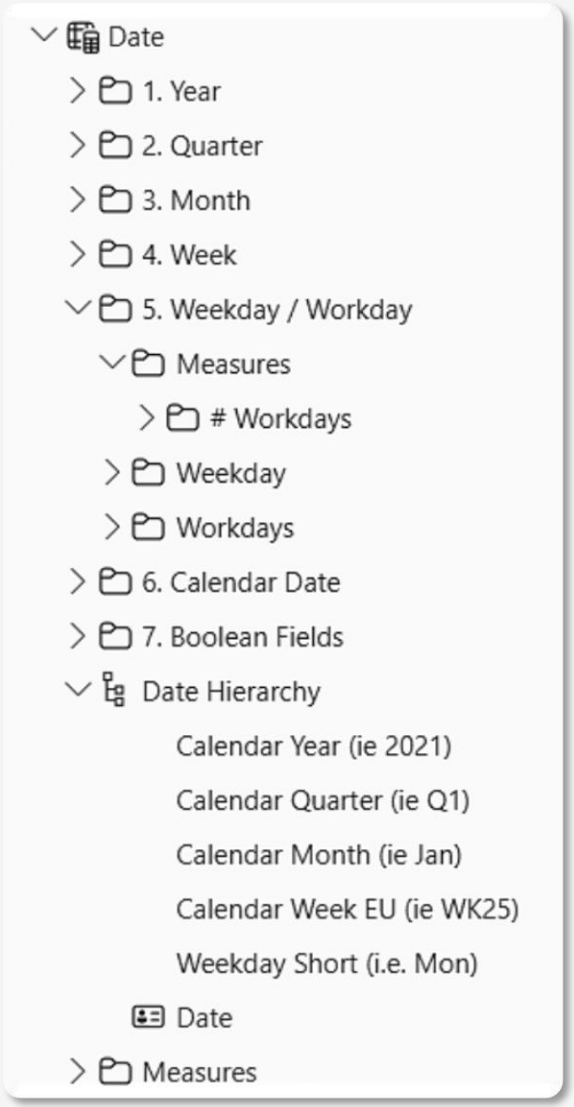
The Ultimate Power BI Productivity Boost with TMDL and Fabric Studio

Dhyan Rathore

12 NOV 2025



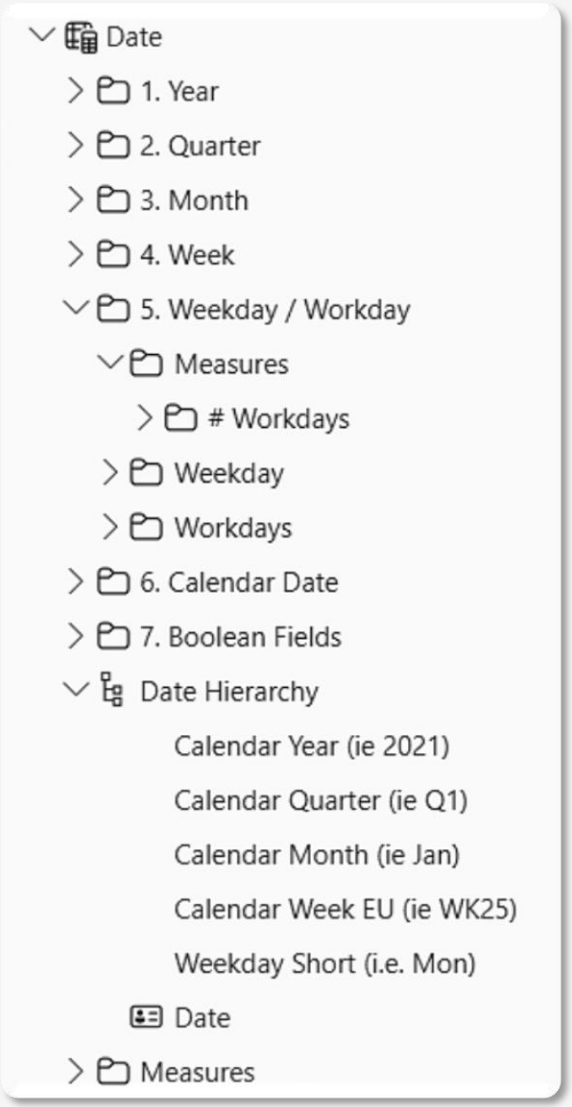
Reuse options

Create from scratch

Clean everything else from the model

External tools

TMDL



Reuse options

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

Dhyan Rathore

Power BI Tech Lead @ Autoliv

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

dhyans

bits2BI

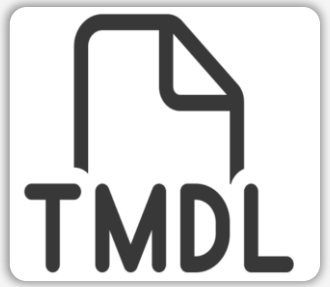
Agenda

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

TMDL…???

What is TMDL

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

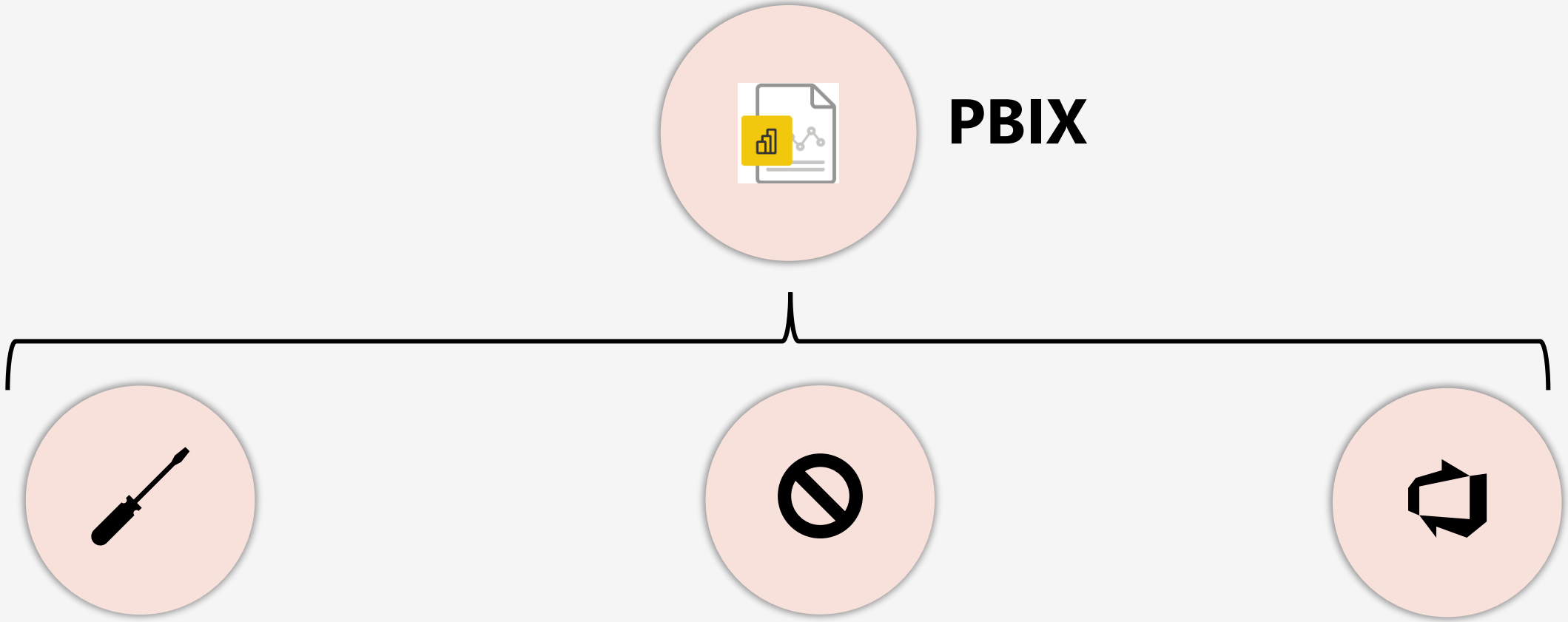


Serialized metadata of a semantic model

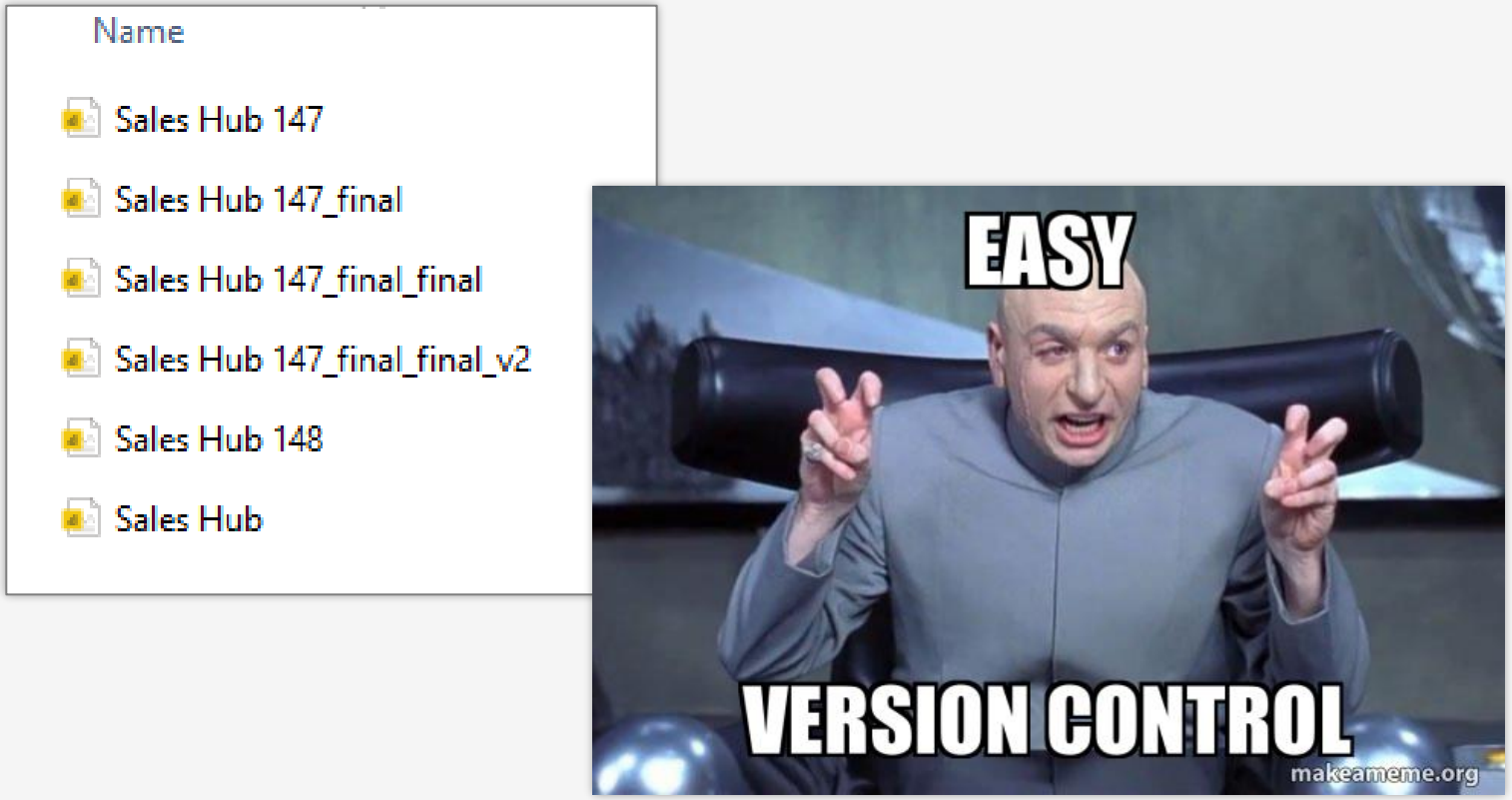
Each table, perspective, role, and culture stored as a separate **text** file

How does this look like?

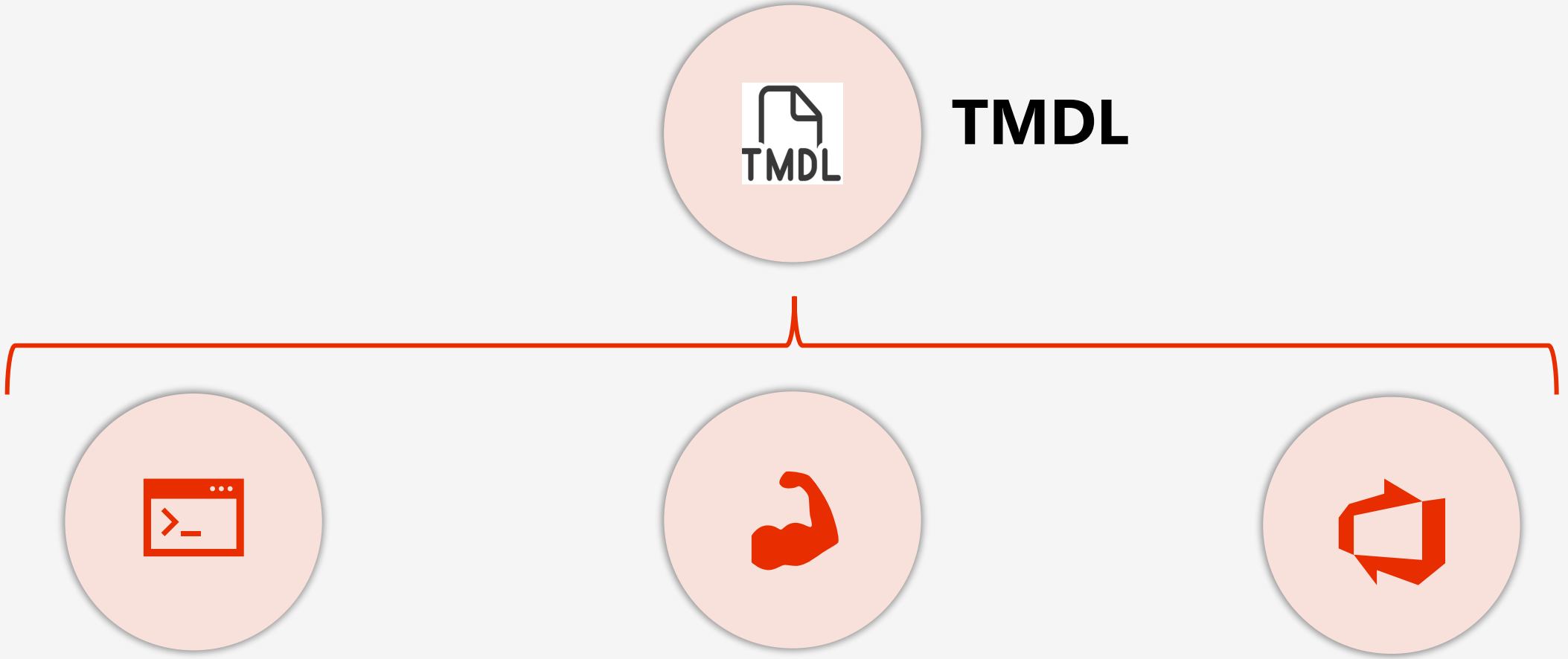
Why do we need TMDL



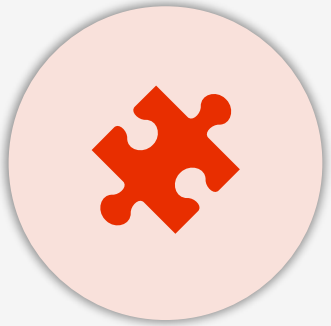
Version Control



Why do we need TMDL

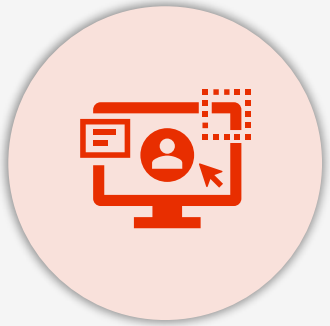


What can we do with TMDL



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 & edit Power Query transformations
- Take a “one-page” backup of semantic model
- Working with a code first experience

Using TMDL with *Local Models*

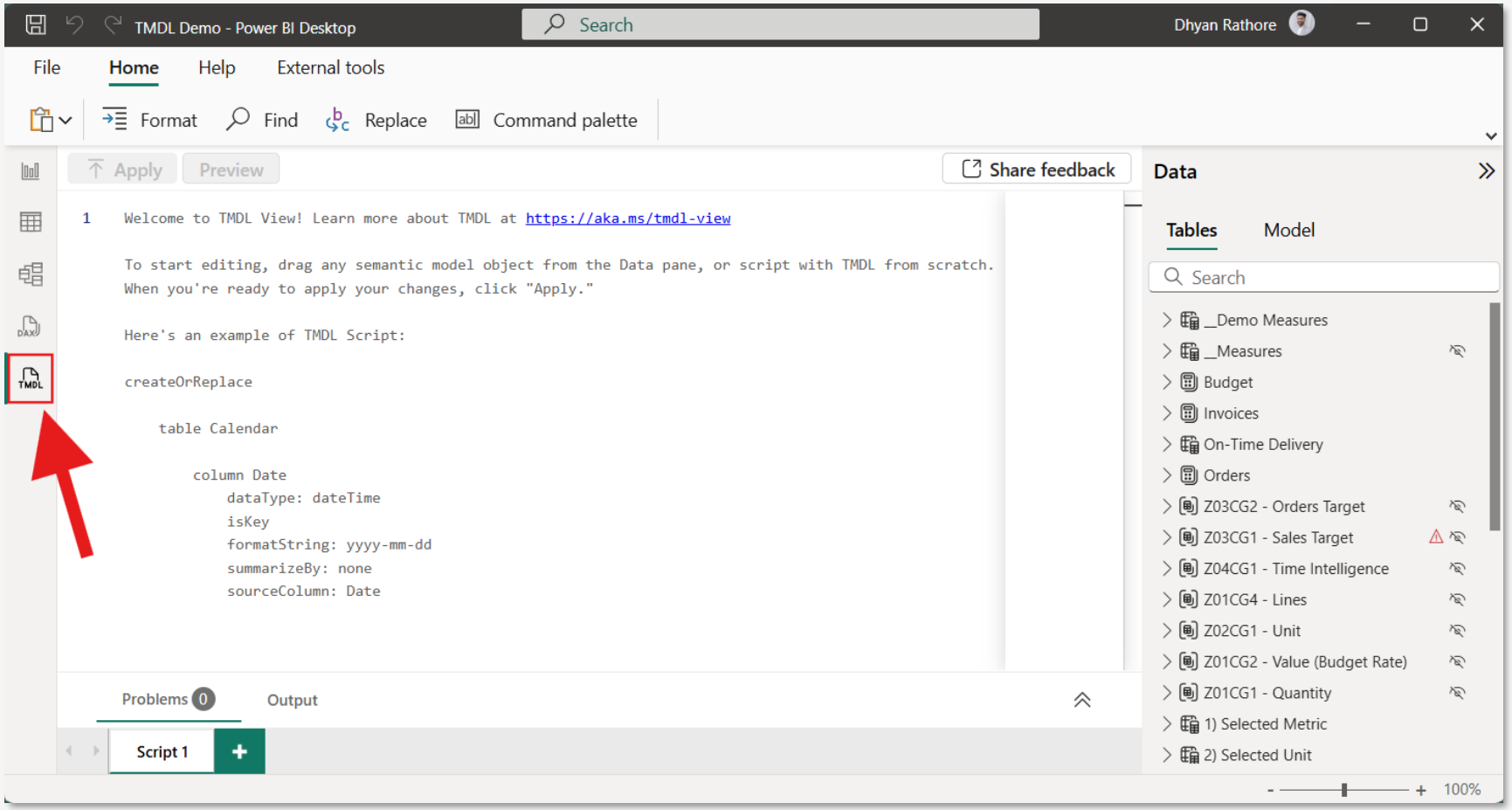
Let’s see it in Action!

Different Types of TMDL

TMDL Scripts

TMDL View

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

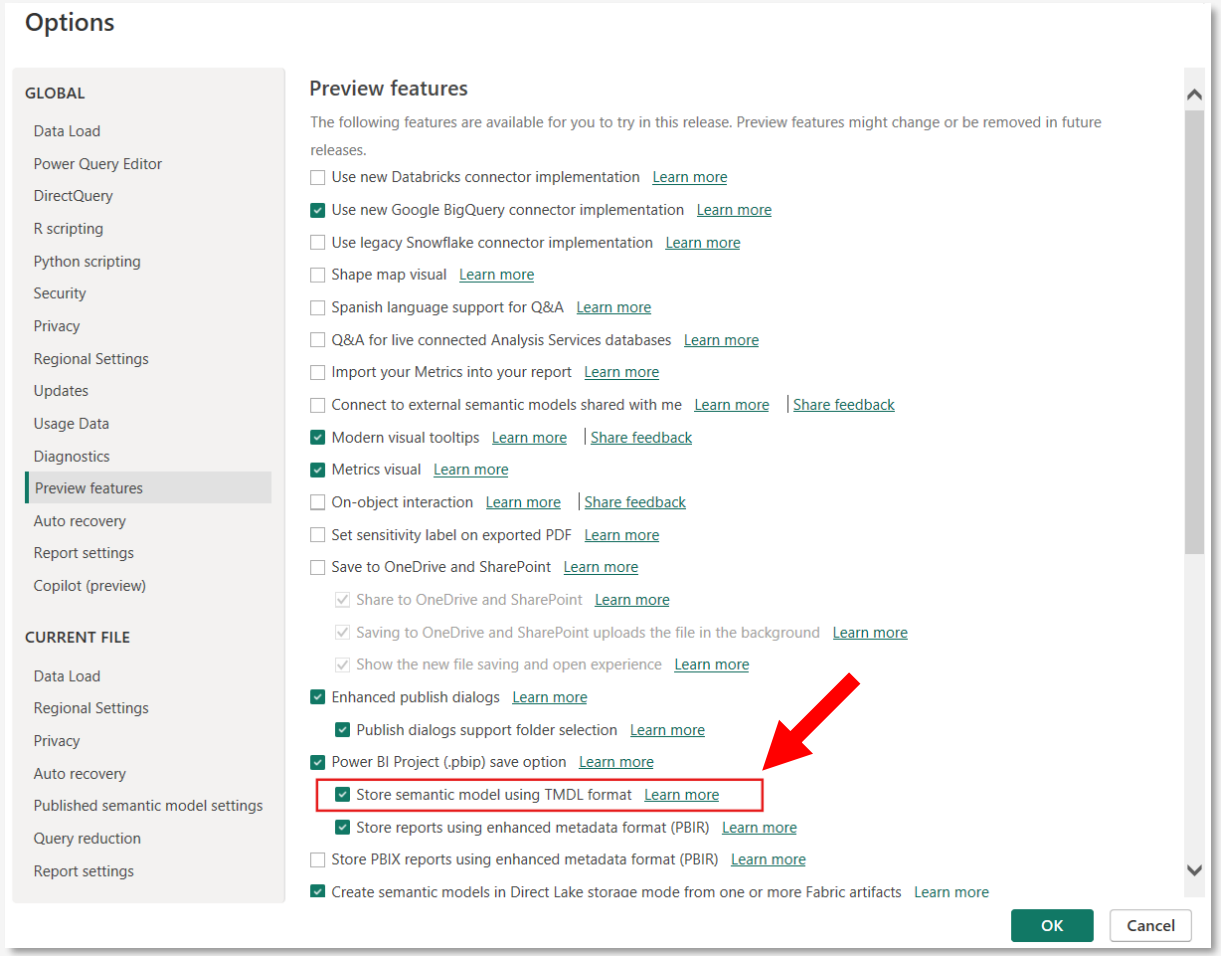


TMDL File Format

Enable TMDL File Format

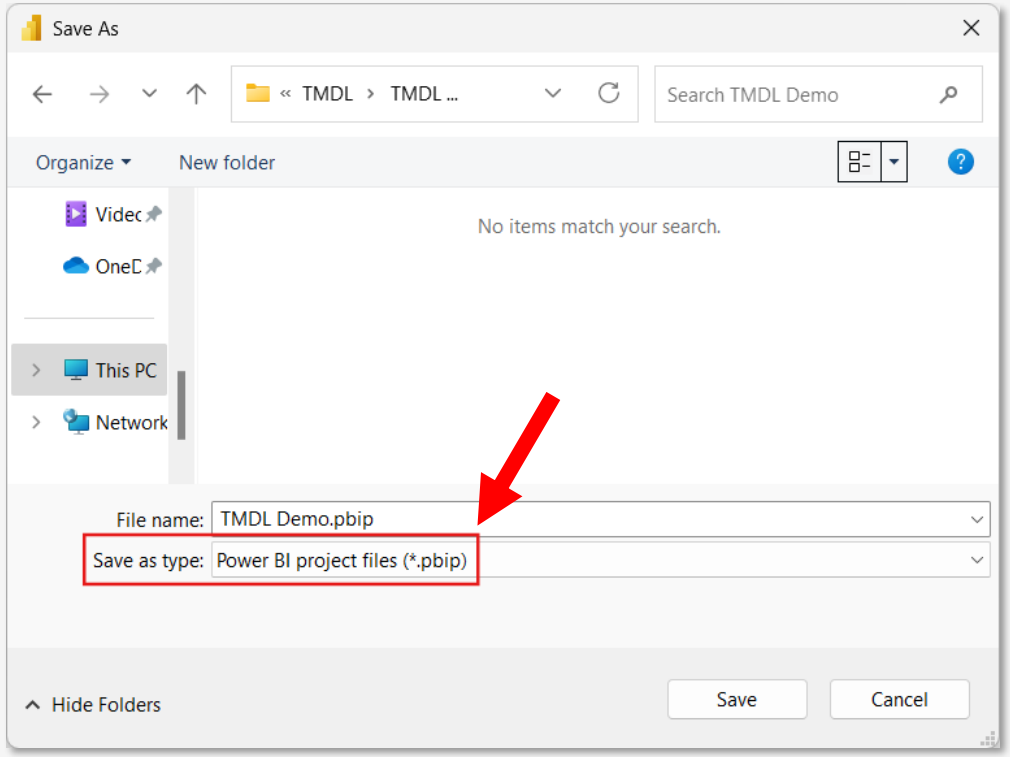
Preview in Desktop

File > Options and settings > Options > Preview features (only with pbip)



Save pbix as .pbip

File > Save as



In Power BI Service, TMDL is the default storage mode for semantic models

Let’s look under the hood!

Summary

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
```

TMDL Files Preview in Desktop

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

File extension: *tmdl*

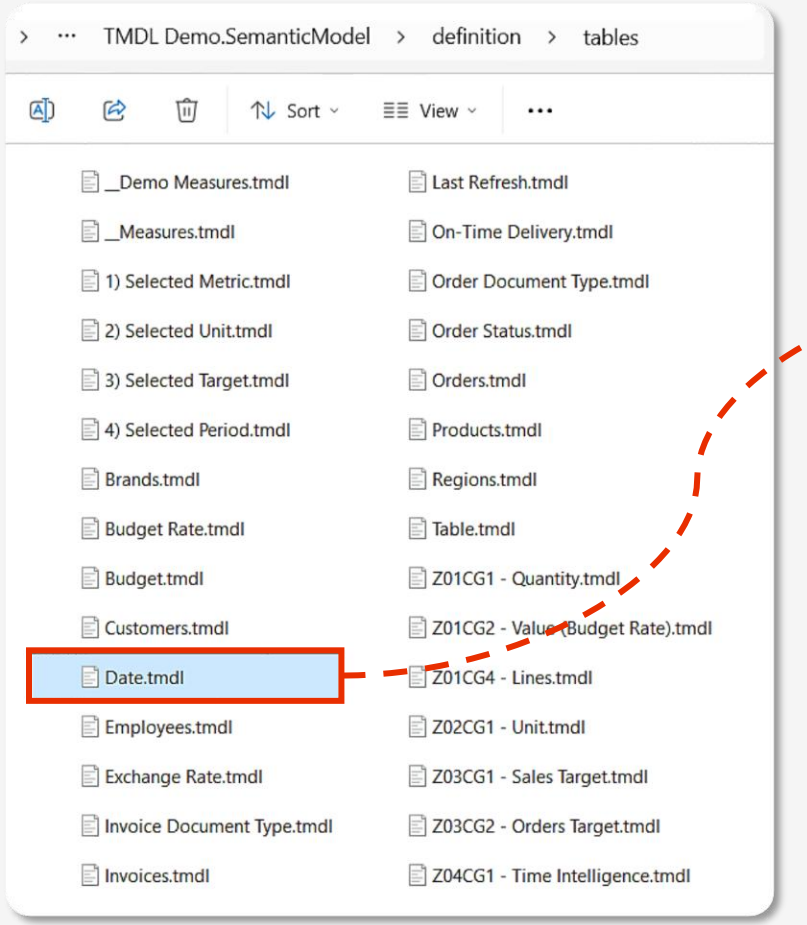
```
table Date
    lineageTag: 0bb45e29-3908-422d-ade4-4100434bdfa4
    dataCategory: Time

    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
```

One can be used without using the other

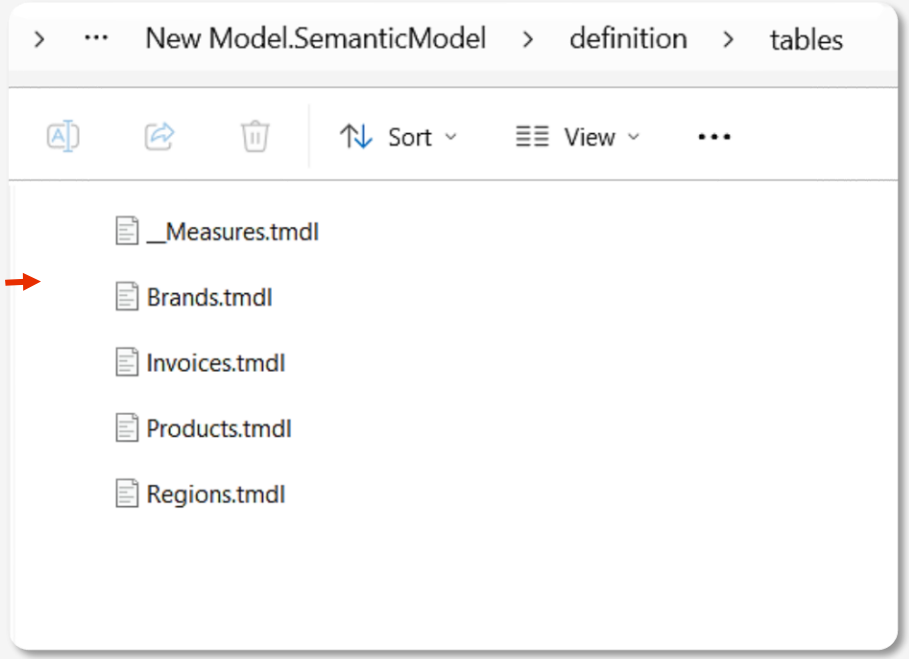
Can we use TMDL files to do things that we did with TMDL scripts?

Using TMDL Files with *Local Models*

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

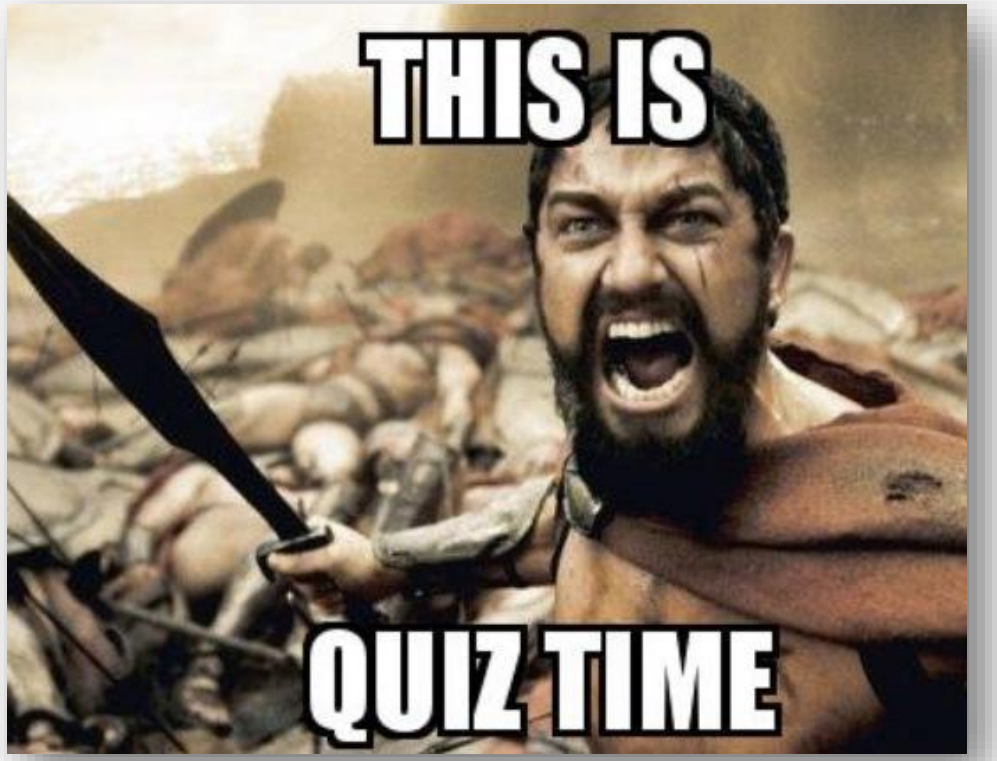
Local Model: Working with TMDL Files

Tool Up

Visual Studio Code (VS Code)

TMDL Extension for VS Code

Updating *Remote Models* with TMDL



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

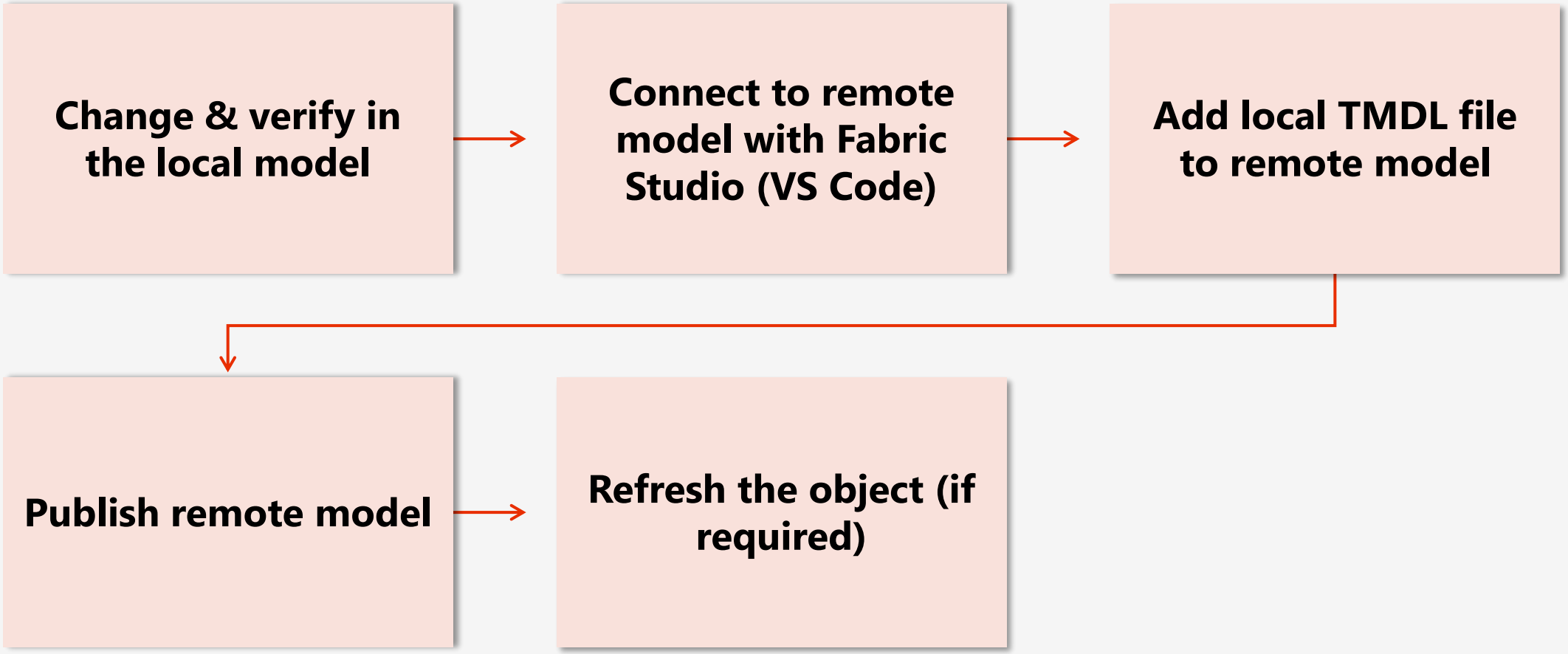
Remote Model: Update with TMDL Files

Tool Up

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

TMDL Magic with Fabric Studio!

Remote Model: Update with TMDL Files



TMDL View in Power BI Web: Planned

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
- 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

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

Recap

What, Why, When & How

TMDL Scripts with local models

TMDL files with local & remote models

Tips & warning to unlock full potential

Questions?

Get the slides…

https://github.com/DhyanRathore/Presentations/tree/main/2025/20251112_DataMindsUserGroup

Thank You!!

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dhyans

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