BUSINESS
INTELLIGENCE &
DATA
VISUALISATION

POWER BI
BEGINNER'S
USER GUIDE

written by

Déborah Leclercq

2024

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AGENDA

Power BI

01

WHY DID I WRITE THIS ?

Welcome to this guide dedicated to Power BI, specifically designed for beginners. Power BI is a powerful data visualisation and analysis tool that allows you to transform raw data into actionable insights through interactive visual representations.

The goal of this manual is to guide you through the basics of Power BI, from connecting to data sources to creating reports and dashboards. You will find practical tips and advice based on my in-depth research and hands-on experience. I felt it was important to compile all these tips into a single manual to save time for me to begin with but also for those new to Power BI.

This manual is not intended to replace the official training provided by Microsoft, but rather to gather various tips found online or through use. For transparency, all resources used are listed at the end of the guide.

Whether you are new to the world of business intelligence or looking for an easy-to-follow guide that compiles various tips and tricks, this manual will provide you with the essential tools to start with confidence and perhaps even inspire you to explore the full capabilities of Power BI.

https://www.microsoft.com/fr-fr/power-platform/products/power-bi

02
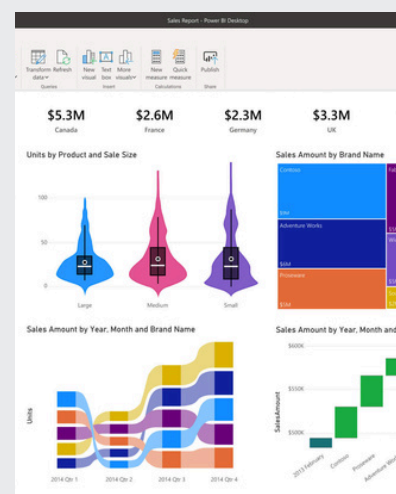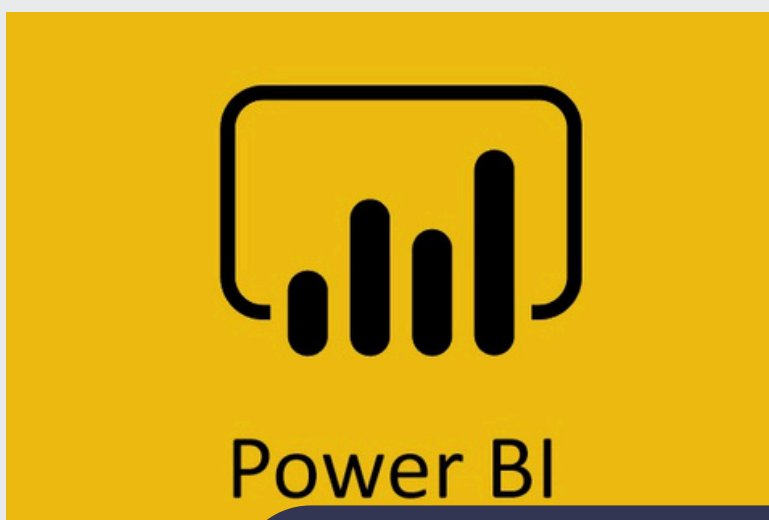
POWERBI DESKTOP

To get started, you need to download Power BI Desktop onto your machine, either by searching for Power BI Desktop in the Microsoft Store or by following this link:
https://www.microsoft.com/fr-fr/power-platform/products/power-bi/getting-started-with-power-bi

Once installed on your computer, you will need to register, even for free use, which means local use without the ability to share reports via the Microsoft Power BI application.

The link below will give you an overview of the general usage, functionality, and installation:
 https://learn.microsoft.com/fr-fr/power-bi/fundamentals/desktop-getting-started
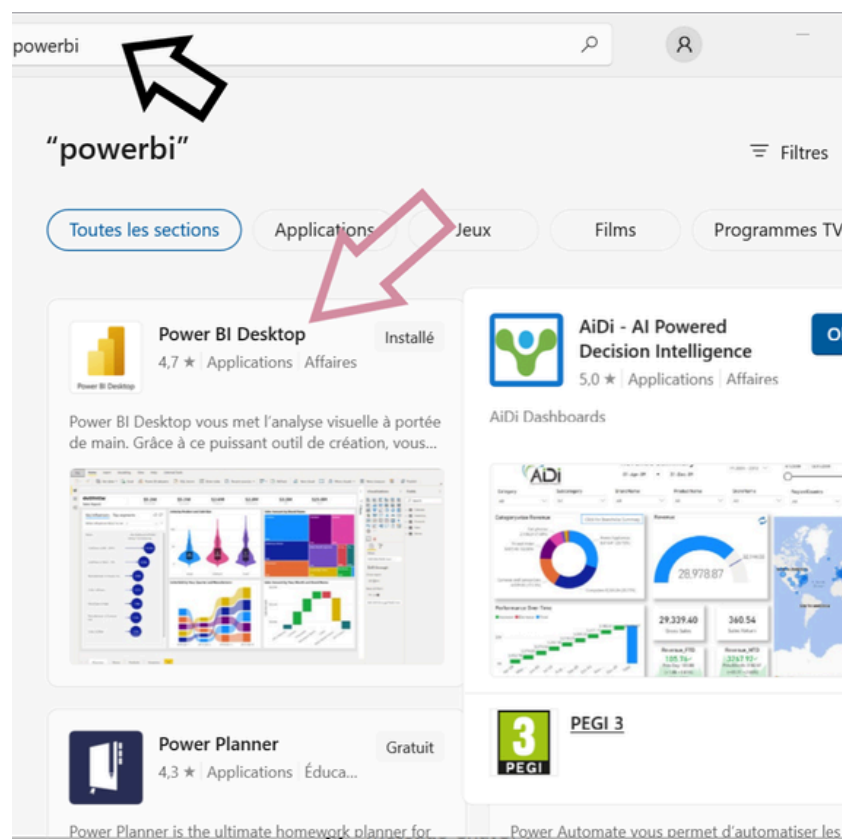
ADVICE

I recommend optimizing the formatting of your file before importing it into Power BI to avoid making changes within Power BI that could complicate future report updates.

BE CAREFUL WITH

- **Null Values:** Be cautious with null values unless they hold particular significance in the analysis you want to visualize.
- **Empty Columns**: Remove any empty columns.
- **Date Formats:** Ensure dates are in the correct date format in Excel before importing the file.
- **Columns with Multiple Types of Information:** Avoid having multiple types of information in a single column (e.g., phase, molecule name, treatment type in one column).
- **Inconsistent Information:** Ensure consistency in your data (e.g., company names with or without a period).

POWERBI DESKTOP

DO'S AND DON'T

L D

QUESTION	YES/NO	WHY
Can I change a column name and click on refresh Data to update PowerBI report?	NO	There will be an error message and no update will be processed
Can I add A new column in my report?	YES	The refreshed version will include the new column in your report no matter where the column was inserted in your file.
Can I add a row anywhere in the file?	YES	Just ensure you save your file before hitting the refresh button in PowerBI
Can I delete a column in my file?	NO	There will be an error message and no update will be processed

While the free version of Power BI doesn't allow for report sharing, it still enables you to work effectively on reports, including linking a BI report to a file on SharePoint.
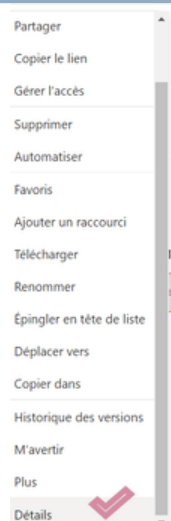
GOAL

Continuing the learning path to usefuls tricks with PowerBi, I wanted to implement a solution to link PowerBI reports to a file stored on my company's Sharepoint.

STEPS IN SHAREPOINT

1

Go to your file :
- ○ **On Sharepoint Select your needed file.**

2

How do you get the access link :
- ○ **right click on icon "..." right next to your file.**
- ○ **Scroll down until you see "Details".**
- ○ **it opens an overview of your file on the right of your screen**
- ○ **scroll down until you see "access link"**
- ○ **copy it**

Partager
Copier le lien
Gérer l'accès
Supprimer
Automatiser
Favoris
Ajouter un raccourci
Télécharger
Renommer
Épingler en tête de liste
Déplacer vers
Copier dans
Historique des versions
M'avertir
Plus
Détails ✓

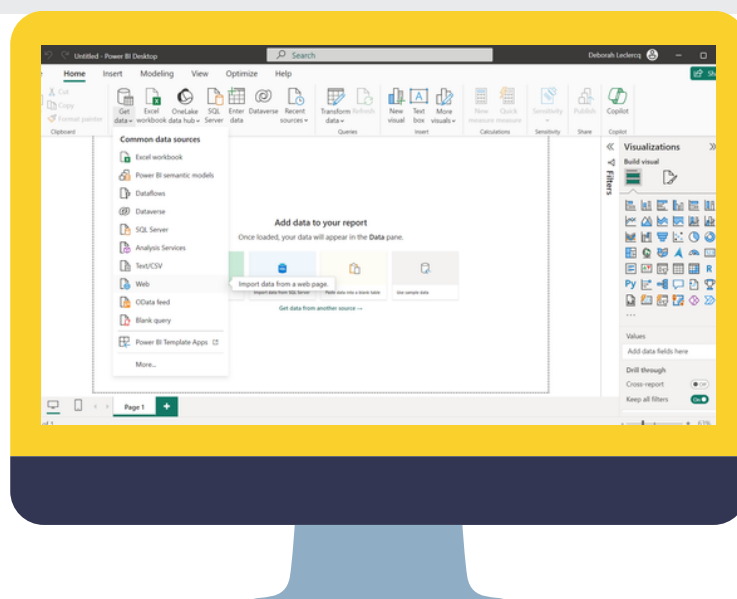Type
Fichier XLSX

Modifié
3 mai

Chemin d'accès 🗗 ✓

LINK POWERBI REPORT TO SHAREPOINT FILE

STEPS IN POWERBI

1

Click on Get Data :
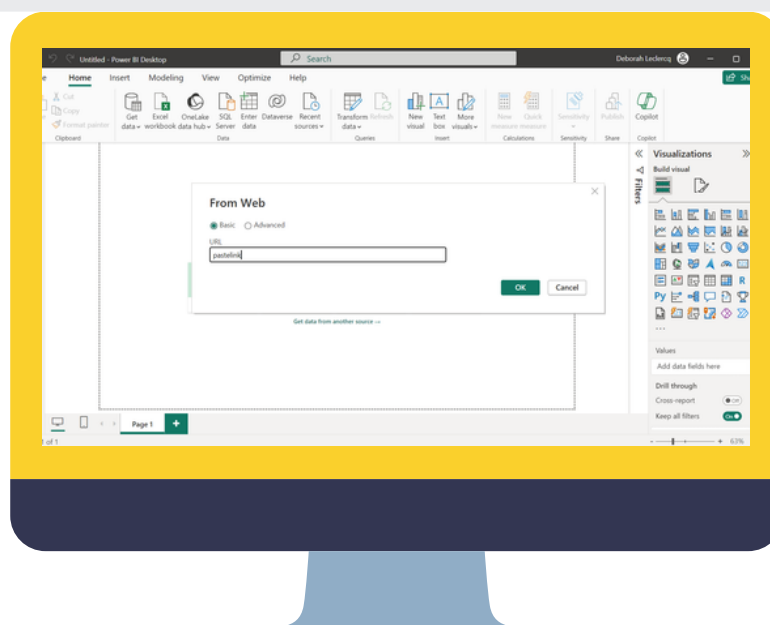- Open up Power BI Desktop.
- Cliquez sur "Get Data".
- Select "Web".

2

Paste your link :
- Paste the url link you just copied in the blank section

LINK POWERBI REPORT TO SHAREPOINT FILE

STEPS IN POWERBI

3 **Connecting with your credentials :**
- **If you have a message stating "credentials provided not valid", you need to sign in again with your credentials so that you now have a message stating "you are currently signed in".**

4 **Connect and Load data :**
- **Click on connect button.**
- **This opens up a window called navigator where you can preview and select your file.**
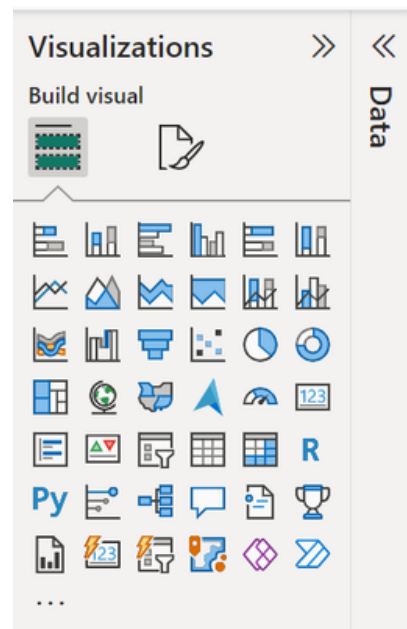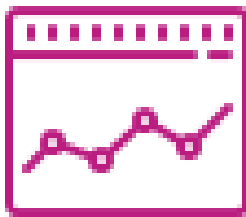- **you can either transform or direclty load**
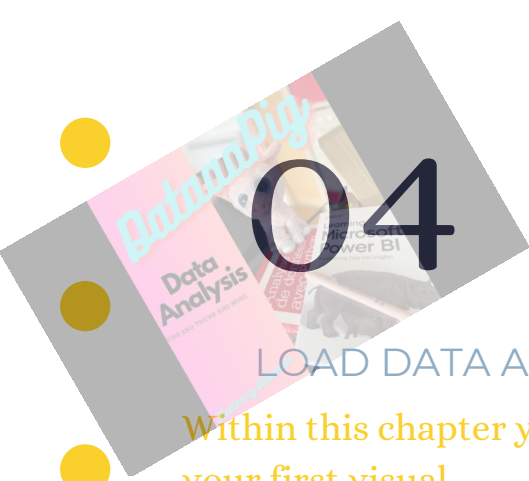
L D
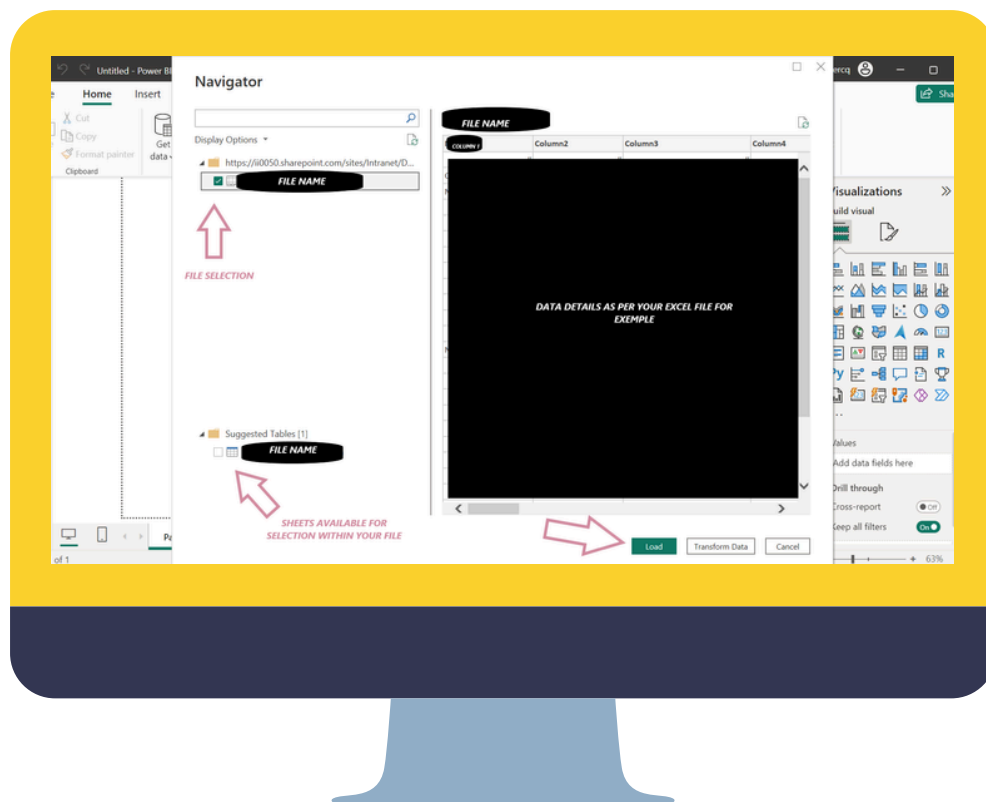
5 **Now ready to create visuals :**
- here you are ready to create your visuals.

6 **Follow this link for a video :**
https://community.fabric.microsoft.com/t5/Power-Query/Get-a-SharePoint-file-path-to-use-in-PBI-without-the-Desktop-app/td-p/2486236

LOAD DATA AND CREATE YOUR FIRST VISUAL

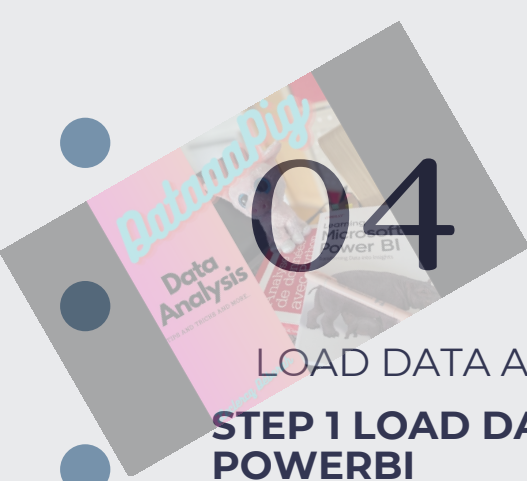Within this chapter you will understand how to load data from a file and create your first visual

GOAL

Understanding How to Load Data and Use Power BI visualisations

STEP 1 LOAD DATA INTO POWERBI

1

Load Data :
- click on blank report
- click on get data and select your file. So either click on excel workbook or follow the steps to an excel file link on sharepoint
- For example if you select your excel file and it has several sheets, you will see them appear on a Navigator window. You can select the one(s) you need for the report
- If you select one sheet the preview window will show you what your file looks like
- click on load

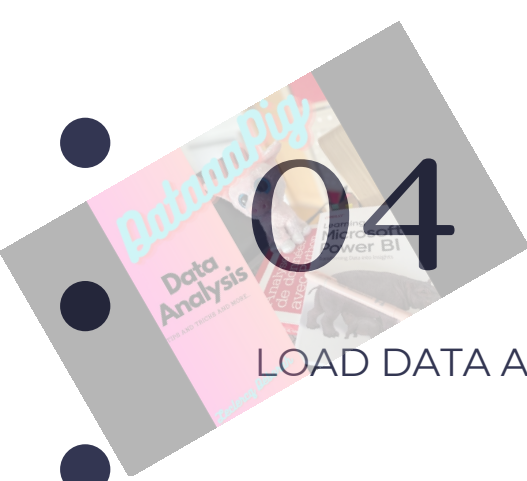LOAD DATA AND CREATE YOUR FIRST VISUAL

STEP 1 LOAD DATA INTO POWERBI
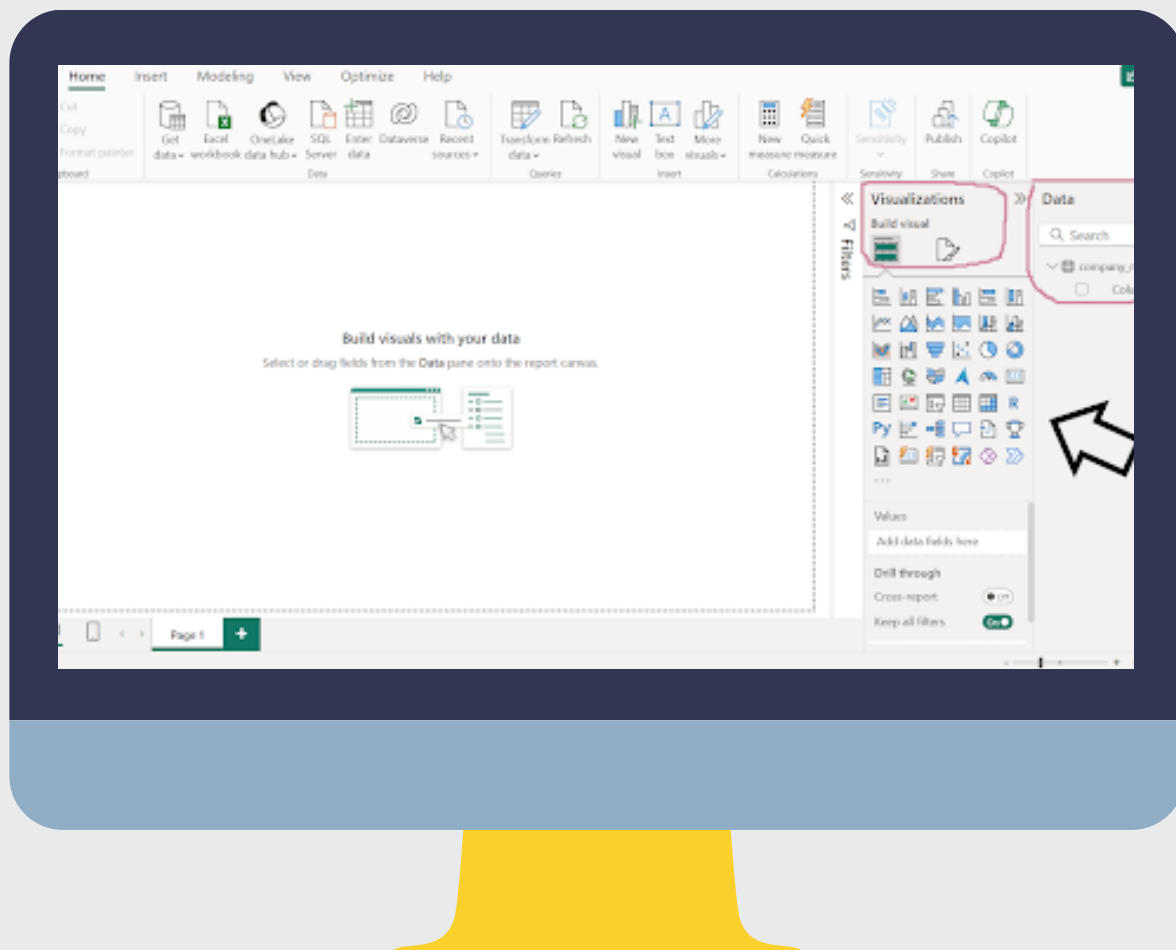
LOAD DATA AND CREATE YOUR FIRST VISUAL

STEP 1 LOAD DATA INTO POWERBI

2 **you will now have your screen showing the following :**
- **To the left :**
  - **first icon = the page for visuals**
  - **second icon = your file**
  - **third icon = relationship tab**
  - **fourth icon = dax specific code area**
- **To the right :**
  - **Filters = this enables to filter your report for all created pages, one visual, all visuals on the page, select whichever data you need to filter on**
  - **Visualisations = this is where you select your most adequate visual for your data**
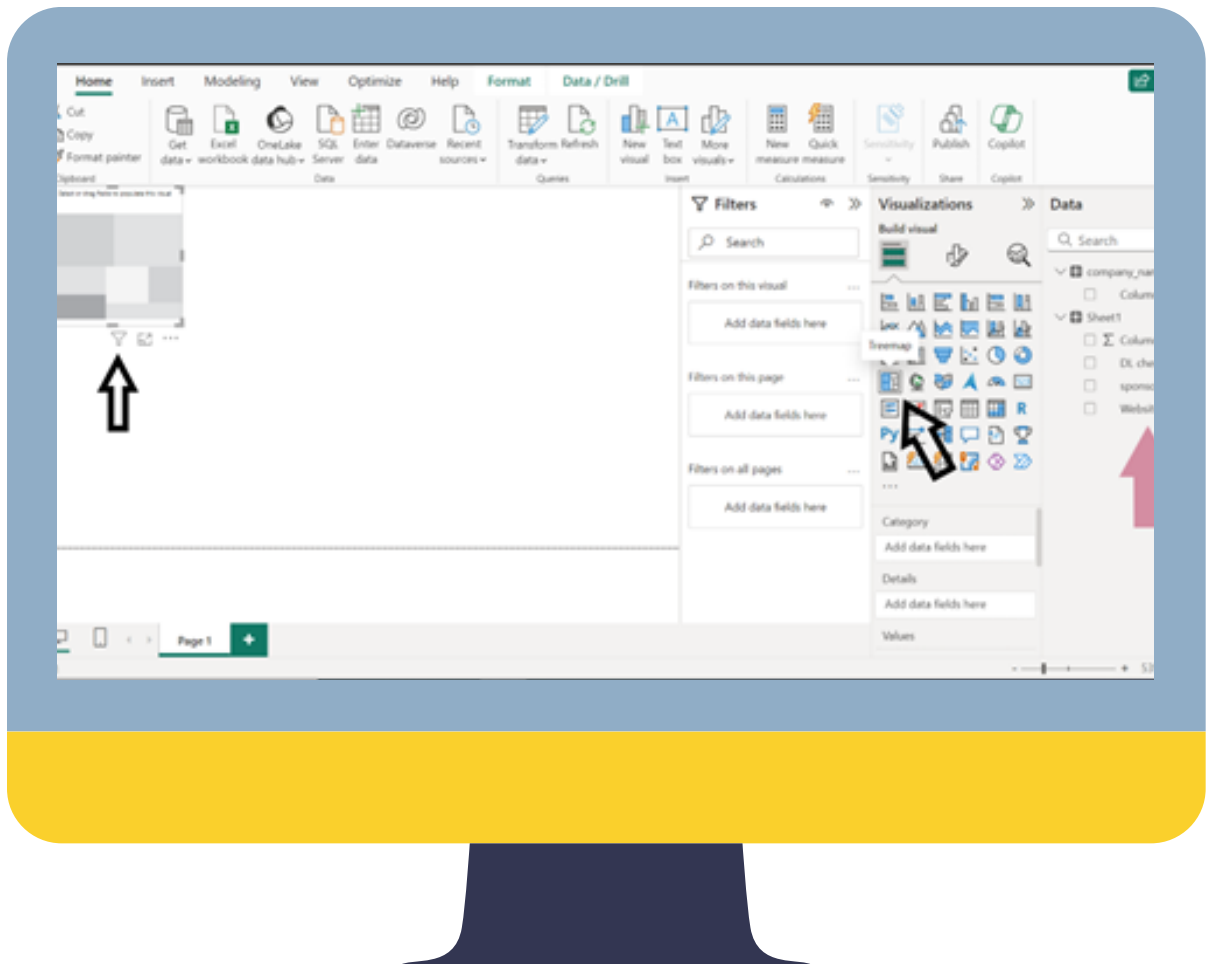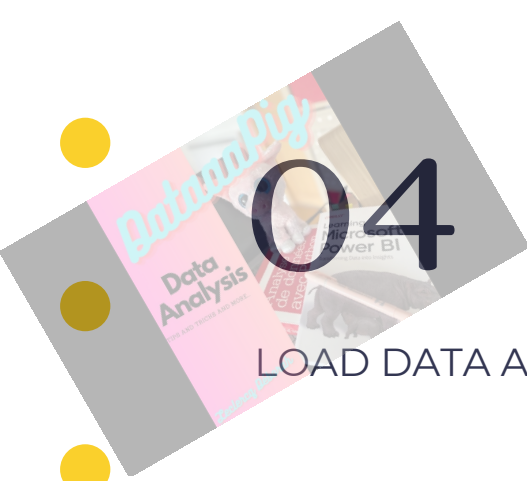 - **Data = shows your selected file and all its related columns which you will use for your report**

04

STEP 2 CREATE A VISUAL

1   **Choose your visual :**
    ◦ **This adds a square to your page**

STEP 2 CREATE A VISUAL

2 **Choose your visual :**
- o **Make sure the created section (square) is selected and then drag the data you need to create the visual.**
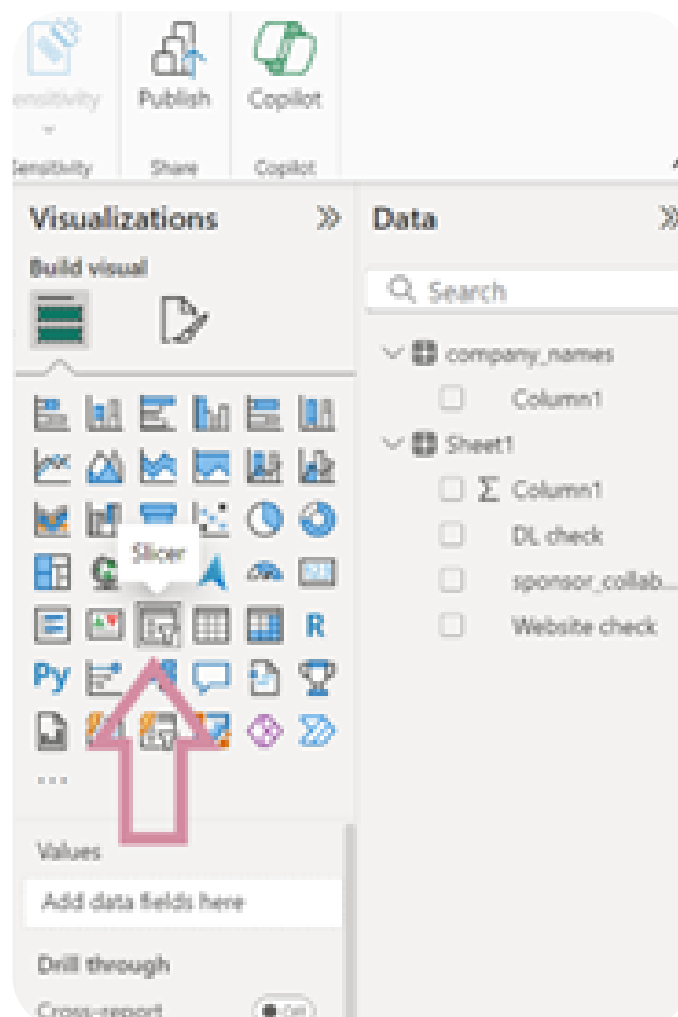- o **You can then select a column , drag it into the Add data fields here underneath the visuals choice details**
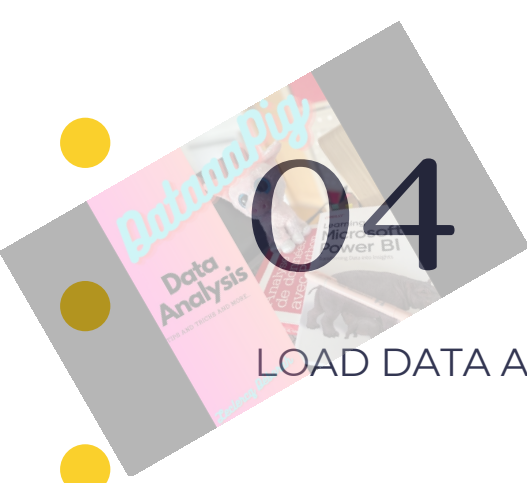
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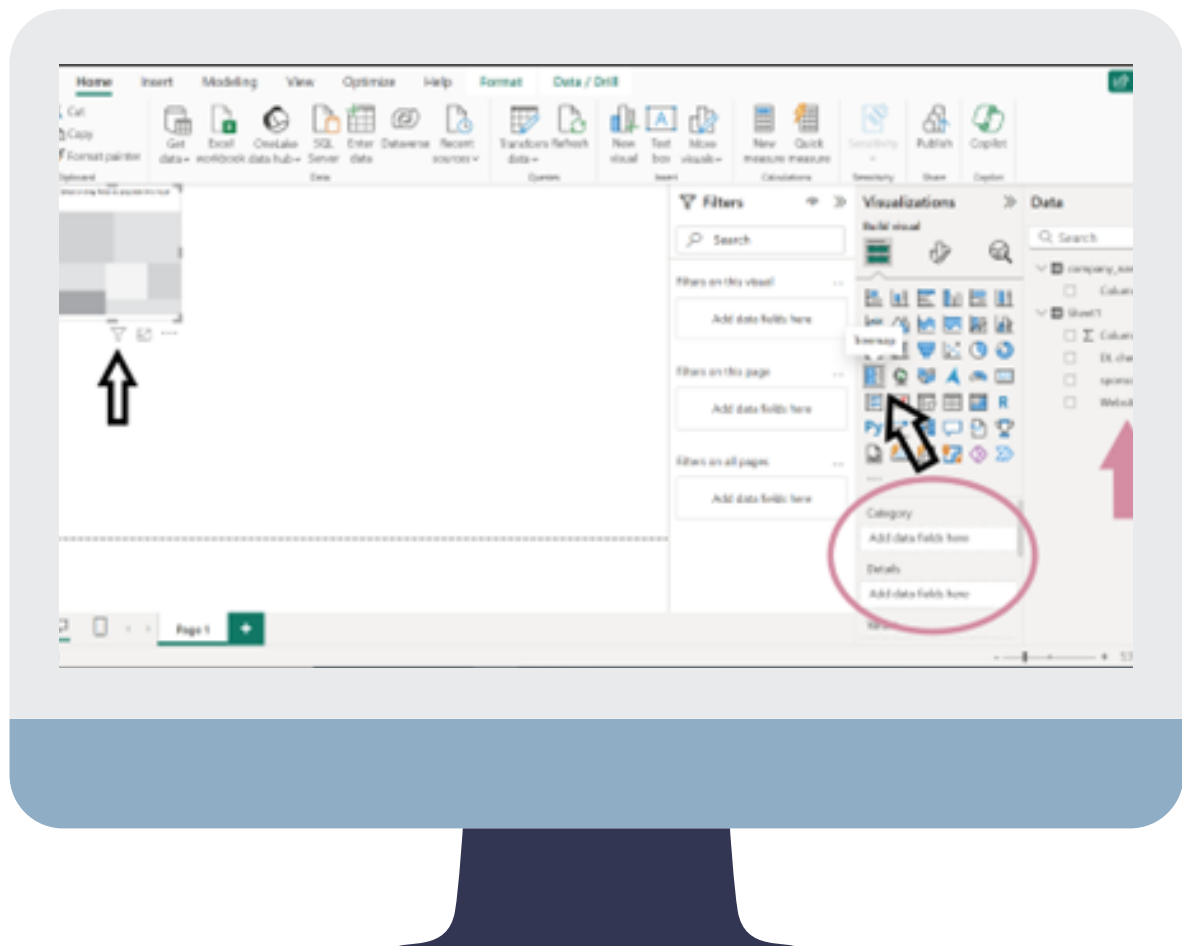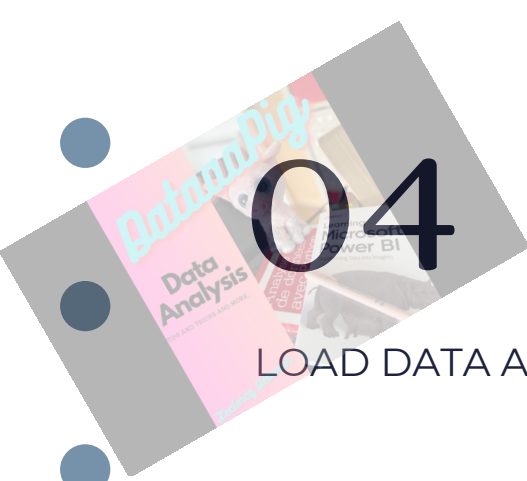
STEP 2 CREATE A VISUAL

3 **Create pages and add slicer :**
- **You can create as many pages as you want with one or more visuals for each page**
- **You can add a slicer and choose how you want to allow the viewer to select data**

04

STEP 2 CREATE A VISUAL

4 **Slicer:**
- **This will bring the focus of the visuals to the selected slicer**
- **You can even click on one specific part of a visual and the data will focus on that area**
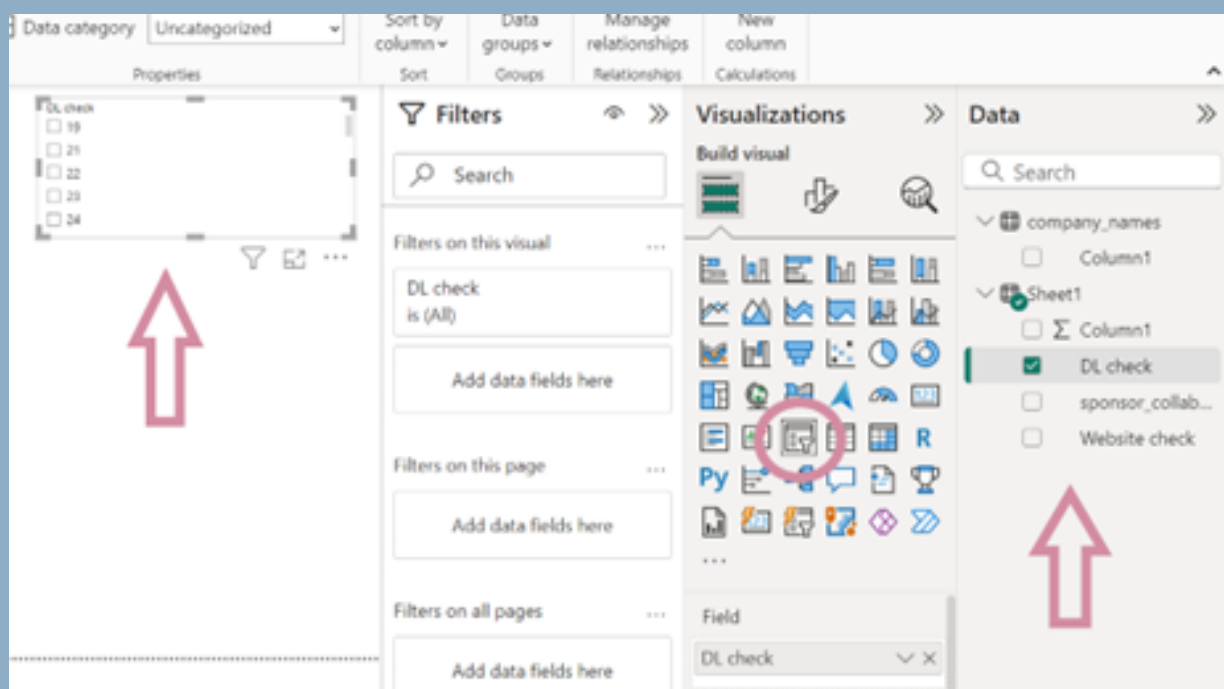
STEP 2 CREATE A VISUAL

5 **Save and Share your report :**
- Once you are happy with your visuals, you can now save it and even share it as long as the person you send it to gets the data file as well.

USEFOOL TOOLS

In this chapter, I'll show you some helpful tips to continue exploring Power BI.
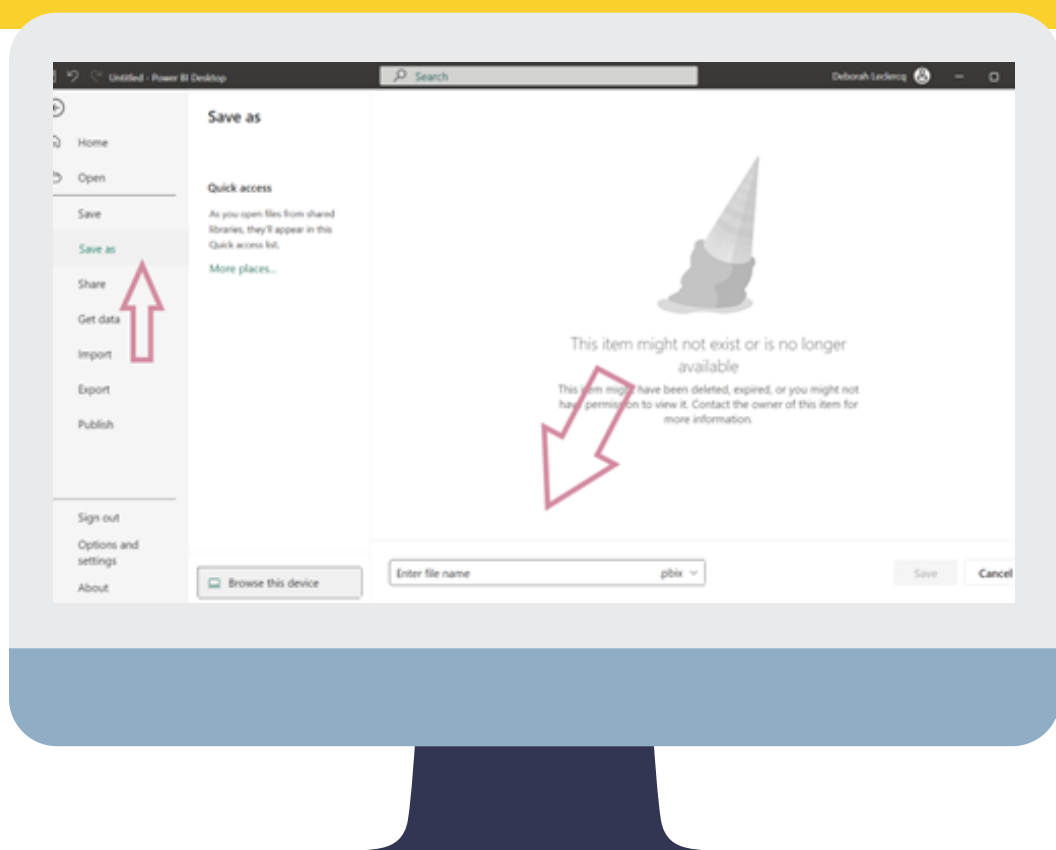
GOAL

Save and Load a report

SAVE A POWERBI REPORT

1

Click on File :
- **Click on 'Save as' and enter the name you need it register to**
- **This creates a .pbix file.**
- **I would advise you to create a folder with the pbix file as well as all the related files you use with the report.**
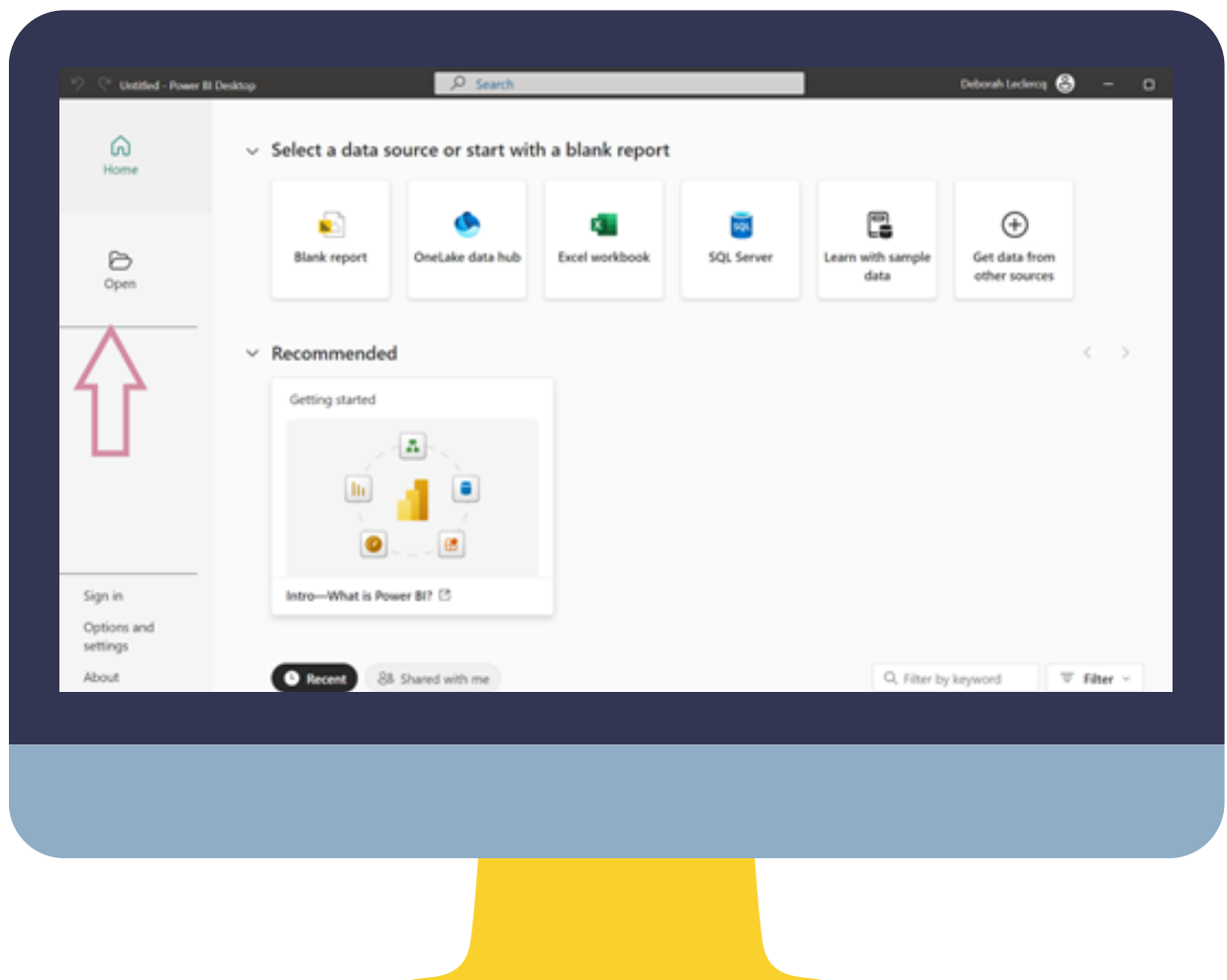
OPEN A POWERBI REPORT

1

Click on Power BI Desktop :
- **Click on open and browse to find your .pbix file to open it.**
- **If you have several pbix files you opened or worked on, you will view their names and location in the Recent window.**
- **Otherwise you just click on browse this device and find it.**

05

USEFOOL TOOLS

In this chapter, I'll guide you on how to change the data source, such as linking your BI report to a new file version if needed.

GOAL

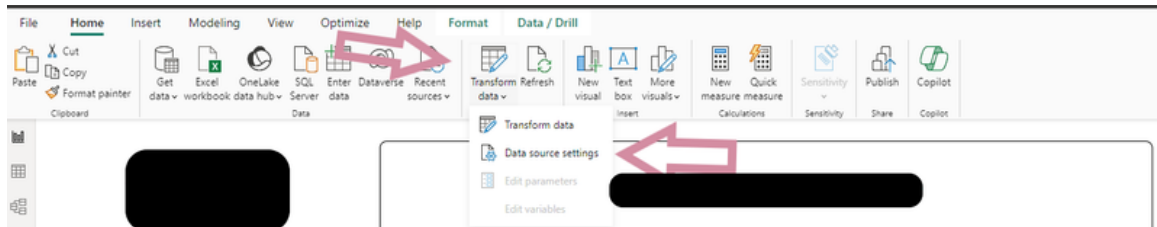Chage your Data Source
This can be useful if you chage your reference file into another location
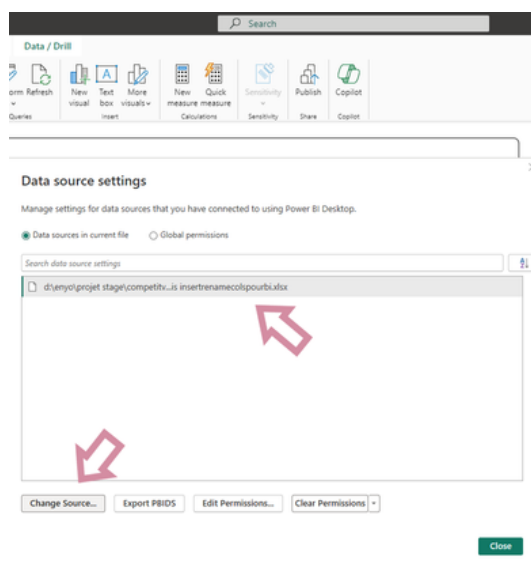
CHANGE DATA SOURCE

1

Open your Power BI report :
- **Search and click on Transform Data**
- **Then click on Data Source settings**

2

Once you clicked on this option, a new widow pops up and shows the actual location of your data file. You will need to click on Change source
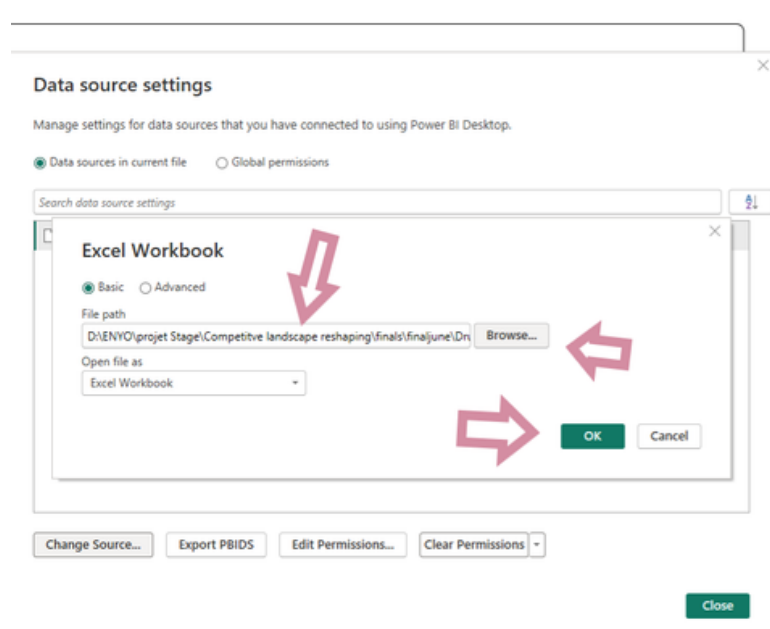
USEFOOL TOOLS

CHANGE DATA SOURCE

3 **Another window pos up where you can Browse and get your file.**
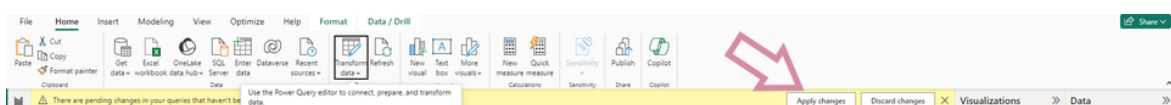**You then click OK**

It works like a charm with your file following a sharepoint link

4 **A yellow ribbon appears on the upper part of your powerBI report.**
This requires you to click on OK to confim the change

USEFOOL TOOLS

GOAL

Creating a consistent color scheme for your visualisations in Power BI helps maintain a uniform aesthetic and reinforce the visual identity of your reports. Here's how to proceed

CREATE A CONSISTENT COLOR SCHEME
STEP 1: DEFINE YOUR COLOR PALETTE

1

Choose Your Primary Colors:
- Select the main colors you want to use. You can use a color palette generator like Adobe Color, Coolors, or similar tools.

2

Note the Hex Codes:
- Write down the hexadecimal codes of the colors you have chosen (e.g., #FF5733, #33FF57, #3357FF).

CREATE A CONSISTENT COLOR SCHEME

STEP 1: DEFINE YOUR COLOR PALETTE

3 **Go to PowerBI desktop:**
   - **Click on "View" then scroll down**

4 **Click on "customise current theme"**
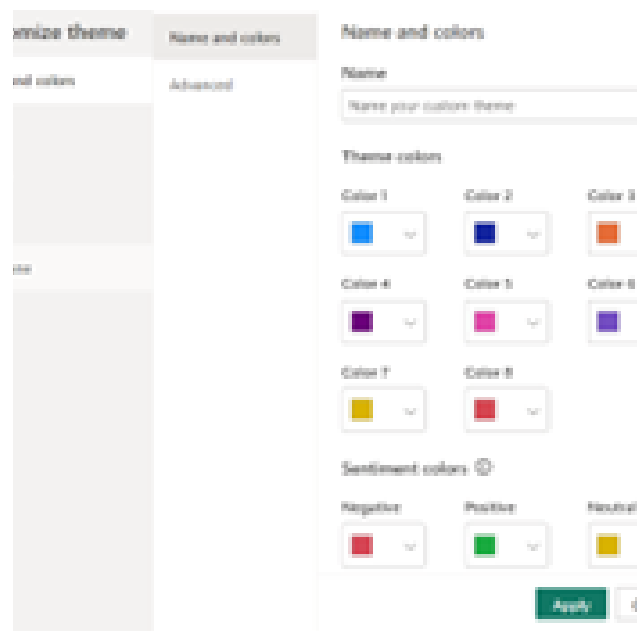
CREATE A CONSISTENT COLOR SCHEME

STEP 1: DEFINE YOUR COLOR PALETTE

5
- **Name your theme.**
- **For each color indicate the hex reference retrieved from above steps and apply.**

6
- **Then you can click on Save current them and name it as you wish**
- **This generates a json file which you can reuse afterwards in other reports you would want to build.**

STEP 2: IMPORT THE COLOR SCHEME INTO POWER BI

1

Open Power BI Desktop:
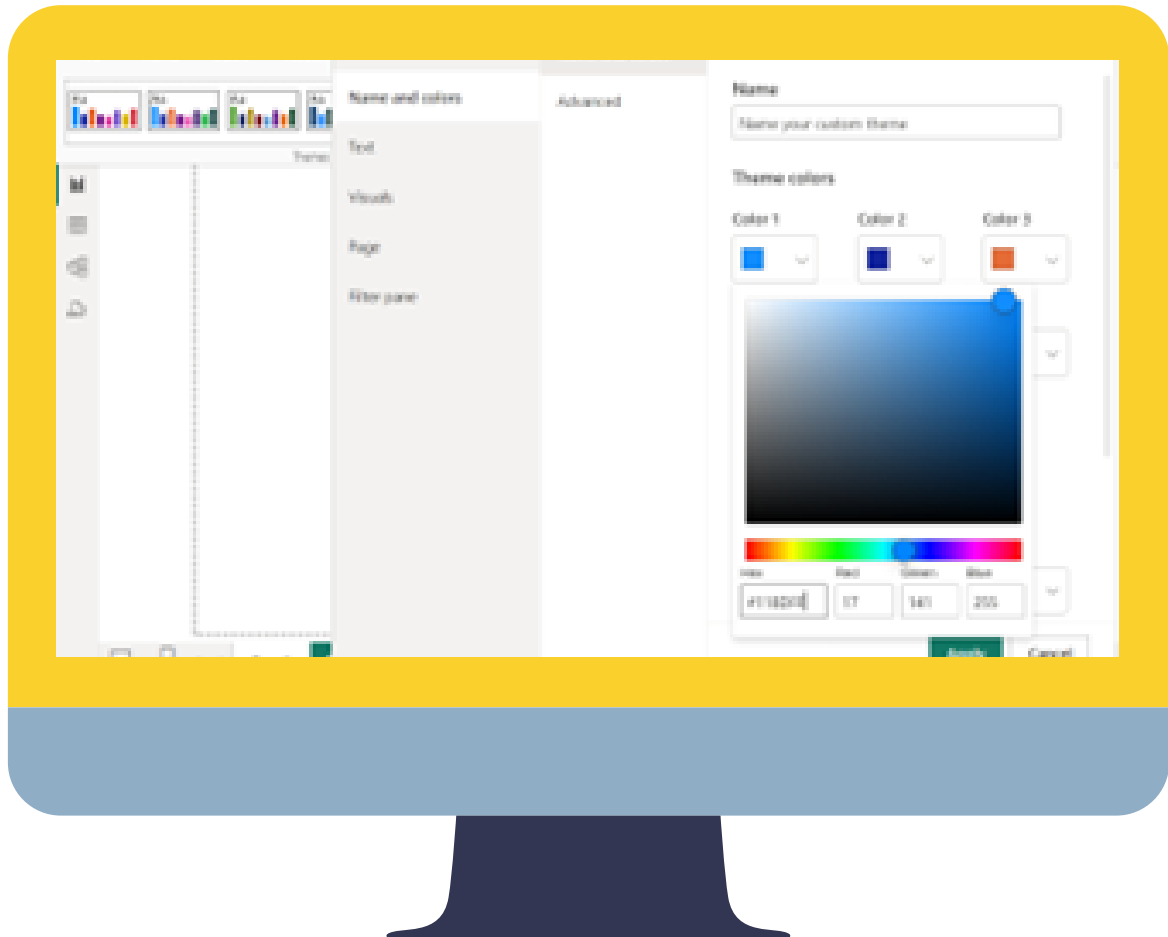- **Launch Power BI Desktop.**

2

Import the Theme:
- **Go to the "Home" tab.**
- **Click on "Themes" in the ribbon.**
- **Select "Browse for themes."**
- **Find and select your JSON file my_color_theme.json.**

3

Apply the Theme:
- **Power BI will immediately apply the color scheme defined in the JSON file to your visualisations.**

STEP 3 CUSTOMIZE AND ADJUST YOUR VISUALISATIONS

1 **Apply Colors to visualisations:**
- **Go to your visualisations and ensure that the colors from the palette are correctly applied.**
- **You can manually adjust the colors in the formatting options of each visualisation if necessary.**

2 **Check for Consistency:**
- **Ensure that all visualizations use the same color palette to maintain visual consistency throughout your report.**

By following these steps, you can create a custom color scheme for your Power BI visualisations, ensuring a professional and consistent presentation of your data.

ADD A LOGO TO YOUR VISUAL

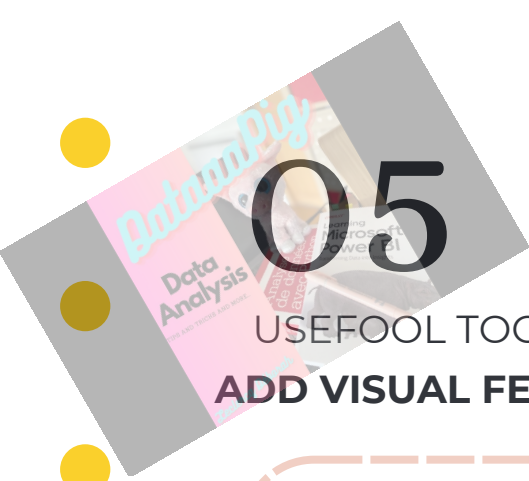**1** **Select a visual :**
- ○ **Click on "Format Visual"**
- ○ **Go to "Plot and background"**
- ○ **Select a picture.**
- ○ **Adjust the size to your liking**
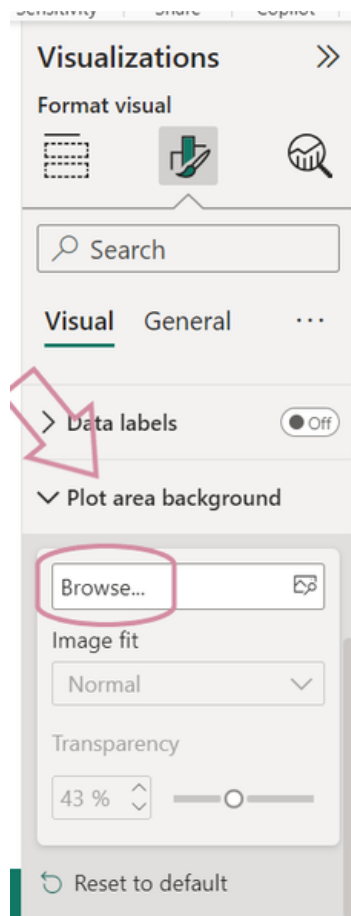
By following these steps, you could include your company logo into the most important visuals.

ADD VISUAL FEATURE

GOAL

Get your customized visuals according to your needs

The add visual feature in Power BI is very useful for helping you represent your data in the best possible way. However, there are several points to keep in mind:

FREE OR PAID

Additional visuals can be free or paid.
Make sure to check before downloading.
Some visuals are free, while others are only available for a trial period and then require a license purchase.

FEATURE LIMITATIONS

- Some downloaded visuals do not have all options available when using the free version of Power BI. If you have the paid version, make sure you have access to all features, such as color customization or tooltips, for example.
- Unless you have the paid version, the visuals you download will be included in your report but not in your application. This means that if you like a downloaded visual, you will have to download it for every new report you build (i.e., for each .pbix file saved).

By keeping these points in mind, you can enhance your reports with appropriate visuals while avoiding unpleasant surprises related to costs or feature limitations.
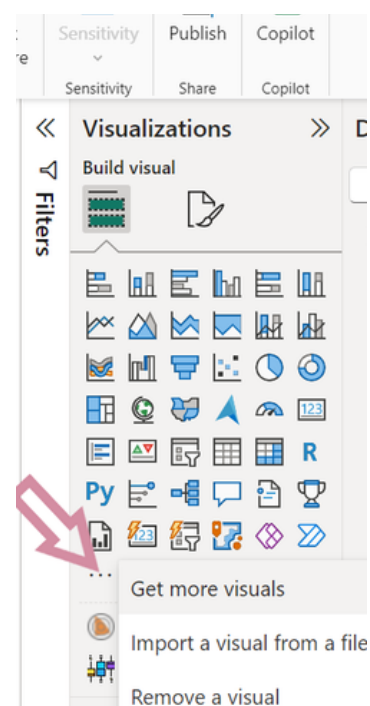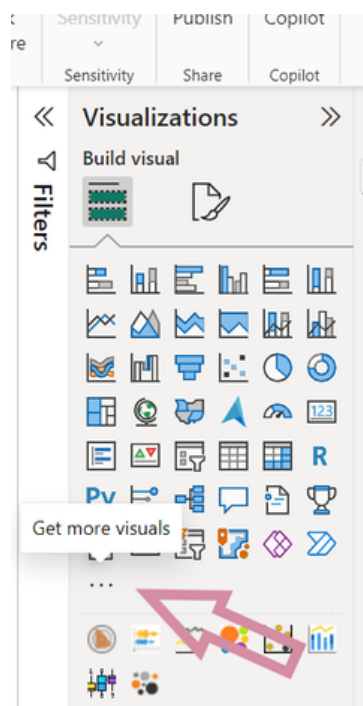
USEFOOL TOOLS

ADD VISUAL FEATURE

STEP 1 - ACCESS THE NEW VISUALS

1 **Underneath the visualisations pane on your powerBI dashboard, you can see three dots.**
- **When you click on them it provides several options.**
- **You want to click on "Get more visuals" if you want to review the options suggested in microsoft store**
- **Or you can download a visual, then save it on your computer and click on import a visual from file.**
- **The "Remove a visual" option helps you clean up your downloads as you might want to try several ones until you find the one you like or the most appropriate.**
- **We will focus on the "Get More visuals" option**
- **Once you click on that this pops a new window up called Power BI visuals**
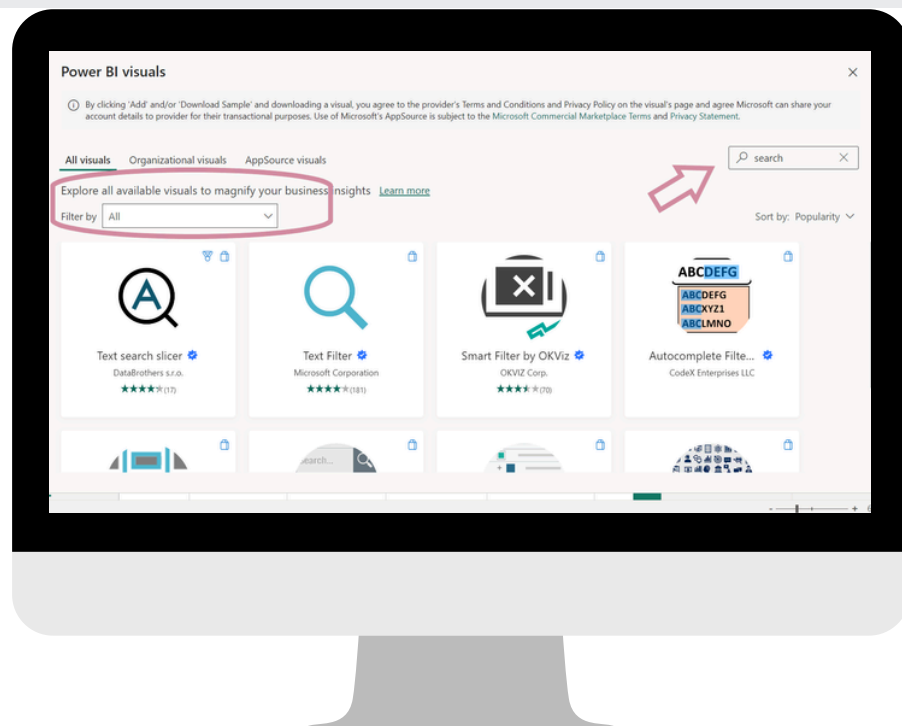
USEFOOL TOOLS

ADD VISUAL FEATURE

STEP 1 - ACCESS THE NEW VISUALS

2 You can either search with the filter by slicer or you can enter a word in the text search slicer.
For example here I wrote "search" and it shows me all the visuals related to the search options.

3 I will click on the first one to check it up:
You have a lot of information on this visual including:
- Pricing
- Publisher
- Overview of its usefulness
- Demonstration details if you scroll down the page

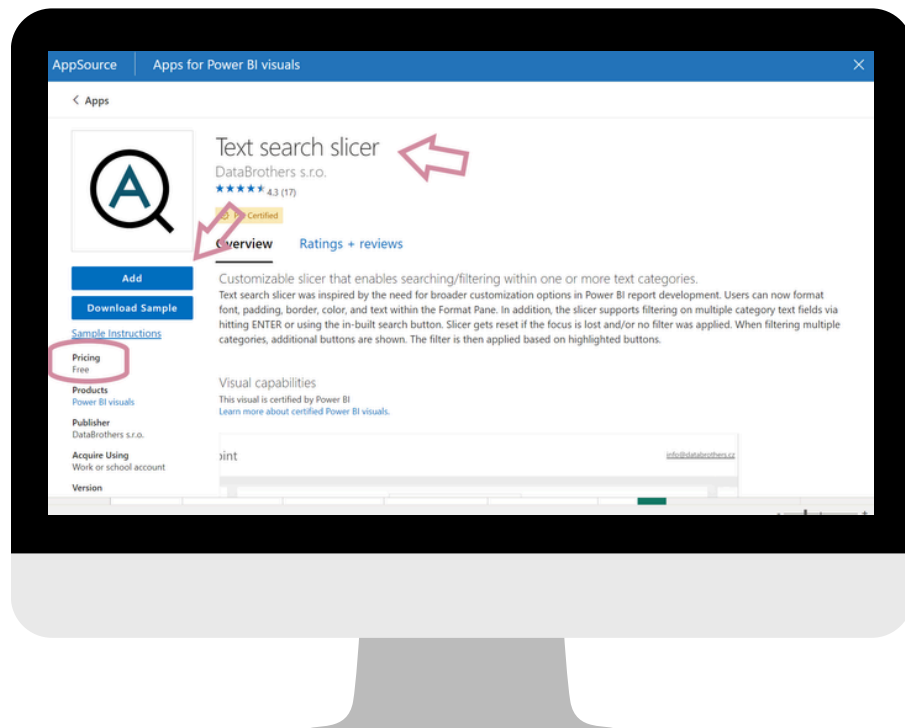**ADD VISUAL FEATURE**
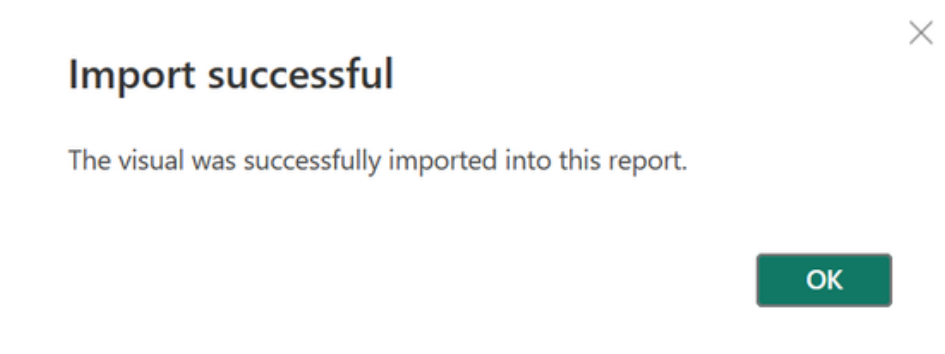
STEP 2 - DOWNLOAD AND USE

1   If you want to try, just click on the Add button

2   Once imported you will see this message

Import successful

The visual was successfully imported into this report.
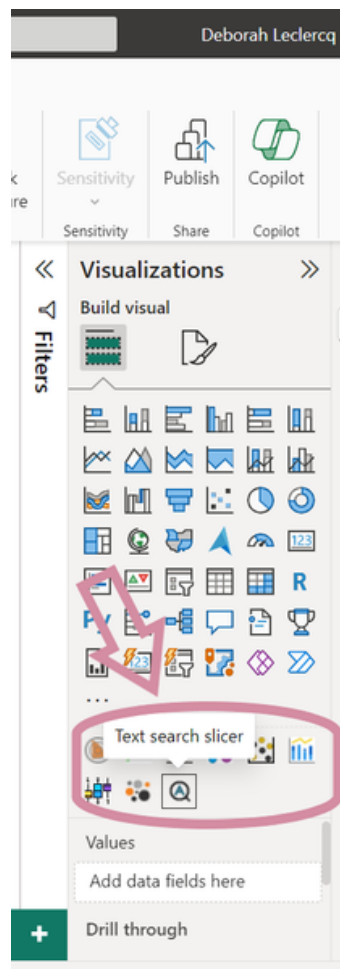
OK

USEFOOL TOOLS

ADD VISUAL FEATURE

STEP 2 - DOWNLOAD AND USE

3 Then this will appear on the visualisations pane underneath the 3 dots with the other visualisations you already downloaded or imported.W

You are now ready to test and use the new visual
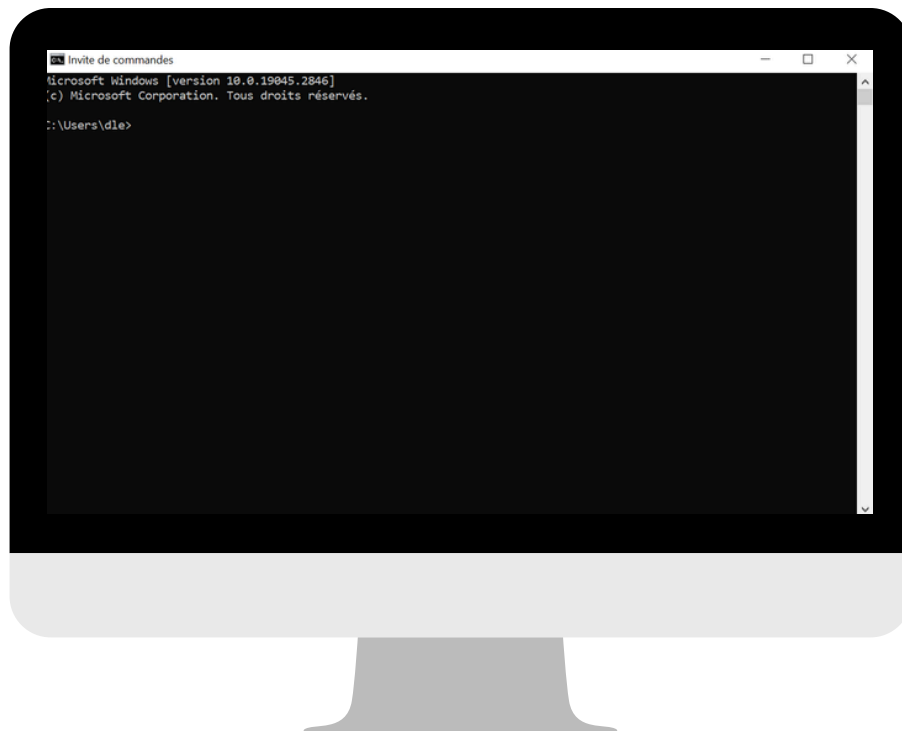You can get help choosing the type of visual fitted to your needs by visiting this website:
https://www.data-to-viz.com/

USE PYTHON IN POWERBI FOR YOUR VISUALS

STEP 1 - INSTALL PYTHON ENV

GOAL

Get your customized visuals using Python coding

1 **Get cmd terminal open**

USE PYTHON IN POWERBI FOR YOUR VISUALS

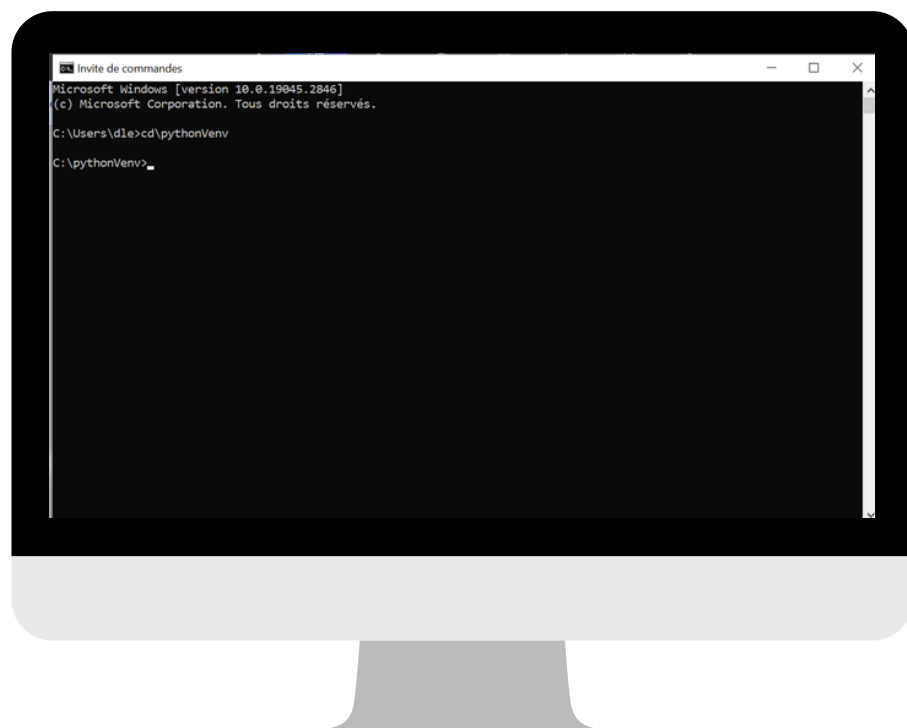## STEP 1 - INSTALL PYTHON ENV

2 **Create a file named Python Software and download Python in it**
For several Python version create subfolders with version names
Create a folder PythonVenv

3 **Go in terminal and use 'cd' + FolderVenv path to go into this folder**

USE PYTHON IN POWERBI FOR YOUR VISUALS

STEP 2 - CREATE PYTHON ENVIRONMENT

1 **Type in this command to create the python env you wish**
Python -m venv + name of your environment
(m stands for module)
- **Activate environment**

Type the following in terminal
Cd +Venv foldername then scripts \activate
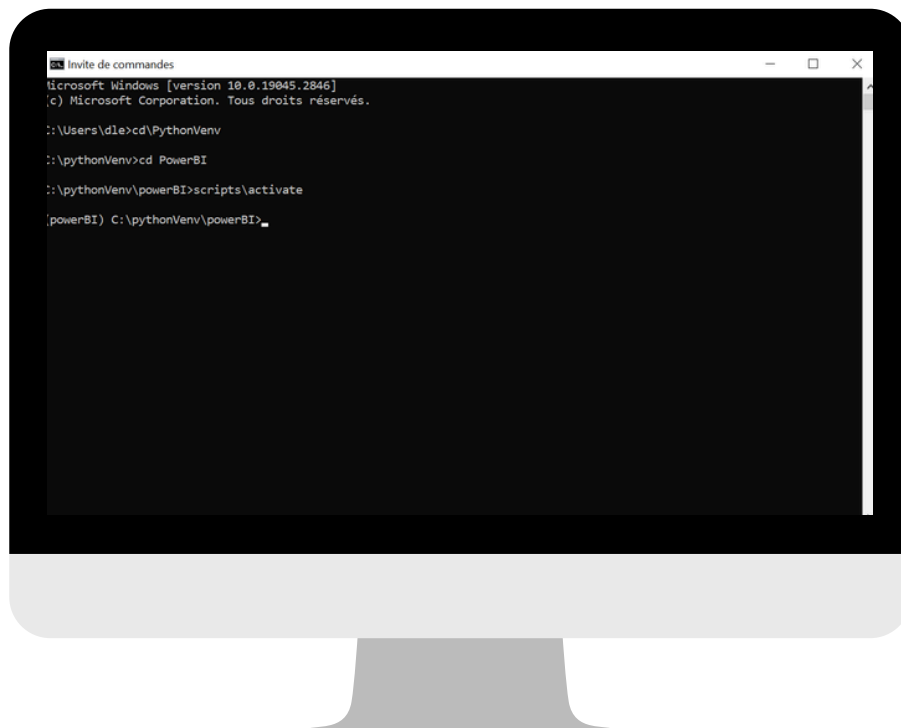
- **Deactivate environment**
scripts\deactivate

USE PYTHON IN POWERBI FOR YOUR VISUALS

STEP 3 INSTALL REQUIRED LIBRARY

1

Type in /
pip install + library you need to include to be able to use for your python visual
Here for this example we will need:
- **Pandas for Data Analysis**
- **Matplotlib for Data Viz**
- **Seaborn & Request could also be useful**

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USE PYTHON IN POWERBI FOR YOUR VISUALS

STEP 4 POWERBI SETUP

1

Go to your PBI file :
Go on options
- **Python scripting**
- **Python script options**
- **Choose path from your Venv folder and inside select scripts file for home directories settings**

Options

GLOBAL	Python script options

GLOBAL
- Data Load
- Power Query Editor
- DirectQuery
- R scripting
- **Python scripting**
- Security
- Privacy
- Regional Settings
- Updates
- Usage Data
- Diagnostics
- Preview features
- Save and Recover
- Report settings
- Copilot (preview)

CURRENT FILE
- Data Load
- Regional Settings
- Privacy

Python script options

To choose a home directory for Python, select a detected Python installation from the drop-down list, or select Other and browse to the location you want.

Detected Python home directories:

Other

Set a Python home directory:

C:\pythonVenv\powerBI\Scripts   Browse

How to install Python

To choose which Python integrated development environment (IDE) you want Power BI Desktop to launch, select a detected IDE from the drop-down list, or select Other to browse to another IDE on your machine.

Detected Python IDEs:

Default OS program for .PY files

Learn more about Python IDEs

Change temporary storage location

Note: Sometimes, Python custom visuals automatically install additional packages. For those to work, the temporary storage folder name must be written in Latin characters (letters in the English alphabet).

OK   Cancel

Advice =
This is advised to test your code before including it in PBI so that you know this works.

USEFOOL TOOLS

USE PYTHON IN POWERBI FOR YOUR VISUALS

STEP 5 PYTHON CODE IN POWERB

Advice = This is advised to test your code before including it in PBI so that you know this works.
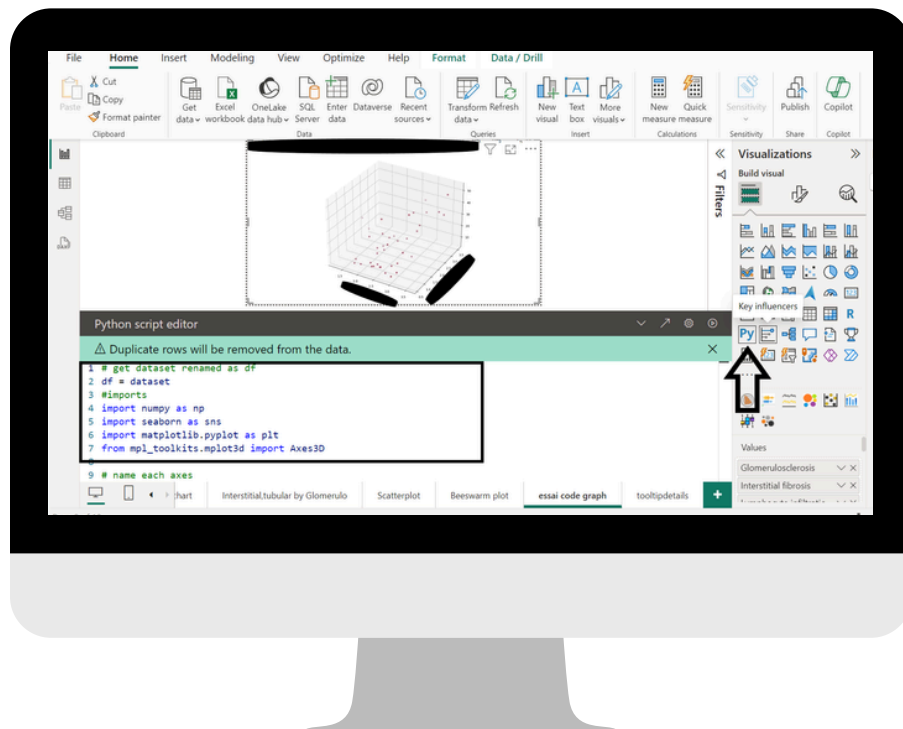
1

Go into your report
In the visualisation pane, select Py
Then include your script.
Ensure you select the data from your columns file in PBI report to create the needed dataset for the visual
As mentioned with the below linked video which I followed, include all needed data and more in case you need to widen your visuals data.

Link to review the steps to create the appropriate environment
https://www.youtube.com/watch?v=cjrRpL9YTnk

CONCLUSION

This manual compiles a series of practical tips to help beginners use Power BI. It brings together all the research and practical applications I have carried out. This will help in better understanding how Power BI works and may also spark an interest in learning more.

ICONS

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Power BI

BOOKS

- **Learning Microsoft Power BI**
  - Writer: Jeremey Arnold
  - Publishing Date : September 2022
  - Publisher : O'Reilly Media, Inc.
- **Power BI Create and Learn**
  - Writer : Roger F. Silva
  - Publishing Date : January 2023
  - Publisher : Create and Learn.

RESOURCES

If you need to dig further into the subject, here below are the resources I used :

- **Getting started with PBI**
  https://learn.microsoft.com/fr-fr/training/modules/get-started-with-power-bi/?WT.mc_id=powerbi_home_inproduct_introcard

- **Link a report to a Sharepoint file**
  https://www.youtube.com/watch?v=TGcS2XRwN70

- **Get HEX color codes**
  https://gradients.app/fr/converter

- **Personalise tooltips in your visuals**
  https://learn.microsoft.com/en-us/power-bi/create-reports/desktop-tooltips?tabs=powerbi-desktop
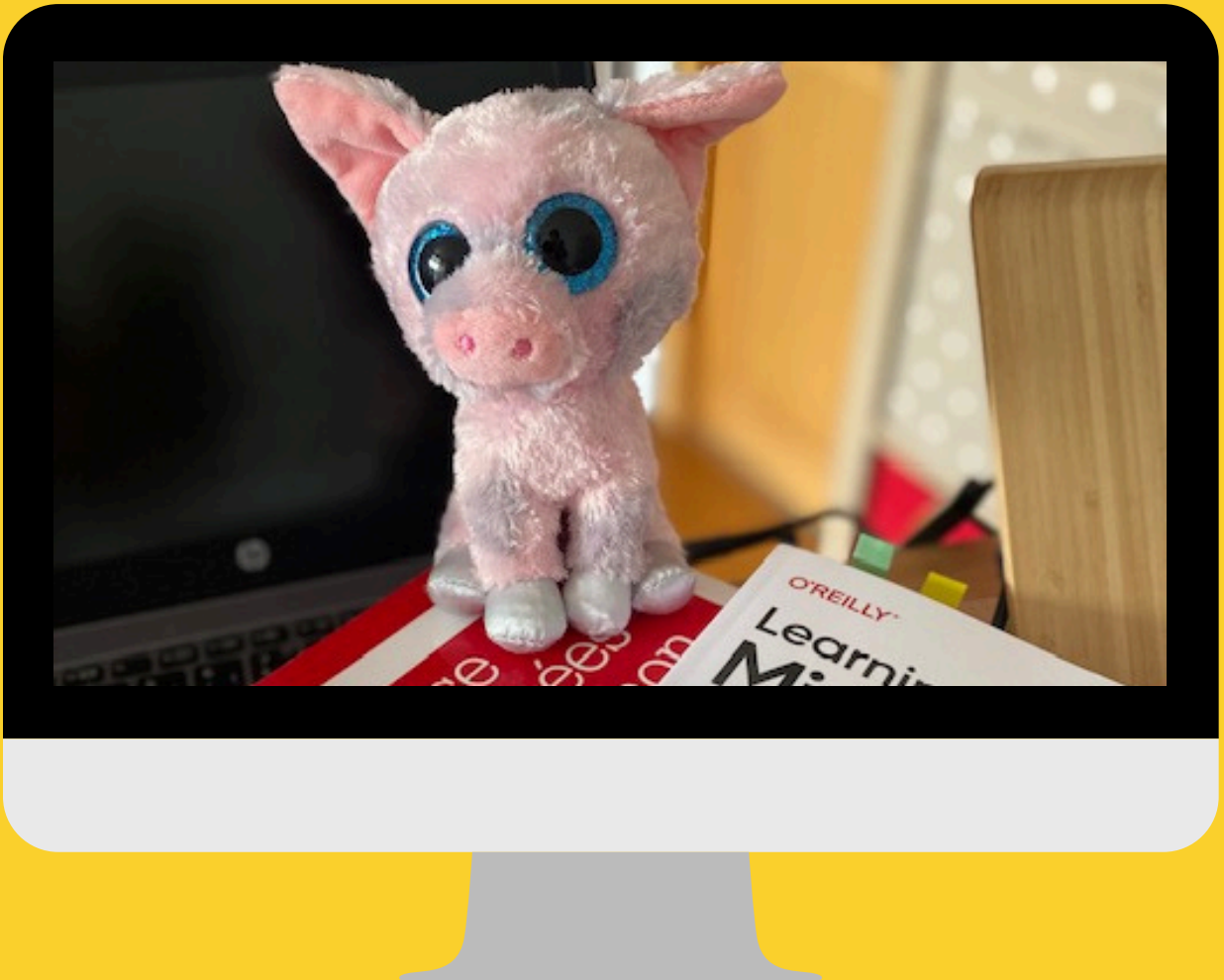
- **Helping you choose the right visual**
  https://www.data-to-viz.com/

HELP

Some corrections and spelling checks made with
https://openai.com/chatgpt/

Power BI

THE
END

2024