Logical functions

INTERMEDIATE DAX IN POWER BI

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datacamp

Overview of logical functions

Logical functions act upon an expression to return information about the values or sets in the expression.

The most used logical functions are:

- `IF()`

- `AND(), OR(), NOT()`

- `SWITCH()`

IF() is one of the most commonly used logic functions

Structure:

- `IF(<logical_test>, <value_if_true>, <value_if_false>)`

Example:

- `Performance = IF([Total Sales] >= 50 000, "Target Reached", "Target Not Reached")`

IF() is one of the most commonly used logic functions

Structure:

- `IF(<logical_test>, <value_if_true>[, <value_if_false>])`

Example:

- `Performance = IF([Total Sales] >= 50 000, "Target Reached", "Target Not Reached")`

Name	Total Sales
Jenny	48,431
Jane	76,528
Dwayne	24,167
Thomas	52,125

IF() is one of the most commonly used logic functions

Structure:

- `IF(<logical_test>, <value_if_true>[, <value_if_false>])`

Example:

- `Performance = IF([Total_Sales] >= 50 000, "Target Reached", "Target Not Reached")`

Name	Total Sales	Performance
Jenny	48,431	Target not Reached
Jane	76,528	Target Reached
Dwayne	24,167	Target Not Reached
Thomas	52,125	Target Reached

AND(), OR() & NOT() operators

All three operators return `TRUE` or `FALSE` as the output.

- `AND(<logical1>,<logical2>)`
  - Returns `TRUE` if both conditions are `TRUE`
  - *Example:* `AND(5 < 4, 5 < 6) = AND(FALSE, TRUE) = FALSE`

- `OR(<logical1>,<logical2>)`
  - Returns `TRUE` if at least one condition is `TRUE`
  - *Example:* `OR(5 < 4, 5 < 6) = OR(FALSE, TRUE) = TRUE`

- `NOT(<logical>)`
  - Changes `TRUE` to `FALSE` and vice versa
  - *Example:* `NOT(OR(5 < 4, 5 < 6)) = NOT(TRUE) = FALSE`

AND(), OR() & NOT() operators

`AND` can be replaced by `&&`

- `AND(5 < 4, 5 < 6)` = `5 < 4 && 5 < 6`

`OR` can be replaced by `||`

- `OR(5 < 4, 5 < 6)` = `5 < 4 || 5 < 6`

The power of SWITCH()

Evaluates an expression against a list of values and returns one of multiple possible result expressions.

- `SWITCH(<expression>, <value>, <result>[, <value>, <result>] ... [, <else>])`

- Often preferred over nested `IF()` functions

```
Performance = SWITCH(TRUE,
[Total_Sales] < 25 000, "Poor",
[Total_Sales] < 50 000, "Below expectations",
[Total_Sales] < 75 000, "Above expectations",
"Exceptional")
```

The power of SWITCH()

```
Performance = SWITCH(TRUE,
[Total_Sales] < 25 000, "Poor",
[Total_Sales] < 50 000, "Below expectations",
[Total_Sales] < 75 000, "Above expectations",
 "Exceptional")
```

Name	Total Sales
Jenny	48,431
Jane	76,528
Dwayne	24,167
Thomas	52,125

The power of SWITCH()

```
Performance = SWITCH(TRUE,
[Total_Sales] < 25 000, "Poor",
[Total_Sales] < 50 000, "Below expectations",
[Total_Sales] < 75 000, "Above expectations",
 "Exceptional")
```

Name	Total Sales	Performance
Jenny	48,431	Below Expectations
Jane	76,528	Exceptional
Dwayne	24,167	Poor
Thomas	52,125	Above expectations

The power of SWITCH()

```
DISCOUNT = SWITCH([Clothing Type],
            "T-shirt", 0.15,
            "Pants", 0.20,
            "Belts", 0.30,
            "Shoes", 0.25)
```

Clothing Type
T-shirt
Pants
Belt
Shoes

The power of SWITCH()

```
DISCOUNT = SWITCH([Clothing Type],
            "T-shirt", 0.15,
            "Pants", 0.20,
            "Belts", 0.30,
            "Shoes", 0.25)
```

Clothing Type	Discount
T-shirt	15%
Pants	20%
Belt	30%
Shoes	25%

Let's switch up!

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Logical functions in Power BI

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Let's practice!

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