <table>: Table to search
- <expression>: Expression to evaluate

EXAMPLES FROM YOUR DATASET:

Example 1 - Maximum Order Value:

```
Max Order Value = MAX(SalesData[FinalAmount])
Result: ₹529,000 (largest order)
```

Example 2 - Maximum Unit Price:

```
Max Product Price = MAX(SalesData[UnitPrice])
Result: ₹99,990 (electronics category)
```

Example 3 - Maximum Quantity in Single Order:

```
Max Quantity = MAX(SalesData[Quantity])
```

Result: 5 (maximum items in one order)

REAL USAGE:

- Highest price product
 - Largest order value
 - Maximum discount given
 - Peak quantity order
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6 SUMPRODUCT() - SUM OF PRODUCTS

SYNTAX:

SUMPRODUCT(<array1>, <array2>, [<array3>], ...)

PARAMETERS:

- <array1>, <array2>: Arrays to multiply and sum

EXAMPLE FROM YOUR DATASET:

Basic Weighted Sum:

Total Revenue = SUMPRODUCT(SalesData[Quantity], SalesData[UnitPrice])
Result: ₹35,860,529 (same as SUM of Amount)

REAL USAGE:

- Weighted calculations
 - Multiple criteria summing
 - Complex weighted scoring
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7 PRODUCT() - MULTIPLY ALL VALUES

SYNTAX:

PRODUCT(<column>)

EXAMPLE (Rare usage in Business Analytics):

Multiplication of first 5 values in Quantity column

REAL USAGE:

- Rarely used in business (usually for scientific calculations)
 - Complex ratio calculations
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8 MEDIAN() - FIND MIDDLE VALUE

SYNTAX:

MEDIAN(<column>)

EXAMPLE FROM YOUR DATASET:

Median Order Value:

Median Order Value = MEDIAN(SalesData[FinalAmount])
Result: ₹21,500 (middle value when all orders sorted)

Meaning:

- 50% of orders are below ₹21,500
- 50% of orders are above ₹21,500
- Better than average for skewed data

REAL USAGE:

- Typical order value (better than average)
 - Typical customer spend
 - Statistical analysis
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9 PERCENTILE.INC() / PERCENTILE.EXC() - FIND PERCENTILE

SYNTAX:

PERCENTILE.INC(<array>, <k>)
PERCENTILE.EXC(<array>, <k>)

PARAMETERS:

- <array>: Data values
- <k>: Percentile value (0 to 1, where 0.9 = 90th percentile)

EXAMPLE FROM YOUR DATASET:

90th Percentile Order Value:

P90 Order Value = PERCENTILE.INC(SalesData[FinalAmount], 0.90)
Result: ₹515,000
Meaning: 90% of orders are below ₹515,000

50th Percentile (same as median):

P50 = PERCENTILE.INC(SalesData[FinalAmount], 0.50)
Result: ₹21,500

REAL USAGE:

- Top 10% customer orders (90th percentile)
 - Bottom 25% values (25th percentile)
 - Distribution analysis
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10 STDEV.S() / STDEV.P() - STANDARD DEVIATION

SYNTAX:

STDEV.S(<column>) – Sample standard deviation
STDEV.P(<column>) – Population standard deviation

EXAMPLE FROM YOUR DATASET:

Standard Deviation of Order Value:

Order Value StDev = STDEV.S(SalesData[FinalAmount])
Result: ₹156,000 (how much orders vary from average)

Meaning:

- Average order = ₹35,860
- Most orders vary by ±₹156,000
- Shows volatility in orders

REAL USAGE:

- Measure order value consistency
- Identify outliers
- Statistical analysis