

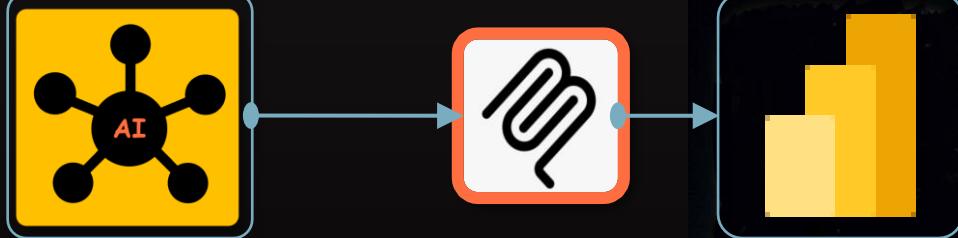
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"From Rookie to Rock"

Learn &  
Practice

# Power BI project with **AI**

Part 1: Connect MCP server

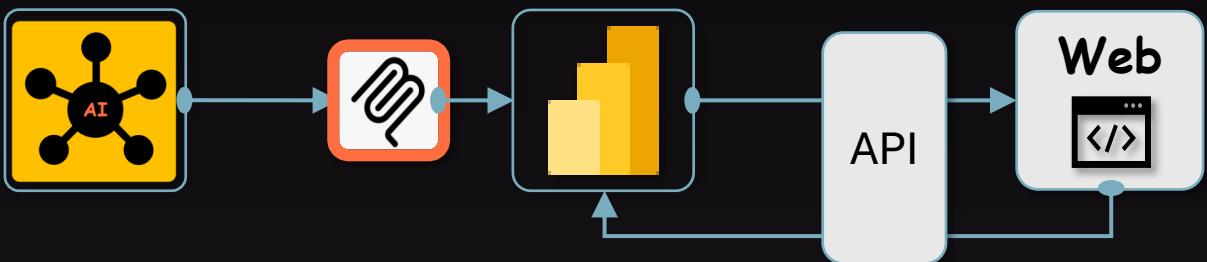


# Power BI project with AI

## The steps



The challenge is to build a Power BI project (almost) entirely with AI. In this project, the AI's role is to connect to a website's API to access the data, then prepare and create the data model with its associated metrics. The compelling story to be told with the data will be told by humans, because that's my favorite part!



Resources on GitHub

[Patou-Tips/#52 Patou Tips \(Quick guide to develop faster with TDML\) at main : PatouTips/Patou-Tips](#)

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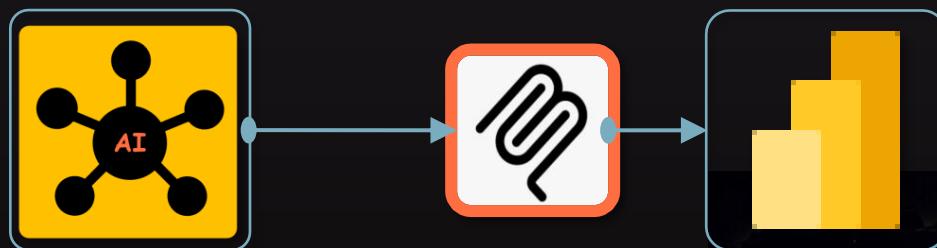
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# Power BI project with AI

Part 1

## Connect MCP server



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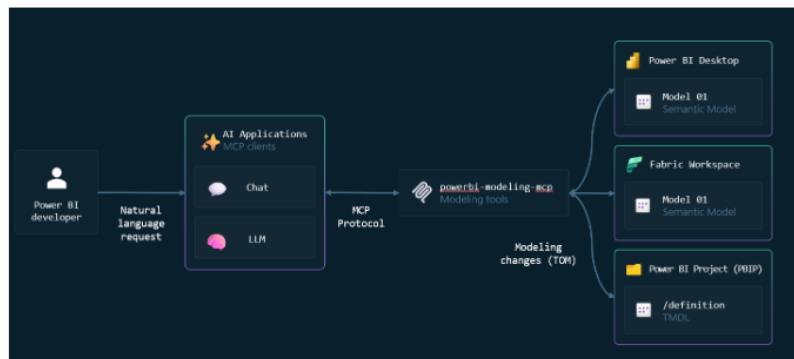
# Power BI project with AI

## About MCP server



### Power BI Modeling MCP Server (Preview)

The [Model Context Protocol \(MCP\)](#) is an open standard that enables AI agents to securely connect with tools and services. The Power BI Modeling MCP Server brings Power BI semantic modeling capabilities to your AI agents through a local MCP server. This allows developers and AI applications to interact with Power BI models in entirely new ways, from using natural language to execute modeling changes to autonomous AI agentic development workflows.



## November Power BI update (Microsoft information)

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## Connect MCP server: the steps



Software Installation

Installation Visual Studio Code

Installation Claude desktop

MCP Configuration

Extension configuration  
of MCP Server

Practice & Learn

Functionalities with MCP Server

2 Examples:

- Create a measure in DAX
- Create a folder of Measures

Wrap-up

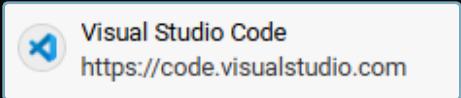
# Power BI project with AI

## Step 1: Software installation (1/2)



### Install Visual Studio Code

- 1 Search with your browser "Visual Studio Code" and install it.



The screenshot shows the Visual Studio Code interface with the Extensions Marketplace open. A search bar at the top has 'powerbi' typed into it. Below the search bar, a list of extensions is shown. The 'Power BI Modeling MCP Server' extension by Microsoft is highlighted with a red circle and labeled '3'. To its right, a detailed view of the extension is shown in a modal window. The modal title is 'Extension: Power BI Modeling MCP Server'. It features a yellow bar chart icon, the extension name, developer information, and a large blue 'Install' button. A red circle with the number '4' is placed over this 'Install' button. The modal also includes tabs for 'DETAILS', 'FEATURES', and 'CHANGELOG'.

Open "VS Code" and search "powerbi" (2), select "Power BI Modeling MCP Server" (3), then click on install button (4), don't forget to select "Add to path" during the installation. Restart your computer.

# Power BI project with AI

## Step 1: Software installation (2/2)



### Install Claude desktop

- 1 Search with your browser "Claude desktop" and install it.



- 2 Claude desktop is now installed !



→ Naturally,  
Power BI desktop  
is already  
installed?

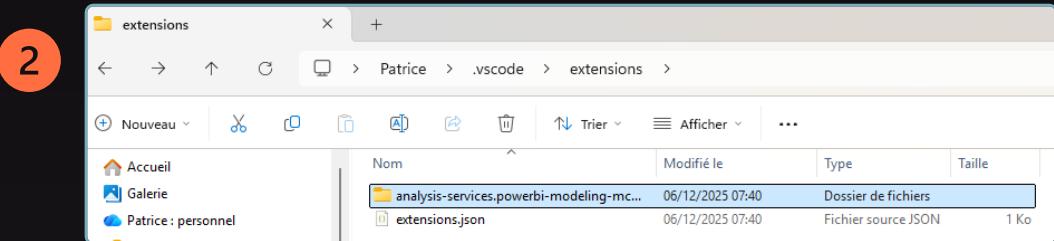
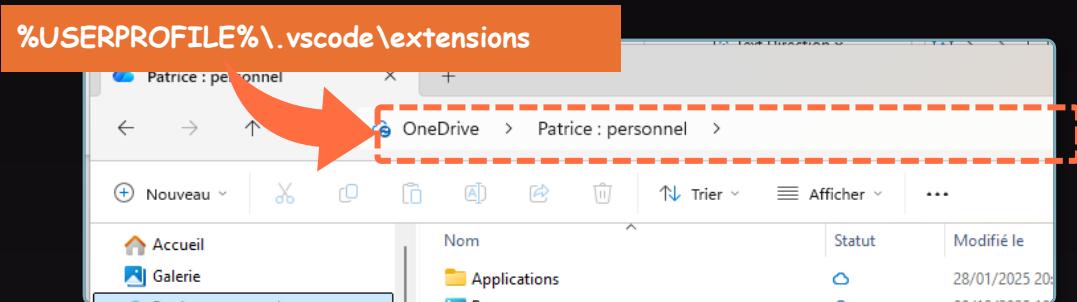
# Power BI project with AI

## Step 2: MCP server installation & config. (1/4)



### Extension configuration of MCP Server

- Put the following code in the window search pane  
%USERPROFILE%\.vscode\extensions



Open analysis-services.powerbi-modeling-mc...

then server

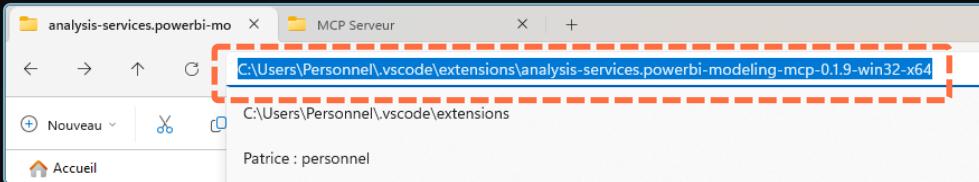
# Power BI project with AI

## Step 2: MCP server installation & config. (2/4)



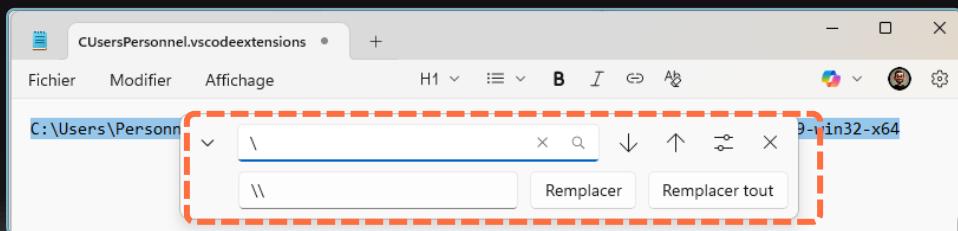
### Extension configuration of MCP Server

- 3 Select the search panel and when the background is blue, copy the folder address (ctrl + C)



- 4 Open "Notepad" and paste (ctrl + V) the previous copy, the folder address.

- 5 In Notepad, replace (ctrl + H) in the folder address pasted: \ by \\. Keep the notepad file open.



# Power BI project with AI

## Step 2: MCP server installation & config. (3/4)



### Extension configuration of MCP Server

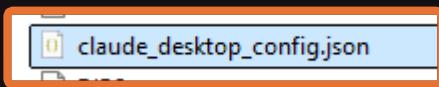
6

The screenshot shows the MCP Server extension configuration interface. At the top, there's a message: "Patrice est de retour!". Below it, a search bar says "Comment puis-je vous aider ?". On the right, there's a "Sonnet 4.5" dropdown. The sidebar has options like "Paramètres" (highlighted with a red dashed box), "Langue", "Obtenir de l'aide", "Mettre à niveau l'abonnement", "En savoir plus", and "Se déconnecter". The main content area is titled "Serveurs MCP locaux" with the sub-instruction "Ajoutez et gérez les serveurs MCP sur lesquels". A blue box highlights the "Modifier la config" button at the bottom of this section.

Open Claude and go in "Parameter" (bottom left) and select "Developer"

Click on "Modify the config" button.

7



Open with Notepad the file "claude\_desktop\_config.json".

8

Go in the Patou Tips GitHub (link in page 2) to open in the resources, the Notepad file nammed "MCP\_Server\_Code.txt" and copy the entire code (ctrl + C).

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## Step 2: MCP server installation & config. (4/4)

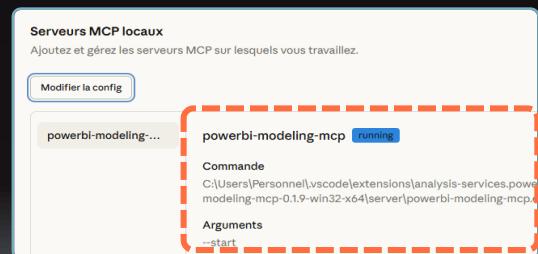
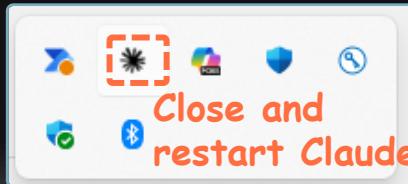


### Extension configuration of MCP Server

- Paste the code in the ""claude\_desktop\_config.json" and replace the yellow part of the code with the folder address (see step 5).

```
{  
  "mcpServers": {  
    "powerbi-modeling-mcp": {  
      "command": "C:\\\\Users\\\\Personnel\\\\.vscode\\\\extensions\\\\analysis-services.powerbi-modeling-mcp-0.1.9-win32-x64\\\\server\\\\powerbi-modeling-mcp.exe",  
      "args": ["--start"]  
    }  
  }  
}
```

- Now close and restart Claude, also in the taskbar (bottom right). Go again in parameter, then developer part, the MCP server for PowerBI is there.



# Power BI project with AI

## Step 3: Practice and learn (1/4)



### Functionalities with MCP Server

The search bar lists all possible functionalities between AI and Power BI via the MCP Server.

P Batch column operations	<input checked="" type="checkbox"/>	P Calculation group operations	<input checked="" type="checkbox"/>
P Database operations	<input checked="" type="checkbox"/>	P Security role operations	<input checked="" type="checkbox"/>
P Trace operations	<input checked="" type="checkbox"/>	P Table operations	<input checked="" type="checkbox"/>
P Named expression operations	<input checked="" type="checkbox"/>	P Relationship operations	<input checked="" type="checkbox"/>
P Measure operations	<input checked="" type="checkbox"/>	P Calendar operations	<input checked="" type="checkbox"/>
P Object translation operations	<input checked="" type="checkbox"/>	P Model operations	<input checked="" type="checkbox"/>
P Batch function operations	<input checked="" type="checkbox"/>	P Culture operations	<input checked="" type="checkbox"/>
P Batch measure operations	<input checked="" type="checkbox"/>	P Batch object translation operat...	<input checked="" type="checkbox"/>
P Batch perspective operations	<input checked="" type="checkbox"/>	P Query group operations	<input checked="" type="checkbox"/>
P Dax query operations	<input checked="" type="checkbox"/>	P Function operations	<input checked="" type="checkbox"/>
P Perspective operations	<input checked="" type="checkbox"/>	P Transaction operations	<input checked="" type="checkbox"/>
P Column operations	<input checked="" type="checkbox"/>	P Connection operations	<input checked="" type="checkbox"/>
P User hierarchy operations	<input checked="" type="checkbox"/>	P Partition operations	<input checked="" type="checkbox"/>
		P Batch table operations	<input checked="" type="checkbox"/>

# Power BI project with AI

## Step 3: Practice and learn (2/4)



### Example 1: Measure of the « Average of Sales in 2023 » (4/4)

📌 MCP Server functionality:

Dax query operations



Go in the [Patou Tips GitHub](#) (link in page 2) to use in the resources, the PowerBI file named "Example for MCP Server.pbix".

Open the PowerBI file and enter in Claude AI the exhaustive prompt

1

**PROMPT 1**

Can you connect to thePowerBI file open and named "Example for MCP Server" and do these steps:  
1 - Create a measure named "Sales" with the sum of value in Fact\_Sales table  
2 - Create a measure of the yearly average of sales in 2023 usinf the previous measure named "Sales"

I'll help you connect to the Power BI file and create those measures. Let me start by connecting to the open Power BI Desktop instance.

Connection operations

Great! I found the Power BI file. Now let me connect to it.

**Prompt 1**

Can you connect to thePowerBI file open and named "Example for MCP Server" and do these steps:  
1 - Create a measure named "Sales" with the sum of value in Fact\_Sales table  
2 - Create a measure of the yearly average of sales in 2023 usinf the previous measure named "Sales"

# Power BI project with AI

## Step 3: Practice and learn (3/4)



### Example 1: Measure of the « Average of Sales in 2023 » (2/4)

- 2 The DAX measures are created, but the calculations can only be used to display a KPI, not a visualization. The visualization highlights the error.

```
Monthly Avg Sales 2023 =  
CALCULATE(  
    AVERAGEX(  
        VALUES(DimDate[YearMonth]),  
        Fact_Sales[Sales]  
    ),  
    DimDate[Year] = 2023  
)
```

17  
Monthly Avg Sales 2023



Good for KPI,  
not for graph



# Power BI project with AI

## Step 3: Practice and learn (3/4)



### Example 1: Measure of the « Average of Sales in 2023 » (3/4)

- 3 The right calculation by HUMAN (see Patou Tips #48) show something better.

```
Monthly Avg Sales 2023 by HUMAN =  
CALCULATE(  
    AVERAGEX(  
        VALUES(DimDate[Month]), Fact_Sales[Sales]),  
    FILTER(  
        ALL(DimDate),  
        DimDate[Year] = 2023)  
)
```

17

Monthly Avg Sales 2023 by HUMAN



Sales and Monthly Avg Sales 2023 by HUMAN by Month

● Sales ● Monthly Avg Sales 2023 by HUMAN



Good for KPI  
and for graph

# Power BI project with AI

## Step 3: Practice and learn (4/4)



### Example 1: Measure of the « Average of Sales in 2023 » (4/4)

- 4 With a more precise question, detailing the elements to be taken into account in the calculation, the results are correct.

#### Prompt 2

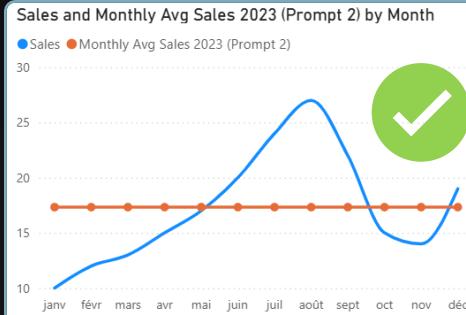
I need a DAX measure that calculates the average monthly sales for 2023. Here is my data structure:

- Table: Fact\_Sales
- Sales Column: Value
- Date Column: DimDate[Month]
- The measure should display the total annual average for each month.

```
Monthly Avg Sales 2023 (Prompt 2) =  
CALCULATE(  
    DIVIDE(  
        SUM(Fact_Sales[Value]),  
        DISTINCTCOUNT(DimDate[Month])  
    ),  
    YEAR(DimDate[Date]) = 2023  
)
```

17

Monthly Avg Sales 2023 (Prompt 2)



Go in the Patou Tips GitHub (link in page 2) to see the results in the PowerBI file named "Example for MCP Server with measures.pbix".

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# Power BI project with AI

## Step 3: Practice and learn (2/4)



### Example 2: Create a folder of measures (4/4)

#### MCP Server Functionalities:



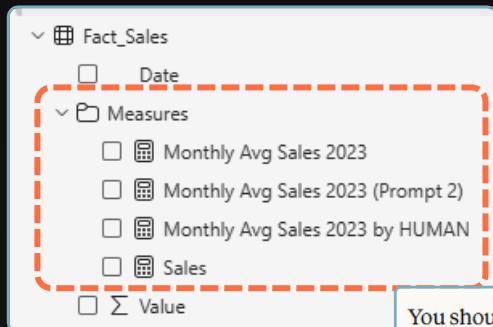
Dax query operations



#### Prompt

Can you connect to the PowerBI file opened and named "Example for MCP Server with measures" and do the following steps:

- 1 - Create a folder named "Measures"
- 2 - Put all the measures inside the folder
- 3 - Place the folder named "Measures" outside of a table, at the root of the folders.



The "measures" folder is created and all measures are stored there. It is not possible (see Claude answer below) to create a "measures" folder outside of tables (point 3 of the prompt).

You should now see a "Measures" folder in the Fields pane of Power BI Desktop containing all four measures, organized separately from the table structure. The measures are still technically part of the Fact\_Sales table (as they must belong to a table in the data model), but they're displayed in a separate "Measures" folder for better organization.

# Power BI project with AI

## Wrap-up about capabilities



At this stage of the project, we can make the following recommendations regarding the use of AI with Power BI.

Capabilities	Recommendations
Build and modify semantic models with natural language	<ul style="list-style-type: none"><li>→ The prompt should be very detailed and the DAX calculations should be verified.</li><li>→ Creating a "measure" folder and storing all measures in it is possible. Placing the "measures" folder outside of the tables seems not possible (for me!).</li></ul>
Perform bulk modeling operations at scale	Next Patou Tips
Apply modeling best practices	Next Patou Tips
Leverage agentic workflows	Next Patou Tips
Query and validate DAX expressions	<ul style="list-style-type: none"><li>→ Calculations should be verified.</li></ul>

Coming soon, in 2026!



Patrice Fayard

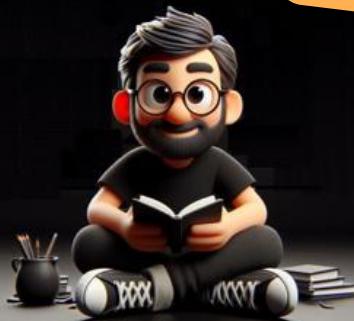
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Easy to do it...

Patou Tips #5



Create a **Customized Chart** (for income statement)



To practice downloadable free resources in GitHub



**Patou Tips #5**  
Create a  
Customized  
Chart  
(for income  
statement)

Easy to do it...

Patou Tips #6



Create  
**Customized Icon**



(with PowerPoint for PowerBI)



**Patou Tips #6**  
Create  
Customized Icon

Easy to do it...

Patou Tips #7



Create an **Age Pyramid Chart** (for Human Ressources)



To practice downloadable free resources in GitHub



**Patou Tips #7**  
Create an Age  
Pyramid Chart  
(for Human  
Ressources)

Easy to do it...

Patou Tips #12



Calculate the correct evolution for KPI



Patou Tips #23

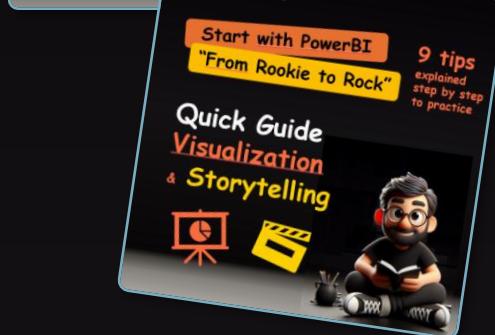


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9 tips explained step by step to practice

Quick Guide  
**Visualization & Storytelling**



**Patou Tips #23**  
Quick Guide Visualization &  
Storytelling



**Resources on GitHub**  
<https://github.com/Patou-Tips/Patou-Tips>

Don't forget!

This isn't the truth, it's just my truth!

## Patou Tips



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