

A Power BI Documentation System

– Not Just an Afterthought

MsBIP 19th May 2025, Aarhus

*Presented by
David Kofod Hanna*

twoday

David Kofod Hanna



Senior Advisor, Data Storytelling @ twoday

+200 courses as Academy Trainer and 10 years as consultant
Certified Tabular Editor 3 Trainer, DP-600, PL-300, CPUX-F



Passionate about guiding self-service Power BI

developers for more enterprise manageable concepts in a consumable and practical way



Born on beautiful “Sunshine island”: Bornholm

Lives in Silkeborg with wife and 3 kids
Love football and running half-marathons



twoday

Who **loves** documentation?



Who **writes** documentation?



Who **updates** documentation?



Who **reads** documentation?



Who can **find** documentation?

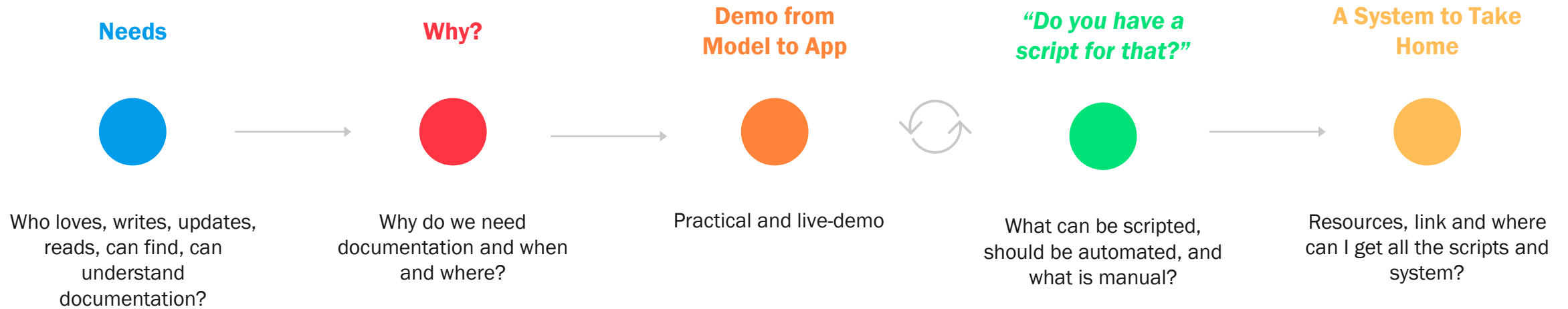


Who can **understand** documentation?

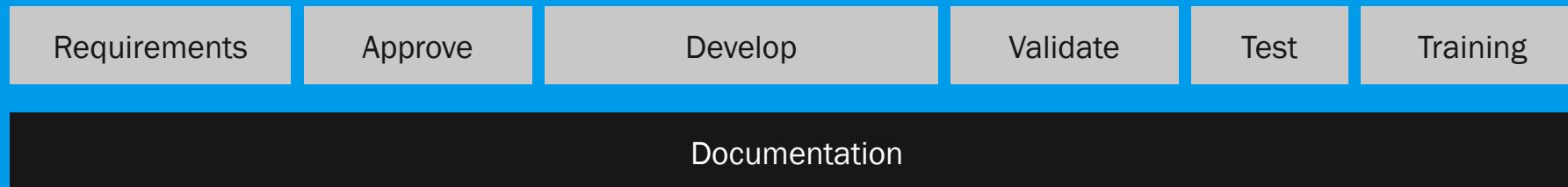


A Power BI Documentation System

– Not Just an Afterthought



Example of project



Why documentation?

Transparency

Reproducibility

Collaboration

Compliance

Scalability

Easier debugging



I CREATED 175 BOOKMARKS

AND NOW I'M LEAVING THE COMPANY...

 Please write my
documentation

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

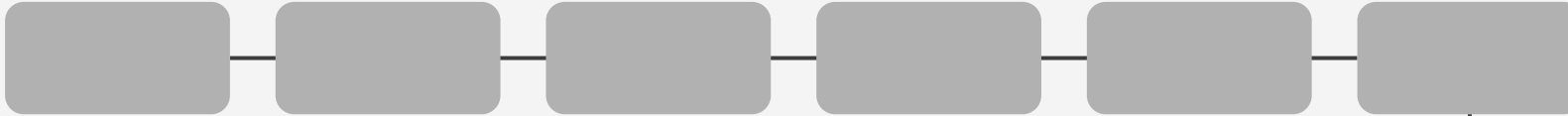
- James Clear, Atomic Habits



Power BI Documentation System – from Model to App



Power Query
{M}



Semantic
Model



Power BI
Desktop



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

■ Automated or Script ■ Manual □ Requires Fabric SKU



Power Query
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Power BI Documentation System – from Model to App



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



Power BI
Desktop



App



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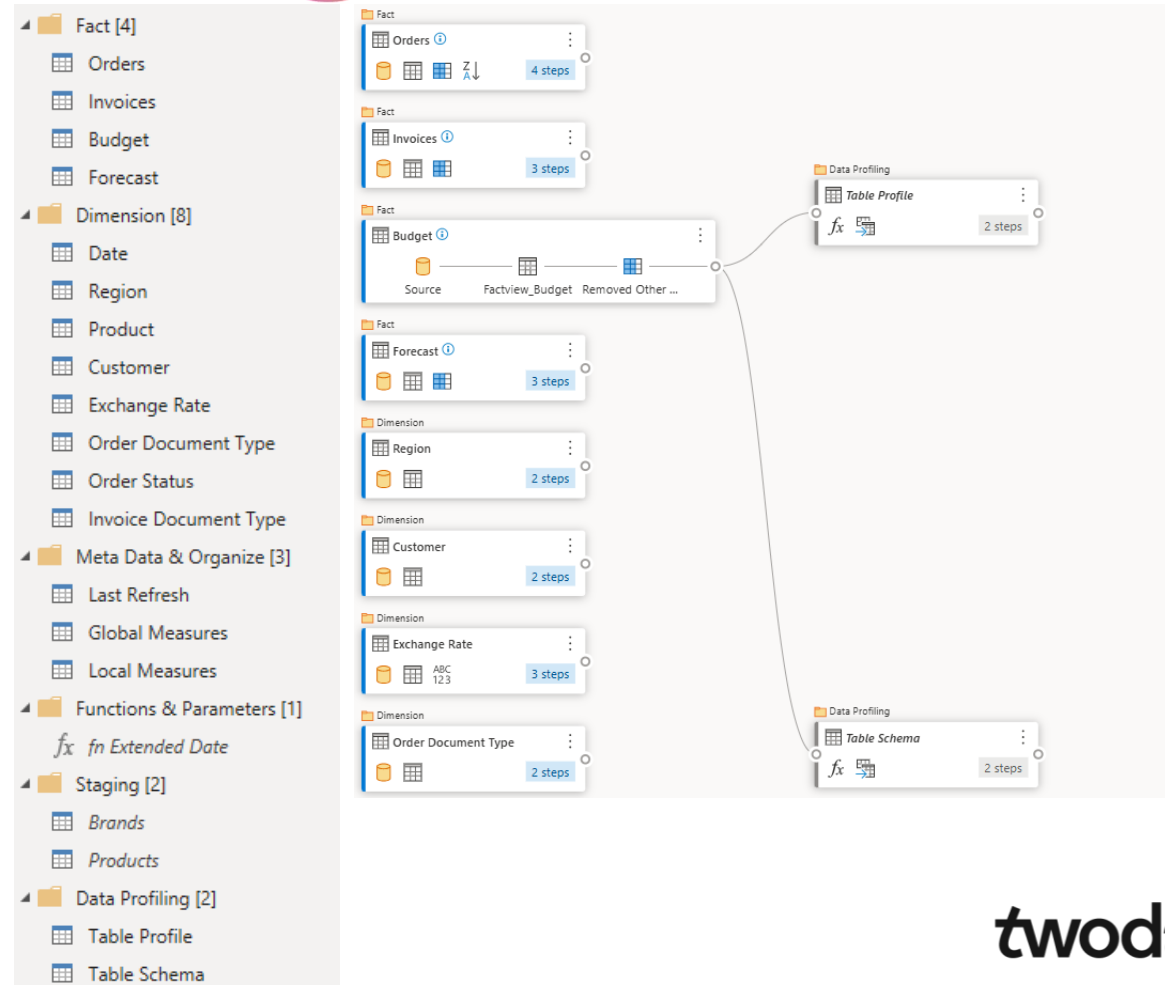
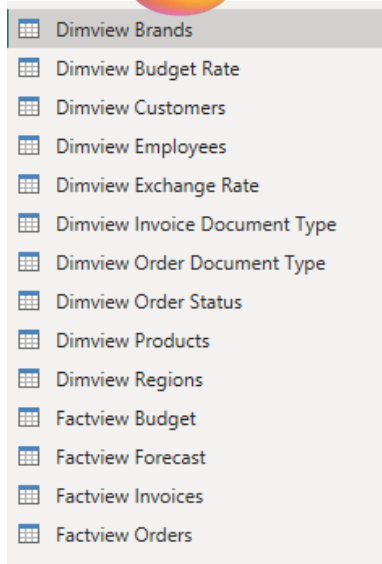
From report consumers
to report developers to
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Query folders by type – and Diagram View in Dataflow Gen2



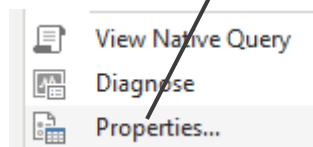
Applied Steps & Properties in step



APPLIED STEPS	
Source	✱
Navigation	✱
Promoted Headers	✱
Changed Type	
Added Conditional Column	✱
Changed Type1	
Added Conditional Column1	✱
Added Conditional Column2	✱
Added Conditional Column3	✱
Changed Type2	
Inserted Sum	✱
Renamed Columns	
Merged Queries	✱
Expanded Accuracy Master	✱
Added Conditional Column4	✱
Changed Type3	
Filtered Rows	✱



APPLIED STEPS	
Source	✱
Navigation	✱
Promoted Headers	✱
Changed Type	
Filtered Rows on Nulls from Excel	✱
DQ Check Column: Firstname = Null	✱
DQ Check Column: Lastname = Null	✱
DQ Check Column: Mobilephone = Null	✱
DQ Check Column: e-Mail = Null	✱
DQ Check Column Sum of Nulls above	✱
Merged Queries Accuracy Master for c...	✱
Expanded Accuracy Master for clientna...	✱
DQ Check Column: Clientname = Client...	✱
Changed Type Wholenumber for DQ c...	



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**.

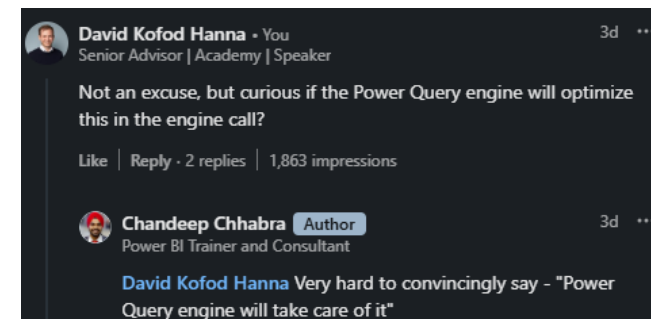


Table properties

Queries [22]

- Dimension [8]
 - Customer**
 - Copy
 - Paste
 - Delete
 - Rename
 - Enable load
 - Include in report refresh
 - Duplicate
 - Reference
 - Move To Group
 - Move Up
 - Move Down
 - Create Function...
 - Convert To Parameter
 - Advanced Editor
 - Properties...

Query Properties

Name
Customer

Description
From CRM, ERP and ServiceNow - combined and validated by Data Governance team

☒ Enable load to report

☒ Include in report refresh ⓘ

OK Cancel

Queries [22]

- Dimension [8]
 - Product
 - Customer**
 - From CRM, ERP and ServiceNow - combined and validated by Data Governance team
 - Order Document type

Data

- > Units
- > User Configuration
- > Customer ...
- > Date

From CRM, ERP and ServiceNow - combined and validated by Data Governance team

Customer ⓘ

Source + Dimview_Custom... Marked key colu...

Parameters for easy switch between environments or sources

```
M Expression on Partition "Customer" on table 'Customer'
1 let
2   Source = Sql.Database("te3-training-eu.database.windows.net", "SpacePartsCoDW"),
3   Dimview_Customers = Source{[Schema="Dimview",Item="Customers"]}[Data]
4 in
5   Dimview_Customers
```



“There’s a script for that”

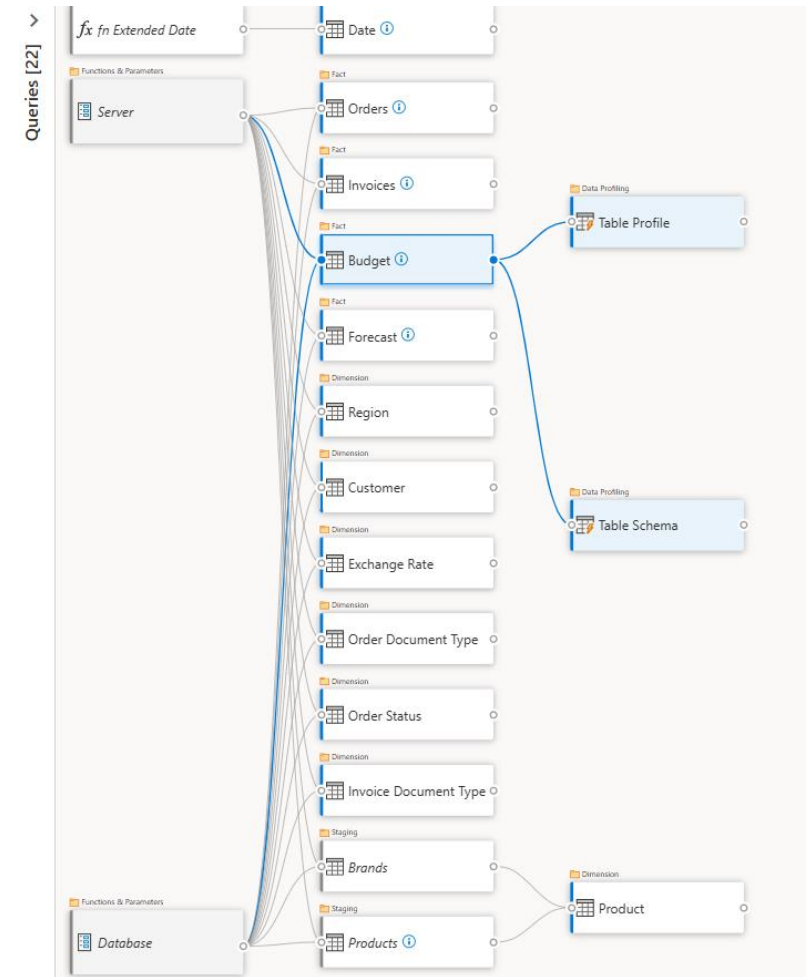
Shared Expressions
Database
Server

Create New M Parameter

Enter Name:

Enter Value:

```
M Expression on Partition "Customer" on table 'Customer'
1 let
2   Source = Sql.Database("#Server", "#Database"),
3   Dimview_Customers = Source{[Schema="Dimview",Item="Customers"]}[Data]
4 in
5   Dimview_Customers
```





Meta Data Tables



“There’s a script for that”

> 📅 Last Refresh

TimeStamp	Date Last Refresh	Time Last Refresh
10 May 2025 10.05	Saturday, 10 May 2025	10.05.12

● Data last updated today

> 📅 Global Measures

Info

Semantic Model Developer's DAX Measures

> 📅 Local Measures

Info

Local Report Level Measures

Last Refresh

```
1  /* M-Query - Data Last Refreshed */
2
3  let
4      SummerTime = Date.StartOfWeek( #date(Date.Year( DateTime.LocalNow() ), 3, 31) , Day.Sunday ),
5      WinterTime = Date.StartOfWeek( #date(Date.Year( DateTime.LocalNow() ), 10, 31) , Day.Sunday ),
6      CurrentDateTime = DateTimeZone.RemoveZone( DateTimeZone.UtcNow() ),
7      TimeShiftFromUTC = if CurrentDateTime < SummerTime & #time( 2, 0, 0) or CurrentDateTime > WinterTime & #time( 2, 0, 0) then 1 else 2,
8      TimeStamp = DateTimeZone.SwitchZone( DateTimeZone.UtcNow(), TimeShiftFromUTC, 0),
9      #Converted to Table" = #table(1, {{TimeStamp}}),
10     #Renamed Column1 to TimeStamp" = Table.RenameColumns(#Converted to Table",{{"Column1", "TimeStamp"}}),
11     #Changed Type TimeStamp" = Table.TransformColumnTypes(#Renamed Column1 to TimeStamp",{{"TimeStamp", type datetimezone}}),
12     #Inserted Col Date" = Table.AddColumn(#Changed Type TimeStamp", "Date", each DateTime.Date([TimeStamp]), type date),
13     #Inserted Col Time" = Table.AddColumn(#Inserted Col Date", "Time", each DateTime.Time([TimeStamp]), type time),
14     #Renamed Col Date and Time" = Table.RenameColumns(#Inserted Col Time",{{"Date", "Date Last Refresh"}, {"Time", "Time Last Refresh"}})
15 in
16     #Renamed Col Date and Time"
17
18
19  /* DAX - format timestamp to Danish format
20
21     TimeStamp DK = FORMAT( MIN( 'Data Last Refresh'[TimeStamp] ) , "DD-MM-YYYY HH:MM:SS" , "Da-DK" )
22  */
```




Meta Data Tables

fx = Table.Profile(Budget)

	Column	Min	Max	Average
1	Customer Key	100001018	100040108	null
2	Month	01/01/2020	01/12/2022	20/06/2021
3	Product Key	1000169	1256334	1199123.401
4	Total Budget	-457418.577	2150570.222	13795.50167

Table row details

Column	Total Budget
Min	-457418.577
Max	2150570.222
Average	13795.50167
StandardDeviat...	37653.9917
Count	2947811
NullCount	0
DistinctCount	1987202

Table.Profile

fx = Table.Schema(Budget)

	Name	Position	Type Name	Kind	Is Nullable
1	Month	0	Date.Type	date	TRUE
2	Total Budget	1	Double.Type	number	TRUE
3	Customer Key	2	Text.Type	text	TRUE
4	Product Key	3	Int32.Type	number	TRUE

Table row details

Name	Total Budget
Position	1
Type Name	Double.Type
Kind	number
Is Nullable	TRUE
NumericPrecisionBa...	2
NumericPrecision	53
NumericScale	null
IsSigned	null
DateTimePrecision	null
MaxLength	null
IsVariableLength	null
NativeTypeName	float
NativeDefaultExpre...	null
NativeExpression	null
Description	null
IsWritable	TRUE
FieldCaption	null

Table.Schema



“It’s not ~~DAX~~ if it’s not formatted?” - SQLBI



“There’s a script for that”

```
1 let
2   Source = {"I", "am", "a", "demo", "query", "for", "powerqueryformatter!", "Hit", "format", "to", "make", "me", "pretty"},
3   #"Convert to Table" = Table.FromList(Source, Splitter.SplitByNothing(), null, null, ExtraValues.Error),
4   #"Changed type" = Table.TransformColumnTypes(#"Convert to Table", {{"Column1", type text}}),
5   #"Rename Columns" = Table.RenameColumns(#"Changed type", {{"Column1", "Words"}}),
6   #"Added Index Column" = Table.AddIndexColumn(#"Rename Columns", "Index", 0, 1, Int64.Type)
7 in
8   #"Added Index Column"
```

www.powerqueryformatter.com



Power BI Documentation System – from Model to App



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

DAX Expression
as Description

INFO.VIEW
Model Docs

Display Folders
for Measures &
Columns

Table Groups

Semantic
Model Docs



Power BI Desktop



App



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Format DAX

Revenue ACT SUMX = SUMX('Sales', 'Sales'[Unit sale price] * 'Sales'[Qty])



SEPARATORS
Choose the list/number separators.

☒ Automatic
☐ US/UK A, B, C, 1234.00
☐ Others A; B; C; 1234,00

SPACING
Manage spaces after function names.

☒ Best practice
☐ Space after function IF (
☐ No space after function IF(

LINES
Show more or fewer arguments on one line.

☐ Long lines
☒ Short lines

⚙ LIGHT

⚙ SETTINGS

Make your DAX code easy to read.
Paste your formula here and try!

🐛 BUG REPORT

FORMAT



```
Revenue ACT SUMX =  
SUMX (  
    'Sales',  
    'Sales'[Unit sale price] * 'Sales'[Qty]  
)
```



“There’s a script for that”

```
1 // Works in Tabular Editor version 2.13.0 or newer:  
2 Selected.Measures.FormatDax();  
3
```

💡 DAX Referencing:

Tables with 'Table'

Columns with table reference 'Table'[Column]

Measures without table reference [Measure]

Variable names start with underscore _

DAX Functions with UPPERCASE

DAX expression as Measure Description

Name [SVG]
Description VAR_SelectedColor = "#B2B2B2"

RETURN

```
"data:image/svg+xml;utf8,<svg width='36'  
height='36' viewBox='0 0 36 36' fill='none'  
xmlns='http://www.w3.org/2000/svg'>  
  <rect width='36' height='36' rx='4' fill='' &  
_SelectedColor & ''/>  
</svg>"
```

- > ii. HEX Colors
- > iii. Dynamic Titles
- ✓ iv. SVG's
 - ☐ SVG
- ✓ v. Cascading Slicers (Alberto)
 - ☐ Alberto Effect
- ✓ vi. Active Filters Footer
 - ☐ Active Filters Footer



"There's a script for that"

```
1 Foreach (var m in Model.AllMeasures)  
2 { m.Description = m.Expression; }
```

Properties

General

Name

SVG

Home table

Global Measures

Description

VAR_SelectedColor = "#B2B2B2"

RETURN



Create with Copilot (preview)



Model Docs DAX INFO.VIEW



“There’s a script for that”

Model Documentation

by INFO.VIEW Functions

Filter by keyword



Column

Measure

Relationship

Table

Location	Name	Type	Expression	Description
Global Measures	Global Measures	Measure	"Locate them here my semantic model developer friend"	
Global Measures	Sum of Delivery Cost	Measure	SUM('Invoices'[Delivery Cost])	This measure is the sum of column 'Invoices'[Delivery Cost]
Global Measures	Sum of Forecast (EUR)	Measure	SUM('Forecast'[Forecast (EUR)])	This measure is the sum of column 'Forecast'[Forecast (EUR)]
Global Measures	Sum of Freight	Measure	SUM('Invoices'[Freight])	This measure is the sum of column 'Invoices'[Freight]
Global Measures	Sum of Late Delivery Penalti...	Measure	SUM('Invoices'[Late Delivery Penalties])	This measure is the sum of column 'Invoices'[Late Delivery Penalties]
Global Measures	Sum of Net Invoice COGS	Measure	SUM('Invoices'[Net Invoice COGS])	This measure is the sum of column 'Invoices'[Net Invoice COGS]
Global Measures	Sum of Net Invoice Cost	Measure	SUM('Invoices'[Net Invoice Cost])	This measure is the sum of column 'Invoices'[Net Invoice Cost]
Global Measures	Sum of Net Invoice Quantity	Measure	SUM('Invoices'[Net Invoice Quantity])	This measure is the sum of column 'Invoices'[Net Invoice Quantity]
Global Measures	Sum of Net Invoice Value	Measure	SUM('Invoices'[Net Invoice Value])	This measure is the sum of column 'Invoices'[Net Invoice Value]
Global Measures	Sum of Net Order Quantity	Measure	SUM('Orders'[Net Order Quantity])	This measure is the sum of column 'Orders'[Net Order Quantity]
Global Measures	Sum of Net Order Value	Measure	SUM('Orders'[Net Order Value])	This measure is the sum of column 'Orders'[Net Order Value]
Global Measures	Sum of Total Budget	Measure	SUM('Budget'[Total Budget])	This measure is the sum of column 'Budget'[Total Budget]
Local Measures	Local Measures	Measure	"Locate them here my report developer friend"	
Table Group DAX	Number of tables	Measure	COUNTROWS('Table Group DAX')	

💡 INFO.VIEW DAX Functions make this possible

INFO.VIEW.COLUMNS()

INFO.VIEW.MEASURES()

INFO.VIEW.TABLES()

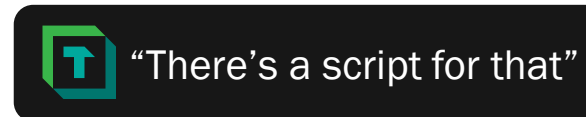
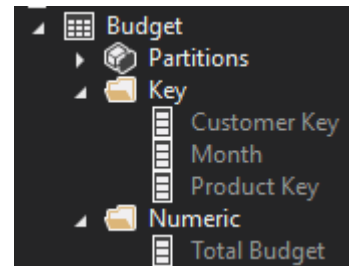
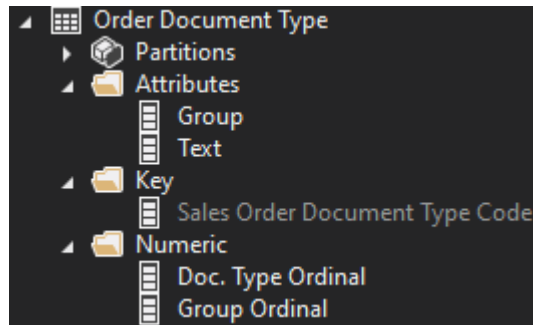
INFO.VIEW.RELATIONSHIPS()

```
1 Model Documentation =
2 VAR _columns =
3     SELECTCOLUMNS(
4         FILTER(
5             INFO.VIEW.COLUMNS( ),
6             [Table] <> "Model Documentation" && NOT ( [IsHidden] )
7         ),
8         "Type", "Column",
9         "Name", [Name],
10        "Description", [Description],
11        "Location", [Table],
12        "Expression", [Expression]
13    )
14 VAR _measures =
15     SELECTCOLUMNS(
16         FILTER(
17             INFO.VIEW.MEASURES( ),
18             [Table] <> "Model Documentation" && NOT ( [IsHidden] )
19         ),
20         "Type", "Measure",
21         "Name", [Name],
22         "Description", [Description],
23         "Location", [Table],
24         "Expression", [Expression]
25    )
26 VAR _tables =
27     SELECTCOLUMNS(
28         FILTER(
29             INFO.VIEW.TABLES( ),
30             [Name] <> "Model Documentation" && [Name] <> "Calculations"
31             && NOT ( [IsHidden] )
32         ),
33         "Type", "Table",
34         "Name", [Name],
35         "Description", [Description],
36         "Location", BLANK( ),
37         "Expression", [Expression]
38    )
39 VAR _relationships =
40     SELECTCOLUMNS(
41         INFO.VIEW.RELATIONSHIPS( ),
42         "Type", "Relationship",
43         "Name", [Relationship],
44         "Description", BLANK( ),
45         "Location", BLANK( ),
46         "Expression", [Relationship]
47    )
48 RETURN
49     UNION( _columns, _measures, _tables, _relationships )
```

twoday academy



Display folders for measures and columns



```
//Go through each table in the model
foreach(var table in Model.Tables)
{
    if(table.Name != "Data"){
        //First look at columns
        foreach(var column in table.Columns)
        {
            var keySuffix = "Key";
            var columnDataType = column.DataType.ToString();
            //DMCreatedDate column should be hidden in a separate folder
            if( column.Name == "DMCreatedDate")
            {
                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 aggregated 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( column.DataType == "DateTime" && column.Name != "DMCreatedDate")
            {
                if(column.UsedInRelationships.Any())
                {
                    column.DisplayFolder = "Key";
                    column.IsHidden = true;
                }
                else{
                    column.DisplayFolder = "Dates";
                }
            }
        }
    }
}
```



Display folders in Global and Local Measure Groups

> Global Measures

Info

Semantic Model Developer's DAX Measures

> Local Measures

Info

Local Report Level Measures

- ✓ i. Base
 - > Budget
 - > Forecast
 - > Invoice
 - > Order
- > ii. KPI Targets
- > iii. Comparison
- ✓ iv. Time Intelligence
 - > i. MTD
 - > ii. QTD
 - > iii. YTD
 - > iv. LY
 - > v. LY %
 - > vi. MoM
 - > vii. QoQ
 - > viii. YoY
- > v. Ratio
- ✓ vi. Report Layout
 - > i. Last Refresh
 - > ii. HEX Colors
 - > iii. Dynamic Titles
 - > iv. SVG's
 - > v. Cascading Slicers (Alberto)

To create subfolder use \



Properties

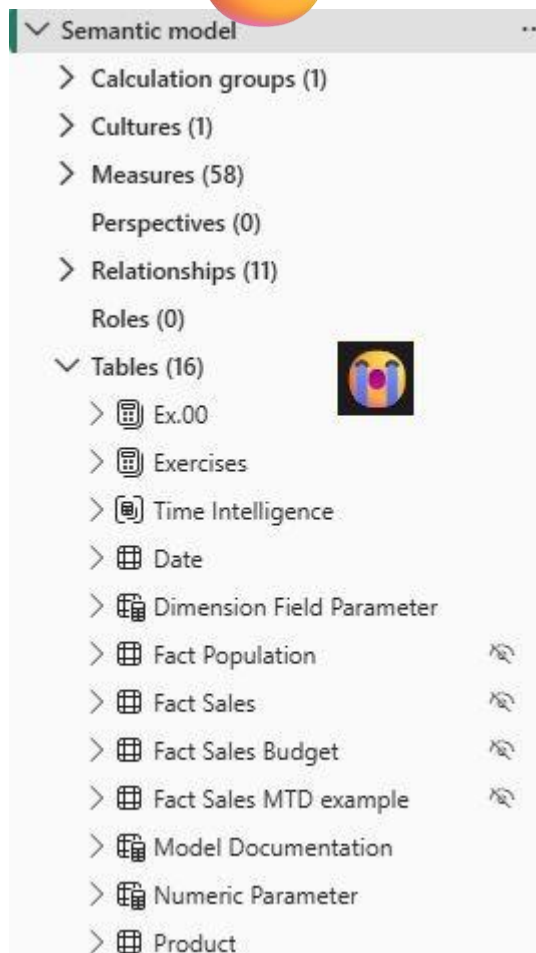
Display folder

iv. Time Intelligence\iii. YTD

To order folders by ...

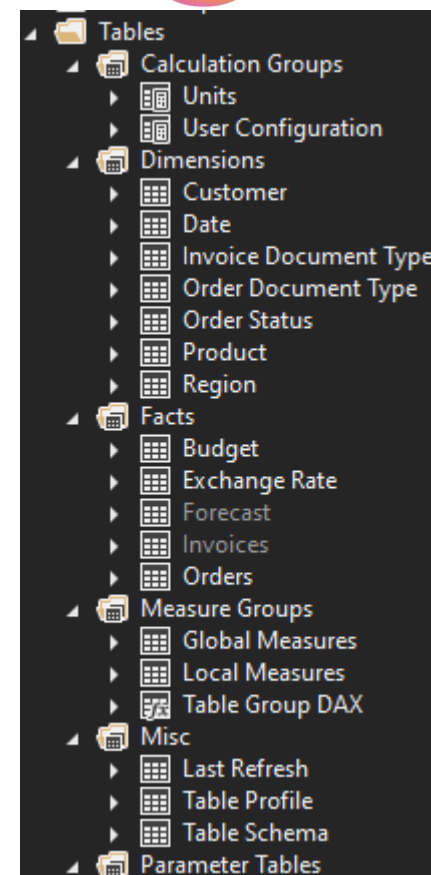
Number	Roman Numeral
1	i
2	ii
3	iii
4	iv
5	v
6	vi
7	vii
8	viii
9	ix
10	x

Table Groups in Tabular Editor 3



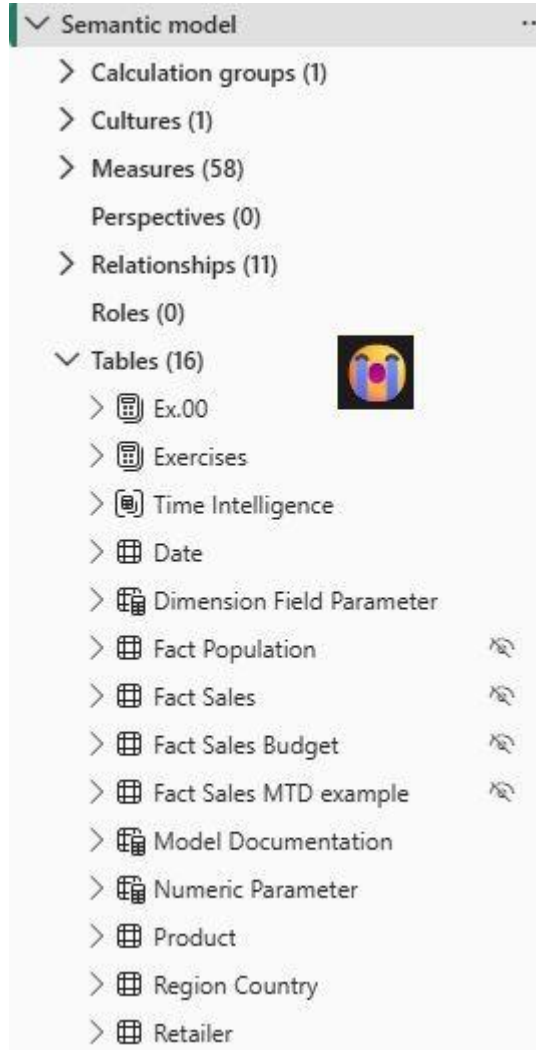
“There’s a script for that”

```
// ***** 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";  
    }  
}
```



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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

Semantic Model Information

Table Groups in Power BI Desktop

Using INFO.VIEW DAX Functions & some creativity

Type	Number of tables
Calculation Group	1
User Configuration	1
Dimension	7
Customer	1
Date	1
Invoice Document Type	1
Order Document Type	1
Order Status	1
Product	1
Region	1
Fact	6
Budget	1
Customer	1
Exchange Rate	1
Forecast	1
Invoices	1
Orders	1
Measure Group	6
Global Measures	1
Last Refresh	1
Local Measures	1
Table Profile	1
Table Schema	1
Units	1
Total	21

Calculation Group	Dimension	Fact	Measure Group	Model Document...
-------------------	-----------	------	---------------	-------------------

Rule Specifications

① Measure Group

An “empty” table to store my measures

If not below tables, no relationships, hidden columns, visible measure

② Fact

Fact table with many-side relationship *->1

SELECTCOLUMNS (INFO.VIEW.RELATIONSHIPS(), Table name from [FromTable])

③ Dimension

Dimension table with one-side relationships 1-> *

SELECTCOLUMNS (INFO.VIEW.RELATIONSHIPS(), Table name from [ToTable])

④ Calculation Group

Dynamic calculation items with SELECTEDMEASURE()

IF (INFO.VIEW.TABLES() [CalculationGroupPrecedence] >= 1)

⑤ Field Parameter

Dynamic switch between measure or attributes

IF (INFO.VIEW.TABLES() CONTAINSSTRING([Expression], "NAMEOF"))

⑥ Numeric Parameter

Dynamic slider for end users to select

IF (INFO.VIEW.TABLES() CONTAINSSTRING([Expression], "GENERATE"))

⑦ Model Documentation

Documentation with INFO.VIEW functions

IF (INFO.VIEW.TABLES() CONTAINSSTRING([Expression], "INFO.VIEW"))



Semantic Model Documentation Page

Semantic Model Information

...

Purpose

Answers the data needs for the business and report developers in the following area

Data Sources

Excel:
Azure SQL DB:
Model Documentation INFO.VIEW:
ERP:
Data Platform:
Fabric Lakehouse:

Ownership

Semantic Model Developer: David Kofod Hanna
Report Developer: David Kofod Hanna
Business: LinkedIn & Community Followers
Support: David Kofod Hanna
Workspace: My Workspace

Data Update & Frequency

Every 3 hours on weekdays

Development Idea:

Automated via INFO.VIEW DAX
Functions + creativity

Properties

RLS: No
Use of Tabular Editor: Yes
Calculation Groups: Yes
Power Query used: Yes
Parameters used: Yes
Hierarchies used: No
Incremental Refresh used: No
Perspectives used: No
Translations used: No
Many-to-Many relationships used: No
Auto date/time used: No
Calculated DAX Tables: Yes
Locale setting: EN-US
Import: Yes
Direct Query: No
Direct Lake: No
Mixed Storage mode: No

Semantic Model Information

Table Groups in Power BI Desktop

Using INFO.VIEW DAX Functions & some creativity

Type	Number of tables
Calculation Group	1
User Configuration	1
Dimension	7
Customer	1
Date	1
Invoice Document Type	1
Order Document Type	1
Order Status	1
Product	1
Region	1
Fact	6
Budget	1
Customer	1
Exchange Rate	1
Forecast	1
Invoices	1
Orders	1
Measure Group	6
Global Measures	1
Last Refresh	1
Local Measures	1
Table Profile	1
Table Schema	1
Units	1
Total	21

Calculation Group	Dimension	Fact	Measure Group	Model Document...
-------------------	-----------	------	---------------	-------------------

Rule Specifications

① Measure Group
An "empty" table to store my measures
(if not below tables, no relationships, hidden columns, visible measure)

② Fact
Fact table with many-side relationship 1-->1
SELECT COLUMNS (INFO.VIEW.RELATIONSHIPS, Table name from FromTable)

③ Dimension
Dimension table with one-side relationships 1--> *
SELECT COLUMNS (INFO.VIEW.RELATIONSHIPS, Table name from ToTable)

④ Calculation Group
Dynamic calculation items with SELECTEDMEASURE()
IF (INFO.VIEW.TABLES [CalculationGroupPrecedence] >= 1)

⑤ Field Parameter
Dynamic switch between measure or attributes
IF (INFO.VIEW.TABLES [CONTAINSSTRING(Expression, "NAME(OF)"]

⑥ Numeric Parameter
Dynamic slider for end users to select
IF (INFO.VIEW.TABLES [CONTAINSSTRING(Expression, "GENERATE")]

⑦ Model Documentation
Documentation with INFO.VIEW functions
IF (INFO.VIEW.TABLES [CONTAINSSTRING(Expression, "INFO.VIEW")]

Model Documentation

by INFO.VIEW Functions

Filter by keyword →

Column	Measure	Relationship	Table
--------	---------	--------------	-------

Location	Name	Type	Expression	Description
Global Measures	Global Measures	Measure	"Locate them here my semantic model developer friend"	
Global Measures	Sum of Delivery Cost	Measure	SUM('Invoices'[Delivery Cost])	This measure is the sum of column 'Invoices'[Delivery Cost]
Global Measures	Sum of Forecast (EUR)	Measure	SUM('Forecast'[Forecast (EUR)])	This measure is the sum of column 'Forecast'[Forecast (EUR)]
Global Measures	Sum of Freight	Measure	SUM('Invoices'[Freight])	This measure is the sum of column 'Invoices'[Freight]
Global Measures	Sum of Late Delivery Penalti...	Measure	SUM('Invoices'[Late Delivery Penalties])	This measure is the sum of column 'Invoices'[Late Delivery Penalties]
Global Measures	Sum of Net Invoice COGS	Measure	SUM('Invoices'[Net Invoice COGS])	This measure is the sum of column 'Invoices'[Net Invoice COGS]
Global Measures	Sum of Net Invoice Cost	Measure	SUM('Invoices'[Net Invoice Cost])	This measure is the sum of column 'Invoices'[Net Invoice Cost]
Global Measures	Sum of Net Invoice Quantity	Measure	SUM('Invoices'[Net Invoice Quantity])	This measure is the sum of column 'Invoices'[Net Invoice Quantity]
Global Measures	Sum of Net Invoice Value	Measure	SUM('Invoices'[Net Invoice Value])	This measure is the sum of column 'Invoices'[Net Invoice Value]
Global Measures	Sum of Net Order Quantity	Measure	SUM('Orders'[Net Order Quantity])	This measure is the sum of column 'Orders'[Net Order Quantity]
Global Measures	Sum of Net Order Value	Measure	SUM('Orders'[Net Order Value])	This measure is the sum of column 'Orders'[Net Order Value]
Global Measures	Sum of Total Budget	Measure	SUM('Budget'[Total Budget])	This measure is the sum of column 'Budget'[Total Budget]
Local Measures	Local Measures	Measure	"Locate them here my report developer friend"	
Table Group DAX	Number of tables	Measure	COUNTROWS(Table Group DAX)	



Power BI Documentation System – from Model to App



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

DAX Expression
as Description

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



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

Documentation and
transparency from
model to app

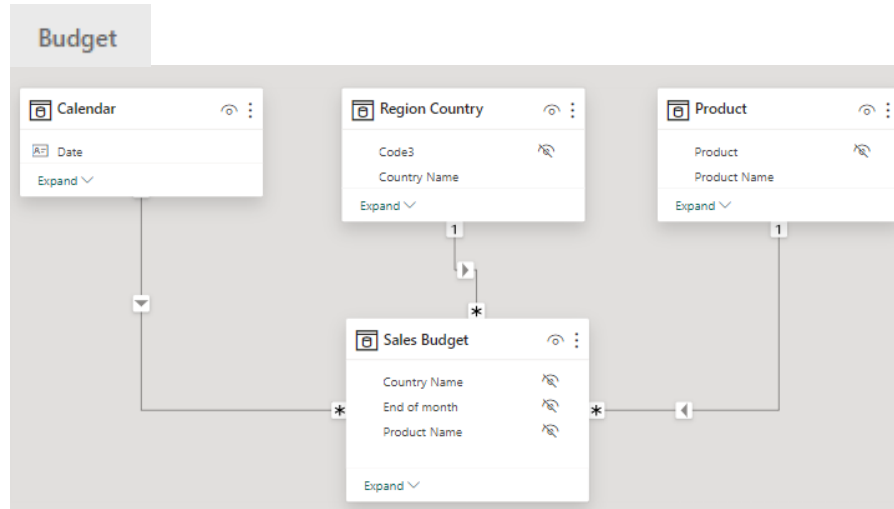
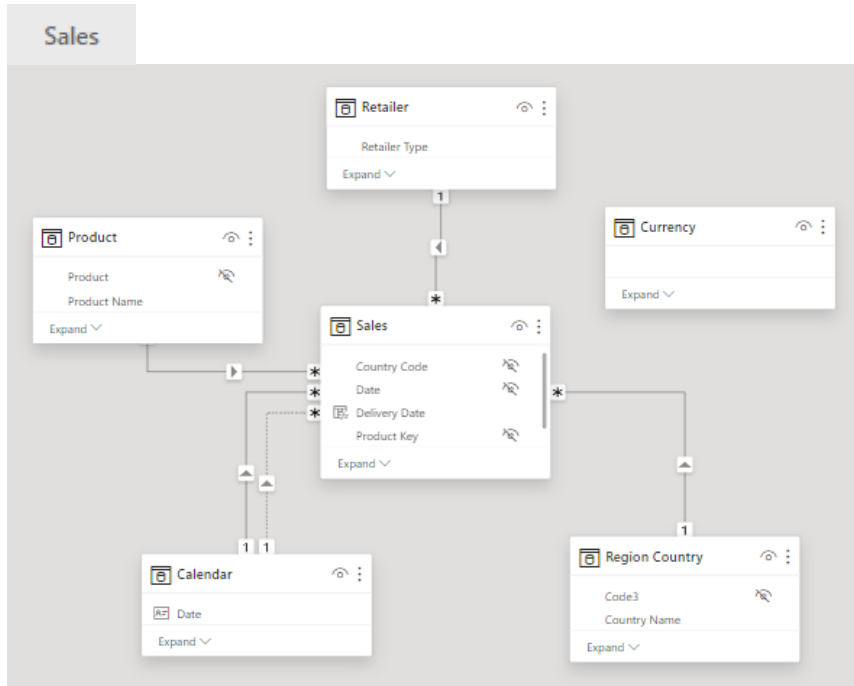
From report consumers
to report developers to
semantic model
developers and data
ingest

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

One Model View Per Fact + Disconnected tables



Disconnected Tables

- Measure groups
- Calculation groups
- Field parameters
- Numeric parameter
- Model documentation
- Or similar



DAX Query View for testing



DAX Query View

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)

```
1 // Author - Hariharan Rajendran
2 // Name - Model Summary in DAX Query View
3 // Version - 1.0
4 // Contact - https://www.linkedin.com/in/hariharan/
5 //This query will provide details about your model like property, value and comment to execute the DAX query to see the complete list
6 //Define the properties
7 EVALUATE
8 VAR _tableCount = COUNTROWS(INFO.TABLES())
9 VAR _columnCount = COUNTROWS(INFO.COLUMNS())
10 VAR _calcColumnCount = COUNTROWS(FILTER(
11     INFO.COLUMNS(),
12     [Type] = 2
13 ))
14 VAR _measures = COUNTROWS(INFO.MEASURES())
15 VAR _relationships = COUNTROWS(INFO.RELATIONSHIPS())
16 VAR _Composite = IF(
17     COUNTROWS(SUPPRESS(
18         INFO.VIEW.TABLES(),
19         [StorageNode]
20     )) > 1,
21     "Yes",
22     "No"
23 )
24 VAR _daxTables = COUNTROWS(FILTER(
```

Model Summary

	[Property]	[Value]	[Comment]
1	Tables	21	EVALUATE INFO.TABLES()
2	Columns	197	EVALUATE INFO.COLUMN...
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

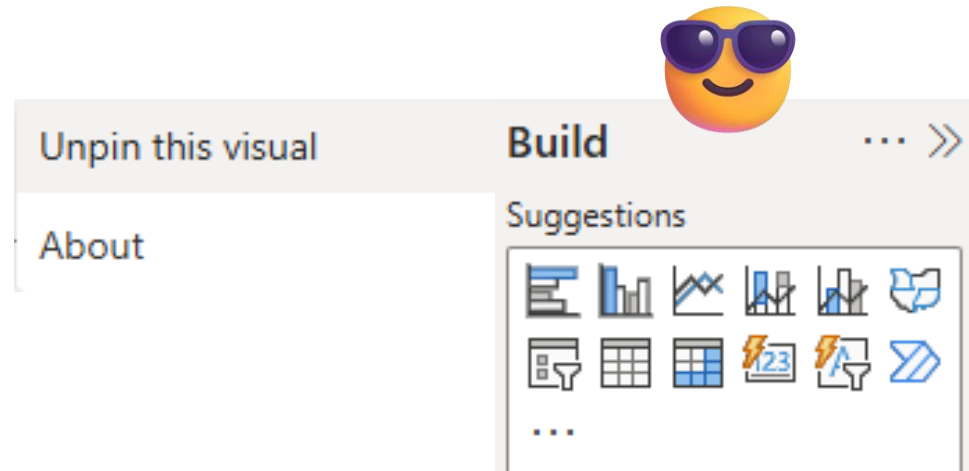
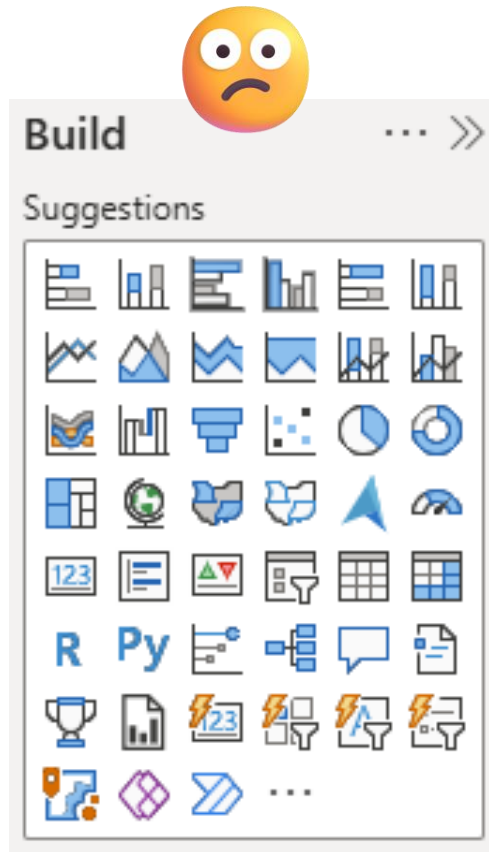
	[Size in MB]
1	1017.25

Visible in .PBIR and for easy copy/paste

System.SemanticModel > DAXQueries >

.pbi	File folder
DAXQueries	DAX Query File
.platform	DAX Query File
definition.pbism	DAX Query File
diagramLayout	DAX Query File
model	DAX Query File
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

Report – Unpin ineffective Default Visuals





JSON Report Theme – For the Nerdy Data Storytellers

Home / JSON to Power BI

JSON Report Theme to Power BI

Power BI custom report themes provide granular control over many aspects of a report theme. It's crucial to build a solid, documented and adopted in an organization for consistency and efficiency.

Theme colors in Power BI

Power BI's data color system lets you define up to 8 colors that map directly to your data points. Along with these colors, Power BI automatically generates 5 different shades of each color that can be dynamically applied throughout the file.

KPI & Divergent Colors

These properties set the status colors used by the waterfall chart and the KPI visual or set the various gradient colors in the conditional formatting dialog box.

Use them to refer in conditional formatting measures where you can simply in the measure, instead of hard-coding a HEX, use "good", "neutral", "bad", "minimum" or "maximum"

Structural Colors

These color classes set the structural colors for elements in the report, such as axis gridlines, highlight colors, and background colors for visual elements.

Active Report Theme

DKH Self-Service Report Theme

Learn more

Theme Colors 1-8

For data visualization

Theme	HEX	ID
1	#367c9f	1
2	#fa8100	2
3	#6cc6cb	3
4	#aa77dd	4
5	#d14576	5
6	#b26d6d	6
7	#8b9b64	7
8	#eae5c9	8

Learn more

KPI Colors

For KPI performance status context

KPI	HEX	Property
Good	#37a78f	Good
Neutral	#f2d292	Neutral
Bad	#a74d37	Bad

Learn more

Divergent Min & Max Colors

For divergent heat map

Divergent	HEX	Property
Minimum	#fa8100	Minimum
Center	#f2d292	Center
Maximum	#367c9f	Maximum
Null		Null

Learn more

Structural Colors

Non-data link for colors except the data colors

Structural	HEX	Property
Background	#485257	Background
BackgroundLight	#f1f3f4	BackgroundLight
BackgroundNeutral	#f1f3f4	BackgroundNeutral
Foreground	#485257	Foreground
ForegroundNeutral/Secondary	#485257	ForegroundNeutral/Secondary
ForegroundNeutral/Tertiary	#606e74	ForegroundNeutral/Tertiary
Hyperlink		Hyperlink
TableAccent	#e6e6e6	TableAccent
Visited Hyperlink		Visited Hyperlink

Learn more

Remember to think of brand guidelines together with enough categorical values along side thinking contrast and call-to-action and WCAG and color-blindness.

Example measure diff Color =
IF (
[Revenue LY %] > 0,
"good",
"bad",
)
)

Try yourself?
Download #JSON

Visual Styles

15 of 52 visual styles defined in theme

Visual Object

Visual Styles

Be aware of the new preview visuals as the report theme schema can change more often on these.

Recommendation:
Set Visual Styles for frequently used visuals like

- Card New Visual
- Matrix
- Table
- Line chart
- Column chart
- Bar chart
- Slicer
- Action button
- Page Navigator

Image	VisualStyleAttribute	Defined in JSON Theme	Type
textbox	textbox	textbox	Object
tableEx	tableEx	tableEx	Visual
slicer	slicer	slicer	Visual
shape	shape	shape	Object
report	report	report	Object
pivotTable	pivotTable	pivotTable	Visual
pageNavigator	pageNavigator	pageNavigator	Object
page	page	page	Object
multiRowCard	multiRowCard	multiRowCard	Visual
kpi	kpi	kpi	Visual
image	image	image	Object
cardVisual	cardVisual	cardVisual	Visual
bookmarkNavigator	bookmarkNavigator	bookmarkNavigator	Object
advancedSlicerVisual	advancedSlicerVisual	advancedSlicerVisual	Visual
actionButton	actionButton	actionButton	Object
aiNarratives	aiNarratives	aiNarratives	Visual
areaChart	areaChart	areaChart	Visual
azureMap	azureMap	azureMap	Visual
barChart	barChart	barChart	Visual
card	card	card	Visual
clusteredBarChart	clusteredBarChart	clusteredBarChart	Visual
clusteredColumnChart	clusteredColumnChart	clusteredColumnChart	Visual
columnChart	columnChart	columnChart	Visual
decompositionTreeVisual	decompositionTreeVisual	decompositionTreeVisual	Visual
donutChart	donutChart	donutChart	Visual
filledMap	filledMap	filledMap	Visual
filter	filter	filter	Object
funnel	funnel	funnel	Visual
gauge	gauge	gauge	Visual
group	group	group	Object
hundredPercentStackedAreaChart	hundredPercentStackedAreaChart	hundredPercentStackedAreaChart	Visual
hundredPercentStackedBarChart	hundredPercentStackedBarChart	hundredPercentStackedBarChart	Visual
hundredPercentStackedColumnChart	hundredPercentStackedColumnChart	hundredPercentStackedColumnChart	Visual

Attribute

Property

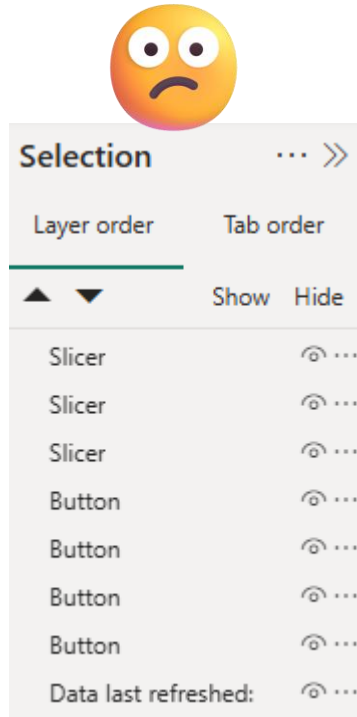
Value

Filter by keyword → All Filter by keyword →

Detail Properties of Visual Styles in Your JSON Theme
Click on a Visual Style to filter

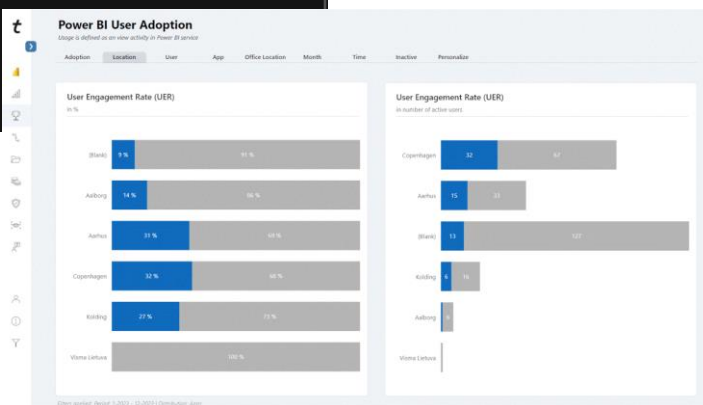
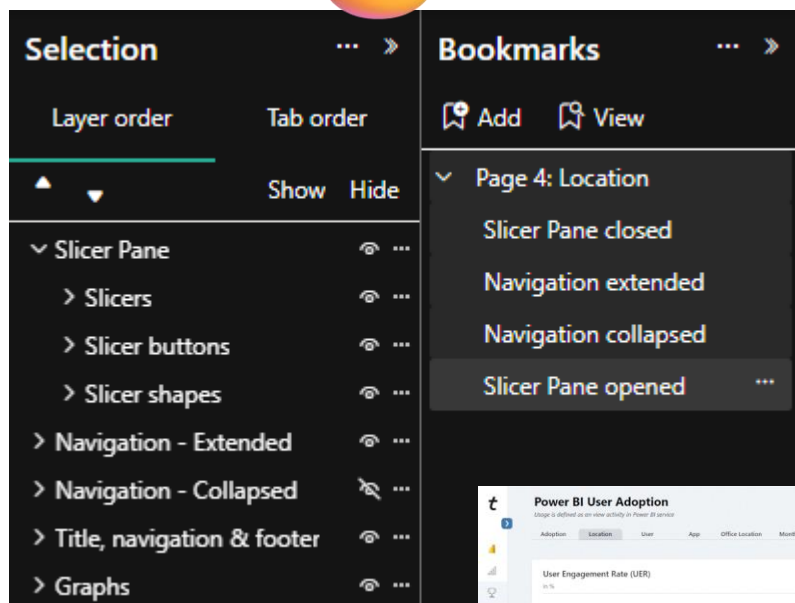
Image	Name	Attribute	Property	Value
bookmarkNavigator	Sid	fill	selected	
		shape	default	
		Text	selected	
		border	Color	#AEB8BD
		bottom	*	0
		color	Border	#AEB8BD
		fillColor	fill	#F1F3F4
		fontColor	Text	#30373A
		fontFamily	Text	Segoe UI Semibold
		fontSize	Text	10.5
		left	*	0
		radius	Border	8
		right	*	0
		roundEdge	shape	8
		show	Border	FALSE
			fill	TRUE
			Outline	FALSE
		tileShape	shape	rectangle

Report Visual Elements





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**”



Report - Page

Report Information

Purpose

Answers the following business questions for the following business groups

Data Sources

Excel:
Azure SQL DB:
Model Documentation INFO.VIEW:
ERP:
Data Platform:
Fabric Lakehouse:

Ownership

Semantic Model Developer: David Kofod Hanna
Report Developer: David Kofod Hanna
Business: LinkedIn & Community Followers
Support: David Kofod Hanna
Workspace: My Workspace

Data Update & Frequency

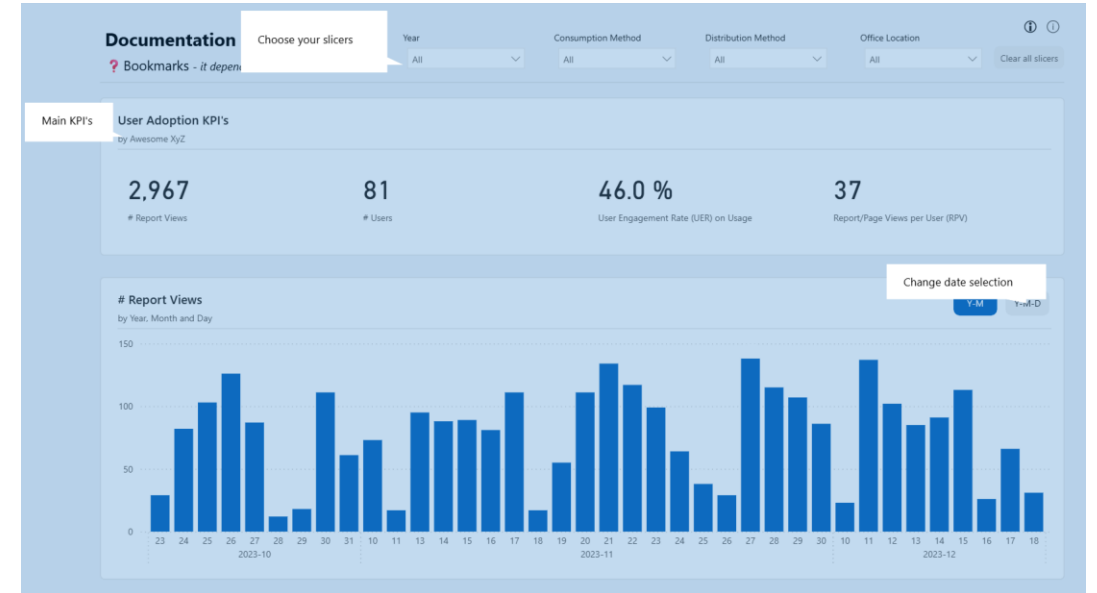
Every 3 hours on weekdays

Data Assumptions

Figures shown in DKK excl. VAT
Data from 2022 and on-wards (No historic data from earlier system)

Properties

Report Level Measures: Yes
Bookmarks: Yes
Custom Visual: No
Filter Pane used for end users: No



Documentation
For specific page

Name	Expression	Description
# Report Views	COUNTROWS('Usage Events')	Based on users who have viewed a Power BI Report
# Users Fact Usage	DISTINCTCOUNT('Usage Events'[User ID])	Based on users who have viewed a Power BI Report
Report/Page Views per User (RPV)	DIVIDE([# Report Views], [# Users Fact Usage])	The average report views per user
User Engagement Rate (UER) on Usage	DIVIDE([# Users Fact Usage], [# Users Dim])	Share of users in % that have a activity as report view



Power BI Documentation System – from Model to App



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

DAX Expression
as Description

INFO.VIEW
Model Docs

Display Folders
for Measures &
Columns

Table Groups

Semantic
Model Docs



Power BI Desktop

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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*

Documentation and
transparency from
model to app

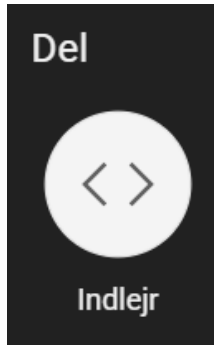
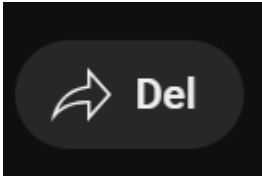
From report consumers
to report developers to
semantic model
developers and data
ingest

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

Embed videos



Helpdesk support back in the day of the middle age

New link

To include a link to an item or website, enter the URL.

* required fields

Link name *

URL address *

Include https:// at the beginning of the URL

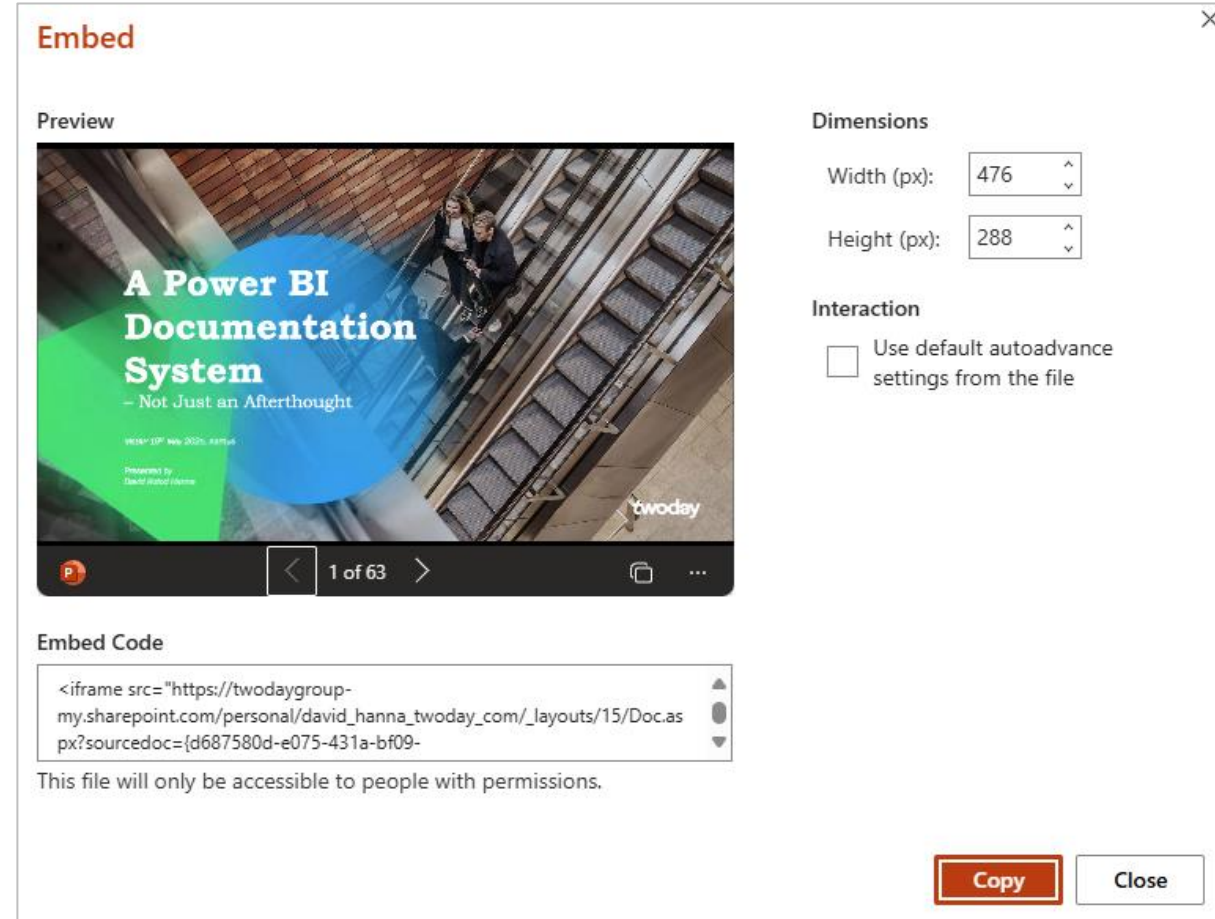
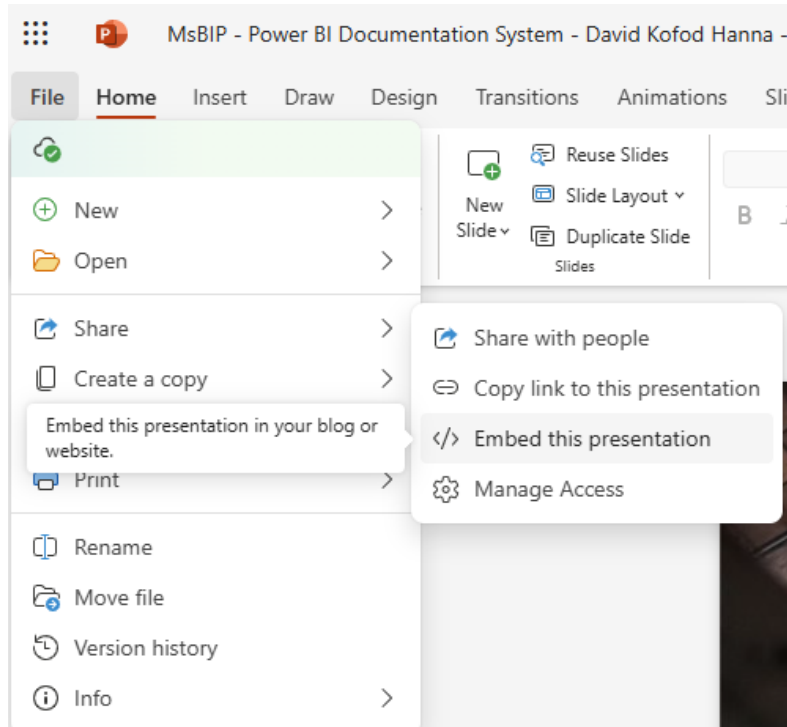
Link behavior

☐ Open link in new browser tab

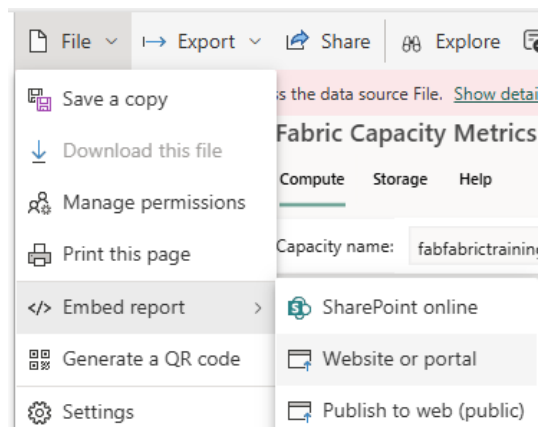
☒ Embed linked content into app

CreateCancel

Embed PowerPoint, Excel, PDF



Embed reports from other workspaces



Securely embed this report in a website or portal

Set up your link

☐ Enable action bar ☐ Enable Copilot ⓘ

Link to embed this content

`https://app.powerbi.com/reportEmbed?reportId=f3c5deba-ff7d-4511-824d-7387dfd5d437&autoAuth=`

HTML to paste on a website

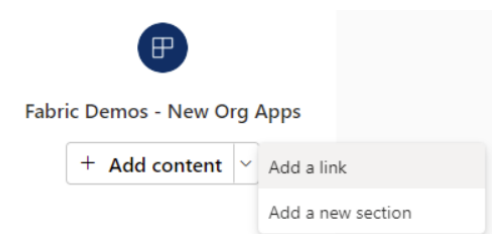
`<iframe title="Fabric Capacity Metrics" width="1140" height="541.25" src="https://app.powerbi.com/re`

Changing the width or height from what is specified in the iframe code above may result in certain features not working as expected.

[Explore more embedding options in our Power BI embedded analytics playground](#)

Close

However, there is a workaround. If you instead of adding the Power BI report as normal content, choose to add a link:



And in the Link textbox add the Embed URL of your Report, with the following suffix added at the very end "&navContentPaneEnabled=false" (remove the "").

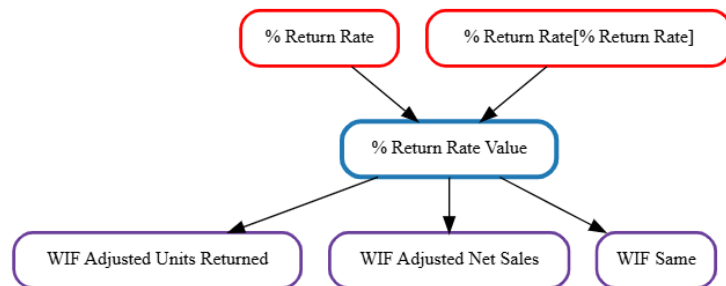
Embed Notebooks for technical documentation

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

+ Code + Markdown

```
1 #Install Measure Maze in a Fabric Notebook
2 !pip install https://github.com/pawarbi/MeasureMaze/raw/main/measuremaze-0.0.1-py3-none-any.whl --q
3
```

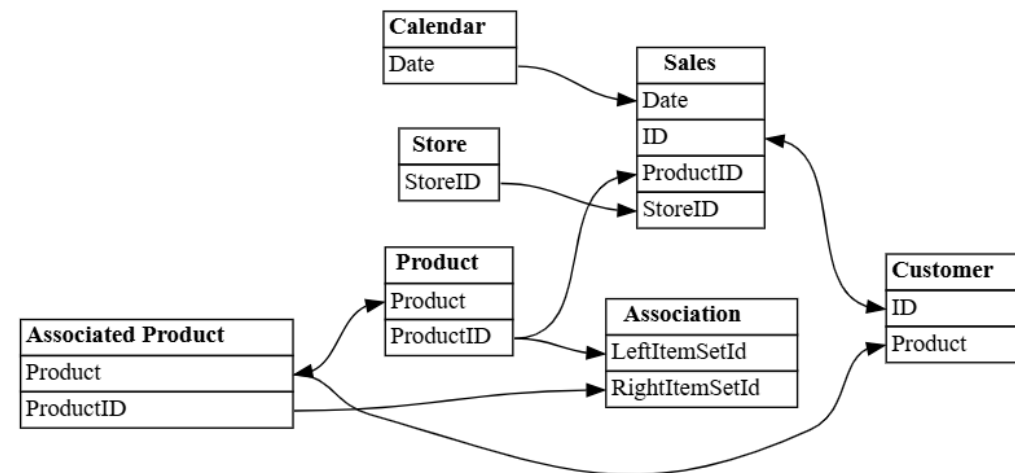
```
[7] 1 all_objects.plot('% Return Rate Value')
```



```
1 #Semantic Link can also be used to plot relationships between tables.
2
3 from sempy import fabric
4 from sempy.relationships import plot_relationship_metadata
5
6
7 relationships = fabric.list_relationships(workspace=ws, dataset=ds)
8 plot_relationship_metadata(relationships)
9
```

[22]

...





Semantic Model – OneLake catalog

OneLake catalog

Explore Govern (preview)

Power BI & Fabric Sho... Data types: (All) Filter by keyword

All items My items Endorsed items Favorites Workspaces All workspaces My workspace 20 Power Query (M)... Fabric Analyst in A ... Mastering Composi... Power BI & Fabric S... More workspaces...

Name

- Power BI Docs - System
- Inspiration Power BI
- StagingWarehouseForDataflows_202...
- StagingWarehouseForDataflows_202...
- StagingWarehouseForDataflows_202...
- StagingWarehouseForDataflows_202...
- StagingLakehouseForDataflows_202...
- DataflowsStagingWarehouse
- DataflowsStagingWarehouse
- DataflowsStagingLakehouse
- 9 KPI's Selection
- Feature demo
- Design only - Expand Bookmark nav
- Template 1
- Supply Chain Analytics Template

Semantic model

Power BI Docs - System

Open

Overview Lineage Monitor Permissions

Location Refreshed Owner

Power BI & Fabric Showcase 19/05/25, 13:35:28 David Kofod Hanna

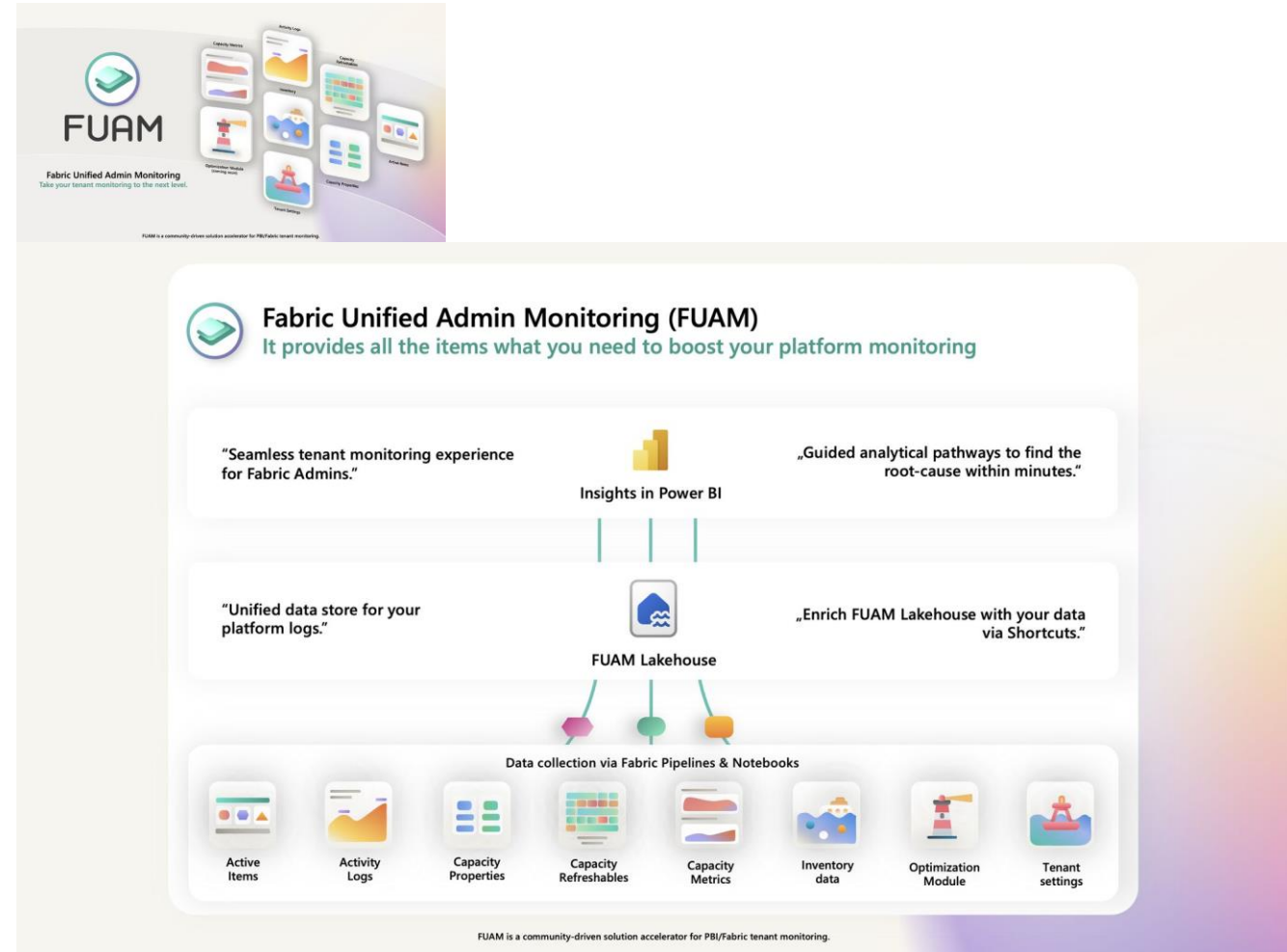
Tables Filter by keyword

Name	Type	Description
> Customer	Table	From CRM, ERP and ServiceNow - combined and validated by ...
> Date	Table	Derived from Melissa de Korte Extended Date Function
> Exchange Rate	Table	From purchased source from web
> Global Measures	Table	Store Global measures from Semantic Model Developer
> Invoice Document Type	Table	MS F&O
> Last Refresh	Table	Last refresh of semantic model - not the underlying job and pi...
> Local Measures	Table	Store Local Report Level Measures



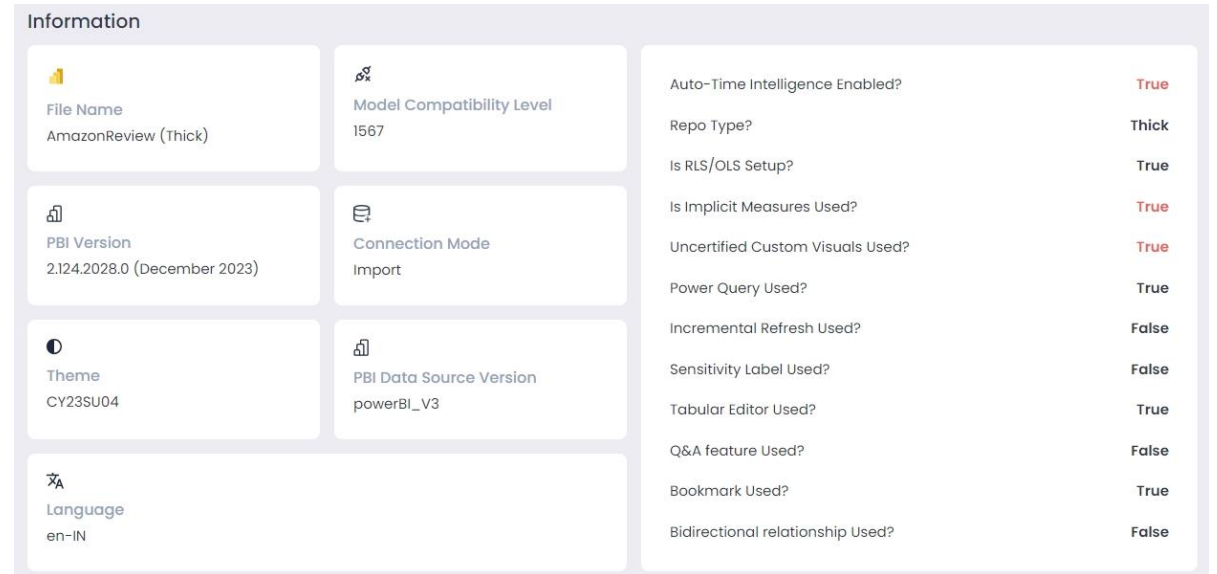
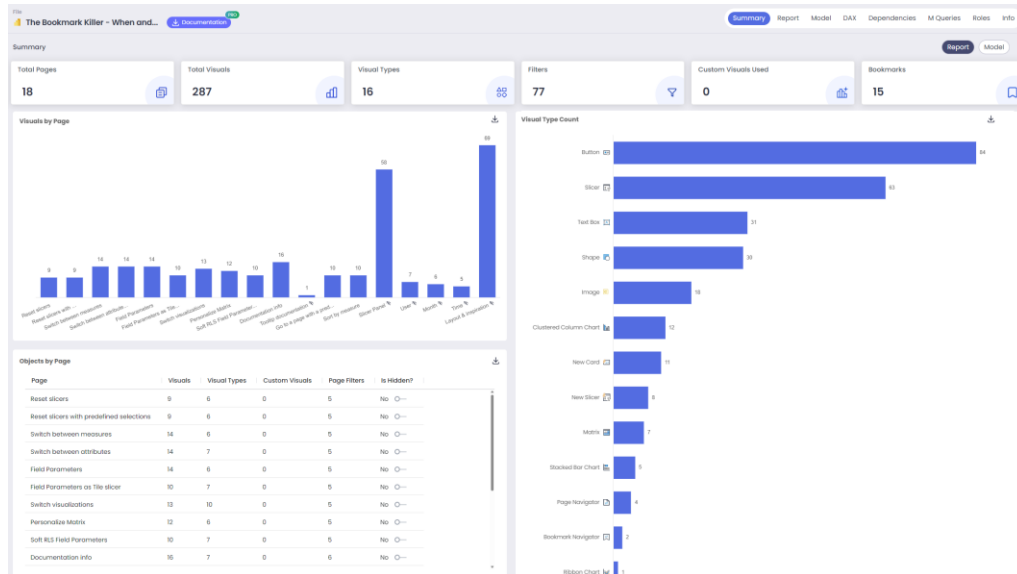
All into a Lakehouse

- Semantic Link Labs
- Dataflow Gen2
- DAX Queries
- FUAM – Fabric Unified Admin Monitoring
- Copilot – Now with F2 SKU
- Copilot to be trained on Model.Bim file
- .PBIR meta data into
- Report Best Practice Analyzer
- Best Practice Analyzer Semantic Model
- VertiPaq Analyzer
- Data Agents and Copilot on top of your data in Fabric

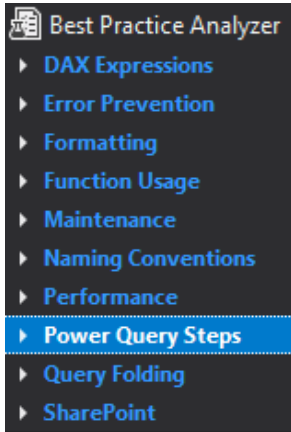


External Tools – Powerops

Documentation and overview at ease



Tabular Editor - Best Practice Analyzer Rules



```
1  [
2  {
3    "ID": "PQ_COMMENT_RULE_ADDCOLUMN_PARTITION",
4    "Name": "[Power Query Steps] Add Comment for Custom Column to Provide Better Documentation",
5    "Category": "Power Query Steps",
6    "Description": "Add Comments for Complicated Steps - For merge steps or adding a custom column, if the previous line does not have a preceding comment
7    "Severity": 3,
8    "Scope": "Partition",
9    "Expression": "\nSourceType.ToString() = \"M\" and Regex.IsMatch(Query, \"\\/*[\\s\\S]*?\\/*/.*(?:\\r?\\n\\s*)?[^\r\n]*\\s*=\\s*Table\\.\\.(AddColumn
10   \"CompatibilityLevel\": 1200
11  },
12  {
13    "ID": "PQ_COMMENT_RULE_ADDCOLUMN_NE",
14    "Name": "[Power Query Steps] Add Comment for Add Custom Column to Provide Better Documentation",
15    "Category": "Power Query Steps",
16    "Description": "Add Comments for Complicated Steps - For merge steps or adding a custom column, if the previous line does not have a preceding comment
17    "Severity": 3,
18    "Scope": "NamedExpression",
19    "Expression": "Kind.ToString() = \"M\" and Regex.IsMatch(Expression, \"\\/*[\\s\\S]*?\\/*/.*(?:\\r?\\n\\s*)?[^\r\n]*\\s*=\\s*Table\\.\\.(AddColumn)\"
20    \"CompatibilityLevel\": 1200
21  },
22  {
23    "ID": "PQ_COMMENT_RULE_NESTEDJOIN_PARTITION",
24    "Name": "[Power Query Steps] Add Comment for Nested Join to Provide Better Documentation",
25    "Category": "Power Query Steps",
26    "Description": "Add Comments for Complicated Steps - For nested joins, if the previous line does not have a preceding comment line, suggest inserting
27    "Severity": 3,
28    "Scope": "Partition",
29    "Expression": "\nSourceType.ToString() = \"M\" and Regex.IsMatch(Query, \"\\/*[\\s\\S]*?\\/*/.*(?:\\r?\\n\\s*)?[^\r\n]*\\s*=\\s*Table\\.\\.(NestedJoin
30    \"CompatibilityLevel\": 1200
31  },
32  {
33    "ID": "PQ_COMMENT_RULE_NESTEDJOIN_NE",
34    "Name": "[Power Query Steps] Add Comment for Nested Join to Provide Better Documentation",
35    "Category": "Power Query Steps",
36    "Description": "Add Comments for Complicated Steps - For nested joins, if the previous line does not have a preceding comment line, suggest inserting
```

Best Practice Analyzer: <https://powerbi.microsoft.com/da-dk/blog/best-practice-rules-to-improve-your-models-performance/>

Michael Kovalsky BPA Rules: <https://github.com/m-kovalsky/Tabular?tab=readme-ov-file>

John Kerski Power Query BPA Rules: <https://gist.github.com/kerski/30bfe29526db6aa9c109e780e7902579>

twoday academy

End User Docs

You don't fix culture with content. You fix it with conversation.

- Training
- Data Literacy & Data culture
- Features like reset to default and more ;)
- Meta data
- Guided Tour

End-User Report Information



Power UI (World Champion)

Answers the following business questions for the following business groups

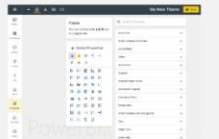
Navigate



Curbal BI JSON

Answers the following business questions for the following business groups

Navigate



Power BI Tips

Answers the following business questions for the following business groups

Navigate



Color Highlight in VS

Answers the following business questions for the following business groups

Navigate

Why do I have these numbers?

Data last refreshed:
10 May 2025 10:05

Data Assumptions:

- Figures shown in DKK excl. VAT
- Data from 2022 and on-wards (No historic data from earlier system)

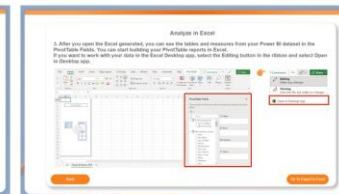
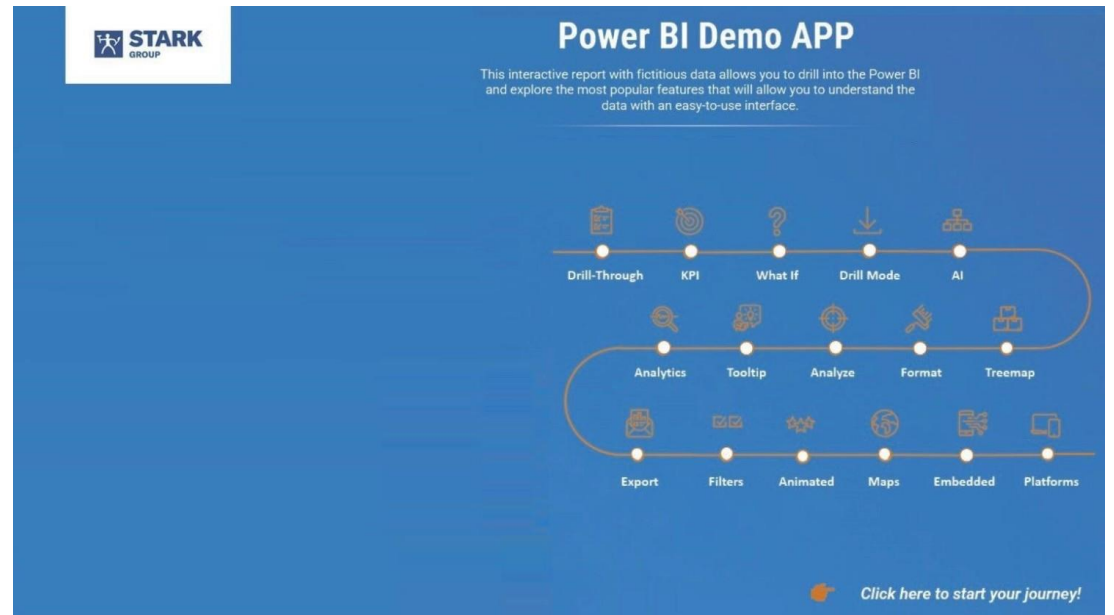
Support:

David.hanna@twoday.com

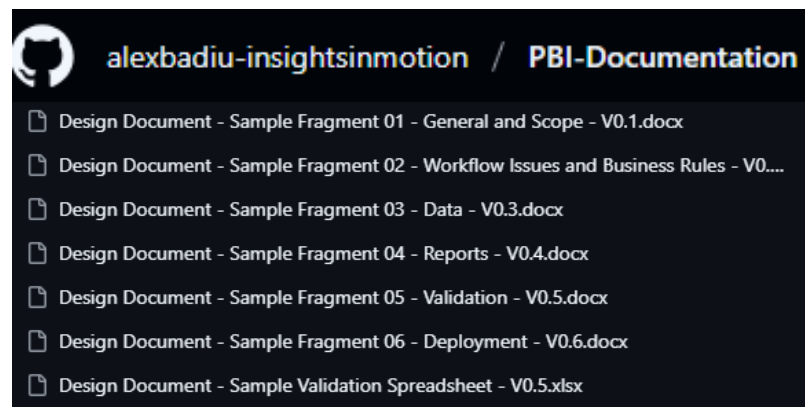
Designing a Self-Learning Power BI Demo for End Users



Alice Aguiar Costa
Power BI Data Analyst Associate | Power BI Developer | 4x Microsoft Certified | Data Storyteller | DataViz



Design Documents – Samples



Power BI Documentation – Design Document
Sample Fragment 04 – Reports

Table of Contents	
1. Introduction	3
2. Scope of Work	3
3. Workflow	3
4. Issues	3
5. Business Rules	3
6. Data	3
7. Reports	3
7.1. Common	3
7.1.1. Theme	3
7.1.2. Filters	4
7.1.3. Navigation	5
7.1.4. Page Header	6
7.1.5. Page Footer	7
7.1.6. Slicers	7
7.2. Specific	8
7.2.1. Semantic Model (specific)	8
7.2.2. AR01 – All Invoices	9
7.2.3. AR02 – Current Invoices	10
7.2.4. AR03 – Upcoming Invoices	10
7.2.5. AR04 – Historical Invoices	11

The items that will be included are described below.

ID	Name (Category / Subcategory)	Design / Selected / Unselected / Hover
N-1	Invoices	<p>DESIGN:</p> <ul style="list-style-type: none">Type=buttonShape=any, with border=offAction=page navigation (subcategory 1) <p>DEFAULT (selected):</p> <ul style="list-style-type: none">Font=Segoe UI, white, 10 ptBackground=dark blueNavigation=page, Invoices-All <p>DEFAULT (unselected):</p> <ul style="list-style-type: none">Font=Segoe UI, medium grey, 10 ptBackground=medium blueNavigation=page, Invoices-All <p>HOVER:</p> <ul style="list-style-type: none">Font=Segoe UI, dark grey, 11 ptBackground=medium greyNavigation=page, Invoices-All
N-2	Invoices / All	(same as N-1 above)
N-3	Invoices / Current	(same as N-1 above, but with adjusted page navigation and selected and unselected defaults reversed)
N-4	Invoices / Upcoming	(same as N-1 above, but with adjusted page navigation and selected and unselected defaults reversed)
N-5	Invoices / Historical	(same as N-1 above, but with adjusted page navigation and selected and unselected defaults reversed)

7.1.6. Slicers

The slicers that will be included on each page of each all report are described below.

ID	Slicer	Design Features / Data / Notes
n/a	General	<p>Title=Segoe UI Semibold, 10 pt</p> <p>Values=Segoe UI, 8 pt</p> <p>Style=dropdown</p> <p>Selection=multi-select; CTRL off; Select All off</p> <p>Header icons=off</p> <p>Search box=enabled</p>
S-1	Fiscal year	<p>Data=Dates[Fiscal Year]</p> <p>Notes=search box unavailable as numeric data</p>
S-2	Fiscal quarter	<p>Data=Dates[Fiscal Quarter]</p> <p>Notes=search box unavailable as numeric data</p>
S-3	Date range	<p>Type=between</p> <p>Slider=on, responsive off</p> <p>Data=Dates[Date]</p>
S-4	Province	<p>Type=text</p> <p>Data=Countries[Province]</p>

 Please write my
documentation



Power BI Documentation System – from Model to App

■ Automated or Script ■ Manual ▭ Requires Fabric SKU



Power Query
{M}



Semantic
Model



Power BI
Desktop



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

■ 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

DAX Expression
as Description

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:

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Semantic Model and
DAX scripts

Semantic Link Labs in
Fabric Notebooks for
automation like never
before

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

- James Clear, Atomic Habits

30 items to be shared directly or via other GitHub Repo's

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

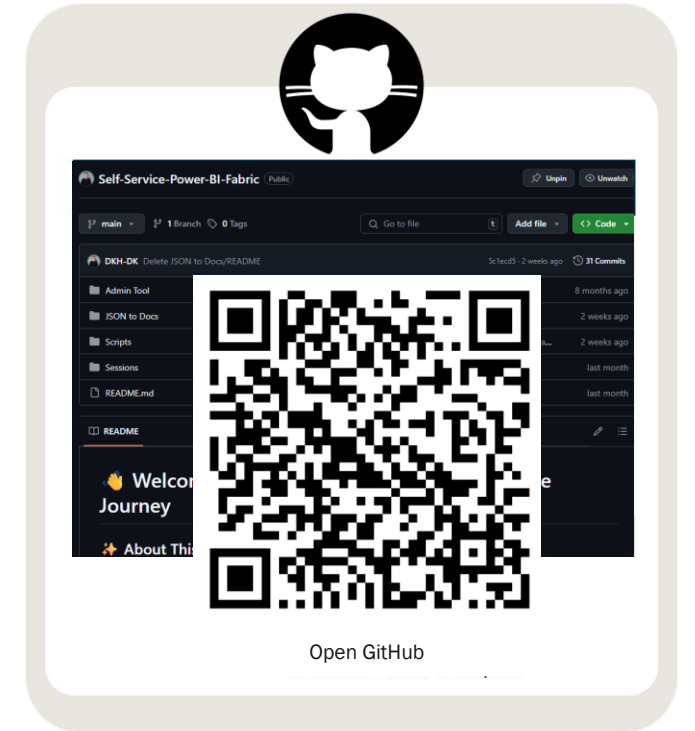
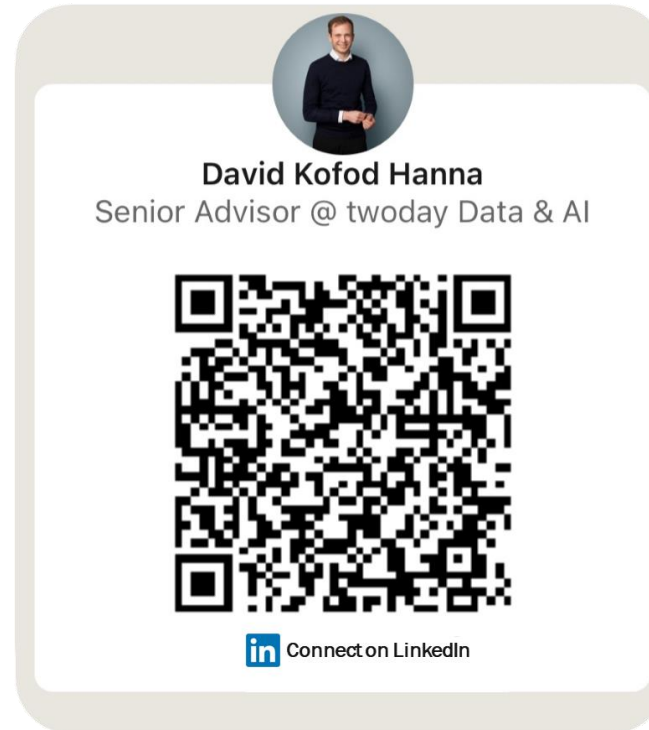
Credit and resources

- Alex Badiu and Greg Philips GitHub on Documentation: <https://github.com/alexbadiu-insightsinmotion/PBI-Documentation/tree/main>
- Kurt Buhler Data Goblin: <https://data-goblins.com/power-bi/dataset-checklist>
- JSON to Docs Template: <https://www.linkedin.com/feed/update/urn:li:activity:7323594556698968064/>
- Table Groups in Power BI Desktop: <https://www.linkedin.com/pulse/table-groups-power-bi-desktop-infoview-david-kofod-hanna-aotof>
- Model Documentation in DAX: <https://www.linkedin.com/pulse/model-documentation-automation-dax-scripts-tabular-editor-hanna-7bhyf/>
- David's GitHub: <https://github.com/DKH-DK/Self-Service-Power-BI-Fabric/tree/main>
- One App to Rule Them All: <https://www.linkedin.com/pulse/one-app-rule-them-all-david-kofod-hanna-pvopf/>
- Best Practice Analyzer: <https://powerbi.microsoft.com/da-dk/blog/best-practice-rules-to-improve-your-models-performance/>
- Michael Kovalsky BPA Rules: <https://github.com/m-kovalsky/Tabular?tab=readme-ov-file>
- Sandeep Pawar: <https://fabric.guru/measure-maze-visualizing-measure-dependencies-using-semantic-link-network-analysis>
- Hariharan Rajendran: <https://www.linkedin.com/feed/update/urn:li:activity:7307061810375925760/>
- Jon Vöge: <https://downhill-data.com/2024/12/10/fabric-quick-tips-hiding-power-bi-report-page-navigation-in-workspace-apps-and-organizational-apps/>
- Tabular Editor Scripts: <https://docs.tabulareditor.com/common/CSharpScripts>
- FUAM & Fabric Toolbox: <https://github.com/microsoft/fabric-toolbox>
- Powerops: <https://powerops.app/>
- Power Query Formatter: www.powerqueryformatter.com
- John Kerski Power Query BPA Rules: <https://gist.github.com/kerski/30bfe29526db6aa9c109e780e7902579>
- Guy in a Cube: <https://www.youtube.com/watch?v=fr1yjm-uFRE>
- Alice Aguiar Costa: <https://www.linkedin.com/pulse/designing-self-learning-power-bi-demo-end-users-alice-costa-le4uf/>
- OneLake Catalog: <https://app.powerbi.com/onelake/explore?experience=power-bi>

A Power BI Documentation System

– Not Just an Afterthought

Released today
on **GitHub**
and soon a
LinkedIn article



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Clear, Concise, Complete, Consistent, Correct, Consumable





” “Be kind to your
future self

— and the next person who takes over your solution.”

Thank you!




David Kofod Hanna
Senior Advisor @ twoday Data & AI



 Connect on LinkedIn



 Open Free Learning
Resource Power BI Report

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