

A Power BI Documentation System

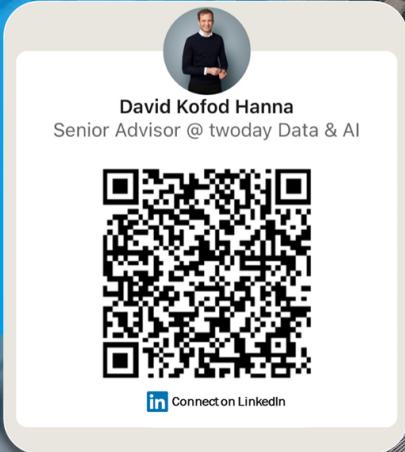
– Not Just an Afterthought

BI Budapest Forum
Nov-2025

Presented by
David Kofod Hanna



Open GitHub



in Connect on LinkedIn



Open Free Learning
Resource Power BI Report

twoday

David Kofod Hanna



Senior Advisor, Data Storytelling @ twoday

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



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 Denmark, Silkeborg with wife and 3 kids
Love football and running half-marathons



twoday

twoday academy

Who **loves** documentation?



Who **writes** documentation?



Who **updates** documentation?



Who **reads** documentation?



Who can **find** documentation?

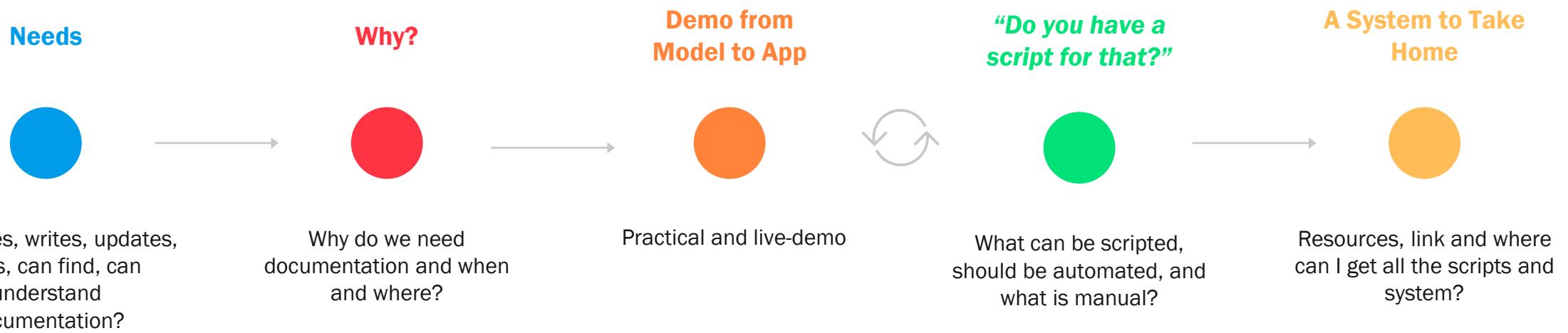


Who can **understand** documentation?



A Power BI Documentation System

– Not Just an Afterthought



Example of project

Requirements

Approve

Develop

Validate

Test

Training

Documentation

Requirements

Approve

Develop

Validate

Test

Training

Documentation

Why documentation?

Transparency

Reproducibility

Collaboration

Compliance

Scalability

Easier debugging

I CREATED 175 BOOKMARKS





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



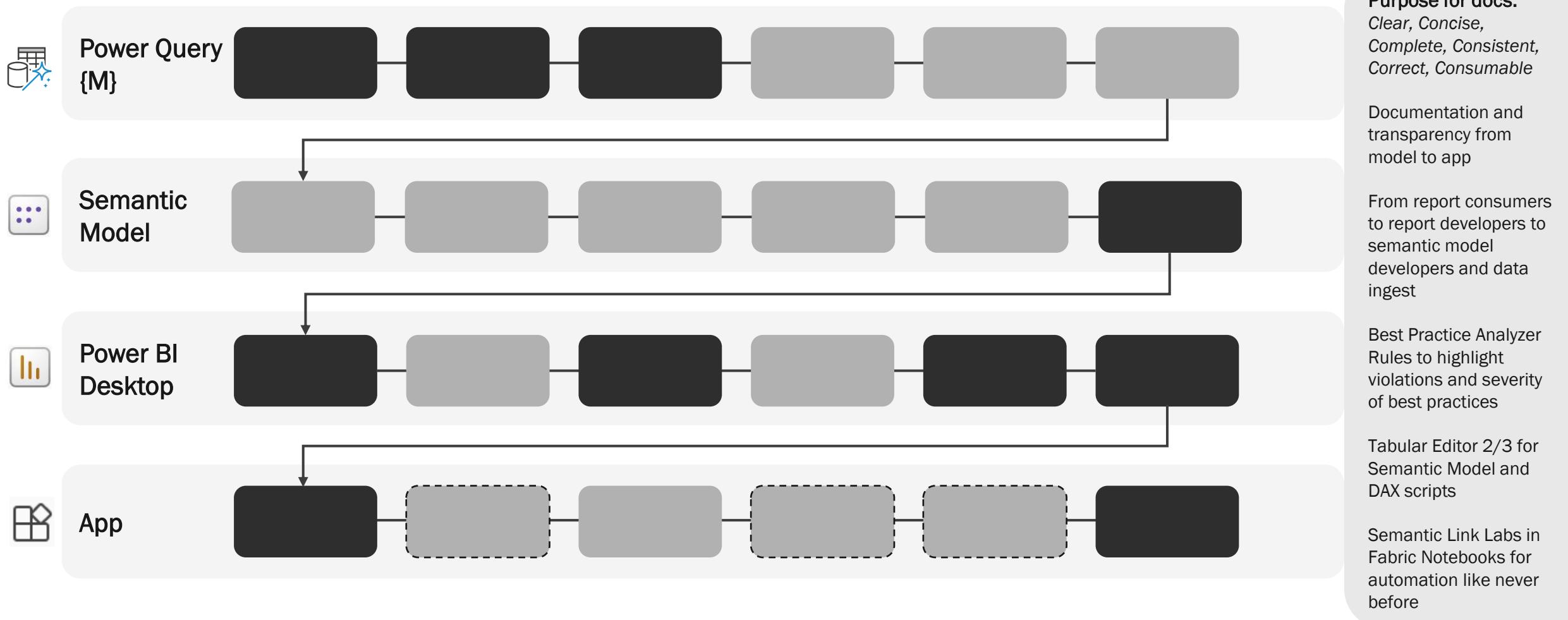
Power BI Documentation System – from Model to App





Power BI Documentation System – from Model to App

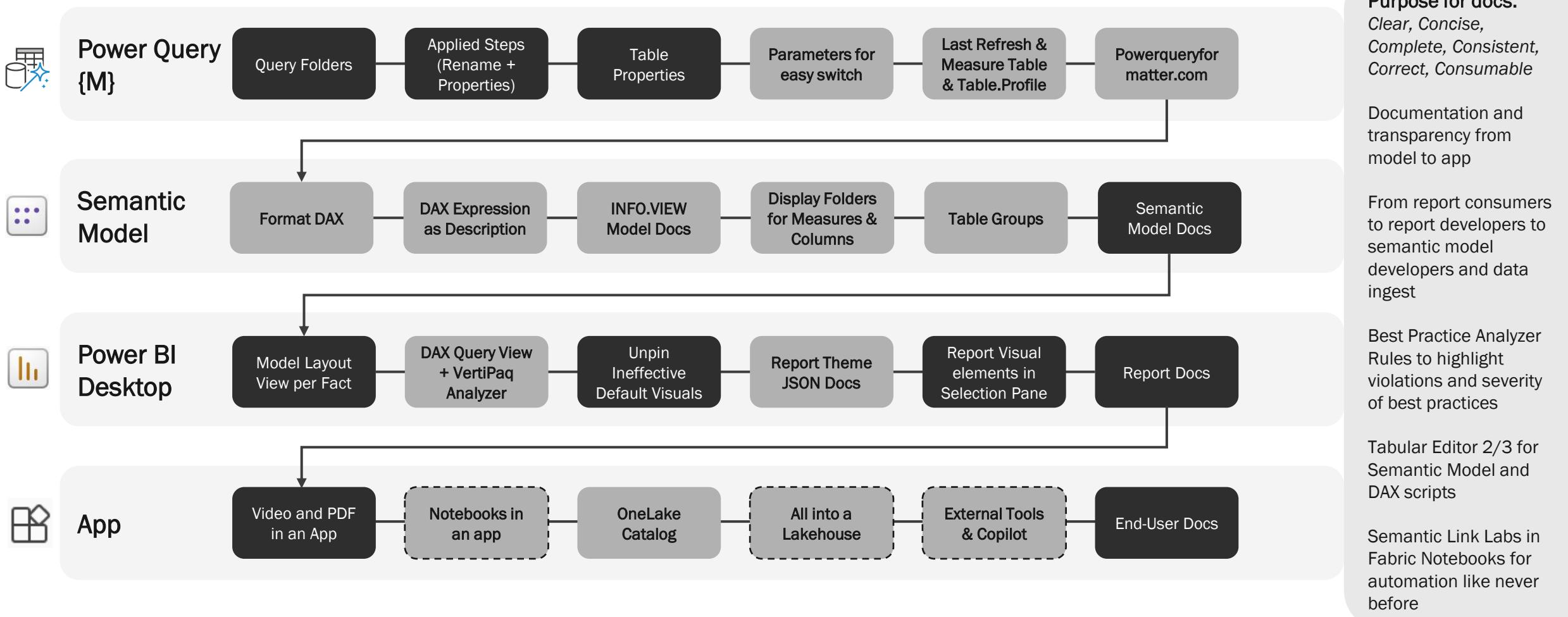
 Automated or Script Manual Requires Fabric SKU





Power BI Documentation System – from Model to App

Automated or Script Manual Requires Fabric SKU



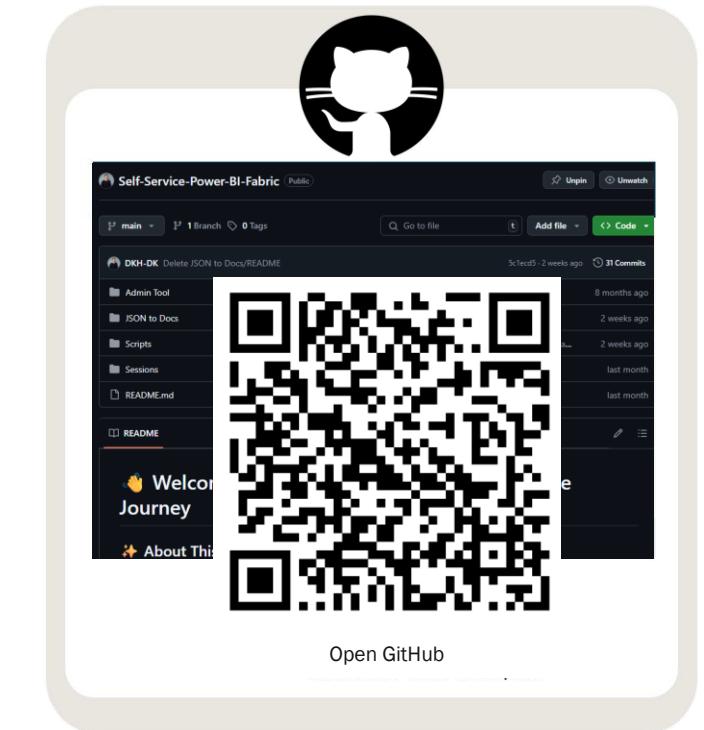
A Power BI Documentation System

– Not Just an Afterthought

**Released on
GitHub
and LinkedIn
article**

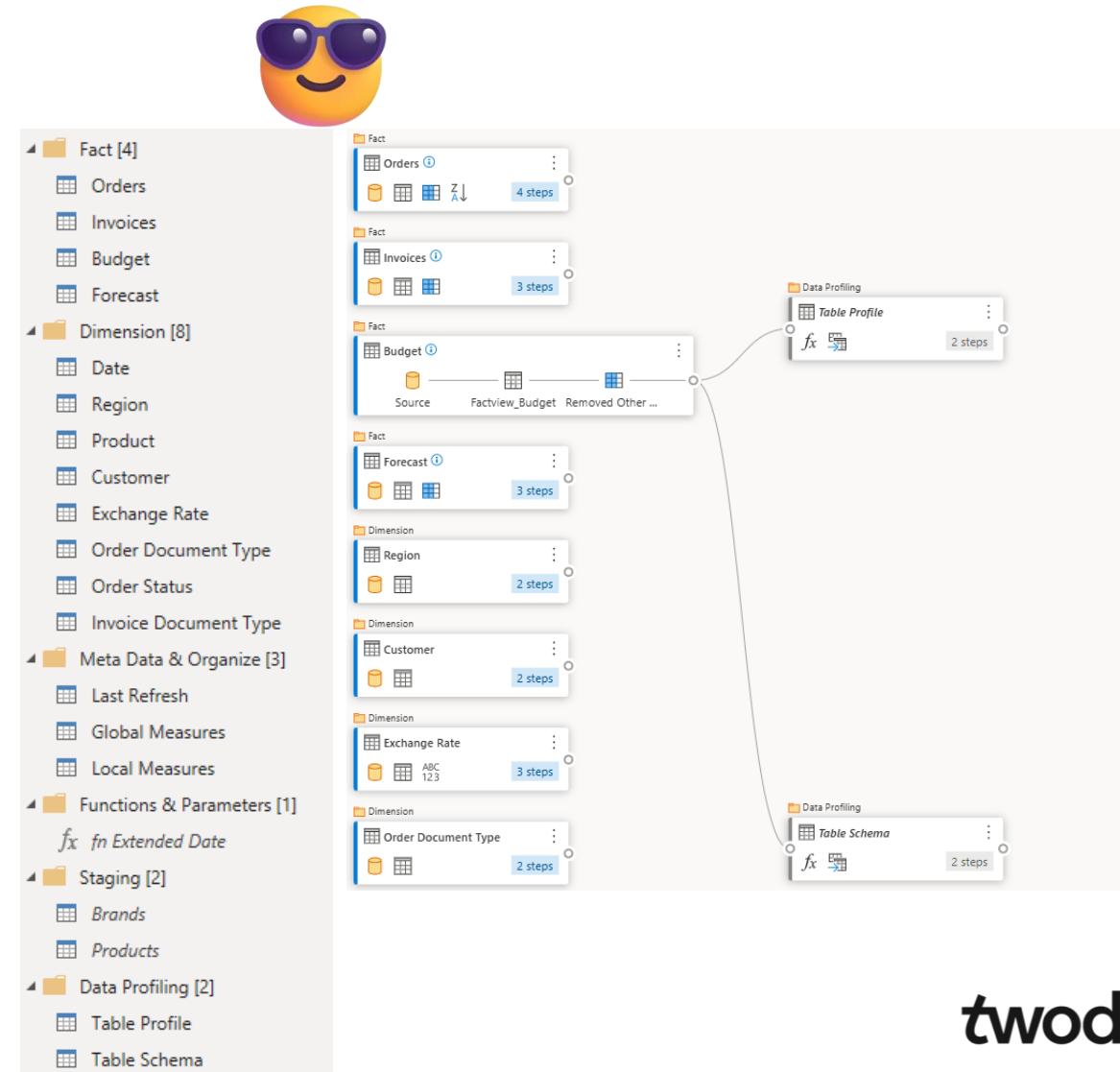
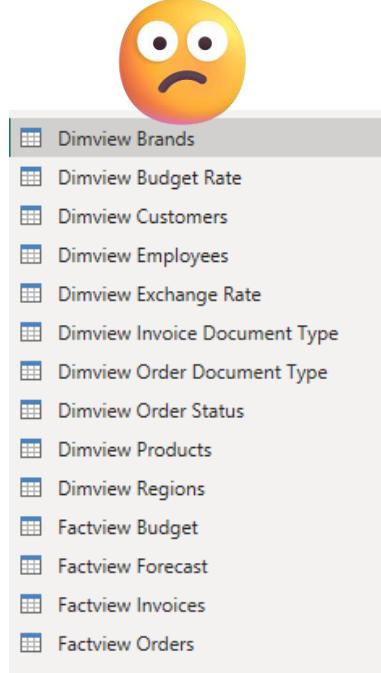
#DocumentationCanBeFun

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.MicrosoftPowerBI/Desktop
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



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Query folders by type – and Diagram View in Dataflow Gen2



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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... <small>(i)</small>	#
Expanded Accuracy Master for clientna...	#
DQ Check Column: Clientname = Client...	#
Changed Type Wholenumber for DQ c...	

 View Native Query
 Diagnose
 Properties...

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.

 David Kofod Hanna • You
Senior Advisor | Academy | Speaker 3d ...

Not an excuse, but curious if the Power Query engine will optimize this in the engine call?

Like | Reply · 2 replies | 1,863 impressions

 Chandeep Chhabra • Author
Power BI Trainer and Consultant 3d ...

David Kofod Hanna Very hard to convincingly say - "Power Query engine will take care of it"



Table properties –

add it once and see it
everywhere

Table properties – add it once and see it everywhere

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**

In Power Query Editor

Queries [22]

Dimension [8]

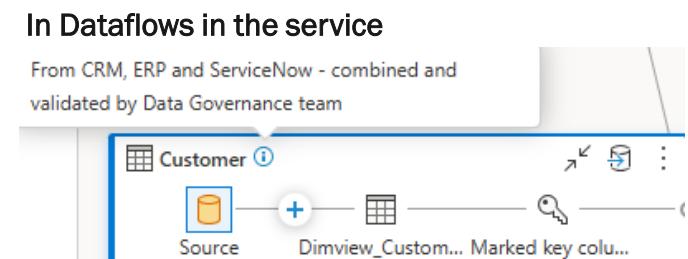
- Product**
- Customer** (selected)
- Ex: From CRM, ERP and ServiceNow - combined and validated by Data Governance team
- Orer Document Type

In Power BI Desktop

Data

Name	Customer
Storage mode	Import
Data refreshed	5/16/2025, 8:06:53 PM
Description	From CRM, ERP and ServiceNow - combined and validated by Data Governance team

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



In TMDL

Queries [22]

Dimension [8]

```

1  createOrReplace
2
3
4
5
6
7
8
9
10
11
12
/// From CRM, ERP and ServiceNow - combined and validated by Data Governance team
table Customer
    lineageTag: 726a20c4-ae07-450e-8d9f-e2b51dfa4e91
        column 'Customer Key'
            dataType: string
            isHidden: false
            isAvailableInMdx: false
            displayFolder: Key

```

In INFO.VIEW DAX Functions

Model Documentation by INFO.VIEW Functions

Location	Name	Type	Expression	Description
Budget		Table	From IBM TMDL	
Customer		Table	From CRM, ERP and ServiceNow - combined and validated by Data Governance team	
Date		Table	Defined 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 pipelines	
Local Measures		Table	Store Local Report Level Measures	
Order Document Type		Table	MS F&O	
Order Status		Table	MS F&O	

In OneLake catalog

Semantic model Power BI Docs - System

Open

Overview Lineage Monitor Permissions

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

Tables

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



Model Docs DAX 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)	

INFO.VIEW DAX Functions make this possible

INFO.VIEW.COLUMNS()

INFO.VIEW.MEASURES()

INFO.VIEW.TABLES()

INFO.VIEW.RELATIONSHIPS()



"There's a script for that"

Model Documentation

Attributes

Description
Expression
Location
Name
Type

```

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 )

```



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"

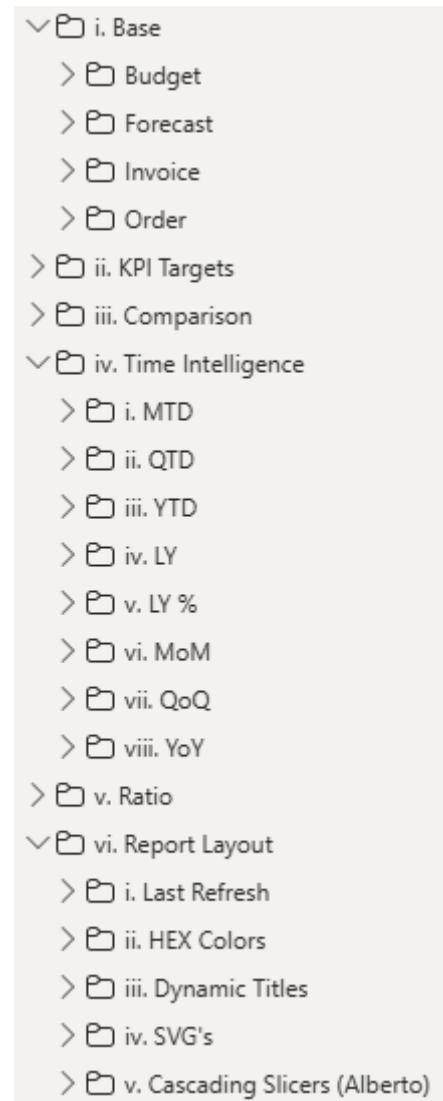
```
//Go through each table in the model
foreach(var table in Model.Tables)
{
  if(table.Name != "Date"){
    //First look at columns
    foreach( var column in table.Columns)
    {
      var keySuffix = "Key";
      var columnDataType = column.DataType.ToString();
      //DWCreatedDate column should be hidden in a seperate 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 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 != "DWCreatedDate")
      {
        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



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



Semantic model

- > Calculation groups (1)
- > Cultures (1)
- > Measures (58)
- Perspectives (0)
- > Relationships (11)
- Roles (0)
- > Tables (16)
 - > Ex.00
 - > Exercises
 - > Time Intelligence
 - > Date
 - > Dimension Field Parameter
 - > Fact Population
 - > Fact Sales
 - > Fact Sales Budget
 - > Fact Sales MTD example
 - > Model Documentation
 - > Numeric Parameter
 - > Product



"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";
    }
}
```



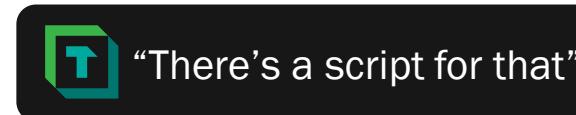
- > Tables
 - > Calculation Groups
 - > Units
 - > User Configuration
 - > Dimensions
 - > Customer
 - > Date
 - > Invoice Document Type
 - > Order Document Type
 - > Order Status
 - > Product
 - > Region
 - > Facts
 - > Budget
 - > Exchange Rate
 - > Forecast
 - > Invoices
 - > Orders
 - > Measure Groups
 - > Global Measures
 - > Local Measures
 - > Table Group DAX
 - > Misc
 - > Last Refresh
 - > Table Profile
 - > Table Schema
 - > Parameter Tables



Table Group in Power BI Desktop with INFO.VIEW

Semantic model

- > Calculation groups (1)
- > Cultures (1)
- > Measures (58)
- Perspectives (0)
- > Relationships (11)
- Roles (0)
- > Tables (16)
 - > Ex.00
 - > Exercises
 - > Time Intelligence
 - > Date
 - > Dimension Field Parameter
 - > Fact Population
 - > Fact Sales
 - > Fact Sales Budget
 - > Fact Sales MTD example
 - > Model Documentation
 - > Numeric Parameter
 - > Product
 - > Region Country
 - > Retailer



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

Rule Specifications

- Measure Group
- An "empty" table to store my measures
If not below tables, no relationships, hidden columns, visible measure
- Fact
- Fact table with many-side relationship *-->
`SELECTCOLUMNS (INFO.VIEW:RELATIONSHIPS), Table name from [FromTable]`
- Dimension
- Dimension table with one-side relationships 1->
`SELECTCOLUMNS (INFO.VIEW:RELATIONSHIPS), Table name from [ToTable]`
- Calculation Group
- Dynamic calculation items with SELECTEDMEASURE
`IF (INFO.VIEW:TABLES) (CalculationGroupPrecedence) >= 1`
- Field Parameter
- Dynamic switch between measure or attributes
`IF (INFO.VIEW:TABLES) CONTAINSSTRING([Expression], "NAMEOF")`
- Numeric Parameter
- Dynamic slider for end users to select
`IF (INFO.VIEW:TABLES) CONTAINSSTRING([Expression], "GENERATE")`
- Model Documentation
- Documentation with INFO.VIEW functions
`IF (INFO.VIEW:TABLES) CONTAINSSTRING([Expression], "INFO.VIEW")`



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 \(D\)](#)

```

1 // Author - Harisharan Rajendran
2 // Name - Model_Summary_in_DAX_Query_View
3 // Version - 1.0
4 // Contact - https://www.linkedin.com/in/lehar-harsh/
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 // Details of the properties
7 EVALUATE
8 VAR _tableCount = COUNTROWS(INFO.TABLES())
9 VAR _columnCount = COUNTROWS(INFO.COLUMNS())
10 VAR _calculatedColumnCount = 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(UPPERCASE(
18         SELECTCOLUMNS(VIEW(TABLES),
19             [StorageMode]
20         )) > 3,
21         "Yes",
22         "No"
23     )
24 VAR _daxTables = COUNTROWS(FILTER(

```

Model Summary

[Property]	[Value]	[Comment]
Tables	21	EVALUATE INFO.TABLES()
Columns	197	EVALUATE INFO.COLUMNS()
--CalculatedColumns	0	EVALUATE FILTER(INFO.CALCULATEDCOLUMNS())
--DirectColumns	197	EVALUATE FILTER(INFO.DIRECTCOLUMNS())
Measures	17	EVALUATE INFO.MEASURES()
Relationships	13	EVALUATE INFO.RELATIONSHIPS()
IsCompositeModel	No	EVALUATE INFO.VIEWTABLES()
DAXTables	2	EVALUATE FILTER(INFO.DAXTABLES())
IsPartitioned	No	EVALUATE FILTER(INFO.ISPARTITIONED())
Perspectives	0	EVALUATE FILTER(INFO.PERSPECTIVES())
Calculation Groups	2	EVALUATE FILTER(INFO.CALCULATIONGROUPS())
Roles	0	EVALUATE FILTER(INFO.ROLES())
PBIDesktopVersion	2.142.1277.0 (25.04)+014fde45...	EVALUATE FILTER(INFO.PBIDESKTOPVERSION())

Model Issues

[Property]	[Value]	[Comment]	[Status]
1 Is Partition Required?	Yes	EVALUATE VAR_dt_part...	Fail
2 Dedicated Date Table	No	EVALUATE FILTER(INFO.D...	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 Inv...	TABLE	Invoices	Invoices
2 Net Invoice Value YTD	CALCULATE([Sum of Ne...	Sum of Net Invoice Value	SUM('Invoices'[Net Inv...	COLUMN	Invoices	Net Invoice Value
3 Net Invoice Value MTD	CALCULATE([Sum of Ne...	Sum of Net Invoice Value	SUM('Invoices'[Net Inv...	TABLE	Invoices	Invoices
4 Net Invoice Value MTD	CALCULATE([Sum of Ne...	Sum of Net Invoice Value	SUM('Invoices'[Net Inv...	COLUMN	Invoices	Net Invoice Value
5 Net Invoice Value QTD	CALCULATE([Sum of Ne...	Sum of Net Invoice Value	SUM('Invoices'[Net Inv...	TABLE	Invoices	Invoices
6 Net Invoice Value QTD	CALCULATE([Sum of Ne...	Sum of Net Invoice Value	SUM('Invoices'[Net Inv...	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	File folder
Measure Dependency	DAX Query File
Model Issues	DAX Query File
Model Summary	DAX Query File
definition.pbism	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



Run DAX Query and save as delta table in Lakehouse 😊

DAX Query x Semantic Link Labs x DAX INFO Functions

Purpose of notebook is to collect, analyze and store semantic model INFO functions and DAX Queries in a Lakehouse and share with semantic model or report owners or "crazy solution documenters"

This can be run in a Python notebook

Credit to following

- Michael Kovalsky - Semantic Link Labs
- List of all DAX INFO functions
- Fourmoo on Python Notebook advantages vs spark notebooks
- Hariharan Rajendran's DAX Query on Models Issues and Model Summary
- Power BI Tips on Save to Delta table with Python
- Reza Rad's take on Power BI model analysis using DAX INFO functions
- David Kofod Hanna's GitHub on Power BI Documentation System

If you feel frustrated like me, not all DAX Info functions can be used like INFO.VIEW functions by adding a calculated DAX table.

Then we have been forced to used DAX Query View.

1 Storage Table Column = `INFO.STORAGECOLUMN()`

The function 'INFO.STORAGECOLUMN()' cannot be used in the expression of a measure, calculated column, or calculated table defined in the model.

Save your frustration, because I found a way to store DAX Query results back to a lakehouse 😊

Manual DAX Query

```
In [ ]: # Define DAX Query to execute  
dax_query = """  
EVALUATE  
INFO.TABLES()  
"""  
  
In [ ]: # Run DAX Query against Semantic Model  
df_result_manual = fabric.evaluate_dax(  
    dataset=SemanticModelName,  
    dax_string=dax_query,  
    workspace=WorkspaceName  
)  
  
# Display the result  
display(df_result_manual)  
  
In [ ]: labs.save_as_delta_table(  
    dataframe=df_result_manual,  
    delta_table_name="daxquery",  
    write_mode="overwrite", # or "append" based on your requirement  
    merge_schema=False, # Set to True if you want to merge schema  
    schema=None, # Provide schema if needed  
    lakehouse=LakehouseName,  
    workspace=None  
)
```

Automated DAX Query loop and save to delta table

```
In [ ]: # Defining DF of all INFO DAX Functions and descriptions  
  
dataDAX = [  
    ("INFO.ALTERNATEOFTDEFINITIONS()", ""),  
    ("INFO.ANNOTATIONS()", "Returns a list of all annotations in t"),  
    ("INFO.ATTRIBUTEHIERARCHIES()", "Represents the TMSCHHEMA_ATTRI"),  
    ("INFO.ATTRIBUTEHIERARCHYSTORAGES()", "")]
```



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.

Try yourself! Download at [GitHub](#)

Active Report Theme: DKH Self-Service Report Theme

Theme Colors 1-8
For data visualization

Theme	Hex	ID
Blue	#367cff	1
Orange	#fa8100	2
Cyan	#6cc6cd	3
Purple	#aa77dd	4
Red	#d14576	5
Dark Red	#b266d6	6
Light Blue	#8b9fd4	7
Yellow	#eae5c9	8

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

KPI Colors
For KPI performance status context

KPI	Hex	Property
Green	#37a78f	Good
Yellow	#f2f2f2	Neutral
Red	#a7d37	Bad

Divergent Min & Max Colors
For divergent heat map

Divergent	Hex	Property
Orange	#fa8100	Minimum
Yellow	#f2f2f2	Center
Blue	#367cff	Maximum
Grey	#a7d37	Null

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

Structural Colors
Non-data ink for colors except the data colors

Structural	Hex	Property
Background	#485257	Background
Background Light	#F1F3F4	BackgroundLight
Background Neutral	#F1F3F4	BackgroundNeutral
Foreground	#485257	Foreground
Foreground Neutral Secondary	#485257	ForegroundNeutralSecondary
Foreground Neutral Tertiary	#606E74	ForegroundNeutralTertiary
Hyperlink	#e6e6e6	Hyperlink
Visited Hyperlink	#e6e6e6	Visited Hyperlink

Visual Styles
15 of 52 visual styles defined in theme

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

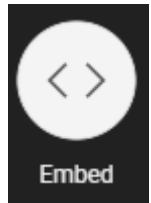
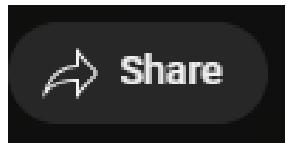
Recommendation:
Set Visual Styles for frequently used visuals like
- Card New Visual
- Matrix
- Table
- Line chart
- Column chart
- Bar chart
- Slicer
- Action button
- Page Navigator

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	
bookmarkNavigator	sid	shape	default	
bookmarkNavigator	sid	border	*	0
bookmarkNavigator	sid	color	Border	#AEBBD
bookmarkNavigator	sid	fillColor	fill	#F1F3F4
bookmarkNavigator	sid	fontColor	Text	#30373A
bookmarkNavigator	sid	fontFamily	Text	Segoe UI Semibold
bookmarkNavigator	sid	fontSize	Text	10,5
bookmarkNavigator	sid	left	*	0
bookmarkNavigator	sid	radius	Border	8
bookmarkNavigator	sid	right	*	0
bookmarkNavigator	sid	roundEdge	shape	8
bookmarkNavigator	sid	show	Border	FALSE
bookmarkNavigator	sid	fill	TRUE	
bookmarkNavigator	sid	outline	Outline	FALSE
bookmarkNavigator	sid	shape	rectangle	

Embed videos



NRK Medieval helpdesk with English subtitles

Watch Later Share

Embed Video

```
<iframe width="560" height="315" src="https://www.youtube.com/embed/pQHX-SjgQvQ?si=n2JMTj9g4Hi0fptp" title="YouTube video player." frameborder="0" allow="accelerometer; autoplay; clipboard-write; encrypted-media; gyroscope; picture-in-picture; web-share" referrerpolicy="strict-origin-when-cross-origin" allowfullscreen></iframe>
```

Start at 0:01

EMBED OPTIONS

Copy

Watch on YouTube 's closed and everything's save inside it.

This block shows a YouTube video thumbnail for a medieval helpdesk. It includes standard sharing options like 'Watch Later' and 'Share'. A modal window titled 'Embed Video' displays the HTML code for embedding the video, along with a checkbox for starting playback at a specific time and an 'EMBED OPTIONS' section.

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 *
Medieval Help Desk

URL address *
<https://www.youtube.com/embed/pQHX-SjgQvQ?si=n2JMTj9g4Hi0fptp>

Include https:// at the beginning of the URL

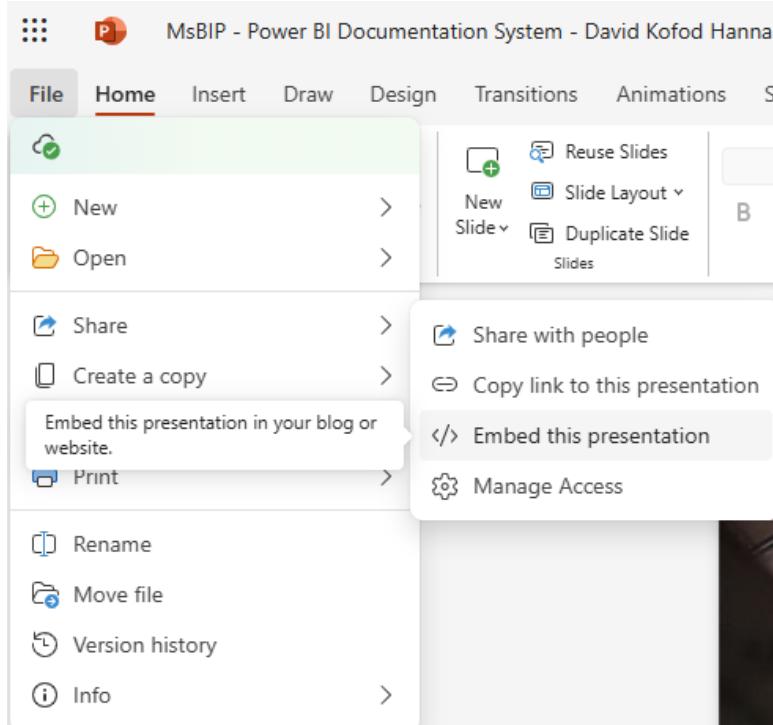
Link behavior

Open link in new browser tab
 Embed linked content into app

Create **Cancel**

This block shows a 'New link' dialog box. It has fields for 'Link name' (Medieval Help Desk) and 'URL address' (a YouTube embed URL). It includes a note about including 'https://'. Under 'Link behavior', the 'Embed linked content into app' option is selected. There are 'Create' and 'Cancel' buttons at the bottom.

Embed PowerPoint, Excel, PDF



Embed

Preview

Dimensions

Width (px): 476
Height (px): 288

Interaction

Use default autoadvance settings from the file

Embed Code

```
<iframe src="https://twodaygroup-my.sharepoint.com/personal/david_hanna_twoday_com/_layouts/15/Doc.aspx?sourcedoc={d687580d-e075-431a-bf09-...>
```

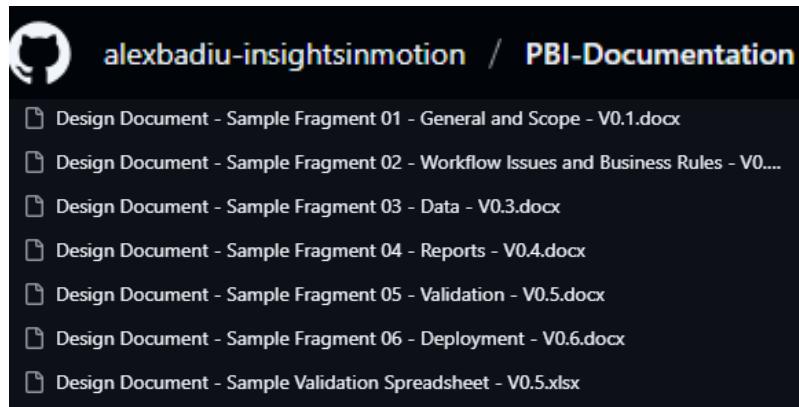
This file will only be accessible to people with permissions.

Buttons: Copy (red), Close

Guy in a Cube: <https://www.youtube.com/watch?v=fr1yjm-uFRE>

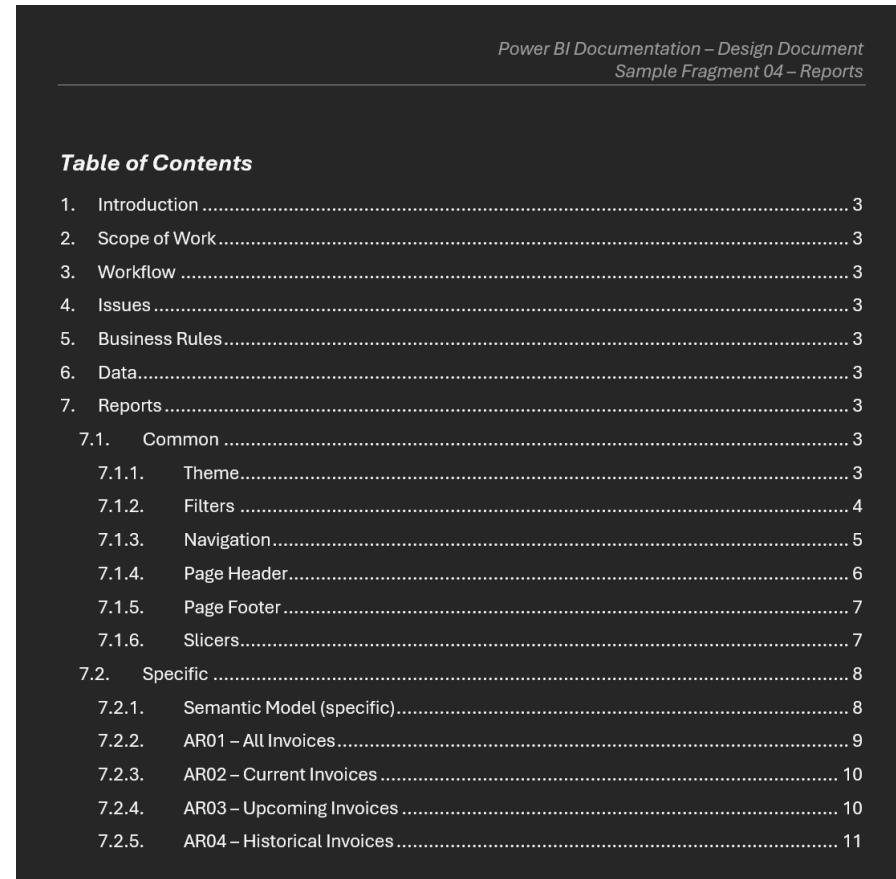
twoday academy

Design Documents – Samples



A GitHub repository page for 'alexbadiu-insightsinmotion / PBI-Documentation'. The repository contains several design documents:

- Design Document - Sample Fragment 01 - General and Scope - V0.1.docx
- Design Document - Sample Fragment 02 - Workflow Issues and Business Rules - V0....
- Design Document - Sample Fragment 03 - Data - V0.3.docx
- Design Document - Sample Fragment 04 - Reports - V0.4.docx
- Design Document - Sample Fragment 05 - Validation - V0.5.docx
- Design Document - Sample Fragment 06 - Deployment - V0.6.docx
- Design Document - Sample Validation Spreadsheet - V0.5.xlsx



Power BI Documentation – Design Document
Sample Fragment 04 – Reports

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7.1.2. Filters	4
7.1.3. Navigation	5
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7.1.5. Page Footer	7
7.1.6. Slicers	7
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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	Title=Segoe UI Semibold, 10 pt Values=Segoe UI, 8 pt Style=dropdown Selection=multi-select; CTRL off; Select All off Header icons=off Search box=enabled
S-1	Fiscal year	Data=Dates[Fiscal Year] Notes=search box unavailable as numeric data
S-2	Fiscal quarter	Data=Dates[Fiscal Quarter] Notes=search box unavailable as numeric data
S-3	Date range	Type=between Slider=on, responsive off Data=Dates[Date]
S-4	Province	Type=text Data=Countries[Province]



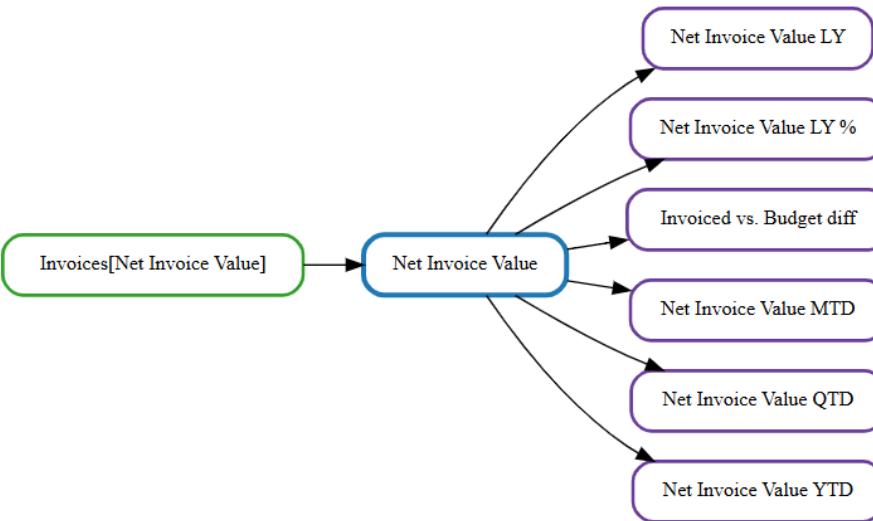
Embed Notebooks for technical documentation

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

+ Code + Markdown

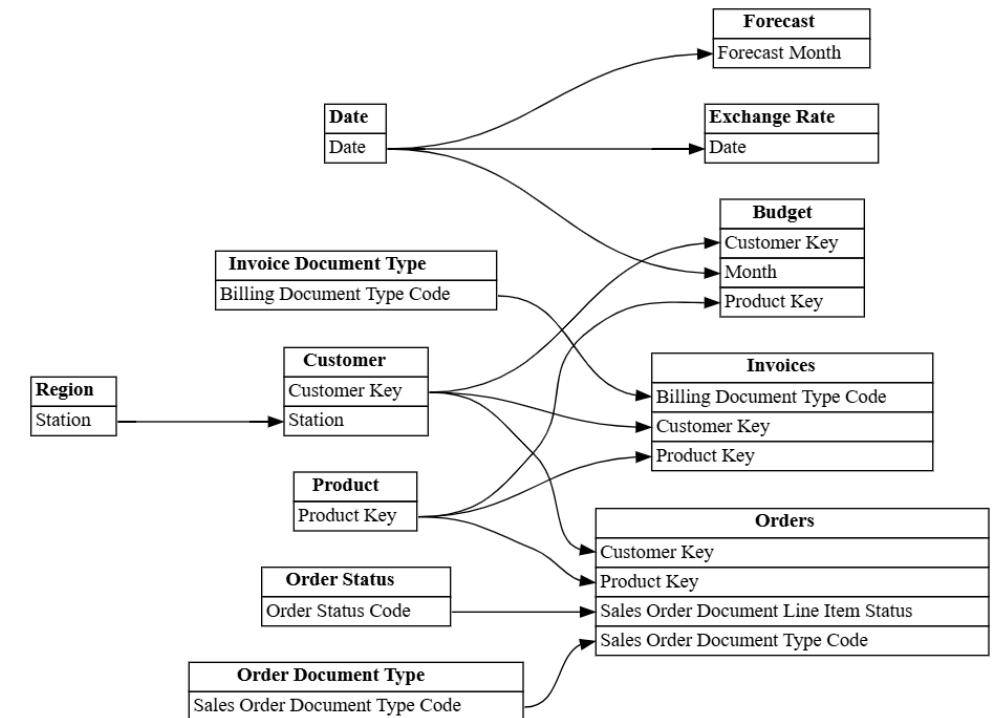
```
1 #Install Measure Maze in a Fabric Notebook
2 !pip install https://github.com/pawarbi/MeasureMaze/raw/main/measuremaze-0.0.1-py3-none-any.whl --q
3
```

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



```
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
```

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





HTML Documentation script – Kurt Buhler x Tabular Editor

Documentation System Devon

DATA GOBLINS SEMANTIC MODEL CHECKLIST

Enhanced with Tabular Editor 3 • Generated: August 12, 2025

Model: Model

1,07 GB
Size (sum of table sizes)

21
Tables

196
Columns

31
Measures

Top 5 Tables by Size

Invoices	499,40 MB
Orders	465,53 MB
Budget	91,92 MB
Product	24,96 MB
Model Documentation	5,09 MB

Top 5 Columns by Size

Orders[Net Order Value]	233,52 MB
Budget[Total Budget]	87,20 MB
Invoices[Net Invoice Value]	68,87 MB
Invoices[Delivery Cost]	59,22 MB
Invoices[Net Invoice COGS]	52,48 MB

This checklist has been automatically analyzed based on your current semantic model structure and contains pre-checked items where applicable.

How to Use This Enhanced Checklist

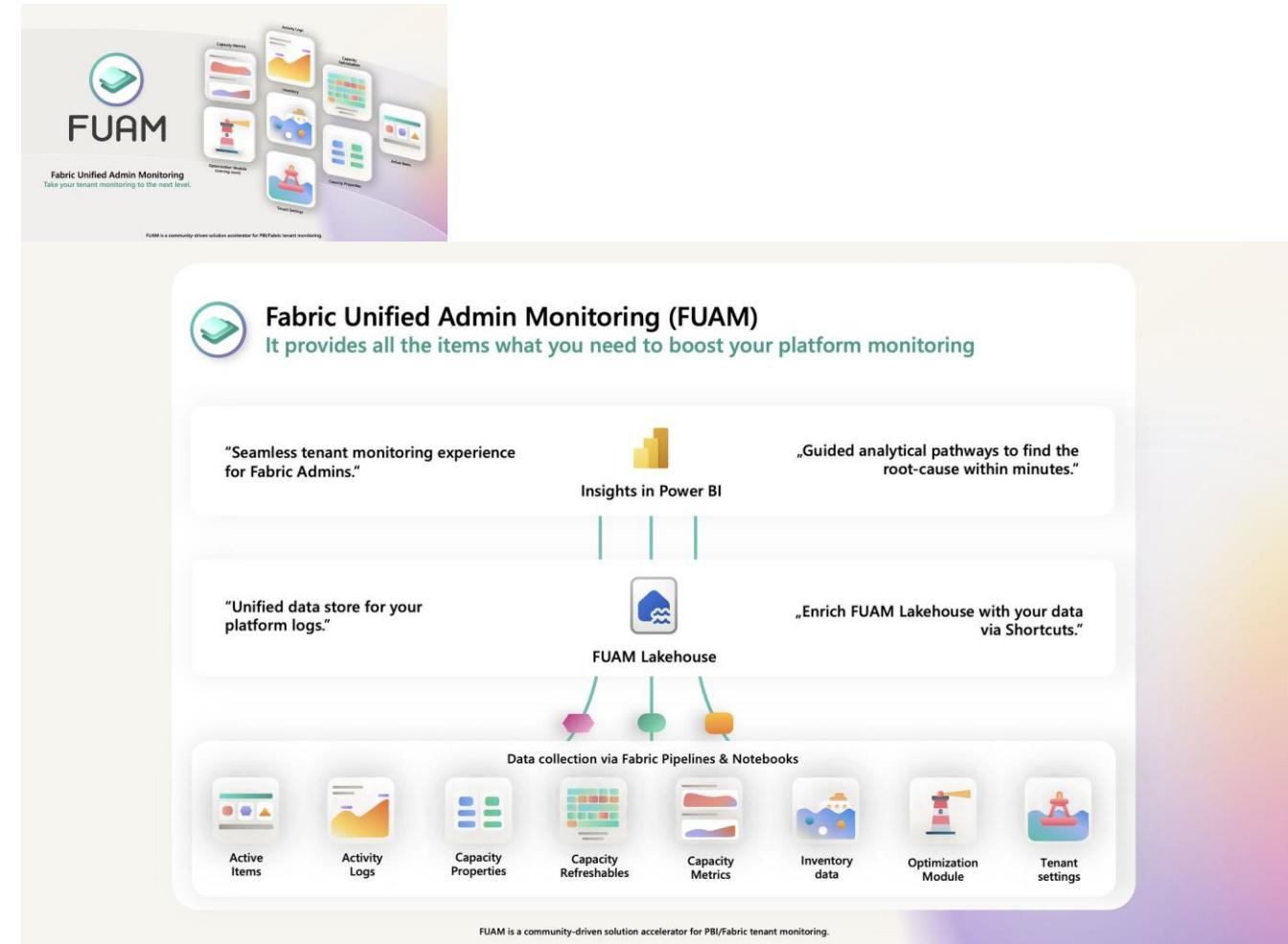
- **Print as PDF:** Use Ctrl+P and select 'Save as PDF' to create a form-fillable document

“There’s a script for that”



All into a Lakehouse + GA of PBIP and PBIR in 2026

- 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 and .PBIR
- .PBIR meta data
- Report Best Practice Analyzer
- Best Practice Analyzer Semantic Model
- VertiPaq Analyzer
- Usage Metrics for activity logs
- Data Agents and Copilot on top of your data in Fabric



FUAM & Fabric Toolbox: <https://github.com/microsoft/fabric-toolbox>



Report Visual Elements

The screenshot shows the 'Report Visual Elements' pane from Power BI. At the top is a large orange sad face icon. Below it is a 'Selection' dropdown and a '... >>' button. Underneath are two tabs: 'Layer order' (which is selected) and 'Tab order'. A 'Show' and 'Hide' button follows. A list of visual elements is then provided:

Element Type	Action
Slicer	⋮ ⋮
Slicer	⋮ ⋮
Slicer	⋮ ⋮
Button	⋮ ⋮
Data last refreshed:	⋮ ⋮





Report Visual Elements – especially important if using bookmarks

The screenshot shows the Power BI interface with the 'Selection' pane open on the left. The 'Bookmarks' pane is open, displaying a list of bookmarks for 'Page 4: Location'. The 'Slicer Pane opened' bookmark is selected. Below the panes, a report page titled 'Power BI User Adoption' is visible, featuring two bar charts: 'User Engagement Rate (UER)' and 'User Engagement Rate (UER) in %'.

City	User Engagement Rate (UER)	User Engagement Rate (UER) in %
Paris	38%	81%
Aberystwyth	34%	66%
Aarhus	31%	69%
Copenhagen	32%	68%
Kolding	27%	72%
Vilnius Lithuania	30%	70%

💡 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**”

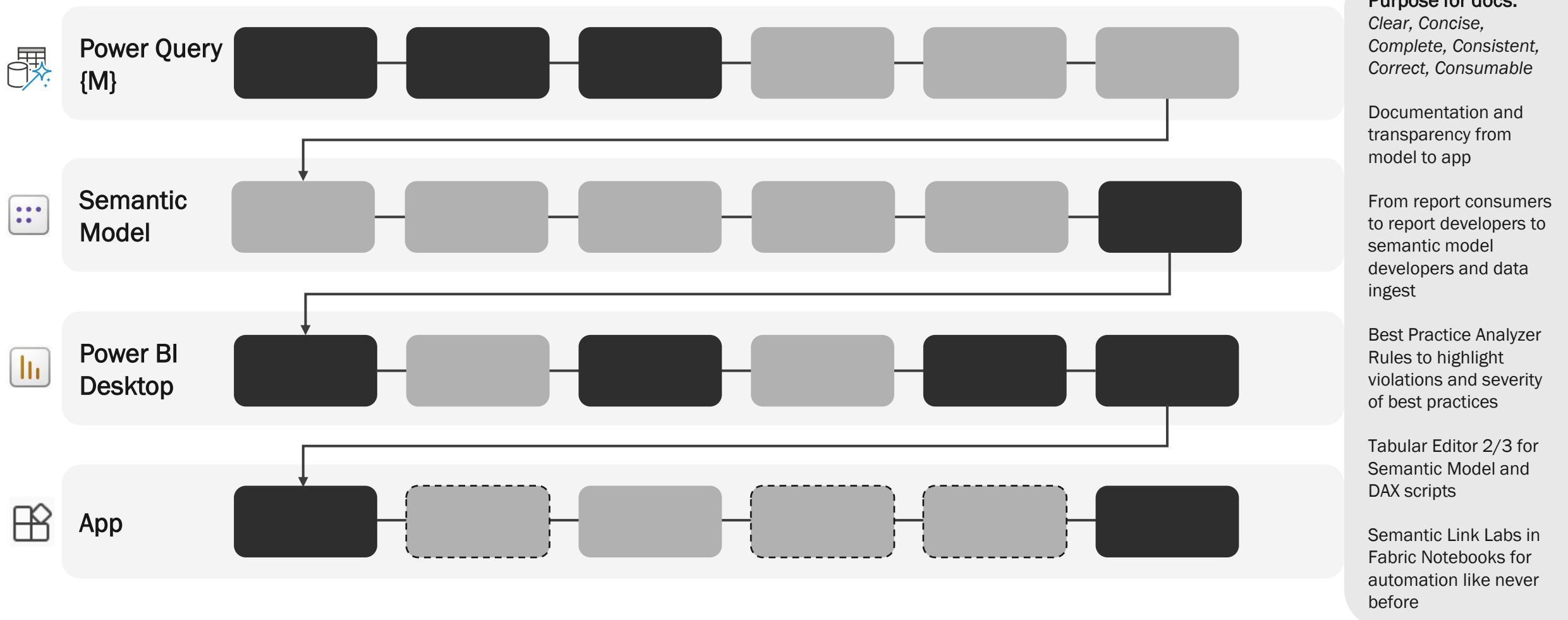


Please write my
documentation



Power BI Documentation System – from Model to App

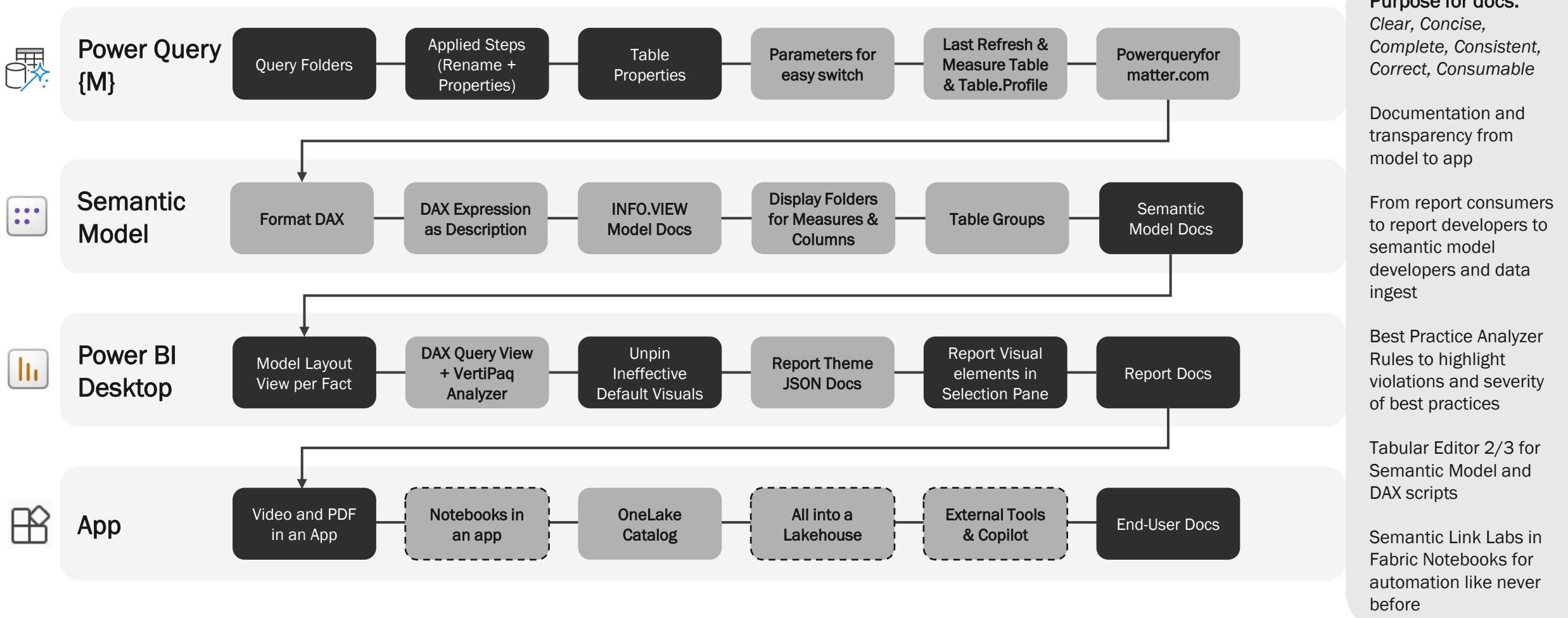
 Automated or Script Manual Requires Fabric SKU





Power BI Documentation System – from Model to App

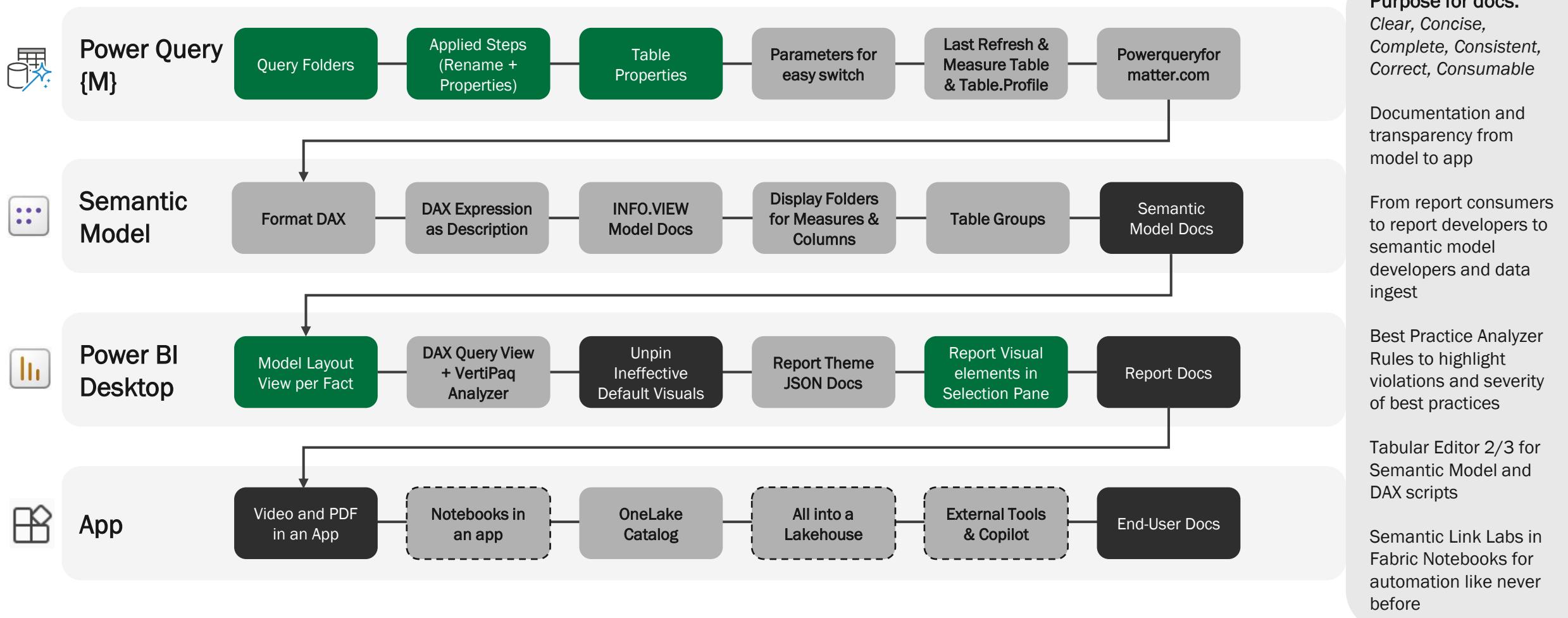
Automated or Script Manual Requires Fabric SKU





Power BI Documentation System – from Model to App

Automated or Script Manual Requires Fabric SKU GitHub Copilot on top of PBIP Format



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

- James Clear, Atomic Habits