



Power BI Development on Steroids

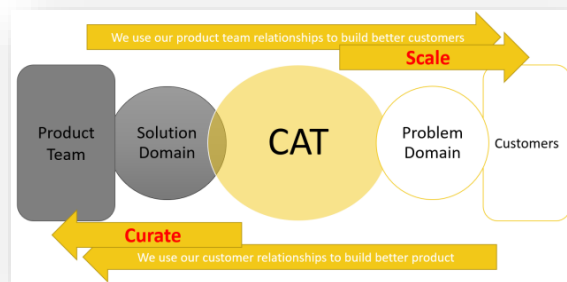
2022-03



Rui Romano

Power BI Customer Advisory Team (CAT)

Microsoft



 @RuiRomano

 <https://www.linkedin.com/in/ruiromano/>

 <https://ruiromanoblog.wordpress.com>



Porto, Portugal

 Power BI & Data

+15 years working on Microsoft Data Stack



Slides here:

<https://github.com/RuiRomano/sessionslides>

Power BI Dev on Steroids

- Tools
- {Dev} Techniques
- Fast Paced 😊

Focus on the possibilities not details...

Tools

My personal take on:

- DAX Studio
- Tabular Editor




DAX Studio

<https://daxstudio.org/> by Darren Gosbell

Main Use Cases:

- DAX Query Editor / Builder / Formatter
- **Quick Inspect Model w/ “View Metrics”**
- [DAX Tuning & Debugging](#) (old fashion)
- Export Data: Folder / SQL Server 💖


Learn more: [Tool Intro](#)



DAX Studio

The ultimate tool for working with DAX queries

Download the latest release of DAX Studio here:

 **DAX Studio v2.16.2**
(installer)

📁 Size: 8.16Mb | 📅 12 Jul 2021 | 📄 downloads: **3,212**

The details of the new features and fixes included in this release are available in the [changelog](#)

Tabular Editor

<https://tabulareditor.com/> by Daniel Otykier

Massive productivity boost!

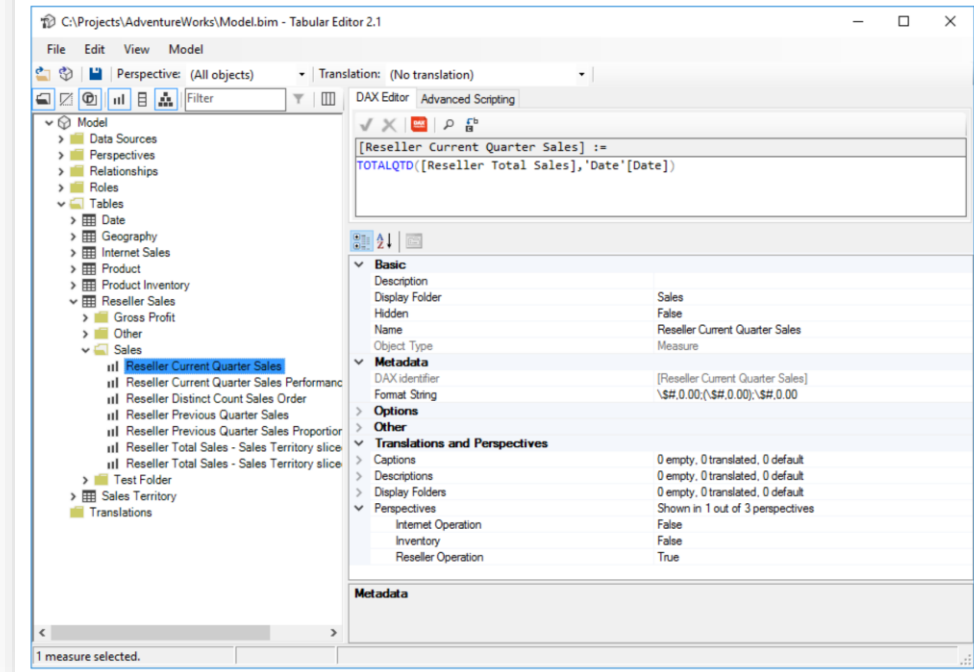
Main use cases:

- Model Development – **Efficiently & Faster**
- **Deployment with options** (ex: only schema) 💎
- **Best Practices Analyzer**
- **Automation** with Scripting
- Copy items between PBIX files
- Restore a PBIX from powerbi.com 💎

Learn more: [Tool Intro](#)

Tabular Editor

Tabular Editor is a tool that lets you easily manipulate and manage measures, calculated columns, display folders, perspectives and translations in Analysis Services Tabular and Power BI XMLA Models (from Compatibility Level 1200 and onwards). The tool is written entirely in .NET WinForms (C#).



Development Techniques & Tips

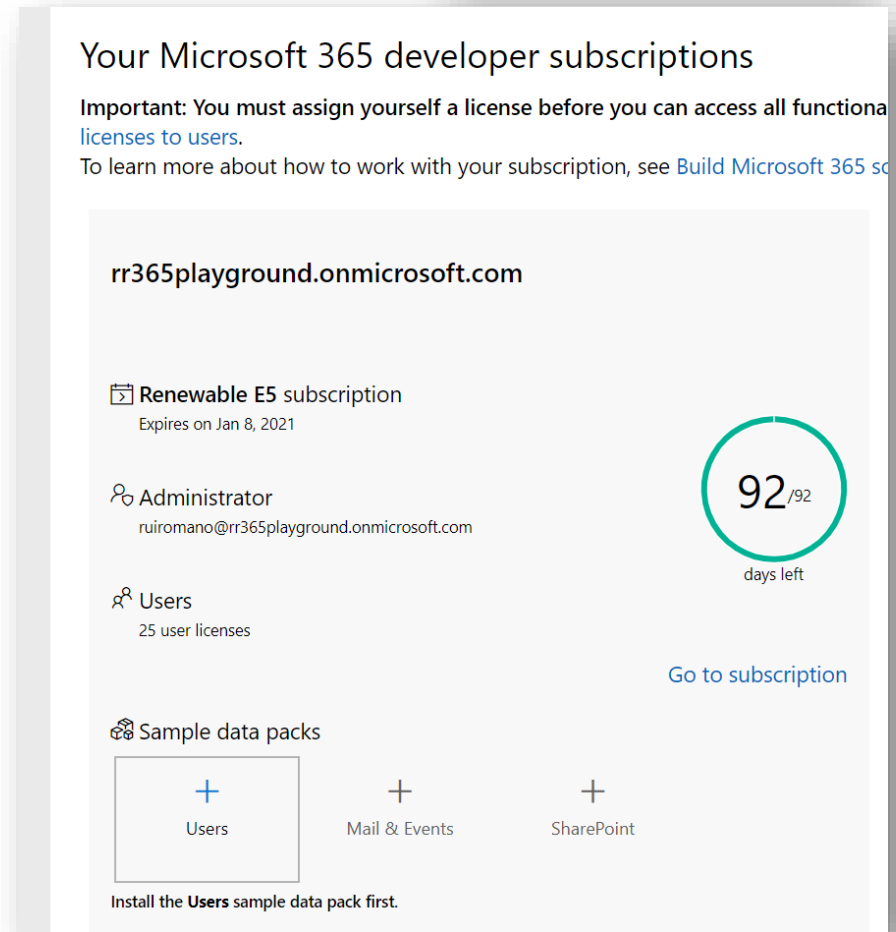
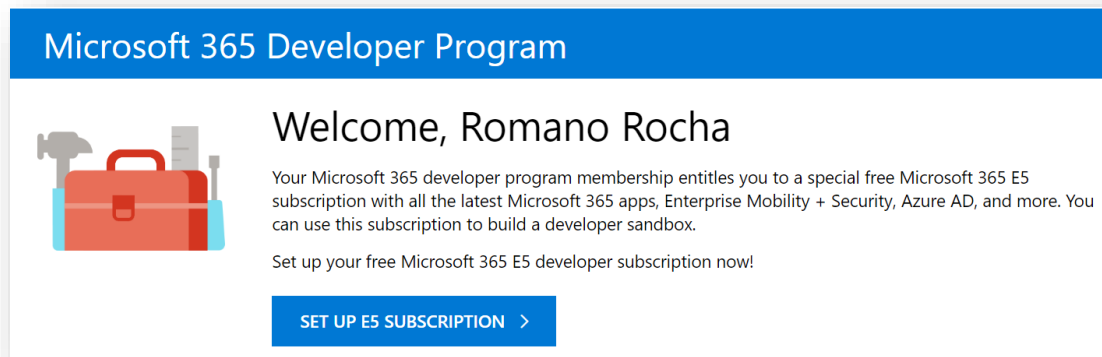
```
mirror_mod = modifier_ob.  
Set mirror object to mirror  
mirror_mod.mirror_object =  
operation == "MIRROR_X":  
mirror_mod.use_x = True  
mirror_mod.use_y = False  
mirror_mod.use_z = False  
operation == "MIRROR_Y":  
mirror_mod.use_x = False  
mirror_mod.use_y = True  
mirror_mod.use_z = False  
operation == "MIRROR_Z":  
mirror_mod.use_x = False  
mirror_mod.use_y = False  
mirror_mod.use_z = True  
  
selection at the end -add  
mirror_ob.select= 1  
modifier_ob.select=1  
context.scene.objects.active  
("Selected" + str(modifier_ob.  
mirror_ob.select = 0  
= bpy.context.selected_object  
data.objects[one.name].select  
print("please select exactly  
  
-- OPERATOR CLASSES --  
  
types.Operator):  
X mirror to the selected  
object.mirror_mirror_x"  
mirror X"  
  
context):  
context.active_object is not
```

Create your own Power BI Playground

Very useful to try admin features 😊

Create a [365 Developer subscription](#)

- 90 days (renew automatically, if used for DEV)
- 25 Licenses of O365 E5 🧑 (PowerBI, PowerApps, PowerAutomate)
- Full Tenant Control

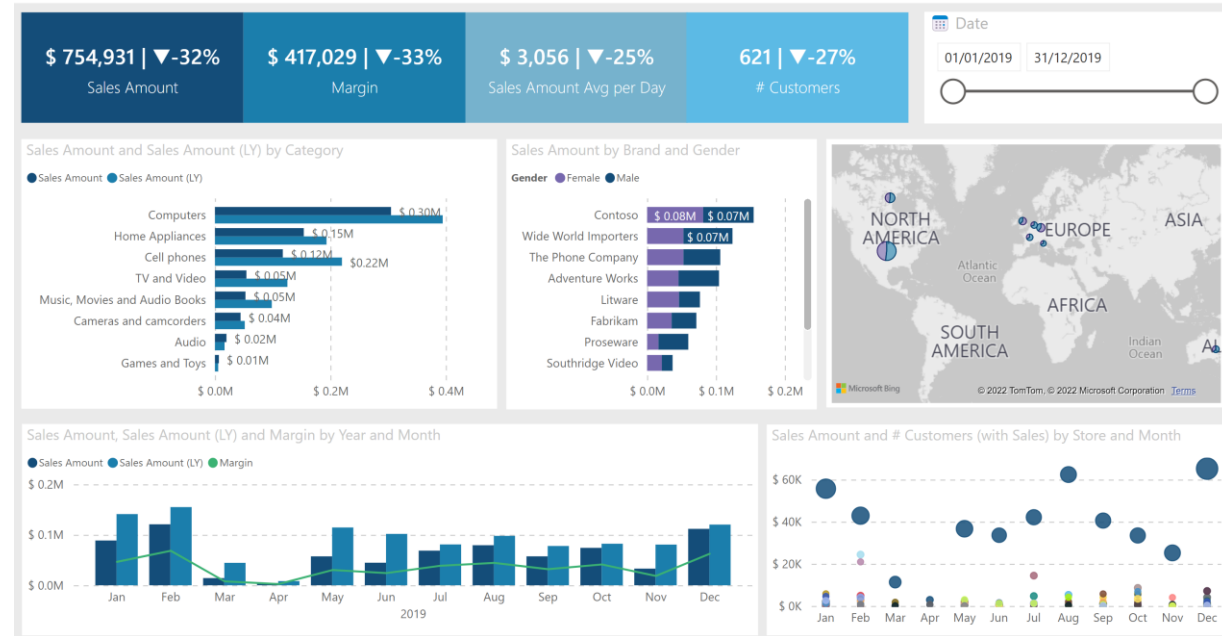


Use Templates!

- FastTrack to new Developments
- Theme files
Much more than just colors
- Built in common tables
Calendar & Time
Calculation Groups
About
...

[Sample PBIT Download](#)

Sales Analysis



```
C: > @Repos > Github > pbihacksworkshop > Demos > Report - Template > { } CompanyTemplate.json > ...  
1  {  
2    "name": "Theme",  
3    "dataColors": [ "#144D79", "#5CBAE5", "#FAC364", "#E15554", "#3BB273", "#7768AE", "#1B7EAC" ],  
4    "foreground": "#144D79",  
5    "foregroundNeutralSecondary": "#144D79",  
6    "foregroundNeutralTertiary": "#144D79",  
7    "background": "#FAFAFA",  
8    "backgroundLight": "#5CBAE5",  
9    "backgroundNeutral": "#5CBAE5",  
10   "tableAccent": "#252525",  
11   "visualStyles":  
12     {  
13     }
```

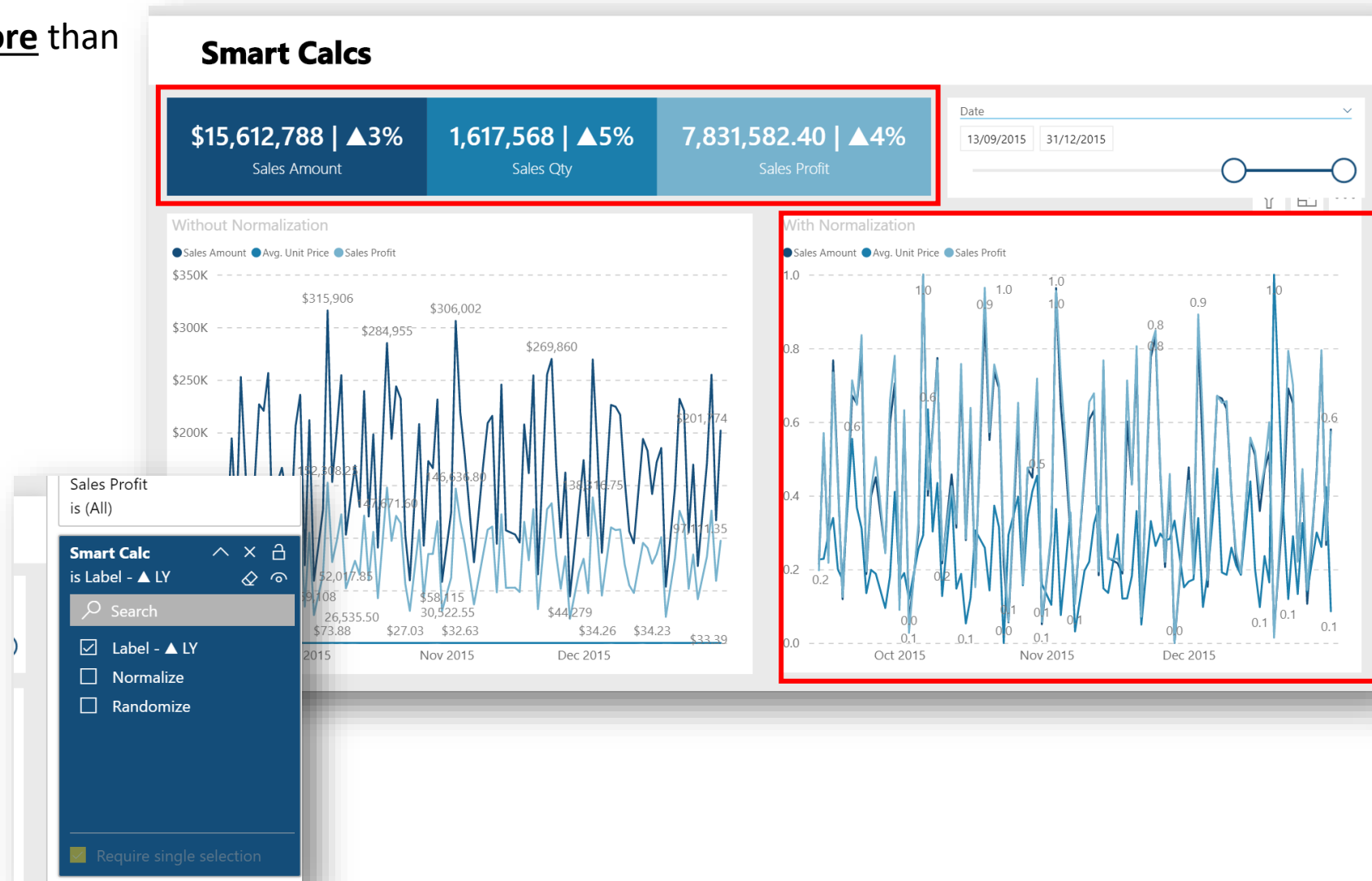
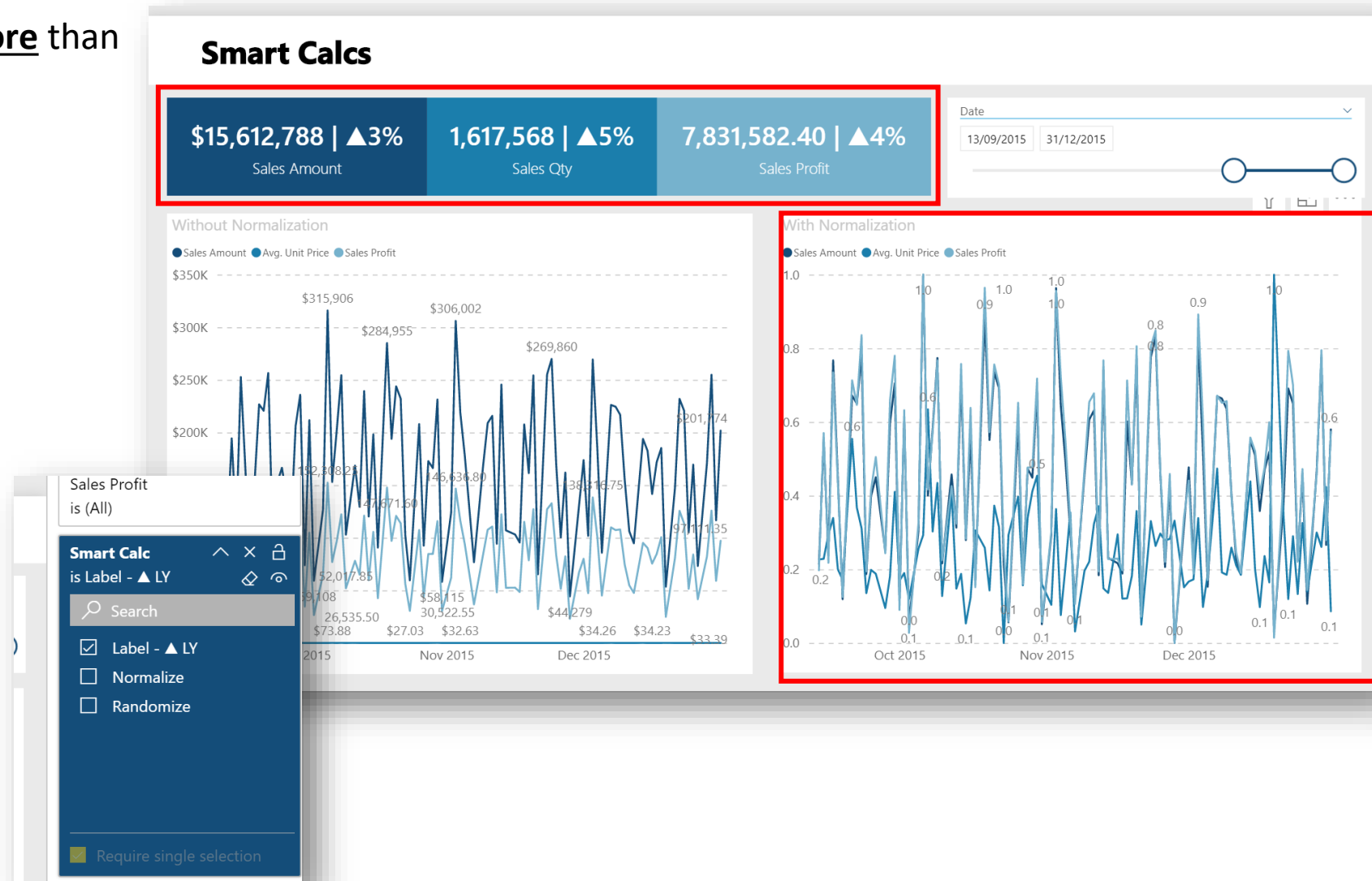
Learn more: <https://docs.microsoft.com/en-us/power-bi/desktop-report-themes>

"Smart" Calculation Groups

Calculation Groups can do **much more** than just Time Aggregations / Variations

Other useful use cases:

- Auto Time Variation on Cards
- Normalization
- Randomize



The “File Proxy” Technique

Create a “Files” proxy query to be referenced by other queries

Abstract your Power BI development from the file source

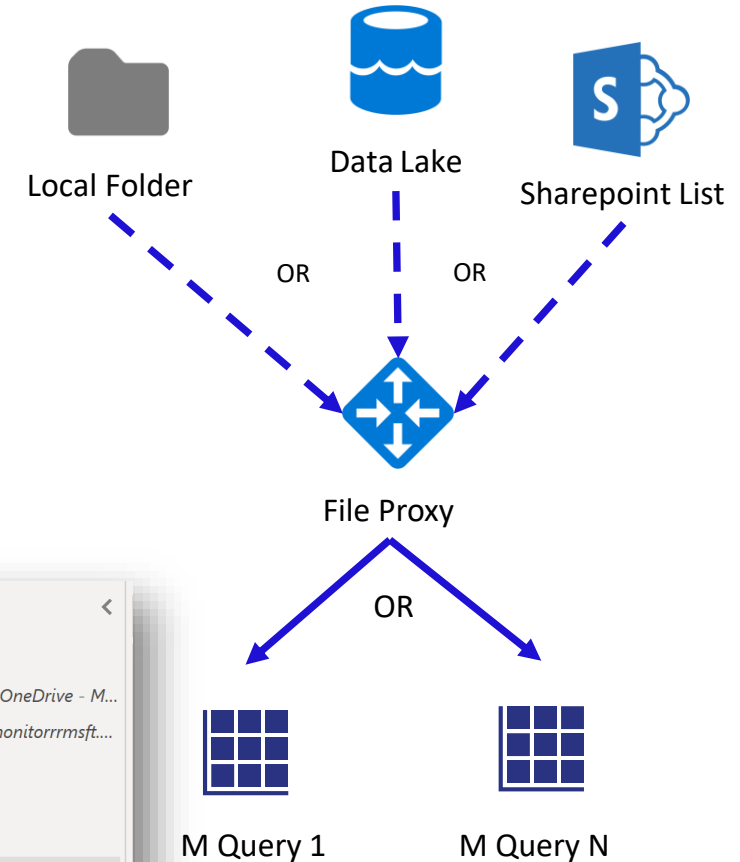
Productivity boost, ex: stage data locally for DEV, incremental refresh

Files


```
let
    //Source = #"Files from BlobStorage",
    Source = #"Files from Disk",
    IncrementalFileFilter = Table.SelectRows(Source, each [Date] = null or DateTime.From([Date]
in
    #"Lowercased Text" = Table.TransformColumns(IncrementalFileFilter, {"Name", Text.Lower, type
    #"Lowercased Text"
```

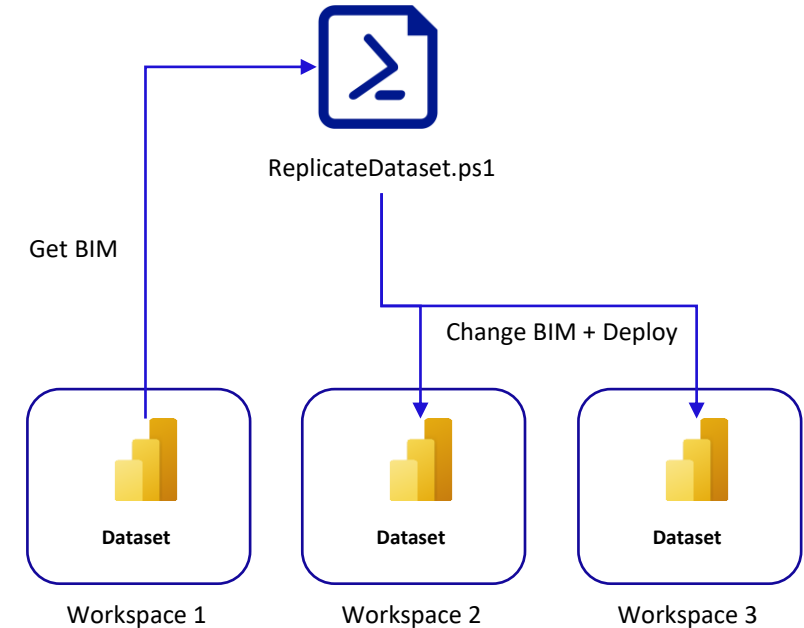
Queries [12]

- Global Parameters [4]
 - DataLocation - Disk (C:\Users\ruiromano\OneDrive - M...
 - DataLocation - Lake (https://pbgatewaymonitrrrmsft....
 - RangeStart (31/12/2000 00:00:00)
 - RangeEnd (31/12/2100 00:00:00)
- Files - FileSystem [1]
 - Files from Disk
- Files - BlobStorage [1]
 - Files from BlobStorage
- Other Queries [6]
 - Files
 - System
 - Calendar
 - Gateway Logs
 - QueryExecutionReport
 - Gateways



XMLA Endpoint & TOM SDK

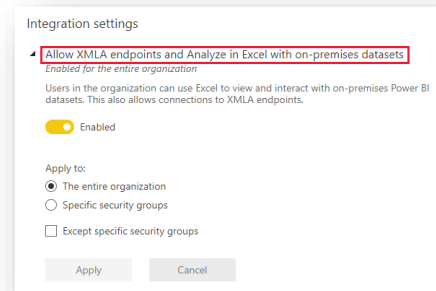
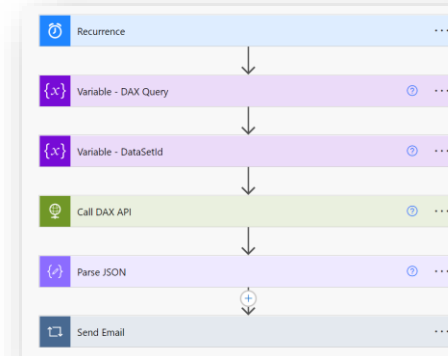
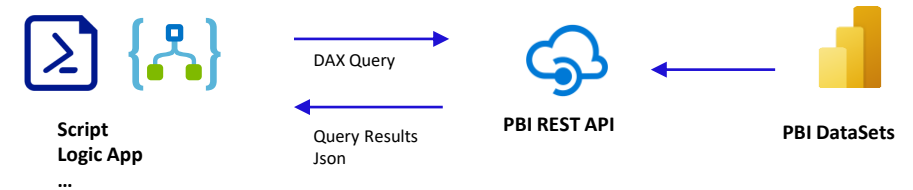
- Complete control of the Power BI Dataset
- Deploy only model and not data
- Automate deployments
- Learn about [TOM Library](#)
- Requires Premium 



REST API - Dataset Execute Queries

- The coolest [API](#)! 😊
- Useful Scenarios:
 - Data Integration (*limited)
 - Data Quality - [blog post](#)
 - Alerting System using Power BI Data
 - App/Website integrations
- Works on Premium & **Shared (PRO)**
- Requirements
 - “Build” permission on the dataset
 - “Allow XMLA Endpoints and Analyze in Excel”
- [Main Limitations](#)
 - Result sets capped to 100k rows
 - No parallel queries

Script: [execute dax in PS](#)



Underperforming Employees - 2021-11-08T17:48:29.2908586Z

This message was sent with Low importance

RR

Rui Romano

Mon 08/11/2021 17:48

To: Rui Romano

Employees.csv

555 bytes

Underperforming Employees:

Employee	[Employee]	[Sales Amount]	[Sales Qty]	[Sales Profit]	[Sales Amount vs LY]
Amy Trefl	13452	504	6438.5	-0.40562167368842	
Anthony Grosse	9257.1	625	4794.6	-0.244139428926031	
Hudson Hollinworth	8183.5	608	3677	-0.756427866664087	
Sophia Hinton	13960.5	525	7087.25	-0.254320486490384	
Archer Lambie	9893.4	523	4950.4	-0.5799034407205	

```
Dataset-REST API DAX Query.ps1 > ...
13 $query = "EVALUATE
14
15 VAR p_currentDate = dt"$($date.ToString("yyyy-MM-dd"))"
16
17 return
18     FILTER(
19         SUMMARIZECOLUMNS(
20             'Employee' [Employee],
21             TREATAS([p_currentDate], 'Calendar' [Date]),
22             "[Sales Amount]", [Sales Amount],
23             "[Sales Qty]", [Sales Qty],
24             "[Sales Profit]", [Sales Profit],
25             "[Sales Amount vs LY]", [% Sales Amount vs 1y]
26         ),
27         [Sales Amount vs LY] < 0
28     )
29
30 Connect-PowerBIServiceAccount
31
32 $body = @{
33     "queries" = @(
34         @(
35             "query" = $query
36         )
37     );
38     "includeNulls" = $false
39 }
40
41 }
42
43 $bodyStr = $body | ConvertTo-Json
44
45 $result = Invoke-PowerBIRestMethod -url "datasets/$datasetId/executeQueries" -
46
```


Thanks!

 @RuiRomano

 <https://www.linkedin.com/in/ruiromano/>

 <https://ruiromanoblog.wordpress.com>