

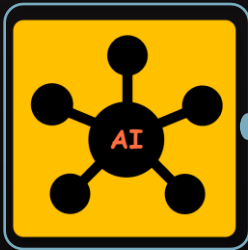
Start with PowerBI

"From Rookie to Rock"

Learn &
Practice

Power BI project with AI

Part 1: Connect MCP server



Patou Tips #54

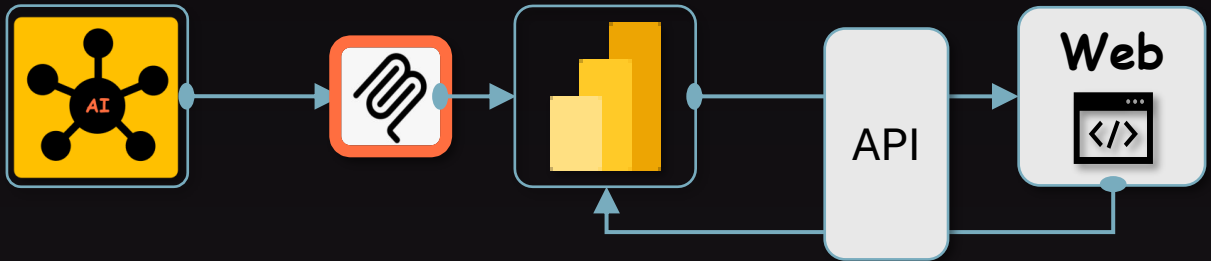


Power BI project with AI

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](#)

Start with PowerBI

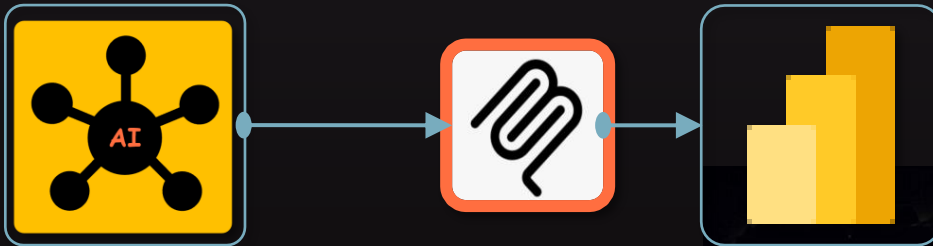
"From Rookie to Rock"

Patou Tips #54

Power BI project with AI

Part 1

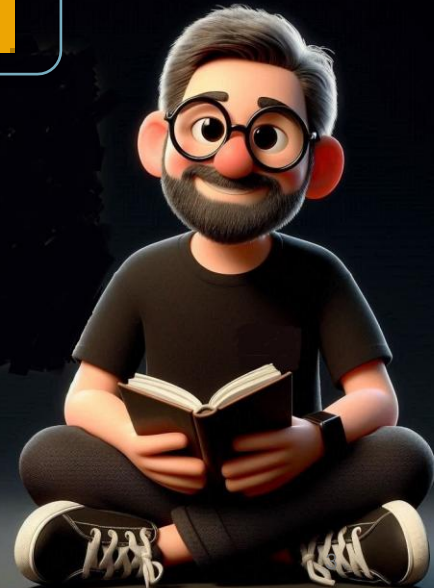
Connect MCP server



Start with PowerBI

"From Rookie to Rock"

Patou Tips #54



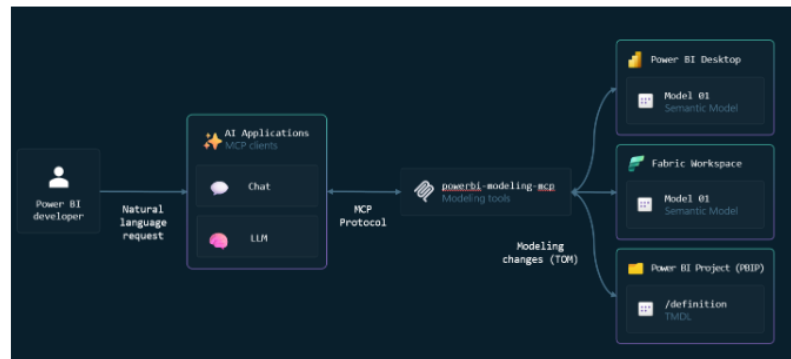
Power BI project with AI

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.



Capabilities

- **Build and modify semantic models with natural language:** Create or update tables, columns, measures, relationships and much more simply by describing what you need.
- **Perform bulk modeling operations at scale:** Rename, refactor, translate, or document hundreds of model objects in seconds.
- **Apply modeling best practices:** Easily evaluate and implement modeling best practices.
- **Leverage agentic workflows:** Work with Power BI Project files and TMDL code, enabling AI agents to autonomously plan and execute complex modeling tasks.
- **Query and validate DAX expressions:** Run DAX queries or validate measures directly through AI-driven workflows.

November
Power BI
update
(Microsoft
information)

Start with PowerBI

"From Rookie to Rock"

Patou Tips #54

Power BI project with AI

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

Wrap-up

2 Examples:

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

Start with PowerBI

"From Rookie to Rock"

Patou Tips #54

Power BI project with AI

Step 1: Software installation (1/2)

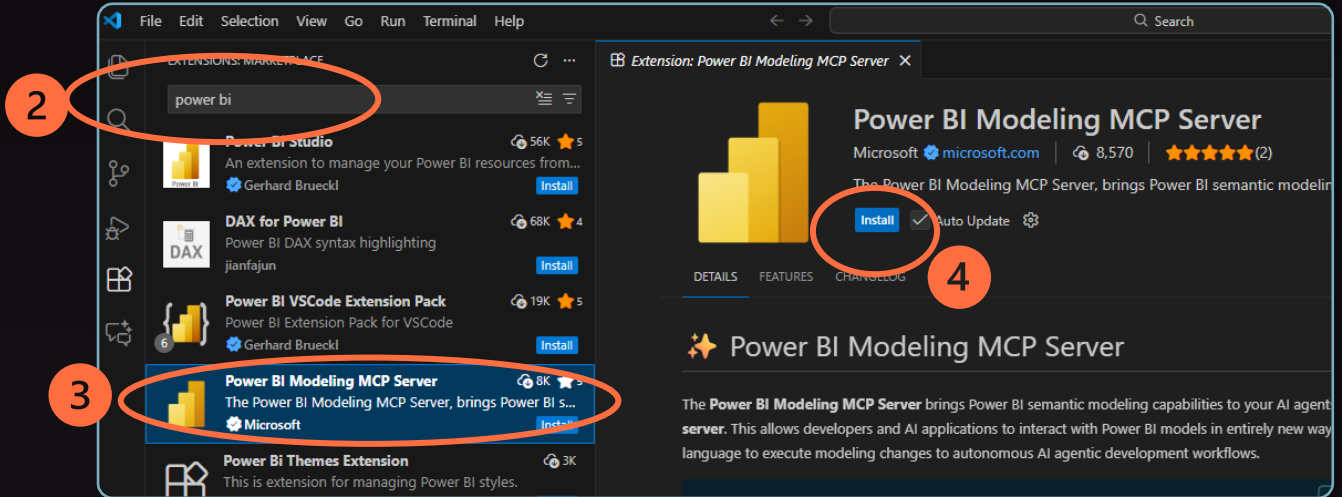


Install Visual Studio Code

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



Visual Studio Code
<https://code.visualstudio.com>



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.

Start with PowerBI

"From Rookie to Rock"

Patou Tips #54

Power BI project with AI

Step 1: Software installation (2/2)



Install Claude desktop

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



claude.com
<https://claude.com> › download

- 2 Claude desktop is now intalled !



➡ Naturally,
Power BI desktop
is already
installed?

Start with PowerBI

"From Rookie to Rock"

Patou Tips #54

Power BI project with AI

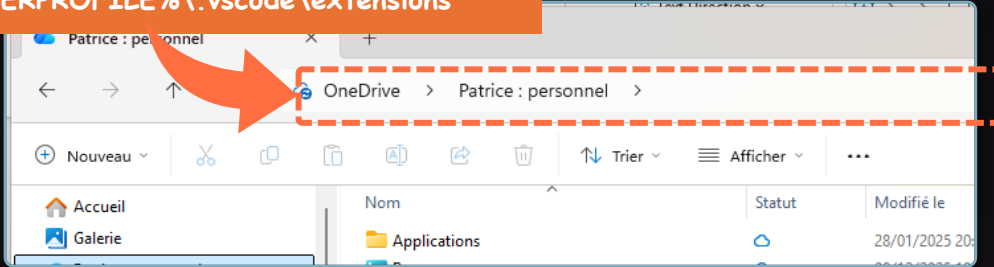
Step 2: MCP server installation & config. (1/4)



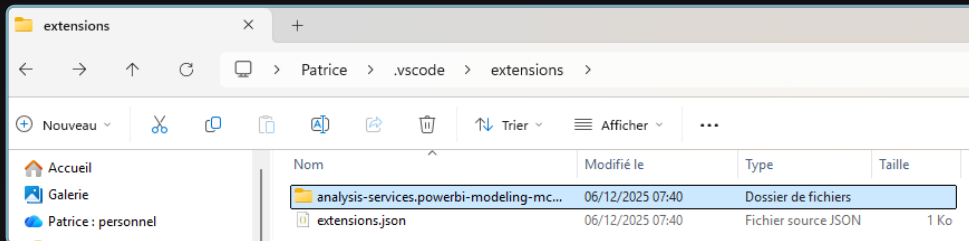
Extension configuration of MCP Server

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

`%USERPROFILE%\vscode\extensions`



2



Open

`analysis-services.powerbi-modeling-mc...`

then

`server`

Start with PowerBI

"From Rookie to Rock"

Patou Tips #54

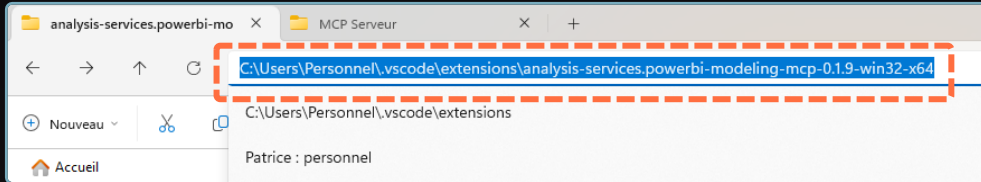
Power BI project with AI


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



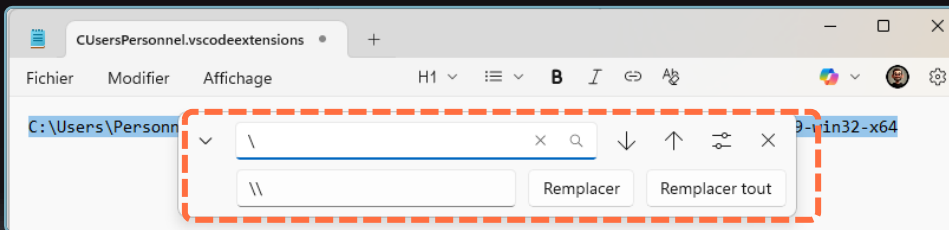
Extension configuration of MCP Server

- 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.



Start with PowerBI

"From Rookie to Rock"

Patou Tips #54

Power BI project with AI

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



Extension configuration of MCP Server

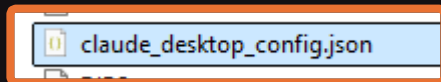
6



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 named "MCP_Server_Code.txt" and copy the entire code (ctrl + C).

Start with PowerBI

"From Rookie to Rock"

Patou Tips #54

Power BI project with AI

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

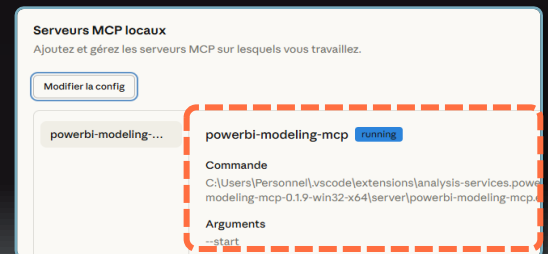
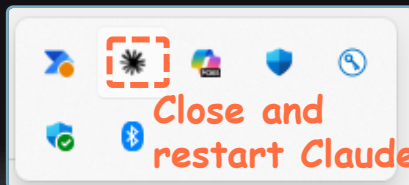


Extension configuration of MCP Server

- 9 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"]
    }
  }
}
```

- 10 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.



Start with PowerBI

"From Rookie to Rock"

Patou Tips #54

Power BI project with AI

Step 3: Practice and learn (1/4)



Functionalities with MCP Server

The screenshot shows the Power BI interface with a search bar at the top. Below the search bar, a list of functionalities is displayed, each with a toggle switch. The search bar contains the text "powerbi-modeling-mcp".

Forfait Free - Mettre à niveau

Bonjour

Comment puis-je vous aider ?

powerbi-modeling-mcp

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

Start with PowerBI

"From Rookie to Rock"

Patou Tips #54

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:

P 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"

06:30 ↺ ↻ 📄

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.

P 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"

Start with PowerBI

"From Rookie to Rock"

Patou Tips #54

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

Sales and Monthly Avg Sales 2023 by Month



Start with PowerBI

"From Rookie to Rock"

Patou Tips #54

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



Good for KPI
and for graph



Start with PowerBI

"From Rookie to Rock"

Patou Tips #54

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:

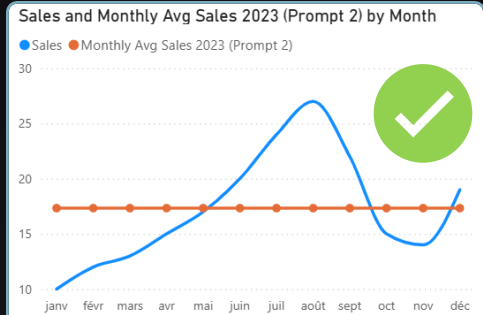
- Table: Fact_Sales
- Sales Column: Value
- Date Column: DimDate[Month]
- The measure should display the total annual average for each month.

```
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".

Start with PowerBI

"From Rookie to Rock"

Patou Tips #54

Power BI project with AI

Step 3: Practice and learn (2/4)



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



MCP Server Functionalities:

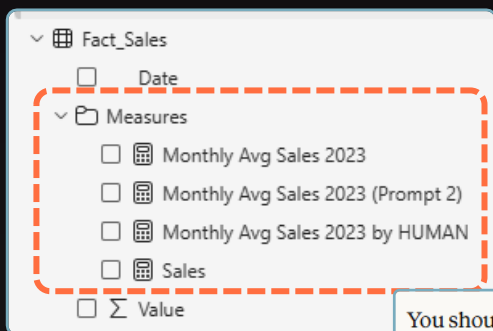
P Dax query operations



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.

Start with PowerBI

"From Rookie to Rock"

Patou Tips #54

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">→ The prompt should be very detailed and the DAX calculations should be verified.→ 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!).
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	→ Calculations should be verified.

Start with PowerBI

"From Rookie to Rock"

Patou Tips #54

Coming soon, in 2026!



Patrice Fayard

Business Intelligence WORKBOOK

Start PowerBI

"From Rookie to Rock"

Learn & Practice

- ✓ 1000 Video tutorials
- ✓ 500 Step by step
- ✓ 5 Cheat Sheet
- ✓ 100 Power Patou Tips
- ✓ Hacking & Workshops



Over 500 pages to
learn and practice: video
tutorials and resources

To develop your
knowledge, find more
explanations and
exercises



Learn and practice

Find past issues of "Patou Tips" and download resources to practice on GitHub



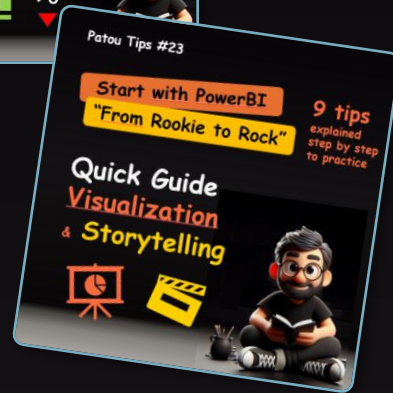
Patou Tips #5
Create a
Customized
Chart
(for income
statement)



Patou Tips #12
Calculate right
evolution for
KPI



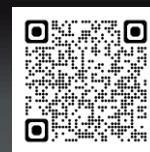
Patou Tips #6
Create
Customized Icon



Patou Tips #23
Quick Guide Visualization &
Storytelling



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



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

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

Patou Tips



Follow me
Like me
Share me

