



M Query & DAX in Power Bi

By

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Capture the current datatime in Power Query using Power BI M-Code

Output:

Create ID1, ID2, and ID3 columns against Full Name as shown in the table below and populate the required value in Power Query using M-Code.

Output:

Extract First Name, Middle Name, and Last Name from the “Full Name” column as mentioned below using Power Query. [Use Enter data to create the below table with a “Full Name” column].

Output:

Extract Date from DateKey column present in the table below using Power Query.

Output:

Convert the below table to matrix structure (Expected output) using Power Query.

Output:

Combine all the records from “StudentFromLocationA” table with “StudentFromLocationB” table using Power Query. You can use Append Query to combine these two tables.

StudentFromLocationA:

StudentFromLocationB:

Output:

Merge all the records from the “Student” table with “Department” using Power Query. You can use Merge Query to combine these two tables. Here DepartmentID is a key column in both the tables.

Student:

Department:

Output:

Download “2020-monthly-visitor-statistics.xlsx” file from the link given below. After downloading the file, load the “Days by Island” sheet in Power BI Desktop and apply Power Query transformation to extract a part of the data (highlighted in the dataset snapshot).

Output:

Transform the below dataset using Power Query transformation.

Output:

Part 2: DAX

Sort the month name as shown in the snapshot using Power BI DAX.

Output:

Step 1: Merged columns “Month” and “Year” to “YearMonth” and converted the type to Date. Then I extracted the month number in the column “Month.1”

Step 2: Made a bar chart using the month from YearMonth column and Sum of values

Capture the Values selected from the slicer, if nothing is selected then show “All”.

Output:

Use the DAX function to extract the Item name, Item ID, and Price from the “Item Description” column

Output:

Write a DAX function to calculate sum of Budget cost where [Type] = Capex and [Period] = Total.

Output:

Calculate the MAX of the number after multiplying with a constant value and put this into a column say as MAX_Value, use the formula for the calculation as shown below

Output:

The table is having item name column, add two columns based on the following value, 1st column contains a value based on the distinct item and 2nd column contains a value based on the item by skipping the row if there is a tie as shown in the screenshot below.

Output:

Create a bar graph as shown below with previous year and present year sales month on month basis.

Output:

Write a DAX function to create a filter (Region= “South”) set of rows from an existing table to a new table as shown in the snapshot below.

Output:

Create a bar graph as shown below with swapping axis as profit, sales, or quantity on a parameter(slicer).

Output:

Step1:

Step 2:

Generate a calendar table that has the following columns

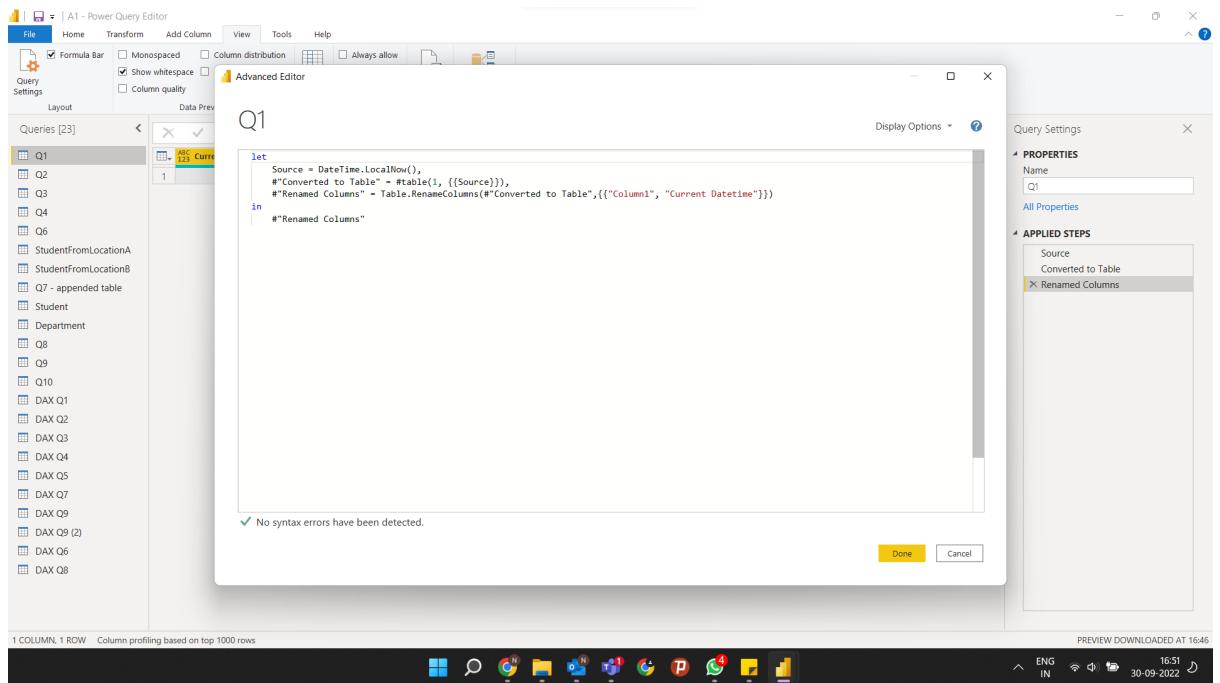
Output:

Part 1: Power BI Transformation and M-Code

1. Capture the current datetime in Power Query using Power BI M-Code

Output:

The screenshot shows the Microsoft Power Query Editor interface. The ribbon at the top includes File, Home, Transform, Add Column, View, Tools, and Help. The Home tab is selected. The main area displays a query titled "Q1" which contains a single row with the column name "Current Datetime" and the value "30-09-2022 16:46:58". The left pane lists other queries: Q2, Q3, Q4, Q6, StudentFromLocationA, StudentFromLocationB, Q7 - appended table, Student, Department, Q8, Q9, Q10, DAX Q1, DAX Q2, DAX Q3, DAX Q4, DAX Q5, DAX Q7, DAX Q9, DAX Q9 (2), DAX Q6, and DAX Q8. The right pane shows "Query Settings" with "Name" set to "Q1" and "APPLIED STEPS" showing "Source" and "Renamed Columns". The bottom status bar indicates "PREVIEW DOWNLOADED AT 16:46" and shows system icons for battery, signal, and date/time.



2. Create ID1, ID2, and ID3 columns against Full Name as shown in the table below and populate the required value in Power Query using M-Code.

- a. ID1: Value starts from 0 and increments by 1.
- b. ID2: Value starts from 1 and increments by 1.
- c. ID3: Value starts from 0 and increments by 5.

Note: Create a column using “Enter Data” option and populate the value mentioned in the table. Once the “Full Name” column is created add the other columns (ID1, ID2, and ID3) based on the above condition.

ID1	ID2	ID3	Full Name
0	1	0	Reily, Nicole, Abbatiello
1	2	5	Micaela, Elizabeth, Abbott
2	3	10	Breonia, Bryce, Abbott
3	4	15	Miranda, Daniela, Abella
4	5	20	Madelyn, Jacob, Abraham
5	6	25	Lyla, Nicholas, Acevedo
6	7	30	Kylia, Zoe, Acevedo
7	8	35	Jase, Marie, Adam
8	9	40	Jessica, June, Adam
9	10	45	Xaivore, Ann, Adams

Output:

A1 - Power Query Editor

File Home Transform Add Column View Tools Help

Formula Bar Monospaced Column distribution Always allow

Show whitespace Column profile

Column quality

Layout Go to Column Advanced Editor Query Dependencies

Advanced Parameters Dependencies

Queries [23]

Q1

Q2

Q3

Q4

Q6

StudentFromLocationA

StudentFromLocationB

Q7 - appended table

Student

Department

Q8

Q9

Q10

DAX Q1

DAX Q2

DAX Q3

DAX Q4

DAX Q5

DAX Q7

DAX Q9

DAX Q9 (2)

DAX Q6

DAX Q8

Data Preview

Table.RenameColumns(#"Reordered Columns3",{{"Index", "ID3"}})

ID3	ID1	ID2	ID3	Full Name
1	0	1	0	Riley, Nicole, Abbatiello
2	1	2	5	Micaela, Elizabeth, Abbott
3	2	3	10	Breonia, Bryce, Abbott
4	3	4	15	Miranda, Daniela, Abella
5	4	5	20	Madelyn, Jacob, Abraham
6	5	6	25	Tyla, Nicholas, Acevedo
7	6	7	30	Kyla, Zoe, Acevedo
8	7	8	35	Jase, Marie, Adam
9	8	9	40	Jessica, June, Adam
10	9	10	45	Xaivore, Ann, Adams

Query Settings

PROPERTIES

Name: Q2

All Properties

APPLIED STEPS

- Source
- Changed Type
- Added Index
- Reordered Columns
- Added Index1
- Reordered Columns1
- Removed Columns
- Added Index2
- Reordered Columns2
- Renamed Columns
- Added Index3
- Reordered Columns3

Renamed Columns1

PREVIEW DOWNLOADED AT 16:52 30-09-2022

Advanced Editor

Display Options

```
let
    Source = Table.FromRows(Json.Document(Binary.Decompress(Binary.FromText("VY78CsIwEER/JeScn2jR57UePim1h02y0IU1gaQW4te7ST3Y63v0zEyTviNxMepGLjTaIVkLKyFz1l029EgOkNGoM9MHLK5Li8R1bbPGAO7J1NxeFaJQhe1AkCtYr0S13sEjxyCuyNAKKx"), Binary.Compression.Deflate)), type text)),
    #"Changed Type" = Table.TransformColumnTypes(Source, [{"Full Name", type text}]),
    #"Added Index" = Table.AddIndexColumn(#"Changed Type", "Index", 0, 1, Int64.Type),
    #"Reordered Columns" = Table.ReorderColumns(#"Added Index", {"Index", "Full Name"}),
    #"Added Index1" = Table.AddIndexColumn(#"Reordered Columns", "Index", 1, Int64.Type),
    #"Reordered Columns1" = Table.ReorderColumns(#"Added Index1", {"Index", "ID1", "Index", "Full Name"}),
    #"Removed Columns" = Table.RemoveColumns(#"Reordered Columns1", {"Index", "Index"}),
    #"Added Index2" = Table.AddIndexColumn(#"Removed Columns", "Index", 1, 1, Int64.Type),
    #"Reordered Columns2" = Table.ReorderColumns(#"Added Index2", {"Index", "Index", "Full Name"}),
    #"Renamed Columns" = Table.RenameColumns(#"Reordered Columns2", [{"Index", "ID2"}, {"Index", "ID1"}]),
    #"Added Index3" = Table.AddIndexColumn(#"Renamed Columns", "Index", 0, 5, Int64.Type),
    #"Reordered Columns3" = Table.ReorderColumns(#"Added Index3", {"ID1", "ID2", "Index", "Full Name"}),
    #"Renamed Columns1" = Table.RenameColumns(#"Reordered Columns3", {"Index", "ID3"})
in
    #"Renamed Columns1"
```

No syntax errors have been detected.

Done Cancel

3. Extract First Name, Middle Name, and Last Name from the “Full Name” column as mentioned below using Power Query. [Use Enter data to create the below table with a “Full Name” column].

Note: Full Name is a combination of “First Name, Middle Name, Last Name”.

Full Name
Reily, Nicole, Abbatiello
Micaela, Elizabeth, Abbott
Breonia, Bryce, Abbott
Miranda, Daniela, Abella
Madelyn, Jacob, Abraham
Lyla, Nicholas, Acevedo
Kyilia, Zoe, Acevedo
Jase, Marie, Adam
Jessica, June, Adam
Xaivore, Ann, Adams

Output:

The screenshot shows the Microsoft Power Query Editor interface. The 'Data Preview' pane displays a table with three columns: 'First Name', 'Middle Name', and 'Last Name'. The rows contain names split into their respective components. The 'Applied Steps' pane on the right shows a single step named 'Renamed Columns1'.

First Name	Middle Name	Last Name
Reily, Nicole	Nicole	Abbatiello
Micaela, Elizabeth	Elizabeth	Abbott
Breonia, Bryce	Bryce	Abbott
Miranda, Daniela	Daniela	Abella
Madelyn, Jacob	Jacob	Abraham
Lyla, Nicholas	Nicholas	Acevedo
Kyilia, Zoe	Zoe	Acevedo
Jase, Marie	Marie	Adam
Jessica, June	June	Adam
Xaivore, Ann	Ann	Adams

```

let
    Source = Table.FromRows(Json.Document(Binary.Decompress(Binary.FromText("VV7BCsIwEER/JeScn2jRS7UePimh02y0IUlgQW4te7ST3Y63v0zEyTviNxMepGLjIa1VklKyFz1L0Z9Eg0kMGoM9MHlK5L18R1bbpPGAOJ71NxeFAJQhe1AkCtYr0Si3sEjxyCUN4Kxt#Changed Type"= Table.TransformColumnTypes(Source,{{"Full Name#(1f)Reilly, Nicole, Abbatielo#(1f)Micaela, Elizabeth, Abbott#(1f)Breonia, Bryce, Abbott#(1f)Miranda, Daniela, Abella#(1f)Madelyn, Jacob, Abraham#(1f)Duplicated Column"= Table.DuplicateColumn("Renamed Columns", "Full Name", "Full Name - Copy"), "#Split Column by Delimiter"= Table.SplitColumn("Duplicated Column", "Full Name - Copy", Splitter.SplitTextByDelimiter(", ", QuoteStyle.Csv), {"Full Name - Copy.1", "Full Name - Copy.2", "Full Name - Copy.3"}), "#Changed type1"= Table.TransformColumnTypes(#"Split Column by Delimiter",{{"Full Name - Copy.1", type text}, {"Full Name - Copy.2", type text}, {"Full Name - Copy.3", type text}}), "#Renamed Columns1"= Table.RenameColumns(#"Changed Type1",{{"Full Name - Copy.1", "First Name"}, {"Full Name - Copy.2", "Middle Name"}, {"Full Name - Copy.3", "Last Name"}})
in
    #"Renamed Columns1"

```

✓ No syntax errors have been detected.

Done Cancel

ENG IN 30-09-2022 16:54

4. Extract Date from DateKey column present in the table below using Power Query.

DateKey(yyyyMMdd)
20220101
20220102
20220103
20220104
20220105
20220106
20220107
20220608
20220109
20220110

Note: Use “Enter Data” option to create the above table in Power BI.

Output:

The screenshot shows the Power Query Editor interface. The ribbon tabs include File, Home, Transform, Add Column, View, Tools, and Help. The Home tab is selected. The ribbon tools include Column From Custom, Column Examples, Invoke Custom Function, Conditional Column, Index Column, Duplicate Column, From Text, From Number, From Date & Time, and AI Insights. The main area displays a table with 10 rows, each containing a date key. The columns are labeled 'DateKey(yyyyMdd)' and 'Date'. The table data is as follows:

	Date
1	20200101
2	20200102
3	20200103
4	20200104
5	20200105
6	20200106
7	20200107
8	20200108
9	20200109
10	20200110

The left sidebar lists various queries: Q1, Q2, Q3, Q4, Q6, StudentFromLocationA, StudentFromLocationB, Q7 - appended table, Student, Department, Q8, Q9, Q10, DAX Q1, DAX Q2, DAX Q3, DAX Q4, DAX Q5, DAX Q7, DAX Q9, DAX Q9 (2), DAX Q6, and DAX Q8. The right sidebar shows 'Query Settings' with 'Name' set to 'Q4' and 'All Properties'. Under 'APPLIED STEPS', it lists 'Source', 'Changed Type', 'Duplicated Column', 'Extracted Last Characters', and 'Renamed Columns'. The status bar at the bottom indicates 'PREVIEW DOWNLOADED AT 16:54'.

The screenshot shows the Advanced Editor window for query Q4. The code is as follows:

```

let
    Source = Table.FromRows(Json.Document(Binary.Decompress(Binary.FromText("i45WmjIwMjIwMDRlithBc4yQ0cbIBNkjikyxwvZY47gm01YIMtYInEMDZRIywE=", BinaryEncoding.Base64), Compression.Deflate))), let _t = ((type nullable text)
    #"Changed Type" = Table.TransformColumnTypes(Source,{{"DateKey(yyyyMdd)", Int64.Type}}),
    #"Duplicated Column" = Table.DuplicateColumn(#"Changed Type", "Datekey(yyyyMdd)", "Datekey(yyyyMdd) - Copy"),
    #"Extracted Last Characters" = Table.TransformColumns(#"Duplicated Column", {"Datekey(yyyyMdd) - Copy", each Text.End(Text.From(_,"en-IN"), 2), type text}}),
    #"Renamed Columns" = Table.RenameColumns(#"Extracted Last Characters",{{"Datekey(yyyyMdd) - Copy", "Date"}})
in
    #"Renamed Columns"

```

A green checkmark at the bottom indicates 'No syntax errors have been detected.' The status bar at the bottom indicates 'Done' and 'Cancel'.

5. Create two parameters to input the Server and Database name and import a Product table using Power Query.

Use the following configuration for the parameters:

- Parameter1: Servername

Local server as Localhost & 127.0.0.1

- Parameter2: Database

Database as "AdventureWorks2014" & "AdventureWorks2012"

Once the parameter is created, import the mentioned table using MS SQL Server connector.

Note: Before performing the above exercise make sure you have restored the mentioned database.

Refer to the below URL to download the database backup file, after downloading the .bak file restore to the local SQL Server database.

- ✓ AdventureWorks2014:

<https://github.com/Microsoft/sql-server-samples/releases/download/adventureworks/AdventureWorks2014.bak>

- ✓ AdventureWorks2012:

<https://github.com/Microsoft/sql-server-samples/releases/download/adventureworks/AdventureWorks2012.bak>

6. Convert the below table to matrix structure (Expected output) using Power Query.

Input Dataset:

Year	Month	Sales
2021	Jan	520
2021	Feb	360
2021	Mar	210
2021	Apr	320
2020	May	160
2020	Jun	963
2020	Jul	201
2020	Jan	302
2020	Feb	500
2020	Mar	450

Output:

The screenshot shows the Power Query Editor interface with the following details:

- File**, **Home**, **Transform**, **Add Column**, **View**, **Tools**, **Help** menu items.
- Formula Bar**: Contains checkboxes for **Monospaced**, **Column distribution**, **Show whitespace**, **Column profile**, **Always allow**, **Advanced Editor**, **Query Dependencies**.
- Query Settings**: Shows **Name** set to **Q6**.
- Layout**: Shows **Columns**, **Parameters**, **Advanced**, **Dependencies** tabs.
- Data Preview**: A table titled `= Table.Pivot("#'Changed Type'", List.Distinct("#'Changed Type'[Month]), "Sales", List.Sum)`. The table has columns for **Year** (2020, 2021) and months (Jan, Feb, Mar, Apr, May, Jun, Jul). The data is summarized as follows:

Year	Jan	Feb	Mar	Apr	May	Jun	Jul
2020	302	500	450	null	160	363	201
2021	520	360	230	320	null	null	null

- Query Settings** pane on the right shows **APPLIED STEPS** with a step named **Changed Type** under **Riveted Column**.
- Bottom status bar: **8 COLUMNS, 2 ROWS - Column profiling based on top 1000 rows**, **PREVIEW DOWNLOADED AT 16:58**, **16:59 30-09-2022**.

The screenshot shows the Advanced Editor window with the following details:

- Q6** is the query name.
- Display Options** button.
- DAX Code** area:

```
let
    Source = Table.FromRows(Json.Document(Binary.Decompress(Binary.FromText("i45WjIwN1TSUFJKzAO5pkYG5nE6cEG31CQgahyGJuibhAQkjqxRBBoLQILGC08GYJWQNLQDEXQpxRkkawZMapgDshMa0HlUQbCTjA2MkAUhTjIIQLMIZLuJKVAvFgA=", BinaryEncoding))
    #"Changed Type" = Table.TransformColumnTypes(Source,{{{"Year", Int64.Type}, {"Month", type text}, {"Sales", Int64.Type}}}),
    #"Pivoted Column" = Table.Pivot("#'Changed Type'", List.Distinct("#'Changed Type'[Month]), "Month", "Sales", List.Sum)
in
    #"Pivoted Column"
```
- Status Bar**: **No syntax errors have been detected.**
- Buttons**: **Done**, **Cancel**.
- Bottom status bar: **ENG IN**, **16:59 30-09-2022**.

7. Combine all the records from “StudentFromLocationA” table with “StudentFromLocationB” table using Power Query. You can use Append Query to combine these two tables.

Note: Use “Enter Data” option to create the below tables in Power BI.

StudentFromLocationA:

ID	First Name	Last Name	DOB	Department
1	Reily	Abbatiello	20-06-2000	IT
2	Micaela	Abbott	15-08-1995	MCA
3	Breonia	Abbott	18-02-1998	ME
4	Miranda	Abella	20-03-1999	ECE
5	Madelyn	Abraham	30-12-2000	CSE

StudentFromLocationB:

ID	First Name	Last Name	DOB	Department
8	Jackson	Adcock	15-02-2000	ME
9	Kara	Adeeb	21-08-1995	CSE
10	Brittany	Adkins	18-02-1996	MCA
11	Julia	Agan	23-05-1994	IT
12	Anyssa	Aguilar	15-09-2000	ECE

StudentFromLocationA:

The screenshot shows the Microsoft Power Query Editor interface. The title bar says "A1 - Power Query Editor". The ribbon has tabs for File, Home, Transform, Add Column, View, Tools, and Help. The "Query Settings" pane on the right shows the query name "StudentFromLocationA" and its properties. The "Applied Steps" pane shows a single step named "Changed Type". The main area displays a table with 5 columns and 5 rows. The columns are labeled "ID", "First Name", "Last Name", "DOB", and "Department". The data is as follows:

ID	First Name	Last Name	DOB	Department
1	Riley	Abatiello	20-06-2000	IT
2	Micaela	Abbott	15-08-1995	MCA
3	Brenna	Abbott	18-02-1998	ME
4	Miranda	Abella	20-03-1999	ECE
5	Madelyn	Abraham	30-12-2000	CSE

Below the table, it says "5 COLUMNS, 5 ROWS - Column profiling based on top 1000 rows". The status bar at the bottom right shows "PREVIEW DOWNLOADED AT 16:59", "ENG IN", "17:00", "30-09-2022", and a battery icon.

StudentFromLocationB:

The screenshot shows the Microsoft Power Query Editor interface. The title bar says "A1 - Power Query Editor". The ribbon has tabs for File, Home, Transform, Add Column, View, Tools, and Help. The "Query Settings" pane on the right shows the query name "StudentFromLocationB" and its properties. The "Applied Steps" pane shows a single step named "Changed Type". The main area displays a table with 5 columns and 5 rows. The columns are labeled "ID", "First Name", "Last Name", "DOB", and "Department". The data is as follows:

ID	First Name	Last Name	DOB	Department
8	Jackson	Adcock	15-02-2000	ME
9	Kara	Adeeb	21-08-1995	CSE
10	Brittany	Adkins	18-02-1996	MCA
11	Julia	Agan	23-05-1994	IT
12	Anyssa	Aguilar	15-09-2000	ECE

Below the table, it says "5 COLUMNS, 5 ROWS - Column profiling based on top 1000 rows". The status bar at the bottom right shows "PREVIEW DOWNLOADED AT 17:00", "ENG IN", "17:00", "30-09-2022", and a battery icon.

Output:

A1 - Power Query Editor

File **Home** **Transform** **Add Column** **View** **Tools** **Help**

Query Settings

Layout

Formula Bar Monospaced Column distribution Always allow Show whitespace Column profile Column quality

Columns **Parameters** **Advanced** **Dependencies**

Go to Column

Advanced Editor

Query Dependencies

Queries [23]

Q1 **Q2** **Q3** **Q4** **Q6** **StudentFromLocationA** **StudentFromLocationB** **Q7 - appended table** **Student** **Department** **Q8** **Q9** **Q10** **DAX Q1** **DAX Q2** **DAX Q3** **DAX Q4** **DAX Q5** **DAX Q7** **DAX Q9** **DAX Q9 (2)** **DAX Q6** **DAX Q8**

Data Preview

= Table.Combine({StudentFromLocationA, StudentFromLocationB})

ID	First Name	Last Name	DOB	Department
1	Riley	Abatiello	20-06-2000	IT
2	Micaela	Abbott	15-08-1995	MCA
3	Brenonia	Abbott	18-02-1998	ME
4	Miranda	Abella	20-03-1999	ECE
5	Madelyn	Abraham	30-12-2000	CSE
6	Jackson	Adcock	15-02-2000	ME
7	Kara	Adeeb	21-08-1995	CSE
8	Brittany	Adkins	18-02-1996	MCA
9	Julia	Agan	23-05-1994	IT
10	Anyssa	Aguilar	15-09-2000	ECE

5 COLUMNS, 10 ROWS - Column profiling based on top 1000 rows

PREVIEW DOWNLOADED AT 17:00

ENG IN 30-09-2022 17:00

Advanced Editor

Q7 - appended table

Display Options

```
let
    Source = Table.Combine({StudentFromLocationA, StudentFromLocationB})
in
    Source
```

No syntax errors have been detected.

Done Cancel

ENG IN 30-09-2022 17:00

8. Merge all the records from the “Student” table with “Department” using Power Query. You can use Merge Query to combine these two tables. Here DepartmentID is a key column in both the tables.

Note: Use “Enter Data” option to create the below tables in Power BI.

Student				
ID	First Name	Last Name	DOB	DepartmentID
1	Kara	Adams	20-06-2000	1
2	Brittany	Adcock	15-08-1995	2
3	Brian	Adeeb	18-02-1998	3
4	Julia	Adkins	20-03-1999	1
5	Tea	Agan	30-12-2000	2

Department		
DepartmentID	Department Code	Department Name
1	IT	Information Technology
2	ME	Mechanical Engineering
3	CSE	Computer Science Engineering

Student:

The screenshot shows the Power Query Editor interface with the 'Student' query selected. The 'Transform' tab is active, and the formula bar displays the transformation code: `Table.TransformColumnTypes(Source, {{"ID", Int64.Type}, {"First Name", type text}, {"Last Name", type text}, {"DOB", type date}, {"DepartmentID", type number}})`. The data preview pane shows the five rows of student data. The 'Properties' pane on the right indicates the query name is 'Student', and the 'Applied Steps' pane shows the 'Changed Type' step has been applied to the source.

Department:

The screenshot shows the Power Query Editor interface with the following details:

- File**: A1 - Power Query Editor
- Layout**: Shows settings like Formula Bar (checked), Monospaced (unchecked), Column distribution (unchecked), Show whitespace (checked), Column profile (unchecked), Column quality (unchecked).
- Queries [23]**: A list of queries including Q1, Q2, Q3, Q4, Q6, StudentFromLocationA, StudentFromLocationB, Q7 - appended table, Student, Department, Q8, Q9, Q10, DAX Q1, DAX Q2, DAX Q3, DAX Q4, DAX Q5, DAX Q7, DAX Q9, DAX Q9 (2), DAX Q6, DAX Q8.
- Data Preview**: Displays a table with three columns: DepartmentID, Department Code, and Department Name. The data is as follows:

DepartmentID	Department Code	Department Name
1	IT	Information Technology
2	ME	Mechanical Engineering
3	CSE	Computer Science Engineering

- Query Settings**: Shows the query name is "Department".
- APPLIED STEPS**: Shows a single step named "Changed Type".
- Bottom Status Bar**: Shows "PREVIEW DOWNLOADED AT 17:01" and the date "30-09-2022".

Output:

The screenshot shows the Power Query Editor interface with the following details:

- File**: A1 - Power Query Editor
- Layout**: Shows settings like Formula Bar (checked), Monospaced (unchecked), Column distribution (unchecked), Show whitespace (checked), Column profile (unchecked), Column quality (unchecked).
- Queries [23]**: A list of queries including Q1, Q2, Q3, Q4, Q6, StudentFromLocationA, StudentFromLocationB, Q7 - appended table, Student, Department, Q8, Q9, Q10, DAX Q1, DAX Q2, DAX Q3, DAX Q4, DAX Q5, DAX Q7, DAX Q9, DAX Q9 (2), DAX Q6, DAX Q8.
- Data Preview**: Displays a table with seven columns: First Name, Last Name, DOB, DepartmentID, Department Code, and Department Name. The data is as follows:

	First Name	Last Name	DOB	DepartmentID	Department Code	Department Name
1	Karen	Adams	20-06-2005	1	IT	Information Technology
2	Julia	Adams	20-03-1999	1	IT	Information Technology
3	Brittany	Adcock	18-08-1998	2	ME	Mechanical Engineering
4	Jessica	Adcock	18-02-1998	3	CSE	Computer Science Engineering
5	Sam	Agarwal	30-12-2000	2	ME	Mechanical Engineering

- Query Settings**: Shows the query name is "Q8".
- APPLIED STEPS**: Shows a step named "Expanded Department".
- Bottom Status Bar**: Shows "PREVIEW DOWNLOADED AT 17:01" and the date "30-09-2022".

9. Download “2020-monthly-visitor-statistics.xlsx” file from the link given below. After downloading the file, load the “Days by Island” sheet in Power BI Desktop and apply Power Query transformation to extract a part of the data (highlighted in the dataset snapshot).

Output:

The screenshot shows the Power Query Editor interface with the following details:

- Title Bar:** A1 - Power Query Editor
- Menu Bar:** File, Home, Transform, Add Column, View, Tools, Help
- Toolbars:** Formula Bar, Monospaced, Column distribution, Always allow, Go to Column, Advanced Editor, Query Editor, Dependencies.
- Queries List:** Shows 23 queries, with Q9 selected. Other visible queries include Q1, Q2, Q3, Q4, Q5, Q6, StudentFromLocationA, StudentFromLocationB, Q7 - appended table, Students, Department, Q8, and Q10.
- Table Preview:** Displays a table with three columns: Island Name, Month, and Number Of Visitors. The data includes rows for Oahu and Molokai across various months from January to December, with visitor counts ranging from 2,809 to 364,790.
- Properties Panel:** Shows properties for the current query Q9, including Name (Q9) and All Properties.
- Applied Steps Panel:** Lists the steps applied to the query, including Source, Navigation, Promoted Headers, Changed Type, Removed Blank Rows, Removed Bottom Rows, Removed Bottom Rows1, Removed Bottom Rows2, Promoted Headers1, Changed Type1, Removed Columns, Filtered Rows, Unpivoted Other Columns, Renamed Columns, and Changed Type2.
- Status Bar:** Shows 3 COLUMNS, 36 ROWS, Column profiling based on top 1000 rows, PREVIEW DOWNLOADED ON MONDAY, 17:03, and 30-09-2022.

```

let
    Source = ExcelWorkbook(File.Contents("C:\Users\Me - georgianDownloads\2020-monthly-visitor-statistics.xlsx"), null, true),
    #"Days by Island_Sheet" = Source[[{"New-Days by Island", "Kind"="Sheet"}][Data],
    #"Promoted Headers" = Table.PromoteHeaders(#"Days by Island_Sheet", [PromoteAllScalars=true]),
    #"Changed Type" = Table.TransformColumnTypes(#"Promoted Headers", [{"2020 Visitor Days by Island and Month (Arrivals by Air)"= type text}, {"Column2"= type any}, {"Column3"= type any}, {"Column4"= type any}, {"Column5"= type any}, {"Column6"= type any}, {"Column7"= type any}], [Type推断=整个列]),
    #"Removed Bottom Row" = Table.RemoveLastN(#"Changed Type", 1),
    #"Removed Bottom Row1" = Table.RemoveLastN(#"Removed Bottom Row", 1),
    #"Removed Bottom Row2" = Table.RemoveLastN(#"Removed Bottom Row1", 1),
    #"Promoted Headers1" = Table.PromoteHeaders(#"Removed Bottom Row2", [PromoteAllScalars=true]),
    #"Changed Type1" = Table.TransformColumnTypes(#"Promoted Headers1", [{"Column1"= type text}, {"JAN"= type number}, {"FEB"= type number}, {"MAR"= type number}, {"APR"= type number}, {"MAY"= type number}, {"JUN"= type number}, {"JUL"= type number}, {"AUG"= type number}, {"SEP"= type number}, {"OCT"= type number}, {"NOV"= type number}, {"DEC"= type number}], [Type推断=整个列]),
    #"Removed Columns" = Table.RemoveColumns(#"Changed Type1", {"TOTAL"}),
    #"Unpivot Other Columns" = Table.UnpivotOtherColumns(#"Removed Columns", {"Column1"}, {"Name", "Value"}, {"Value", "Number Of Visitors"}),
    #"Renamed Columns" = Table.RenameColumns(#"Unpivot Other Columns", {"Column1", "Island Name"}, {"Attribute", "Value"}, {"Value", "Number Of Visitors"}),
    #"Changed Type2" = Table.TransformColumnTypes(#"Renamed Columns", [{"Number Of Visitors"= Int64.Type}])
in
#"Changed Type2"

```

No syntax errors have been detected.

10. Transform the below dataset using Power Query transformation.

Input Dataset: -

Col1	Col2	Col3	Col4	Col5	Col6	Col7
	2020			2021		
	Technology	Office Supplies	Furniture	Technology	Office Supplies	Furniture
Jan	433.2	255.4	2.6	4.7	93.9	122.8
Feb	435.0	229.1	2.1	5.7	83.4	97.4
Mar	409.3	230.7	1.9	6.3	74.2	89.2
Apr	377.6	209.2	2.0	4.4	87.9	86.4
May	403.4	226.0	1.2	5.8	86.3	83.4
Jun	471.8	260.0	2.2	3.8	106.5	121.9
Jul	540.5	272.1	2.4	3.4	106.5	116.5
Aug	485.5	243.6	2.4	3.4	100.3	120.3
Sep	432.8	183.4	1.7	3.3	83.7	95.6
Oct	442.7	234.1	2.3	4.6	88.1	108.9
Nov	419.6	197.8	2.1	4.8	80.9	116.5
Dec	532.8	260.0	2.5	6.4	96.2	133.5

Output:

A1 - Power Query Editor

File **Home** **Transform** **Add Column** **View** **Tools** **Help**

Formula Bar Monospaced Column distribution Always allow

Show whitespace Column profile

Column quality

Columns **Parameters** **Advanced** **Dependencies**

Layout

Query Settings

Properties

Name: Q10
All Properties

Applied Steps

- Source
- Changed Type
- Transposed Table
- Promoted Headers
- Changed Type1
- Unpivoted Other Columns
- Renamed Columns
- Changed Type2
- Renamed Column1**

Queries [23]

Q1 Q2 Q3 Q4 Q5 StudentFromLocationA StudentFromLocationB Q7 - appended table Student Department Q8 Q9 Q10 DAX Q1 DAX Q2 DAX Q3 DAX Q4 DAX Q5 DAX Q6 DAX Q7 DAX Q9 DAX Q9 (0) DAX Q6 DAX Q8

Table.RenameColumns("Changed Type2", {"Year", "Product", "Attribute", "Month", "Value", "Sales"})

Year	Product	Month	Value	Sales
1	Technology	Jan	433.2	
2	Technology	Feb	435	
3	Technology	Mar	409.3	
4	Technology	Apr	377.6	
5	Technology	May	401	
6	Technology	Jun	472.9	
7	Technology	Jul	540.5	
8	Technology	Aug	485.5	
9	Technology	Sep	432.8	
10	Technology	Oct	442.7	
11	Technology	Nov	419.6	
12	Technology	Dec	532.8	
13	Office Supplies	Jan	255.4	
14	Office Supplies	Feb	229.1	
15	Office Supplies	Mar	230.7	
16	Office Supplies	Apr	209.2	
17	Office Supplies	May	226	
18	Office Supplies	Jun	260	
19	Office Supplies	Jul	272.1	
20	Office Supplies	Aug	243.6	
21	Office Supplies	Sep	183.4	
22	Office Supplies	Oct	284.1	
23	Office Supplies	Nov	257.8	
24	Office Supplies	Dec	260	
25	Furniture	Jan	2.6	
26	Furniture	Feb	2.1	
27	Furniture	Mar	1.9	
28	Furniture	Apr	2	
29	Furniture	May	1.2	
30	Furniture	Jun	2.2	
31	Furniture	Jul	2.4	
32	Furniture	Aug	2.4	
33	Furniture	Sep	1.7	
34	Furniture	Oct	2.3	
35	Furniture	Nov	2.1	
36	Furniture	Dec	2.5	
37	Technology	Jan	4.7	
38	Technology	Feb	5.7	
39	Technology	Mar	5.1	

4 COLUMNS, 72 ROWS Column profiling based on top 1000 rows

PREVIEW DOWNLOADED AT 17:07
30-09-2022

Advanced Editor

Display Options

Q10

```
let Source = Table.FromRows(Json.Document(Binary.Decompress(Binary.FromText("1zK7bsu0EVJfAcCBxp51igycGz2BuQybuUBSAEbtuXCB/XMSR/objbdCR3xtlrdTheSgIp0dF8ytSuamsL/mnQuTt3-Hj0m092xzbPV2PenY3dmcldnIxccj/u5qIn7mrPhLq5j8pCV6ykpRnYpV0NEQa1nkByBQQT1BbF401CRUSnfEc043gSC66", BinaryEncoding.Base64), 2)), type table),
#"Changed Type" = Table.TransformColumnTypes(Source, {"Col1", type text}, {"Col2", type text}, {"Col3", type text}, {"Col4", type text}, {"Col5", type text}, {"Col6", type text}),
#"Transposed Table" = Table.Transpose("Changed Type"),
#"Promoted Headers" = Table.PromoteHeaders("Transposed Table", [PromoteAllScalars=true]),
#"Changed Type1" = Table.TransformColumnTypes("Promoted Headers", [{"Year", type number}, {"Jan", type number}, {"Feb", type number}, {"Mar", type number}, {"Apr", type number}, {"May", type number}, {"Jun", type number}, {"Jul", type number}, {"Aug", type number}], [{"Year", "type text"}, {"Col1", "type text"}, {"Col2", "type text"}]),
#"Unpivoted Other Columns" = Table.UnpivotOtherColumns("Changed Type1", {"Year", "Month", "Attribute", "Value"}),
#"Renamed Columns1" = Table.RenameColumns("Unpivoted Other Columns", {"Year", "Year", "Month", "Value", "Sales"}),
#"Changed Type2" = Table.TransformColumnTypes("Renamed Columns1", {"Year", type text}),
#"Renamed Columns1" = Table.RenameColumns("Changed Type2", {"Year", "Product", "Attribute", "Month", "Value", "Sales"}),
in #"Renamed Columns1"
```

No syntax errors have been detected.

Done Cancel

17:07
30-09-2022

Part 2: DAX

1. Sort the month name as shown in the snapshot using Power BI DAX.

[Use Q1 sheet from DAX_Data.xlsx file].

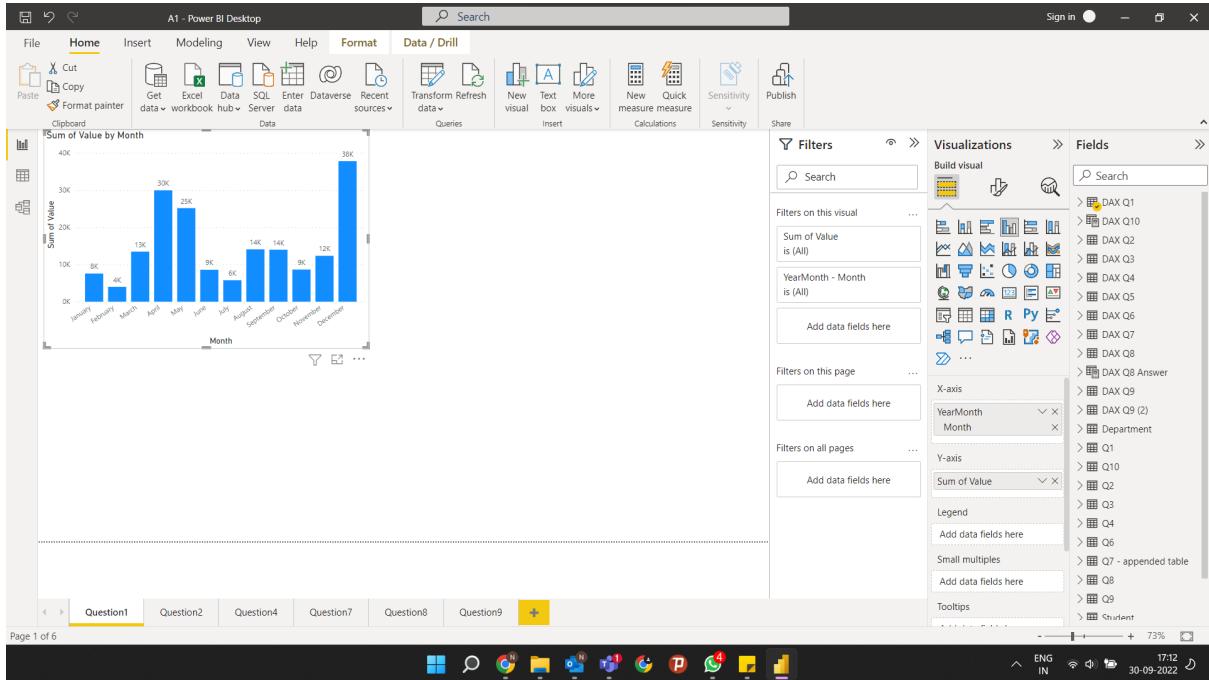
Output:

Step 1: Merged columns “Month” and “Year” to “YearMonth” and converted the type to Date. Then I extracted the month number in the column “Month.1”

The screenshot shows the Power BI Desktop interface with the 'Table tools' ribbon selected. A table named 'DAX Q1' is open, displaying 24 rows of data. The columns are: ID, Year, Month, Value, YearMonth, and Month.1. The 'Fields' pane on the right lists various tables and columns, including 'DAX Q1' and its corresponding columns. The taskbar at the bottom shows several pinned apps.

ID	Year	Month	Value	YearMonth	Month.1
1	2021	Jan	1253	01 January 2021	1
2	2021	Feb	2000	01 February 2021	2
3	2021	Mar	5620	01 March 2021	3
4	2021	Apr	7842	01 April 2021	4
5	2021	May	1253	01 May 2021	5
6	2021	Jun	740	01 June 2021	6
7	2021	Jul	4512	01 July 2021	7
8	2021	Aug	7842	01 August 2021	8
9	2021	Sep	9471.5	01 September 2021	9
10	2021	Oct	800	01 October 2021	10
11	2021	Nov	7842	01 November 2021	11
12	2021	Dec	1253	01 December 2021	12
13	2022	Jan	6320	01 January 2022	1
14	2022	Feb	2000	01 February 2022	2
15	2022	Mar	7842	01 March 2022	3
16	2022	Apr	22102.3	01 April 2022	4
17	2022	May	23906.7	01 May 2022	5
18	2022	Jun	7842	01 June 2022	6
19	2022	Jul	1253	01 July 2022	7
20	2022	Aug	6235	01 August 2022	8
21	2022	Sep	4512	01 September 2022	9
22	2022	Oct	7842	01 October 2022	10
23	2022	Nov	4500	01 November 2022	11
24	2022	Dec	36537.5	01 December 2022	12

Step 2: Made a bar chart using the month from YearMonth column and Sum of values



2. Capture the Values selected from the slicer, if nothing is selected then show “All”.

Use card visuals to display the value. [Use Q2 sheet from DAX_Data.xlsx].

Output:

The screenshot shows the Power BI Desktop interface with a visual containing the text "Food,Clothing,Electronics". In the Fields pane, under the "Multi_Selected_Months" field, the "Category" dropdown is set to "Multiple selections".

When nothing is selected

The screenshot shows the Power BI Desktop interface with a visual containing the text "Food,Clothing,Electronics,Electrical,Furni...". In the Fields pane, under the "Multi_Selected_Months" field, the "Category" dropdown is set to "All".

3. Use the DAX function to extract the Item name, Item ID, and Price from the “Item Description” column

(which contains a combination of Item Name, Item ID, and price). [Use Q3 sheet from DAX_Data.xlsx].

Output:

The screenshot shows the Power BI Desktop interface with the 'Table tools' tab selected. A calculated column 'Item Name' is being defined with the formula `LEFT('DAX Q3'[ItemDesc], FIND(".", 'DAX Q3'[ItemDesc])-1)`. The table contains five rows of data: Food.1TM1001.500, Clothing.1TM1002.600, Electronics.1TM1003.400, Electrical.1TM1004.800, and Furniture.1TM1005.700. The Fields pane on the right lists various DAX measures and tables, with 'Item Name' currently selected.

ItemDesc	Item Name	ItemID&Price	Item ID	Price
Food.1TM1001.500	Food	ITM1001.500	ITM1001	500
Clothing.1TM1002.600	Clothing	ITM1002.600	ITM1002	600
Electronics.1TM1003.400	Electronics	ITM1003.400	ITM1003	400
Electrical.1TM1004.800	Electrical	ITM1004.800	ITM1004	800
Furniture.1TM1005.700	Furniture	ITM1005.700	ITM1005	700

The screenshot shows the Power BI Desktop interface with the 'Table tools' tab selected. A calculated column 'ItemID&Price' is being defined with the formula `RIGHT('DAX Q3'[ItemDesc],LEN('DAX Q3'[ItemDesc])-LEN('DAX Q3'[Item Name])-1)`. The table contains the same five rows of data as the previous screenshot. The Fields pane on the right lists various DAX measures and tables, with 'ItemID&Price' currently selected.

ItemDesc	Item Name	ItemID&Price	Item ID	Price
Food.1TM1001.500	Food	ITM1001.500	ITM1001	500
Clothing.1TM1002.600	Clothing	ITM1002.600	ITM1002	600
Electronics.1TM1003.400	Electronics	ITM1003.400	ITM1003	400
Electrical.1TM1004.800	Electrical	ITM1004.800	ITM1004	800
Furniture.1TM1005.700	Furniture	ITM1005.700	ITM1005	700

A1 - Power BI Desktop

File Home Help Table tools Column tools

Name: Item ID Data type: Text

Summarization: Don't summarize Data category: Uncategorized

Formatting Properties

Structure Sort by column Sort Data groups Groups Manage relationships Relationships New column Calculations

1 Item ID = LEFT(DAX Q3[ItemID&Price], FIND(".", DAX Q3[ItemID&Price])-1)

ItemDesc	Item Name	ItemID&Price	Item ID	Price
Food. ITM1001.500	Food	ITM1001.500	ITM1001	500
Clothing. ITM1002.600	Clothing	ITM1002.600	ITM1002	600
Electronics. ITM1003.400	Electronics	ITM1003.400	ITM1003	400
Electrical. ITM1004.800	Electrical	ITM1004.800	ITM1004	800
Furniture. ITM1005.700	Furniture	ITM1005.700	ITM1005	700

Fields

Search

- DAX Q1
- DAX Q10
- DAX Q2
- DAX Q3
- Item ID
- ItemDesc
- ItemID&Price
- Price
- DAX Q4
- DAX Q5
- DAX Q6
- DAX Q7
- DAX Q8
- DAX Q8 Answer
- DAX Q9
- DAX Q9 (2)
- Department
- Q1
- Current Datetime
- Q10
- Q2
- Q3

Table: DAX Q3 (5 rows) Column: Item ID (5 distinct values)

A1 - Power BI Desktop

File Home Help Table tools Column tools

Name: Price Data type: Text

Summarization: Don't summarize Data category: Uncategorized

Formatting Properties

Structure Sort by column Sort Data groups Groups Manage relationships Relationships New column Calculations

1 Price = RIGHT(DAX Q3[ItemID&Price], LEN(DAX Q3[ItemID&Price]) - LEN("DAX Q3[Item ID]") - 1)

ItemDesc	Item Name	ItemID&Price	Item ID	Price
Food. ITM1001.500	Food	ITM1001.500	ITM1001	500
Clothing. ITM1002.600	Clothing	ITM1002.600	ITM1002	600
Electronics. ITM1003.400	Electronics	ITM1003.400	ITM1003	400
Electrical. ITM1004.800	Electrical	ITM1004.800	ITM1004	800
Furniture. ITM1005.700	Furniture	ITM1005.700	ITM1005	700

Fields

Search

- DAX Q1
- DAX Q10
- DAX Q2
- DAX Q3
- Item ID
- Item Name
- ItemDesc
- ItemID&Price
- Price
- DAX Q4
- DAX Q5
- DAX Q6
- DAX Q7
- DAX Q8
- DAX Q8 Answer
- DAX Q9
- DAX Q9 (2)
- Department
- Q1
- Current Datetime
- Q10
- Q2
- Q3

Table: DAX Q3 (5 rows) Column: Price (5 distinct values)

4. Write a DAX function to calculate sum of Budget cost where [Type] = Capex and [Period] = Total.

[Use Q4 sheet from DAX_Data.xlsx].

Output:

Here I have used the filters option available in GUI where Type = Capex and Period = Total

The screenshot shows the Power BI Desktop interface with the following details:

- Visual Content:** A single value visual displaying the number 1747.
- Filter Settings (Filters pane):**
 - Period is Total
 - Sum of Budgeted Cost is (All)
 - Type is Capex
- Fields pane:** Shows a tree view of fields:
 - DAX Q3
 - Budgeted Cost
 - DAX Q4
 - Sum of Budgeted Cost
 - DAX Q5
 - DAX Q6
 - DAX Q7
 - DAX Q8
 - DAX Q8 Answer
 - ID
 - Value
 - Year
 - DAX Q9
 - DAX Q9 (2)
 - Department
 - Q1
 - Q10
 - Q2

5. Calculate the MAX of the number after multiplying with a constant value and put this into a column say as MAX_Value, use the formula for the calculation as shown below

MAX_Value = MAXX([M] * 1750, [W]* 1, [V] * 330)

Note: S, M, W, and V are the column name. [Use Q5 sheet from DAX_Data.xlsx].

Output:

The screenshot shows the Power BI Desktop interface with a table named "Max_Value". The table has five rows and columns labeled M, W, V, S, and Max_Value. The Max_Value column contains DAX formulas. The Fields pane shows relationships between tables like DAX Q1-Q6 and ItemID, ItemName, ItemDesc, Price, etc.

M	W	V	S	Max_Value
15	500	60	1	26250
10	60000	2	2	60000
12.5	284000	300	3	284000
5	4200	360	4	118800
10	40250	240	5	79200

Table: DAX Q5 (5 rows) Column: Max_Value (5 distinct values)

6. The table is having item name column, add two columns based on the following value, 1st column contains a value based on the distinct item and 2nd column contains a value based on the item by skipping the row if there is a tie as shown in the screenshot below.

[Use Q6 sheet from DAX_Data.xlsx].

Output:

A1 - Power BI Desktop

File Home Help Table tools Column tools

Name: ID1 Data type: Whole number Format: Whole number Summarization: Sum Data category: Uncategorized

Structure Formatting Properties

Sort by column Sort Data groups Groups Manage relationships Relationships New column Calculations

$1 \text{ ID1} = \text{RANKX}(\text{"DAX Q6"}, \text{"DAX Q6"}[\text{Item Name}], , 1, \text{Dense})$

Item ID	Item Name	ID1	ID2
1	Apple	1	1
2	Apple	1	1
3	Banana	2	3
4	Banana	2	3
5	Candy	3	5
6	Candy	3	5
7	Candy	3	5

Fields

- DAX Q1
- DAX Q10
- DAX Q2
- DAX Q3
 - Item ID
 - Item Name
 - ItemDesc
 - ItemID&Price
 - Price
- DAX Q4
- DAX Q5
 - Max_Value
 - S
 - V
 - W
- DAX Q6
 - ID1
 - ID2
 - Item ID
 - Item Name
- DAX Q7
- DAX Q8

Table: DAX Q6 (7 rows) Column: ID1 (3 distinct values)

ENG IN 30-09-2022 17:43

A1 - Power BI Desktop

File Home Help Table tools Column tools

Name: ID2 Data type: Whole number Format: Whole number Summarization: Sum Data category: Uncategorized

Structure Formatting Properties

Sort by column Sort Data groups Groups Manage relationships Relationships New column Calculations

$1 \text{ ID2} = \text{RANKX}(\text{"DAX Q6"}, \text{"DAX Q6"}[\text{Item Name}], , 1, \text{Skip}0)$

Item ID	Item Name	ID1	ID2
1	Apple	1	1
2	Apple	1	1
3	Banana	2	3
4	Banana	2	3
5	Candy	3	5
6	Candy	3	5
7	Candy	3	5

Fields

- DAX Q1
- DAX Q10
- DAX Q2
- DAX Q3
 - Item ID
 - Item Name
 - ItemDesc
 - ItemID&Price
 - Price
- DAX Q4
- DAX Q5
 - Max_Value
 - S
 - V
 - W
- DAX Q6
 - ID1
 - ID2
 - Item ID
 - Item Name
- DAX Q7
- DAX Q8

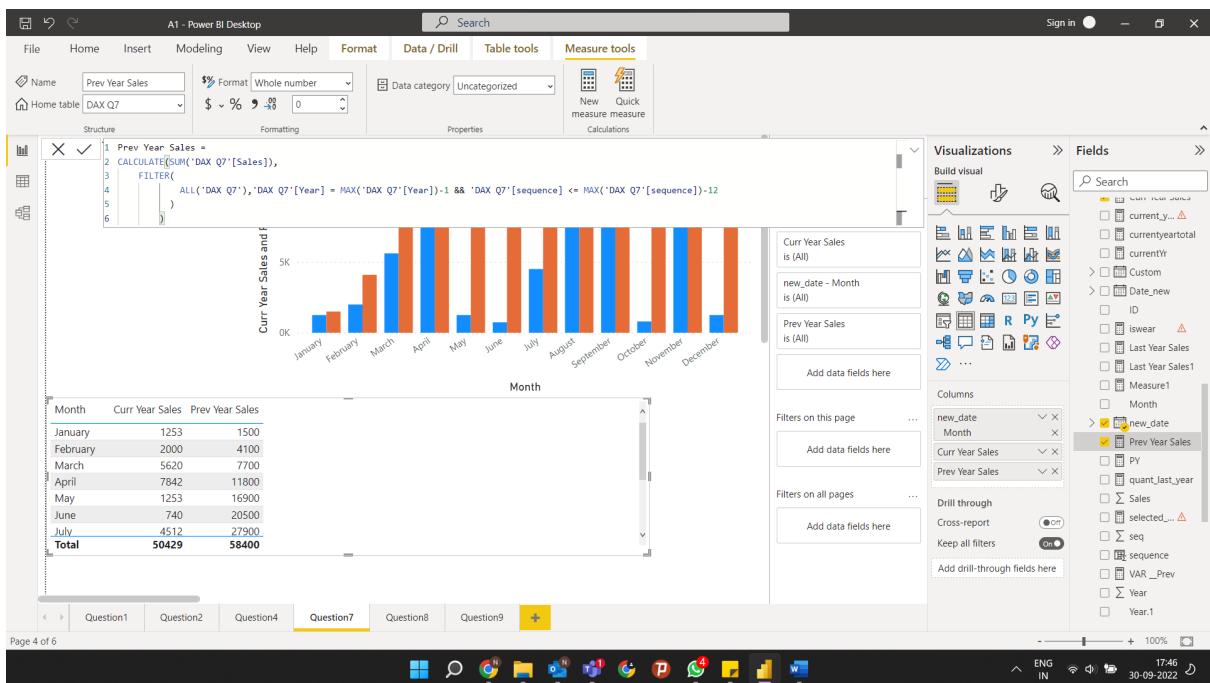
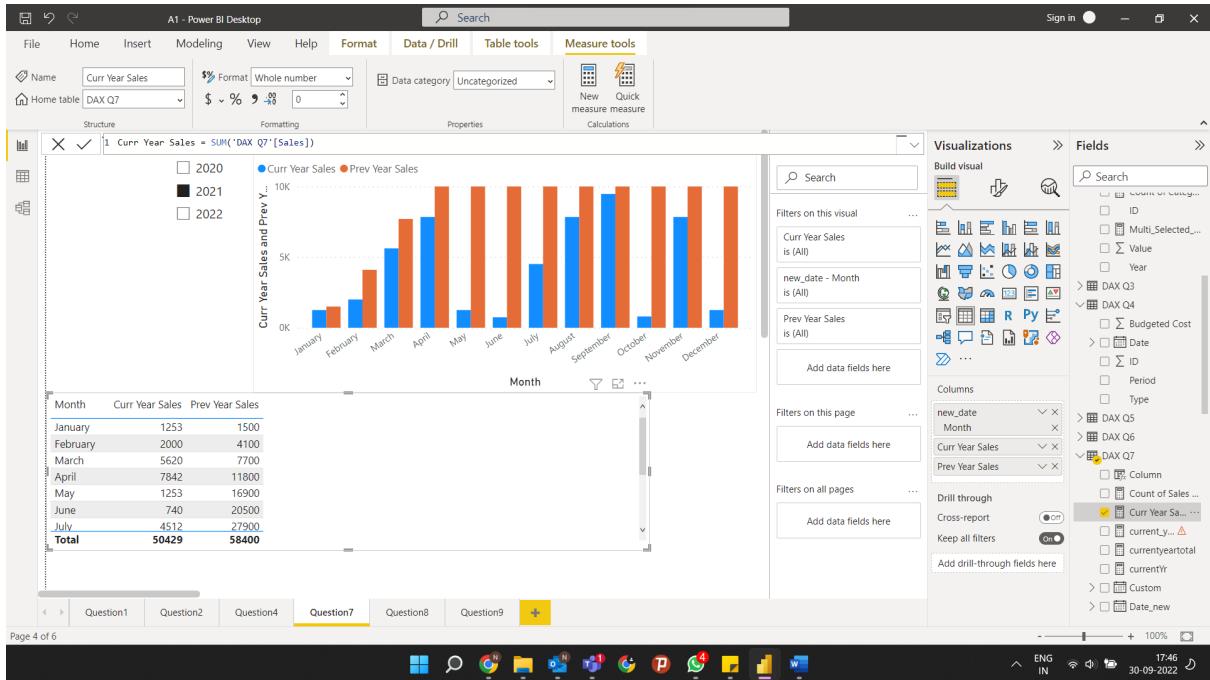
Table: DAX Q6 (7 rows) Column: ID2 (3 distinct values)

ENG IN 30-09-2022 17:43

7. Create a bar graph as shown below with previous year and present year sales month on month basis.

[Use Q7 sheet from DAX_Data.xlsx].

Output:



8. Write a DAX function to create a filter (Region= “South”) set of rows from an existing table to a new table as shown in the snapshot below.

[Use Q9 sheet from DAX_Data.xlsx].

Output:

The screenshot shows the Power BI Desktop interface. On the left, there is a table visual titled 'Question8' containing the following data:

ID	Region	State	Sales
1	South	Brighton and Hove	1,500.00
2	South	Milton Keynes	2,600.00
3	South	Southampton	3,600.00
4	South	Portsmouth	4,100.00
5	South	Slough	5,100.00
6	South	Reading	3,600.00
7	South	Oxford	7,400.00
8	South	High Wycombe	8,000.00
9	South	Basingstoke	6,300.00
10	South	Maidstone	9,000.00
11	South	Crawley	4,000.00
12	South	Worthing	3,200.00
13	South	Gillingham	1,253.00
14	South	Eastbourne	2,000.00
Total			61,653.00

The Fields pane on the right lists various columns and measures from the data model, including ID, Region, Sales, State, and calculated measures like DAX Q3 through DAX Q8.

9. Create a bar graph as shown below with swapping axis as profit, sales, or quantity on a parameter(slicer).

[Use Q9 sheet from DAX_Data.xlsx].

Output:

Step1:

Select the columns *Sales*, *Profit* & *Quantity* and unpivoted the columns. I did this because I needed these as values in a single column. Removed *ID* column as it contained duplicates after unpivot function. This gave me 2 columns *Attribute* & *Value*. Then I merged Year and Month column to form *year_date* column in date format.

A1 - Power BI Desktop

File Home Help Table tools

Name: DAX Q9

Mark as date table v Calendars Manage relationships Relationships New measure New measure column New table Calculations

Structure

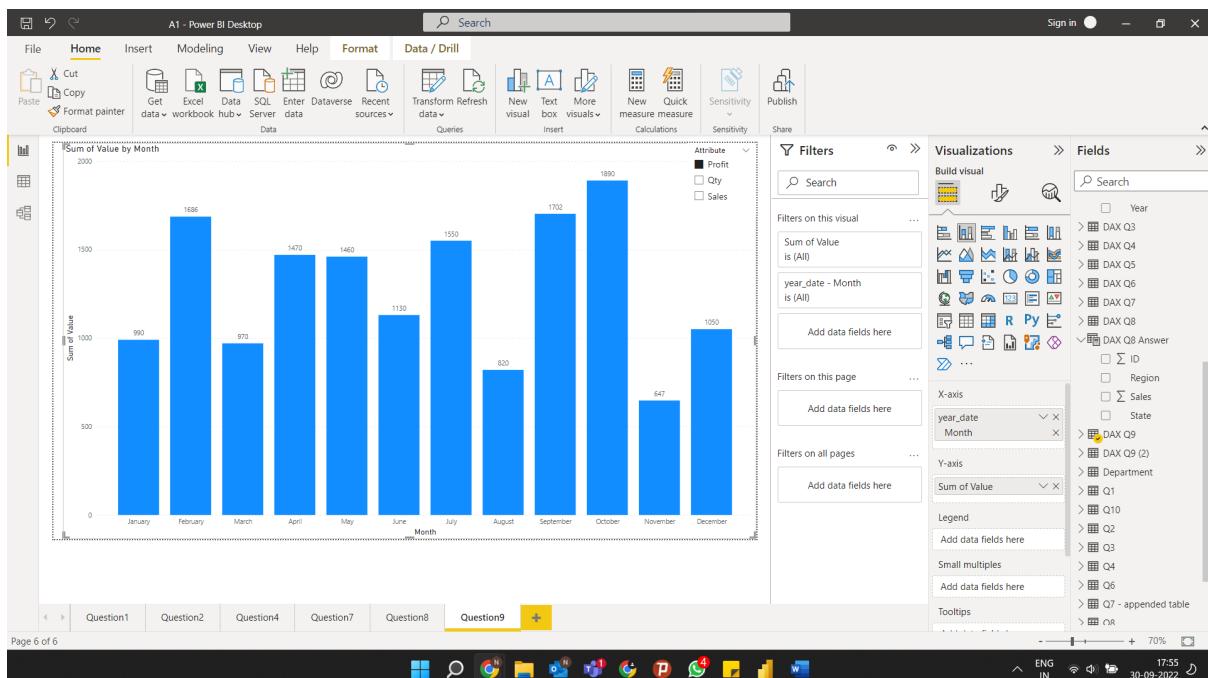
Fields

Search

Table: DAX Q9 (108 rows)

Step 2:

Used the *Attribute* column as a slicer and plot the bar graph with Month from *year_date* column and sum of *Value*



10. Generate a calendar table that has the following columns

Output:

Date: containing a date value

The screenshot shows the Power BI Desktop interface with a table named "DAX Q10". The table has the following columns: Date, Year, MonthNo, MonthName, DateKey, Day, Quarter, WeekNo, and WeekDay. The data consists of 31 rows for January 2015. The "Table tools" ribbon is selected, specifically the "Column tools" tab. On the right side, the Fields pane is open, showing the structure of the table with columns like Date, DateKey, Day, MonthName, MonthNo, Quarter, WeekDay, WeekNo, and Year.

Date	Year	MonthNo	MonthName	DateKey	Day	Quarter	WeekNo	WeekDay
01-01-2015	2015	1	January	20150101	1	Q1	1	5
02-01-2015	2015	1	January	20150102	2	Q1	1	6
03-01-2015	2015	1	January	20150103	3	Q1	1	7
04-01-2015	2015	1	January	20150104	4	Q1	2	1
05-01-2015	2015	1	January	20150105	5	Q1	2	2
06-01-2015	2015	1	January	20150106	6	Q1	2	3
07-01-2015	2015	1	January	20150107	7	Q1	2	4
08-01-2015	2015	1	January	20150108	8	Q1	2	5
09-01-2015	2015	1	January	20150109	9	Q1	2	6
10-01-2015	2015	1	January	20150110	10	Q1	2	7
11-01-2015	2015	1	January	20150111	11	Q1	3	1
12-01-2015	2015	1	January	20150112	12	Q1	3	2
13-01-2015	2015	1	January	20150113	13	Q1	3	3
14-01-2015	2015	1	January	20150114	14	Q1	3	4
15-01-2015	2015	1	January	20150115	15	Q1	3	5
16-01-2015	2015	1	January	20150116	16	Q1	3	6
17-01-2015	2015	1	January	20150117	17	Q1	3	7
18-01-2015	2015	1	January	20150118	18	Q1	4	1
19-01-2015	2015	1	January	20150119	19	Q1	4	2
20-01-2015	2015	1	January	20150120	20	Q1	4	3
21-01-2015	2015	1	January	20150121	21	Q1	4	4
22-01-2015	2015	1	January	20150122	22	Q1	4	5
23-01-2015	2015	1	January	20150123	23	Q1	4	6
24-01-2015	2015	1	January	20150124	24	Q1	4	7
25-01-2015	2015	1	January	20150125	25	Q1	5	1
26-01-2015	2015	1	January	20150126	26	Q1	5	2
27-01-2015	2015	1	January	20150127	27	Q1	5	3

Year: containing a year value from date

A1 - Power BI Desktop

File Home Help Table tools Column tools

Name: Year Data type: Whole number

Summarization: Sum Data category: Uncategorized

Sort by column: Sort Data groups: Groups Manage relationships: Relationships New column: Calculations

Structure: Formatting Properties

1 Year = Year(DAX Q10[Date])

Date	Year	MonthNo	MonthName	DateKey	Day	Quarter	WeekNo	WeekDay
01-01-2015	2015	1	January	20150101	1	Q1	1	5
02-01-2015	2015	1	January	20150102	2	Q1	1	6
03-01-2015	2015	1	January	20150103	3	Q1	1	7
04-01-2015	2015	1	January	20150104	4	Q1	2	1
05-01-2015	2015	1	January	20150105	5	Q1	2	2
06-01-2015	2015	1	January	20150106	6	Q1	2	3
07-01-2015	2015	1	January	20150107	7	Q1	2	4
08-01-2015	2015	1	January	20150108	8	Q1	2	5
09-01-2015	2015	1	January	20150109	9	Q1	2	6
10-01-2015	2015	1	January	20150110	10	Q1	2	7
11-01-2015	2015	1	January	20150111	11	Q1	3	1
12-01-2015	2015	1	January	20150112	12	Q1	3	2
13-01-2015	2015	1	January	20150113	13	Q1	3	3
14-01-2015	2015	1	January	20150114	14	Q1	3	4
15-01-2015	2015	1	January	20150115	15	Q1	3	5
16-01-2015	2015	1	January	20150116	16	Q1	3	6
17-01-2015	2015	1	January	20150117	17	Q1	3	7
18-01-2015	2015	1	January	20150118	18	Q1	4	1
19-01-2015	2015	1	January	20150119	19	Q1	4	2
20-01-2015	2015	1	January	20150120	20	Q1	4	3
21-01-2015	2015	1	January	20150121	21	Q1	4	4
22-01-2015	2015	1	January	20150122	22	Q1	4	5
23-01-2015	2015	1	January	20150123	23	Q1	4	6
24-01-2015	2015	1	January	20150124	24	Q1	4	7
25-01-2015	2015	1	January	20150125	25	Q1	5	1
26-01-2015	2015	1	January	20150126	26	Q1	5	2
27-01-2015	2015	1	January	20150127	27	Q1	5	3

Table: DAX Q10 (31 rows) Column: Year (1 distinct values)

Fields: DAX Q1, DAX Q10, Date, DateKey, Day, MonthName, MonthNo, Quarter, WeekDay, WeekNo, Year

MonthNo: containing a month number from date

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Name: MonthNo Data type: Whole number

Summarization: Sum Data category: Uncategorized

Sort by column: Sort Data groups: Groups Manage relationships: Relationships New column: Calculations

Structure: Formatting Properties

1 MonthNo = Month(DAX Q10[Date])

Date	Year	MonthNo	MonthName	DateKey	Day	Quarter	WeekNo	WeekDay
01-01-2015	2015	1	January	20150101	1	Q1	1	5
02-01-2015	2015	1	January	20150102	2	Q1	1	6
03-01-2015	2015	1	January	20150103	3	Q1	1	7
04-01-2015	2015	1	January	20150104	4	Q1	2	1
05-01-2015	2015	1	January	20150105	5	Q1	2	2
06-01-2015	2015	1	January	20150106	6	Q1	2	3
07-01-2015	2015	1	January	20150107	7	Q1	2	4
08-01-2015	2015	1	January	20150108	8	Q1	2	5
09-01-2015	2015	1	January	20150109	9	Q1	2	6
10-01-2015	2015	1	January	20150110	10	Q1	2	7
11-01-2015	2015	1	January	20150111	11	Q1	3	1
12-01-2015	2015	1	January	20150112	12	Q1	3	2
13-01-2015	2015	1	January	20150113	13	Q1	3	3
14-01-2015	2015	1	January	20150114	14	Q1	3	4
15-01-2015	2015	1	January	20150115	15	Q1	3	5
16-01-2015	2015	1	January	20150116	16	Q1	3	6
17-01-2015	2015	1	January	20150117	17	Q1	3	7
18-01-2015	2015	1	January	20150118	18	Q1	4	1
19-01-2015	2015	1	January	20150119	19	Q1	4	2
20-01-2015	2015	1	January	20150120	20	Q1	4	3
21-01-2015	2015	1	January	20150121	21	Q1	4	4
22-01-2015	2015	1	January	20150122	22	Q1	4	5
23-01-2015	2015	1	January	20150123	23	Q1	4	6
24-01-2015	2015	1	January	20150124	24	Q1	4	7
25-01-2015	2015	1	January	20150125	25	Q1	5	1
26-01-2015	2015	1	January	20150126	26	Q1	5	2
27-01-2015	2015	1	January	20150127	27	Q1	5	3

Table: DAX Q10 (31 rows) Column: MonthNo (1 distinct values)

Fields: DAX Q1, DAX Q10, Date, DateKey, Day, MonthName, MonthNo, Quarter, WeekDay, WeekNo, Year

MonthName: containing month name from date

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Name: MonthName Data type: Text

Structure: MonthName = FORMAT(DAX Q10[Date], "mmm")

Formatting: Summarization: Don't summarize, Data category: Uncategorized, Sort by column: Sort, Data groups: Groups, Manage relationships: Relationships, New column: Calculations.

Properties: Search: MonthName

Table: DAX Q10 (31 rows) Column: MonthName (1 distinct values)

Fields: DAX Q1, DAX Q10, Date, DateKey, Day, MonthName, MonthNo, Quarter, WeekDay, WeekNo, Year, DAX Q2, DAX Q3, DAX Q4, DAX Q5, DAX Q6, DAX Q7, DAX Q8, DAX Q8 Answer, DAX Q9, DAX Q9 (2), Department, o1

DateKey: containing a date in integer format, ex- 26-05-2022 20220626

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Name: DateKey Data type: Whole number

Structure: DateKey = CONVERT(FORMAT('DAX Q10'[Date],"yyyyymmdd"),INTEGER)

Formatting: Summarization: Count, Data category: Uncategorized, Sort by column: Sort, Data groups: Groups, Manage relationships: Relationships, New column: Calculations.

Properties: Search: DateKey

Table: DAX Q10 (31 rows) Column: DateKey (31 distinct values)

Fields: DAX Q1, DAX Q10, Date, DateKey, Day, MonthName, MonthNo, Quarter, WeekDay, WeekNo, Year, DAX Q2, DAX Q3, DAX Q4, DAX Q5, DAX Q6, DAX Q7, DAX Q8, DAX Q8 Answer, DAX Q9, DAX Q9 (2), Department, o1

Day: containing day from date

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Name: Day Data type: Text

Structure: Date, Year, MonthNo, MonthName, DateKey, Day, Quarter, WeekNo, WeekDay

Formatting: Summarization: Don't summarize, Data category: Uncategorized, Sort by column: Sort, Data groups: Groups, Manage relationships: Relationships, New column: Calculations.

1 Day = FORMAT("DAX Q10'[Date]", "d")

Date	Year	MonthNo	MonthName	DateKey	Day	Quarter	WeekNo	WeekDay
01-01-2015	2015	1	January	20150101	1	Q1	1	5
02-01-2015	2015	1	January	20150102	2	Q1	1	6
03-01-2015	2015	1	January	20150103	3	Q1	1	7
04-01-2015	2015	1	January	20150104	4	Q1	2	1
05-01-2015	2015	1	January	20150105	5	Q1	2	2
06-01-2015	2015	1	January	20150106	6	Q1	2	3
07-01-2015	2015	1	January	20150107	7	Q1	2	4
08-01-2015	2015	1	January	20150108	8	Q1	2	5
09-01-2015	2015	1	January	20150109	9	Q1	2	6
10-01-2015	2015	1	January	20150110	10	Q1	2	7
11-01-2015	2015	1	January	20150111	11	Q1	3	1
12-01-2015	2015	1	January	20150112	12	Q1	3	2
13-01-2015	2015	1	January	20150113	13	Q1	3	3
14-01-2015	2015	1	January	20150114	14	Q1	3	4
15-01-2015	2015	1	January	20150115	15	Q1	3	5
16-01-2015	2015	1	January	20150116	16	Q1	3	6
17-01-2015	2015	1	January	20150117	17	Q1	3	7
18-01-2015	2015	1	January	20150118	18	Q1	4	1
19-01-2015	2015	1	January	20150119	19	Q1	4	2
20-01-2015	2015	1	January	20150120	20	Q1	4	3
21-01-2015	2015	1	January	20150121	21	Q1	4	4
22-01-2015	2015	1	January	20150122	22	Q1	4	5
23-01-2015	2015	1	January	20150123	23	Q1	4	6
24-01-2015	2015	1	January	20150124	24	Q1	4	7
25-01-2015	2015	1	January	20150125	25	Q1	5	1
26-01-2015	2015	1	January	20150126	26	Q1	5	2
27-01-2015	2015	1	January	20150127	27	Q1	5	3

Fields: DAX Q1, DAX Q10, Date, DateKey, Day, MonthName, MonthNo, Quarter, WeekDay, WeekNo, Year

Quarter: containing quarter from date

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Name: Quarter Data type: Text

Structure: Date, Year, MonthNo, MonthName, DateKey, Day, Quarter, WeekNo, WeekDay

Formatting: Summarization: Don't summarize, Data category: Uncategorized, Sort by column: Sort, Data groups: Groups, Manage relationships: Relationships, New column: Calculations.

1 Quarter = CONCATENATE("Q", CONVERT(FORMAT("DAX Q10'[Date]", "Q"), STRING))

Date	Year	MonthNo	MonthName	DateKey	Day	Quarter	WeekNo	WeekDay
01-01-2015	2015	1	January	20150101	1	Q1	1	5
02-01-2015	2015	1	January	20150102	2	Q1	1	6
03-01-2015	2015	1	January	20150103	3	Q1	1	7
04-01-2015	2015	1	January	20150104	4	Q1	2	1
05-01-2015	2015	1	January	20150105	5	Q1	2	2
06-01-2015	2015	1	January	20150106	6	Q1	2	3
07-01-2015	2015	1	January	20150107	7	Q1	2	4
08-01-2015	2015	1	January	20150108	8	Q1	2	5
09-01-2015	2015	1	January	20150109	9	Q1	2	6
10-01-2015	2015	1	January	20150110	10	Q1	2	7
11-01-2015	2015	1	January	20150111	11	Q1	3	1
12-01-2015	2015	1	January	20150112	12	Q1	3	2
13-01-2015	2015	1	January	20150113	13	Q1	3	3
14-01-2015	2015	1	January	20150114	14	Q1	3	4
15-01-2015	2015	1	January	20150115	15	Q1	3	5
16-01-2015	2015	1	January	20150116	16	Q1	3	6
17-01-2015	2015	1	January	20150117	17	Q1	3	7
18-01-2015	2015	1	January	20150118	18	Q1	4	1
19-01-2015	2015	1	January	20150119	19	Q1	4	2
20-01-2015	2015	1	January	20150120	20	Q1	4	3
21-01-2015	2015	1	January	20150121	21	Q1	4	4
22-01-2015	2015	1	January	20150122	22	Q1	4	5
23-01-2015	2015	1	January	20150123	23	Q1	4	6
24-01-2015	2015	1	January	20150124	24	Q1	4	7

Fields: DAX Q1, DAX Q10, Date, DateKey, Day, MonthName, MonthNo, Quarter, WeekDay, WeekNo, Year

WeekNo: containing week no from date

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Column tools

Date	Year	MonthNo	MonthName	DateKey	Day	Quarter	WeekNo	WeekDay
01-01-2015	2015	1	January	20150101	1	Q1	1	5
02-01-2015	2015	1	January	20150102	2	Q1	1	6
03-01-2015	2015	1	January	20150103	3	Q1	1	7
04-01-2015	2015	1	January	20150104	4	Q1	2	1
05-01-2015	2015	1	January	20150105	5	Q1	2	2
06-01-2015	2015	1	January	20150106	6	Q1	2	3
07-01-2015	2015	1	January	20150107	7	Q1	2	4
08-01-2015	2015	1	January	20150108	8	Q1	2	5
09-01-2015	2015	1	January	20150109	9	Q1	2	6
10-01-2015	2015	1	January	20150110	10	Q1	2	7
11-01-2015	2015	1	January	20150111	11	Q1	3	1
12-01-2015	2015	1	January	20150112	12	Q1	3	2
13-01-2015	2015	1	January	20150113	13	Q1	3	3
14-01-2015	2015	1	January	20150114	14	Q1	3	4
15-01-2015	2015	1	January	20150115	15	Q1	3	5
16-01-2015	2015	1	January	20150116	16	Q1	3	6
17-01-2015	2015	1	January	20150117	17	Q1	3	7
18-01-2015	2015	1	January	20150118	18	Q1	4	1
19-01-2015	2015	1	January	20150119	19	Q1	4	2
20-01-2015	2015	1	January	20150120	20	Q1	4	3
21-01-2015	2015	1	January	20150121	21	Q1	4	4
22-01-2015	2015	1	January	20150122	22	Q1	4	5
23-01-2015	2015	1	January	20150123	23	Q1	4	6
24-01-2015	2015	1	January	20150124	24	Q1	4	7
25-01-2015	2015	1	January	20150125	25	Q1	5	1
26-01-2015	2015	1	January	20150126	26	Q1	5	2
27-01-2015	2015	1	January	20150127	27	Q1	5	3

Fields

- DAX Q1
- DAX Q10
- Date
- DateKey
- Day
- MonthName
- MonthNo
- Quarter
- WeekDay
- WeekNo
- Year
- DAX Q2
- DAX Q3
- DAX Q4
- DAX Q5
- DAX Q6
- DAX Q7
- DAX Q8
- DAX Q8 Answer
- DAX Q9
- DAX Q9 (2)
- Department
- 11

Table: DAX Q10 (31 rows) Column: WeekNo (5 distinct values)

WeekDay: containing week day from day

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File Home Help Table tools Column tools Search Sign in

Column tools

Date	Year	MonthNo	MonthName	DateKey	Day	Quarter	WeekNo	WeekDay
01-01-2015	2015	1	January	20150101	1	Q1	1	5
02-01-2015	2015	1	January	20150102	2	Q1	1	6
03-01-2015	2015	1	January	20150103	3	Q1	1	7
04-01-2015	2015	1	January	20150104	4	Q1	2	1
05-01-2015	2015	1	January	20150105	5	Q1	2	2
06-01-2015	2015	1	January	20150106	6	Q1	2	3
07-01-2015	2015	1	January	20150107	7	Q1	2	4
08-01-2015	2015	1	January	20150108	8	Q1	2	5
09-01-2015	2015	1	January	20150109	9	Q1	2	6
10-01-2015	2015	1	January	20150110	10	Q1	2	7
11-01-2015	2015	1	January	20150111	11	Q1	3	1
12-01-2015	2015	1	January	20150112	12	Q1	3	2
13-01-2015	2015	1	January	20150113	13	Q1	3	3
14-01-2015	2015	1	January	20150114	14	Q1	3	4
15-01-2015	2015	1	January	20150115	15	Q1	3	5
16-01-2015	2015	1	January	20150116	16	Q1	3	6
17-01-2015	2015	1	January	20150117	17	Q1	3	7
18-01-2015	2015	1	January	20150118	18	Q1	4	1
19-01-2015	2015	1	January	20150119	19	Q1	4	2
20-01-2015	2015	1	January	20150120	20	Q1	4	3
21-01-2015	2015	1	January	20150121	21	Q1	4	4
22-01-2015	2015	1	January	20150122	22	Q1	4	5
23-01-2015	2015	1	January	20150123	23	Q1	4	6
24-01-2015	2015	1	January	20150124	24	Q1	4	7
25-01-2015	2015	1	January	20150125	25	Q1	5	1
26-01-2015	2015	1	January	20150126	26	Q1	5	2
27-01-2015	2015	1	January	20150127	27	Q1	5	3

Fields

- DAX Q1
- DAX Q10
- Date
- DateKey
- Day
- MonthName
- MonthNo
- Quarter
- WeekDay
- WeekNo
- Year
- DAX Q2
- DAX Q3
- DAX Q4
- DAX Q5
- DAX Q6
- DAX Q7
- DAX Q8
- DAX Q8 Answer
- DAX Q9
- DAX Q9 (2)
- Department
- 11

Table: DAX Q10 (31 rows) Column: WeekDay (7 distinct values)