

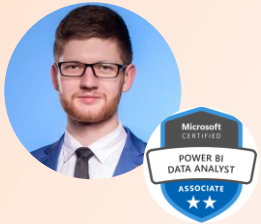
OLD WINE IN A NEW BOTTLE

GRUPY OBLICZENIOWE, EKSPLORATOR MODELU I WIDOK DAX QUERY W POWER BI DESKTOP

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Kim jesteśmy?



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Menu



Przystawka

Eksplorator modelu i grupy obliczeniowe

Pierwsze danie

DAX Query View

Drugie danie

Funkcje INFO DAX

Deser

Automatyczne dokumentowanie i testowanie modelu
Q&A

Eksplorator modelu

Eksplorator modelu danych (Model Explorer)



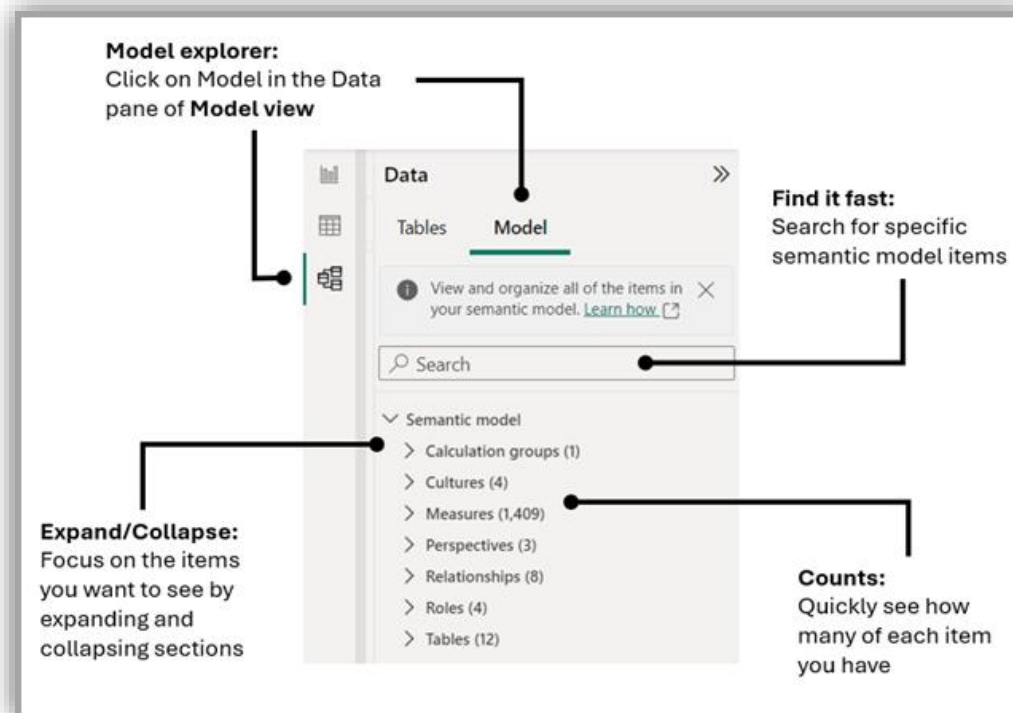
Narzędzie pozwalające na wyświetlanie elementów modelu semantycznego. Pokazuje wszystkie elementy modelu z krótkim podsumowaniem oraz umożliwia ich szybkie wyszukiwanie i przeglądanie oraz podejmowanie konkretnych akcji z poziomu Power BI Desktop.



Eksplorator modelu danych (Model Explorer)



Narzędzie pozwalające na wyświetlanie elementów modelu semantycznego. Pokazuje wszystkie elementy modelu z krótkim podsumowaniem oraz umożliwia ich szybkie wyszukiwanie i przeglądanie oraz podejmowanie konkretnych akcji z poziomu Power BI Desktop.



Options

GLOBAL

Data Load
Power Query Editor
DirectQuery
R scripting
Python scripting
Security
Privacy
Regional Settings
Updates
Usage Data
Diagnostics
Preview features
Save and Recover
Report settings

CURRENT FILE

Data Load
Regional Settings
Privacy
Auto recovery
Published dataset settings
Query reduction
Report settings

Preview features

The following features are available for you to try in this release. Preview features might change or be removed in future releases.

- ☐ Shape map visual [Learn more](#)
- ☐ Spanish language support for Q&A [Learn more](#)
- ☐ Q&A for live connected Analysis Services databases [Learn more](#)
- ☐ Connect to external datasets shared with me [Learn more](#) | [Share feedback](#)
- ☐ Modern visual tooltips [Learn more](#) | [Share feedback](#)
- ☐ Sparklines [Learn more](#)
- ☐ Metrics visual [Learn more](#)
- ☐ Quick measure suggestions [Learn more](#) | [Share feedback](#)
- ☐ Field parameters [Learn more](#)
- ☐ Enhanced row-level security editor [Learn more](#)
- ☐ On-object interaction [Learn more](#) | [Share feedback](#)
- ☐ Power BI Home in Desktop [Learn more](#) | [Share feedback](#)
- ☐ Enable setting sensitivity label on exported PDF [Learn more](#)
- ☐ Dynamic format string for measures [Learn more](#)
- ☐ Save to OneDrive and SharePoint [Learn more](#)
 - ☐ Share to OneDrive and SharePoint [Learn more](#)
- ☐ Power BI Project (.pbip) save option [Learn more](#)
- ☐ New card visual [Learn more](#)
- ☐ Button slicer visual
- ☒ Model explorer and Calculation group authoring [Learn more](#)

OK

Cancel



File Home Help External tools

Clipboard: Paste, Cut, Copy

Data: Get data, Excel workbook, OneLake data hub, SQL Server, Enter data, Dataverse, Recent sources

Queries: Transform data, Refresh data

Relationships: Manage relationships

Calculations: New measure, New column, New table, Calculation group

Security: Manage roles, View as

Q&A: Q&A setup, Language, Linguistic schema

Sensitivity: Sensitivity

Share: Publish

1

Product, Customer, Sales Territory, Reseller, Date, Sales, Sales Order

2

3

Model

Properties

Cards

Show the database in the header when applicable: Yes

Show related fields when card is collapsed: Yes

Pin related fields to top of card: Yes

Data

Tables

Model

View and organize all of the items in your semantic model. [Learn how](#)

Search

Semantic model

- > Calculation groups (1)
- > Cultures (4)
- > Measures (1,408)
- > Perspectives (3)
- > Relationships (8)
- > Roles (4)
- > Tables (12)

All tables Verbose +

70%



Elementy widoczne w Eksploratorze modelu



- Model semantyczny (*Semantic model*)
- Grupy obliczeniowe (*Calculation Groups*)
- Kultury (*Cultures*)
- Miary (*Measures*)
- Perspektywy (*Perspectives*)
- Relacje (*Relationships*)
- Role (*Roles*)
- Tables (*Tabele*)



Calculation Groups



Calculation Groups



Zbiór elementów pozwalających na zastosowanie określonych obliczeń do istniejących miar DAX.

Fizycznie w modelu - jedna tabela z dwoma kolumnami i N-wartościami oraz zaszytą logiką w DAX.

Wprowadzone zostały w 2019 roku



Jakie są korzyści?

- Redukcja miar w modelu danych
- Automatyzacja procesu tworzenia miar zawierających tę samą logikę
- Uproszczenie modelu danych i utrzymania logiki miar
- Możliwość rozwiązania trudnych przypadków mniejszym nakładem pracy



Jak działają?

```
• YTD Sales Amount :=  
CALCULATE (  
    [Sales Amount],  
    DATESYTD ( 'Date'[Date] )  
)  
  
• YTD Total Cost :=  
CALCULATE (  
    [Total Cost],  
    DATESYTD ( 'Date'[Date] )  
)  
  
• YTD Margin :=  
CALCULATE (  
    [Margin],  
    DATESYTD ( 'Date'[Date] )  
)  
  
• YTD Sales Quantity :=  
CALCULATE (  
    [Sales Quantity],  
    DATESYTD ( 'Date'[Date] )  
)
```



```
YTD <Measure> :=  
CALCULATE (  
    <Measure>,  
    DATESYTD ( 'Date'[Date] )  
)
```



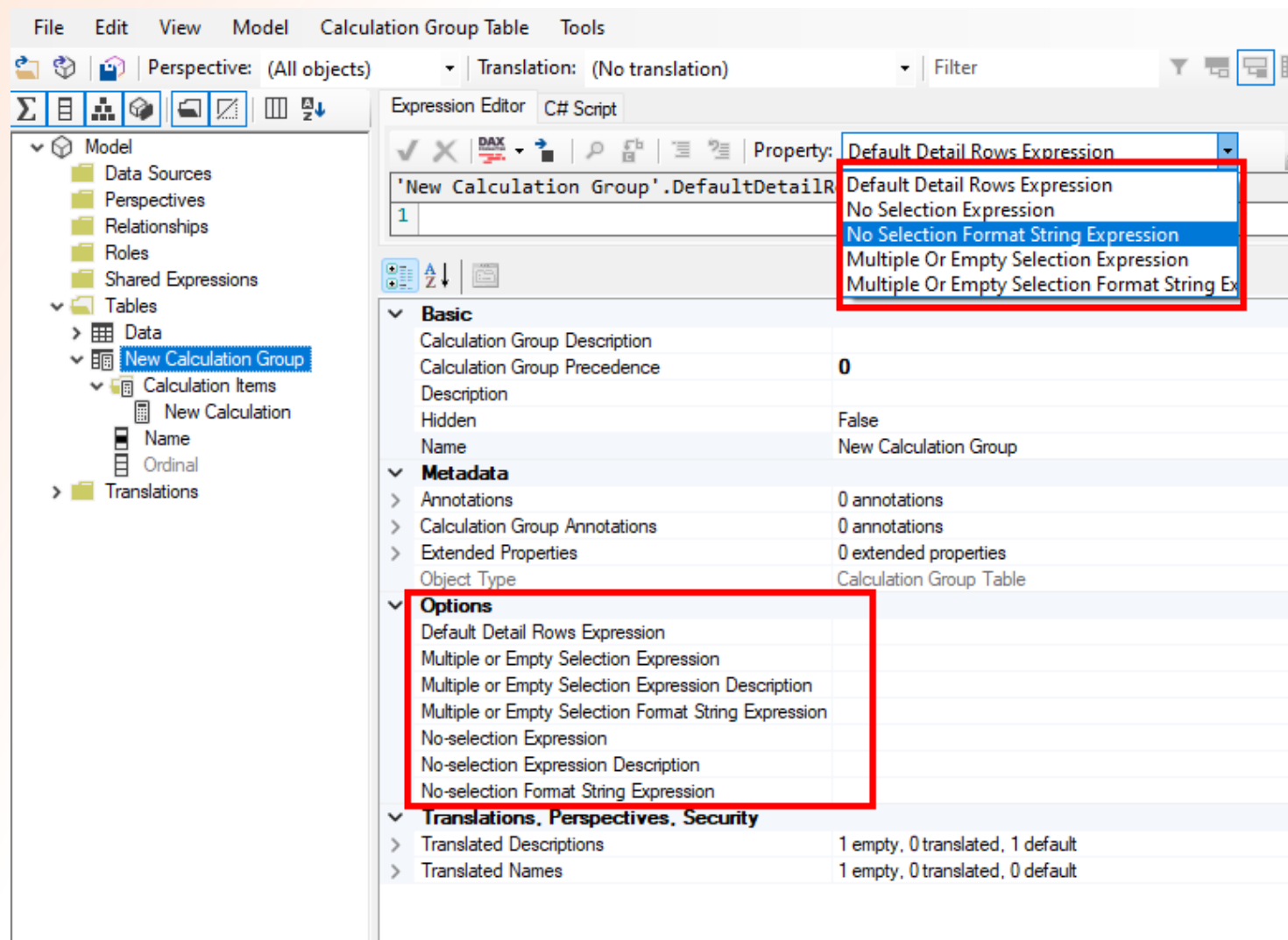
```
--  
-- Calculation Item: YTD  
--  
CALCULATE (  
    SELECTEDMEASURE (),  
    DATESYTD ( 'Date'[Date] )  
)
```



```
--  
-- Calculation Item: YTD  
--  
CALCULATE (  
    SELECTEDMEASURE (),  
    DATESYTD ( 'Date'[Date] )  
)  
  
-- Calculation Item: QTD  
--  
CALCULATE (  
    SELECTEDMEASURE (),  
    DATESQTD ( 'Date'[Date] )  
)  
  
-- Calculation Item: SPLY  
--  
CALCULATE (  
    SELECTEDMEASURE (),  
    SAMEPERIODLASTYEAR ( 'Date'[Date] )  
)  
  
-- Calculation Item: MTD  
--  
CALCULATE (  
    SELECTEDMEASURE (),  
    DATESMTD ( 'Date'[Date] )  
)
```



Do czego nadal potrzebujemy TE?



Eksplorator modelu i grupy obliczeniowe



DEMO

DAX Query View

DAX Query View

- Bardziej zaawansowany edytor pisanie miar DAX
 - Łatwiejsze pisanie długich zapytań
 - Łatwiejsze debuggowanie
 - Podgląd definicji wielu kilku miar jednocześnie
- Quick queries – pomocne szybkie zapytania
- Podgląd danych w modelu DirectQuery

Power BI **Developer** Mode

DAX query view:
Access via 4th
view in Power BI
Desktop

Ribbon:
Common actions to help
in writing DAX queries

Command bar:
Critical actions needed
for running DAX queries

Data pane:
See model tables and
columns to use in DAX
queries.

DAX query editor:
Write DAX queries

Results grid:
Results of the
DAX query

Quick queries:
Generated DAX queries
from tables, columns,
and measures.

Query tabs:
Create, remove, and navigate multiple DAX queries &
see status of queries

The screenshot shows the Power BI DAX query editor interface. At the top, the 'File', 'Home', and 'Help' tabs are visible. The 'Home' tab is active, showing a ribbon with options like 'Paste', 'Copy', 'Format', 'Comment', 'Uncomment', 'Find', 'Replace', and 'Command palette'. Below the ribbon is a 'Command bar' with a 'Run' button. The main area is the 'DAX query editor', which contains a text editor with the following DAX query:

```
1 // Learn more about DAX queries at https://aka.ms/dax-queries
2
3 // Here is a sample DAX query from your model, click 'Run'
4 // Try other DAX queries by right clicking a table, column, or measure in the data pane and choosing one from 'Quick queries'
5
6 EVALUATE
7     TOPN(100, 'Fact')
8
```

Below the editor is the 'Results grid', which displays the results of the query. The grid has columns for Fact(Segment), Fact(Country), Fact(Product), Fact(Discount Band), Fact(Units Sold), Fact(Manufacturing Price), and Fact(Sale Price). The results are as follows:

Fact(Segment)	Fact(Country)	Fact(Product)	Fact(Discount Band)	Fact(Units Sold)	Fact(Manufacturing Price)	Fact(Sale Price)
0 Government	Germany	Corsetta	None	1513	1	350
1 Government	Germany	Corsetta	None	1006	10	350
2 Government	Canada	Paseo	None	1725	10	350
3 Government	Germany	Paseo	None	1513	10	350
4 Government	Germany	Woo	None	1006	120	350
5 Government	France	VTT	None	1527	250	350
6 Government	France	Amarita	None	2750	200	350
7 Government	Mexico	Corsetta	Low	1210	1	350

At the bottom of the interface is the 'Query tabs' section, which shows 'Query 1' and 'Query 2'. A right-click context menu is open over the 'Data' pane, showing options like 'Evaluate', 'Define and evaluate', 'Define with references and evaluate', 'Define all measures in this model', 'Quick queries', 'Rename', 'Delete from model', 'Hide in report view', 'Unhide all', 'Collapse all', and 'Expand all'.

DAX Query View



DAX formula

DEFINE

```
MEASURE 'Measures group'[Sales] = SUM(Fact[Sales])
MEASURE 'Measures group'[COGS] = SUM(Fact[COGS])
MEASURE 'Measures group'[Profit] = [Sales] - [COGS]
```

EVALUATE

```
SUMMARIZECOLUMNS(
    'Fact'[Country],
    "Sales", 'Measures group'[Sales],
    "COGS", 'Measures group'[COGS],
    "Profit", 'Measures group'[Profit]
)
```

DAX query

Results | Result 1 of 1 | Copy

	Fact[Country]	[Sales]	[COGS]	[Profit]
0	Canada	24887654.88	21358426	3529228.88
1	Germany	23505340.82	19824952	3680388.82
2	France	24354172.28	20573151.5	3781020.78
3	Mexico	20949352.11	18041829	2907523.11
4	United States of America	25029830.17	22034289.5	2995540.67

DAX formula

- **DEFINICJA** miary lub kolumny obliczeniowej

DAX query

- **ZAPYTANIE** zwracające **DANE** w formie **TABELI**

DAX Query View



DEMO

Run

```
1 EVALUATE
2 SUMMARIZECOLUMNS(
3     "Profit", 'Measures group'[Profit]
4 )
```

More Actions...



Define



Define with references

Run

```
1 DEFINE
2     Update model: Overwrite measure
3     MEASURE 'Measures group'[Profit] = [Sales] - [COGS]
4 EVALUATE
5     SUMMARIZECOLUMNS(
6         "Profit", 'Measures group'[Profit]
7     )
```

Update
model
measure

Data

Tables

Model

Profit

Semantic model

Measures (22)

Profit

Evaluate

Define and evaluate

Define with references and evaluate

Define all measures in this model

Quick queries

Rename

Delete from model

Hide in report view

Funkcje INFO DAX

- Old DMVs (dynamic management views) in a new bottle
- Pisanie w składni języka DAX
- Można łączyć z wynikami innych funkcji
- Ponad 50 funkcji
- Słaba (brak?) dokumentacja



Funkcje INFO DAX



DEMO

Automatyczna dokumentacja modelu semantycznego



- Notatniki (DAXQueries) przechowywane z modelem semantycznym
- Kopiowanie plików z folderu DAX Queries
- Template „dokumentującego” modelu semantycznego

Automatyczne testowanie



John Kerski blog - [Weaving DataOps into Microsoft Fabric - DAX Query View Testing Pattern | John Kerski's Blog](#)

Workspace	DEV	TEST	PROD
Testing Calculations	X		
Testing Content	X	X	X
Testing Schema	X	X	X

Testowanie kalkulacji

- Czy miara zwraca poprawną wartość?

Testowanie danych

- Liczba wierszy, liczba nulli, czy są duplikaty...

Testowanie schematu

- Nazwa tabel, kolumn, typu danych kolumn..

Automatyczne testowanie



DEMO

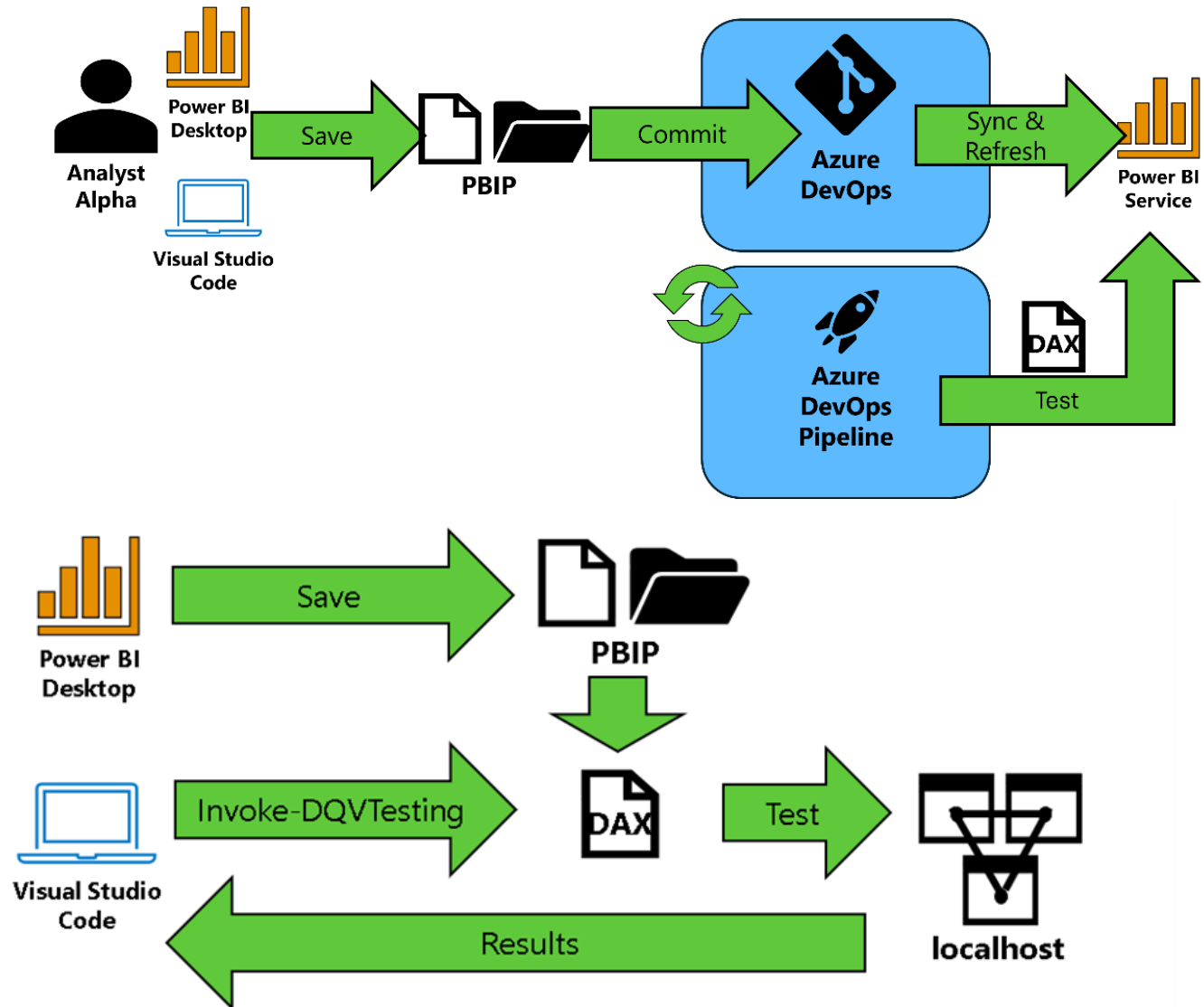
Automatyczne testowanie – CI/CD



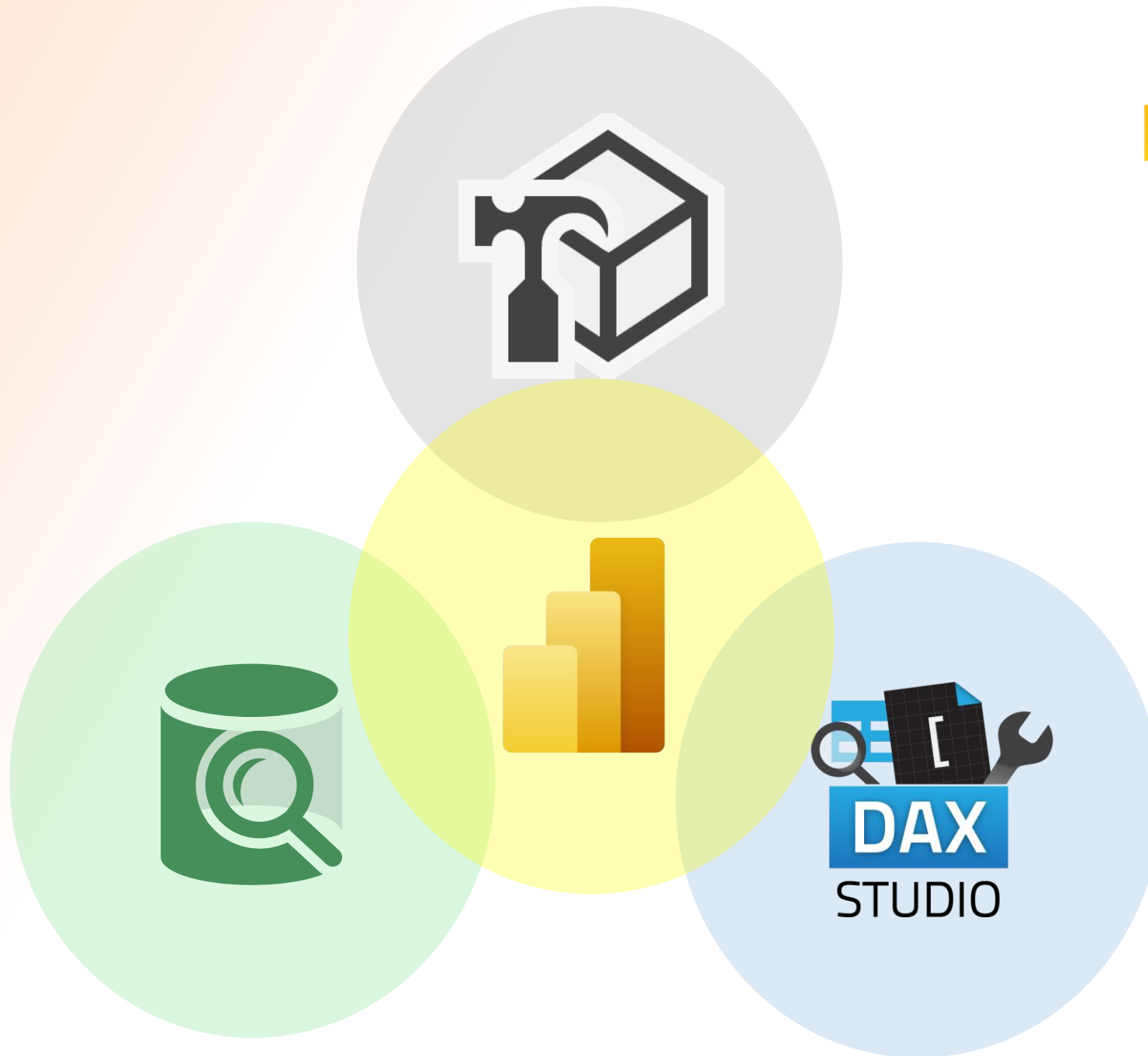
John Kerski blog -

<https://blog.kerski.tech/>

- Automatyczne wywoływanie testów w Azure DevOps Pipelines
- Automatyczne wywoływane testów lokalnie w PowerShell



Wnioski



Q&A



A simple black line drawing of a smiley face with heart-shaped eyes.

Dziękujemy

Łukasz Balcerzak, Dominik Dębowski
SQL Day, 14.05.2024

Źródła



- **Model explorer**
 - Basic MS docs - [Use Model explorer in Power BI \(preview\) - Power BI | Microsoft Learn](#)
 - Model explorer and calc groups - [Deep dive into the Model Explorer with calculation group authoring and creating relationships in the properties pane | Microsoft Power BI Blog | Microsoft Power BI](#)
- **Calculation Groups**
 - MS docs - [Calculation groups in Analysis Services tabular models | Microsoft Learn](#)
 - Selection expression - compatibility level needs to be 1605 or higher [Solved: Re: Where to define and manage selection expressio... - Microsoft Fabric Community](#)
 - MS authoring cg - [Create calculation groups in Power BI \(preview\) - Power BI | Microsoft Learn](#)
 - SQLBI definitive guide - <https://www.sqlbi.com/calculation-groups/>
 - GIAQ simple example - [REDUCE the # of measures with Calculation Groups In Power BI](#)
- **DAX Query View**
 - GIAQ simple overview- [Boost your productivity with DAX Query View in Power BI Desktop!](#)
- Basic MS docs - [DAX query view in Power BI Desktop - Power BI | Microsoft Learn](#)
- **Deep dive into DQV** - [Deep dive into DAX query view and writing DAX queries | Microsoft Power BI Blog | Microsoft Power BI](#)
- **INFO functions** - [DAX query view introduces new INFO DAX functions | Blog rozwiązania Microsoft Power BI | Microsoft Power BI](#)
- Relationships - [Relationships DAX query \(using INFO.RELATIONSHIPS\) \(datazoepowerbi.com\)](#)
- Dependencies - [Chris Webb's BI Blog: Documenting dependencies between DAX calculations \(crossjoin.co.uk\)](#)
- Debug/develop a measure in DQV - [Testing Your Code Using the \[DAX\] Query View!](#)
- **Testing DAX pattern**
 - [Weaving DataOps into Microsoft Fabric - Version Control and Testing](#)
 - [fabric-dataops-patterns/DAX Query View Testing Pattern/dax-query-view-testing-pattern.md at main · kerski/fabric-dataops-patterns · GitHub](#)



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