

Power BI's Hottest Upgrade - Developer Mode with TMDL




Dhyan Rathore




19 NOV 2025


▼

 Date


>

 1. Year


>

 2. Quarter

>


 3. Month

>

 4. Week


▼

>


 5. Weekday / Workday

▼


>

 Measures


>

 # Workdays


>

 Weekday


>

 Workdays


>

 6. Calendar Date

>

 7. Boolean Fields

▼

 Date Hierarchy


Calendar Year (ie 2021)

Calendar Quarter (ie Q1)


Calendar Month (ie Jan)

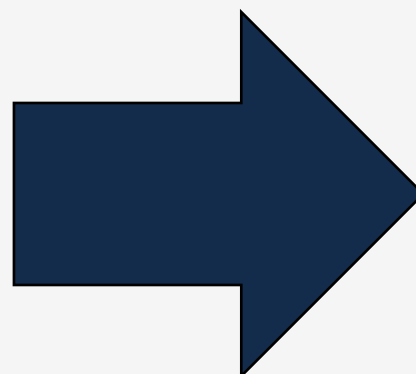
Calendar Week EU (ie WK25)

Weekday Short (i.e. Mon)

 Date

>

 Measures



Reuse options



Create from scratch



Clean everything
else from the model



External
tools



TMDL

▼ 📅 Date

> 📁 1. Year

> 📁 2. Quarter

> 📁 3. Month

> 📁 4. Week

▼ 📁 5. Weekday / Workday

▼ 📁 Measures

> 📁 # Workdays

> 📁 Weekday

> 📁 Workdays

> 📁 6. Calendar Date

> 📁 7. Boolean Fields

▼ 📅 Date Hierarchy

Calendar Year (ie 2021)

Calendar Quarter (ie Q1)

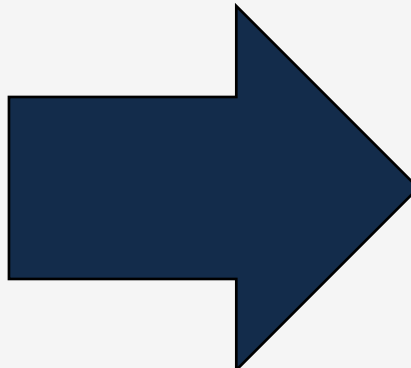
Calendar Month (ie Jan)

Calendar Week EU (ie WK25)

Weekday Short (i.e. Mon)

📅 Date

> 📁 Measures



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

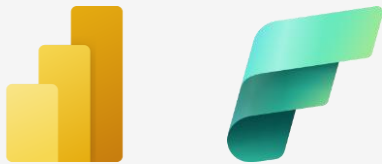




Dhyan Rathore

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



Agenda



TMDL: What, Why, When & How



Using TMDL with Local and Remote Models

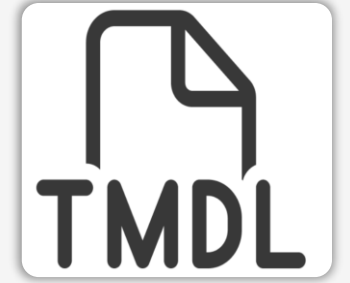


Tips to unlock full potential

TMDL...???

What is TMDL

Tabular Model Definition Language



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



PBIX









**Power BI Desktop or
external tools only**

**Unsupported model
changes with external tools**

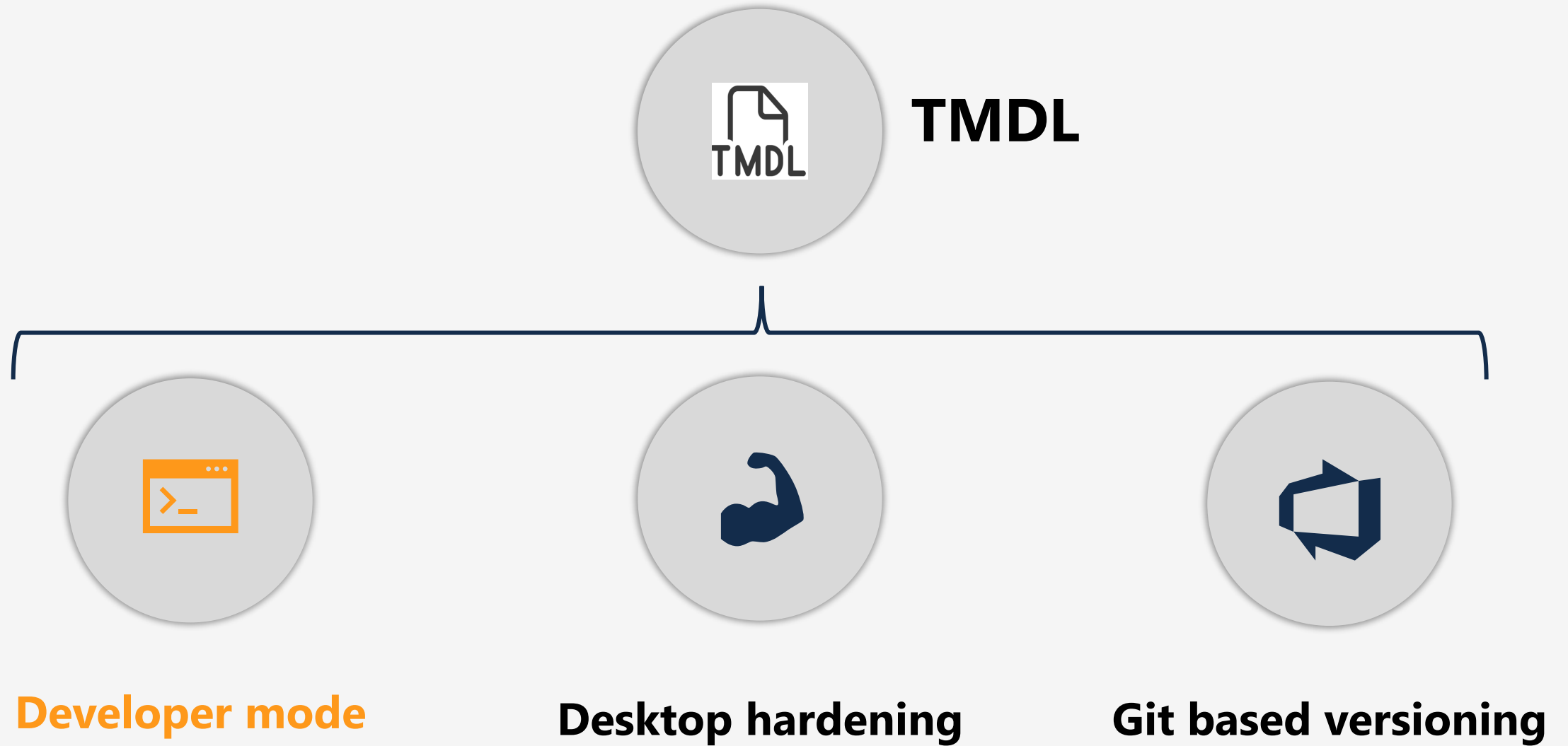
**Lack of Git based
Version Control**

Version Control

Name
 Sales Hub 147
 Sales Hub 147_final
 Sales Hub 147_final_final
 Sales Hub 147_final_final_v2
 Sales Hub 148
 Sales Hub



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*

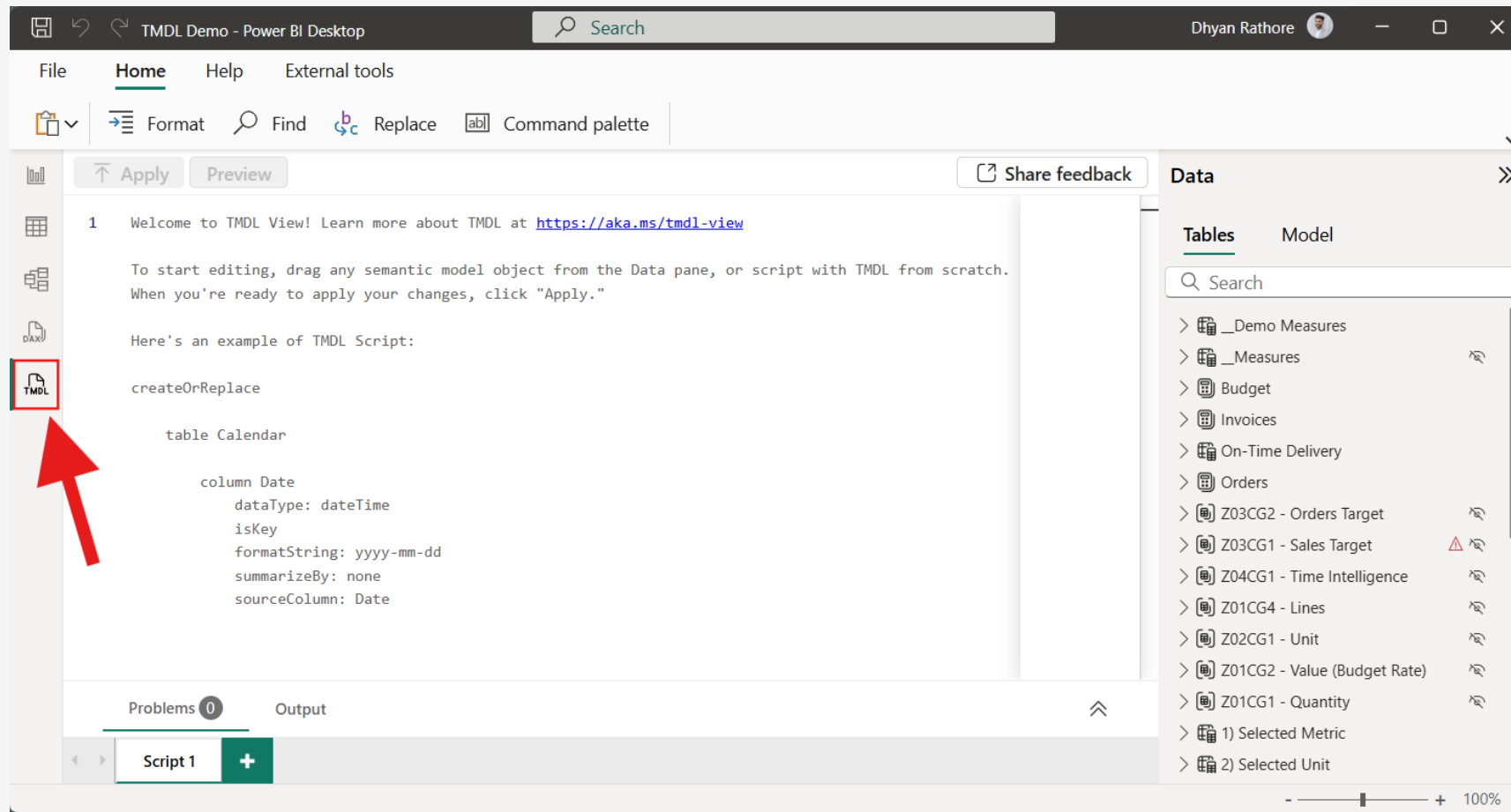
Let's see it in Action!

Different Types of TMDL

TMDL Scripts

TMDL View

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

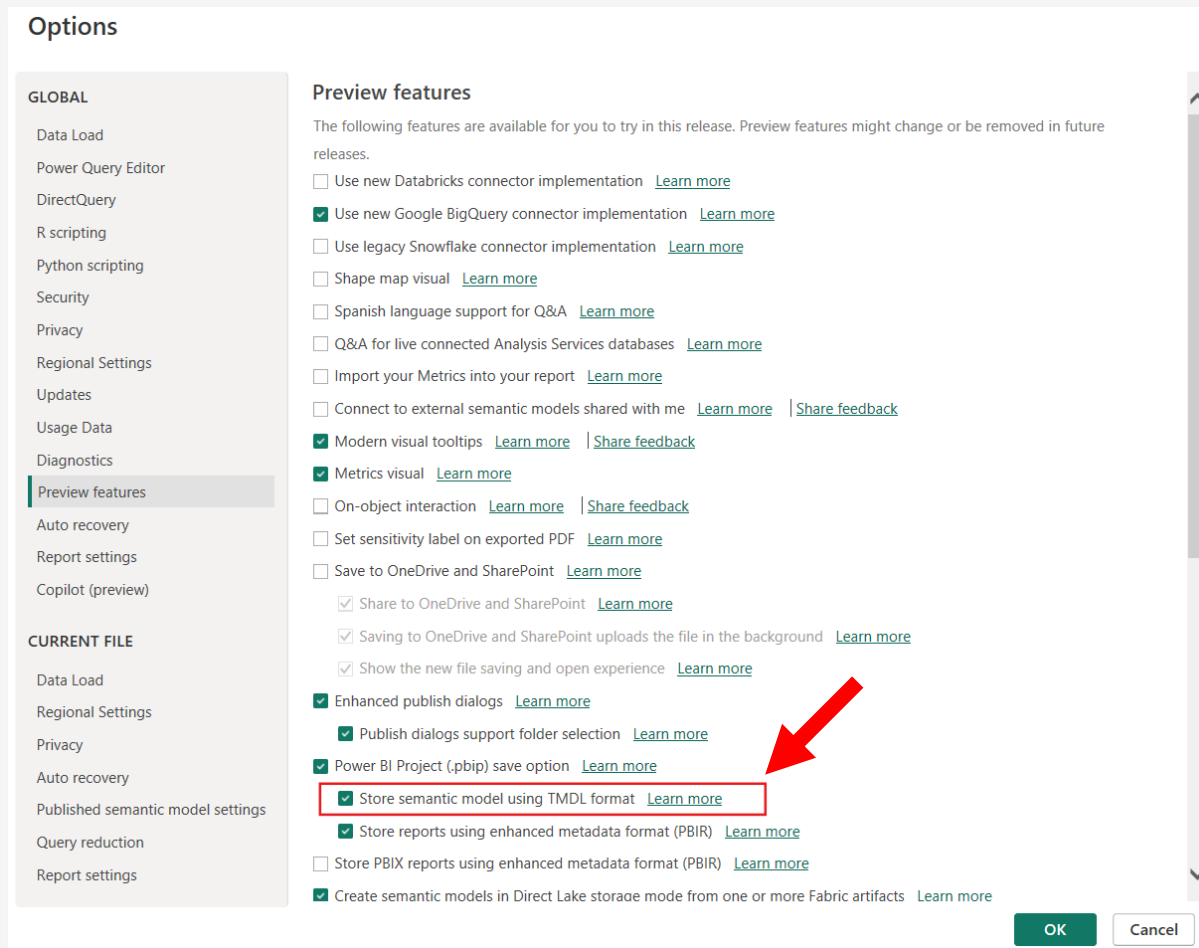


TMDL File Format

Enable TMDL File Format

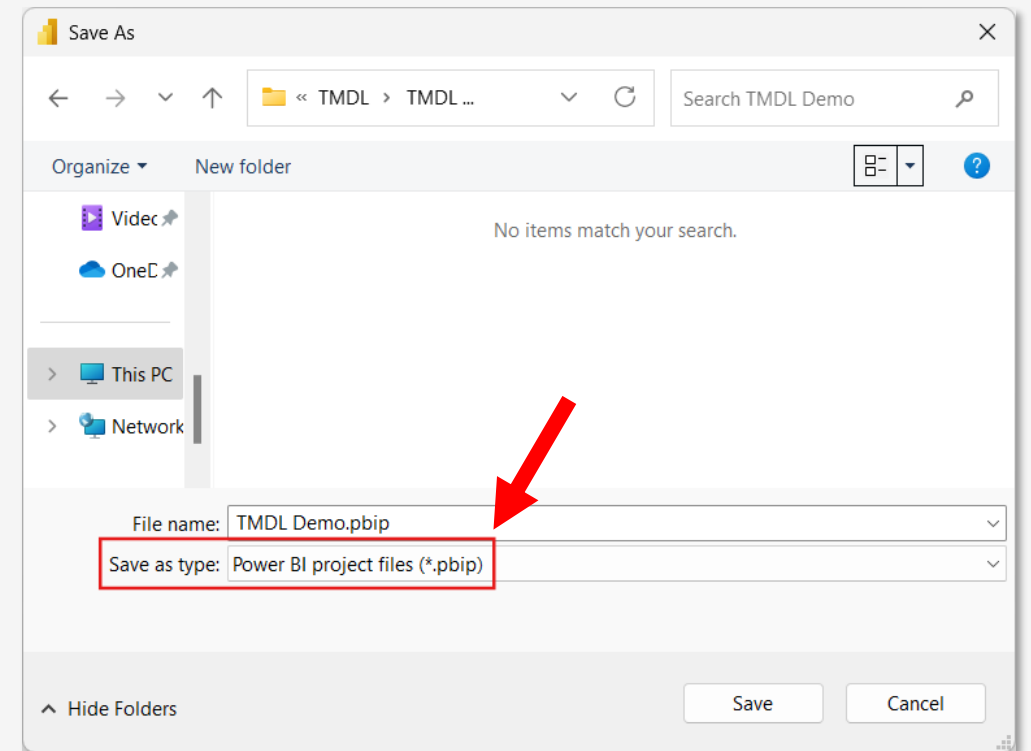
[Preview in Desktop](#)

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*

```
1 createOrReplace
2
3 table Date
4     lineageTag: 0bb45e29-3908-422d-ade4-4100434bdfa4
5     dataCategory: Time
6
7     measure '# Workdays MTD' =
8         CALCULATE(
9             MAX( 'Date'[Workdays MTD] ),
10            'Date'[IsDateInScope] = TRUE
11        )
12     formatString: #,##0
13     displayFolder: 5. Weekday / Workday\Measures\# Workdays
14     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*

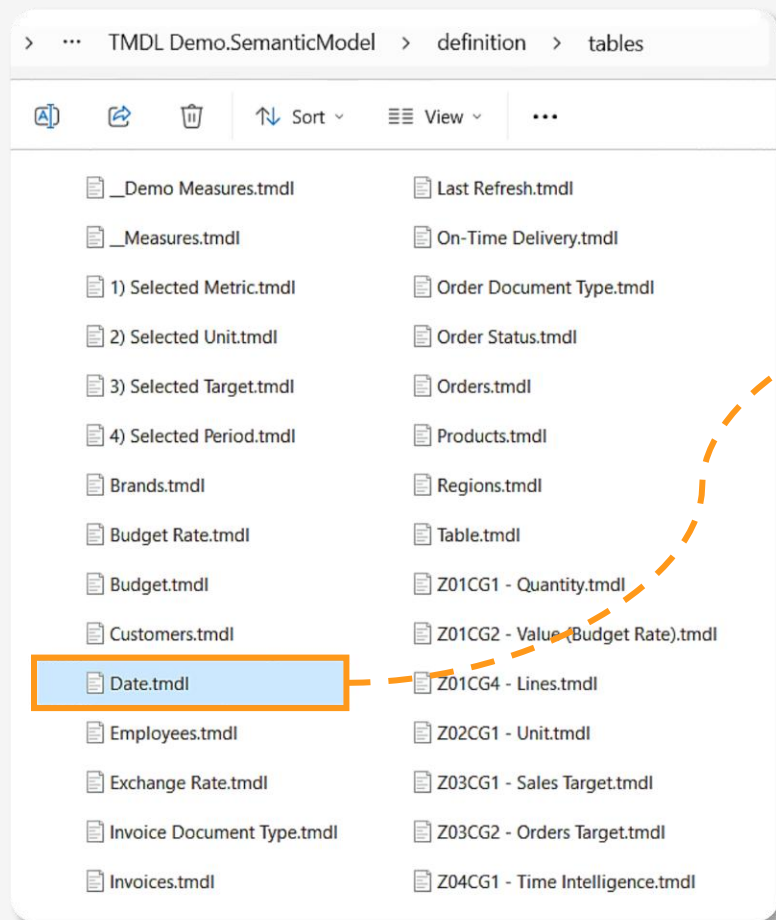
```
1 table Date
2     lineageTag: 0bb45e29-3908-422d-ade4-4100434bdfa4
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10     formatString: #,##0
11     displayFolder: 5. Weekday / Workday\Measures\# Workdays
12     lineageTag: 4b0555ab-6912-4d3c-b613-0d2d542a6965
```

One can be used without using the other

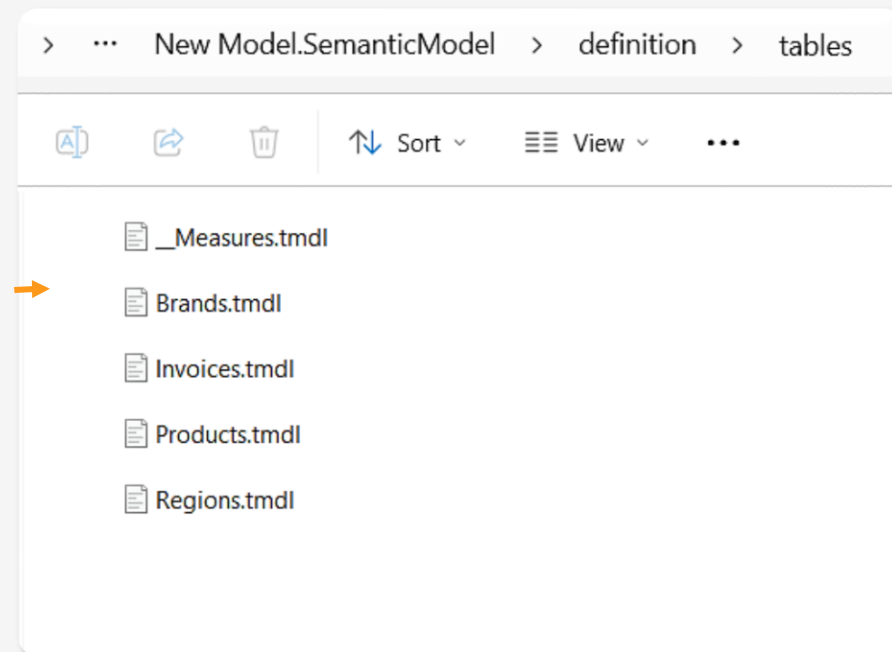
**Can we use TMDL files to do things
that we did with TMDL scripts?**

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

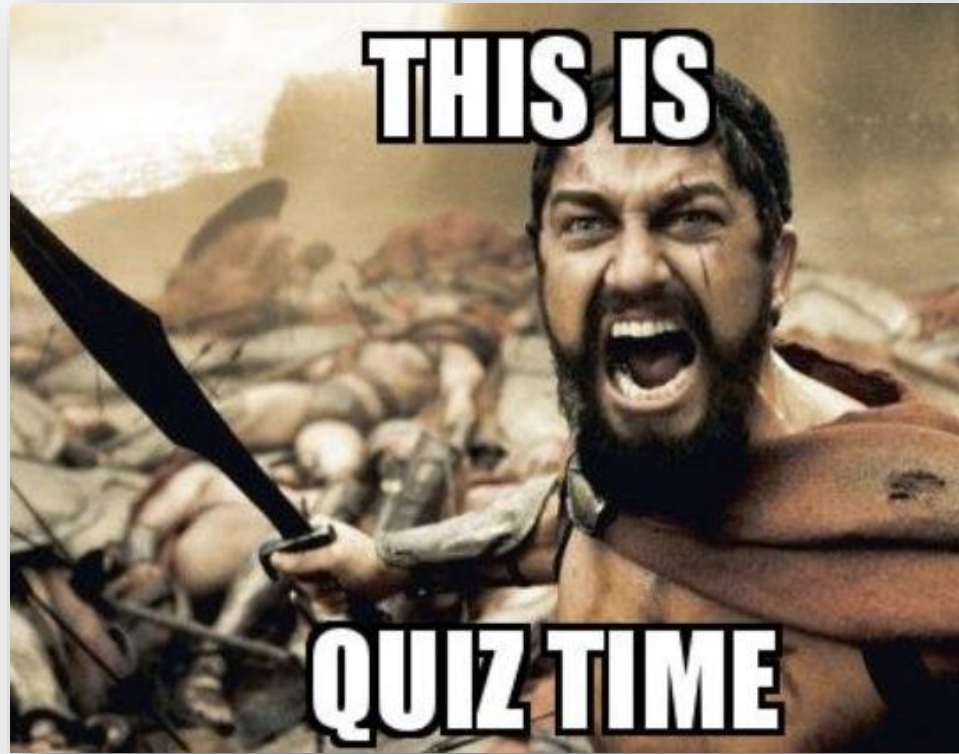


Visual Studio Code (VS Code)



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

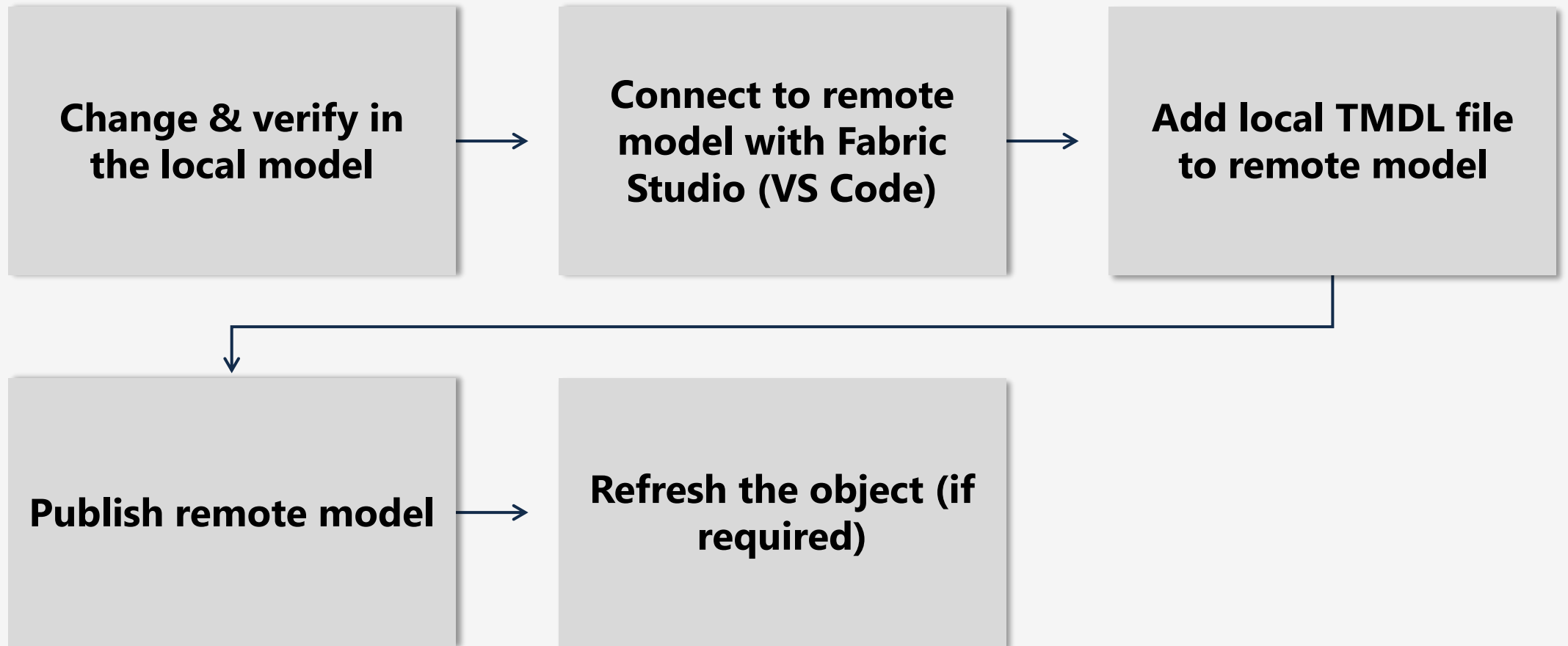


Fabric Studio Extension for
VS Code

TMDL Magic with Fabric Studio!



Remote Model: Update with **TMDL Files**



TMDL: 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/2025/20251119_BudapestBIForum](https://github.com/DhyanRathore/Presentations/tree/main/2025/20251119_BudapestBIForum)

Thank You!!

Dhyan Rathore

 **dhyans**

The logo for 'bits2BI' features the word 'bits' in a blue, pixelated font, followed by a yellow arrow pointing right, and the letters 'BI' in a green, bold font.