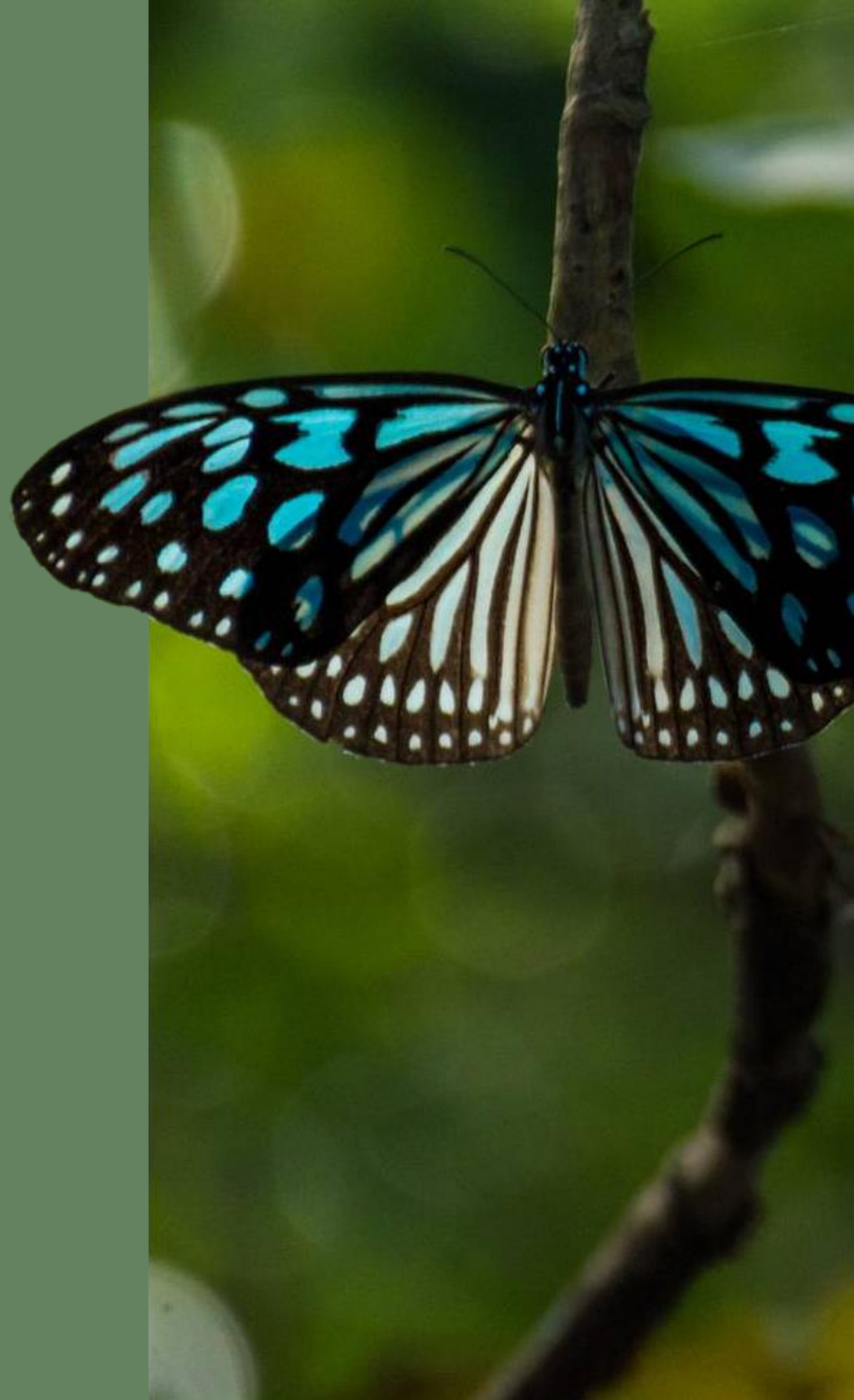
Odeta Jankaitienė

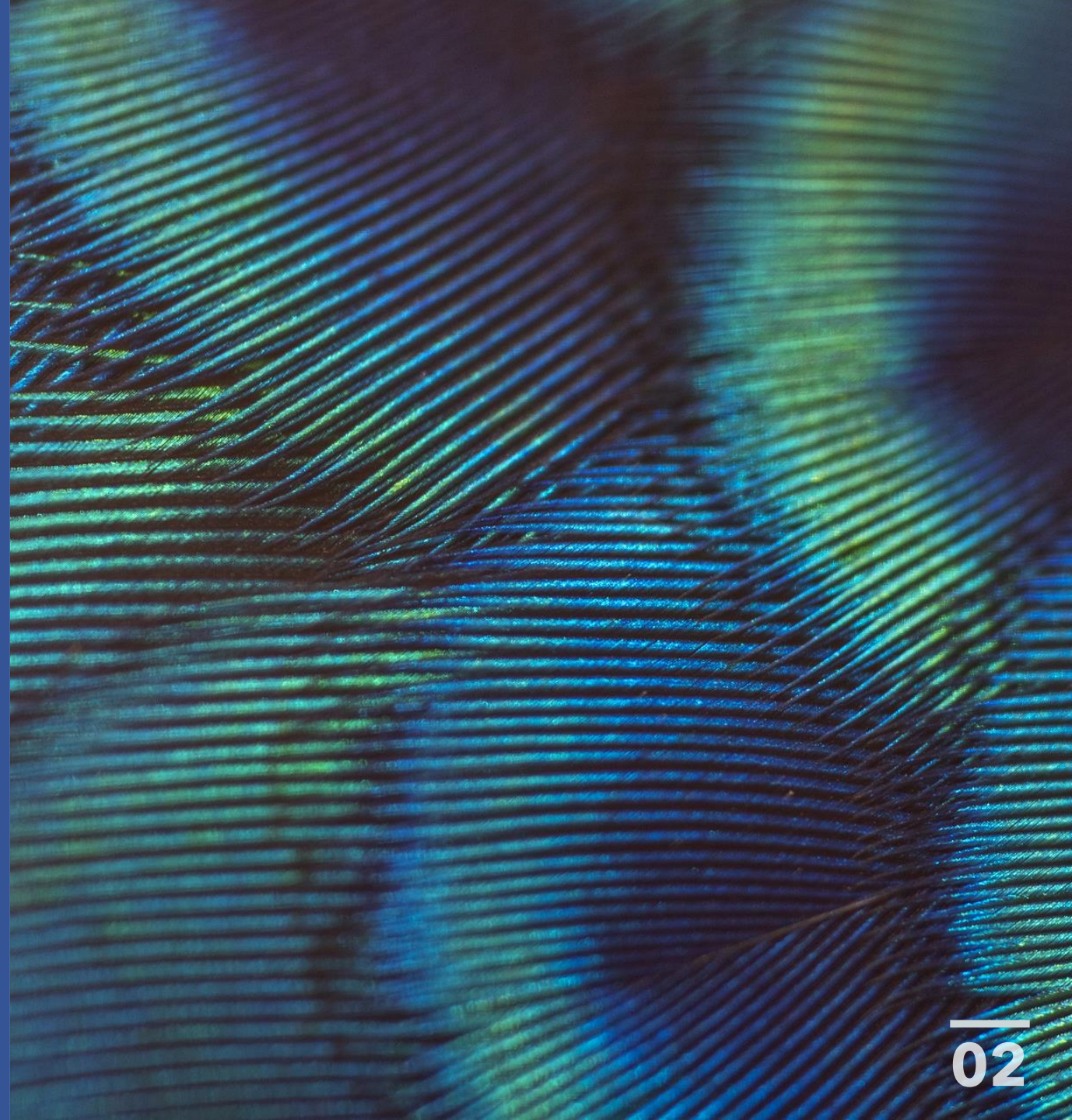
UNLEASHING THE POTENTIAL OF POWER BI

A Hands-On Introduction



Training Description

In this training, you'll learn what Power BI report developer's workflow looks like and how to create the best report for your client.



Odeta Jankaitienė

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/in/odetajankaitiene

DragonsData.com

github.com/Odeta-Jankaitiene

/@dragonsdata

WHO ARE YOU?

WHY DO YOU WANT TO LEARN HOW TO CREATE REPORTS?

Training Outline

01 Part

What is the Purpose of a Report?

02 Part

Get and Connect to Data

03 Part

Transform Data

04 Part

Visualise and Tell a Story

05 Part

Test and Get Feedback

Breaks

- ~**10:30** – 5 mins
- ~**12:00** – 1h lunch, password: PASS
- ~**14:00** – 5 mins
- ~**15:05** – 10 mins
- ~**16:15** – 5 mins

Part 01

What is the Purpose of a Report?

What is the Purpose of a Report?

Before You Start

Problems

What problems or issues do they want to solve?

Right Metrics

Are they looking at the right data? Do they have data?

Audience

Who will be using the report?

Usage

Will they look via desktop or/and mobile?

Part 02

Get and Connect to Data

Topics

What Will You Work With?

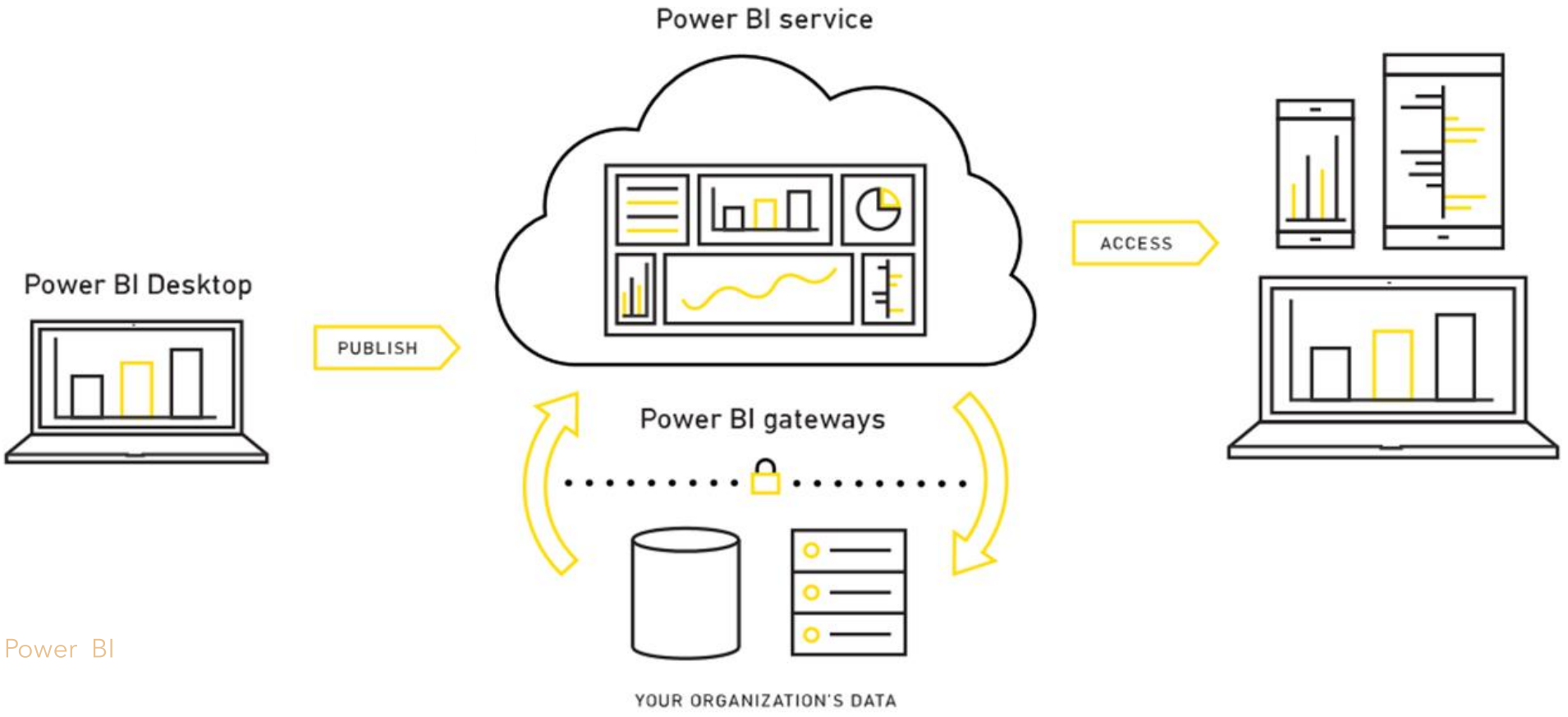
What is Power BI?

Power BI Desktop

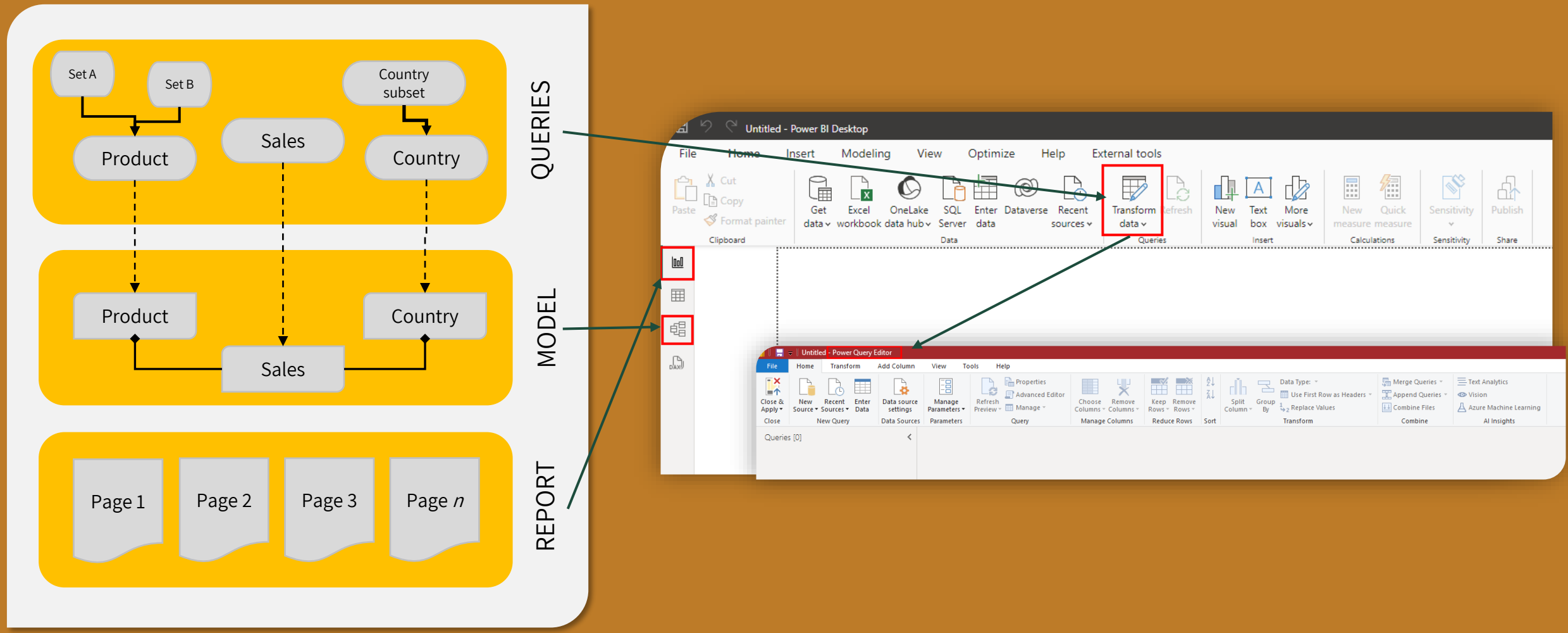
Power BI Service

Connect to Data

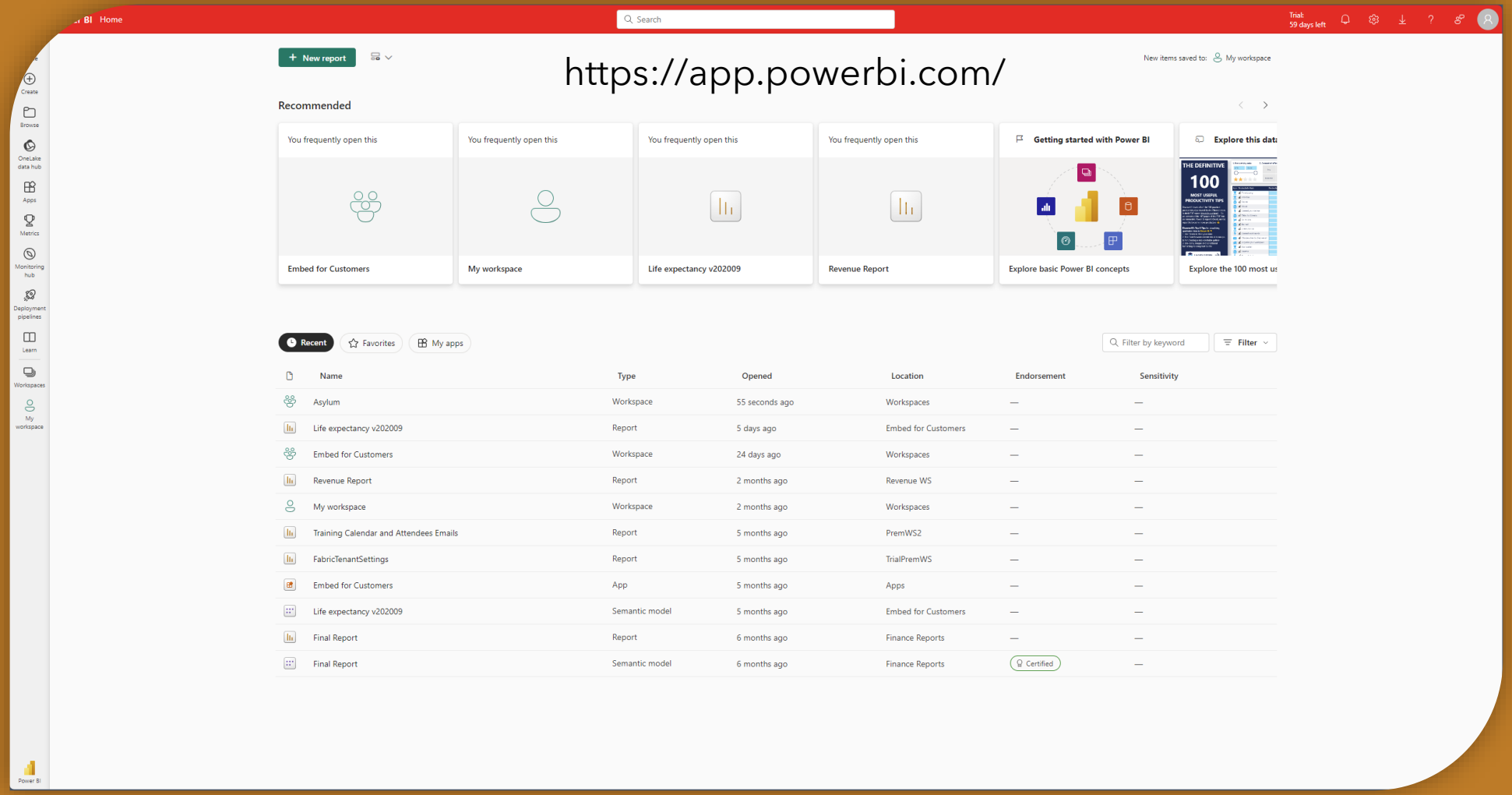
What is Power BI?



What is Power BI Desktop?



What is Power BI Service?



Get Data

First, install Power BI Desktop

Export data from https://github.com/Odeta-Jankaitiene/PBI_Training

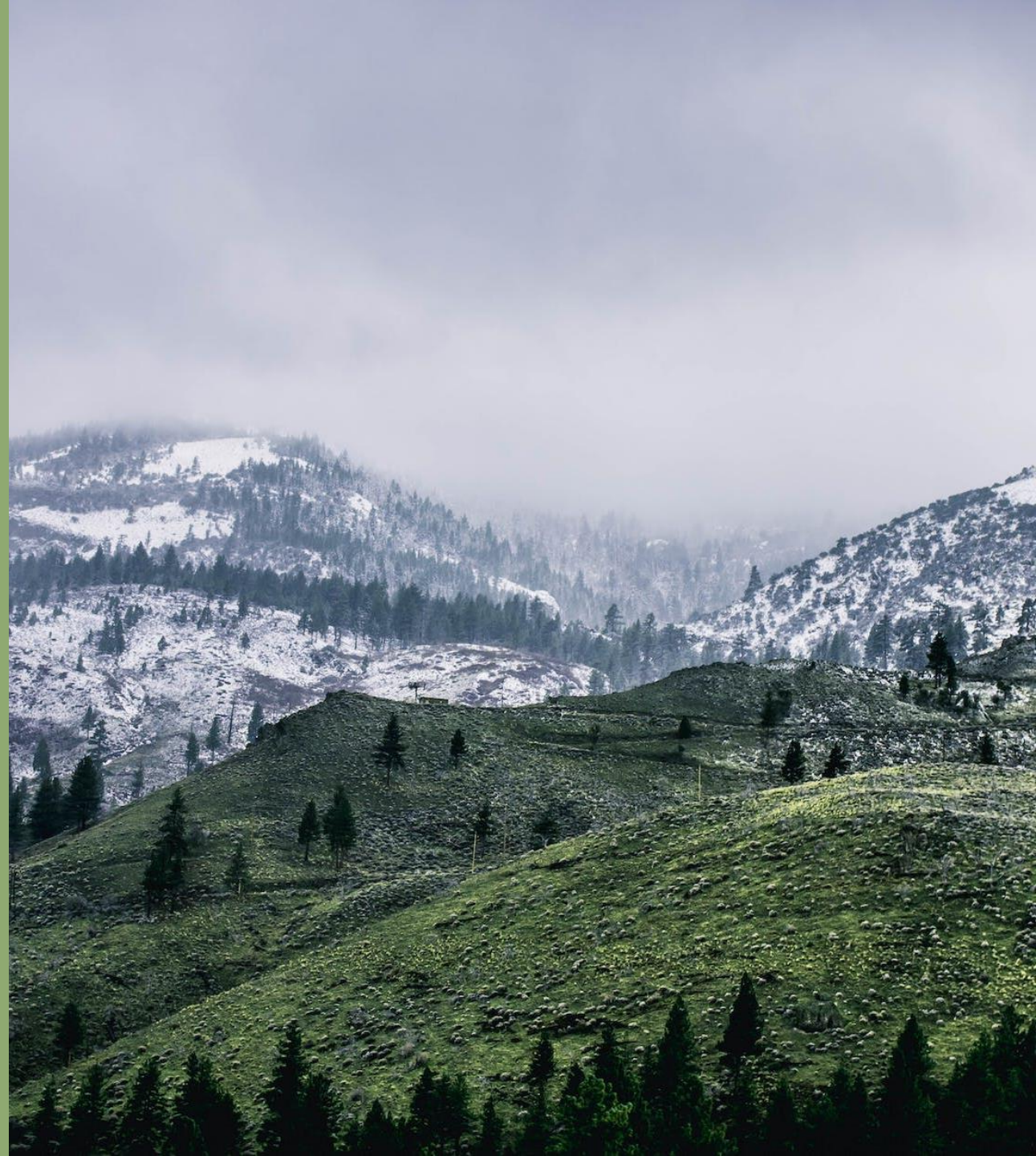
It comes from: kaggle.com

Import data into Power BI Desktop

Change “Regional Settings”
(Current File & Global)

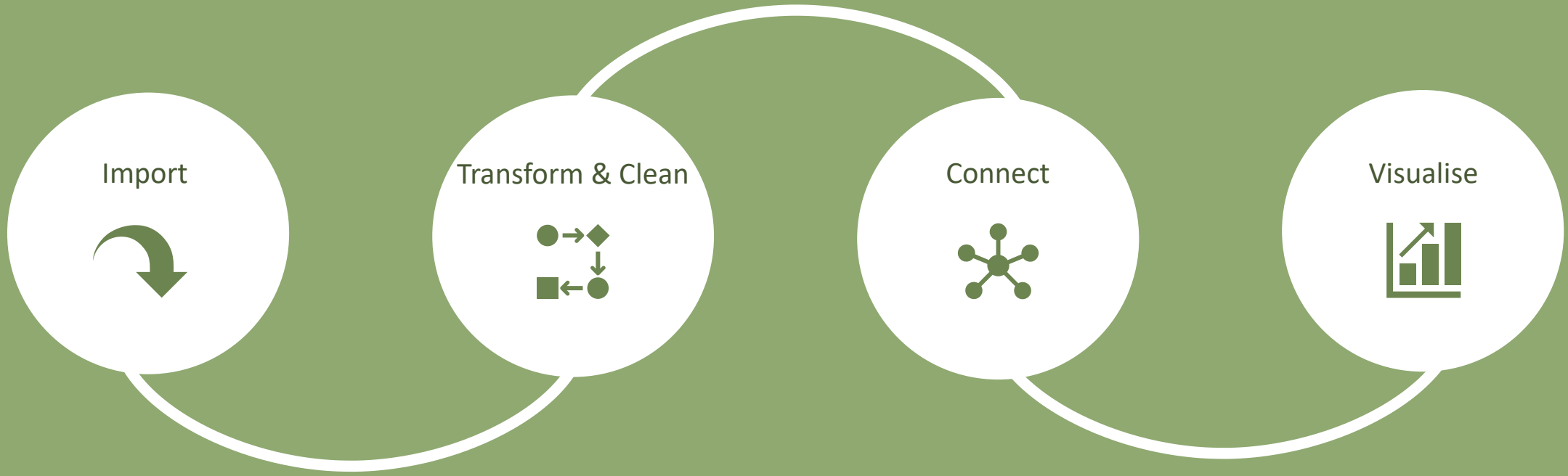
Part 03

Transform Data



Workflow

Start to Build



Tabular Form Table

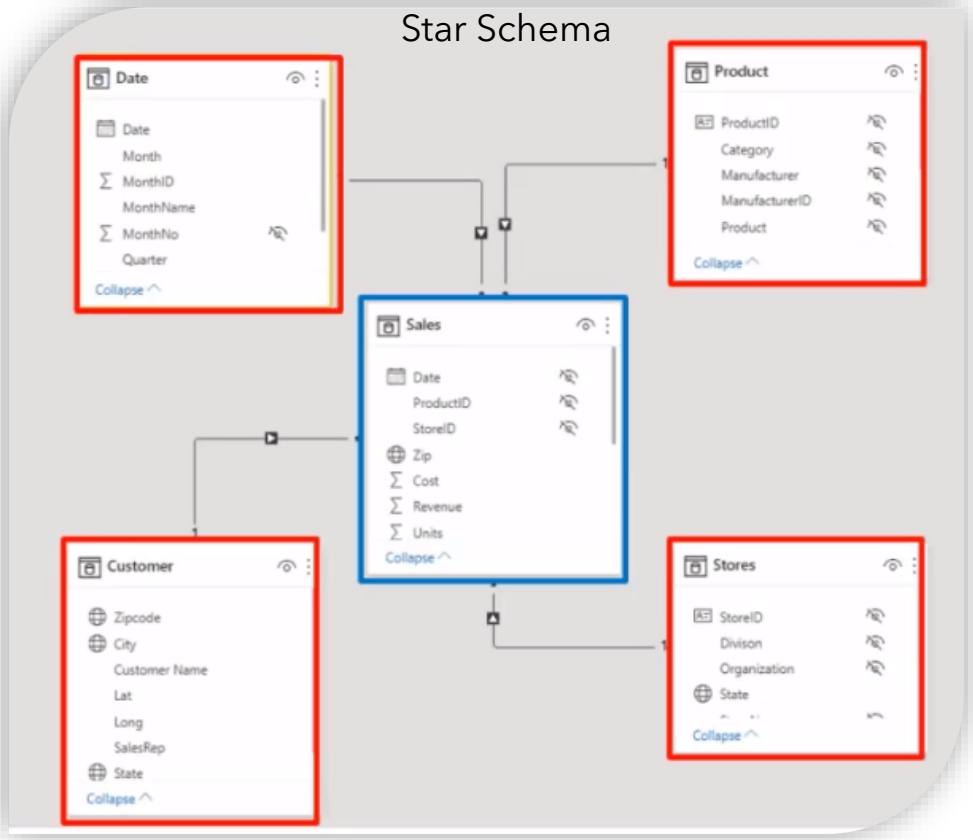
Count of title	Column Labe																													
Row Labels	1975	1978	1983	1987	1993	1994	1996	1997	1998	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Movie	1	1	1	1	1		1	1	1	2	1	1	2	1	1	1	1	1	2	1	1	2				2	4	1	5	23
TV Show						1																1	2	1	1	1	2	2	4	35

type	release_year	Count of title
Movie	1975	1
Movie	1978	1
Movie	1983	1
Movie	1987	1
Movie	2012	1
Movie	2013	2
Movie	2017	2
Movie	2018	4
Movie	2019	1
Movie	2020	5
Movie	2021	23
TV Show	1994	1
TV Show	2013	1
TV Show	2014	2
TV Show	2015	1
TV Show	2016	1
TV Show	2017	1
TV Show	2018	2
TV Show	2019	2
TV Show	2020	4
TV Show	2021	35

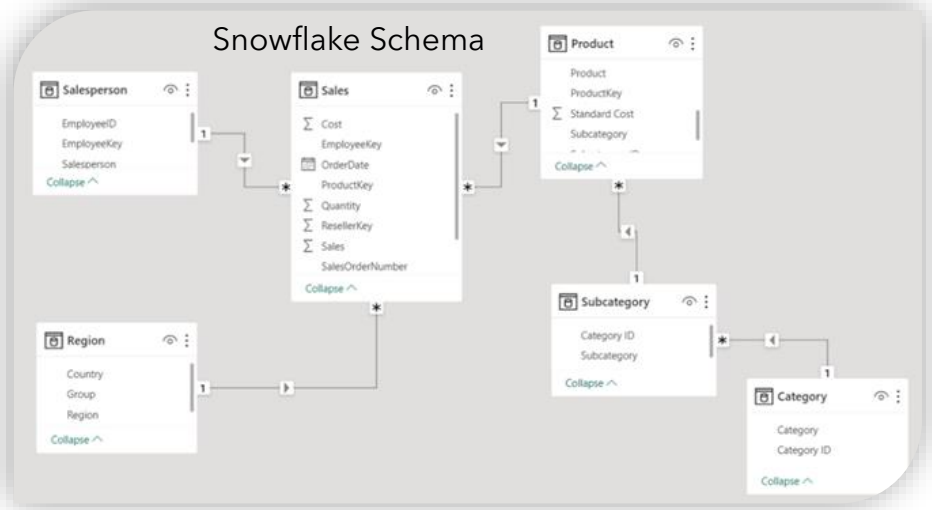
Semantic Model

Star Schema or Snowflake

Star Schema



Snowflake Schema



Relationship Types

1 to 1

Every **individual record** in dataset A is mapped to one **individual record** in dataset B

Dataset A
Customer information

Customer ID	Country
AW000111024	United States
AW00019377	Germany

Dataset B
Customer information

Customer ID	Date of Birth
AW000111024	9 april 1990
AW00019377	9 april 1983

1 to many

One record of dataset A is mapped to **multiple records** in dataset B

Dataset A
Customer information

Customer ID	Country
AW000111024	United States
AW00019377	Germany

Dataset B
Sales Information

Customer ID	Product	Order Quantity
AW00011024	CA-1098	2
AW00019377	BC-M005	1
AW00019377	CA-1098	1
AW00019377	FE-6654	1
AW00019377	HL-U509-B	1
AW00019377	TI-M602	1
AW00019377	TT-M928	1
AW00019377	WB-H098	1

Many to many

Multiple records of dataset A are mapped to **multiple records** in dataset B

Dataset A
Customer information

Customer ID	Store ID	Store Type
AW00011024	ON-1	Online
AW00011024	ST-1	Regional City Store
AW00011024	ST-2	Regional City Store
AW00019377	ON-1	Online
AW00019377	ST-1	Regional City Store
AW00019377	ST-2	Regional City Store

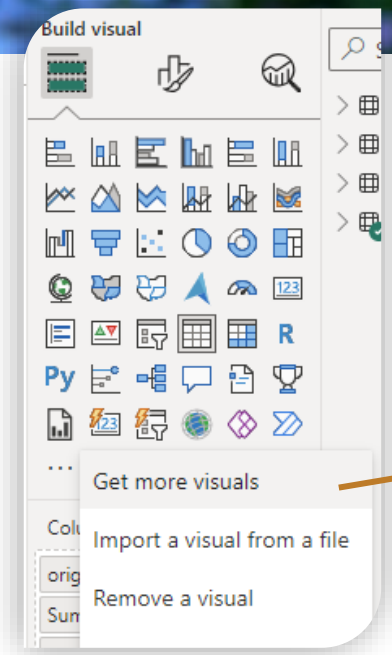
Dataset B
Sales Information

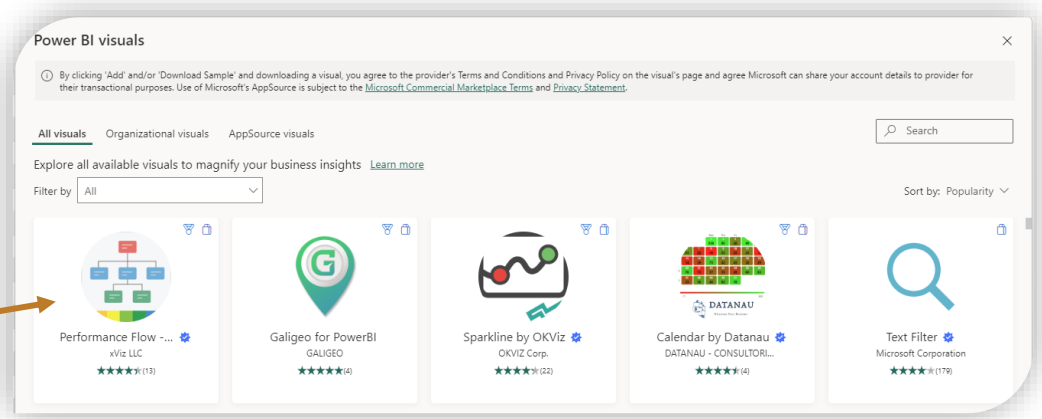
Customer ID	Product	Order Quantity
AW00011024	CA-1098	2
AW00011024	TT-M928	5
AW00019377	BC-M005	1
AW00019377	CA-1098	1
AW00019377	FE-6654	1
AW00019377	HL-U509-B	1
AW00019377	TI-M602	1
AW00019377	TT-M928	1
AW00019377	WB-H098	1

Part 04

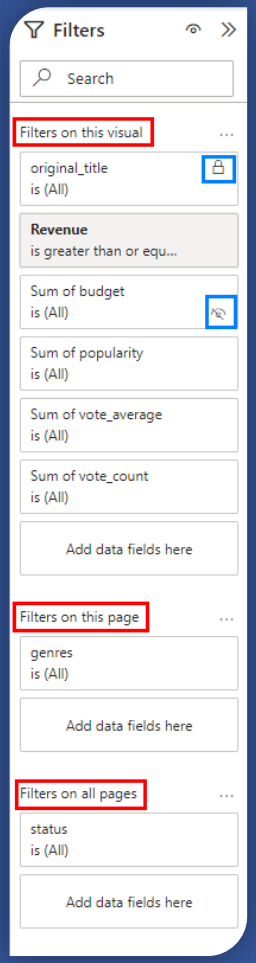
Visualise and Tell a Story

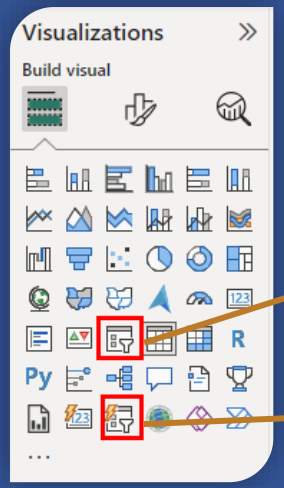
Visuals

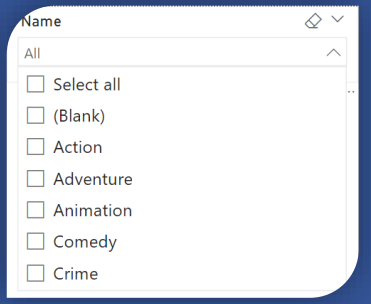

Build visual
Get more visuals
Import a visual from a file
Remove a visual

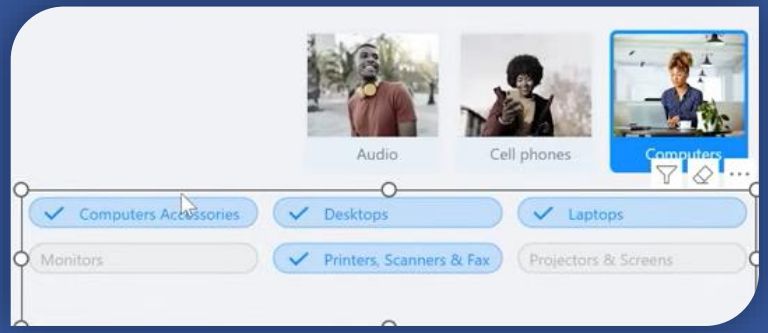

Power BI visuals
All visuals
Organizational visuals
AppSource visuals
Search
Explore all available visuals to magnify your business insights
Learn more
Filter by
All
Sort by: Popularity
Performance Flow -...
xViz LLC
Galigeo for PowerBI
GALIGEO
Sparkline by OKViz
OKVIZ Corp.
Calendar by Datanau
DATANAU - CONSULTORI...
Text Filter
Microsoft Corporation

Filters & Slicers









https://www.youtube.com/@HowtoPowerBI

Create a Report That Tells a Story

Topic 1: Design Principles

Topic 2: Report Themes

Topic 3: Which Chart Type to Use?

Topic 4: Storytelling with Data

Hierarchy

helps prioritise information by using size, colour, and placement to guide the viewer's attention to the most important elements

Hierarchy in Scale

Hierarchy in Colour (intensity or hue)

Contrast

enhances readability by creating differentiation between elements. It can be achieved through colour, font styles, and size variations

Contrast in Colour

Contrast in Size

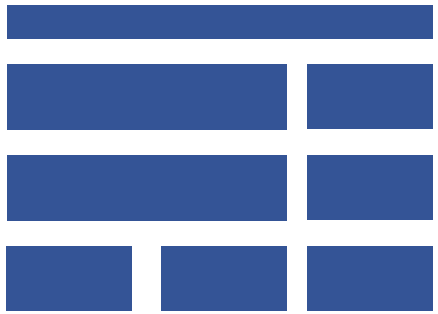
TITLE

Note

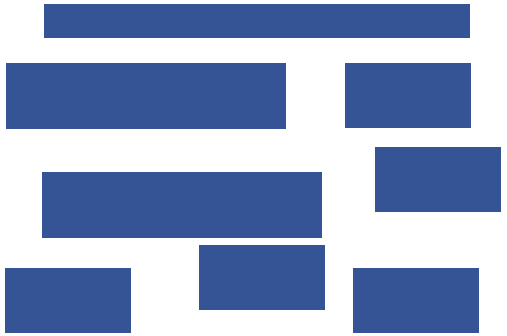
Contrast in Font

Alignment

ensures that elements are visually connected, creating a sense of order and coherence within the report



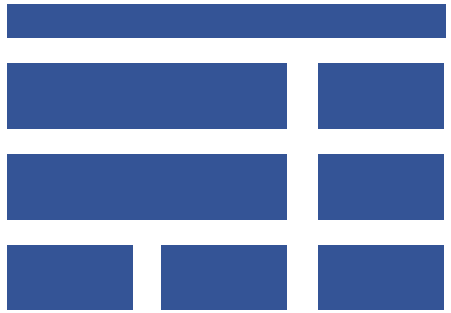
Good Alignment



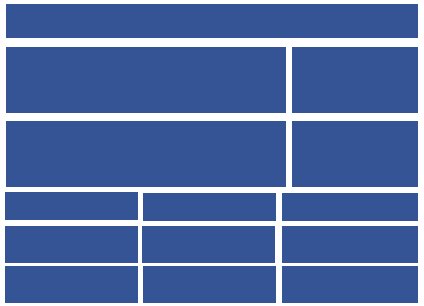
Bad Alignment

White Space

or negative space refers to areas of a design that have no design elements. This space is important for making a design uncluttered and for making various elements stand out.

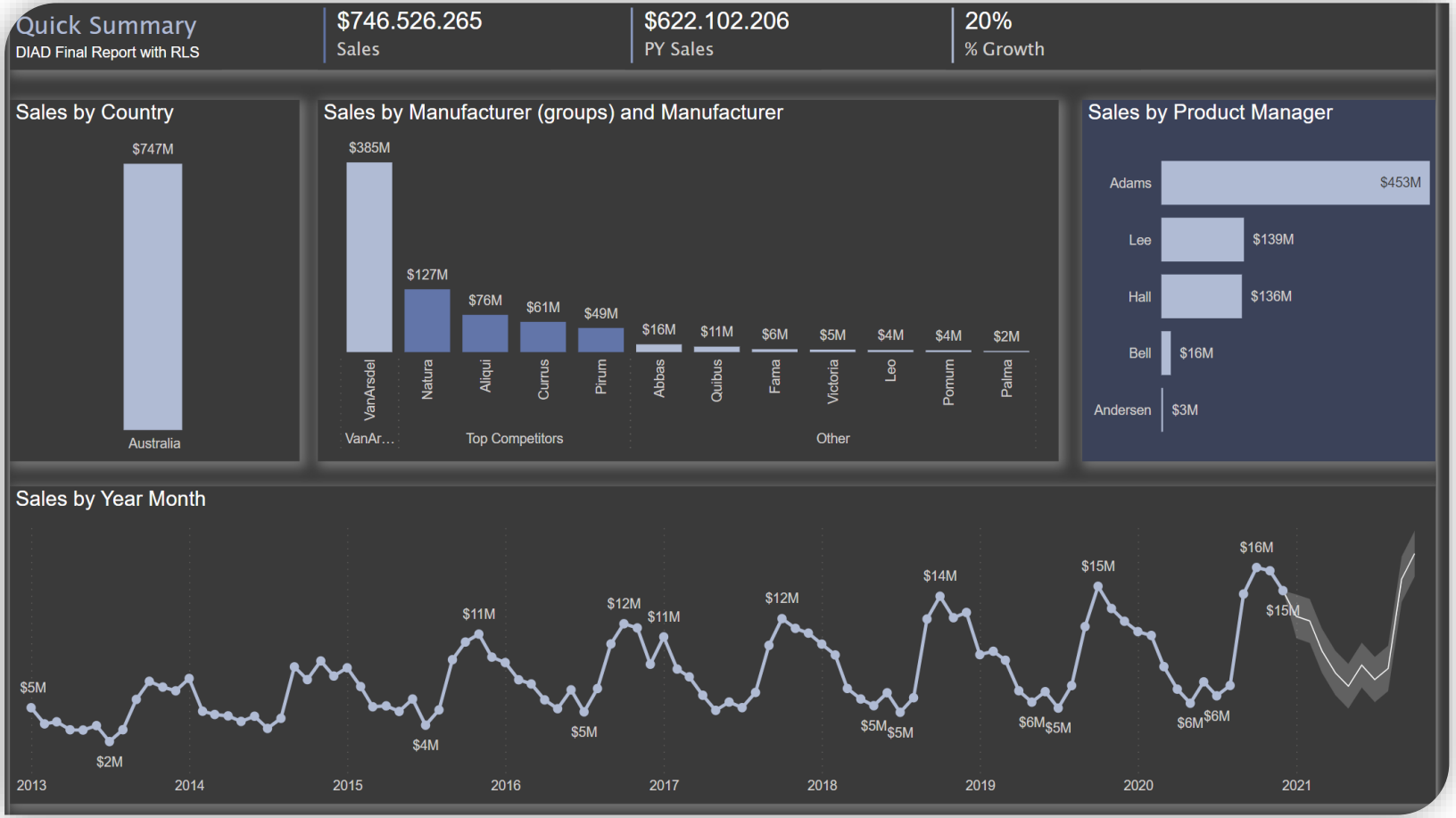


Good White Space Usage



Bad White Space Usage

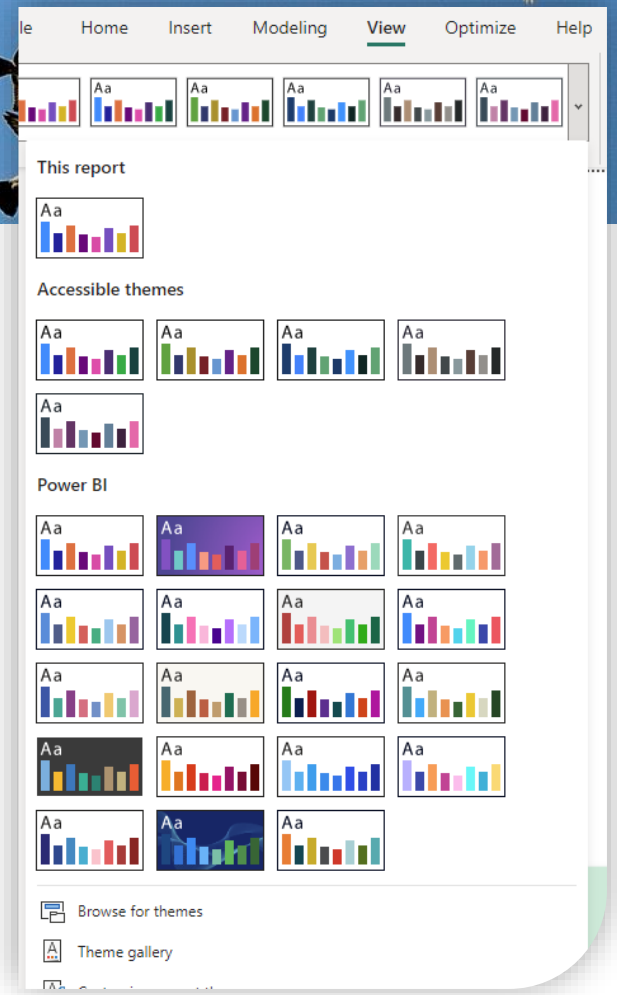
Report Example



Report Themes

Use the default Power BI report theme or your own

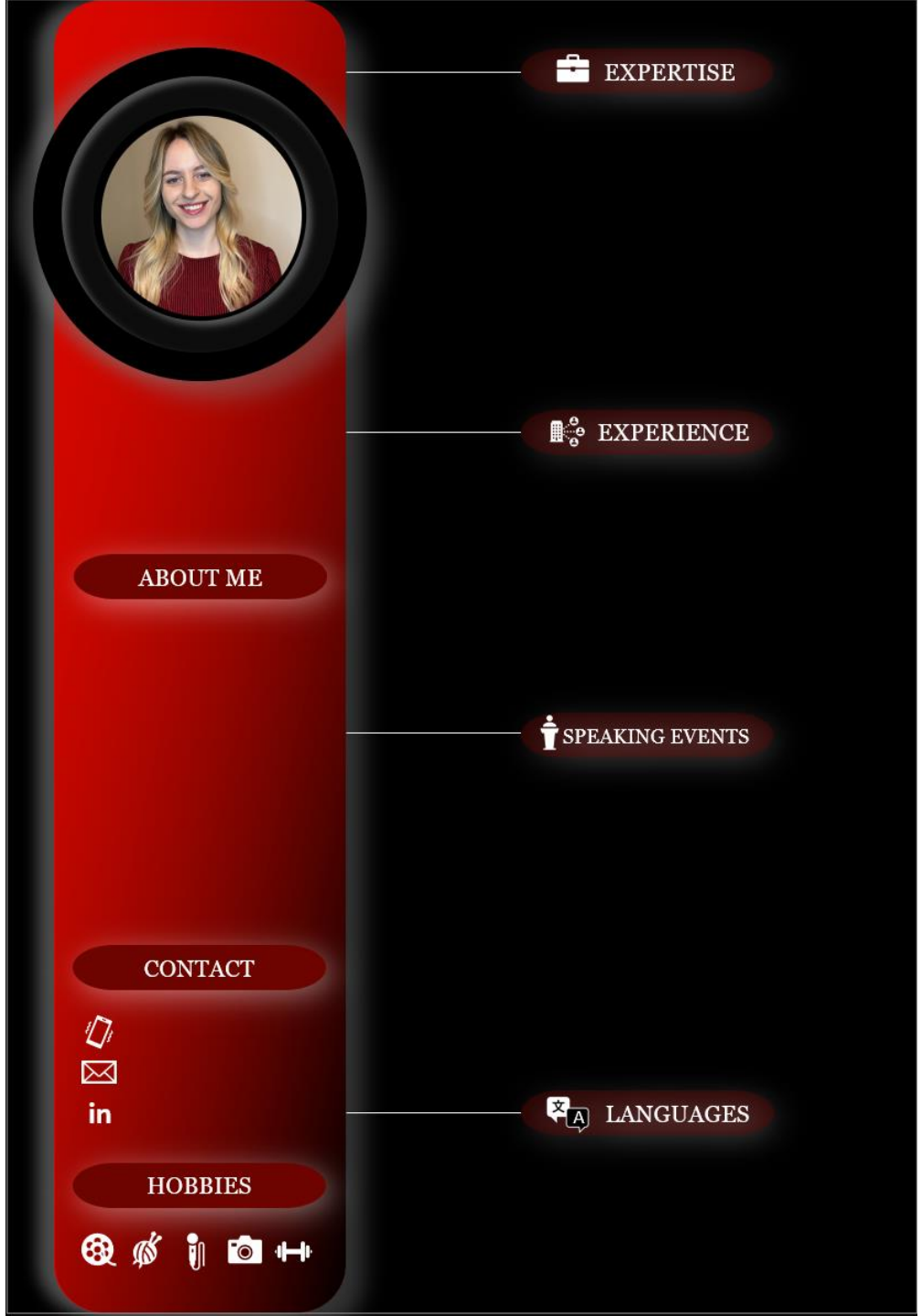
- Import your exported custom theme or created (JSON file), e.g., use theme builder at PowerBI.tips
- Import themes from the Github repository, e.g., deldersveld/PowerBI-ThemeTemplates
- Import themes from Microsoft Power BI Community Themes Gallery



Theme Example


```
{"name":"Macaw",
 "dataColors":["#FFC000","#000000","#FFFFFF","#9E998F","#CDC7C2","#FBD200","#FFEA00"],
 "bad":"#C4151C","neutral":"#E67A1D","good":"#5A8D31",
 "textClasses":{"label":{"fontFace":"Assistant","fontSize":12},"callout":{"fontFace":"Assistant"},"title":{"fontFace":"Assistant","fontSize":13},"header":{"fontFace":"Assistant"}},
 "visualStyles":
    {"*":
        {"*":{
            "background":[{"color":{"solid":{"color":"#FFFFFF"}},"transparency":0}],
            "outspacePane":[{"backgroundColor":{"solid":{"color":"#FFFFFF"}},"transparency":0,"checkboxAndApplyColor":{"solid":{"color":"#CDC7C2"}}}],
            "filterCard":[{"$id":"Applied","backgroundColor":{"solid":{"color":"#FBD200"}},"transparency":62}]
        }},
    "page":
        {"*":{
            "background":[{"color":{"solid":{"color":"#CDC7C2"}},"transparency":80}],
            "outspace":[{"color":{"solid":{"color":"#FFFFFF"}},"transparency":0}]
        }}
    }
}
```


Backgrounds & Layout



Where to Get Inspiration From?

- Look at websites (don't forget that many people use the term "dashboard" instead of "report"):
  - *Dribbble*
  - *Freepik*
  - *Adobe Stock*
- You can replicate the design in PowerPoint or another design tool
- Use icons
  - From PowerPoint (Insert -> Illustrations: Icons)
  - Flaticon

Visualisation

Which Data Type to Use?

Data Types:

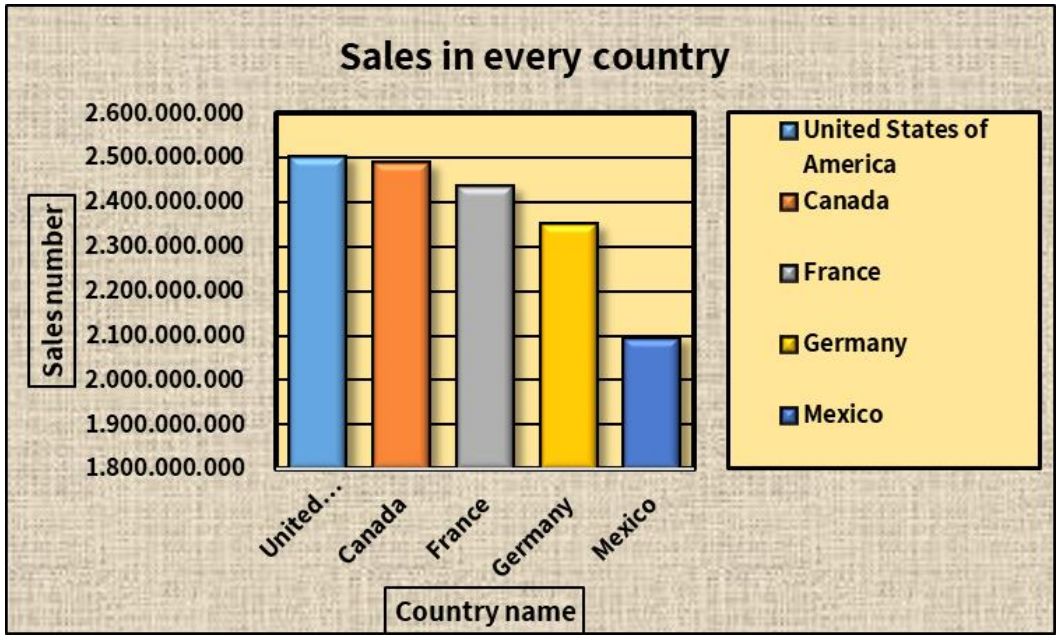
- **Quantitive**: numbers (e.g., revenue)
- **Ordinal**: can be ranked but not aggregated (e.g., clothes sizes S, M,…)
- **Nominal**: categories (e.g., electronic devices)

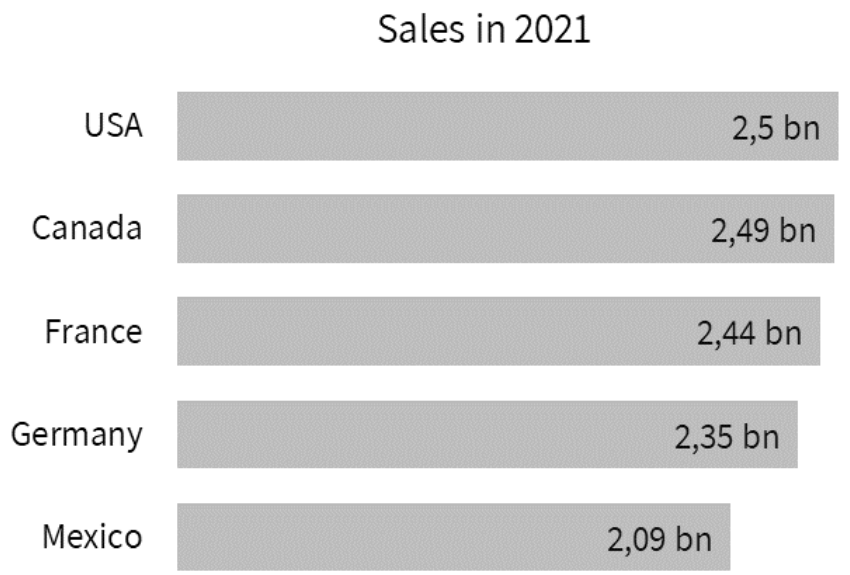
more effective

less effective

Quantitative	Ordinal	Nominal
position	position	position
length	color intensity	color hue
slope	color hue	color intensity
size	length	shape
color intensity	slope	length
color hue	size	slope
shape	shape	size

Focus On Data





Storytelling with Data

Tell a Story

Structure your report in a way that guides the audience through the data and tells a coherent story.

Additional Information

Begin with a clear introduction, provide context for the data, and outline the objectives of the report.

Storytelling Techniques

Incorporate storytelling techniques such as using headlines, annotations, and callouts to highlight key insights and engage the audience emotionally

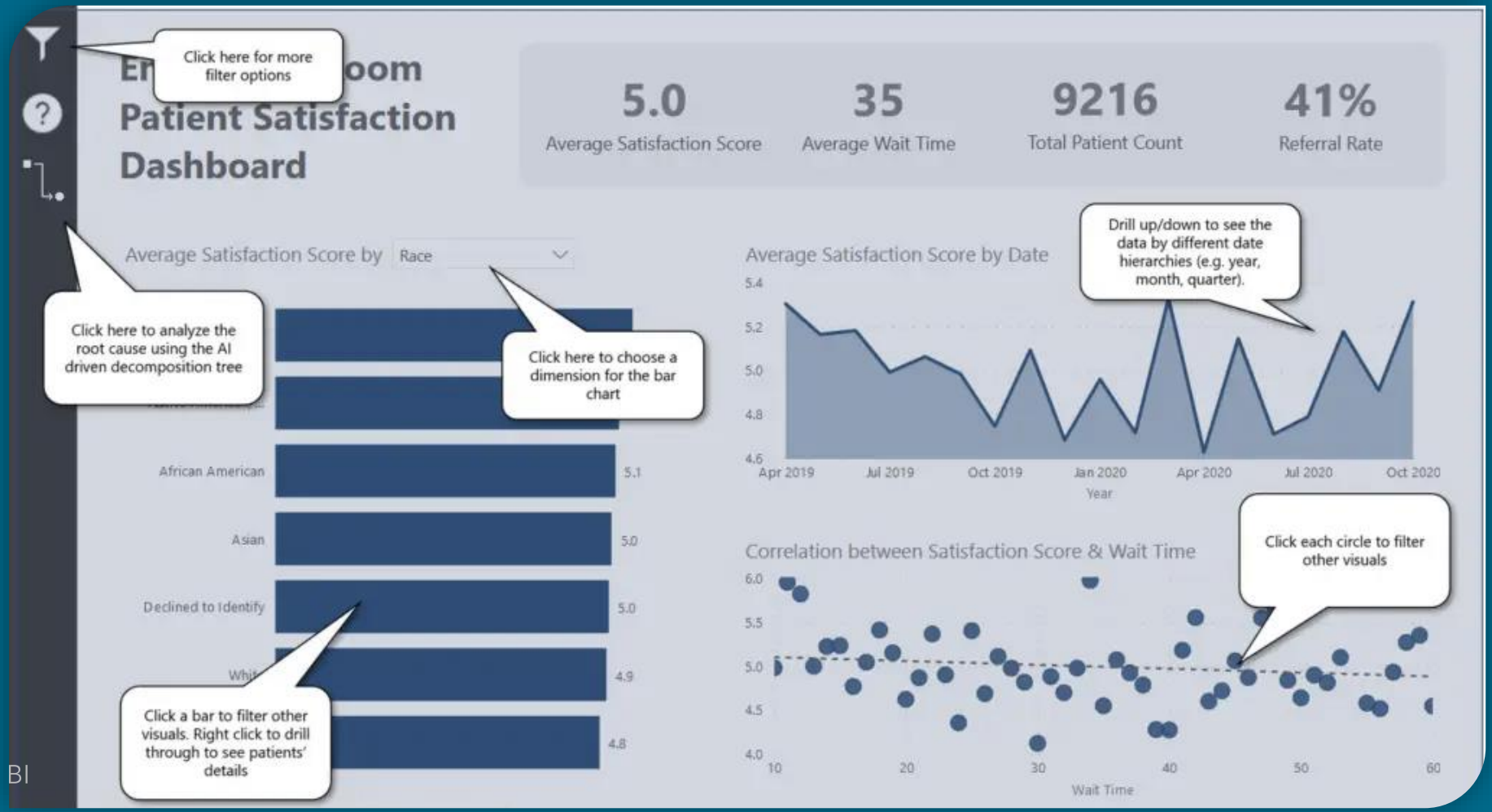
Part 05

Test and Get Feedback

Test & Feedback

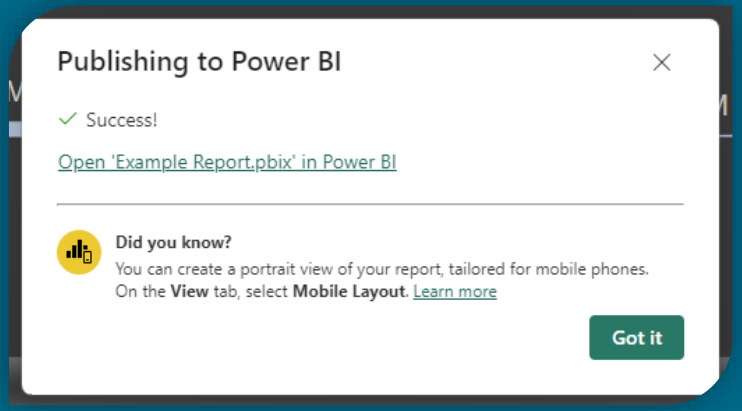
- Test the report's usability with different user roles and gather feedback
- Train or/and describe how to use the report

Callouts Example – Information Panel



stuffbyyuki.com

Publish & Share Your Report



Power BI Service

What Needs to Be Done?

Workspace
Create a workspace

Publish
Publish the report to the workspace

App
Create an app

Share
Share the app with report users

Teach
Teach them how to use it

Feedback
Gather feedback and make necessary adjustments

Training Summary

- Figure out what the purpose of the report is. Invest time in this!
- Make a tabular form & use star schema
- Data should be transformed as far upstream as possible and as far downstream as necessary
- Tell a story and use as simple visuals as possible
- Test and ask for feedback
- Train or describe how to use the report

Thank You For Participating!

Useful Links

For future learning

- Guy in a Cube – YouTube
- SQLBI – YouTube
- How to Power BI – YouTube
- Power BI Blog– Microsoft Power BI
- Design principles https://254-online.com/
- Theme builder PowerBI.tips
- For inspiration *Dribbble*, *Freepik*, *Adobe Stoc*
- Icons Flaticon
- storytelling with data