

Using Tabular Editor to speed up Power BI development

Bas Land



Disclaimer

- I am not affiliated in any way with Tabular Editor
- I am not a partner, reseller, shareholder¹, nothing!

- I just think the tool is nice for Power BI developers that want to work smarter, not harder

¹ I might be interested, though 😊

Slides and code samples

- The slides and code samples for this session will be posted to my public Github repo:
- <https://github.com/basland/presentations/>
- Also check my blog for content like this:
- <https://thatfabricguy.com>

Agenda

- Problem with manual development in Power BI semantic models
- Introduction of Tabular Editor
- Naming conventions

- Creating relationships
- Bulk measure creation

- Best practice analyzer
- One secret goodie 😊

About Tabular Editor



**THIS
MIGHT
TAKE
A WHILE**

Tabular Editor

- Started as open source software
- Currently a for profit (and rightfully so!)
- Helps edit Power BI and Analysis Services models
- Works alongside Power BI Desktop and Service
- Both free version (v2) and paid (v3) available
- Today's demo will use v2



How to download?

tabulareditor.com/downloads

Download Tabular Editor 3

With Tabular Editor 3 you are all set for Analysis Services and Power BI Tabular modelling

Download (64 bit)



Tabular Editor 3 (32 bit)

Tabular Editor 2.x (free)

Tabular Editor 3 (64 bit, portable version)

Tabular Editor 3 (32 bit, portable version)

[load options](#)





- Model
 - Data Sources
 - Perspectives
 - Relationships
 - Roles
 - Shared Expressions
 - Tables
 - Customers
 - Items
 - Partitions
 - PK_Items**
 - StockItemName
 - Brand
 - Size
 - SearchDetails
 - Orders
 - SalesOrderLines
 - Translations

Expression Editor C# Script

Property: [Dropdown]

1

Hidden	False
Name	PK_Items
Sort By Column	
Source Column	PK_Items
Summarize By	Sum
▼ Metadata	
Annotations	1 annotation
DAX Identifier	"Items"[PK_Items]
Error Message	
Extended Properties	0 extended properties
Object Type	Column
State	Ready
▼ Options	
Alignment	Default
Alternate Of	
Available In MDX	True
Data Category	

Name
The name of this object. Warning: Changing the name can break fomula logic, if Automatic Fomula Fix-up is disabled.

Theoretical tips 'n tricks

Naming conventions

- Generally agreed scheme for naming things
- Makes collaborating with colleagues easier
- Also makes collaborating with automation tools easier!
- Use prefixes or suffixes for column names
- At the minimum: relationship columns and measure columns

Bad example

- Foreign keys are all over the place!
- No standard measure naming

The screenshot displays four data tables in a dark-themed interface:

- Customers:** Fields include Σ CustomerKey (highlighted in yellow), CustomerName, and a Collapse ^ button.
- Items:** Fields include Brand, Σ ItemId (highlighted in yellow), SearchDetails, Size, and StockItemName. A Collapse ^ button is at the bottom.
- Orders:** Fields include Comments, Σ CustomerPurchaseOrderNumber, DeliveryInstructions, InternalComments, OrderDate, and Σ PK_Orders (highlighted in yellow). A Collapse ^ button is at the bottom.
- SalesOrderLines:** Fields include Σ CustomerId (highlighted in yellow), Description, Σ FK_Orders (highlighted in yellow), Σ ItemNumber (highlighted in yellow), Σ PackageTypeID, Σ Qty (highlighted in orange), Σ TaxRate, and Σ Total UnitPrice (highlighted in orange). A Collapse ^ button is at the bottom.

Good example

- FK_ and PK_ for relationship key columns
- M_ for measure columns

Table	Column	Type
Customers	CustomerName	Text
	PK_Customers	Primary Key
Items	Brand	Text
	PK_Items	Primary Key
	SearchDetails	Text
	Size	Text
	StockItemName	Text
Orders	Comments	Text
	CustomerPurchaseOrderNumber	Text
	DeliveryInstructions	Text
	InternalComments	Text
	PK_Orders	Primary Key
SalesOrderLines	Description	Text
	FK_Customers	Foreign Key
	FK_Items	Foreign Key
	FK_Orders	Foreign Key
	m_Quantity	Measure
	m_UnitPrice	Measure
	PackageTypeID	Text
	TaxRate	Text

Automations with TE2

- Programmatically create objects
- Use naming conventions to bulk create objects
- Easily cleanup your model afterwards
- Write C# scripts to automate tasks
- I'm not that good with C#, but you know who is?
- Bloggers.
- Youtubers.
- ChatGPT!



Automation examples

Creating relationships

```
Expression Editor C# Script
1 // Example for Power BI Gebruikersdagen 2025
2 // Automating Power BI development with Tabular Editor
3 // Created by Bas Land, Kimura Data Intelligence B.V. and ThatFabricGuy.com
4
5
6 // Loop through all tables to find PK_ columns
7 foreach (var pkTable in Model.Tables)
8 {
9     foreach (var pkColumn in pkTable.Columns)
10    {
11        if (pkColumn.Name.StartsWith("PK_"))
12        {
13            // Extract the key name (without the "PK_" prefix)
14            var keyName = pkColumn.Name.Substring(3);
15
16            // Search for corresponding FK_ column in other tables
17            foreach (var fkTable in Model.Tables)
18            {
19                if (fkTable == pkTable) continue; // Skip itself (dont create relationship with self)
20
21                foreach (var fkColumn in fkTable.Columns)
22                {
23                    if (fkColumn.Name == "FK_" + keyName)
24                    {
25                        // Check if relationship does not already exist
26                        bool relationshipExists = Model.Relationships
27                            .Any(r => r.ToColumn == pkColumn && r.FromColumn == fkColumn);
28
29                        if (!relationshipExists)
30                        {
31                            // Create the relationship
32                            var rel = Model.AddRelationship();
33                            rel.FromColumn = fkColumn; // Foreign key is always on the "From" side (fact table)
34                            rel.ToColumn = pkColumn; // Primary key is on the "To" side (dimension table)
35                            rel.IsActive = true;
36                            rel.CrossFilteringBehavior = CrossFilteringBehavior.OneDirection; // Single-direction filtering
37
38                            // Hide the key columns, we don't want to use them in the report
39                            pkColumn.IsHidden = true;
40                            fkColumn.IsHidden = true;
41                        }
42                    }
43                }
44            }
45        }
46    }
47 }
```


Automation examples

Creating measures

```
Expression Editor C# Script
Samples + X P B 100%
1 // Example for Power BI Gebruikersdagen 2025
2 // Automating Power BI development with Tabular Editor
3 // Created by Bas Land, Kimura Data Intelligence B.V. and ThatFabricGuy.com
4
5 // Define the table name
6 var measureTableName = "Calculations";
7
8 // Check if the table already exists
9 var measureTable = Model.Tables.FirstOrDefault(t => t.Name == measureTableName);
10
11 if (measureTable == null)
12 {
13     // Create a calculated table using a simple DAX expression with a placeholder column
14     string daxExpression = "DATATABLE(\"DummyColumn\", STRING, {\"Placeholder\"})";
15
16     measureTable = Model.AddCalculatedTable(measureTableName, daxExpression);
17
18     // Ensure DummyColumn is hidden
19     var dummyColumn = measureTable.Columns.FirstOrDefault(c => c.Name == "DummyColumn");
20     if (dummyColumn != null)
21     {
22         dummyColumn.IsHidden = true;
23     }
24 }
25
26 // Loop through all tables to find m_ columns
27 foreach (var table in Model.Tables)
28 {
29     foreach (var column in table.Columns.ToList()) // Convert to list to avoid modification issues
30     {
31         if (column.Name.StartsWith("m_"))
32         {
33             // Extract measure name (remove "m_" prefix)
34             var measureName = column.Name.Substring(2);
35             var daxExpression = "SUM ( " + table.Name + "[" + column.Name + " ] )";
36
37             // Check if the measure already exists
38             var existingMeasure = measureTable.Measures.FirstOrDefault(m => m.Name == measureName);
39
40             if (existingMeasure != null)
41             {
42                 existingMeasure.Expression = daxExpression;
43             }
44             else
45             {
46                 // Create new measure
47                 var newMeasure = measureTable.AddMeasure(measureName, daxExpression);
48                 newMeasure.DisplayFolder = table.Name;
49             }
50
51             // Hide the original column
52             column.IsHidden = true;
53         }
54     }
55 }
```

Best practise analyzer

- Tool to help you follow best practices
- Fully automated
- Rule based
- Default rulesets available!
 - > <https://powerbi.microsoft.com/nl-nl/blog/best-practice-rules-to-improve-your-models-performance/>
 - Ruleset in a file: <https://raw.githubusercontent.com/microsoft/Analysis-Services/master/BestPracticeRules/BPARules.json>

Best pr

demo_file_step2_after_naming.pbix (local)

File Edit View Model Tools

Perspective: (All)

Model

- Data Sources
- Perspectives
- Relationships
- Roles
- Shared Expressions
- Tables
- Translations

Best Practice Analyzer

Show ignored

Object	Type	Severity
[Performance] Do not use floating point data types (1 object)		2
'SalesOrderLines'[m_UnitPrice]	Column	
[Performance] Model should have a date table (1 object)		2
Model	Model	
[Maintenance] Ensure tables have relationships (4 objects)		1
'Customers'	Table (Impo	
'Items'	Table (Impo	
'Orders'	Table (Impo	
'SalesOrderLines'	Table (Impo	
[Maintenance] Visible objects with no description (25 objects)		1
'Customers'	Table (Impo	
'Items'	Table (Impo	
'Orders'	Table (Impo	
'SalesOrderLines'	Table (Impo	
'Customers'[PK_Customers]	Column	
'Customers'[CustomerName]	Column	
'Items'[PK_Items]	Column	
'Items'[StockItemName]	Column	
'Items'[Brand]	Column	
'Items'[Size]	Column	
'Items'[SearchDetails]	Column	
'Orders'[PK_Orders]	Column	
'Orders'[OrderDate]	Column	
'Orders'[CustomerPurchaseOrderNumber]	Column	
'Orders'[Comments]	Column	
'Orders'[DeliveryInstructions]	Column	
'Orders'[InternalComments]	Column	
'SalesOrderLines'[FK_Orders]	Column	
'SalesOrderLines'[FK_Customers]	Column	
'SalesOrderLines'[FK_Items]	Column	
'SalesOrderLines'[Description]	Column	
'SalesOrderLines'[PackageTypeID]	Column	
'SalesOrderLines'[m_Quantity]	Column	
'SalesOrderLines'[m_UnitPrice]	Column	
'SalesOrderLines'[TaxRate]	Column	
[Formatting] Provide format string for "Date" columns (1 object)		1
'Orders'[OrderDate]	Column	

43 objects in violation of 6 Best Practice rules.

Analysis-Services/master/BestPracticeRu

Add...

Remove

^ v

Collection	Severity
https://raw.github...	2
https://raw.github...	3
https://raw.github...	2
https://raw.github...	2
https://raw.github...	1
https://raw.github...	2
https://raw.github...	2
https://raw.github...	3

New rule...

Clone rule

Edit rule...

Delete rule

Move to...

OK Cancel

Secret topic±

- I won't tell you...
- Keep watching for the end of the demo!





Demo time

Conclusion

- Using Tabular Editor (even the free version) you can automate a lot
- Naming conventions are necessary to help automate
- Even AI can be utilised to quickly generate all kinds of content



Bas Land

- BI Consultant since 2013
- Co-founder at Kimura Data Intelligence
- **Husband** to Anouk, **human** to Chester (our dachshund 😊), **soon-to-be-dad** to our expected baby (any time now)
- Purple belt Brazilian jiu-jitsu / grappling



Add me on LinkedIn



Technology for a data driven organisation

- Founded in 2019
- 10 Microsoft data specialists
- ‘Productised’ consultancy
 - Kimura Data Framework
 - Accelerator for Power BI projects

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Q&A



A big thank you to our *amazing partners*

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FINANCE & BI**

Kimura

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valcon

Tabular Editor

**GET
RESPONSIVE**

**9Δ nine
altitudes**

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PORTAL**

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Quanto
collective analytics

Thanks

Session Feedback



Event Feedback

