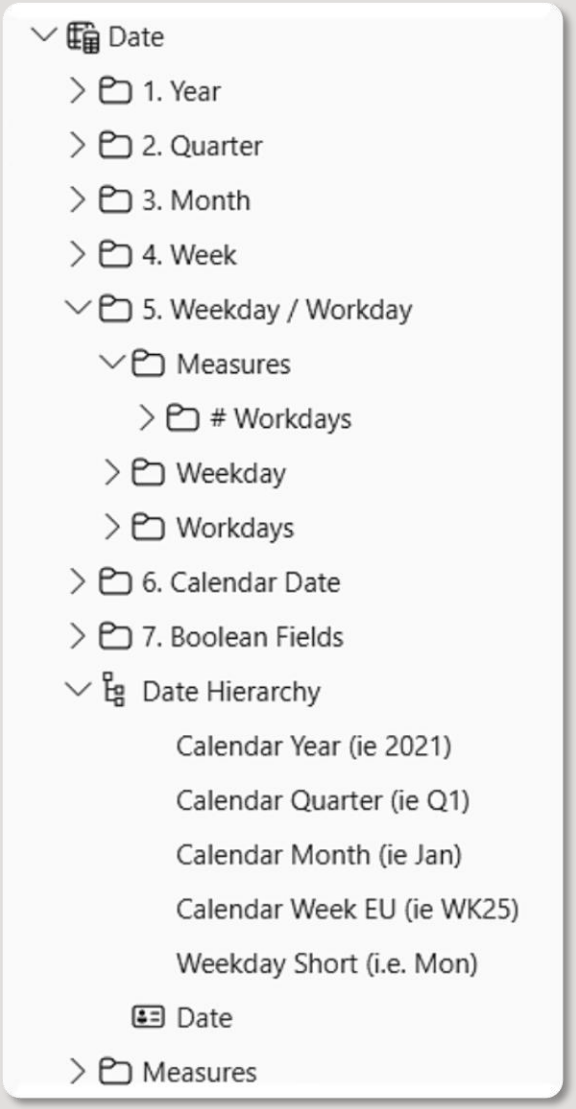
The Ultimate Power BI Productivity Boost with TMDL and Fabric Studio

Dhyanendra Singh Rathore

Power BI Next Step

SEP 2025



Create from scratch

Clean everything else from the model

External tools

TMDL

Agenda

- What, Why, When
- Using TMDL with Local and Remote Models
- Tips to unlock full potential

Big THANK YOU to our great sponsors

Raffle prizes from the sponsors

Power BI
Next Step

Dhyanendra Singh Rathore

Power BI Tech Lead @ Autoliv

- ✓ **Stockholm, Sweden**
- ✓ **Blogger, Speaker & Hiker**
- ✓ **Automation & Optimization**

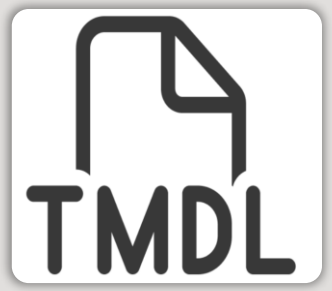
dhyans

bits2BI

What is TMDL

What is TMDL

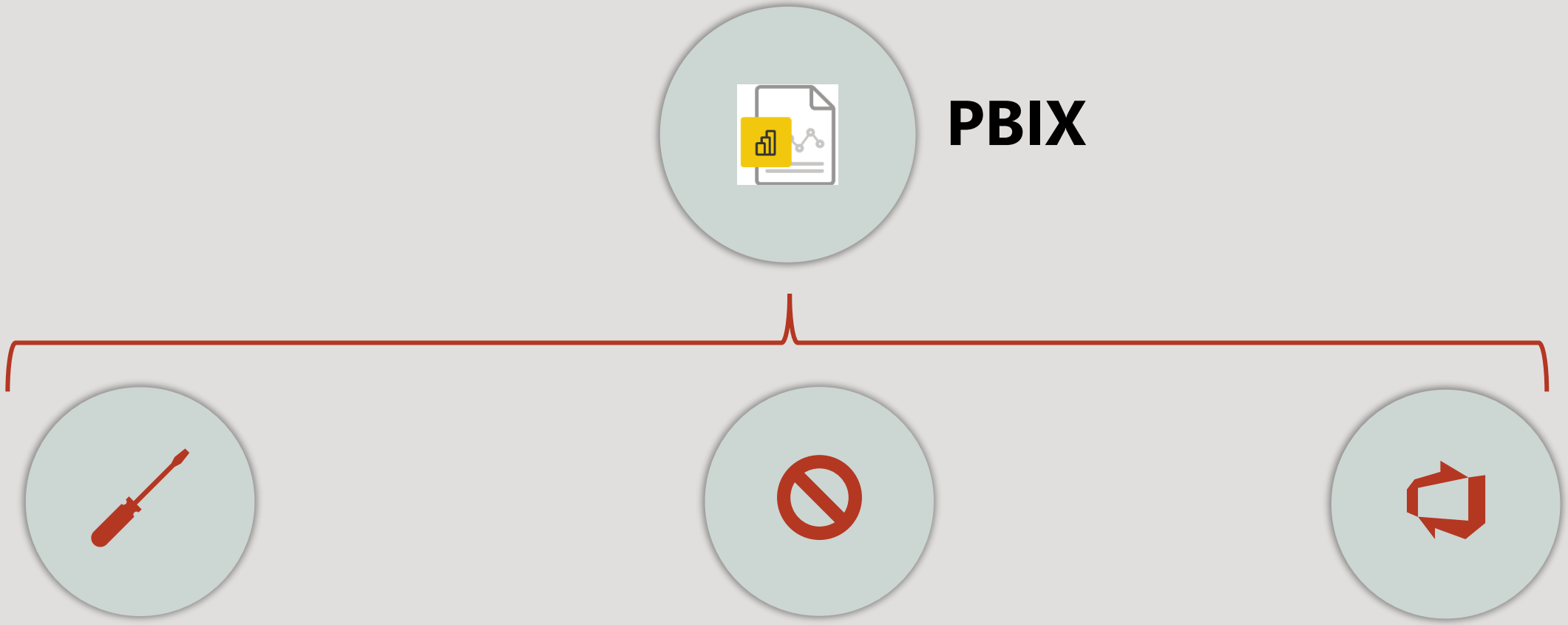
Tabular **M**odel **D**efinition **L**anguage



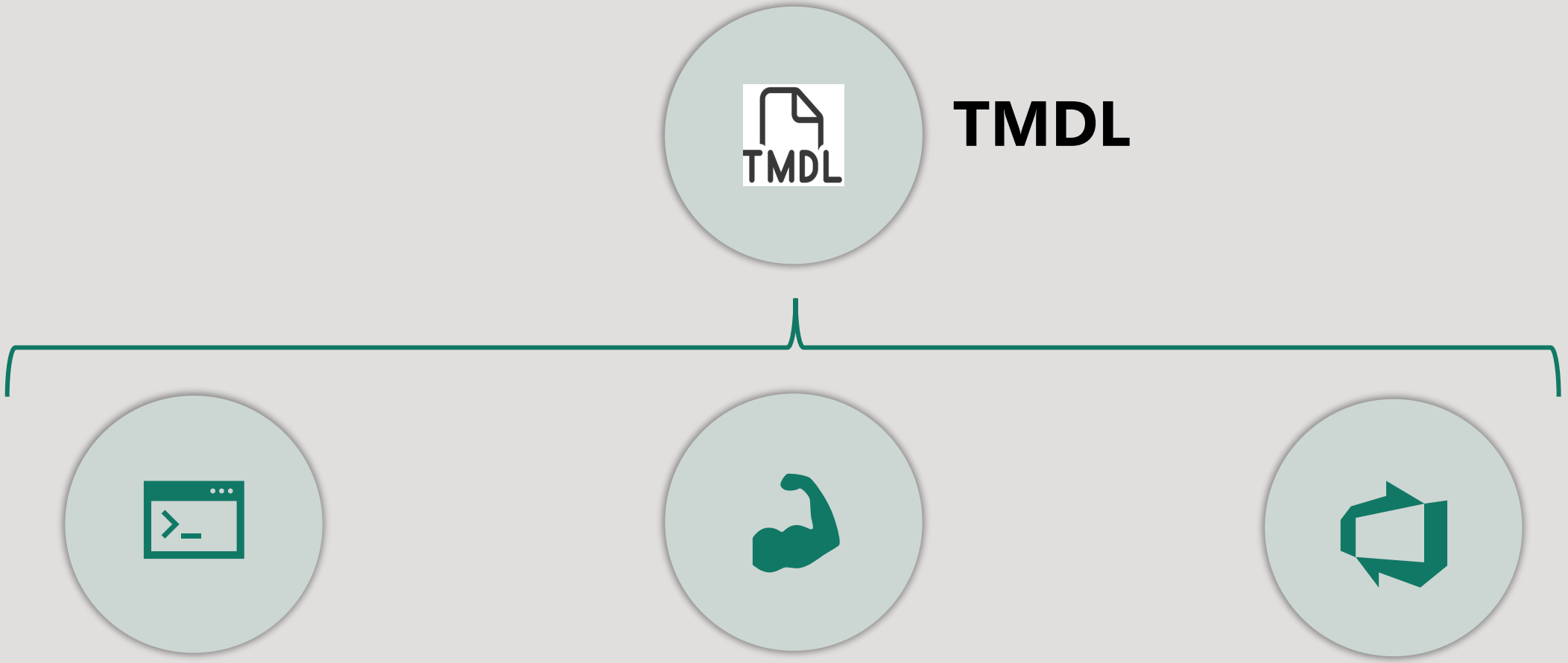
Serialized metadata of a semantic model

Each table, perspective, role, and culture stored as a separate **text** file

Why do we need TMDL



Why do we need TMDL



Different Types of TMDL

Types of TMDL

TMDL Files Preview

Files storing object metadata as text that Power BI can use to render a model

File extension: *tmdl*

```
table Date
    lineageTag: 0bb45e29-3908-422d-ade4-4100434bdfa4
    dataCategory: Time

    measure '# Workdays MTD' =
            CALCULATE(
                MAX( 'Date'[Workdays MTD] ),
                'Date'[IsDateInScope] = TRUE
            )
        formatString: #,##0
        displayFolder: 5. Weekday / Workday\Measures\# Workdays
        lineageTag: 4b0555ab-6912-4d3c-b613-0d2d542a6965
```

TMDL Scripts GA

Script containing the object metadata as text that Power BI Desktop can use to make changes to the model

Keywords: *createOrReplace, ref*

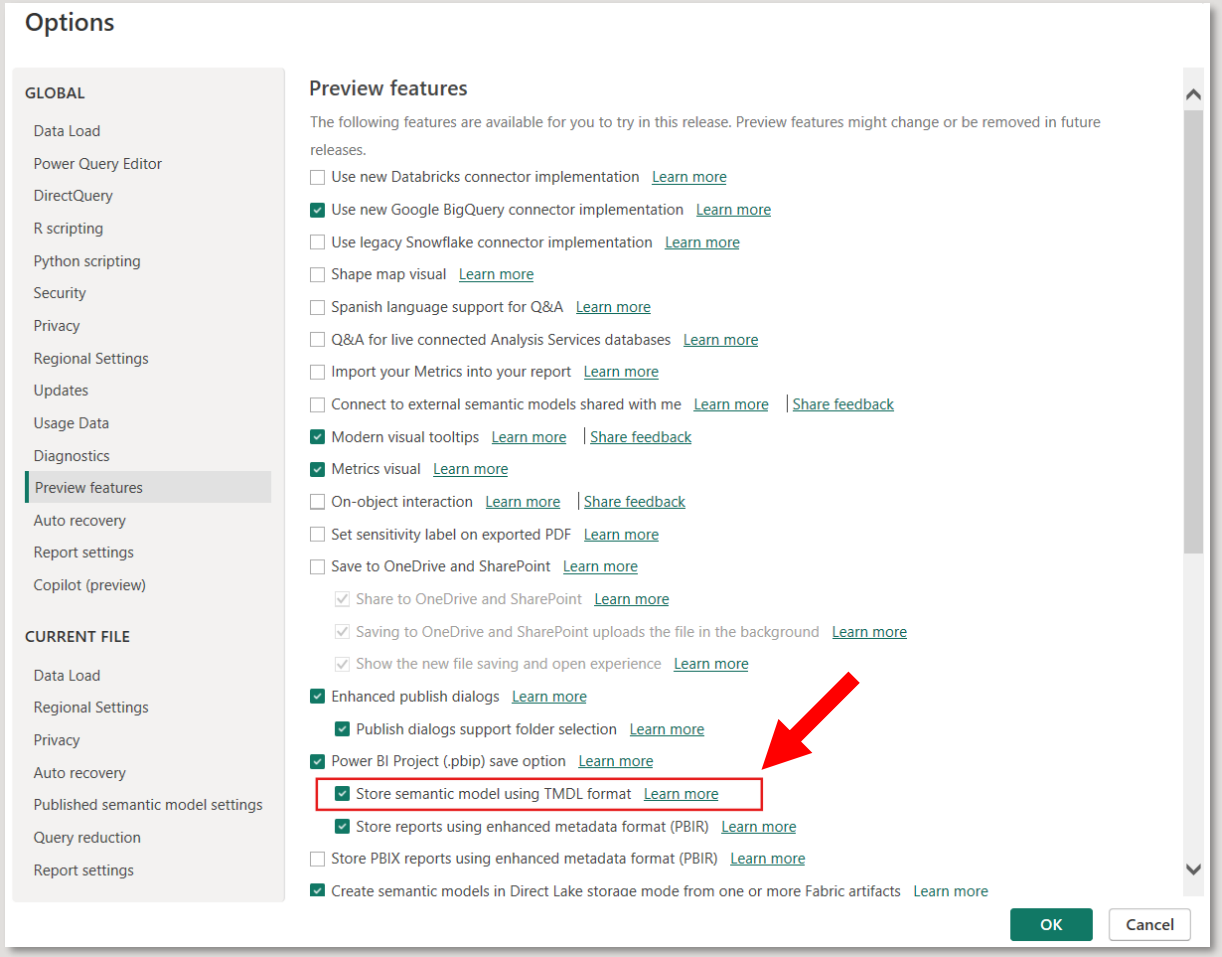
```
createOrReplace

    table Date
        lineageTag: 0bb45e29-3908-422d-ade4-4100434bdfa4
        dataCategory: Time

        measure '# Workdays MTD' =
                CALCULATE(
                    MAX( 'Date'[Workdays MTD] ),
                    'Date'[IsDateInScope] = TRUE
                )
            formatString: #,##0
            displayFolder: 5. Weekday / Workday\Measures\# Workdays
            lineageTag: 4b0555ab-6912-4d3c-b613-0d2d542a6965
```

Both can be used without using the other

TMDL File Format

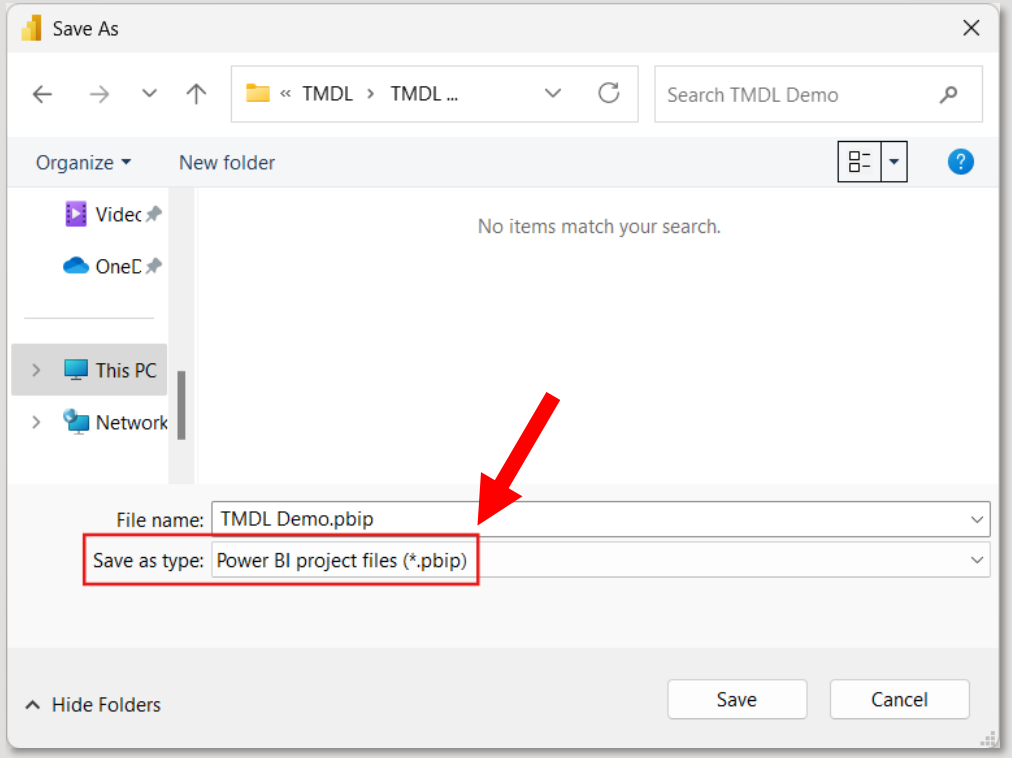
Enable TMDL File Format

File > Options and settings > Options > Preview features



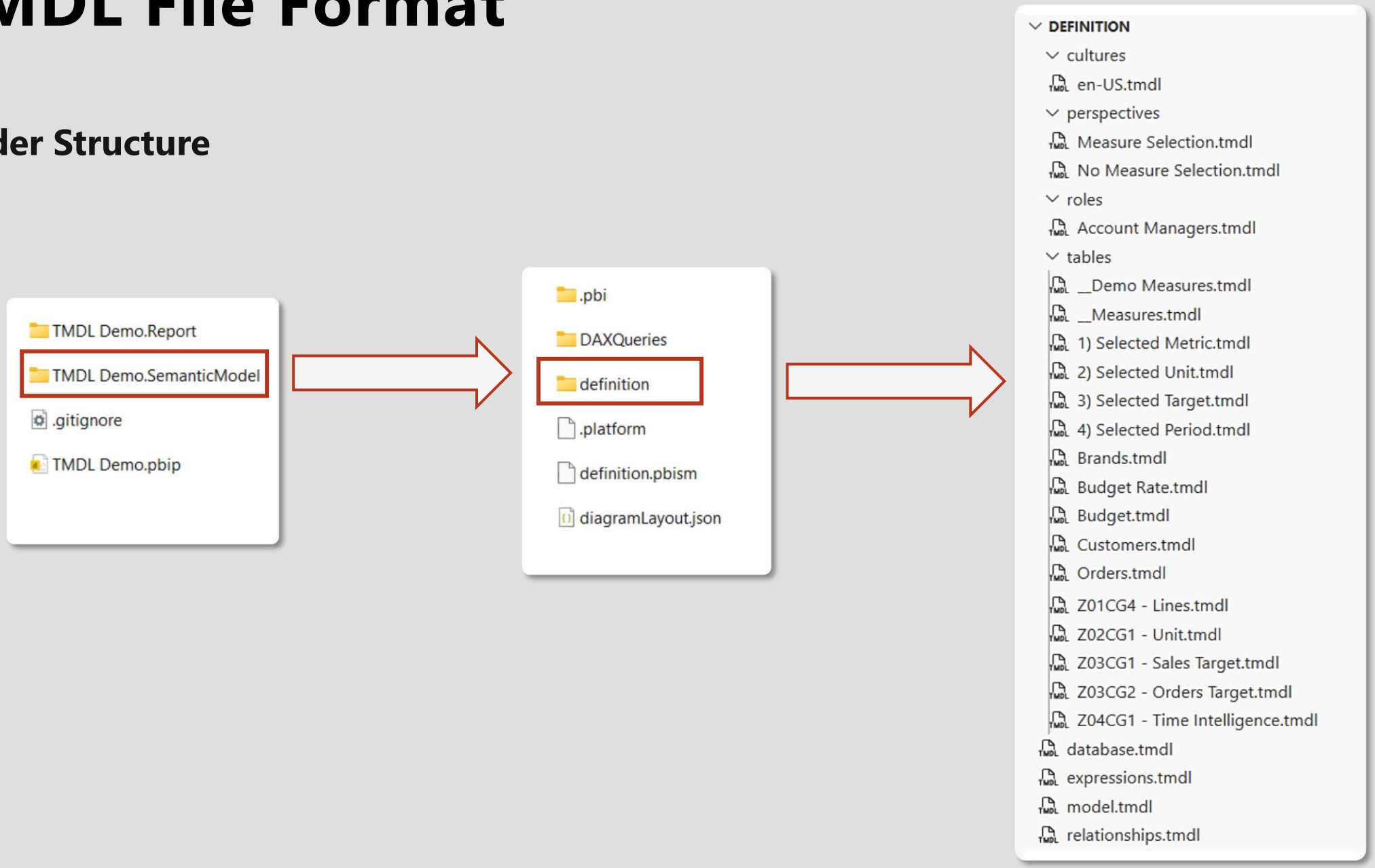
Save pbix as .pbip

File > Save as



TMDL File Format

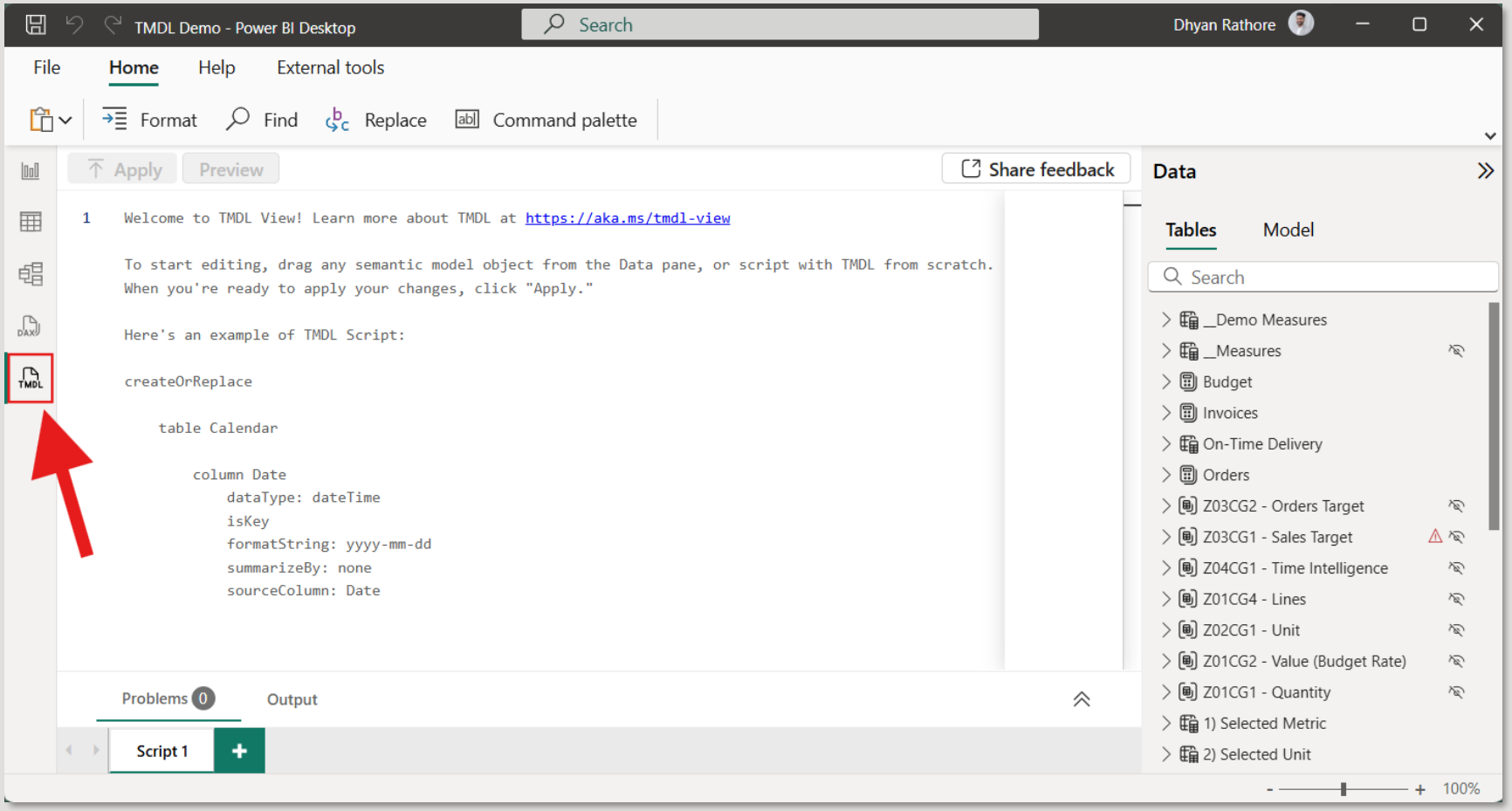
Folder Structure



TMDL Scripts

TMDL View

- **Power BI Desktop** – GA since September 2025 release ✌🏻
- **Power BI Web** – Planned



Working with TMDL

What can we do with TMDL

Create Objects

Edit Objects & Properties

Objects & Properties without a UI in PBI Desktop

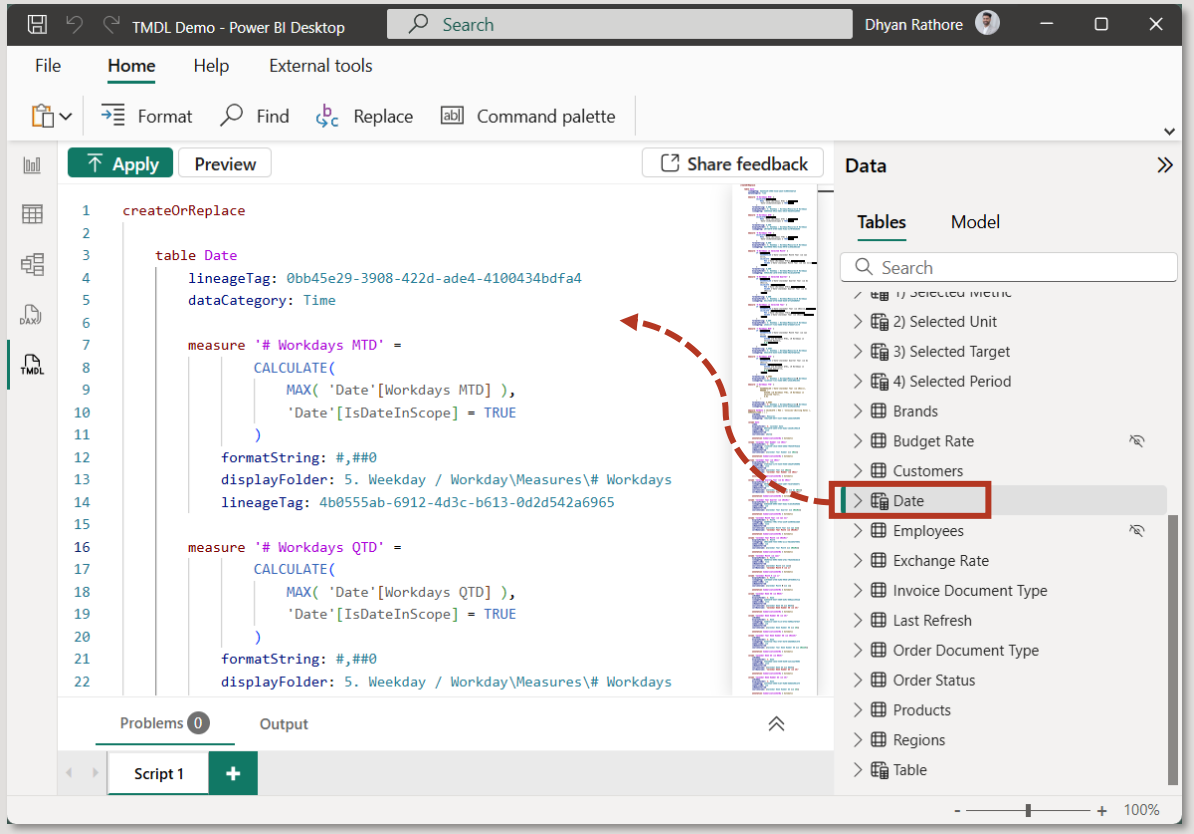
Objects as Text

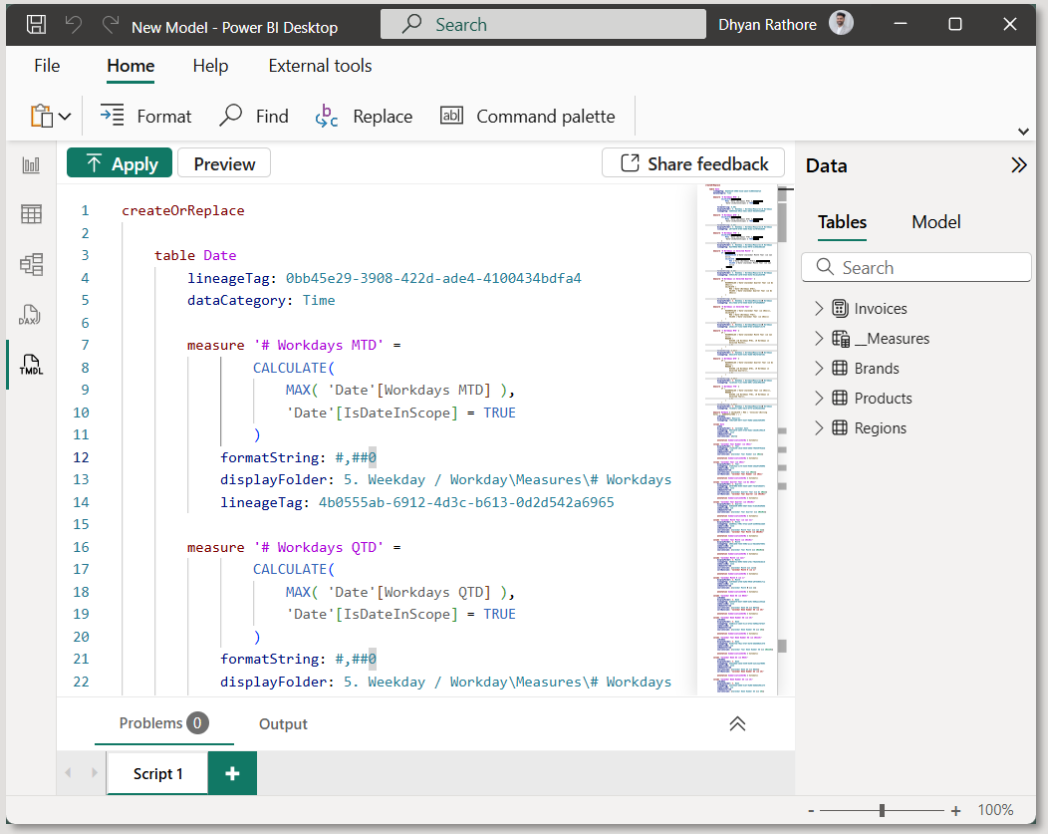
When to use TMDL

- Viewing multiple objects at once
- Making multiple changes at once
- Work with objects & properties without an UI
- Reuse objects across different models
- View Power Query transformations
- Take a “one-page” backup of semantic model
- Working with a code first experience

Working with TMDL : Local Model

Local Model: Reuse Objects with TMDL Scripts





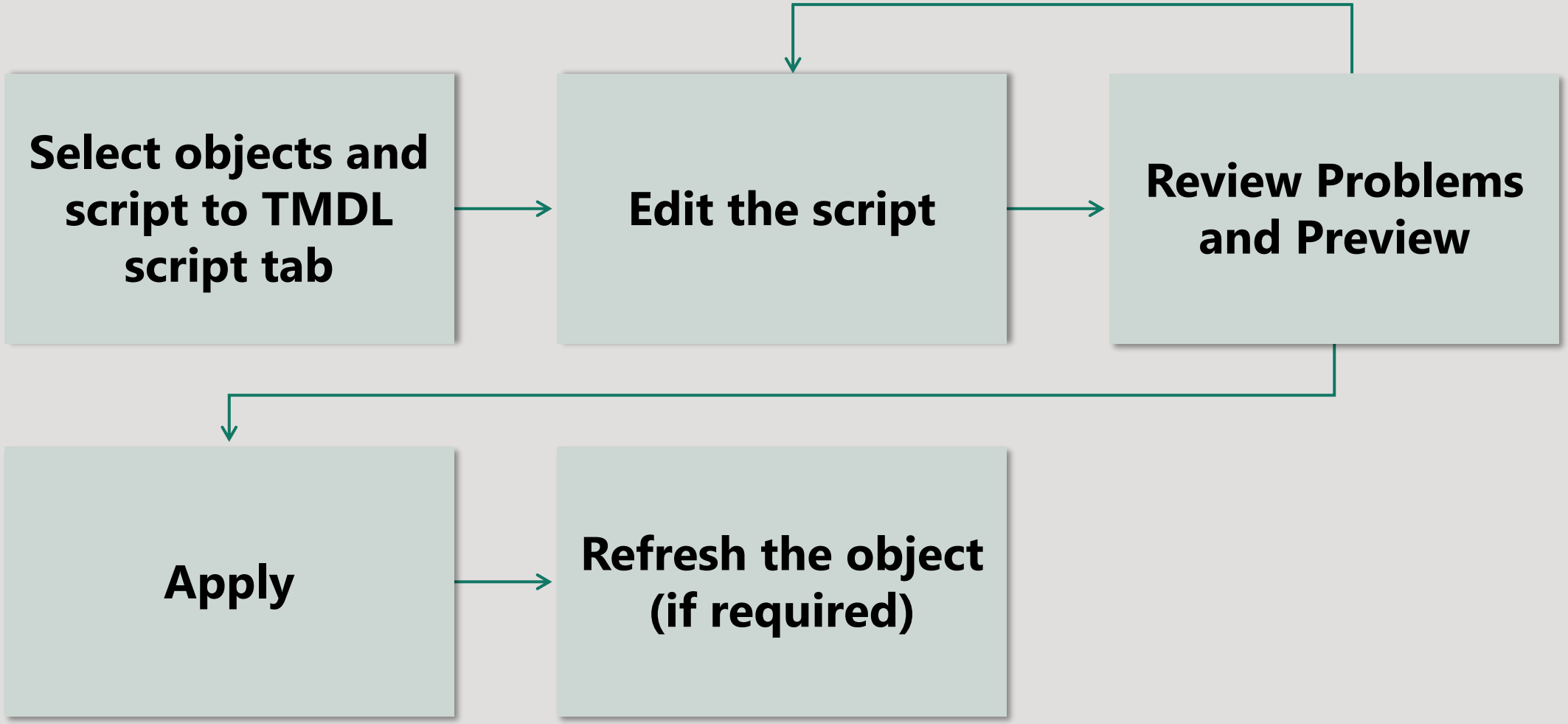
Source Model: TMDL View

1. Select object(s) and script to TMDL script tab
2. Copy the script

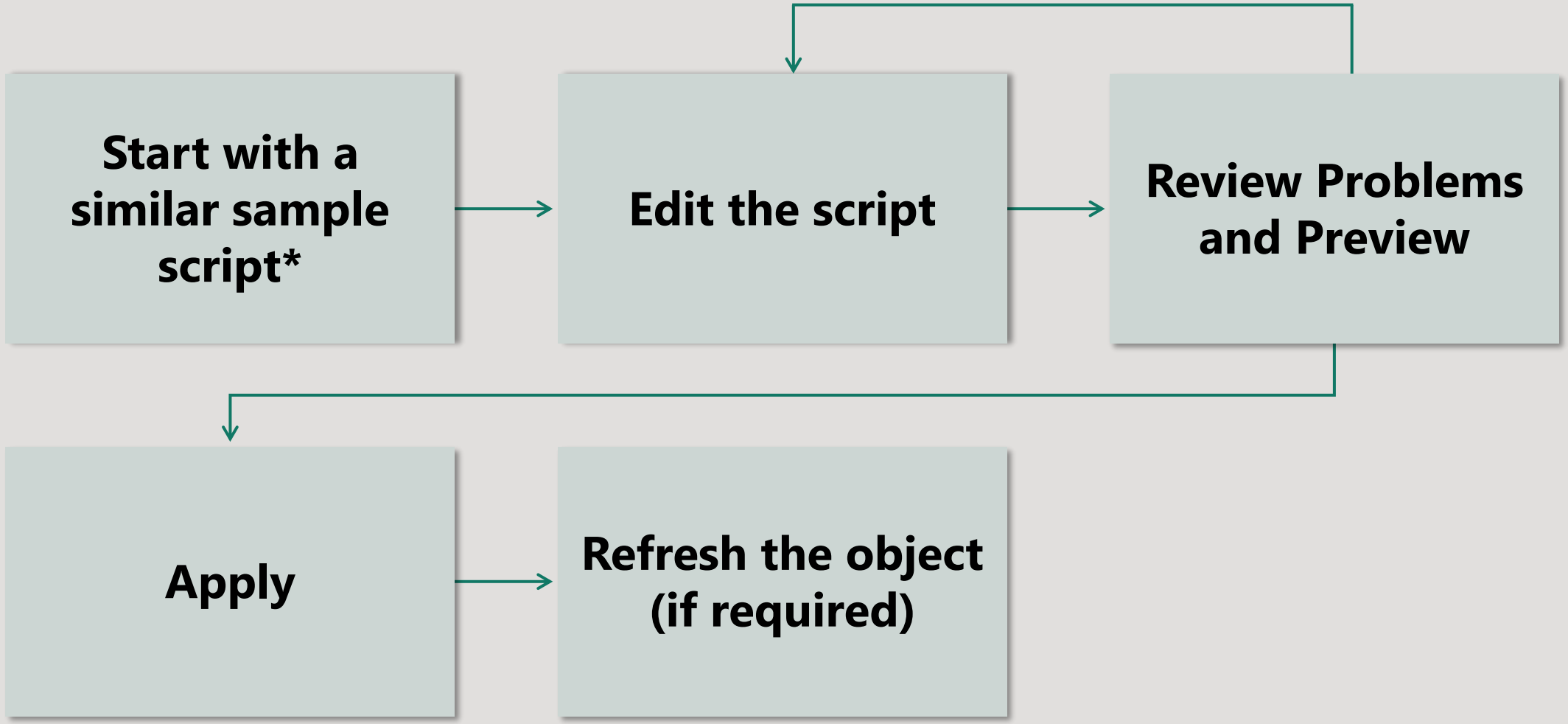
Target Model: TMDL View

1. Paste the script
2. Preview & Apply
3. Refresh the object (if required)

Local Model: Edit Objects with TMDL Scripts

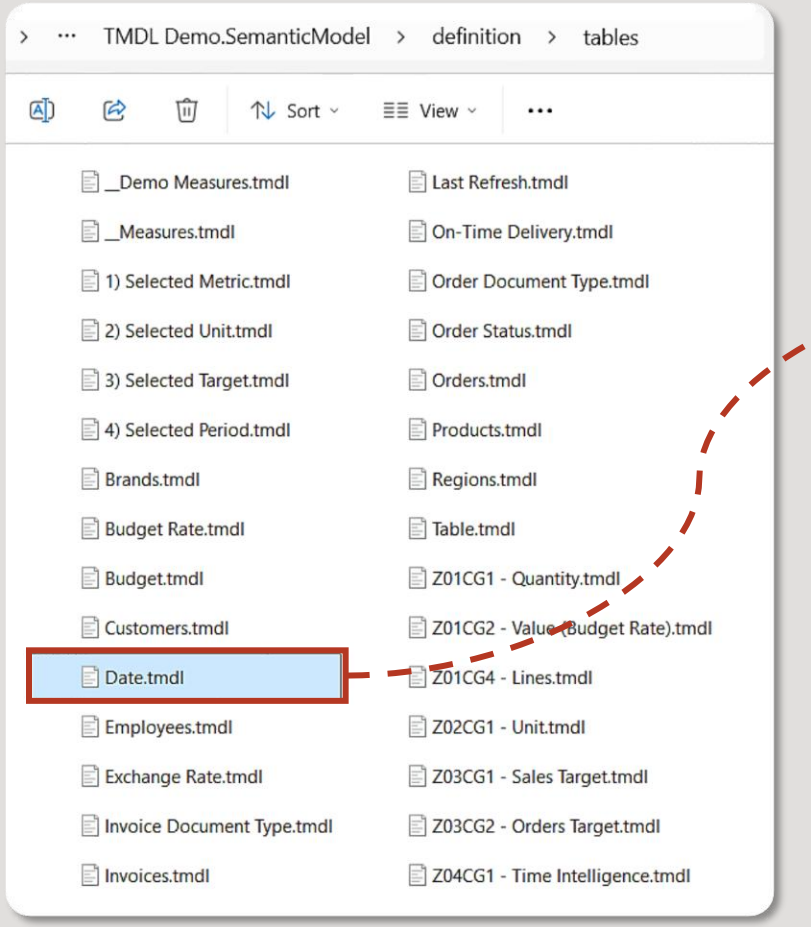


Local Model: Create New Objects with TMDL Scripts

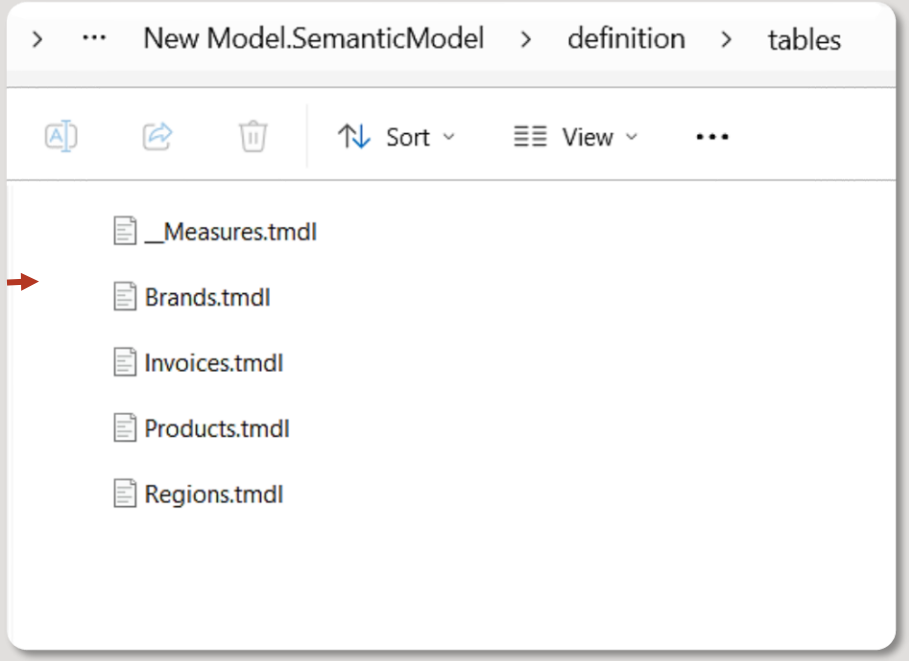


** Use a similar existing object or check out TMDL gallery at https://tinyurl.com/tmdl-gallery*

Local Model: Reuse Objects with TMDL Files



Source Model: TMDL Files



Target Model: TMDL Files

1. Move the object TMDL files from source to target model TMDL files
2. Relaunch Power BI Desktop
3. Refresh the object (if required)

Power BI Desktop auto-detect changes: Planned

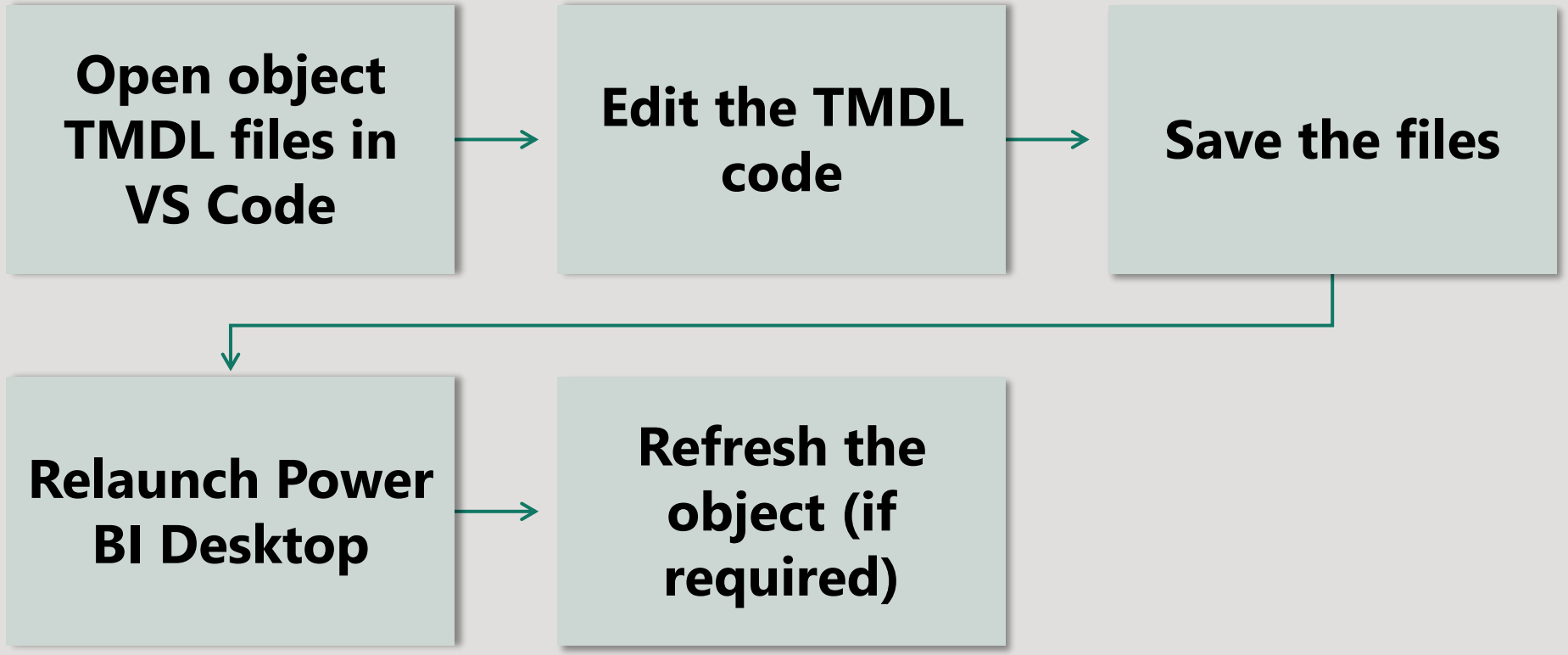
Local Model: Working with TMDL Files

Tool Up

Visual Studio Code (VS Code)

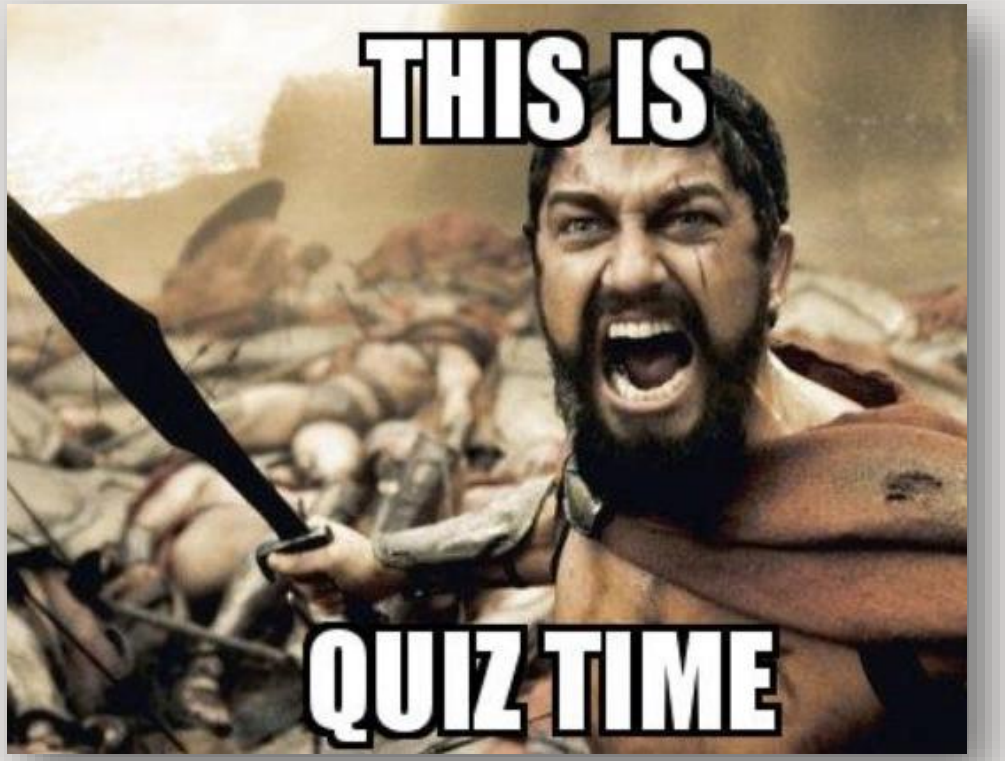
TMDL Extension for VS Code

Local Model: Edit Objects with TMDL Files



Power BI Desktop auto-detect changes: Planned

Working with TMDL : Model in the Service



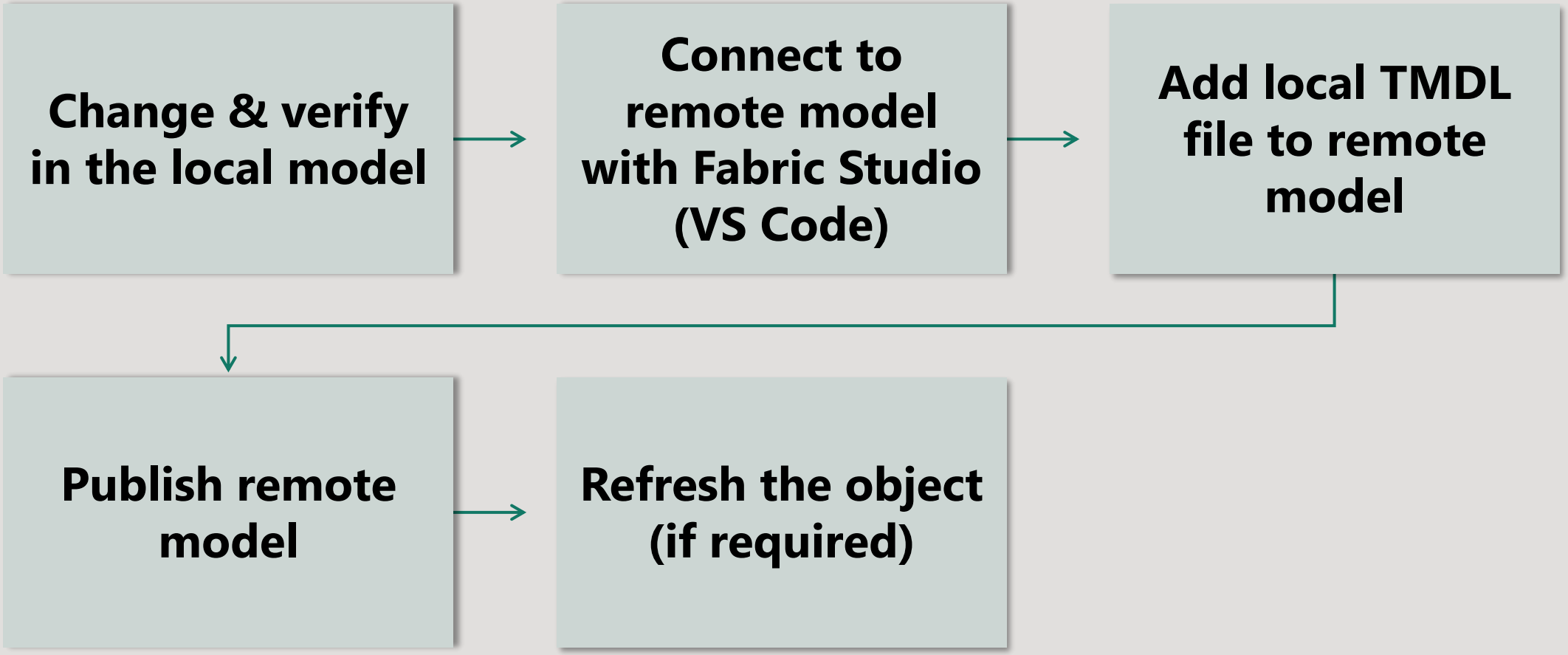
To change a model in Power BI Service, do we go for TMDL Scripts or TMDL Files?

Remote Model: Working with TMDL Files

Tool Up

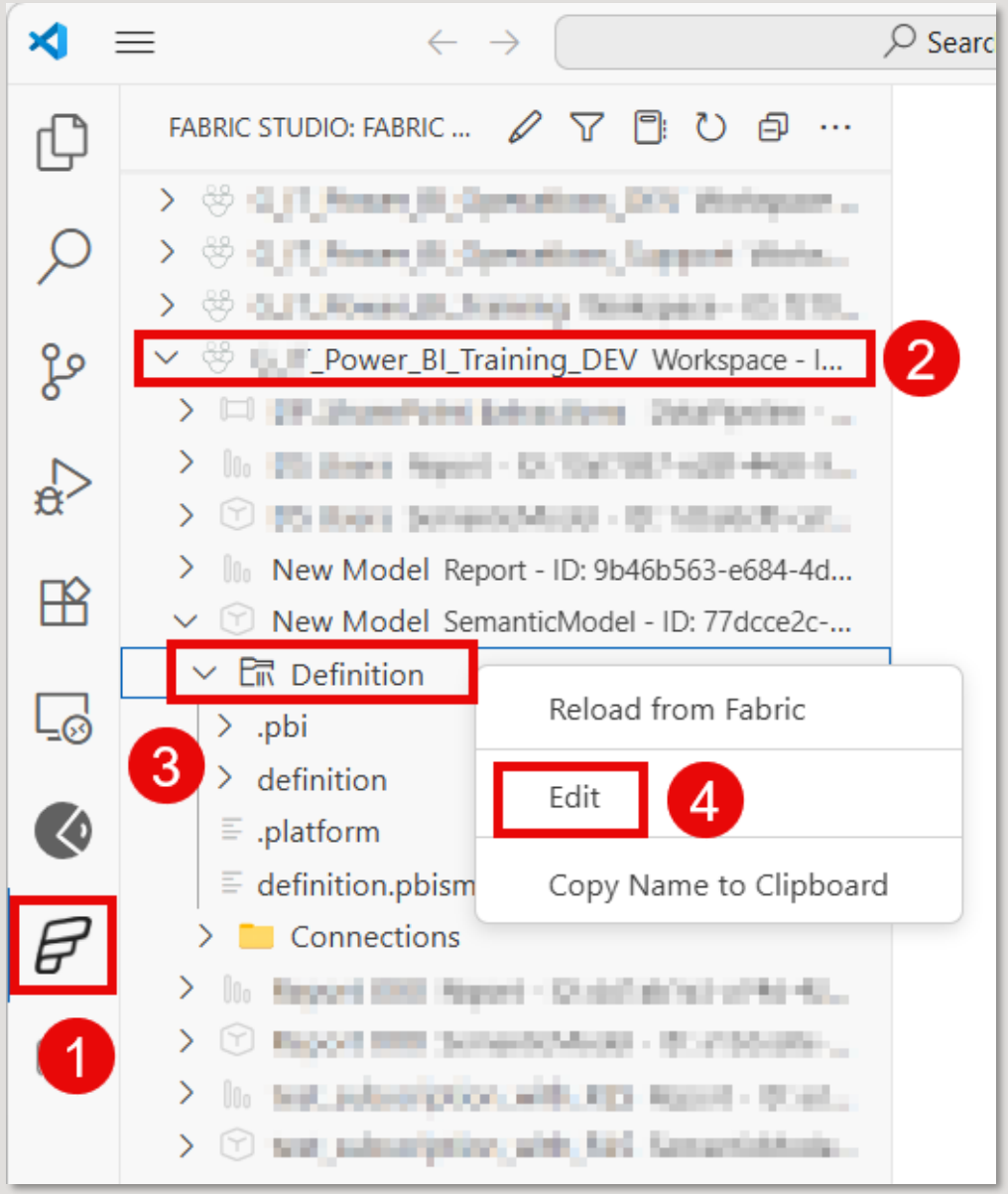
- Visual Studio Code (VS Code)
- TMDL Extension for VS Code
- Fabric Studio Extension for VS Code

Remote Model: Update Model with TMDL Files

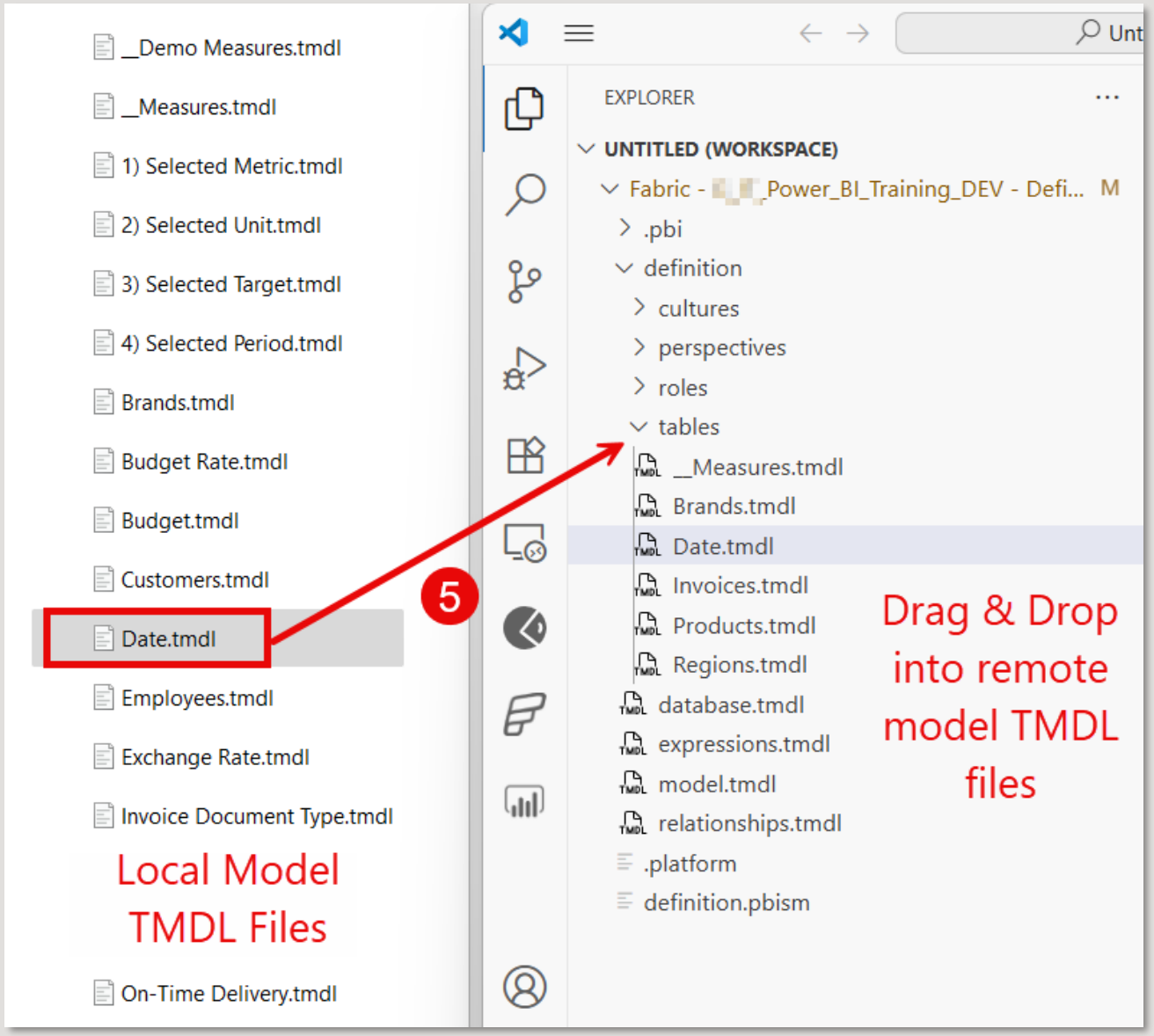


TMDL View in Power BI Web: Planned

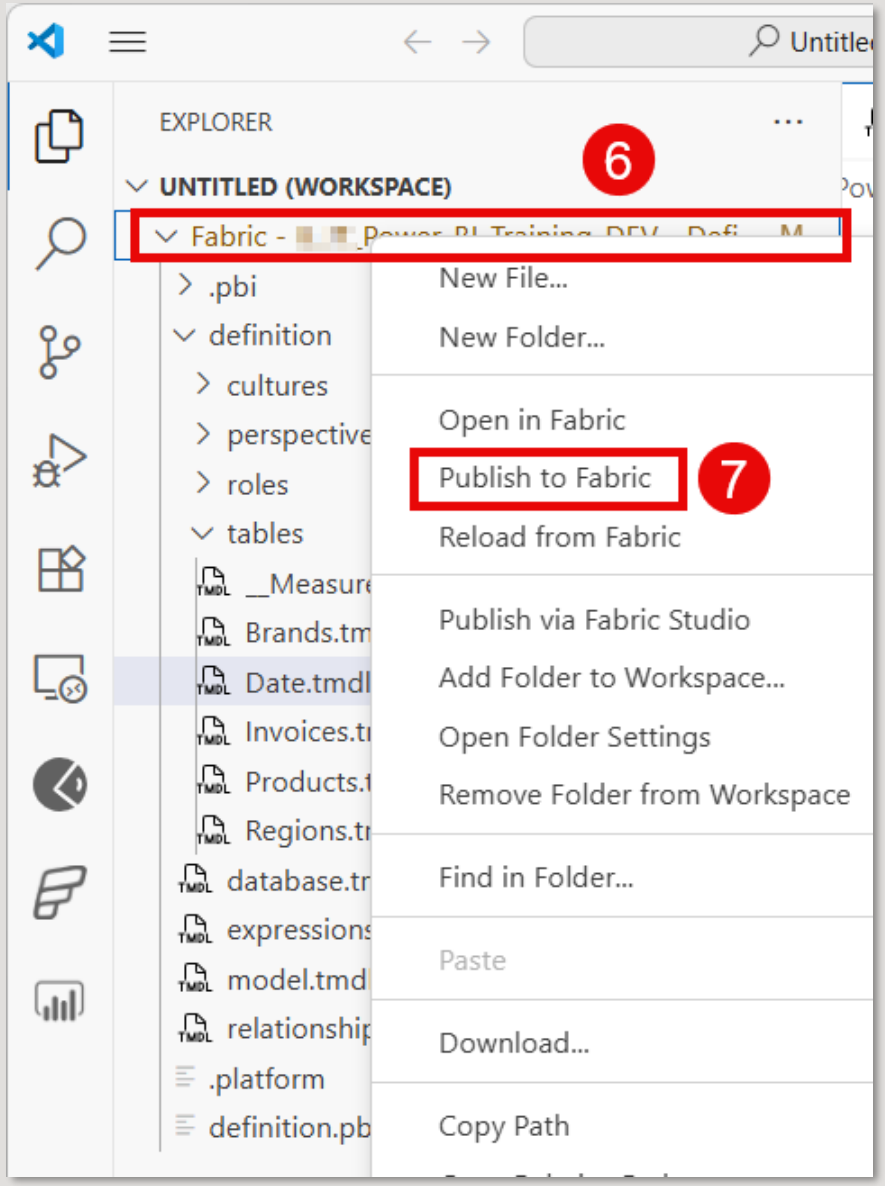
Remote Model: Update Model with TMDL Files



Remote Model: Update Model with TMDL Files



Remote Model: Update Model with TMDL Files



TMDL: The Smart Way

When not to use TMDL

Editing DAX or Power Query

When the user interface is simpler

Changing unknown properties

Creating Perspectives for the first time

Tips

Default values of properties are not shown if it's not changed

A closed TMDL script tab can’t be recovered

Preview before applying changes

No undo for data modeling changes

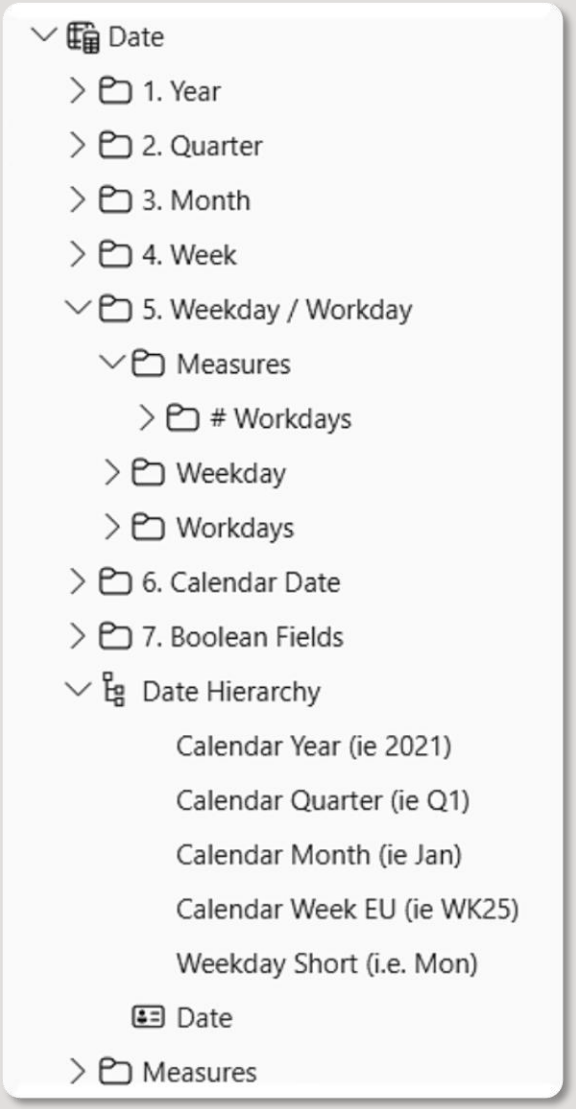
Some Warnings

Careful with Find & Replace as you can make unintended changes

Dependencies are not cross highlighted

Some changes can result in requiring a full table refresh

TMDL only changes the model metadata and does not update the visuals



Create from scratch

- **Clicks**: 400
- **Keypresses**: ?
- **Time**: 40 min

~~Clean everything else from the model~~

~~External tools~~

TMDL

- **Clicks**: 6
- **Keypresses**: 3
- **Time**: 10 sec

Recap

What, why, when

TMDL Scripts with local models

TMDL files with local & remote models

Tips & warning to unlock full potential

Questions?

Scan here...

Compliments, complaints, and dad jokes all accepted

Thank You!!

Dhyanendra Singh Rathore

dhyans

bits2BI