Switch

Switch Function in Power BI

We all know how important logical functions in the field of data analysis and interpretation. When we talk about logical functions "IF" is the father of all the logical functions we use, but not many of us aware that there is an alternative to IF condition in Power BI. Yes, we have an alternative to IF condition i.e. "SWITCH" DAX function in power BI. In this article, we will guide you through the DAX function "SWITCH" in detail.

What Does SWITCH Function Do in Power BI?

SWITCH is a kind of logical function to arrive results based on multiple conditions. So, the power BI in switch function is looking at all the logical conditions and arrives at the result of the logical condition which is TRUE. However, unlike IF conditions, we cannot use complex calculations with SWITCH but good enough function replace nested IF conditions in excel.

Below is the syntax of the SWITCH function in Power BI.

```
SWITCH(
SWITCH(Expression, Value1, Result1, ..., [Else])
 Returns different results depending on the value of an expression.
```

The syntax is unlike IF but we will explain it for you below.
- **Expression:** This is nothing but the column that we need to evaluate.
- **Value1:** So, for this, we can apply what is the logical test we need to do against the **Expression** column.
- **Result1:** If the **"Value1"** logical test is TRUE then what should be the result.
- **[Value2]:** This is the optional parameter if the **Value1** logical tests are FALSE then what is the second logical test to evaluate the **Expression.**

- **[Result1]:** If the **"Value2"** logical test is TRUE then what should be the result.
- **[Else]:** If all the logical tests are FALSE then what is the alternative result needed.

Examples of SWITCH Function in Power BI

Below are examples of the switch function in Power BI. You can download the workbook to use the same file as we used in this example.

Example #1

Below is the data table we are going to use to demonstrate the SWITCH function in Power BI. You can download the excel workbook and use the same to practice.

Emp ID	Rating
ID0001	2
ID0002	4
ID0003	5
ID0004	1
ID0005	4

We need to arrive at "Appraisal %" based on the rating value available. Below are the criteria to arrive at the Appraisal%.

- If the rating is =5 then appraisal percentage will be 10%.
- If the rating is =4 then appraisal percentage will be 8%.
- If the rating is =3 then appraisal percentage will be 6%.
- If the rating is =2 then appraisal percentage will be 5%.
- If the rating is =1 then appraisal percentage will be 4%.

Ok, upload the data table to Power BI to start the proceedings.
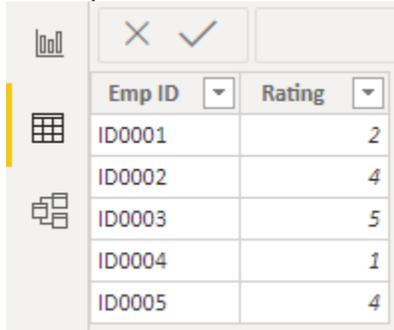
Emp ID	Rating
ID0001	2
ID0002	4
ID0003	5
ID0004	1
ID0005	4

Right-click on the table and choose "New Column" to arrive appraisal % in the new column.

Fields   >

🔍 Search

∨ ⊞ Month_Table

   New measure

   New column

   New quick measure
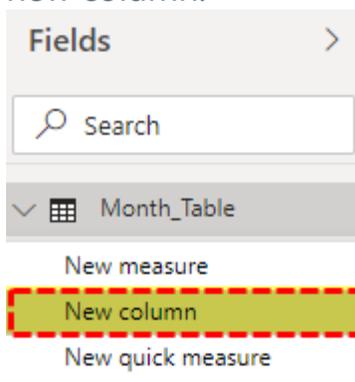
Now name the new column as "Appraisal %".

Open the SWITCH function in Power BI now.

The first argument is **Expression** i.e. which column we need to test to arrive appraisal % in the new column. So, in this case by testing rating we need to arrive result, so choose the "Rating" column.

Value 1 is nothing but the logical test that we need to apply against the **Expression** column, so our first logical test is to check whether the rating is =5 or not.

The next argument is **Result1** i.e. what is the result if the **Value1** logical test is correct. So we need the result as 0.10.

Next is **Value2** i.e. if the **Value1** logical test is false then what is the second logical test that we need to apply, so we need to test rating =4 or not.

If this logical test is TRUE then **Result 2** will be 0.08.

Similarly, the next applies the third logical test.

Appraisal % = SWITCH('Table'[Rating],5,0.1,4.0.08,3,0.06,2,0.05,1,0.04)

Ok close the bracket and hit enter key to get the result.

Like this, we can arrive results, but when it comes to logical operator usage, we need to include different strategies.
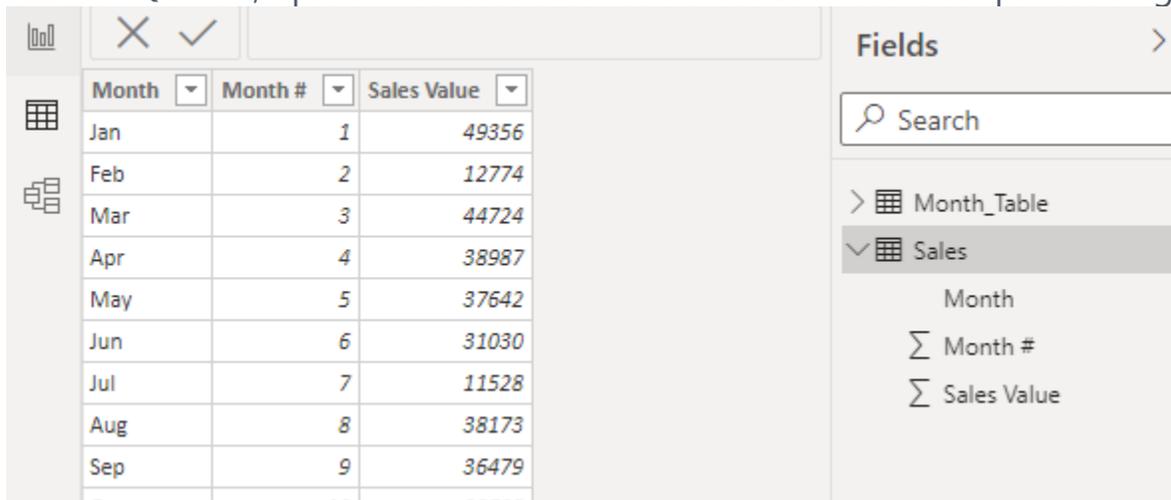
Example #2

Now look at the below data

Month	Month #	Sales Value
Jan	1	$ 49,356
Feb	2	$ 12,774
Mar	3	$ 44,724
Apr	4	$ 38,987
May	5	$ 37,642
Jun	6	$ 31,030
Jul	7	$ 11,528
Aug	8	$ 38,173
Sep	9	$ 36,479
Oct	10	$ 38,795
Nov	11	$ 28,851
Dec	12	$ 20,360

From this table, we need to arrive new column as "Quarter". To arrive in this column, we need to test month numbers and below are the criteria.

- If the month number is >9 then quarter is "Q4".
- If the month number is >6 then quarter is "Q3".
- If the month number is >3 then quarter is "Q2".
- If any other month numbers, then quarter is "Q1".

So, we need to test three conditions and if all the three are FALSE then quarter will be "Q1". Ok, upload the data table to Power BI to start the proceedings.

Month	Month #	Sales Value
Jan	1	49356
Feb	2	12774
Mar	3	44724
Apr	4	38987
May	5	37642
Jun	6	31030
Jul	7	11528
Aug	8	38173
Sep	9	36479

Right-click on the Sales table and choose "New Column" to arrive quarters in the new column.

Now name the new column as "Quarter #" and with the following expression:

```
Quarter # = SWITCH(TRUE(),Sales[Month #]>9,"Q4",Sales[Month #]>6,"Q3",Sales[Month #]>3,"Q2","Q1")
```
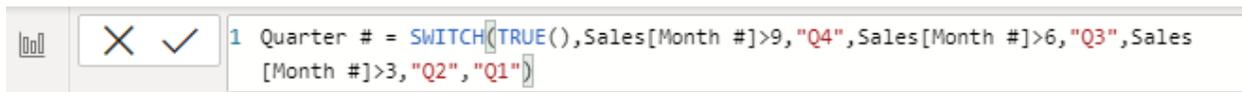


```
1 Quarter # = SWITCH(TRUE(),Sales[Month #]>9,"Q4",Sales[Month #]>6,"Q3",Sales
  [Month #]>3,"Q2","Q1")
```

By using the above technique, we can use logical operator symbols.

```
1  Quarter # = SWITCH(TRUE(),Sales[Month #]>9,"Q4",Sales[Month #]>6,"Q3",Sales
   [Month #]>3,"Q2","Q1")
```

Month	Month #	Sales Value	Quarter #
Jan	1	49356	Q1
Feb	2	12774	Q1
Mar	3	44724	Q1
Apr	4	38987	Q2
May	5	37642	Q2
Jun	6	31030	Q2
Jul	7	11528	Q3
Aug	8	38173	Q3
Sep	9	36479	Q3
Oct	10	38795	Q4
Nov	11	28851	Q4
Dec	12	20360	Q4

Things to Remember

- ELSE parameter is used only to get the alternative result.
- We cannot use logical operator symbols like the IF condition but need to use the TRUE or FALSE logical function to use logical operators.