

# Custom Transformation - use cases with advanced SQL queries

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## Using If / Then construct

### Use case:

You have a table with the stationary orders. You need to output a new column in the table with the order priority according to the total sum of money: less than \$1000 is Low, from \$1000 to \$2000 is Medium, and more than \$2000 is High.

### Solution:

1. Switch the page to the edit mode.
2. Insert the Table Transformer macro and paste the table or the macros outputting tables within the macro body.
3. Select the macro and click **Edit**.
4. In the **Presets** tab select **Custom transformation** and click **Next**.
5. Enter the following SQL query:

```
SELECT
  * ,
  CASE
    WHEN
      'Subtotal' < 1000
    THEN
      "LOW"
    WHEN
      'Subtotal' >= 1000
      AND 'Subtotal' < 2000
    THEN
      "MEDIUM"
    ELSE
      "HIGH"
  END
  AS 'Priority'
FROM
  T1
```

***CASE WHEN ... THEN ... ELSE ... END** goes through conditions and return a value when the first condition is met.*

***AS '...'** outputs a new 'Priority' column.*

6. Click **Next**.
7. [Define the table settings and view options](#) if needed.
8. **Save** the macro and the page.



If you want to replace the words Low, Medium and High by prominent statuses using the default Status macro or the Handy Status macro, just place a one-column table containing each status and the same column label in the macro body. Don't change anything in the SQL query.

## Using formulas

### Use case:

You have a table with the number of added lines of code and the number of defects. You need to calculate the quality of the code. The number of defects less than one defect per 10 lines indicates the good quality of the code. Otherwise the quality of the code is bad.

### Solution:

1. Switch the page to the edit mode.
2. Insert the Table Transformer macro and paste the tables or the macros outputting tables within the macro body.
3. Select the macro and click **Edit**.
4. In the **Presets** tab select **Custom transformation** and click **Next**.
5. Enter the following SQL query:

```

SELECT
  *,
  (
    'Number of defects' * 10 / 'Lines of
code added'
  )
  AS 'Defects per 10 lines',
  CASE
    WHEN
      (
        'Number of defects' * 10 /
'Lines of code added'
      )
      < 1
    THEN
      "Good"
    ELSE
      "Bad"
  END
  AS 'Code quality'
FROM
  T1

```

*(**'... \* 10 / ...'**) AS **'...'** calculates the number of defects per 10 lines of code and outputs the 'Defects per 10 lines' column.*

***CASE WHEN ... THEN ... ELSE ... END AS **'...'***** goes through conditions and return a value when the first condition is met and outputs the 'Code quality' column.

6. Click **Next**.
7. [Define the table settings and view options](#) if needed.
8. **Save** the macro and the page.



You can merge two columns containing text with the help of formulas:

```

SELECT
  *,
  (
    'First name' + " " + 'Last name'
  )
  AS 'Full name'
FROM
  T1

```

## Merging tables using filtration

### Use case:

You have two tables where the columns differ.

You need to merge two tables where the entries meet the conditions:

- transaction date in Table 1: October 2018
- customer type in Table 2: business

### Solution:

1. Switch the page to the edit mode.
2. Insert the Table Transformer macro and paste the tables or the macros outputting tables within the macro body.
3. Select the macro and click **Edit**.
4. In the **Presets** tab select **Custom transformation** and click **Next**.
5. Enter the following SQL query:

```

SELECT
  *
FROM
  T1
  JOIN
    T2
    ON T1.'Transaction ID' =
T2.'Transaction ID'
WHERE
  (
    'Transaction Date' >= "10 / 1 / 2018"
    AND 'Transaction Date' < "11 / 1 /
2018"
  )
  AND
  (
    'Customer Type' = "Business"
  )

```

*WHERE (... ' >= "10/1/2018" AND ... ' < "11/1/2018") AND (... ' = "...") extracts only those records that fulfill a specified condition.*

6. Click **Next**.
7. [Define the table settings and view options](#) if needed.
8. **Save** the macro and the page.

## Calculating the number of workdays in a period of time

### Use case:

You have a table containing a period of time (start date and end date).

You need to count the number of workdays during this time period.

### Advanced use case:

You have an additional table with national holidays which you also shouldn't consider as workdays.

### Solution:

1. Switch the page to the edit mode.
2. Insert the Table Transformer macro and paste the table within the macro body.
3. Select the macro and click **Edit**.
4. Switch to the **SQL query** tab.
5. Enter the following SQL query:

```

SELECT *,
'Days' -
2 * (('Days' / 7)::integer) -
CASE
    WHEN 'Days' % 7 = 0 THEN 0
    WHEN 'Start date'::Date->getDay() =
0 THEN 1
    WHEN 'Start date'::Date->getDay() +
'Days' % 7 = 6 THEN 1
    WHEN 'Start date'::Date->getDay() +
'Days' % 7 > 6 THEN 2
    ELSE 0
END AS 'Work days'
FROM
(SELECT *,
(Tl.'End date' - Tl.'Start date') / "1d" + 1
AS 'Days'
FROM Tl)

```

6. Click **Next**.
7. [Define the table settings and view options](#) if needed.
8. **Save** the macro and the page.

#### Solution for the advanced use case:

Enter the following SQL query:

```

SELECT *,
'Days' - 2 * (('Days' / 7)::integer) -
CASE
    WHEN 'Days' % 7 = 0 THEN 0
    WHEN 'Start date'::Date->getDay() = 0 THEN
1
    WHEN 'Start date'::Date->getDay() + 'Days'
% 7 = 6 THEN 1
    WHEN 'Start date'::Date->getDay() + 'Days'
% 7 > 6 THEN 2
    ELSE 0
END
-
(SELECT COUNT(*) FROM
(SELECT *, 'Holiday'::Date->getDay() AS 'Day' FROM
T2)
WHERE 'Holiday' >= TT.'Start date' AND 'Holiday'
<= TT.'End date'
AND 'Day' > 0 AND 'Day' < 6)
AS 'Work days'
FROM
(SELECT *, ('End date' - 'Start date') / "1d" + 1
AS 'Days' FROM T1) AS TT

```

