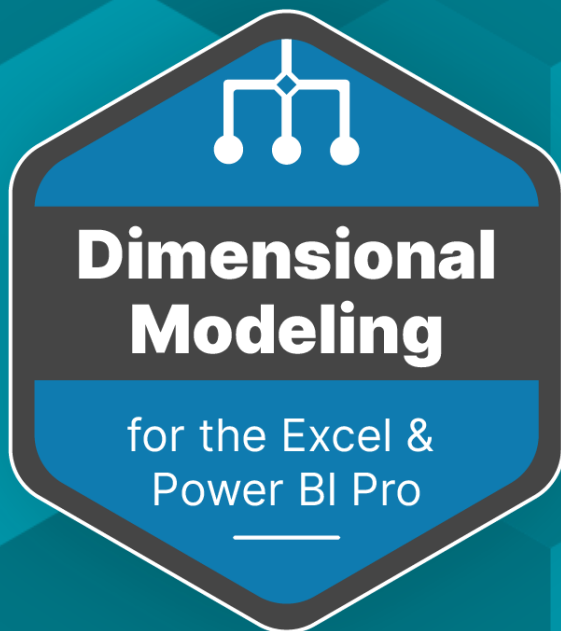


POWER QUERY RECIPES

Dimensional Modeling Edition





ABOUT POWER QUERY RECIPES

These cards are a set of ready-to-use Power Query Recipes to lead you step-by-step through a variety of data transformations and techniques. These cards are a useful reference where you can look up the exact steps needed for a particular data transformation pattern. We hope you find them as handy as we do ourselves!

USING THE RECIPE CARDS

The Table of Contents and the recipe cards are fully linked so you can easily navigate between them. Clicking on the recipe number or name on the Table of Contents will take you directly to that recipe. Likewise, if a recipe card references another recipe, clicking that reference will take you directly to the referenced recipe.

These recipes are also linked to corresponding videos in our Dimensional Modeling for the Excel and Power BI Pro course (both the Excel and Power BI versions), and are indicated with the video icon shown here:



Because you are enrolled in both versions of the course, clicking the corresponding video icon will take you to that video on the course site. Please note that you will first need to login to the course site before being able to watch the video. *You will not be able to watch the video if you are not logged into the Skillwave Training site or if you are not enrolled in the course.*



















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0.510.2010	Creating Dimension Tables
0.520.2010	Creating Bridge Tables
0.530.2010	Creating Composite Keys
0.540.2010	Flattening Snowflaked Dimensions

Link to Corresponding Course

n/a	n/a
 Excel	 Power BI
 Excel	 Power BI
 Excel	 Power BI
 Excel	 Power BI
 Excel	 Power BI
 Excel	 Power BI
 Excel	 Power BI

50. RANKING

50.125.2010	Number Grouped Rows
-------------	---------------------

 Excel	 Power BI
---	--

Look for the
Pattern
Difficulty scale:



No
Code



Lo
Code



Pro
Code

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TOC: 00.001.2303





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Link to Corresponding Course

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TOC: 00.002.2303



0. BEST PRACTICE ARCHITECTURES

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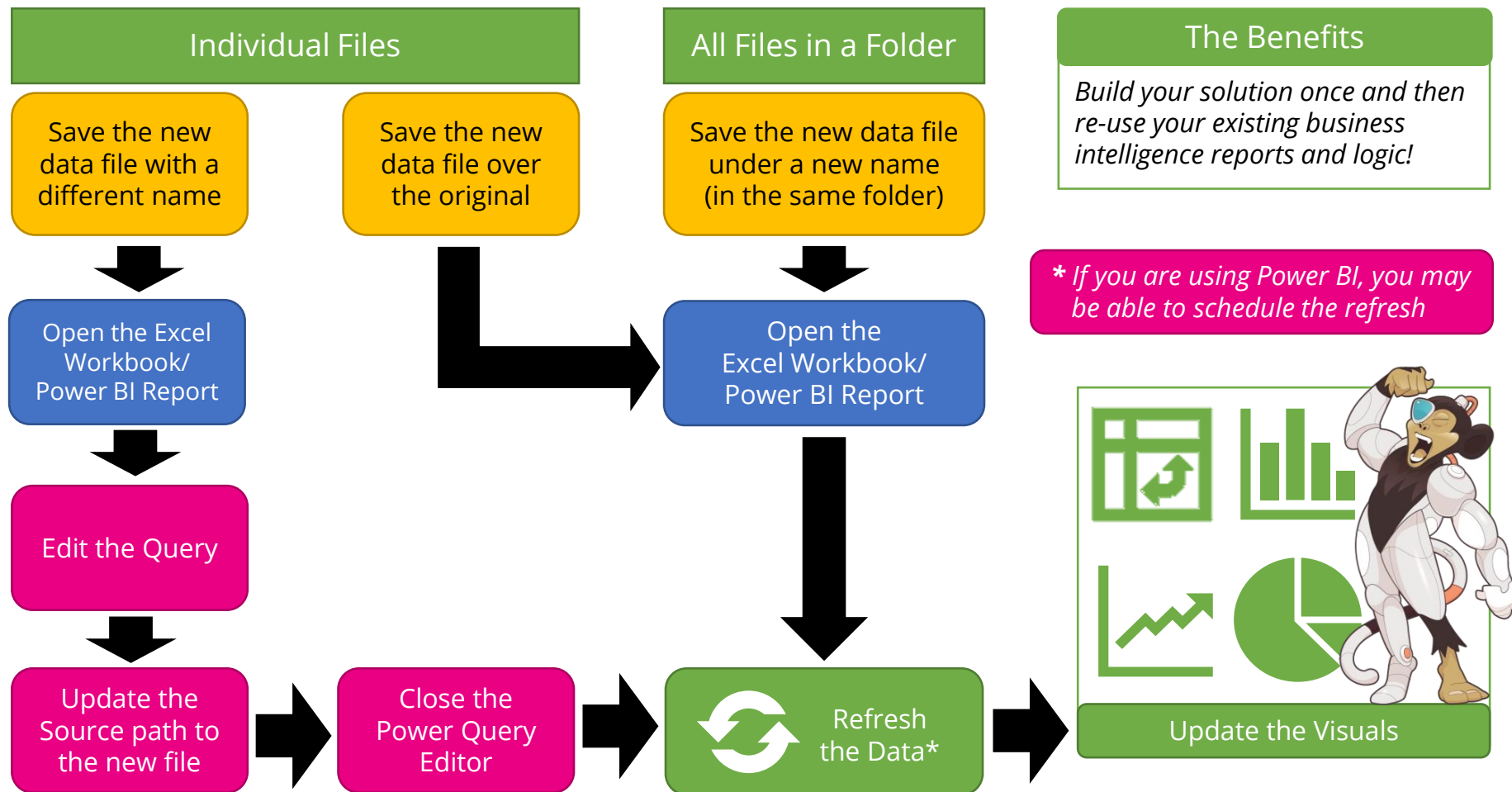


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Pattern Difficulty



Architecture Recipes: Options when using Files as a Data Source



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Recipe: 0.100.1902

ISBN 978-1-61547-246-8





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Pattern Difficulty



Architecture Recipes: Creating a Staging Query

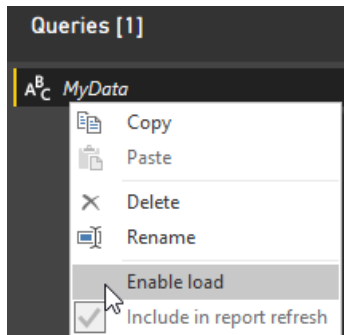
Power BI Desktop

Step 1: Prepare the Source Data

- Connect to your Data source
- Perform any desired transformations
- Name your query

Step 2: Load as a Staging query

- Right click the Query name
- Uncheck Enable Load



Staging queries do not consume any processor or RAM until they are called by another query. They can be very helpful in order to act as a starting point for other queries!

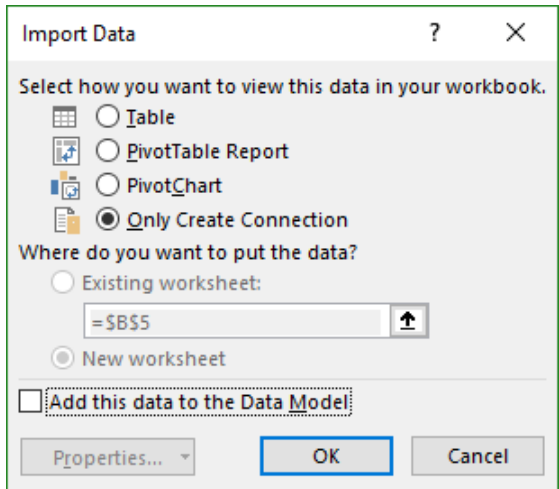
Excel

Step 1: Prepare the Source Data

- Connect to your Data source
- Perform any desired transformations
- Name your query

Step 2: Load as a Staging query

- Go to Home → Close & Load → Close & Load To...
- Choose Only Create Connection
- Uncheck "Add this data to the Data Model"



Dimensional Modeling Subscribers:

Click icons to see this recipe in action!



Excel



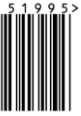
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Recipe: 0.110.2010

ISBN 978-1-61547-246-8





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Pattern Difficulty



Architecture Recipes: Modifying Query Load Destinations

Excel

Step 1: Display the Queries & Connections Pane

Excel 2010/2013 Power Query → Show Pane
Excel 2016 Data → Show Queries
Excel 2019/365 Data → Queries & Connections

Step 2: Modify the Load Destination

Right click the desired query → Load To...
Modify the load behavior as desired

Import Data

Select how you want to view this data in your workbook.

☐ Table
☐ PivotTable Report
☐ PivotChart
☒ Only Create Connection

Where do you want to put the data?

☐ Existing worksheet:
=B\$5

☒ New worksheet

☐ Add this data to the Data Model

Properties... OK Cancel



Power BI Desktop

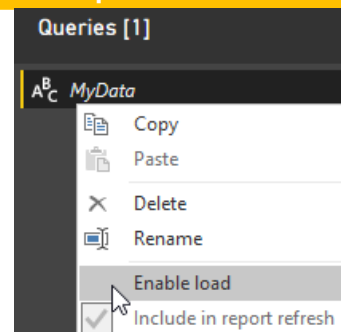
Go to Home → Edit Queries

Right click the Query name

(Un-) Check "Enable Load"

Click Close & Apply

Go to Home → Refresh



Excel Tips!

- 1) If you accidentally loaded a query to a table, you can convert it to a Connection Only query by simply deleting the worksheet!
- 2) Change your default Load Behaviour by modifying the Query Options found here:

Excel 2010/2013 Power Query → Options
Excel 2016 Data → New Query → Query Options
Excel 2019/365 Data → Get Data → Query Options

Dimensional Modeling Subscribers:

Click icons to see this recipe in action!



Excel



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Recipe: 0.120.2010





MASTER YOUR DATA IN EXCEL & POWER BI

Pattern Difficulty



Dimensional Modeling Recipes: Creating Fact Tables

Date	Item	Category	Units
2011-01-02	Omelette	Breakfast	3
2011-01-02	Garlic Bread	Soup/Salad	2
2011-01-02	Chowder	Soup/Salad	2
2011-01-02	Omelette	Breakfast	5
2011-01-02	Pizza	Entrees	4
2011-01-02	Eggs Benny		



Date	Item	Units
2011-01-02	Omelette	3
2011-01-02	Garlic Bread	2
2011-01-02	Chowder	2
2011-01-02	Omelette	5
2011-01-02	Pizza	4
2011-01-02	Eggs Benny	5

Since [Category] is contained in my Items table, I don't need it in my Fact table as well.

Why you care

Separating Fact and Dimension tables is an important component of building effective Power Pivot and Power BI models



Creating Fact Tables Recipe

If you do not already have a staging query for your data...

Create a staging query for the original data

Edit the original data query

Right click the final step → Extract Previous

Name the original "Staging-" <something descriptive>

Load the query as Connection Only (*Recipe 0.110*)

Create a new "fact table" query

Reference the (new) Staging query

Go to Home → Choose Columns

Un-check any column that doesn't meet one of these criteria:

Columns that will be aggregated (the Facts)

Columns that will act as Foreign Keys to link to Dimensions

(Re) set the Data Types for each column

Load the table to the Data model

Link the new Fact table to any related Dimension tables

Dimensional Modeling Subscribers:

Click icons to see this recipe in action!



Excel



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Recipe: 0.410.2010

ISBN 978-1-61547-246-8



US\$19.95





MASTER YOUR DATA IN EXCEL & POWER BI

Dimensional Modeling Recipes: Creating Dimension Tables

Date	Item	Category	Units
2011-01-02	Omelette	Breakfast	3
2011-01-02	Garlic Bread	Soup/Salad	2
2011-01-02	Chowder	Soup/Salad	2
2011-01-02	Omelette	Breakfast	5
2011-01-02	Pizza	Entrees	4
2011-01-02	Eggs Benny	Breakfast	



Item	Category
Omelette	Breakfast
Garlic Bread	Soup/Salad
Chowder	Soup/Salad
Pizza	Entrees
Eggs Benny	Breakfast

Your dimension must have a Primary Key column (like **Item** in my new table.) As a hint, these columns always show the same number of Unique and Distinct values in Power Query's column profiling tools!

Why you care

Separating Fact and Dimension tables is an important component of building effective Power Pivot and Power BI models



Creating Dimension Tables Recipe

If you do not already have a staging query for your data...

Create a staging query for the original data

Edit the original data query

Right click the final step → Extract Previous

Name the original "Staging-" <something descriptive>

Load the query as Connection Only (*Recipe 0.110*)

Create a new "dimension" query

Reference the (new) Staging query

Select the column(s) you wish to keep in your Dimension

Right click any column → Remove other columns

Select All columns

Right click any column → Remove duplicates

Ensure you have a column that can act as a Primary Key

(Re) set the Data Types for each column

Load the table to the Data model

Link the new dimension to your table(s)

Dimensional Modeling Subscribers:

Click icons to see this recipe in action!



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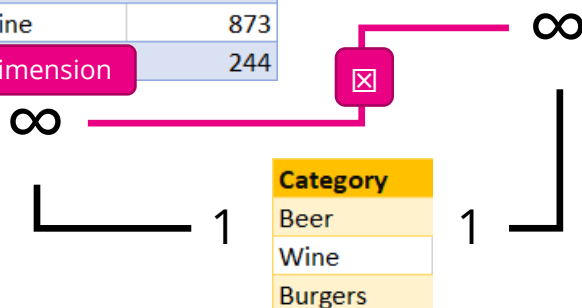
Pattern Difficulty



Dimensional Modeling Recipes: Solving Many to Many Joins

Sales		
Date	Category	Amount
2018-01-01	Beer	175
2018-01-01	Beer	175
2018-01-01	Beer	175
2018-01-02	Beer	1785
2018-01-01	Wine	512
2018-01-01	Burgers	72
2018-01-02	Wine	873
2018-01-02	Wine	873
2018-01-02		244

Budgets		
Date	Category	Amount
2018-01-31	Beer	43,683
2018-01-31	Wine	101,558
2018-01-31	Burgers	13,677
2018-02-28	Beer	104,637
2018-02-28	Wine	21,173
2018-02-28		10,884



This recipe enforces "referential integrity", ensuring that items added to either table appear in the Bridge Table!



Creating Bridge Tables Recipe

Create staging queries for each table

- Reference each query
- Right click column → Remove other columns
- Right click column → Remove duplicates
- Load as Connection Only (*Recipe 0.110*)

Create a new "dimension" query

- Reference one of the new staging tables
- Append the second table
- Remove duplicates
- Load the new table to the data model

Link the new dimension to your tables

Getting a message that you can't create a relationship due to multiple distinct values in each column? This recipe may be part of the solution!

You may need to combine this recipe with the recipe for Creating Composite Keys (*Recipe 0.530.x*)

Dimensional Modeling Subscribers:

Click icons to see this recipe in action!



Excel



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Pattern Difficulty



Dimensional Modeling Recipes: Solving Many to Many Joins

The "Many" Table

Date	Account	Dept	Amount
2008-01-31	61510	150	642.62
2008-01-31	61520	150	1,359.62
2008-01-31	61530	150	261.73
2008-01-31	61540	150	7.16
2008-01-31	61520	155	1,185.46
2008-01-31	61530	155	33.26
2008-01-31	61540	155	1,901.98
2008-02-29	61510	150	2,957.41
2008-02-29	61520	150	6,210.83
2008-02-29	61530	150	1,586.26

The "One" Table

Account	Dept	Category
61510	150	Liquor
61520	150	Wine
61530	150	Beer
61540	150	Cider
61520	155	Beer
61530	155	Wine
61540	155	Liquor

The trick to this pattern is identifying that combining the fields in the "One" table results in unique values.



Creating Composite Keys Recipe

Edit the "Many" Table

Hold CTRL and select the columns to join
Go to the **Transform** tab → Merge Columns
Merge the columns with a delimiter

Edit the "One" Table

Hold CTRL and select the columns to join
Go to the **Add Column** tab → Merge Columns
Merge the columns with a delimiter
Load the tables to the Data model

Don't forget to use a delimiter when joining the columns. Without it, 111 could mean 1-11 or 11-1.

You may need to combine this recipe with the recipe for Creating Bridge Tables (*Recipe 0.520.x*)

Preserving the original columns in the "One" table allows you to use them in filters later!

Dimensional Modeling Subscribers:

Click icons to see this recipe in action!



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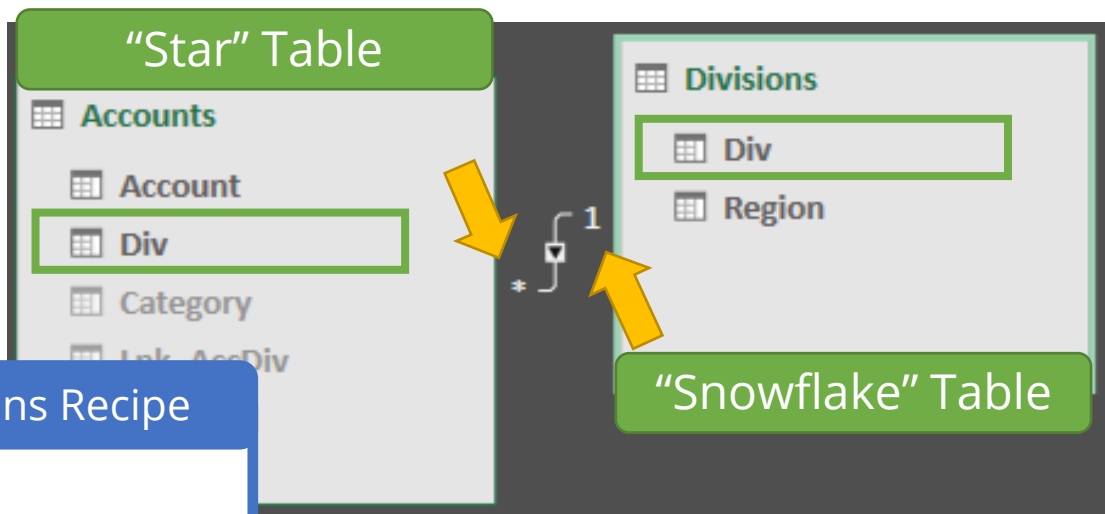
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Pattern Difficulty



Dimensional Modeling Recipes: Recommended Practices

A "Snowflaked" dimension is a dimensional table that only has a single relationship. This level of abstraction is unnecessary in Power BI and Power Pivot models.



Flattening Snowflaked Dimensions Recipe

Edit the "Star" table

- Go to Home → Merge Queries
- Merge the Star table to the Snowflake table
- Select the common fields for the merge → OK
- Expand desired fields from the Snowflake column
- Load to the Data Model
- Create the table relationships

Edit the "Snowflake" table

Change to load to Connection Only (*Recipe 0.120*)

Snowflakes belong on mountains, not in your data model



Dimensional Modeling Subscribers:

Click icons to see this recipe in action!



Excel



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50. RANKING

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Pattern Difficulty



Number Grouped Rows Recipe

Initial Preparation

Sort any **[Dimension]** column(s) to group the data

Sort the **[Fact]** column → Descending

Re-apply the column data types

Group the Data

Go to Transform → Group → Advanced

Group by the **[Dimension]** column(s)

Add a new column called "Data" → All Rows

Add Row Numbers

Go to Add Column → Custom Column

Name: Custom

Formula: `=Table.AddIndexColumn([Data], "Index", 1, 1)`

Right click the **[Custom]** column → Remove Other Columns

Expand all columns from **[Custom]**

Re-order the columns if desired

Source Table

Group	Category	Sales
Food	Breakfast	99,562.64
Food	Soups/Salads	113,642.33
Food	Sandwiches	217,510.36
Alcohol	Draft Beer	132,882.83
Alcohol	Wine	217,492.74
Alcohol	Liquor	50,939.94
Alcohol	Coolers/Ciders	22,628.14
Alcohol	Canned Beer	49,996.55

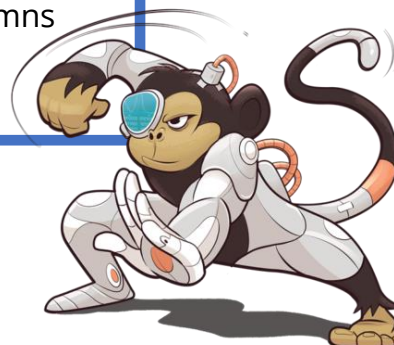
Dimension

Fact

Table With Numbered Rows

Group	Category	Sales	Index
Food	Sandwiches	217,510.36	1
Food	Soups/Salads	113,642.33	2
Food	Breakfast	99,562.64	3
Alcohol	Wine	217,492.74	1
Alcohol	Draft Beer	132,882.83	2
Alcohol	Liquor	50,939.94	3
Alcohol	Canned Beer	49,996.55	4
Alcohol	Coolers/Ciders	22,628.14	5

DBAs know this output as using SQL's ROW_NUMBER with PARTITION



Dimensional Modeling Subscribers:

Click icons to see this recipe in action!



Excel



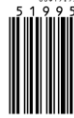
Power BI

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60. DATE & TIME TECHNIQUES

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MASTER YOUR DATA IN EXCEL & POWER BI

Pattern Difficulty



Overview: Creating Dynamic Calendar Tables

Step 1: Create Calendar Boundaries

12 Month Calendars
Dec 31 Year End

12 Month Calendars
Non-std Year Ends

364 Day Calendars
445, 454, 544, 13 Mth

Create Helper
Queries

Create **YEMonth**
Query based on
Recipe 60.110.x

Create **Start364**
Query based on
Recipe 60.110.x

Generate Calendar
Boundaries
(Start & End of Year)

Create **StartDate** &
EndDate based on
Recipe 60.100.x

Create **StartDate** &
EndDate based on
Recipe 60.105.x

Create **StartDate** &
EndDate based on
Recipe 60.105.x

Adjust Boundaries
for non-standard
Year Ends

Shift the **StartDate** &
EndDate based on
Recipe 60.120.x

Shift the **StartDate** &
EndDate based on
Recipe 60.130.x

Step 2: Create the Calendar Table

Fill In the Calendar
depending on what
type you need

Calendars that span
StartDate to EndDate
Recipe 60.210.x

Calendars that cover
StartDate + x Days
Recipe 60.220.x

Step 3: Add Period IDs for non-standard year ends (see [Recipe 60.002.x](#))



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Excel



Power BI

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5 1 9 9 5





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Pattern Difficulty



Overview: Creating Dynamic Calendar Tables

Step 1: Create Calendar Boundaries (see Recipe 60.001.x)

Step 2: Create the Calendar Table (see Recipe 60.001.x)

Step 3: Create the Fiscal Period columns

12 Month Calendars
Non-std Year Ends

364 Day Calendars
445, 454, 544

364 Day Calendars
13 x 4-Weeks

Create PeriodID
Columns

Create PeriodIDs
based on
Recipe 60.410.x

Create PeriodIDs
based on
Recipe 60.510.x

Create Fiscal Period
Columns

Create Fiscal Period
Columns based on
Recipe 60.330.x

Create Fiscal Period
Columns based on
Recipe 60.430.x

Create Fiscal Period
Columns based on
Recipe 60.530.x



Dimensional Modeling Subscribers:

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Pattern Difficulty



Dynamic Calendar Boundaries: Standard December 31 Year Ends

Determine the StartDate

Reference table with earliest date
 Right click **[Date]** → Remove Other Columns
 Filter **[Date]** → Date Filters → Is **Earliest**
 Right click **[Date]** → Remove duplicates
 Change the data type to a Date*
 Transform → Date → Year → **Start of Year**
 Right click the date cell → Drill down†
 Call query **StartDate** (no spaces)
 Load as Connection Only

Determine the EndDate

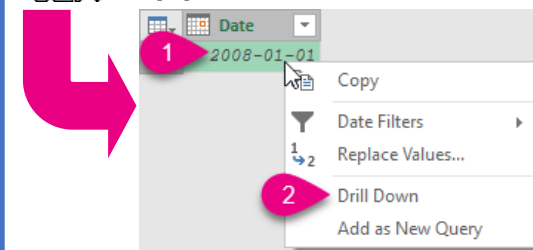
Reference table with latest date
 Right click **[Date]** → Remove Other Columns
 Filter **[Date]** → Date Filters → Is **Latest**
 Right click **[Date]** → Remove duplicates
 Change the data type to a Date*
 Transform → Date → Year → **End of Year**
 Right click the date cell → Drill down†
 Call query **EndDate** (no spaces)
 Load as Connection Only

Continue with your preferred Dynamic Calendar Recipe (60.2xx.x)

* This step is important if you are not forcing to start/end of period

† Ensure that you click the cell to drill down, not the header of the table. You need your new formula to read as follows:
 =#"<previous step name>"{0}[Date Column Name]

Month End	Category	Amount
2008-01-31	Beer	226.22
2008-01-31	Beer	1657.65
2008-01-31	Cider	10.55
2008-01-31	Liquor	473.05
2008-02-29	Beer	984.34
2008-02-29	Beer	2398.14
2008-02-29	Cider	64.04



Formula Bar: =#"Calculated Start of Year"{0}[Date]
 Result: 2008-01-01
StartDate



Dimensional Modeling Subscribers:

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Excel



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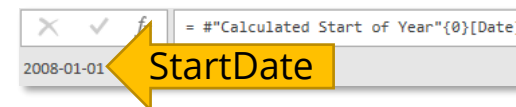
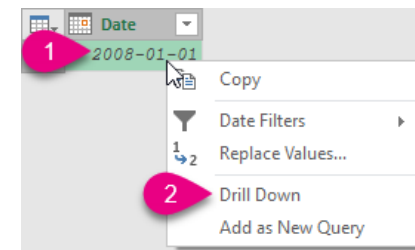
Generating Calendar *StartDate* (*EndDate*) Queries

1. Set up required "Helper" queries per Recipe 60.110.x
2. Reference table with *earliest* (*latest*) date
3. Right click **[Date]**→ Remove Other Columns
4. Filter **[Date]** → Date Filters → Is *Earliest* (*Latest*)
5. Right click **[Date]** → Remove duplicates
6. Transform date to *Start* (*End*) of Year
7. Apply "Year End Adjustment" steps
 - a) For 12-Month Calendars, see Recipe 60.120.x
 - b) 445, 454, 544 (ISO) or 13-Month Calendars, see Recipe 60.130.x
8. Change the data type to a Date*
9. Right click the date cell→ Drill down†
10. Call query *StartDate* (*EndDate*) – with no spaces
11. Load as Connection Only

Continue with your preferred Dynamic Calendar Recipe (60.2xx.x)

* Be Safe! Failure to apply Step 7 could lead to a hard-coded date when applying Step 8!

† When performing Step 8, ensure that you right click the cell to drill down (as shown at right), not the column header on the table!



Click icons to see this recipe in action!



Excel



Power BI

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Recipe: 60.105.2010





MASTER YOUR DATA IN EXCEL & POWER BI

Pattern Difficulty



Helper Queries for Custom Calendars

12-Month Calendars (Year Ends other than December 31)

1. Create a new Blank Query
2. Name the query **YEMonth**
3. In the formula bar, enter the calendar month number of your fiscal year end
4. Load as Connection Only

364-Day Year Ends (445, 454, 544, & 13-Month)

1. Create a new Blank Query
2. Name the query **Start364**
3. In the formula bar, enter the start date of *any* valid 364-day fiscal year end for your company in the following format:
=#date (yyyy ,mm ,dd)
e.g. =#date (2020 ,12 ,28)
4. Load as Connection Only

Return to Recipe 60.105.x – Step 2

Why make these simple queries?

These recipes are intended to act as Helper Queries in order to make it easier to generate custom calendars for non-standard year ends. Refer to [Recipe 60.105.x](#) to review the steps that require these queries.

Could I use a Parameter for this instead of a Query? Absolutely!



Dimensional Modeling Subscribers:

Click icons to see this recipe in action!



Excel



Power BI

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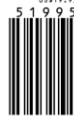
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MASTER YOUR DATA IN EXCEL & POWER BI

Pattern Difficulty



Year End Adjustment for Non-Standard Year Ends: 12-Month Year End other than December 31

Determine the StartDate

Follow Recipe 60.105.x Steps 1-6

Step 7:

Go to Add Column → Custom Column

Use the following formula: †

```
=Date.AddMonths (
    [Date] ,
    YEMonth -12
)
```

Click OK

Right click **[Date]** † → Remove

Determine the EndDate

Follow Recipe 60.105.x Steps 1-6

Step 7:

Go to Add Column → Custom Column

Use the following formula: †

```
=Date.AddMonths (
    [Date] ,
    YEMonth
)
```

Click OK

Right click **[Date]** † → Remove

Return to Recipe 60.105.x – Step 8

Precedents Required!

This pattern requires the **YEMonth** query, which is generated in Recipe 60.110.x

† No “Date” column ?

If your dates column is not called “Date”, then replace both instances of **[Date]** with **[<your date column name>]**



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Pattern Difficulty



Year End Adjustment for Non-Standard Year Ends: 364-Day Calendars (445, 454, 544, & 13 Month)

Determine the StartDate

Follow [Recipe 60.105.x Steps 1-6](#)

Step 7:

Go to Add Column → Custom Column

Use the following formula: †

```
=Date.AddDays (
  Start364,
  364 * Number.Round (
    Duration.Days (
      Duration.From ( [Date] - Start364 )
    ) / 364 ,
    0
  )
)
```

Click OK

Right click **[Date]** † → Remove

Determine the EndDate

Follow [Recipe 60.105.x Steps 1-6](#)

Step 7:

Go to Add Column → Custom Column

Use the following formula: †

```
=Date.AddDays (
  Start364,
  364 * Number.RoundUp (
    Duration.Days (
      Duration.From ( [Date] - Start364 )
    ) / 364 ,
    0
  ) - 1
)
```

Click OK

Right click **[Date]** † → Remove

Return to [Recipe 60.105.x](#) – Step 8

Precedents Required!

This pattern requires the **Start364** query, which is generated in [Recipe 60.110.x](#)

† No “Date” column ?

If your dates column is not called “Date”, then replace both instances of **[Date]** in this recipe with:
[<your date column name>]



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MASTER YOUR DATA IN EXCEL & POWER BI

Pattern Difficulty



Dynamic Calendar Recipe: From Start Date to End Date

Determine the Calendar boundaries

Create **StartDate** query (*Recipe 60.10x.x*)

Create **EndDate** query (*Recipe 60.10x.x*)

Create a Blank Query

Enter the following in the formula bar:

```
= {Number.From(StartDate) .. Number.From(EndDate) }
```

Go to List Tools → To Table → OK

Set **[Column1]** to a Date data type

Rename **[Column1]** to Date

Rename the table to Calendar

Add New Columns

1. Select the **[Date]** column
2. Go to Add Column → Date → <the format to add>
3. Repeat Steps 1-2 as many times as needed

Load the Calendar to the intended destination

Given only a
StartDate and
an **EndDate**...

The diagram shows a pink arrow pointing from a table with a 'List' column to a table with a 'Date' column. The 'List' table has values 39448 through 39453. The 'Date' table has corresponding dates from 2008-01-01 to 2008-01-06. Another pink arrow points from the 'Date' table to the 'Fully Dynamic Calendar Table'.

	List	Date
1	39448	2008-01-01
2	39449	2008-01-02
3	39450	2008-01-03
4	39451	2008-01-04
5	39452	2008-01-05
6	39453	2008-01-06

Fully Dynamic 'Calendar' Table

	Date	Year	Month	Month Name	Day
1	2008-01-01	2008	1	Jan	1
2	2008-01-02	2008	1	Jan	2
3	2008-01-03	2008	1	Jan	3
4	2008-01-04	2008	1	Jan	4
5	2008-01-05	2008	1	Jan	5
6	2008-01-06	2008	1	Jan	6

To shorten Month or Day names, go to
Transform → Extract → First Characters

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Recipe: 60.210.2010





MASTER YOUR DATA IN EXCEL & POWER BI

Pattern Difficulty



Fiscal Period Columns for 12-Mth Non-Std Year Ends

To add the period column(s):

Go to Add Column → Custom Column

Name:

Fiscal (Month, Quarter or Year)

Formula:

Enter the appropriate formula based on the column you need, as shown in the table on the right

Click OK

Set the column's data type

Fiscal...	Required Column(s)	Formula
Month	[Date]	<code>Date.Month(Date.AddMonths([Date] , - YEMonth))</code>
Quarter	[Fiscal Month]	<code>Number.RoundUp([Fiscal Month] / 3)</code>
Year	[Date]	<code>if Date.Month([Date]) > YEMonth then Date.Year([Date]) + 1 else Date.Year([Date])</code>

Which data type should I choose?

Setting your Fiscal Year to text doesn't compromise the sort order and means that it will never be "summed" when putting it on a visual. But don't do this for Months, as it will then sort 1, 10, 11, 12, 2



These formulae, as written, rely on the **YEMonth** query created in [Recipe 60.110.x](#). If you don't have this query, or would like to skip it, just replace it with the numeric value of the final month in your fiscal year.

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Recipe: 60.330.2010





MASTER YOUR DATA IN EXCEL & POWER BI

Pattern Difficulty



PeriodID Column Recipes for 445 / 454 / 544 Calendars

Step 1: Add a DayID column

Go to Add Column → Index Column → From 1
Rename [Index] to DayID

Step 2: Add other ID columns

For each item in the *PeriodID Formulae* table:

Go to Add Column → Custom Column
Enter the column names and formulae as per the table
Click OK

PeriodID Formulae

Column	Formula
YearID	= Number.RoundUp ([DayID] / 364)
QuarterID	= Number.RoundUp ([DayID] / 91)
MonthID	See Recipe 60.420.x
WeekID	= Number.RoundUp ([DayID] / 7)

These columns have two uses:

- 1) Creating Time Intelligent DAX Measures:
Implement Rob Collie's GFITW pattern for custom calendar time intelligence!
[Click here to learn more!](#)
- 2) Creating Fiscal Date Columns for reporting:
Create columns like "End of Fiscal Year" or "Fiscal Month of Year"

My ID columns don't reset at period end...

You are correct, and this is by design. These ID columns are intended to drive Power Query logic and DAX calculations, not necessarily fiscal reporting.

I only want YearID, so do I need DayID?

These Recipes make use of DayID to make things simpler. If you don't want the DayID, then you can either modify the formulae or delete it when you have the columns you need.

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Recipe: 60.410. 2010





MASTER YOUR DATA IN EXCEL & POWER BI

Pattern Difficulty



MonthID Column Recipe for 445 / 454 / 544 Calendars

To add the MonthID column:

Go to Add Column → Custom Column

Name: MonthID

Formula:

Enter the appropriate formula based on your calendar type, as shown in the table on the right

Click OK

Calendar Type	MonthID Formula
4-4-5	<pre>= Number.RoundDown ([DayID] / 91) * 3 + (if Number.Mod ([DayID], 91) = 0 then 0 else if Number.Mod ([DayID], 91) <= 28 then 1 else if Number.Mod ([DayID], 91) <= 56 then 2 else 3)</pre>
4-5-4	<pre>= Number.RoundDown ([DayID] / 91) * 3 + (if Number.Mod ([DayID], 91) = 0 then 0 else if Number.Mod ([DayID], 91) <= 28 then 1 else if Number.Mod ([DayID], 91) <= 63 then 2 else 3)</pre>
5-4-4	<pre>= Number.RoundDown ([DayID] / 91) * 3 + (if Number.Mod ([DayID], 91) = 0 then 0 else if Number.Mod ([DayID], 91) <= 35 then 1 else if Number.Mod ([DayID], 91) <= 63 then 2 else 3)</pre>



Don't forget that this formula relies on the **DayID** column created in [Recipe 60.410.x](#)

Dimensional Modeling Subscribers:

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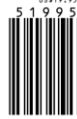
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MASTER YOUR DATA IN EXCEL & POWER BI

Pattern Difficulty



Fiscal Period Columns for 445 / 454 / 544 Calendars

To add the period column(s):

Go to Add Column → Custom Column

Name:

Fiscal <Period>

Formula:

Enter the appropriate formula based on the column you need, as shown in the table on the right

Click OK

Set the column's data type

Fiscal...	Required Column(s)	Formula
Year	[YearID] [Date] [DayID]	= [YearID] + Date.Year(Date.AddDays([Date], - [DayID] + 1))
Quarter	[QuarterID]	= Number.Mod([QuarterID] - 1, 4) + 1
Month	[MonthID]	= Number.Mod([MonthID] - 1 , 12) + 1
Week	[WeekID]	= Number.Mod([WeekID] - 1, 52) + 1

Which data type should I choose?

Setting your Fiscal Year to text doesn't compromise the sort order and means that it will never be "summed" when putting it on a visual. But don't do this for Months, as it will then sort 1, 10, 11, 12, 2



If your Fiscal Year is off by one in the first year, just add or subtract 1 at the end of the formula.

These formulae rely on:
The **Start364** query created in [Recipe 60.110.x](#) and
The **PeriodID** columns from [Recipe 60.410.x](#).

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MASTER YOUR DATA IN EXCEL & POWER BI

Pattern Difficulty



PeriodID Column Recipes for 13 x 4-Week Calendars

Step 1: Add a DayID column

Go to Add Column → Index Column → From 1

Rename [Index] to DayID

Step 2: Add other ID columns

For each item in the *PeriodID Formulae* table:

Go to Add Column → Custom Column

Enter the column names and formulae as per the table

Click OK



These columns have two uses:

- 1) Creating Time Intelligent DAX Measures: Implement Rob Collie's GFITW pattern for custom calendar time intelligence! Click here to learn more!
- 2) Creating Fiscal Date Columns: Create columns like "End of Fiscal Year" or "Fiscal Month of Year"

The QuarterID column relies on the MonthID column. Don't forget to create it first!

Changing 3, 6, 9 (in bold) to 4, 7, 10 would include the 13th month in the 1st quarter instead of the 4th quarter.

My ID columns don't reset at period end...

You are correct, and this is by design. These ID columns are intended to drive Power Query logic and DAX calculations, not necessarily fiscal reporting.

Column	PeriodID Formulae
WeekID	= Number.RoundUp ([DayID] / 7)
MonthID	= Number.RoundUp ([DayID] / 28)
QuarterID	= Number.RoundDown ([MonthID] / 13) * 4 + (if Number.Mod ([MonthID] , 13) = 0 then 0 else if Number.Mod ([MonthID] , 13) <= 3 then 1 else if Number.Mod ([MonthID] , 13) <= 6 then 2 else if Number.Mod ([MonthID] , 13) <= 9 then 3 else 4)
YearID	= Number.RoundUp ([DayID] / 364)

Dimensional Modeling Subscribers:

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MASTER YOUR DATA IN EXCEL & POWER BI

Pattern Difficulty



Fiscal Period Columns for 13 x 4-Week Calendars

To add the period column(s):

Go to Add Column → Custom Column

Name:

Fiscal <Period>

Formula:

Enter the appropriate formula based on the column you need, as shown in the table on the right

Click OK

Set the column's data type

Fiscal...	Required Column(s)	Formula
Year	[YearID] [Date] [DayID]	= [YearID] + Date.Year(Date.AddDays([Date], - [DayID] + 1))
Quarter	[Fiscal Month]	= if [Fiscal Month] > 9 then 4 else if [Fiscal Month] > 6 then 3 else if [Fiscal Month] > 3 then 2 else 1
Month	[MonthID]	= Number.Mod([MonthID] - 1 , 13) + 1
Week	[WeekID]	= Number.Mod([WeekID] - 1, 52) + 1

Which data type should I choose?

Setting your Fiscal Year to text doesn't compromise the sort order and means that it will never be "summed" when putting it on a visual. But don't do this for Months, as it will then sort 1, 10, 11, 12, 2



If your Fiscal Year is off by one in the first year, just add or subtract 1 at the end of the formula.

Changing 3, 6, 9 (in bold) to 4, 7, 10 would include the 13th month in the 1st quarter instead of the 4th quarter.

These formulae rely on:
The **Start364** query created in [Recipe 60.110.x](#) and
The **PeriodID** columns from [Recipe 60.510.x](#).

Dimensional Modeling Subscribers:

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Recipe: 60.530.2303

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Perform a simple text replacement

Right click the desired date column → Replace Values

Replace ***null*** with ***01-01-01***

Edit the formula in the Formula bar

```
Select:      #date(2001, 1, 1)
```

Replace with: `Date.From(DateTime.LocalNow())`

Need the current date AND time? Replace null with:

01-01-01 12:59

then replace

```
#datetime(2001,1,1,1,0,0)
  in the formula with only
  DateTime.LocalNow()
```



	¹² ₃ CustID	A ^B _C Name	A ^B _C Address	From	To
1	1	Fred	123 Somewhere St	2019-01-01	null
2	2	Bob	456 Nowhere Close	2019-01-01	2019-02-15
3	3	John	4 The Win	2019-01-01	null
4	2	Bob	1 So Close	2019-02-16	null

Replace *nulls* with current date

```
= Table.ReplaceValue("#Changed Type",null,#date(2001, 1, 1),Replacer.ReplaceValue,{"To"})
```

This recipe is very useful for preparing a slowly moving dimension table

	¹²³	^{A^BC} ID	^{A^BC} Name	^{A^BC} Address	^{From}	^{To}
1		1	Fred	123 Somewhere St	2019-01-01	2019-06-14
2		2	Bob	456 Nowhere Close	2019-01-01	2019-02-15
3		3	John	4 The Win	2019-01-01	2019-06-14
4		2	Bob	1 So Close	2019-02-16	2019-06-14

```
= Table.ReplaceValue("#Changed Type",null,Date.From(DateTime.LocalNow()),Replacer.ReplaceValue,{"To"})
```

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