CTTT

★ Est.2023 ★

A Power BI Documentation System

– Not Just an Afterthought

David Kofod Hanna

Open GitHub

David Kofod Hanna
Senior Advisor @ twoday Data & AI

Connect on LinkedIn

Open Free Learning Resource Power BI Report

HEADLINE

robopack

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GOLD

XOPERO Backup&Recovery

Master Packager

Visit Tallinn

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PATCH MY PC

SILVER

ARROW

PROEKSPERT

ONLINE

QUBIX

ChangePilot by Empowering.Cloud

DYNAMICS MINDS powered by DOCENTRIC

ColorCloud HAMBURG

David Kofod Hanna

MVP Data Platform | Senior Advisor | Academy

Passionate about guiding self-service Power BI developers for more enterprise manageable concepts in a consumable and practical way

+200 courses as Academy Trainer and 10 years as consultant
Microsoft Data Platform MVP, Certified Trainer in Microsoft and Tabular Editor

Who loves documentation?

✋

Who writes documentation?

✋

Who updates documentation?

✋

Who reads documentation?

✋

Who can find documentation?

✋

Who can understand documentation?

✋

Who think AI and Agents will do this for you?

✋

A Power BI Documentation System

– Not Just an Afterthought

Needs

Who loves, writes, updates, reads, can find, can understand documentation?

Why?

Why do we need documentation and when and where?

Demo from Model to App

Practical and live-demo

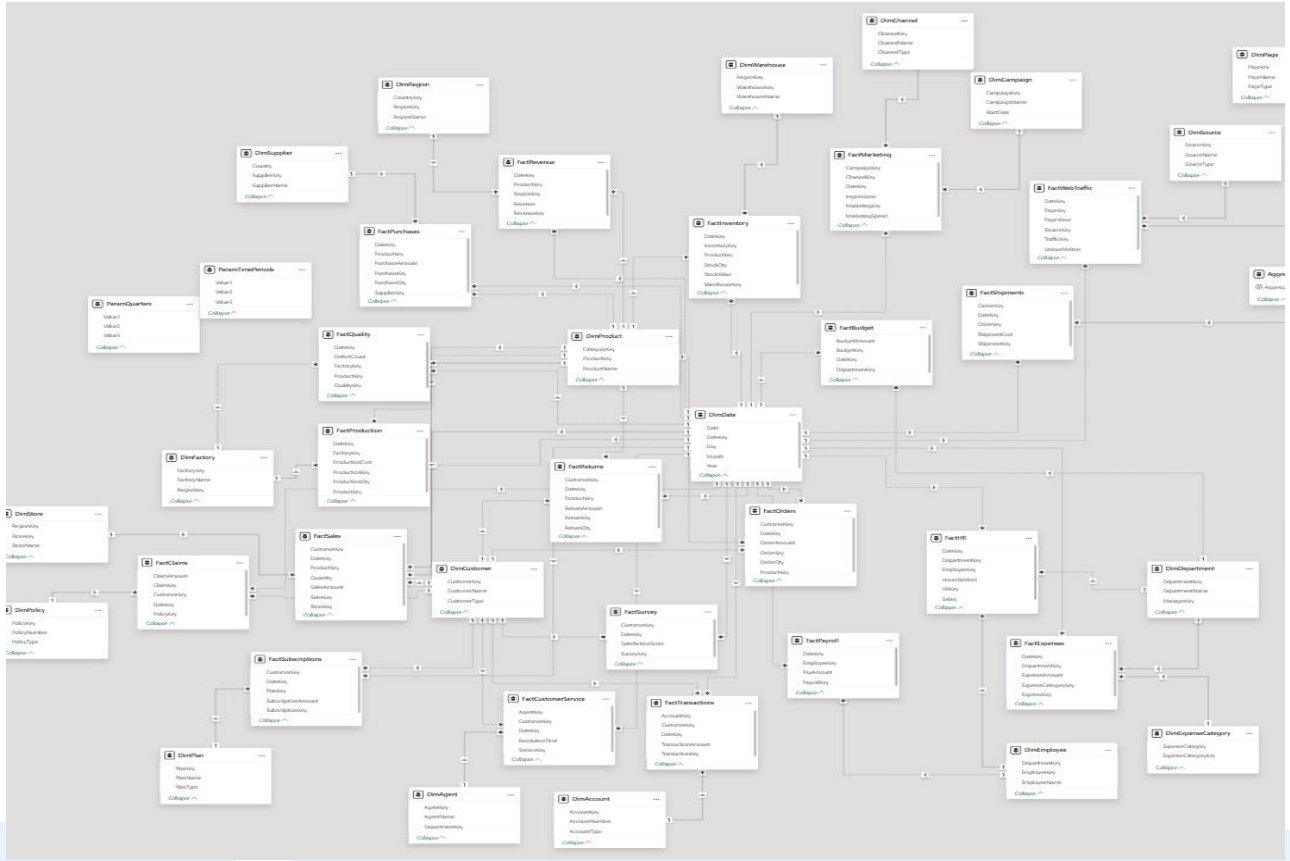
"Do you have a script for that?"

What can be scripted, should be automated, and what is manual?

A System to Take Home

Resources, link and where can I get all the scripts and system? What about AI and Agents?

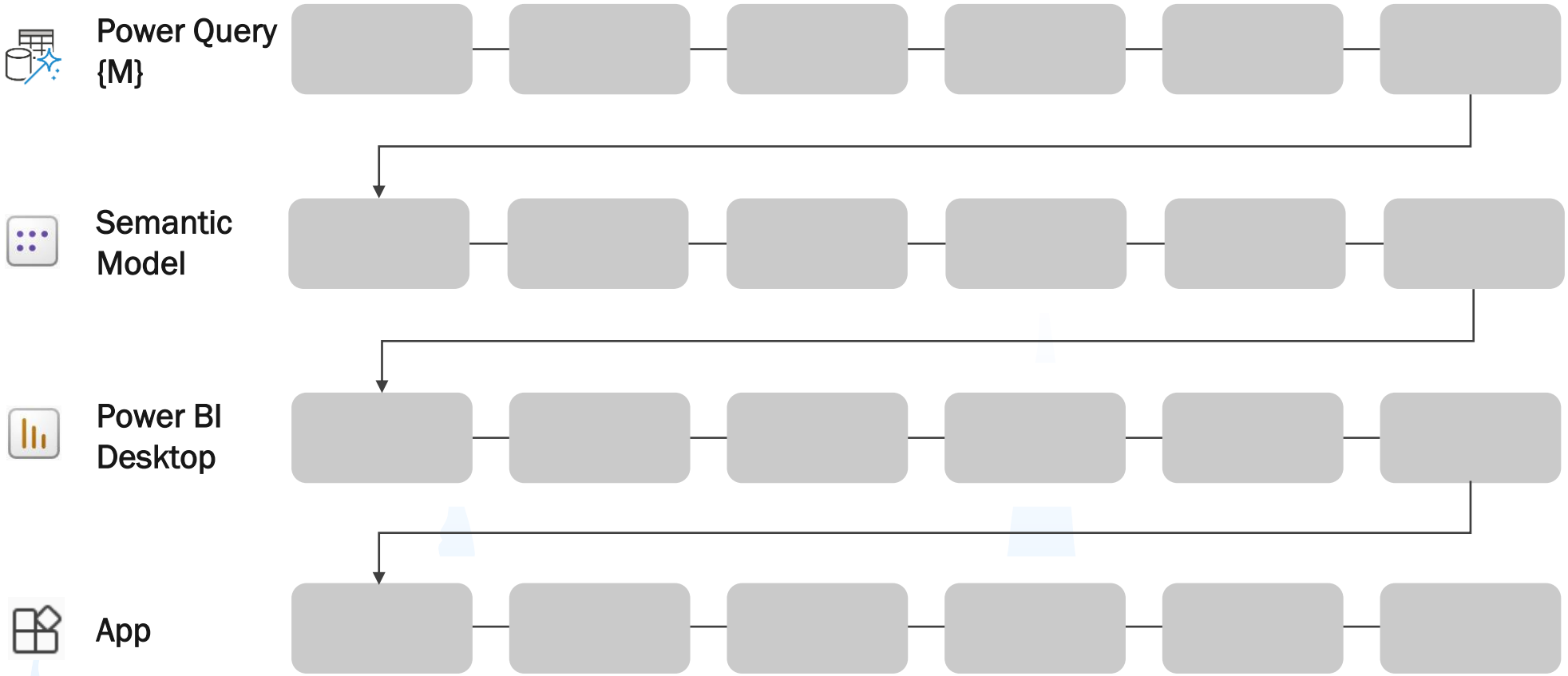
I CREATED 175 BOOKMARKS
AND NOW I'M LEAVING THE COMPANY...



“You do not rise to the level of your goals, you fall to the level of your systems.”

- James Clear, Atomic Habits

Power BI Documentation System – from Model to App



Purpose for docs:
Clear, Concise, Complete, Consistent, Correct, Consumable

Documentation and transparency from model to app

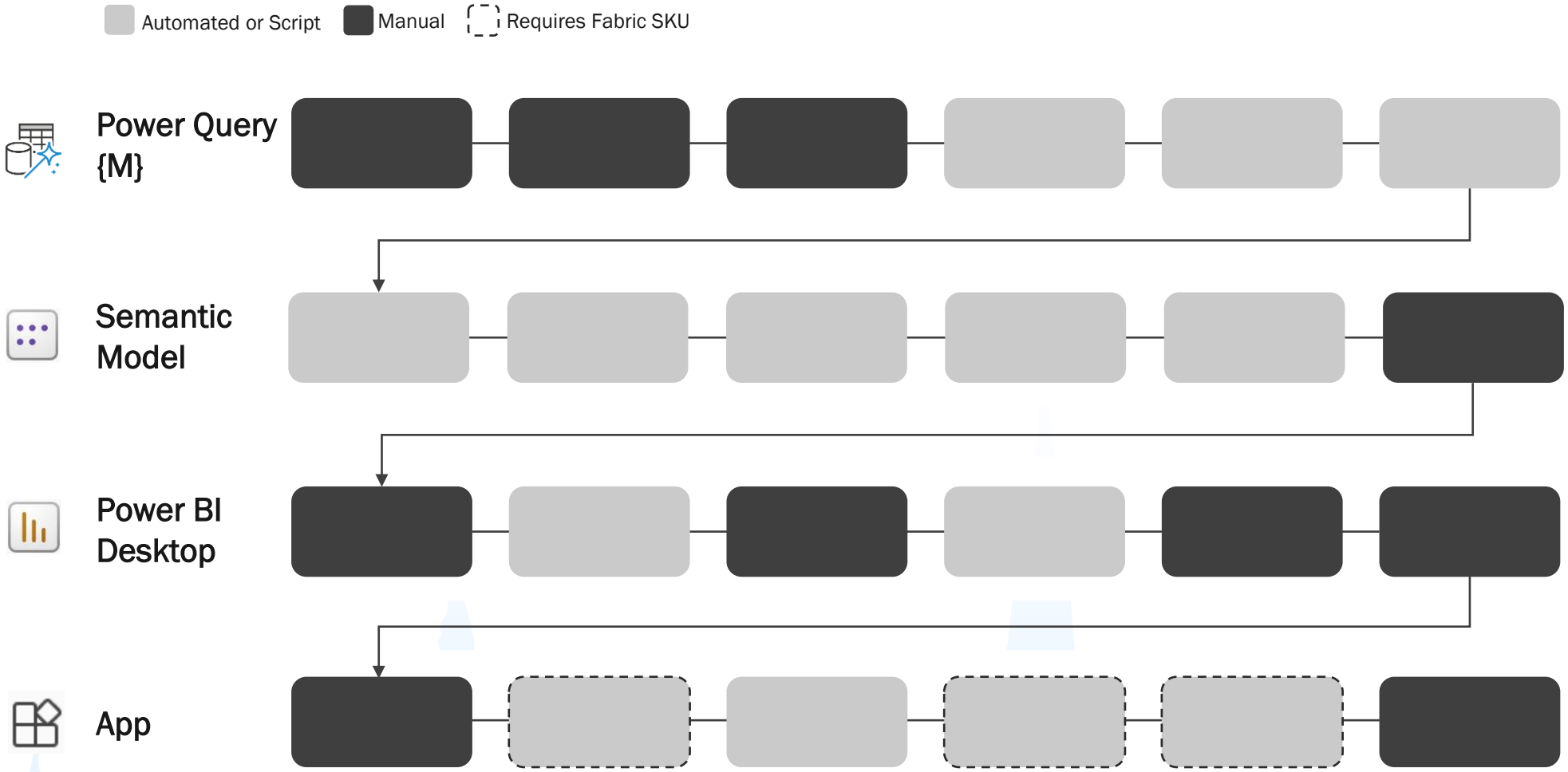
From report consumers to report developers to semantic model developers and data ingest

Best Practice Analyzer Rules to highlight violations and severity of best practices

Tabular Editor 2/3 for Semantic Model and DAX scripts

Semantic Link Labs in Fabric Notebooks for automation like never before

Power BI Documentation System – from Model to App



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Power BI Documentation System – from Model to App

Automated or Script | Manual | Requires Fabric SKU

Power Query {M}

- Query Folders
- Applied Steps (Rename + Properties)
- Table Properties
- Parameters for easy switch
- Last Refresh & Measure Table & Table.Profile
- Powerqueryfor matter.com

Semantic Model

- Format DAX
- Best Practice Analyzer
- INFO.VIEW Model Docs
- Display Folders for Measures & Columns
- Table Groups
- Semantic Model Docs

Power BI Desktop

- Model Layout View per Fact
- DAX Query View + VertiPaq Analyzer
- Unpin Ineffective Default Visuals
- Report Theme JSON Docs
- Report Visual elements in Selection Pane
- Report Docs

App

- Video and PDF in an App
- Notebooks in an app
- OneLake Catalog
- All into a Lakehouse
- External Tools & Copilot
- End-User Docs

Purpose for docs:
Clear, Concise, Complete, Consistent, Correct, Consumable

Atomic building blocks as reuseable assets for any solution

From report consumers to report developers to semantic model developers and data ingest

Best Practice Analyzer Rules to highlight violations and severity of best practices

Tabular Editor for Scripts

Semantic Link Labs in Fabric Notebooks for automation like never before

A Power BI Documentation System

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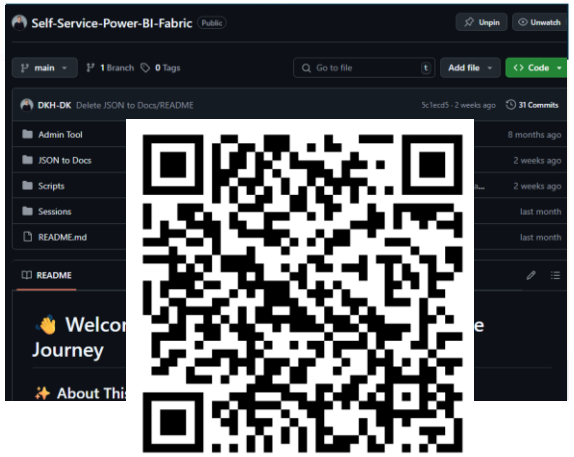
Released on **GitHub** and LinkedIn article

#DocumentationCanBeFun

1. Create M Parameter	C# Script Source File
2. Create Global Measure Table	C# Script Source File
3. Create Last Refresh	C# Script Source File
4. Format Power Query (M)	C# Script Source File
5. Format DAX Measures	C# Script Source File
6. Measure DAX Expression as Description	C# Script Source File
7. Model Documentation DAX Script	TE3DAXS File
7. Model Documentation DAX	Text Document
8. Display Folders for Measures & Columns	C# Script Source File
9. Create Table Groups TE3	C# Script Source File
9. Table Groups in Power BI Desktop with INFO.VIEW DAX	File
9. Table Groups in Power BI Desktop with INFO.VIEW DAX Script	TE3DAXS File
10. Best Practice Analyzer Rules incl. John Kerski PQ Doc Rules	JSON Source File
11. Measure Dependency	DAX Query File
11. Model Issues	DAX Query File
11. Model Summary	DAX Query File
11. VertiPaq Column	DAX Query File
11. VertiPaq Memory Size	DAX Query File
11. VertiPaq Partition	DAX Query File
11. VertiPaq Relationship	DAX Query File
11. VertiPaq Table	DAX Query File
12. DKH Self-Service Report Theme - Raw Template	JSON Source File
12. JSON to Power BI Docs - Raw Template	Microsoft.MicrosoftPowerBIDesktop
13. Report Analysis Notebook - Michael Kovalsky	Jupyter Source File
14. Measure Maze Dependency Sandeep Pawar	Jupyter Source File
15. Design Document - Sample Fragment 01 - General and Scope - V0.1	Microsoft Word Document
15. Design Document - Sample Fragment 02 - Workflow Issues and Business Rules - V0.2	Microsoft Word Document
15. Design Document - Sample Fragment 03 - Data - V0.3	Microsoft Word Document
15. Design Document - Sample Fragment 04 - Reports - V0.4	Microsoft Word Document
MsBIP - Power BI Documentation System - David Kofod Hanna - May 2025	Microsoft PowerPoint Presentation

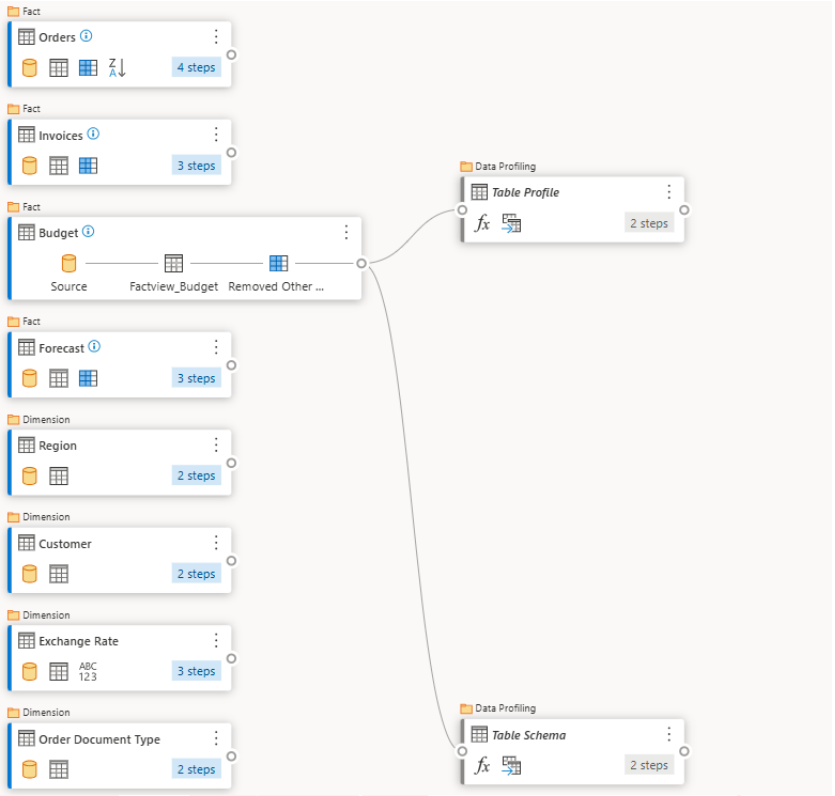


Open GitHub

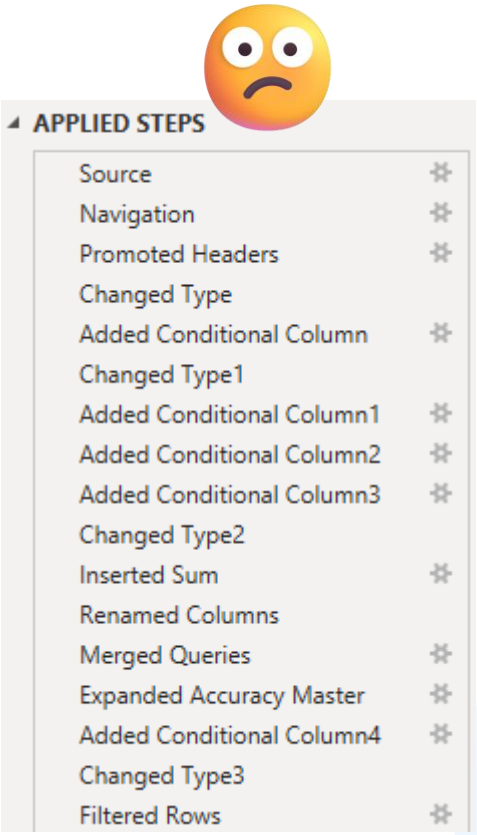
Query folders by type – and Diagram View in Dataflow Gen2

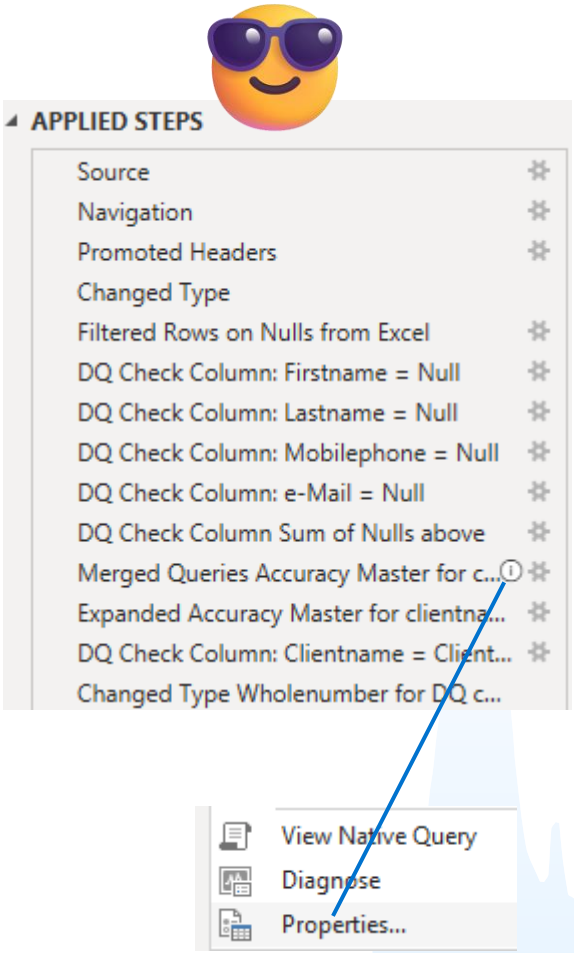
- Dimview Brands
- Dimview Budget Rate
- Dimview Customers
- Dimview Employees
- Dimview Exchange Rate
- Dimview Invoice Document Type
- Dimview Order Document Type
- Dimview Order Status
- Dimview Products
- Dimview Regions
- Factview Budget
- Factview Forecast
- Factview Invoices
- Factview Orders

- Fact [4]
  - Orders
  - Invoices
  - Budget
  - Forecast
- Dimension [8]
  - Date
  - Region
  - Product
  - Customer
  - Exchange Rate
  - Order Document Type
  - Order Status
  - Invoice Document Type
- Meta Data & Organize [3]
  - Last Refresh
  - Global Measures
  - Local Measures
- Functions & Parameters [1]
  - *fn Extended Date*
- Staging [2]
  - *Brands*
  - *Products*
- Data Profiling [2]
  - Table Profile
  - Table Schema



Applied Steps & Properties in step





My Standard:

Filter as early as possible (rows and columns)

Combine similar steps into one – instead of Changed Type1, Changed Type2, Changed Type3

Rename steps that are important for yourself or colleagues to understand
- Added Conditional Column
- Merge Queries
- Append Queries

Add more documentation for tooltip info at steps by right-clicking step and choose **Properties**– if you are needing more space than in the step name.

The **#""** in the steps can be avoided if you don't use space

Query Folding for SQL DB and OData connection and always **Roche's Maxim of Data Transformation**.

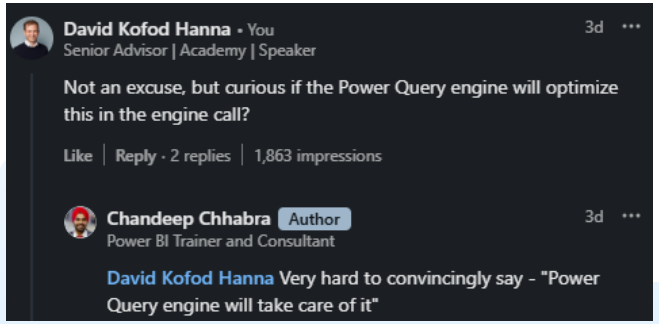
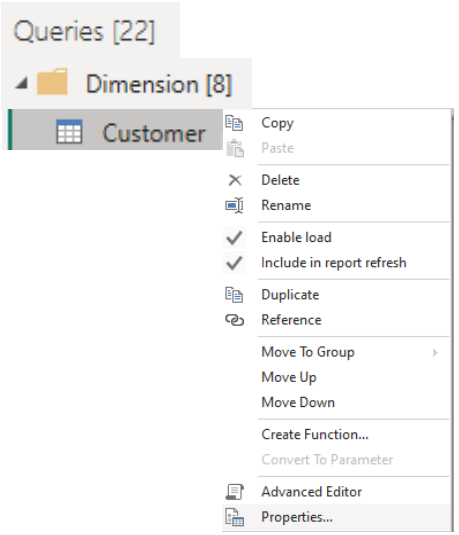
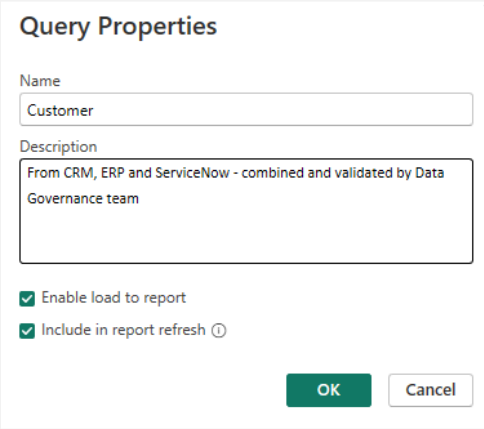


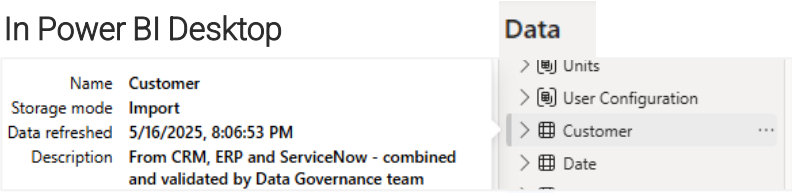
Table properties – add it once and see it everywhere



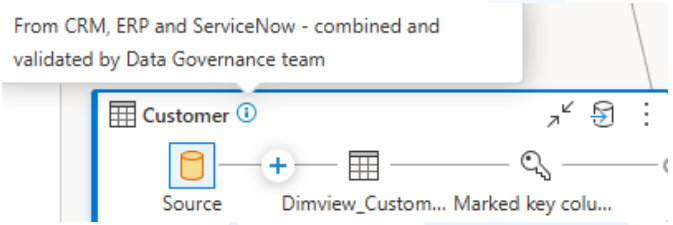


In Power Query Editor

In Power BI Desktop

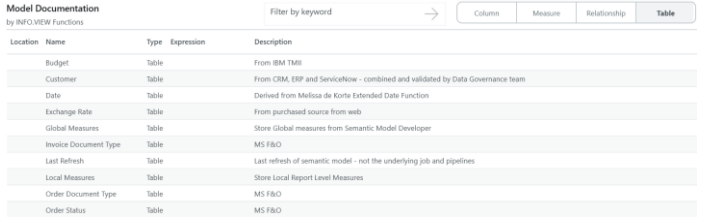


In Dataflows in the service

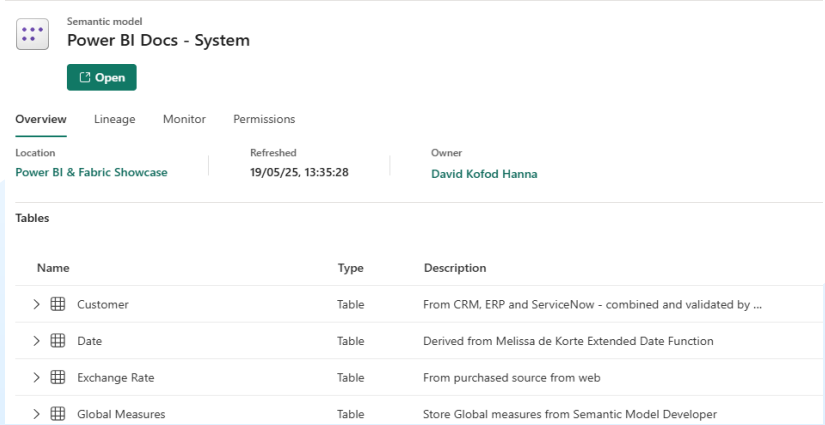


In TMDL

In INFO.VIEW DAX Functions



In OneLake catalog



Model Docs DAX INFO.VIEW

“There’s a script for that”

I ❤️ auto-updated documentation with INFO.VIEW DAX Functions

Semantic Model Information

Clear all slicers

Model Documentation
by INFO.VIEW Functions

Filter by keyword | Column | Measure | Relationship | Table

Location	Name	Type	Expression	Description
	Finance Transactions	Table		The wonderful sample data by Microsoft "Financials" from 2013
Finance Transactions	Revenue YTD	Measure	CALCULATE([Revenue], DATESYTD('Date'[Date]))	If blank, remember to filter on a year with data
	Budget	Table		From Excel workbook Owner: David Hanna
	Calendar	Table		Calendar table
	'Budget'[Date] *[<-]1 'Calen...	Relationship	'Budget'[Date] *[<-]1 'Calendar'[Date]	
	'Budget'[Date] *[<-]1 'Date'...	Relationship	'Budget'[Date] *[<-]1 'Date'[Date]	
	'Calendar'[Date] *[<-]1 'Loc...	Relationship	'Calendar'[Date] *[<-]1 'LocalDateTable_27428003-7dd4-49...	
	'Calendar'[Year-Month] *[<-...	Relationship	'Calendar'[Year-Month] *[<-]1 'LocalDateTable_ea79abb1-2...	
	Country	Table		
	Date	Table		
	'Date'[Date] *[<-]1 'LocalDa...	Relationship	'Date'[Date] *[<-]1 'LocalDateTable_2d9661bf-0097-4ec8-b...	
	'Finance Transactions'[Coun...	Relationship	'Finance Transactions'[Country Key] *[<-]1 'Country'[Countr...	
	'Finance Transactions'[Date]...	Relationship	'Finance Transactions'[Date] *[<-]1 'Calendar'[Date]	
	'Finance Transactions'[Seg...	Relationship	'Finance Transactions'[Segment Key] *[<-]1 'Segment'[Seg...	
	Segment	Table		
Budget	Budget	Column		
Budget	Date	Column		
Budget	Product	Column		
Budget	Total Budget	Measure	SUM(Budget[Budget])	
Calendar	Date	Column		
Calendar	Day	Column		
Calendar	Day Name	Column		

Model Documentation

```
Model Documentation =
VAR _columns =
    SELECTCOLUMNS(
        FILTER(
            INFO.VIEW.COLUMNS(),
            [Table] <> "Model Documentation" && NOT([IsHidden])
        ),
        "Type", "Column",
        "Name", [Name],
        "Description", [Description],
        "Location", [Table],
        "Expression", [Expression]
    )
VAR _measures =
    SELECTCOLUMNS(
        FILTER(
            INFO.VIEW.MEASURES(),
            [Table] <> "Model Documentation" && NOT([IsHidden])
        ),
        "Type", "Measure",
        "Name", [Name],
        "Description", [Description],
        "Location", [Table],
        "Expression", [Expression]
    )
VAR _tables =
    SELECTCOLUMNS(
        FILTER(
            INFO.VIEW.TABLES(),
            [Name] <> "Model Documentation" && [Name] <> "Calculations" && NOT([IsHidden])
        ),
        "Type", "Table",
        "Name", [Name],
        "Description", [Description],
        "Location", BLANK(),
        "Expression", [Expression]
    )
VAR _relationships =
    SELECTCOLUMNS(
        INFO.VIEW.RELATIONSHIPS(),
        "Type", "Relationship",
        "Name", [Relationship],
        "Description", BLANK(),
        "Location", BLANK(),
        "Expression", [Relationship]
    )
RETURN
    UNION(_columns, _measures, _tables, _relationships)
```

David Kofod Hanna: https://www.linkedin.com/pulse/model-documentation-automation-dax-scripts-tabular-editor-hanna-7bhyf/

Display folders for columns

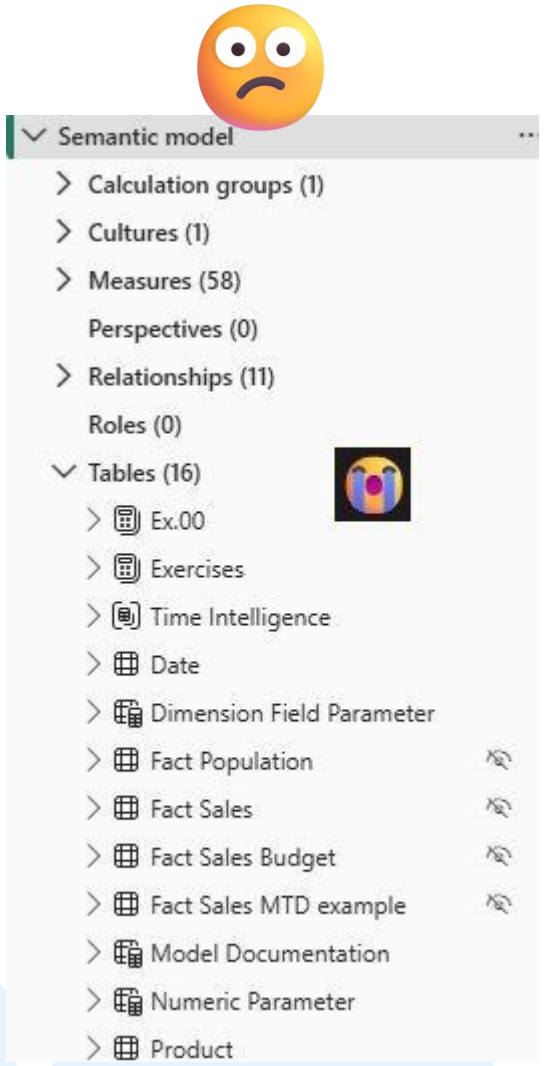
- Factview Invoices
  - Billing Date
  - Billing Document Line Item Number
  - Billing Document Number
  - Billing Document Type Code
  - Customer Key
  - Delivery Cost
  - DWCreatedDate
  - Freight
  - Late Delivery Penalties
  - Local Currency
  - Net Invoice COGS
  - Net Invoice Cost
  - Net Invoice Quantity
  - Net Invoice Value
  - OTD Indicator
  - Overdue Payment Penalties
  - Product Key
  - Ship Date
  - Taxes & Commercial Fees

- Invoices
  - Attributes
  - Dates
  - Flags
  - Key
  - Numeric

“There’s a script for that”

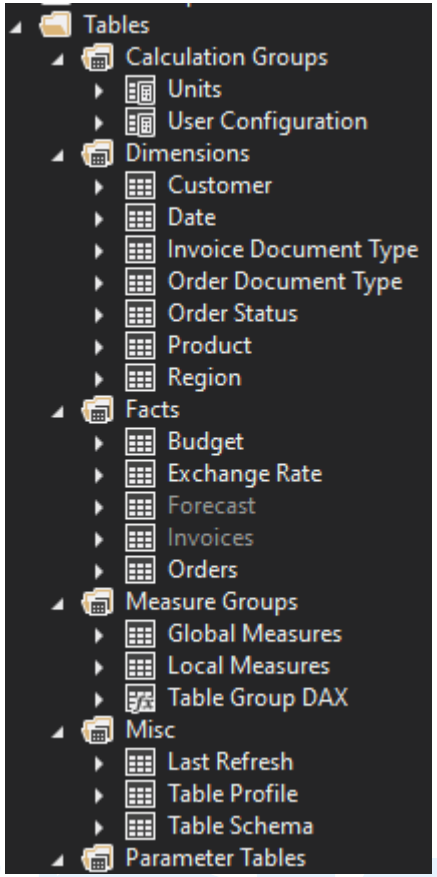
```
//Go through each table in the model
foreach(var table in Model.Tables)
{
   if(table.Name != "Date"){
    //First look at columns
     foreach( var column in table.Columns)
        {
        var keySuffix = "Key";
        var columnDateType = column.DataType.ToString();
            //DWCreatedDate column should be hidden in a sepearte folder
            if( column.Name == "DWCreatedDate")
            {
                column.DisplayFolder = "Attributes\\Metadata";
                column.IsHidden = true;
            }
            //Numeric columns should not be aggregated and float (double) data type should not be used
            if(column.DataType == DataType.Double || column.DataType == DataType.Decimal ||  column.DataType == DataType.Int64)
            {
                column.DisplayFolder = "Numeric";
                column.SummarizeBy = AggregateFunction.None;
                if(column.DataType == DataType.Double)
                {
                    column.DataType = DataType.Decimal;
                }
            }
            //Boolean data types into their own folder
            if(column.DataType == DataType.Boolean)
            {
                column.DisplayFolder = "Flags";
            }
            if(column.DataType == DataType.String)
            {
                column.DisplayFolder = "Attributes";
            }
            //Keys go into their own display folder, should not be aggregrated and hidden.
            if(column.UsedInRelationships.Any())
            {
                column.DisplayFolder = "Key";
                column.SummarizeBy = AggregateFunction.None;
                column.IsHidden = true;
            }
            //Date keys get their own folder and other dates go in attributes
           if( columnDateType == "DateTime" && column.Name != "DWCreatedDate")
            {
                if(column.UsedInRelationships.Any())
                {
                    column.DisplayFolder = "Key";
                    column.IsHidden = true;
                }
                else{
                    column.DisplayFolder = "Dates";
```

Table Groups in Tabular Editor 3



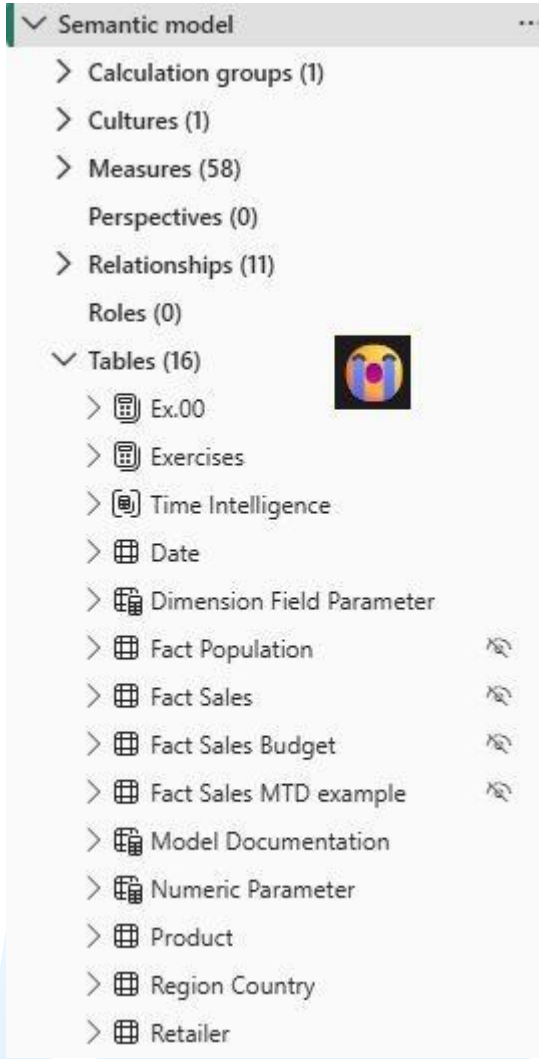
"There's a script for that"

```
// ************ CREATE TABLE GROUPS **************

// Loop through all tables in the model:
foreach (var table in Model.Tables)
{
    if (table is CalculationGroupTable)
    {
        // Assign table group for calculation groups:
        table.TableGroup = "Calculation Groups";
    }
    else if (!table.UsedInRelationships.Any() && table.Measures.Any(m => m.IsVisible))
    {
        // Tables containing visible measures, but no relationships to other tables:
        table.TableGroup = "Measure Groups";
    }
    else if (table.UsedInRelationships.All(r => r.FromTable == table) && table.UsedInRelationships.Any())
    {
        // Tables exclusively on the "many" side of relationships:
        table.TableGroup = "Facts";
    }
    else if (!table.UsedInRelationships.Any() && table is CalculatedTable && !table.Measures.Any())
    {
        // Tables without any relationships that are calculated tables
        // and do not have measures:
        table.TableGroup = "Parameter Tables";
    }
    else if (table.UsedInRelationships.Any(r => r.ToTable == table))
    {
        // Tables on the "one" side of relationships:
        table.TableGroup = "Dimensions";
    }
    else
    {
        // All other tables:
        table.TableGroup = "Misc";
    }
}
```



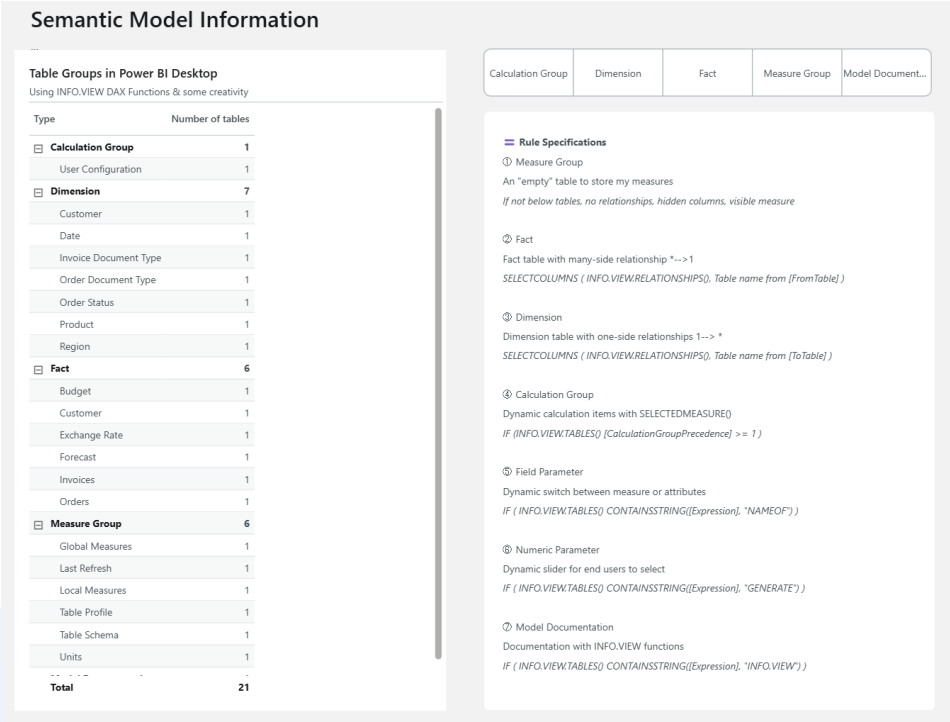
https://docs.tabulareditor.com/common/CSharpScripts/Beginner/script-create-table-groups.html

Table Group in Power BI Desktop with INFO.VIEW



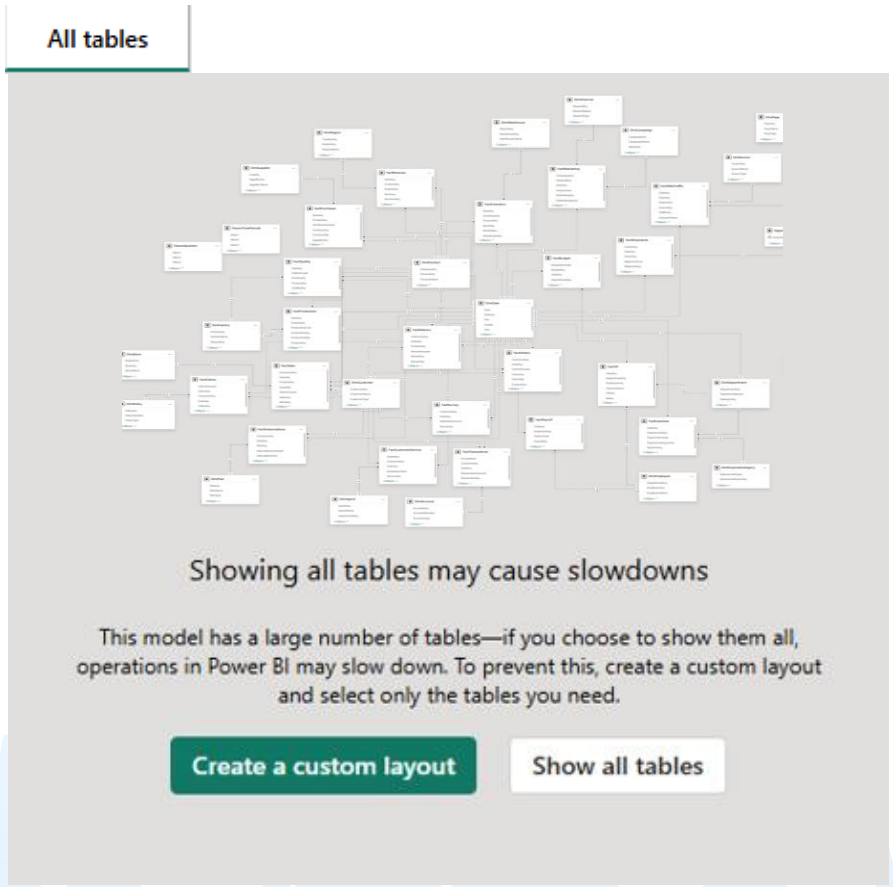
"There's a script for that"

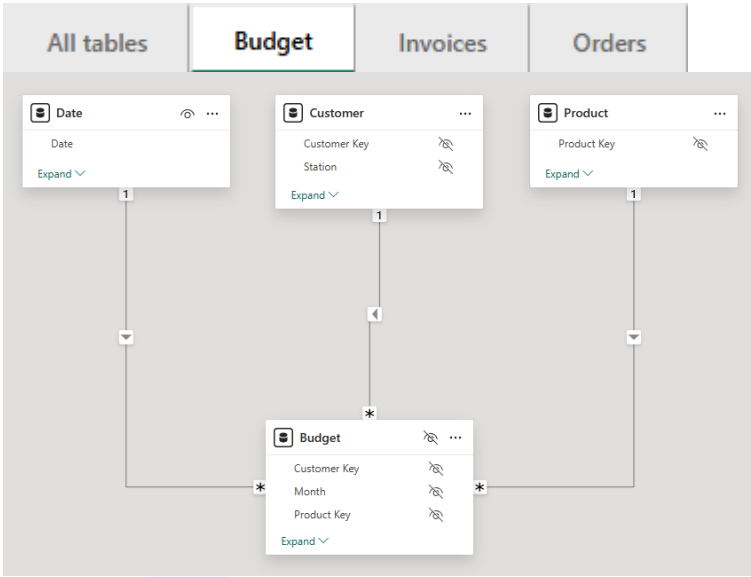
Description	Type	Order	Table Name
Classified as Measure Group	Measure Group	1	Exercises
Classified as Measure Group	Measure Group	1	Ex.00
Fact with many-side relationship	Fact	2	Fact Sales
Fact with many-side relationship	Fact	2	Fact Sales Budget
Fact with many-side relationship	Fact	2	Fact Population
Fact with many-side relationship	Fact	2	Fact Sales MTD example
Dimension with one-side relationship	Dimension	3	Sales Size
Dimension with one-side relationship	Dimension	3	Retailer
Dimension with one-side relationship	Dimension	3	Product
Dimension with one-side relationship	Dimension	3	Date
Dimension with one-side relationship	Dimension	3	Region Country
Dynamic calculation items	Calculation Group	4	Time Intelligence
Dynamic switch between measure or attributes	Field Parameters	5	Dimension Field Parameter
Dynamic slider for end users to select	Numeric Parameter	6	Parameter
Documentation with INFO.VIEW functions	Model Documentation	7	Model Documentation



David Kofod Hanna: https://www.linkedin.com/pulse/table-groups-power-bi-desktop-infoview-david-kofod-hanna-aotof/

One Model View Per Fact + Disconnected tables

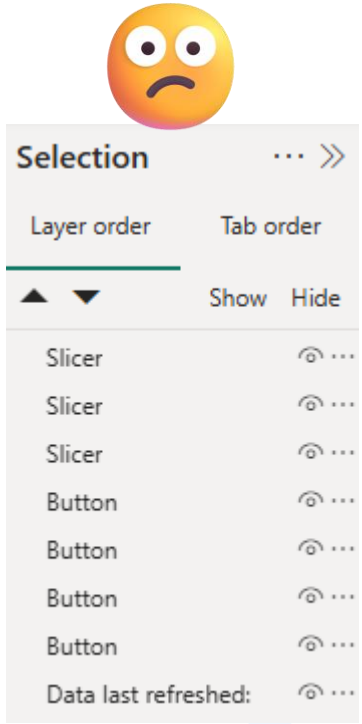




Disconnected Tables

- Measure groups
- Calculation groups
- Field parameters
- Numeric parameter
- Model documentation
- RLS

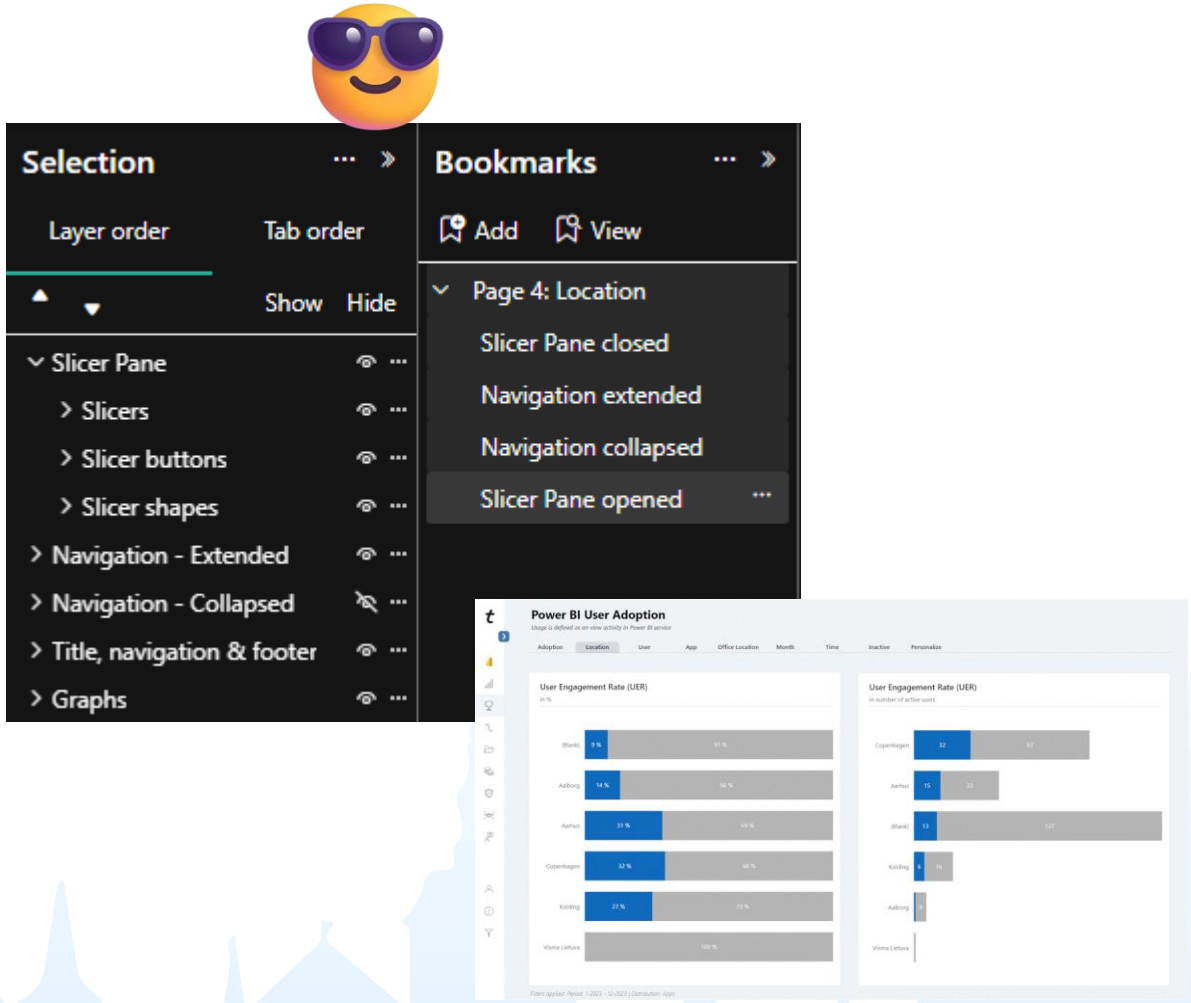
Report Visual Elements



David Kofod Hanna: https://www.linkedin.com/pulse/introducing-bookmark-killer-david-kofod-hanna-90quf/

📊 Report Visual Elements

- especially important if using bookmarks



💡 My Standard:

For non-visual objects:
Use the visual object as Prefix + "-" and then a meaningful name for the object "Slicer – Year" or "Image – Logo"
Relevant for: Slicer, Textbox, Shapes, Images, Button, Page Navigator, Bookmark Navigator, etc.

For **visual elements** the name of the object is the Title in the visual, thus can't be prefixed with Bar chart, etc.

Group visual elements into e.g.
"Slicer Pane",
"Title, Navigation & Footer",
"KPI's"
"Graphs".

Layer order from top left corner to bottom right corner
(F or Z structure)

For use cases where only **Bookmarks** can solve the report user need and counting the total cost of ownership, use Selected Visuals and the Group of visuals.
Group Bookmarks together and name it prefix of page no and page name **"Page 4: Sales Region Analysis"**

David Kofod Hanna: https://www.linkedin.com/pulse/introducing-bookmark-killer-david-kofod-hanna-90quf/

DAX Query View for testing

DAX queries will be saved to your model They won't be visible when published in the Power BI service. Learn more

Run | Update model with changes (0)

```
// Author - Hariharan Rajendran
// Name - Model Summary in DAX Query View
// Version - 1.0
// Contact - https://www.linkedin.com/in/imhariharanr/
//This query will provide details about your model like propery, value and comment to execute the DAX query to see the complete list
//Define the properties
EVALUATE
    VAR _tableCount = COUNTROWS(INFO.TABLES())
    VAR _columnCount = COUNTROWS(INFO.COLUMNS())
    VAR _CalcColumnCount = COUNTROWS(FILTER(
        INFO.COLUMNS(),
        [Type] = 2
    ))
    VAR _Measures = COUNTROWS(INFO.MEASURES())
    VAR _Relationships = COUNTROWS(INFO.RELATIONSHIPS())
    VAR _Composite = IF(
        COUNTROWS(SUMMARIZE(
            INFO.VIEW.TABLES(),
            [StorageMode]
        )) > 1,
        "Yes",
        "No"
    )
    VAR _daxTables = COUNTROWS(FILTER(
```

Model Summary

	[Property]	[Value]	[Comment]
1	Tables	21	EVALUATE INFO.TABLES()
2	Columns	197	EVALUATE INFO.COLUM...
3	--CalculatedColumns	0	EVALUATE FILTER(INFO....
4	--DirectColumns	197	EVALUATE FILTER(INFO....
5	Measures	17	EVALUATE INFO.MEASU...
6	Relationships	13	EVALUATE INFO.RELATI...
7	IsCompositeModel	No	EVALUATE INFO.VIEW.T...
8	DAXTables	2	EVALUATE FILTER(INFO....
9	IsPartitioned	No	EVALUATE FILTER(INFO....
10	Perspectives	0	EVALUATE FILTER(INFO....
11	Calculation Groups	2	EVALUATE FILTER(INFO....
12	Roles	0	EVALUATE FILTER(INFO....
13	PBIDesktopVersion	2.142.1277.0 (25.04)+014fde45...	EVALUATE FILTER(INFO....

Model Issues

	[Property]	[Value]	[Comment]	[Status]
1	Is Partition Required?	Yes	EVALUATE VAR _dt_parti...	Fail
2	Dedicated Date Table	No	EVALUATE FILTER(INFO....	Fail
3	Is there any Redundant Columns	Yes	EVALUATE FILTER(GROU...	Fail
4	Are descriptions added?	No	EVALUATE FILTER(INFO....	Fail
5	Calculated Columns		EVALUATE FILTER(INFO....	Pass
6	Local Date Tables (Auto Time Intelligence)	0	EVALUATE FILTER(INFO....	Pass
7	In Active Relationships	0	EVALUATE FILTER(INFO....	Pass
8	Bi-directional Relationships	0	EVALUATE FILTER(INFO....	Pass
9	Many to Many Relationships	0	EVALUATE FILTER(INFO....	Pass

Measure Dependency

	[MeasureName]	[Expression]	[SourceMeasure]	[SourceExpression]	[Type]	[ReferenceTable]	[ReferenceObject]
1	Net Invoice Value YTD	CALCULATE([Sum of Ne...	Sum of Net Invoice Value	SUM('Invoices'[Net Invo...	TABLE	Invoices	Invoices
2	Net Invoice Value YTD	CALCULATE([Sum of Ne...	Sum of Net Invoice Value	SUM('Invoices'[Net Invo...	COLUMN	Invoices	Net Invoice Value
3	Net Invoice Value MTD	CALCULATE([Sum of Ne...	Sum of Net Invoice Value	SUM('Invoices'[Net Invo...	TABLE	Invoices	Invoices
4	Net Invoice Value MTD	CALCULATE([Sum of Ne...	Sum of Net Invoice Value	SUM('Invoices'[Net Invo...	COLUMN	Invoices	Net Invoice Value
5	Net Invoice Value QTD	CALCULATE([Sum of Ne...	Sum of Net Invoice Value	SUM('Invoices'[Net Invo...	TABLE	Invoices	Invoices
6	Net Invoice Value QTD	CALCULATE([Sum of Ne...	Sum of Net Invoice Value	SUM('Invoices'[Net Invo...	COLUMN	Invoices	Net Invoice Value
7	Number of tables	COUNTROWS('Table Gr...			CALC_TABLE	Table Group DAX	Table Group DAX
8	Sum of Total Budget	SUM('Budget'[Total Bud...			TABLE	Budget	Budget
9	Sum of Total Budget	SUM('Budget'[Total Bud...			COLUMN	Budget	Total Budget
10	Sum of Net Order Quan...	SUM('Orders'[Net Order...			TABLE	Orders	Orders

VertiPaq Memory Size

	[Size in MB]
1	1017.25

Visible in .PBIP and for easy copy/paste

System.SemanticModel > DAXQueries >

.pbi	
DAXQueries	
.platform	
definition.pbism	
diagramLayout	
model	

.pbi	File folder
Measure Dependency	DAX Query File
Model Issues	DAX Query File
Model Summary	DAX Query File
VertiPaq Columns	DAX Query File
VertiPaq Memory Size	DAX Query File
VertiPaq Partitions	DAX Query File
VertiPaq Relationships	DAX Query File
VertiPaq Table	DAX Query File

Hariharan Rajendran: https://www.linkedin.com/feed/update/urn:li:activity:7307061810375925760/
https://github.com/alexbadiu-insightsinmotion/PBI-Documentation/tree/main/DAX%20Query%20View

Embed Notebooks for technical documentation

```
#Author and MVP: Sandeep Pawar
#https://fabric.guru/measure-maze-visualizing-measure-dependencies-using-semantic-link-network-analysis
```

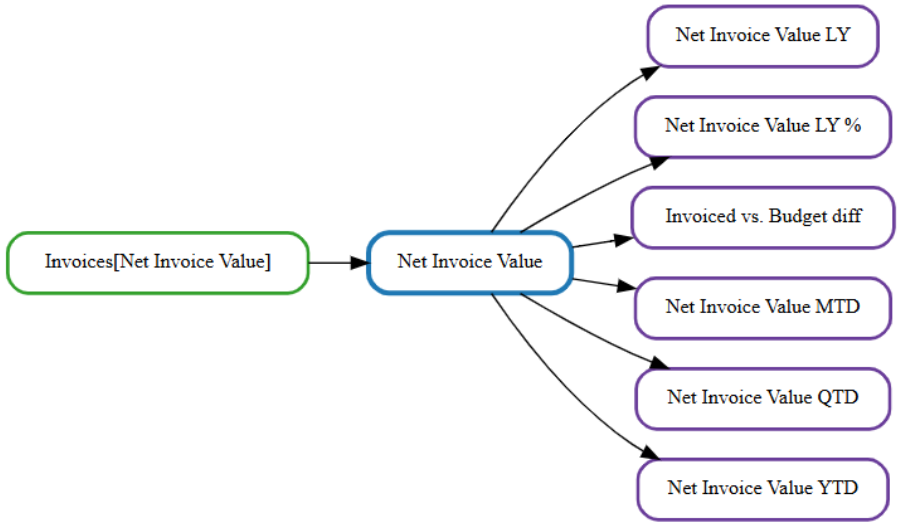
+ Code + Markdown

```
#Install Measure Maze in a Fabric Notebook
!pip install https://github.com/pawarbi/MeasureMaze/raw/main/measuremaze-0.0.1-py3-none-any.whl --q
```

✓

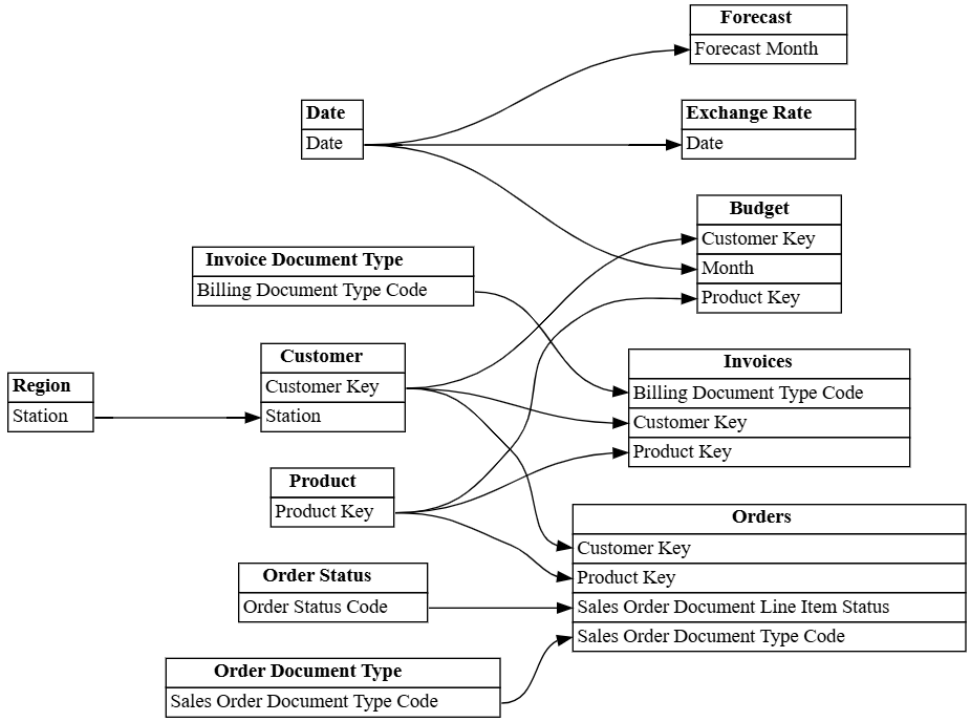
```
#Change the layout
all_objects.plot('Net Invoice Value', layout='horizontal')
```

[7] ✓ - Command executed in 375 ms by David Kofod Hanna on 1:02:35 PM, 8/12/25




```
#Semantic Link can also be used to plot relationships between tables.

from sempy import fabric
from sempy.relationships import plot_relationship_metadata


relationships = fabric.list_relationships(workspace=ws, dataset=ds)
plot_relationship_metadata(relationships)

```

[10] ✓ - Command executed in 1 sec by David Kofod Hanna on 1:02:59 PM, 8/12/25



Sandeep Pawar: https://fabric.guru/measure-maze-visualizing-measure-dependencies-using-semantic-link-network-analysis

Notebooks for ReportWrapper Semantic Link

Table view

	DataFrame	Description	Count
1	df_pages	Report pages (name, display name, hidden status)	19
2	df_bookmarks	All bookmarks in the report	16
3	df_visuals	All visuals (type, page, position)	356
4	df_paths	All definition file paths	473
5	df_report_filters	Report-level filters (apply to all pages)	2
6	df_page_filters	Page-level filters (apply to specific pages)	1
7	df_visual_filters	Visual-level filters (apply to specific visuals)	77
8	df_custom_visuals	Custom visuals used in report	0
9	df_report_level_...	Report-level measures (should migrate to model)	0
10	df_visual_calcula...	Visual calculations (new feature)	1
11	df_visual_interac...	Modified visual interactions	0
12	df_semantic_mo...	All semantic model objects used	408
13	df_visual_objects	Objects used in each visual	328

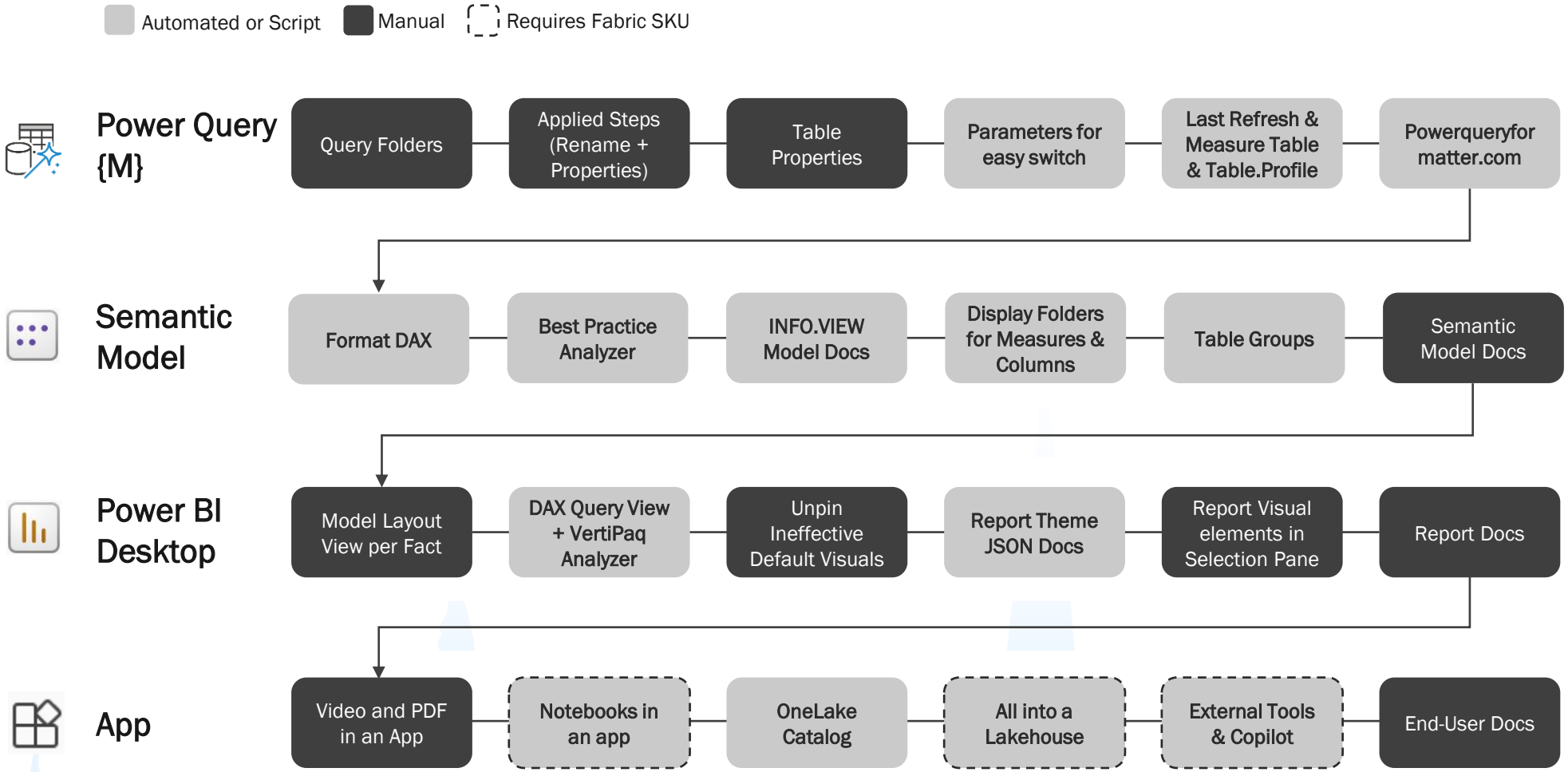
```python
# Collect all report data using list_ functions with error handling
print("Collecting report metadata...")

try:
    # Basic report structure
    print("  → Fetching pages...")
    df_pages = rpt.list_pages()

    print("  → Fetching bookmarks...")
    df_bookmarks = rpt.list_bookmarks()

    print("  → Fetching visuals...")
    df_visuals = rpt.list_visuals()

    print("  → Fetching definition paths...")
    df_paths = rpt.list_paths()

    # Filters
    print("  → Fetching report filters...")
    df_report_filters = rpt.list_report_filters(extended=False)

    print("  → Fetching page filters...")
    df_page_filters = rpt.list_page_filters(extended=False)

    print("  → Fetching visual filters...")
    df_visual_filters = rpt.list_visual_filters(extended=False)

    # Advanced features
    print("  → Fetching custom visuals...")
    df_custom_visuals = rpt.list_custom_visuals()

    print("  → Fetching report-level measures...")
    df_report_level_measures = rpt.list_report_level_measures()

    print("  → Fetching visual calculations...")
    df_visual_calculations = rpt.list_visual_calculations()

    print("  → Fetching visual interactions...")
    df_visual_interactions = rpt.list_visual_interactions()

    # Semantic model objects
    print("  → Fetching semantic model objects...")
    df_semantic_model_objects = rpt.list_semantic_model_objects(extended=False)

    print("  → Fetching visual objects...")
    df_visual_objects = rpt.list_visual_objects(extended=False)

    print("\n✓ Data collection complete!")

except Exception as e:
    print(f"\n✗ Error collecting data: {str(e)}")
    raise
```

✓ 2 min 17 sec - Command executed in 2 min 17 sec 608 ms by David Kofod Hanna on 7:15:49 PM, 12/04/25

```python
# Quick overview of all collected dataframes
print("="*70)
print("DATAFRAME COLLECTION OVERVIEW")
print("="*70)

dataframes_info = {
    'DataFrame': [
        'df_pages',
        'df_bookmarks',
        'df_visuals',
        'df_paths',
        'df_report_filters',
        'df_page_filters',
        'df_visual_filters',
        'df_custom_visuals',
        'df_report_level_measures',
        'df_visual_calculations',
        'df_visual_interactions',
        'df_semantic_model_objects',
        'df_visual_objects'
    ],
    'Description': [
        'Report pages (name, display name, hidden status)',
        'All bookmarks in the report',
        'All visuals (type, page, position)',
        'All definition file paths',
        'Report-level filters (apply to all pages)',
        'Page-level filters (apply to specific pages)',
        'Visual-level filters (apply to specific visuals)',
        'Custom visuals used in report',
        'Report-level measures (should migrate to model)',
        'Visual calculations (new feature)',
        'Modified visual interactions',
        'All semantic model objects used',
        'Objects used in each visual'
    ],
    'Count': [
        len(df_pages),
        len(df_bookmarks),
        len(df_visuals),
        len(df_paths),
        len(df_report_filters),
        len(df_page_filters),
        len(df_visual_filters),
        len(df_custom_visuals),
        len(df_report_level_measures),
        len(df_visual_calculations),
        len(df_visual_interactions),
        len(df_semantic_model_objects),
        len(df_visual_objects)
    ]
}

df_overview = pd.DataFrame(dataframes_info)
display(df_overview)

print("\n" + "="*70)
print("✓ All dataframes successfully collected!")
print("="*70)
```

✓ <1 sec - Command executed in 1 sec 6 ms by David Kofod Hanna on 7:49:06 PM, 12/04/25

Power BI Documentation System – from Model to App



Purpose for docs:
Clear, Concise, Complete, Consistent, Correct, Consumable

Documentation and transparency from model to app

From report consumers to report developers to semantic model developers and data ingest

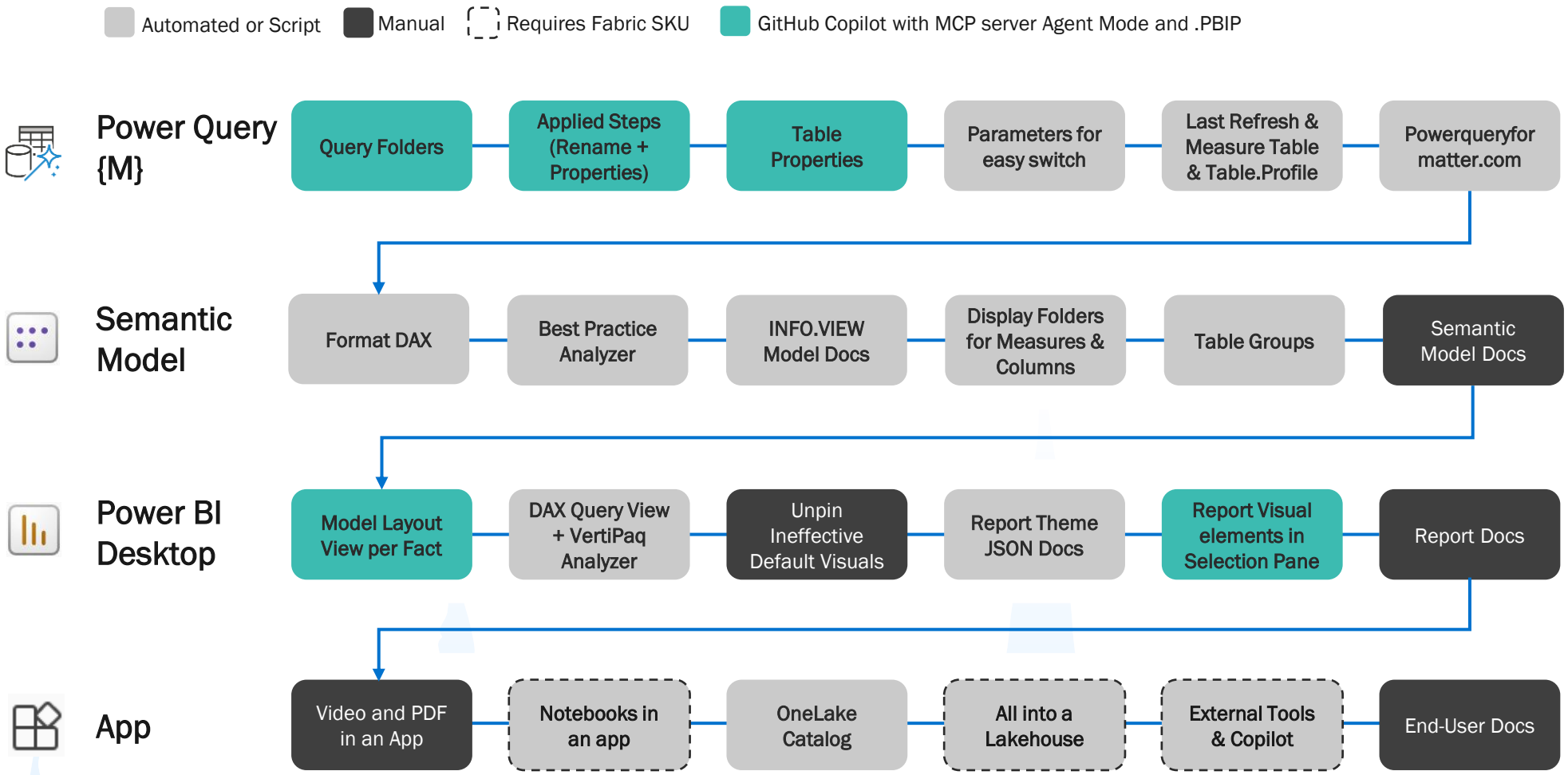
Best Practice Analyzer Rules to highlight violations and severity of best practices

Tabular Editor 2/3 for Semantic Model and DAX scripts

Semantic Link Labs in Fabric Notebooks for automation like never before

🪄 AI Agent, please write my documentation

Power BI Documentation System – from Model to App



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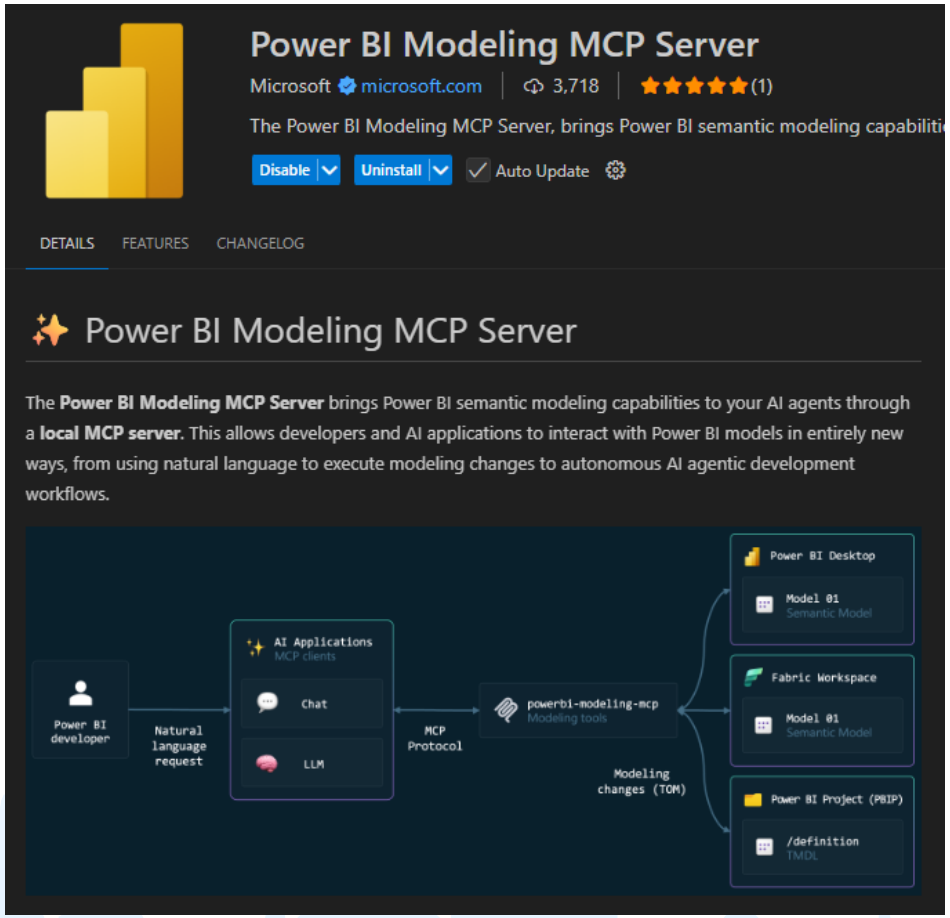
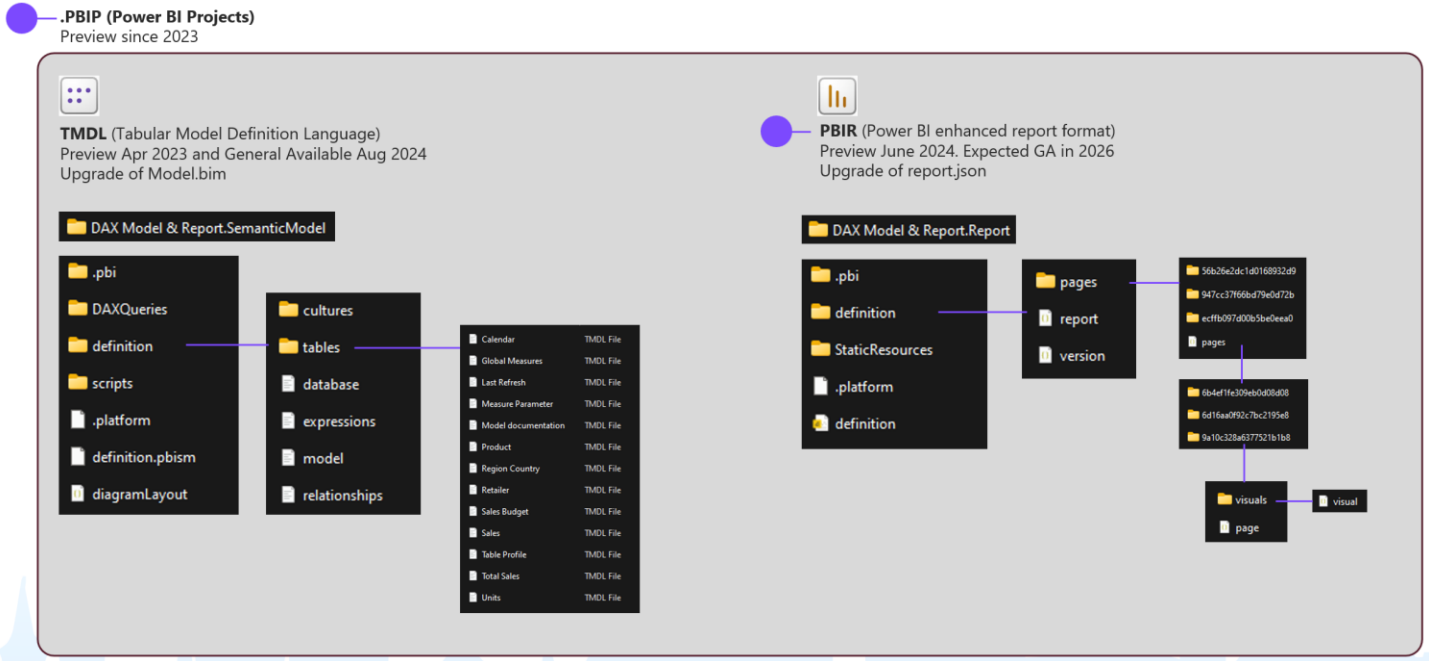
Semantic Link Labs in Fabric Notebooks for automation like never before

Agentic Power BI Development

with GitHub Copilot and Power BI Modeling MCP Server in Visual Studio Code





Get Started Guide by David Kofod Hanna:
https://www.linkedin.com/pulse/get-started-power-bi-modeling-mcp-server-developers-david-kofod-hanna-awatf

File Edit Selection View Go ... Search

Welcome

Visual Studio Code

Editing evolved

Start

- New File...
- Open File...
- Open Folder...
- Clone Git Repository...
- Connect to...
- Generate New Workspace...

Walkthroughs

GitHub C... Updated

More...

Recent

- Getting Started Series PBIP x VS Co...
- Documentation System C:\Users\...
- Desktop C:\Users\DavidKofodHa...
- Self-Service-Power-BI-Fabric [GitHu...
- Git DKH C:\Users\DavidKofodHa...
- More...

Show welcome page on startup

CHAT

Connect to open power bi desktop Power bi docs raw

I'll help you connect to an open Power BI Desktop instance. Let me use the Power BI model connection tool to connect to a local Power BI Desktop instance.

> Ran `connection_operations` – powerbi-modeling-mcp (MCP Server) ✓

Auto approved for this profile (Edit)

Great! I found an open Power BI Desktop instance with the file "Power BI Docs - Raw". Now let me connect to it:

> Ran `connection_operations` – powerbi-modeling-mcp (MCP Server) ✓

Auto approved for this profile (Edit)

Perfect! I've successfully connected to your Power BI Desktop file "Power BI Docs - Raw". The connection is now established and ready to use.

You can now:

- Query and analyze the data model
- View tables, measures, columns, and relationships
- Execute DAX queries
- Modify the model metadata
- And much more!

What would you like to do with this Power BI model?

Add Context...

Remove table prefix of Factview and Dimview
Display folders for columns (Key, Attribute, Numeric)
Hide Key columns
Hide all columns on Fact table
SUM Measures of numeric columns
Add Measure Descriptions

Agent · Claude Sonnet 4.5

Power BI Docs - Raw - Power BI Desktop

File Home Insert Modeling View Optimize Help External tools

Paste · Data · Queries · Insert · Calculations · Sensitivity · Publish · Prep data for Copilot AI

Clipboard · Sensitivity · Share · Copilot

Filters

Data

Search

- Dimview Brands
- Dimview Customers
- Dimview Exchange Rate
- Dimview Invoice Document Type
- Dimview Order Document Type
- Dimview Order Status
- Dimview Products
- Dimview Regions
- Factview Budget
- Factview Forecast
- Factview Invoices
- Factview Orders

Page 1

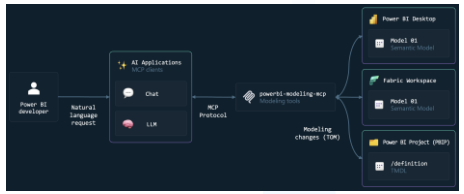
Page 1 of 1 · 26%

ENG 21.45 27/11/2025

PBIR: “What about me?”

TMDL
.SemanticModel

Power BI Modeling MCP Server
& Tabular Editor for semantic models…

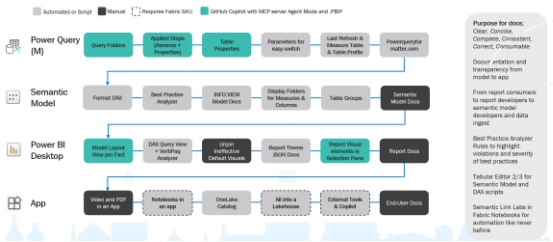


PBIR
.Report

What about me?

Build your own custom Power BI Report Agent

Let me help you
GitHub Copilot Assistant
Instructions.json



PBIR
.Report

Microsoft **Fabric Roadmap**

Planned

General availability
Q3 2026

Developer Mode GA

Developer Mode GA

We will be GAing developer mode in Desktop which will include the new PBIR format being default on for everyone. More details to follow.

Release Date:
Q3 2026

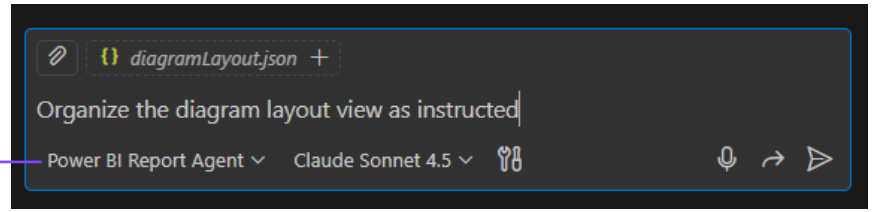
Thank you

Fabric Roadmap: https://roadmap.fabric.microsoft.com/?product=powerbi

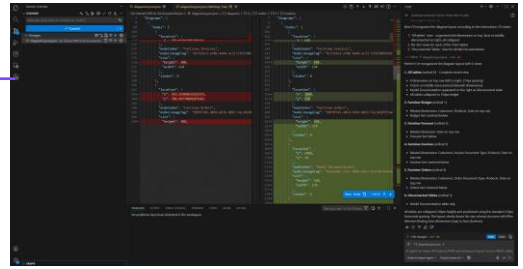
David Kofod Hanna LinkedIn Posts: https://www.linkedin.com/feed/update/urn:li:activity:7419382341082554368/

Diagram Layout View

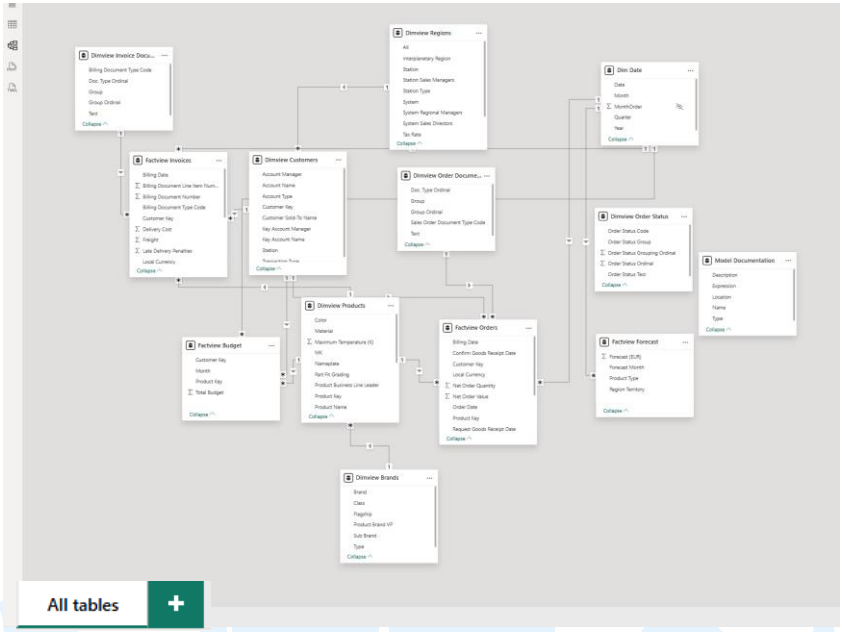
Specifically, the agent is instructed to take this **diagram layout view in "All Tables"** to create new model layout views per fact table and one for disconnected tables as parameters, calculation groups, documentation, measure tables.



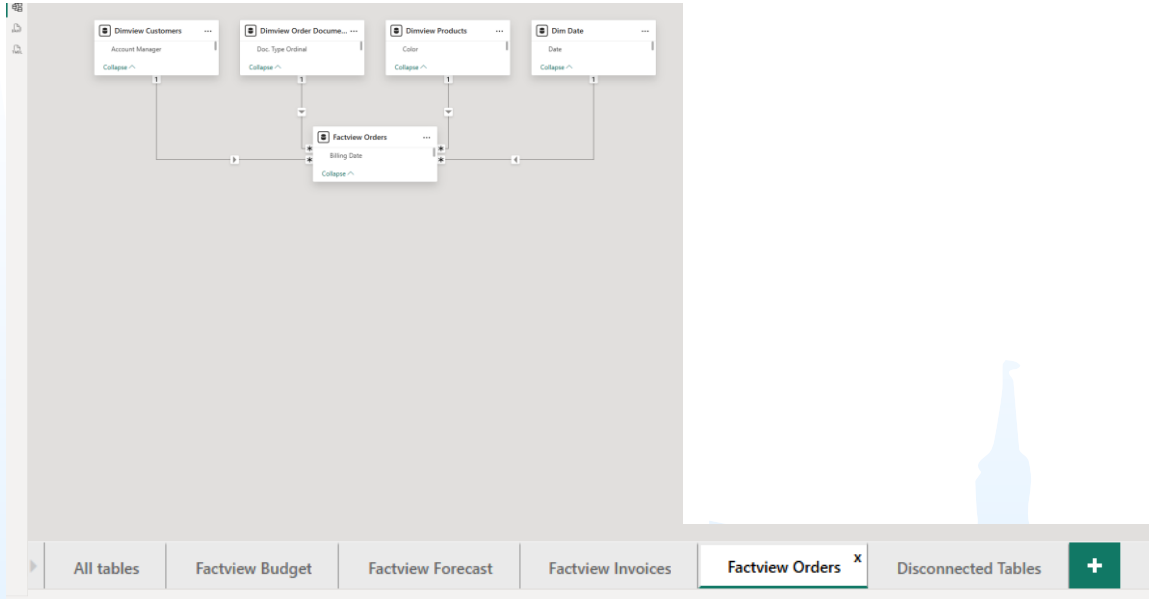
The agent have modified the file **"diagramLayout.json"**



Before

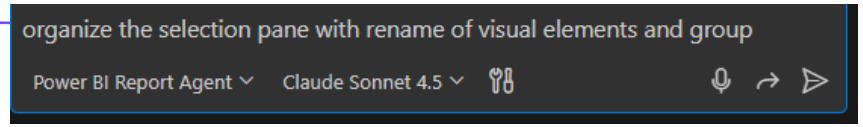


After

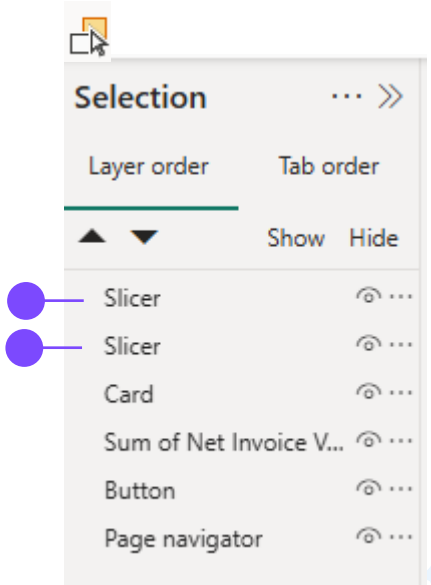


Rename Visual Elements and Group

The selection pane is what I open whenever I want to validate the level of detail, discipline of documentation the report developer I work with have

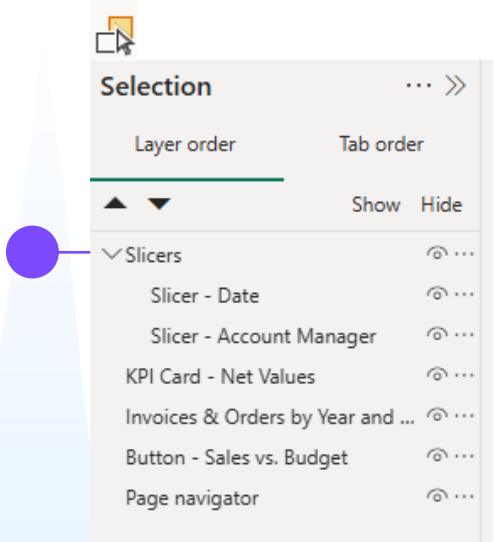


Before



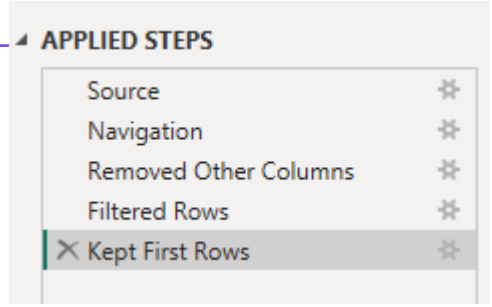
After

Renaming visual elements with no-title objects and group slicers and rename slicers



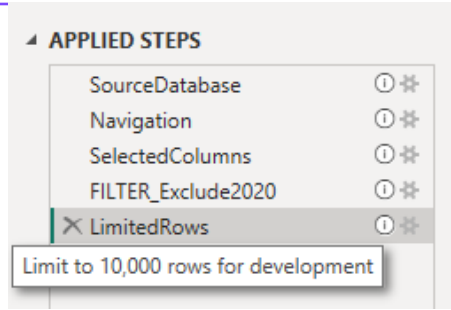
Power Query Folders & Applied Steps

Before

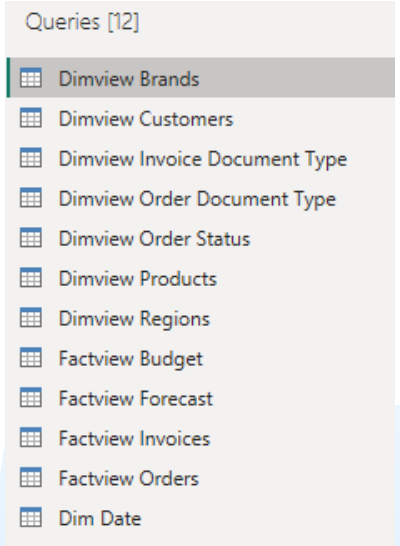


After

No spaces to avoid #"" and description on steps

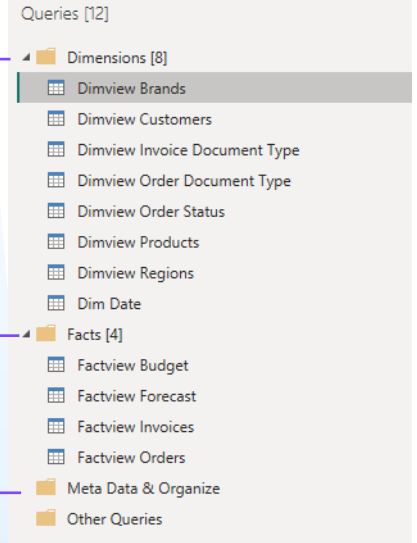


Before



After

Query folders for dimensions, facts, meta data, parameters, functions.



“You do not rise to the level of your goals, you fall to the level of your systems.”

- James Clear, Atomic Habits

Thank you!

Please rate this session!

Your feedback will help with

- speaker evaluation
- content relevance
- decision making for future events
- quality improvement