

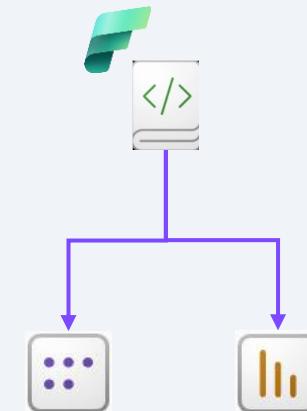


Programmatically access, set, get and develop with Power BI and Fabric Artifacts via a Fabric Notebook

Semantic Link and Semantic Link Labs

Specifically, the library semantic link and its “expansion pack” semantic-link-labs, spearheaded by Michael Kovalsky:

- Full access to the TOM model / TMDL / .PBIR
- Need to setup Fabric Git Integration
- Change and modify reports
- Transparent and copy-paste of bookmarks between pages or reports
- Set first report page to starting page (forgetting when publishing to the service)
- JSON Report Theme
- Run Best Practice Analyzer on your Report



Requirement:

- Fabric Capacity
- Fabric Notebook
- Install Semantic-Link-Labs Package
- To utilize Power BI Report functions, the report must be stored in PBIR.

From January 2026, the default in Power BI Service will be stored in the new PBIR format and that opens up for more usage with Semantic Link Labs



Semantic Link Labs with PBIP: Add measure descriptions



Self-Service Power BI &
Fabric Newsletter
by David K. Hanna

● %pip install semantic-link-labs

```
import sempy_labs as labs
import sempy_labs.report as rep
from sempy_labs.report import ReportWrapper
```

● # Add measure descriptions

```
from sempy_labs.tom import connect_semantic_model

dataset = 'Semantic Link Labs' # Enter the name or ID
# of your semantic model
workspace = None # Enter the name or ID of the
# workspace in which the semantic model resides
readonly = False # Set this to False to overwrite
# existing descriptions
```

```
with connect_semantic_model(dataset=dataset,
                           workspace=workspace, readonly=readonly) as tom:
    x = tom.generate_measure_descriptions()
```



...	Table Name	Measure Name	Expression	Description
0	User	F value calc	\n[User number of daily logins last 30 days]	Calculates the number of daily user logins ove...
1	User	last transaction date	\n MAXX(FILTER('Usage Events','Usage Ev...)	Returns the most recent transaction date for e...
2	User	M value calc	\n[# Report Views]	Calculates the total number of report views.
3	User	R value calc	\nDATEDIFF([last transaction date],TODAY(),DAY)	Calculates the number of days since the user's...
4	Artifact	# of Artifacts	\nCOUNTROWS(Artifact)	Counts the total number of rows in the Artifac...
...
76	DAX	04 leads/actuals	divide ([03 actuals] , [02 leads])	Calculates the ratio of actual users to leads ...
77	DAX	06 selected_sortby	var ascending = \n rankx (\n allsel...)	Determines the sort order ranking for users ba...
78	DAX	07 lower_bound	0\n-- for the error bars lower bound setting	A static value of 0 for the lower bound settin...
79	DAX	05 minus 100	var selection = selectedvalue ('dt03 Normali...)	Returns 1 minus the '04 leads/actuals' ratio i...
80	DAX	01 name	max (User[Office Location])	Returns the maximum value of the Office Locati...

81 rows × 4 columns



Semantic Link Labs with PBIP: Add TMDL “Model Docs”



Self-Service Power BI & Fabric Newsletter
by David K. Hanna

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

Add Models Docs to Semantic Model

```
from sempy_labs.tom import connect_semantic_model

dataset = 'Semantic Link Labs' # Enter the name or ID of your semantic model
workspace = None # Enter the name or ID of the workspace in which the semantic model resides
readonly = False # Set this to False to overwrite existing descriptions

with connect_semantic_model(dataset=dataset, workspace=workspace, readonly=readonly) as tom:
    x = tom.add_calculated_table("Model Documentation",
    """
    VAR _columns =
    SELECTCOLUMNS(
        FILTER(
            INFO.VIEW.COLUMNS(),
            [Table] <> "Model Documentation" && NOT([IsHidden])
        ),
        "Type", "Column",
        "Name", [Name],
        "Description", [Description],
        "Location", [Table],
        "Expression", [Expression]
    )
    VAR _measures =
    SELECTCOLUMNS(
        FILTER(
            INFO.VIEW.MEASURES(),
            [Table] <> "Model Documentation" && NOT([IsHidden])
        ),
        "Type", "Measure",
        "Name", [Name],
        "Description", [Description],
        "Location", [Table],
        "Expression", [Expression]
    )
    VAR _tables =
    SELECTCOLUMNS(
        FILTER(
            INFO.VIEW.TABLES(),
            [Name] <> "Model Documentation" && [Name] <> "Calculations" && NOT([IsHidden])
        ),
        "Type", "Table",
        "Name", [Name],
        "Description", [Description],
        "Location", BLANK(),
        "Expression", [Expression]
    )
    VAR _relationships =
    SELECTCOLUMNS(
        INFO.VIEW.RELATIONSHIPS(),
        "Type", "Relationship",
        "Name", [Relationship],
        "Description", BLANK(),
        "Location", BLANK(),
        "Expression", [Relationship]
    )
    RETURN
    UNION(_columns, _measures, _tables, _relationships)
    """
    , "This table is auto-updated via the INFO.VIEW DAX Functions"
    )
x
```

Semantic Model Information

Model Documentation	Name	Type	Expression	Description
Finance Transactions	Table			The wonderful sample data by Microsoft "Financials" from 2013
Revenue YTD	Measure	CALCULATE([Revenue], DATESYTD>Date[Date])	If blank, remember to filter on a year with data	
Budget	Table		From Excel workbook Owner: David Hanna	
			Calendar table	
Budget[Date] 1<-1 Calendar	Relationship	Budget[Date] 1<-1 Calendar[Date]		
Budget[Date] 1<-1 Date	Relationship	Budget[Date] 1<-1 Date[Date]		
Calendar[Date] 1<-1 1st...	Relationship	Calendar[Date] 1<-1 LocalDataTable_27408003-7d44-49...		
Calendar[Year-Month] 1<-1...	Relationship	Calendar[Year-Month] 1<-1 LocalDateTable_ae79bd1-2...		
Country	Table			
Date	Table			
Date[Date] 1<-1 LocalDa...	Relationship	Date[Date] 1<-1 LocalDateTable_ae79bd1-2...		
Finance Transaction[Co...	Relationship	Finance Transaction[Country Key] 1<-1 Country[Cont...		
Finance Transaction[Dat...	Relationship	Finance Transaction[Date] 1<-1 Calendar[Date]		
Finance Transaction[Seg...	Relationship	Finance Transaction[Segment Key] 1<-1 Segment[Seg...		
Segment	Table			
Budget	Budget	Column		
Budget	Date	Column		
Budget	Product	Column		
Budget	Total Budget	Measure	SUM(Budget[Budget])	
Calendar	Date	Column		
Calendar	Day	Column		
Calendar	Day Name	Column		

Model Documentation

```
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" && NOT([IsHidden])
31     ),
32     "Type", "Table",
33     "Name", [Name],
34     "Description", [Description],
35     "Location", BLANK(),
36     "Expression", [Expression]
37  )
38 VAR _relationships =
39   SELECTCOLUMNS(
40     INFO.VIEW.RELATIONSHIPS(),
41     "Type", "Relationship",
42     "Name", [Relationship],
43     "Description", BLANK(),
44     "Location", BLANK(),
45     "Expression", [Relationship]
46  )
47 RETURN
48 | UNION(_columns, _measures, _tables, _relationships)
```



Semantic Link Labs with PBIR: Add Report Page for “Model Docs”



Self-Service Power BI & Fabric Newsletter
by David K. Hanna

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

```
1 rpt = ReportWrapper(report='Semantic Link Labs', workspace=None)
2
3 rpt.add(
4     file_path="definition/pages/ModelDocs/visuals/f8dc347bc3501591d40/f8dc347bc3501591d40.json",
5     payload={
6         "$schema": "https://developer.microsoft.com/json-schemas/fabric/item/report/definition/visualContainer/2.4.0/schema.json",
7         "name": "f8dc347bc3501591d40",
8         "position": {
9             "x": 118.47549909255898,
10            "y": 120.79854809437386,
11            "z": 0,
12            "height": 555.20871143375678,
13            "width": 1076.7332123411977,
14            "tabOrder": 0
15        },
16        "visual": {
17            "visualType": "tableEx",
18            "query": {
19                "queryState": {
20                    "values": {
21                        "projections": [
22                            {
23                                "field": {
24                                    "Column": {
25                                        "Expression": {
26                                            "SourceRef": {
27                                                "Entity": "Model Documentation"
28                                            }
29                                        },
29                                        "Property": "Location"
30                                    }
31                                },
32                                "queryRef": "Model Documentation.Location",
33                                "nativeQueryRef": "Location"
34                            },
35                            {
36                                "field": {
37                                    "Column": {
38                                        "Expression": {
39                                            "SourceRef": {
40                                                "Entity": "Model Documentation"
41                                            }
42                                        },
43                                        "Property": "Name"
44                                    }
45                                },
46                                "queryRef": "Model Documentation.Name",
47                                "nativeQueryRef": "Name"
48                            },
49                            {
50                                "field": {
51                                    "Column": {
52                                        "Expression": {
53                                            "SourceRef": {
54                                                "Entity": "Model Documentation"
55                                            }
56                                        },
57                                        "Property": "Expression"
58                                    }
59                                }
60                            }
61                        ]
62                    }
63                }
64            }
65        }
66    }
67 }
```



Semantic Model Information

Model Documentation		Filter by keyword	Clear all slicers	
Location	Name	Type	Expression	Description
Finance Transactions	Finance Transactions	Table		The wonderful sample data by Microsoft “Financials” from 2013
	Revenue YTD	Measure	CALCULATE([Revenue], DATESYTD('Date'[Date]))	If blank, remember to filter on a year with data
	Budget	Table		From Excel workbook Owner: David Hanna
	Calendar	Table		Calendar table
	'Budget'[Date] *[-1] 'Calendar'[Date]	Relationship	'Budget'[Date] *[-1] 'Calendar'[Date]	
	'Budget'[Date] *[-1] 'Date'[Date]	Relationship	'Budget'[Date] *[-1] 'Date'[Date]	
	'Calendar'[Date] *[-1] 'Loc...' [Relationship]	Relationship	'Calendar'[Date] *[-1] LocalDateTable_27428003-7dd4-49...	
	'Calendar'[Year-Month] *[-1...	Relationship	'Calendar'[Year-Month] *[-1] LocalDateTable_ea79abb1-2...	
	Country	Table		
	Date	Table		
	'Date'[Date] *[-1] 'LocalDa...' [Relationship]	Relationship	'Date'[Date] *[-1] LocalDataTable_2d9661bf-0097-4ec8-b...	
	'Finance Transactions'[Coun...	Relationship	'Finance Transactions'[Country Key] *[-1] 'Country'[Countr...	
	'Finance Transactions'[Date]...	Relationship	'Finance Transactions'[Date] *[-1] 'Calendar'[Date]	
	'Finance Transactions'[Seg... [Relationship]	Relationship	'Finance Transactions'[Segment Key] *[-1] 'Segment'[Seg...	
	Segment	Table		
Budget	Budget	Budget		
Budget	Date	Date		
Budget	Product	Product		
Budget	Total Budget	Measure	SUM(Budget[Budget])	
Calendar	Date	Column		
Calendar	Day	Column		
Calendar	Day Name	Column		

8f8c4130524c1902aae4

Changes

- page.json Financials.Report\definition\pages\8f8c4130524c1902aae4
- visual.json Financials.Report\definition\pages\8f8c4130524c1902aae4\visuals\button_clearyallslicers
- visual.json Financials.Report\definition\pages\8f8c4130524c1902aae4\visuals\shape_titleofreport
- visual.json Financials.Report\definition\pages\8f8c4130524c1902aae4\visuals\slicer_type
- visual.json Financials.Report\definition\pages\8f8c4130524c1902aae4\visuals\table
- visual.json Financials.Report\definition\pages\8f8c4130524c1902aae4\visuals\textsllicer_expression
- visual.json Financials.Report\definition\pages\8f8c4130524c1902aae4\visuals\visualgroup
- Model Documentation.tmdl Financials.SemanticModel\definition\tables



Semantic Link Labs with PBIR: Get and Set Report Theme



Self-Service Power BI & Fabric Newsletter
by David K. Hanna

- Get theme from specific report

```
rpt = ReportWrapper(report='Semantic Link Labs', workspace=None)
```

```
rpt.get_theme()
```

```
...  {'name': 'CY23SU11',
     'dataColors': ['#118dff',
                   '#12239e',
                   '#e66c37',
                   '#6b007b',
                   '#e044a7',
                   '#744ec2',
                   '#d9b300',
                   '#d64550',
                   '#197278',
                   '#1aab40',
                   '#15c6f4',
                   '#4092ff',
                   '#ffa058',
                   '#b5dc95',
                   '#f472d0',
                   '#b5a1ff',
                   '#c4a200',
                   '#ff8080',
                   '#00dbbc',
                   '#5bd667',
                   '#0091d5',
                   '#4668c5',
                   '#ff6300',
                   '#99008a',
                   '#e0008c',
                   '#533285',
                   '#99708a',
                   '#ff4141',
                   '#1f9a85',
                   '#25891c',
                   '#0057a2',
                   '#002050',
                   '#c94f0f',
                   '#450f54',
                   '#b60064',
                   '#34124f',
                   '#6a5a29',
                   '#1aab40',
                   '#ba141a',
                   '#c3d377',
                   '#0b511f'],
      'foreground': '#252423',
      'foregroundNeutralSecondary': '#605e5c',
      'foregroundNeutralTertiary': '#b3b0ad',
      'background': '#ffffff',
      'backgroundLight': '#f3f2f1',
      'backgroundNeutral': '#c0c6c4',
      'tableAccent': '#118dff',
      'good': '#1aa840',
      'neutral': '#d9b300',
      'bad': '#d64550',
      'maximum': '#118dff',
      'center': '#d9b300',
      'minimum': '#deefff',
      'null': '#ffff48',
      'hyperlink': '#0078d4',
```

- Set your theme

```
rpt.set_theme()
```

Perform actions on a report

Set a custom theme for a report based on a Power BI theme file

```
1 #Sets a custom theme for a report based on a theme .json file.
2 #Parameters:theme_file_path (str) - The file path of the theme.json file. This can either be from a Fabric lakehouse or
3 #Example for web url: file_path = 'https://raw.githubusercontent.com/PowerBiDevCamp/FabricUserApiDemo/main/FabricUserAp
4
5 rpt.set_theme(theme_file_path='/lakehouse/default/Files/CY23SU09.json')
```

```
1 rpt.set_theme(theme_file_path='https://raw.githubusercontent.com/PowerBiDevCamp/FabricUserApiDemo/main/FabricUserApiDem
```



Semantic Link Labs with PBIR: Display Report in Notebook



Self-Service Power BI & Fabric Newsletter
by David K. Hanna

● # Display the page embedded

```
labs.report.launch_report(report='Semantic Link Labs', workspace=None)
```

The screenshot shows a Jupyter Notebook cell with the following content:

```
1 # Display the page embedded
2 labs.report.launch_report(report='Semantic Link Labs', workspace=None)
[3] 2 sec - Command executed in 2 sec 634 ms by David Kofod Hanna on 2:24:45 PM, 12/04/25
```

PySpark (Python) ▾

Log

... ▾

The notebook cell displays the output of the PBIR command, which is a semantic link lab report titled "User Adoption KPI's" by "Awesome XyZ". The report includes four key metrics:

- # Report Views:** 2,967
- # Users:** 81
- User Engagement Rate (UER) on Usage:** 46.0 %
- Report/Page Views per User (RPV):** 37

Below these metrics is a chart titled "# Report Views" showing the distribution of views by Year, Month and Day. The chart is a bar chart with blue bars, showing values ranging from approximately 50 to 150.



Semantic Link Labs with PBIR: Set Active Page



Self-Service Power BI &
Fabric Newsletter
by David K. Hanna

- Set the active page (page shown upon opening the report)

```
#Sets the active page (first page displayed when opening a report) for a report.  
rpt.set_active_page(page_name='Overview')
```

```
StatementMeta(, b61ce942-40e1-4c4e-858f-286c1771de2a, 21, Finished, Available, Finished)
```

The 'Overview' page has been set as the active page in the 'Power BI Introduction Course' report within the 'None' workspace.



Semantic Link Labs with PBIR: Documentation



Self-Service Power BI & Fabric Newsletter
by David K. Hanna

rpt.list_pages()

1 rpt.list_pages()
✓ - Command executed in 56 sec 82 ms by David Kofod Hanna on 11:33:04 AM, 2/28/25

PySpark (Python) ▾

	File Path	Page Name	Page Display Name	Hidden	Active	Width	Height	Display Option	Type	Alignment	Drillthrough Target Page	Visual Count	Data Visual Count	Visible Visual Count	Page Filter Count	
0	definition/pages/1e5fd0117f690a6ec303/page.json	1e5fd0117f690a6ec303	Switch between attributes	False	True	1280	720	FitToPage	16:9	Top	False	14	6	14	0	https://app.powerbi.com/reports/1e5fd0117f690a6ec303
1	definition/pages/35a9e93b98866c83c3d8/page.json	35a9e93b98866c83c3d8	Switch between measures	False	False	1280	720	FitToPage	16:9	Top	False	14	7	13	0	https://app.powerbi.com/reports/35a9e93b98866c83c3d8
2	definition/pages/3fefbd7eec736618d8dd/page.json	3fefbd7eec736618d8dd	Soft RLS Field Parameters	False	False	1280	720	FitToPage	16:9	Top	False	10	7	10	0	https://app.powerbi.com/reports/3fefbd7eec736618d8dd
3	definition/pages/52ff2afc35fdd878b525/page.json	52ff2afc35fdd878b525	Sort by measure	False	False	1280	720	FitToPage	16:9	Top	False	10	7	10	0	https://app.powerbi.com/reports/52ff2afc35fdd878b525
4	definition/pages/5391b756d2bb25539b39/page.json	5391b756d2bb25539b39	Personalize Matrix	False	False	1280	720	FitToPage	16:9	Top	False	12	7	12	0	https://app.powerbi.com/reports/5391b756d2bb25539b39
5	definition/pages/6f9a7d8735b47525f528/page.json	6f9a7d8735b47525f528	Field Parameters	False	False	1280	720	FitToPage	16:9	Top	False	14	7	14	0	https://app.powerbi.com/reports/6f9a7d8735b47525f528
6	definition/pages/96c31fdc811cd14c72fb/page.json	96c31fdc811cd14c72fb	Switch visualizations	False	False	1280	720	FitToPage	16:9	Top	False	13	9	11	0	https://app.powerbi.com/reports/96c31fdc811cd14c72fb
7	definition/pages/9fce34aa68927a760cd/page.json	9fce34aa68927a760cd	Documentation info	False	False	1280	720	FitToPage	16:9	Top	False	16	7	15	1	https://app.powerbi.com/reports/9fce34aa68927a760cd
8	definition/pages/a20fb1fde3ecfdda0ea3/page.json	a20fb1fde3ecfdda0ea3	Reset slicers with predefined selections	False	False	1280	720	FitToPage	16:9	Top	False	9	6	9	0	https://app.powerbi.com/reports/a20fb1fde3ecfdda0ea3
9	definition/pages/a9943951d5638f8e35f6/page.json	a9943951d5638f8e35f6	Field Parameters as Tile slicer	False	False	1280	720	FitToPage	16:9	Top	False	10	7	10	0	https://app.powerbi.com/reports/a9943951d5638f8e35f6
10	definition/pages/dbcff7320b6faa876e6e/page.json	dbcff7320b6faa876e6e	Go to a page with a predefined filter	False	False	1280	720	FitToPage	16:9	Top	False	10	7	10	0	https://app.powerbi.com/reports/dbcff7320b6faa876e6e
11	definition/pages/e54b87203aa8de797ea6/page.json	e54b87203aa8de797ea6	Tooltip documentation	True	False	800	500	ActualSize	Custom	Top	False	1	1	1	0	https://app.powerbi.com/reports/e54b87203aa8de797ea6



Semantic Link Labs with PBIR: Documentation



Self-Service Power BI & Fabric Newsletter
by David K. Hanna

rpt.list_bookmarks()

D | v

1 #Shows a list of all bookmarks in the report.
2 rpt.list_bookmarks()

[6] ✓ <1 sec - Command executed in 449 ms by David Kofod Hanna on 2:30:51 PM, 12/04/25

...

	File Path	Bookmark Name	Bookmark Display Name	Page Name	Page Display Name	Visual Name	Visual Hidden	Suppress Data	Current Page Selected	Apply Visual Display State	Apply To All Visuals
0	definition/bookmarks/06a88983ff4398ca3399.book...	06a88983ff4398ca3399	Y-M-D	1e5fd0117f690a6ec303	Switch between attributes	5586233d3b3e34c865c7	False	False	False	True	False
1	definition/bookmarks/06a88983ff4398ca3399.book...	06a88983ff4398ca3399	Y-M-D	1e5fd0117f690a6ec303	Switch between attributes	6754672902d19036cb92	False	False	False	True	False
2	definition/bookmarks/06a88983ff4398ca3399.book...	06a88983ff4398ca3399	Y-M-D	1e5fd0117f690a6ec303	Switch between attributes	ea5c735adbdb1d718125	False	False	False	True	False
3	definition/bookmarks/06a88983ff4398ca3399.book...	06a88983ff4398ca3399	Y-M-D	1e5fd0117f690a6ec303	Switch between attributes	f95c970992c4b54dca57	False	False	False	True	False
4	definition/bookmarks/06a88983ff4398ca3399.book...	06a88983ff4398ca3399	Y-M-D	1e5fd0117f690a6ec303	Switch between attributes	156fb8b32dc20c6a58cf	False	False	False	True	False
...
328	definition/bookmarks/hibookmark1.bookmark.json	hibookmark1	Y-M-D	1e5fd0117f690a6ec303	Switch between attributes	c681aebac3fe6b670554	False	False	False	True	False
329	definition/bookmarks/hibookmark1.bookmark.json	hibookmark1	Y-M-D	1e5fd0117f690a6ec303	Switch between attributes	0fe396dfa8114ce925c5	False	False	False	True	False
330	definition/bookmarks/hibookmark1.bookmark.json	hibookmark1	Y-M-D	1e5fd0117f690a6ec303	Switch between attributes	1d6f50e02d7cb16c5218	False	False	False	True	False
331	definition/bookmarks/hibookmark1.bookmark.json	hibookmark1	Y-M-D	1e5fd0117f690a6ec303	Switch between attributes	283a83c7e2833998a16f	False	False	False	True	False
332	definition/bookmarks/hibookmark1.bookmark.json	hibookmark1	Y-M-D	1e5fd0117f690a6ec303	Switch between attributes	a1b353fe187a2fde795a	False	False	False	True	False

333 rows x 11 columns



Semantic Link Labs with PBIR: Documentation



Self-Service Power BI & Fabric Newsletter
by David K. Hanna

rpt.list_report_level_measures()

```
1 #Shows a list of all report-level measures in the report
2 rpt.list_report_level_measures()
```

[11]

Measure Name Table Name Expression Data Type Format String

rpt.list_custom_visuals()

```
1 #Shows a list of all custom visuals used in the report
2 rpt.list_custom_visuals()
```

[6]

Custom Visual Name Custom Visual Display Name Used in Report

0	Aquarium1442671919391	Enlighten Aquarium	True
---	-----------------------	--------------------	------

rpt.list_visual_calculations()

```
1 rpt.list_visual_calculations()
```

[9] ✓ 6 sec - Command executed in 6 sec 457 ms by David Kofod Hanna on 2:40:40 PM, 12/04/25

...

Page Display Name Visual Name Name Language Expression

rpt.list_report_filters()

```
1 #Shows a list of all report filters used in the report
2 rpt.list_report_filters(extended=True)
```

[8]

Filter Name	Type	Table Name	Object Name	Object Type	Hidden	Locked	How Created	Used	Valid Semantic Model Object
0 Filter5fecbf0c9f999e5963da	Categorical	User	Office Location	Column	True	True	User	True	True
1 Filter72a290d739d0be345135	Categorical	User	User Name	Column	True	False	User	False	True

```
1 #Shows a list of all page filters used in the report
2 rpt.list_page_filters(extended=True)
```

[9]

Page Name	Page Display Name	Filter Name	Type	Table Name	Object Name	Object Type	Hidden	Locked	How Created	Used	Page URL
0 9fce34aa68927a760cd	Documentation info	77319df877709a8177c7	Categorical	Model Documentation	Name	Column	False	True	User	True	https://app.powerbi.com/groups/bf58b874-6e62-4...

rpt.list_visuals()

```
1 #Shows a list of all visuals in the report
2 rpt.list_visuals()
```

[6]

PySpark (Python) ▾

File Path	Page Name	Page Display Name	Visual Name	Type	Display Type	X	Y	Z	Width	... Show Items With No Data	Divider	Slicer Type
0 definition/pages/1e5fd0117f690a6ec303/visuals/...	1e5fd0117f690a6ec303	Switch between attributes	0fe396dfa8114ce925c5	actionButton	Button	128.354080	260.363762	10000	69.231715	...	False	N/A
1 definition/pages/1e5fd0117f690a6ec303/visuals/...	1e5fd0117f690a6ec303	Switch between attributes	156fb8b32dc20c6a58cf	slicer	Slicer	458.871363	31.145537	5000	150.393802	...	False	Dropdown
2 definition/pages/1e5fd0117f690a6ec303/visuals/...	1e5fd0117f690a6ec303	Switch between attributes	1d6f50e02d7cb16c5218	actionButton	Button	690.075039	260.363762	11000	69.231715	...	False	N/A
3 definition/pages/1e5fd0117f690a6ec303/visuals/...	1e5fd0117f690a6ec303	Switch between attributes	283a83c7e2833998a16f	actionButton	Button	406.067664	260.363762	12000	69.231715	...	False	N/A
4 definition/pages/1e5fd0117f690a6ec303/visuals/...	1e5fd0117f690a6ec303	Switch between attributes	42f758e8fd820f7a005b	cardVisual	Card (new)	98.334409	115.687540	6000	1147.785668	...	False	DatumInContext(values='true', path=Fields['Valu...



Semantic Link Labs with PBIR: Report Best Practice Analyzer



Self-Service Power BI & Fabric Newsletter
by David K. Hanna

#Shows the default rules for the report BPA used by the run_report_bpa function

```
rep.run_report_bpa(report='Power BI Semantic Link', workspace=None)
```

Error Prevention		Performance	
	X (6)		⚠ (1) + i (1)
Rule Name	Object Type	Object Name	Severity
Fix report objects which reference invalid semantic model objects	Visual	Broken Visuals'[0c2a46e59d93207148b2]	X
Fix report objects which reference invalid semantic model objects	Visual	'Report Analysis'[12a8fc4204adebeb8a41]	X
Fix report objects which reference invalid semantic model objects	Visual Filter	'Overview'[98f74e144dea8d3ca3a1]	X
Fix report objects which reference invalid semantic model objects	Visual Filter	'Overview'[98f74e144dea8d3ca3a1]	X
Fix report objects which reference invalid semantic model objects	Visual Filter	'Overview'[98f74e144dea8d3ca3a1]	X
Fix report objects which reference invalid semantic model objects	Visual Filter	'Overview'[98f74e144dea8d3ca3a1]	X

Error Prevention		Performance	
	X (6)		⚠ (1) + i (1)
Rule Name	Object Type	Object Name	Severity
Reduce the number of objects within visuals	Visual	'Details'[96a7030070c2aaa75566]	⚠
Reduce usage of custom visuals	Custom Visual	Enlighten Aquarium	i

https://semantic-link-labs.readthedocs.io/en/stable/sempy_labs.report.html#sempy_labs.report.ReportWrapper.set_active_page



Semantic Link Labs with PBIR: Report Best Practice Analyzer



Self-Service Power BI & Fabric Newsletter
by David K. Hanna

- The beloved Best Practice Analyzer from Tabular Editor on Semantic Models, now we have it on Report layer.
The Report Best Practice Analyzer

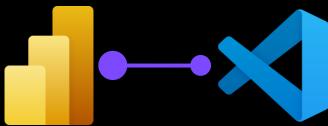
The screenshot shows a GitHub repository for 'semantic-link-labs'. The repository has 43 issues and 37 pull requests. A Jupyter notebook named 'Report Analysis.ipynb' is open. The notebook contains several code cells demonstrating the use of the Report Best Practice Analyzer (BPA). The first cell installs the package: `%pip install semantic-link-labs`. The second cell imports the library and sets initial parameters: `import sempy_labs as labs`, `import sempy_labs.report as rep`, `from sempy_labs.report import ReportWrapper`. The third cell runs the BPA: `rep.run_report_bpa(report=report_name, workspace=report_workspace)`. The fourth cell shows how to use custom rules: `import pandas as pd`, `rules = pd.DataFrame([{"Category": "Error Prevention", "Type": "Semantic Model", "Message": "Fix report objects which reference invalid semantic model objects", "Condition": lambda df: df["Valid Semantic Model Object"] == False, "Description": "This rule highlights visuals, report filters, page filters or visual filters which reference an invalid semantic model object"}])`.

The screenshot shows the Python API documentation for the `sempy_labs.report` package. It includes a 'Module contents' section listing submodules like `sempy_labs.admin`, `sempy_labs.directlake`, `sempy_labs.lakehouse`, `sempy_labs.migration`, `sempy_labs.report`, and `sempy_labs.tom`. Below this is a 'Private docs hosting' section.

The screenshot shows the API documentation for the `sempy_labs.report` package. It includes a 'Module contents' section and several methods:

- `disable_show_items_with_no_data()`: Disables the `show items with no data` property in all visuals within the report.
- `get_theme(theme_type: str = 'baseTheme') → dict`: Obtains the theme file of the report. Parameters: `theme_type (str, default="baseTheme")` – The theme type. Options: "baseTheme", "customTheme". Returns: The theme.json file. Return type: `dict`.
- `hide_tooltip_drillthrough_pages()`: Hides all tooltip pages and drillthrough pages in a report.
- `list_bookmarks() → DataFrame`: Shows a list of all bookmarks in the report. Returns: A pandas dataframe containing a list of all bookmarks in the report. Return type: `pandas.DataFrame`.
- `list_custom_visuals() → DataFrame`: Shows a list of all custom visuals used in the report. Returns: A pandas dataframe containing a list of all the custom visuals used in the report. Report. Return type: `pandas.DataFrame`.
- `list_page_filters(extended: bool = False) → DataFrame`: Shows a list of all page filters used in the report. Parameters: `extended (bool, default=False)` – If True, adds an extra column called 'Valid'

<https://github.com/microsoft/semantic-link-labs/blob/main/notebooks/Report%20Analysis.ipynb>



Getting Started Series: Power BI Projects .PBIP and VS Code as a Power BI Developer

Setup

- *Install Git, VS Code & enable Power BI Projects .PBIP*
- *TMDL and PBIR in .PBIP*
- *Extensions for VS Code when using .PBIP*
- *AI Extensions for VS Code when using .PBIP*
- *Open folder & Initialize Repo for Source Control*
- *Terminology of Git (that frightens Power BI developers)*
- *Clone Repository from GitHub to your PC*

Develop in VS Code and Validate in Power BI Desktop

- *Find the visual object in the .PBIP*
- *Detect Changes and See Changes*
- *Working with Report JSON Theme*
- *Style Presets in Report JSON Theme*
- *Renaming GUID's to Display Names*
- *Annotations in PBIR*
- *Bookmarks in .PBIP*
- *Find and change the active report page*
- *Live-connected Reports*
- *Find Report Level Measures*
- *Add generic model docs TMDL and report page file*

GitHub Copilot

- *GitHub Copilot Agent Mode & Power BI Modeling MCP Server*
- *Diagram Layout View*
- *Documentation on table, column and measures*
- *Power Query Folders*
- *Power Query Applied Steps*
- *SVG for wireframe of report objects*

Semantic Link Labs with .PBIP

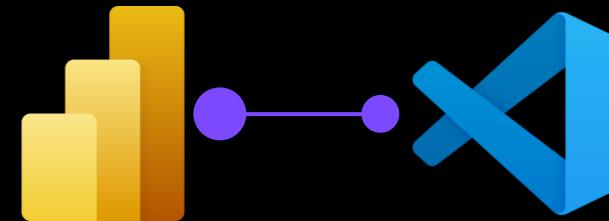
- **Semantic Link Labs in Fabric with Power BI Projects .PBIP**
- **Discover Bookmarks and Visual Level Filters**
- **Set Active Page**
- **Report Best Practice Analyzer**

Multiple Developers on a Single Project

- OneDrive & ALM Toolkit
- Deployment Pipelines
- Azure DevOps, GitHub & Fabric Git Integration
- Collaboration with Merge Conflicts, Feature Branches and Pull Requests



*Self-Service Power BI &
Fabric Newsletter
by David K. Hanna*



Getting Started Series: **Power BI Projects .PBIP and VS Code** **as a Power BI Developer**
