

Augmented volume (march 25)

Start with PowerBI

“From Rookie to Rock”

35 tips
explained
step by step
to practice

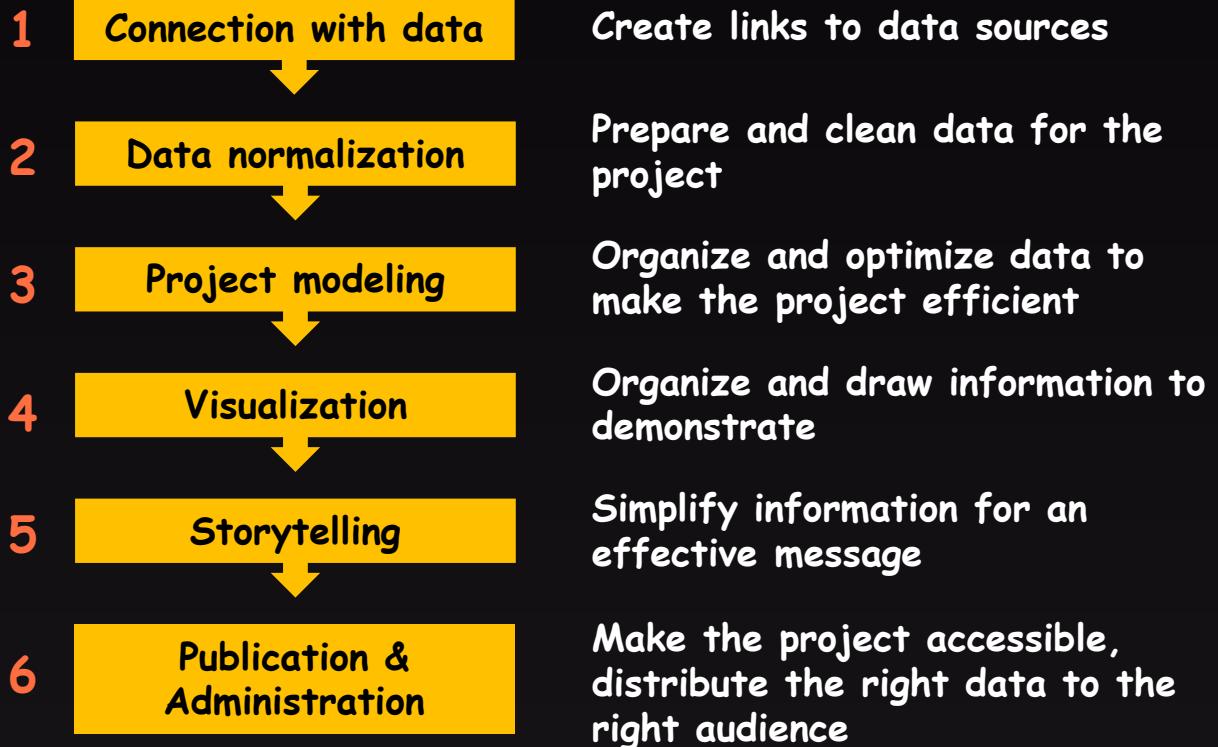
The Complete Guide

- 1 Connection with data
- 2 Data normalization
- 3 Project modeling
- 4 Visualization
- 5 Storytelling
- 6 Publication & Administration





6 steps to perform a PowerBI project



Start with PowerBI

“From Rookie to Rock”



Step 1, Connection with data

- 1 Connection with data
- 2 Data normalization
- 3 Project modeling
- 4 Visualization
- 5 Storytelling
- 6 Publication & Administration



5 really useful connectors

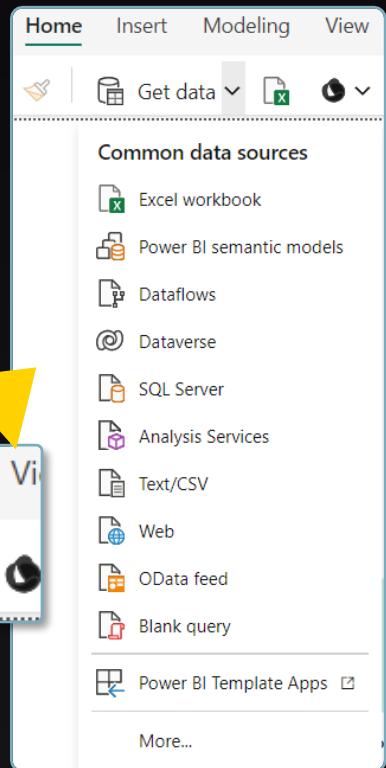
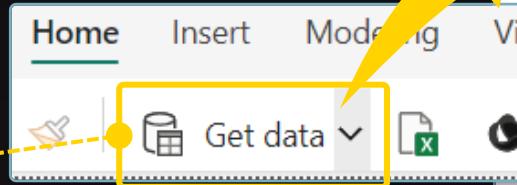


There are so many possibilities to connect with data source types in PowerBI.

To get started...

- ✓ Excel file
- ✓ CSV file
- ✓ Folder of files
- ✓ Web site source
- ✓ SQL source

In the "home" menu...
Selecting a connector gives access to PowerQuery



1

Connection with Excel file



Select the connector <>

1 All sheets in the Excel file are displayed here. Select one (or more) sheet(s).

2 The contents of the selected sheet are displayed here.

Patou Tip: The "transform data" button is really interesting to check the quality of your data for yourself. See "Patou Tips #16 (step 2)" for more information.

Navigator

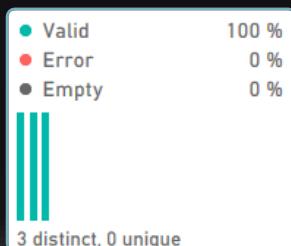
Display Options

DimIncomeStatement.xlsx [3]

- Sheet1
- Sheet2
- Sheet3

Column1
Income Statement
Sales
Sales
COGS
COGS
Gross Profit
Gross Profit

Load Transform Data Cancel



2

Connection with CSV file



Select the connector << Text/CSV >>

productID	productName	quantityPerUnit	unitPrice	discontinued	categoryID
1	Chai	10 boxes x 20 bags	18	0	1
2	Chang	24 - 12 oz bottles	19	0	1
3	Aniseed Syrup	12 - 550 ml bottles	10	0	2
4	Chef Anton's Cajun Seasoning	48 - 6 oz jars	22	0	2
5	Chef Anton's Gumbo Mix	36 boxes	21.35	1	2
6	Grandma's Boysenberry Spread	12 - 8 oz jars	25	0	2
7	Uncle Bob's Organic Dried Pears	12 - 1 lb pkgs.	30	0	7
8	Northwoods Cranberry Sauce	12 - 12 oz jars	40	0	2
9	Mishi Kobe Niku	18 - 500 g pkgs.	97	1	6

1

Patou Tip: Use the format "65001: Unicode (UTF-8)", when you have data with accentuation like French, Spanish languages...

2

Select the delimiter (could be a coma "," or a semicolon ";")

3

Connection with a folder of files (1/2)



Select the connector « Folder »

Note: This connector works with many file formats; Excel, CSV, PDF...

- 1 Select your folder

Folder

1

Folder path

C:\Users\Personnel\OneDrive\Documents\Patou Tips (Start PowerBI)

- 2 The contents of the folder (files) is displayed here.

C:\Users\Personnel\OneDrive\Documents\Patou Tips\Ch...

Content	Name	Extension	Date accessed	Date modified	Date created
Binary	orders.csv	.CSV	17/11/2024 18:07:42	08/05/2023 15:12:56	17/11/2024 18
Binary	order_details.csv	.CSV	17/11/2024 18:07:42	08/05/2023 15:12:56	17/11/2024 18
Binary	products.csv	.CSV	17/11/2024 17:28:07	08/05/2023 15:12:56	17/11/2024 17
Binary	shippers.csv	.CSV	17/11/2024 18:07:42	08/05/2023 15:12:56	17/11/2024 18

2

- 3 Select the "combine and transform data" button

Combine >

Load

Trans

Combine & Transform Data

Combine & Load

3

Connection with a folder of files (2/2)

**1**

See tip #2,
"Connection
with CSV file"

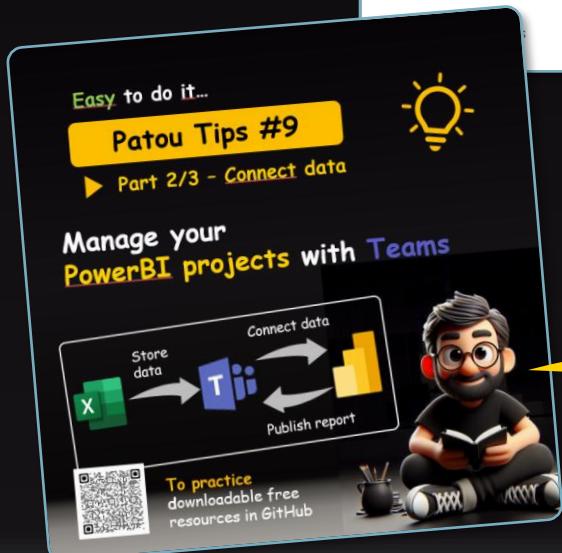
Combine Files

Specify the settings for each file. [Learn more](#)

File Origin: 1252: Western European (Windows) Delimiter: Comma Data Type Detection: Based on first 200 rows

orderID	customerID	employeeID	orderDate	requiredDate	shippedDate	shipperID	freight
10248	VINET	5	2013-07-04	2013-08-01	2013-07-16	3	32.38
10249	TOMSP	6	2013-07-05	2013-08-16	2013-07-10	1	11.61
10250	HANAR	4	2013-07-08	2013-08-05	2013-07-12	2	65.83
10251	VICTE	3	2013-07-08	2013-08-05	2013-07-15	1	41.34
10252	SUPRD	4	2013-07-09	2013-08-06	2013-07-11	2	51.3

OK Cancel



Discover "Patou Tips #9"
to connect PowerBi with
Teams (or Sharepoint)

Start with PowerBI

"From Rookie to Rock"

Step 1, Connection with data

4

Connection with a Web site source



Select the connector <<



>>

1 Paste the Web site address. Here a Web site with a list of "300 best movies of all the time".

2 Select the object to display

3 The contents of selected object is displayed here. Great it's the list that we wanted!

4 Select the "transform data" button

From Web

Basic Advanced

JRL

https://editorial.rottentomatoes.com/guide/best-movies-of-all-time/

Table View Web View

Navigator

Display Options

HTML Tables [3] Table 1

Table 2
Table 3

Suggested Tables [4]

Table 4
Table 5
Table 6
Table 7

Text [2]

HTML Code
Displayed Text

Add Table Using Examples

1. 99% L.A. Confidential (1997)
2. 97% The Godfather (1972)
3. 99% Casablanca (1942)
4. 100% Seven Samurai (1954)

5. 99% Parasite (2019)

HOME BOX OFFICE TV DVD MORE

Load Transform Data Cancel

Start with PowerBI

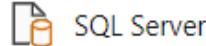
"From Rookie to Rock"

Step 1, Connection with data

5

Connection with a SQL source

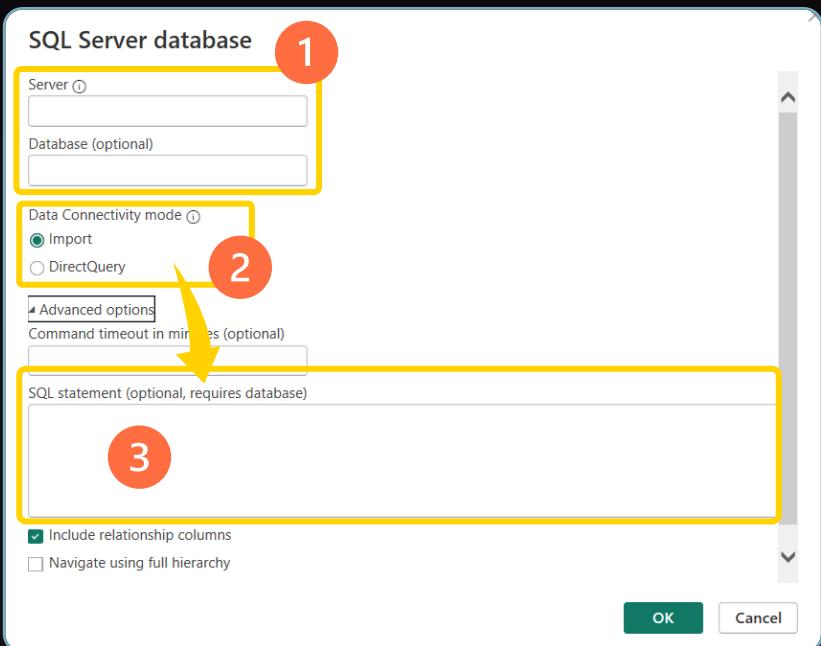


Select the connector <>  SQL Server >>

1 Specify the SQL Server address

2 Select the connection mode. Select "import" to always keep the data in PowerBI or "DirectQuery" for continuous refresh.

3 It is better to create a SQL statement to limit each query.



To go further...



6 great ressources!



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"From Rookie to Rock"

Step 1, Connection with data

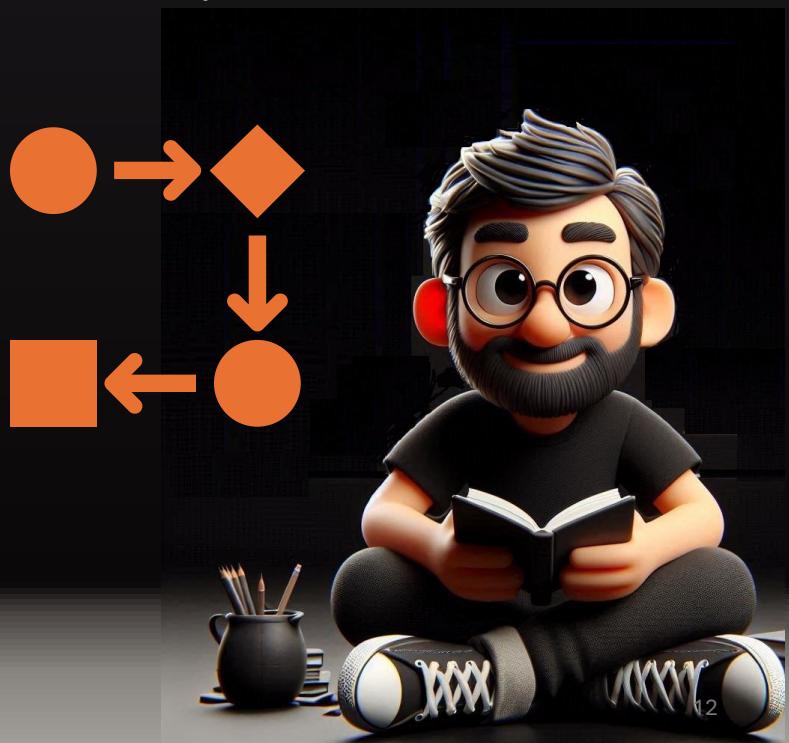
Start with PowerBI

“From Rookie to Rock”



Step 2, Data normalization

- 1 Connection with data
- 2 Data normalization
- 3 Project modeling
- 4 Visualization
- 5 Storytelling
- 6 Publication & Administration





About this step...

After connecting the data (see Patou Tips #15), to prepare and clean the project data, we start in PowerQuery...

The screenshot shows the PowerBI PowerQuery interface. The top ribbon has tabs like Home, Transform, Add Column, View, Tools, and Help. The main area is divided into several panes:

- Data pane (1):** Shows the data source structure with Fact table [2], Fct_order_details, Fct_Orders, Dimension [5] (Dim_Categories, Dim_Customers, Dim_Employees, Dim_Products, Dim_Shippers), and Support table [3] (Table_Flags, Table_Flags (Employees), Table_TableCountryCode). A red circle labeled 1 points to the 'New Query' button.
- Query pane (2):** Shows the current query steps. A red circle labeled 2 points to the pane itself.
- Data window (3):** Displays a preview of the data with columns like Freight, EmployeeID, and OrderDate. It includes a column profile for 'Freight' showing 830 distinct values. A red circle labeled 3 points to the preview area.
- Transformation history (5):** Shows the applied steps: 'Source', 'En-têtes promus', 'Type modifié', and 'Valeur remplacée'. A red circle labeled 5 points to the 'Type modifié' step.

PowerQuery is a powerful ETL (Treat, Transform, Load) inside PowerBI (and Excel)

1 Functions pane

2 Query pane

3 Formula window

4 Data window

5 Transformation history

Start with PowerBI

"From Rookie to Rock"

Step 2, Data normalization

5 data normalization rules

+ 1 « Power Patou Tip »



 Before preparing your data in Power Query, it is necessary to understand the business needs and the business codes of your future users (HR, finance, sales, etc.).

- ✓ 1 → Understand the data profiling and use the right click
- ✓ 2 → Select necessary columns and remove duplicate rows
- ✓ 3 → Rename columns and change data types
- ✓ 4 → Replace Null values and filter data
- ✓ 5 → Rename and organize your queries



« Power Patou Tip » → Create the « N value »

1

Understand the data profiling and use the right click (1/2)

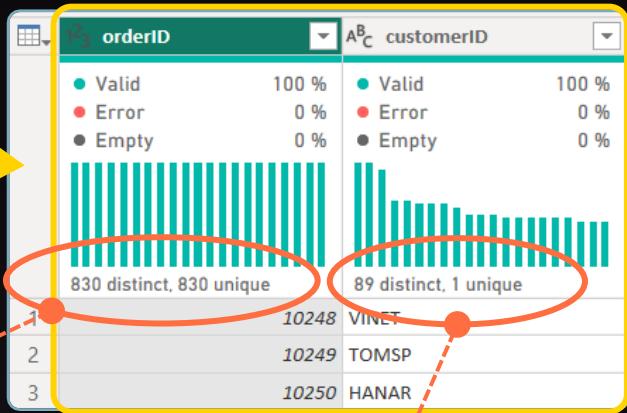
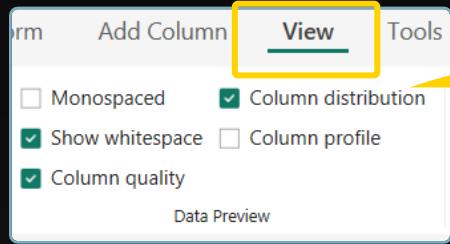


Practice



Data profiling provides you with important information about data quality and distribution.

On View Menu



830 distinct, 830 unique

830 different values and 830 values appear once, so there are no duplicate values. In this example, this means that the order IDs are unique, great, that's what we want!

89 distinct, 1 unique

89 different values and 1 value only appears once. In this example, this means that 88 customers ordered multiple times.

Start with PowerBI

"From Rookie to Rock"

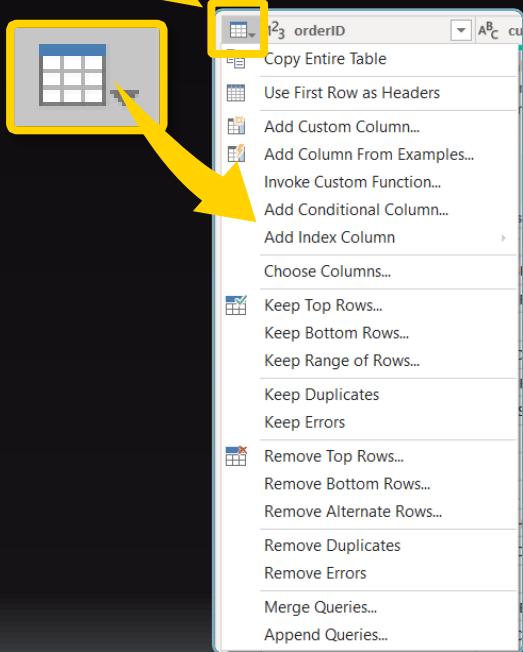
Step 2, Data normalization

Understand the data profiling and use the right click (2/2)

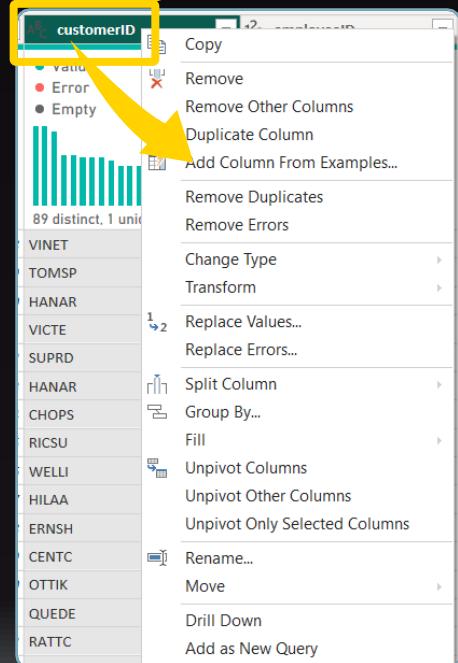


Right-clicking on the upper left corner or on a column name gives you access to almost all the tools useful for cleaning and transforming data.

Right-clicking on the upper left corner



Right-clicking on a column name



2

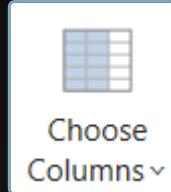
Select necessary columns and remove duplicate rows



These two actions help to keep the necessary data and remove duplicate rows. By reducing the number of columns and rows you will **increase the performance of your project**.

Select necessary columns

On Home Menu



Choose Columns

Choose the columns to keep

- (Select All Columns)
- orderId
- customerID
- employeeID
- orderDate
- requiredDate
- shippedDate
- shipperID
- freight

Remove duplicate rows

Right-clicking on the upper left corner



- Add Index Column
- Choose Columns...
- Keep Top Rows...
- Keep Bottom Rows...
- Keep Range of Rows...
- Keep Duplicates
- Keep Errors
- Remove Top Rows...
- Remove Bottom Rows...

Remove Duplicates

3

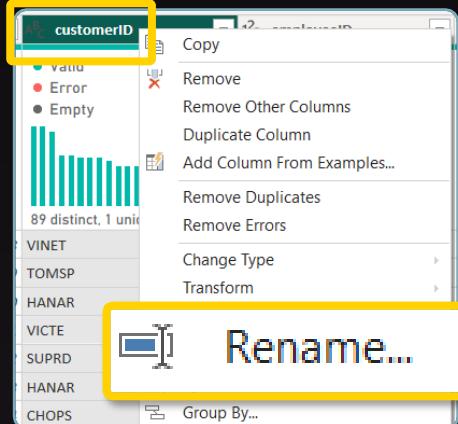
Rename columns and change data types



These two actions allow you to name the data in the business sense and to assign them the appropriate format to facilitate data manipulation.

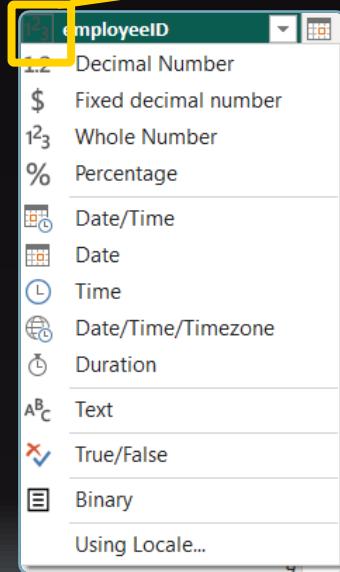
Rename columns

Right-clicking on a column name



Change data types

Click on the logo on the left of the column name



4

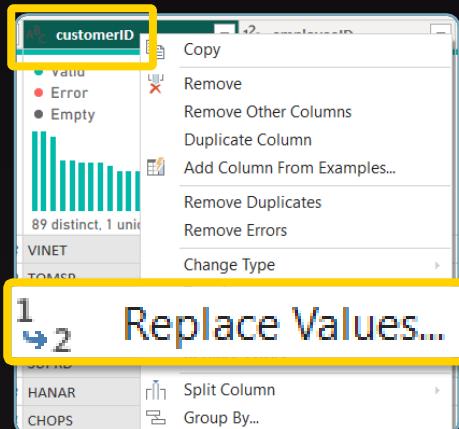
Replace Null values and filter data (1/2)



These two actions allow you to reduce the number of data by their value and improve the performance of your project.

Replace Null values

Right-clicking on a column name



Number values

Replace Values

Replace one value with another in the selected column

Value To Find

null

Replace With

0



Text values

Replace Values

Replace one value with another in the selected column

Value To Find

null

Replace With

ND ND = Not Determined



Start with PowerBI

"From Rookie to Rock"

4

Replace Null values and filter data (2/2)



Filter data

Click on the logo on the right of the column name

A^B_C customerID



Text filters

- Equals...
- Does Not Equal...
- Greater Than...
- Greater Than Or Equal To...
- Less Than...
- Less Than Or Equal To...
- Between...

Number filters

- Equals...
- Does Not Equal...
- Begins With...
- Does Not Begin With...
- Ends With...
- Does Not End With...
- Contains...
- Does Not Contain...

Date filters

- Equals...
- Before...
- After...
- Between...
- In the Next...
- In the Previous...
- Is Earliest
- Is Latest
- Is Not Earliest
- Is Not Latest
- Year
- Quarter
- Month
- Week
- Day

5

Rename and organize your queries



Rename queries

Right-clicking on a query name

The screenshot shows the 'Queries [11]' pane in Power BI. It lists the following queries:

- Fact table [2]:
 - Fct_order_details
 - Fct_Orders
- Dimension [5]:
 - Dim_Categories
 - Dim_Customers
 - Dim_Employees
 - Dim_Products
 - Dim_Shippers
- Support table [3]:
 - Table_Flags
 - Table_Flags (Employees)

Fct = Fact
Dim = Dimension

Organize queries

Right-clicking on a query name

A context menu is open over the 'Fct_Orders' query. The menu options are:

- Copy
- Paste
- Delete
- Rename
- Enable load
- Include in report refresh
- Duplicate
- Reference
- Move To Group
- Move Up
- Move Down
- Create Function...
- New Group...

The 'Move To Group' and 'New Group...' options are highlighted with yellow boxes.

Start with PowerBI

"From Rookie to Rock"

Step 2, Data normalization

« Power Patou Tip »

Create the « N value »
→ N = Nominal



Practice

This technique allows you to group all the variables of type "fact table" in the same field. It will be useful and easier to create measures in PowerBi with the Dax language.

orderID	productName	unitPrice	quantity
Valid	100 %	Valid	100 %
Error	0 %	Error	0 %
Empty	0 %	Empty	0 %
3 distinct, 3 unique	2 distinct, 1 unique	2 distinct, 1 unique	3 distinct, 3 unique
10252 Camembert Pierrot		27,2	40
10353 Côte de Blaye		210,8	50

Variables



Unpivot Only Selected Columns

orderID	productName	Attribute	N value
Valid	100 %	Valid	100 %
Error	0 %	Error	0 %
Empty	0 %	Empty	0 %
2 distinct, 0 unique	2 distinct, 0 unique	2 distinct, 0 unique	2 distinct, 0 unique
10252 Camembert Pierrot	unitPrice		27,2
10252 Camembert Pierrot	quantity		40
10353 Côte de Blaye	unitPrice		210,8
10353 Côte de Blaye	quantity		50



Start with PowerBI

“From Rookie to Rock”

Step 2, Data normalization

To go further...



6 great ressources!



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Start with PowerBI

"From Rookie to Rock"

Step 2, Data normalization

Start with PowerBI

“From Rookie to Rock”



Step 3, Project modeling

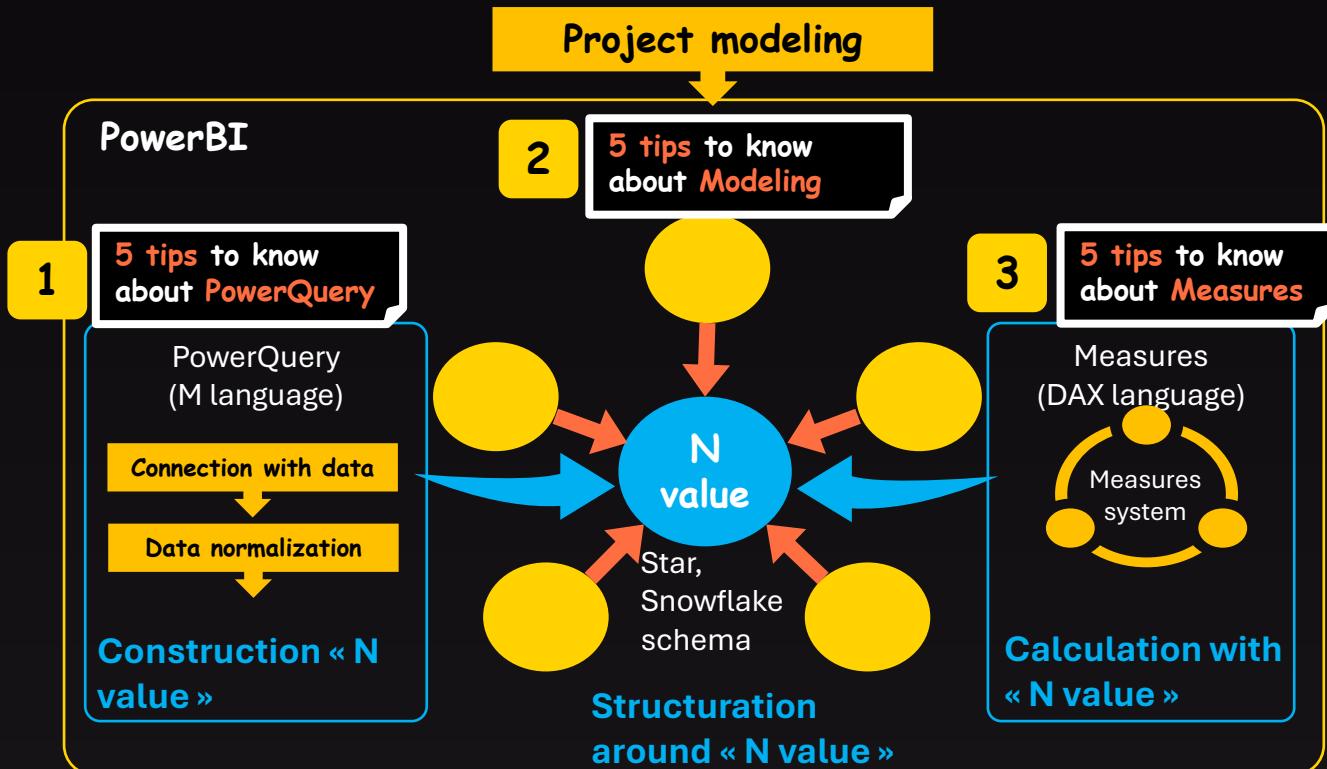
- 1 Connection with data
- 2 Data normalization
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About this step...

After data normalization step in PowerQuery (Patou Tips #16),
create the architecture is important to achieve your project goal.
Everything must turn around the “N value”!



The importance of the "N value"

Start with PowerBI

"From Rookie to Rock"

Step 3, Project modeling

1

5 tips to know about PowerQuery Construction « N value »



This part starts with Power Query, two steps, “Connecting to data (Patou Tips #15)” and “Normalizing data (Patou Tips #16)”, this is the first stone of your house, these are the foundations.

- ✓ 1.1 → Understand the M language
- ✓ 1.2 → Generate M language code with help
- ✓ 1.3 → Pivot/Unpivot
- ✓ 1.4 → Merge/Append queries
- ✓ 1.5 → Transform Cell to Column



1

5 tips to know about PowerQuery Construction « N value »



1.1 Understand the M language (1/2)

The M language, M = Machine Learning, is the native language of PowerQuery and it is really incredible and powerful.

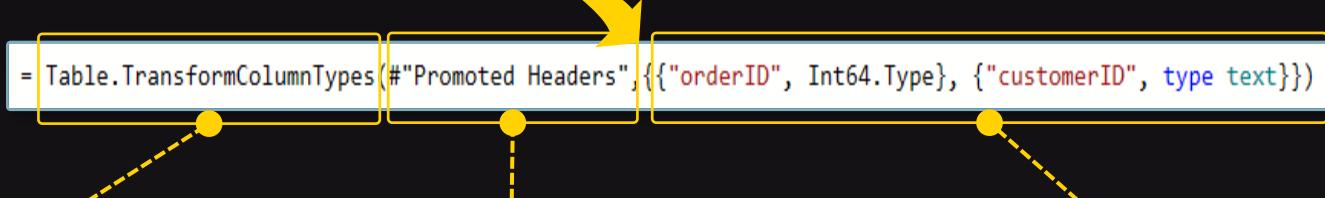
In PowerQuery on the right side, you get the "transformation history window" called "applied steps". You can control all the steps of your transformation actions.

APPLIED STEPS

1	Source	
2	Promoted Headers	
3	Changed Type	



- 1 The first line is always the description of the link with the data source (Excel files, Text/CSV files, SQL server...)
- 2 On the third line, for example, we have a transformation of the data format.



Name of the "M" fonction

Name of the step where the transformation is applied, here previous step "Promoted headers"

Description of the transformation, here the column "orderID" has become a numeric format and "CustomerID" a text format.

1

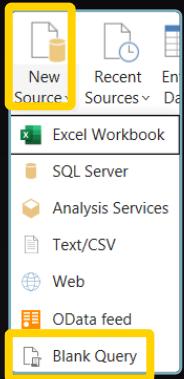
5 tips to know about PowerQuery Construction « N value »



1.1 Understand the M language (2/2)

Inside PowerQuery exist a really interesting guide!

In PowerQuery: >
Home > Blank
Query, then
write = #shared
on the "formula
window"



- 1 List of all PowerQuery functions
- 2 Function syntax
- 3 Function description
- 4 Example of function usage

1

= #shared

List.FindText	Function
List.RemoveLastN	Function
List.RemoveFirstN	Function
Binary.View	Function
Binary.ViewFunction	Function
Binary.ViewError	Function
Table.ColumnCount	Function

function (list as list, optional countOrCondition as any) as list

Returns a list that removes the last countOrCondition elements from the end of list list. If list has less than countOrCondition elements, an empty list is returned.

3

If a number is specified, up to that many items are removed.
If a condition is specified, any consecutive matching items at the end of list are removed.
If this parameter is null, only one item is removed.

4

Usage:
`List.RemoveLastN({1, 2, 3, 4, 5}, 3)`

Output:
`{1, 2}`

Start with PowerBI

"From Rookie to Rock"



1.2 Generate M language code with help

In PowerQuery there is also a function that generates code for you! Above, we want to extract the day from a date for each row.

1 In PowerQuery: > Add Column > Column From Examples > From Selection

2 Enter sample values to create a new column (Ctrl+Enter to apply).
Transform: `Text.BeforeDelimiter(Text.From([orderDate], "fr-FR"), "/")`

employeeID	orderDate	Day
5	04/07/2013	04
6	05/07/2013	05
3	08/07/2013	08
4	09/07/2013	09
5	10/07/2013	10
6	11/07/2013	11

- 1** Select a column
- 2** Select the function
- 3** Write the name of the new column and in the first row the day, here 04
- 4** The values for each row are generated
- 5** The code is generated, great!

1

5 tips to know about PowerQuery Construction « N value »



1.3 Pivot/Unpivot

It will be useful and easier to create measures in PowerBi with the Dax language (see part 3)!

orderID	productName	unitPrice	quantity
Valid	100 %	Valid	100 %
Error	0 %	Error	0 %
Empty	0 %	Empty	0 %
3 distinct, 3 unique	2 distinct, 1 unique	2 distinct, 1 unique	3 distinct, 3 unique
10252 Camembert Pierrot		27,2	40
10353 Côte de Blaye		210,8	50

Variables



orderID	productName	Attribute	N value
Valid	100 %	Valid	100 %
Error	0 %	Error	0 %
Empty	0 %	Empty	0 %
2 distinct, 0 unique	2 distinct, 0 unique	2 distinct, 0 unique	2 distinct, 0 unique
10252 Camembert Pierrot	unitPrice		27,2
10252 Camembert Pierrot	quantity		40
10353 Côte de Blaye	unitPrice		210,8
10353 Côte de Blaye	quantity		50

Unpivot Only Selected Columns



Start with PowerBI

“From Rookie to Rock”

Step 3, Project modeling

5 tips to know about PowerQuery Construction « N value »



1.4 Merge/Append Queries (1/4)

→ Merge Queries (6 Joins kind)

→ 1 Left Outer Join

Sales table

	Product	Sales
1	A	10
2	B	20
3	C	30
4	E	40



Merge Queries ▾

Product	Sales
A	10
B	20
C	30
E	40



Price table

	Product	Price
1	A	5
2	B	6
3	C	4
4	G	8



Price

Product	Price
A	5
B	6
C	4
G	8

Result table

	Product	Sales	Price
1	A	10	5
2	B	20	6
3	C	30	4
4	E	40	null

Join Kind

Left Outer (all from first, matching from second)



One product have Sales but no Price (E Product)

Start with PowerBI

"From Rookie to Rock"

Step 3, Project modeling



1.4 Merge/Append Queries (2/4)

→ Merge Queries (6 Joins kind)

→ 2 Right Outer Join

Join Kind

Right Outer (all from second, matching from first)

	A ^B _C	Product	1 ² ₃	Sales	1 ² ₃	Price
1	A			10		5
2	B			20		6
3	C			30		4
4		null		null		8

One product have a Price, but no reference and no Sales.

→ 3 Full Outer Join

Join Kind

Full Outer (all rows from both)

	A ^B _C	Product	1 ² ₃	Sales	1 ² ₃	Price
1	A			10		5
2	B			20		6
3	C			30		4
4		null		null		8
5	E			40		null

One product have Sales but no Price (E Product), and ne product have a Price, but no reference and no sales.



1.4 Merge/Append Queries (3/4)

→ Merge Queries (6 Joins kind)

→ 4 Inner (only matching rows)

Join Kind: Inner (only matching rows)

	A ^B _C Product	1 ² ₃ Sales	1 ² ₃ Price
A		10	5
B		20	6
C		30	4

Only 3 products have Sales and a Price (exist on two tables)

→ 5 Left Anti Join

Join Kind: Left Anti (rows only in first)

	A ^B _C Product	1 ² ₃ Sales	1 ² ₃ Price
1	E	40	null

Only 1 product have Sales and no Price (exist only in Sales table)

→ 6 Right Anti

Join Kind: Right Anti (rows only in second)

	A ^B _C Product	1 ² ₃ Sales	1 ² ₃ Price
1		null	8

Only 1 product have Price and no Sales (exist only in Price table)

1

5 tips to know about PowerQuery Construction « N value »



1.4 Merge/Append Queries (4/4) → Append Queries

Nice Shop Sales table

	A ^B _C Shop	A ^B _C Product	1 ² ₃ Sales
1	Nice	A	5
2	Nice	B	15
3	Nice	C	25
4	Nice	E	35

Paris Shop Sales table +

	A ^B _C Shop	A ^B _C Product	1 ² ₃ Sales
1	Paris	A	10
2	Paris	B	20
3	Paris	C	30
4	Paris	E	40

Result table =

	A ^B _C Shop	A ^B _C Product	1 ² ₃ Sales
1	Nice	A	5
2	Nice	B	15
3	Nice	C	25
4	Nice	E	35
5	Paris	A	10
6	Paris	B	20
7	Paris	C	30
8	Paris	E	40

Append

Concatenate rows from two tables into a single table.

Two tables Three or more tables

First table: Sales Nice
Second table: Sales Paris



All sales from the Sales Tables shops (Nice, Paris) are gathered in the same table

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Step 3, Project modeling



1.5 Transform Cell to Column

Inside PowerQuery exist a really interesting guide!

Right-clicking on a column name

The screenshot shows a table with two columns: "Product category" and "Product". The "Product" column is selected, and its context menu is open. The menu includes "Remove Errors", "Change Type", "Transform", "Replace Values...", "Split Column", "Group By...", and "Fill". A yellow arrow points from the "Split Column" option to the second screenshot.

Split Column by Delimiter

Specify the delimiter used to split the text column.

Select or enter delimiter: Comma

Split at:

- Left-most delimiter
- Right-most delimiter
- Each occurrence of the delimiter

Advanced options:

Split into:

- Columns
- Rows

The screenshot shows the result of splitting the "Product" column by delimiter. The original table had three rows: Category A, Category B, and Category C, with the "Product" column containing "A1, A2, A3", "B1, B2", and "C1, C2" respectively. After splitting, there are seven rows: Category A, Category A, Category A, Category B, Category B, Category C, and Category C, with the "Product" column now containing "A1", "A2", "A3", "B1", "B2", "C1", and "C2" respectively.



This second part is really the heart of your BI project. I think 80% of the problems in a BI project come from an approximative modeling. Modeling is the command center of your project.



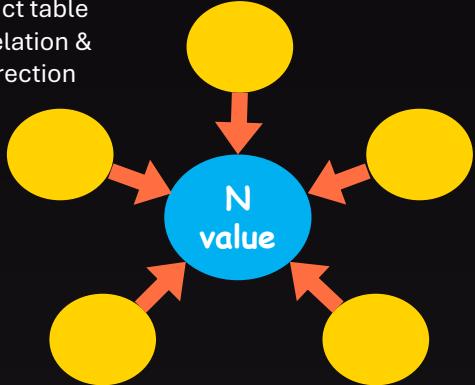
- ✓ 2.1 → Build a Star or Snowflake schema
- ✓ 2.2 → Manage relationships
- ✓ 2.3 → Create the good Cardinality and Cross-filter Direction
- ✓ 2.4 → Best practices with dates
- ✓ 2.5 → Create the good table kind: fact, dimension



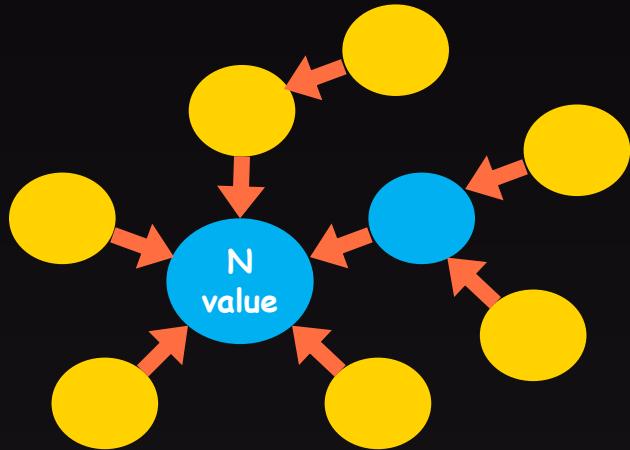
2.1 Build a Star or Snowflake schema (1/2)

The “N value” must be always in the heart of your project!

- Dimension table
- Fact table
- Relation & direction



Star schema improves read performance and is easier to model. It can lead to large, redundant dimension tables that take up more storage space and reduce project performance.



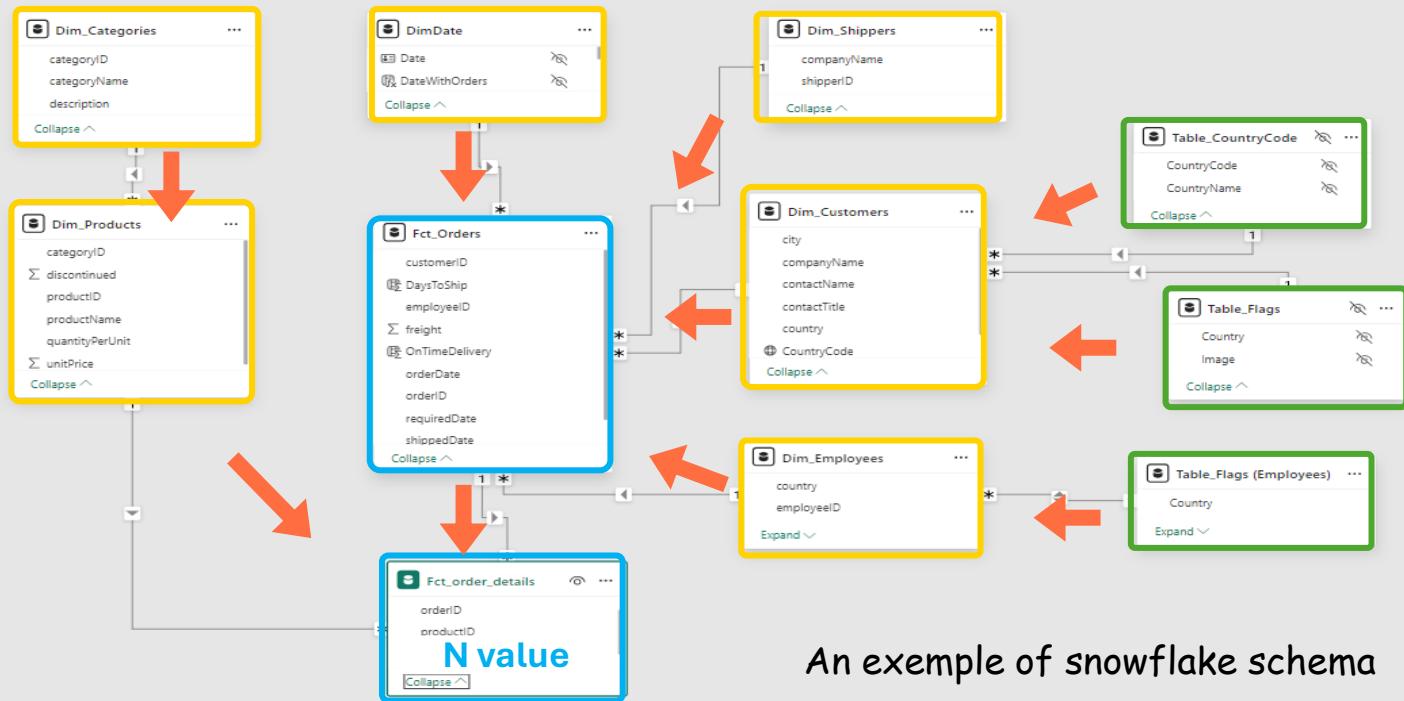
Snowflake schema is a more dynamic and flexible modeling, with complex and standardized dimensions and hierarchies. It is less readable and must be done precisely.

5 tips to know about Modeling Structuration around « N value »



2.1 Build a Star or Snowflake schema (2/2)

The “N value” must be always in the heart of your project!



Dimension table

Fact table

Support table

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2

5 tips to know about Modeling Structuration around « N value »



2.2 Manage relationships

The screenshot shows the Power BI Model view interface. On the left, there's a ribbon with icons: 1 (highlighted in orange), 2 (highlighted in orange), 3 (highlighted in orange), and DAX. In the center, the 'DimDate' table is selected, showing its columns: Date, DateKey, and WeekDay. Below it, the 'Fct_Orders' table is selected, showing its columns: customerID, DaysToShip, employeeID, freight, OnTimeDelivery, orderDate, orderID, orderNumber, requiredDate, shippedDate, and UnitPrice. A relationship is being established between the 'orderDate' column in 'Fct_Orders' and the 'Date' column in 'DimDate'. A yellow arrow points from the 'Fct_Orders' table to the 'Edit relationship' dialog box on the right.

Edit relationship

Select tables and columns that are related.

From table: Fct_Orders

customerID	DaysToShip	employeeID	freight	OnTimeDelivery	orderID
HANAR	4	4	65.83	1	10250
SUPRD	2	4	51.3	1	10252
QUEDU	11	4	3.05	1	10261

To table: DimDate

Date	Day	Month	NumDayMonth	NumMonth	RelativeMonth	Year
01/01/2013	true	janv	1	1	-28	2013
02/01/2013	true	janv	2	1	-28	2013
03/01/2013	true	janv	3	1	-28	2013

Cardinality: Many to one (*:1)

Cross-filter direction: Single

Make this relationship active

Assume referential integrity

4 Apply security filter in both directions

1 Model view

Right click on the link
between table

3 Select fields to link

Cardinality and Cross-filter
direction (see 2.3 on next
page)

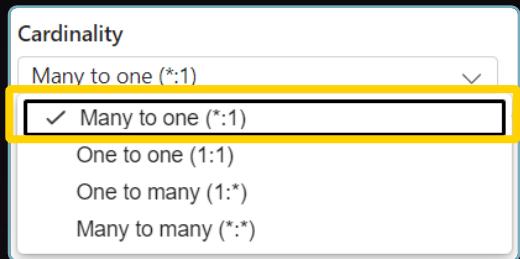
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Step 3, Project modeling



2.3 Create the good Cardinality and Cross-filter Direction



Model your project to have this link most often

A **one-to-many (1:*)** or **many-to-one (*:1)** relationship is the **most common default relationship type**. This means that a column in a given table can have multiple values, while a related table has only one value.

A **one-to-one (1:1)** relationship means that both columns contain unique values. This cardinality is not good for performance due to storing redundant data.

A **many-to-many (*:*)** relationship means that both columns can contain duplicate values. This type of cardinality is rarely used. This cardinality is also not good for performance.

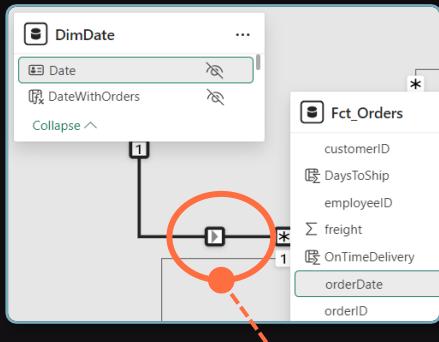
5 tips to know about Modeling Structuration around « N value »



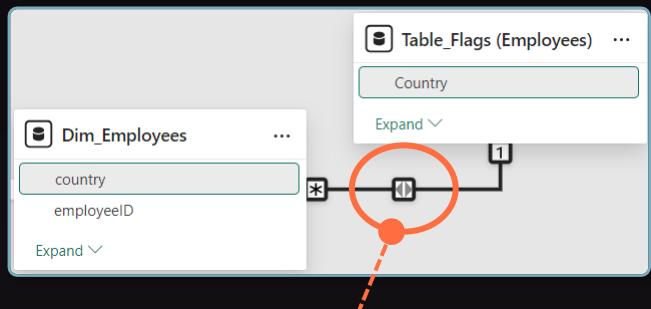
2.3 Create the good Cardinality and Cross-filter Direction



Model your project to have this direction most often



Single direction, Model your project to have this direction most often



Both direction. Here a link between an employee's country and the flag of the country table. On both sides, the values are unique. This type of link is not to be preferred.



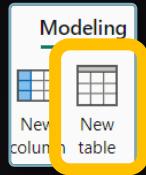
The DAX CALCULATE formula allows you to act on these modeling objects (see 3).

5 tips to know about Modeling Structuration around « N value »



2.4 Best practices with dates

Create the dimension date table (DimDate)



In powerBI, create a table called "DimDate" and write this code in DAX

Path: « Modeling > New Table »



Downloadable free resources to practice in GitHub

```

1 DimDate = GENERATE(CALENDAR("1/1/2021","31/12/2030"), // Generate dates from 1/1/2021 until 31/12/2030 (To adjust to your needing)
2 VAR An = YEAR([Date]) // Year
3 VAR Semester = IF(QUARTER([Date])<3,"S1","S2") // Return S1 or S2
4 VAR Quarter = "Q"&QUARTER([Date]) // Return Q1, Q2, Q3 or Q4
5 VAR MonthLong = FORMAT([Date],"Mmmmm") // January, February, March... (Month in the language of your system)
6 VAR Month = FORMAT([Date],"Mmm") // Jan, Feb, Mar... (Month in the language of your system)
7 VAR MonthShort = UPPER(LEFT(Month,1)) // J, F, M... (Month in the language of your system)
8 VAR Day = FORMAT([Date],"dddd") // Monday, Tuesday, Wednesday... (Month in the language of your system)
9 VAR NumMonth = MONTH([Date]) // 1 for January, 2 for February... 12 for December
10 VAR NumWeek = WEEKNUM([Date],21) // 1 when week begins on Sunday, 2 when week begins on Monday, or 21 for ISO week numbers
11 VAR NumDayWeek = WEEKDAY([Date],2) // Return a number day, 1 for Monday ...to 7 for Sunday (depend of the extension)
12 VAR NumDayMonth = DAY([Date]) // 1 for the first day of the month ...to the last day of the month (28,29, 30 or 31)
13 RETURN ROW(-----Create column for each row below-----
14 "Year",An, // See line 2
15 "YearSemester",An&"-&Semester, // Year + Semester / For example: 2024-S1, 2024-S2
16 "YearQuarter",An&"-&Quarter, // Year + Quarter / For example: 2024-Q1, 2024-Q2, 2024-Q3, 2024-Q4
17 "YearMonth",An&"-W&Month, // Year + Month number / For example: 2024-01, 2024-02 ...to 2024-12
18 "YearWeek",An&"-W"&NumWeek, // Year + Week number / For example: 2024-W1, 2024-W2 ...to 2024-W52 or 2024-W53
19 "Semester",Semester, // See line 3
20 "Quarter",Quarter, // See line 4
21 "MonthLong",MonthLong, // See line 5
22 "Month",Month, // See line 6
23 "MonthShort",IF(NumMonth IN {5,6,8},MonthShort&" ",IF(NumMonth = 7,MonthShort&" ",MonthShort)), // See line 7, setting according country language, for the months who start with the same letter one space or a double space are added
24 // See line 7, setting according country language, for the months who start with the same letter one space or a double space are added
25 "Week",W &NumWeek, // Week / For example : W1, W2 ...to W52 or W53
26 "Day",Day, // See line 8
27 "NumMonth",NumMonth, // See line 9 (usefull to sort Month, MonthLong and MonthShort chronologically)
28 "NumWeek",NumWeek, // See line 10 (usefull to sort Week chronologically)
29 "NumDayWeek",NumDayWeek, // See line 11 (usefull to sort Day chronologically)
30 "NumDayMonth",NumDayMonth)) // See line 12

```

Start with PowerBI

“From Rookie to Rock”

Step 3, Project modeling

5 tips to know about Modeling Structuration around « N value »



2.4 Best practices with dates

Mark as a date table



This step is one of the **first things to do when you create a PowerBI project**. With this step, PowerBI validates your date system and allows optimal operation with the "Time Intelligence" functions.

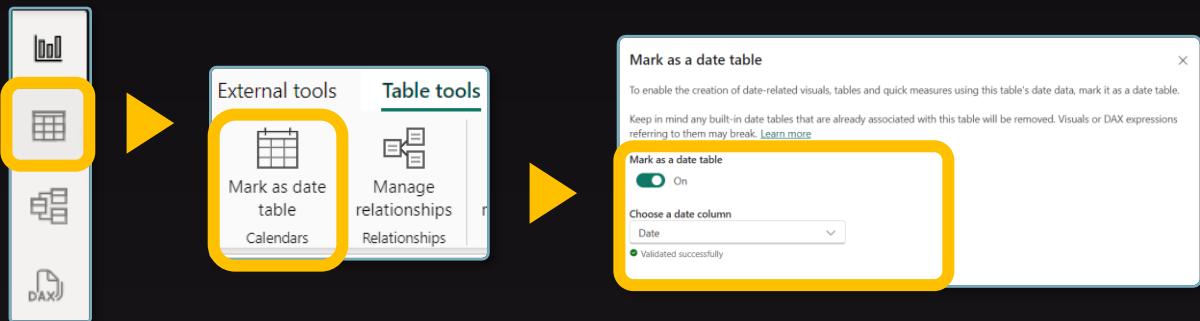
Important: Your date system must contain:



- ✓ only unique values
- ✓ contiguous values
- ✓ no null value

On the « table view »

Path: «Table tools > Mark as date table »



5 tips to know about Modeling Structuration around « N value »



2.4 Best practices with dates

Sort "month" chronologically

This tip is really usefull when you want to have a good ascending sorting of dates; the days and months in particular.



For example, the months in PowerBI will be classified in alphabetical order, so a year will start with the months of August, then April...???

It's important to have a good sort to show good storytelling. So, we can sort the months by another field order, such the month numbers (NumMonth) who give the value 1 for January, 2 for February...

X Before

2024
Apr
Aug
Dec
Feb
Jan
Jul
Jun
Mar
May
Nov
Oct
Sep

The screenshot shows the PowerBI 'Properties' pane with the 'Sort by column' dropdown open. The 'Month' column is selected. The 'NumMonth' option is highlighted with a red dashed oval. Other options shown include 'A/F', 'Date', 'Day', 'MonthFrench', 'MonthLong', 'NumDayMonth', 'NumDayWeek', and 'NumMonth'.

✓ After

2024
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

5 tips to know about Modeling Structuration around « N value »

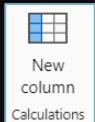


2.4 Best practices with dates

Create a “relative Month”



This tip allows to display only the month with sales data in the filter. In the example below we have sales until March 15, 2024. So why to show to the users the entire month of the year as well as subsequent years? In the table of dates, create a calculated column and write the Dax formula below.

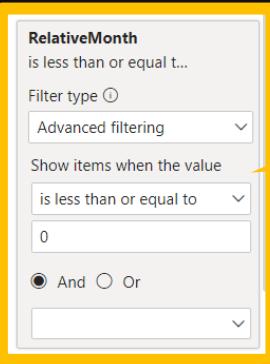
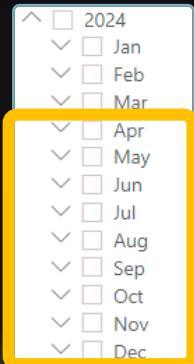


```
1 RelativeMonth = DATEDIFF(MAX(Sales[Date]),DimDate[Date],MONTH)
```

→ Explanation: The month of march 2024 will have the value “0 (zero)”, and before march 2024 the months will have a negative value (the past) and positive value after march 2024 (the future). After that we put this value in the pane filter of the “report view” and put the settings showing below.



Before



After



5 tips to know about Modeling Structuration around « N value »



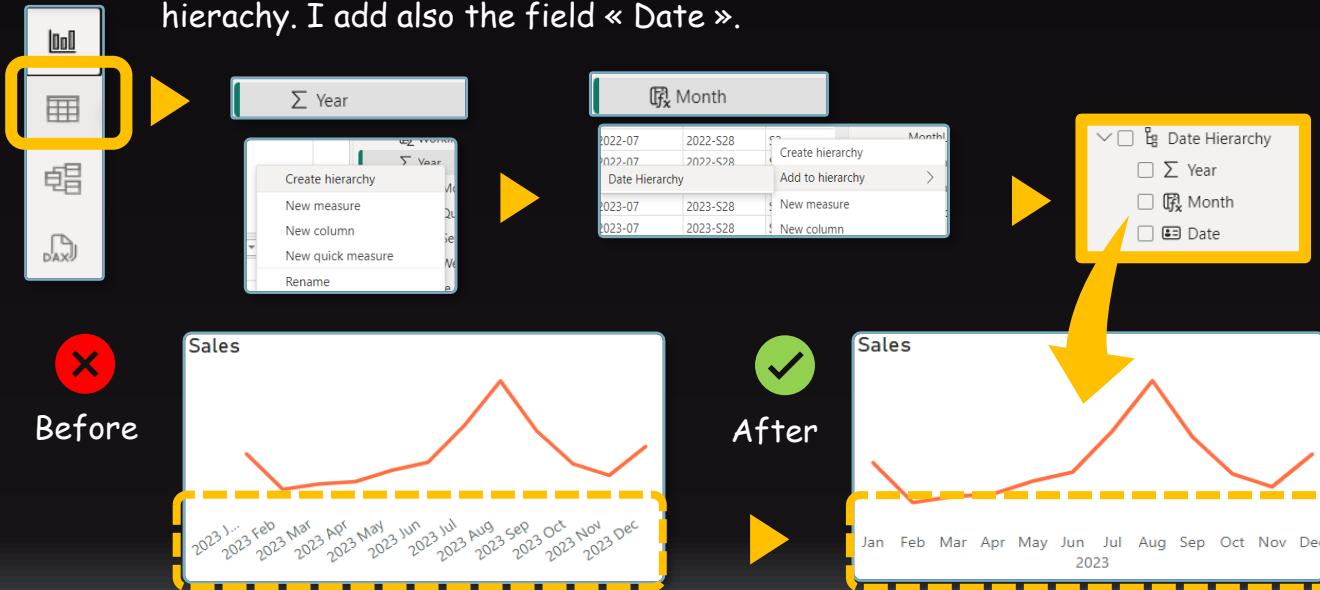
2.4 Best practices with dates

Create hierarchy of date



This tip will allow you to group your **main dates information** and use it simultaneously in your tables or charts. This will also make it easier for your users to understand.

On the « Table View », right click on the « Year » label of the DimDate and choose « Create hierarchy ». Here I rename the hierarchy in « Date Hierarchy ». Then, click right on the « Month » label and choose « Add to hierarchy ». You can do this for any field that you want to add in the new hierarchy. I add also the field « Date ».



5 tips to know about Modeling Structuration around « N value »



2.4 Best practices with dates

Create short month



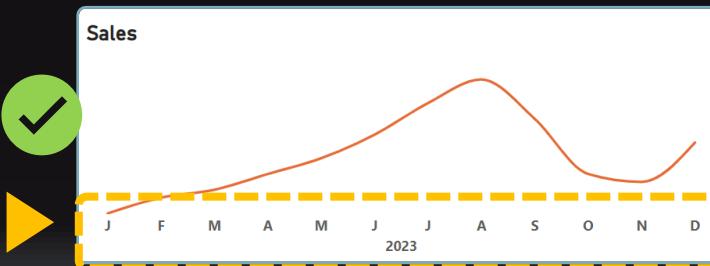
It can be useful to have only the first letter of each month, especially when you have charts in a small space.

```
7 VAR MonthShort = UPPER(LEFT(Month,1))
```

→ Explanation: On line 7 of the table date code, we take the first letter (LEFT) of each month in capital (UPPER).

```
23 "MonthShort",IF(NumMonth IN {5,6,8},MonthShort&" ", IF(NumMonth = 7,
MonthShort& " ",MonthShort)),
```

→ Explanation: In English, for example, the first letter of a month, "J", can be January, June or July. It is important to distinguish them if we want to order them chronologically. It depends on the language of the country. So, for the second "J" we put a space (" ") and 2 spaces (" ") for the third "J" to have different values.



2

5 tips to know about Modeling Structuration around « N value »



2.4 Best practices with dates Performance optimization



This tip will allow you to avoid having a model whose size can really increase more and more. Also this tip will improve its performance.

Path: File > Options and settings > Options > Data Load > Time intelligence

Regional Settings

Updates

Usage Data

Diagnostics

Preview features

Save and Recover

Report settings

Copilot (preview)

CURRENT FILE

- Data Load**

Regional Settings

Time intelligence

Auto date/time [Learn more](#)

Background Data

Allow data previews to download in the background

Parallel loading of tables ⓘ

Maximum number of concurrent jobs [Learn more](#)

Default

One (disable parallel loading)

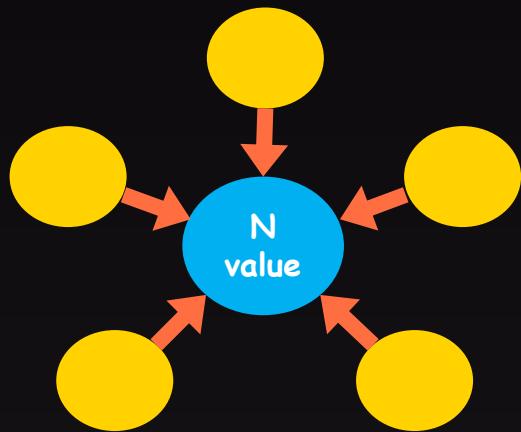
Custom

Unselect "Auto date/time"

5 tips to know about Modeling Structuration around « N value »



2.5 Create the good table kind: fact, dimension



● Dimension table

● Fact table
Relation &
direction

Dimension table

→ Dim_Date, Dim_Product...

All reference information,
deduplicated and often to be
associated with a unique code. For
example: list of customers, list of
employees, list of suppliers,
date...

Fact table

→ Fct_Sales, Fct_Invoices...

All information relating to an
activity: list of sales, list of
invoices...



Try always to have the minimum
of columns by table

5 tips to know about Measures Calculation with « N value »



This third part is the preparation for vizalisation and the first link to your users.



- ✓ 3.1 → Understand DAX language
- ✓ 3.2 → Measures structures with « N value »
- ✓ 3.3 → What is context?
- ✓ 3.4 → Organize your measures
- ✓ 3.5 → 5 DAX formulas to know!



3.1 Understand DAX language

Data Analysis eXpression (DAX) is a very powerful language. It sometimes looks like Excel, but what makes it special is that it is a language that creates context and manipulates objects.

Write "Dax Guide" on your browser



The best Web guide created by Alberto Ferrari and Marco Russo. You will also find explanations, examples and videos...

I use it every day!

DAX GUIDE

Any attribute ▾

A-Z Groups Search

FUNCTIONS

- ABS
- ACRINT
- ACRINTM
- ACOS
- ACOSH
- ACOT
- ACOTH
- ADDCOLUMNS
- ADMISSINGITEMS
- ALL
- ALLCROSSTABLED

The DAX language

The DAX language was created specifically for the handling of data used in several Microsoft Products such as Microsoft Power BI, Micro These products all share the same internal engine, called Tabular.

Functions

Browse DAX functions alphabetically from the sidebar or choose a category below.

- Aggregation functions
- Aggregation functions return a scalar value applying an aggregation function to a column or to an expression evaluated by iterating a table expression.
- Date and Time functions
- Date and time functions help creating calculations based on dates and time. Many of the functions in DAX are similar to the Excel date and time functions.
- Information functions
- Information functions provide information type or filter context of the argument.
- Logical functions
- Logical functions act upon an expression to return information about the values or state of the expression.
- Math and Trig functions

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Step 3, Project modeling



3.2 Measures structures with « N value » (1/2)

This technique around the “N value” created in Power Query (see 1.3, in Connection with data), allows to avoid performance problems and also the circular value.

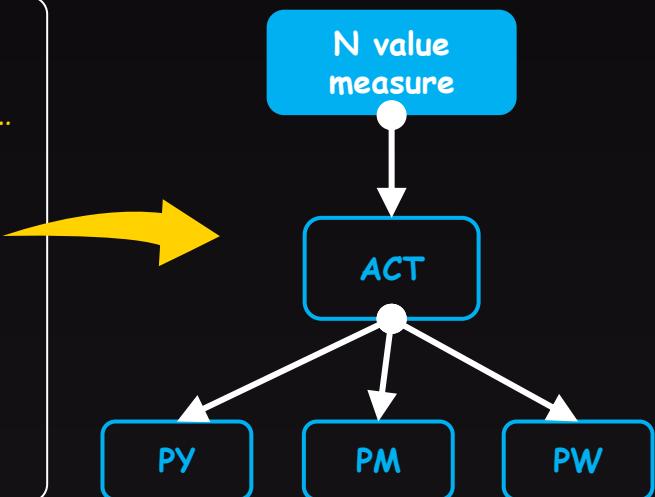
Here, measures for Sales report, like ACT (actual), PY (Previous Year), PM (Previous Month), PW (Previous Week)...

First we create the “N value measure”

N value measure = sum([N value])

ACT = CALCULATE([N value measure])

PY = Calculate([N value measure],
dateadd(Dim_Date[Date], -1, YEAR))

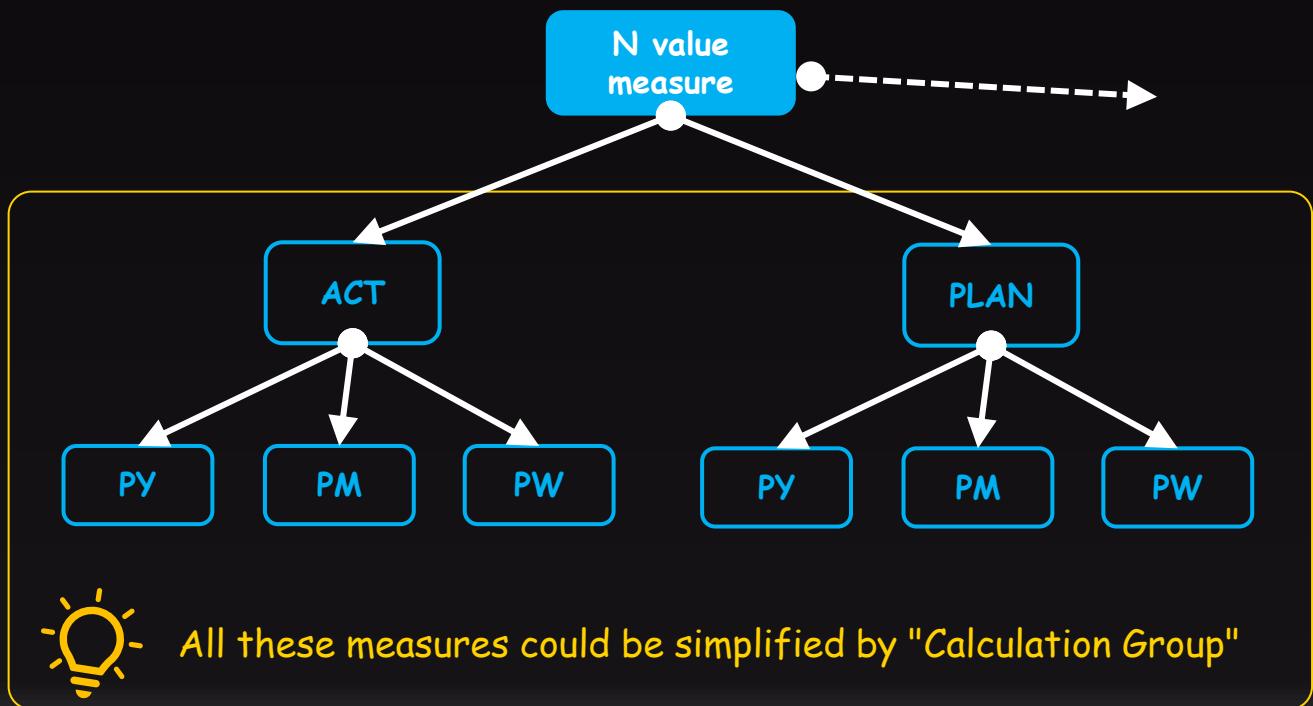


Use measure, not calculated column! To create a column, it's better in PowerQuery



3.2 Measures structures with « N value » (2/2)

This technique around the “N value” with extended measures, ultimately creates a type of star schema for measures.



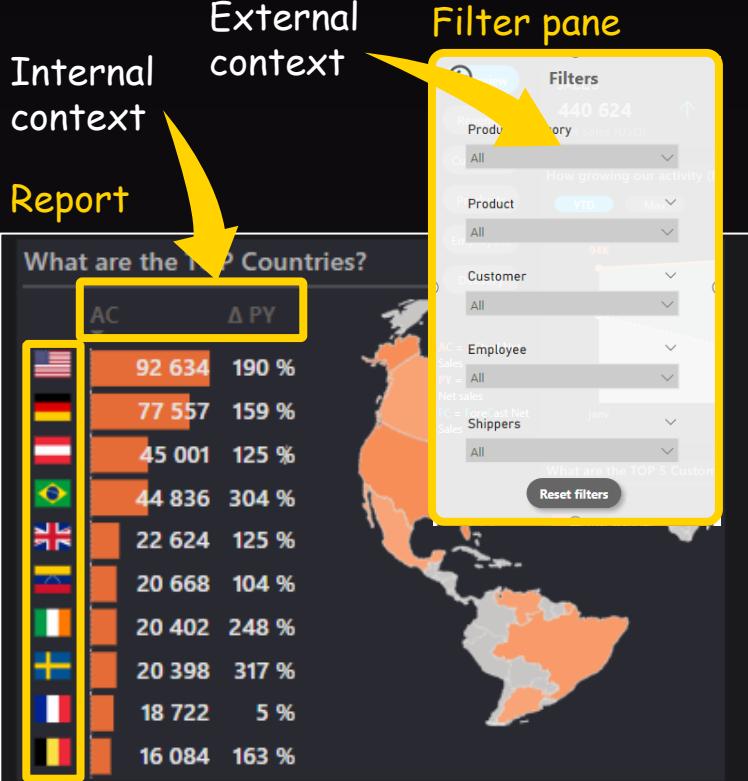


3.3 What is context?

In the current visualization, the AC column (see previous page) is the result of two contexts: internal or external.

The role of a DAX formula like CALCULATE, allows to give the data flow in the modeling (see 2.3), fed by the "N value structure" and the filters.

The structure is dynamic, all objects in the report are interconnected.



This visualization is from the "Maven Northwind Traders" challenge. The PowerBI file is available upon request.

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3

5 tips to know about Measures Calculation with « N value »

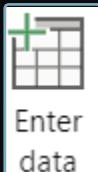


3.4 Organize your measures



1

Create table measures



Enter data

Create Table

	Column1	+
1		
+		

Name: Mesures

2

Create folder measures

Model view > Properties pane >
Display folder

Properties

net sales/customer n, net sales, sales, net sales customer n, customer n, n

Display folder

Customers

Mesures

Customers

Customer N

Customer N-1

3

Drag and drop measures

Start with PowerBI

“From Rookie to Rock”

Step 3, Project modeling



3.3 5 DAX formulas to know!

To get started with PowerBI, here you are 5 DAX formulas

- ✓ **CALCULATE** → The formula, to know and to understand
- ✓ **FILTER** → Often used with **CALCULATE**, it adds context
- ✓ **SELECTEDVALUE** → Retrieves the value from user selection
- ✓ **DATEADD** → This is a Time Intelligence formula, useful for calculating/filtering with a date value.
- ✓ **SUM/SUMX** → Add and aggregate (**SUMX**) values



DAX GUIDE, created by Alberto Ferrari and Marco Russo, you will find explanations, examples and videos...

To go further...



6 great ressources!

Corine Sandra K. • 2e

Ankita Chelani • 2e
2x LinkedIn Top Voice | BI and Data Analytics
Gurugram

8 k abonnés

10 relations en commun

Martin Bubenheimer • 2e
Power BI Architect @ Daiichi Sankyo Europe C
Nuremberg

3 k abonnés

9 relations en commun

Clément Pruvost • 1er
Responsable Data - Ofilea Family Office
Greater Lille Metropolitan Area

8 k abonnés

14 relations en commun

Message Voir le profil complet

Benjamin Ejzenberg
@BenjaminEjzenberg • 12,6 k abonnés • 136 vidéos
Je vous apprends à maîtriser Power BI, l'outil incontournable
[datacoach.ca](#) et 1 autre lien

S'abonner

Maven Analytics
Fournisseurs d'apprentissage en ligne
Boston, Massachusetts

214 k abonnés

Envoyer un message Suivi

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"From Rookie to Rock"

Step 3, Project modeling

Start with PowerBI

“From Rookie to Rock”



Step 4, Visualization

- 1 Connection with data
- 2 Data normalization
- 3 Project modeling
- 4 Visualization
- 5 Storytelling
- 6 Publication & Administration





About this step...

Ultimately, BI is the process of transforming data that machines understand into something that humans can act on, the visualization achieves the goal.

 Understanding your users' needs and activities is fundamental!

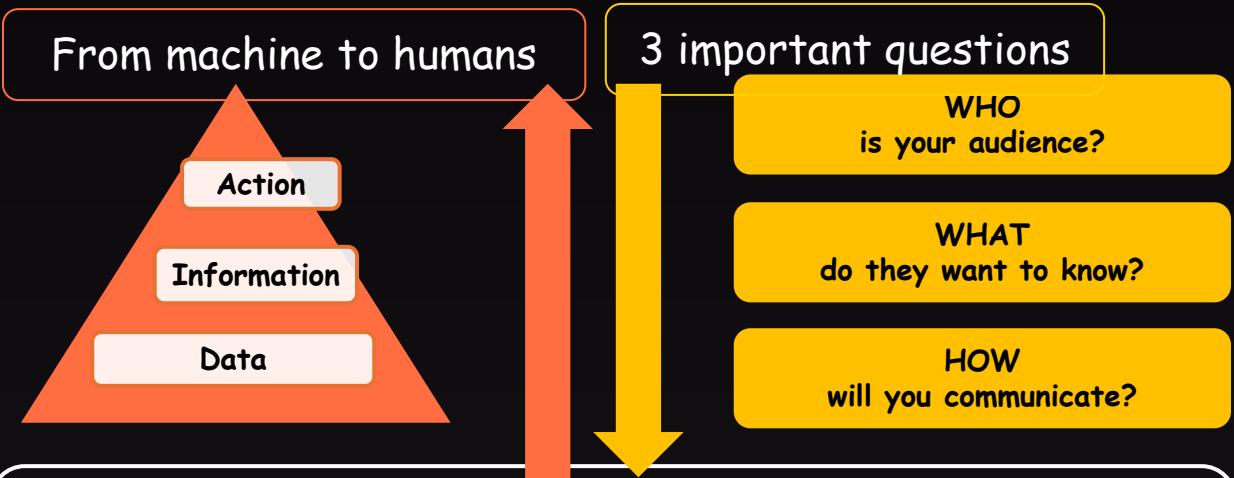
- ✓ 1 → Data Visualization Principles, Report or Dashboard?
- ✓ 2 → Choose the right chart
- ✓ 3 → Create an understandable KPI
- ✓ 4 → Add a PowerBI visual
- ✓ 5 → Create your own visualization!



- ✓ 5.1 Customized chart (for income statement)
- ✓ 5.2 Age Pyramid Chart



1 Data Visualization Principle Report or Dashboard?



Report or Dashboard?

Report: Provide summary information over a short or recent period; Sales brief, previous day's sales results, end-of-month report, etc.

Dashboard: Provide comprehensive information on where we have come from and where we are going: Monthly/half-yearly/quarterly/annual dashboard of sales, finances...

Often, confusion between reporting and monitoring:
monitoring consists of providing continuous information in order to follow an activity in real time (this is another goal)



2

Choose the right chart (1/3)



Chart	When to use it?	Use cases
Bar Chart 	Show comparison or distribution of a variable	Monthly sales, age distribution, survey, Age Pyramid Chart
Line Chart 	Show change/trend over time	Monthly sales, forecast
Combo 	Show two related variables on different numeric scales	Financial results
Pie/Donut Chart 	Show part-to-whole composition	Marketing product, survey
Funnel 	Show and describe flows and processes	Sales funnel, marketing funnel

2

Choose the right chart (2/3)



Chart	When to use it?	Use cases
Waterfall 	Show change over time with a part-to-whole composition	Decomposition PVM (Price Volume Mix)
Radar 	Compare values between multiples attribut	Product test, survey
Scatter Plot 	Show relationships between two numeric variables	Product cycle, ROI Cause and effect diagram
Sandkey 	Show relationships between input and output sources	Sales deformation, income statement deformation
Map 	Show composition using geographic coordinates	Regional sales, density of population

2

Choose the right chart (3/3)



Where to find visuals?
(Report view)

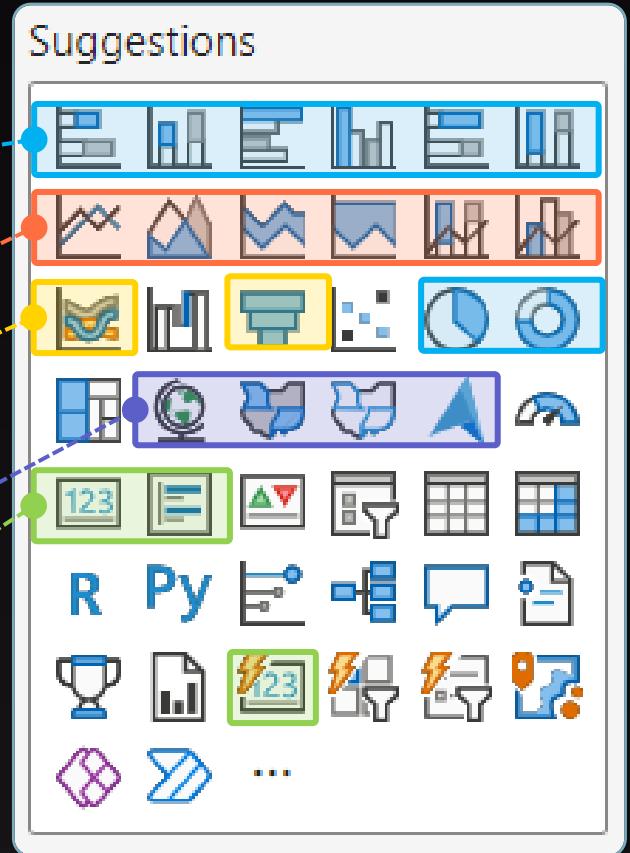
Part-to-whole
composition

Change over time

Flows and
processes

Geographical

KPI



3

Create an understandable KPI



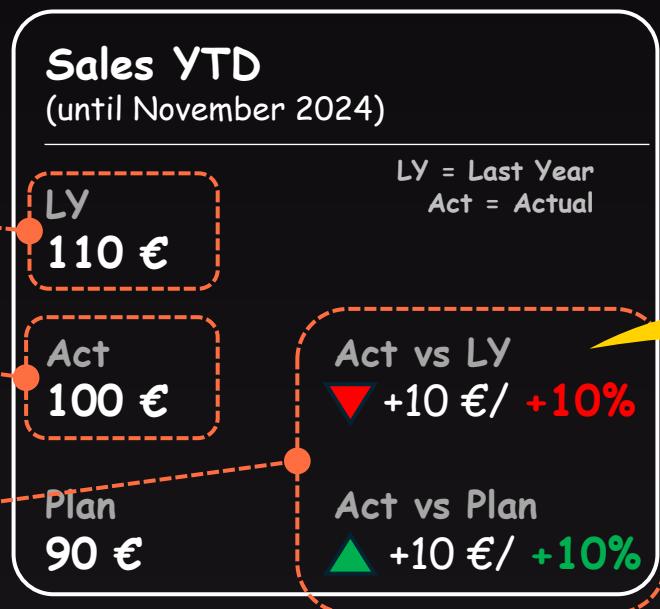
KPIs (Key Process Indicators) are a set of quantifiable measures used to understand the performance of a company. This information is an aid to operational or strategic decision-making.

Anatomy of a KPI

Where we come from?

Where we are?

Where we go?



See "Patou Tips #12", to calculate right evolution for KPI.

Start with PowerBI

"From Rookie to Rock"

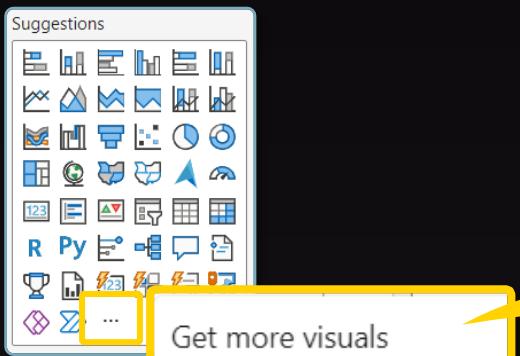
Step 4, Vizualisation

4

Add a PowerBI visual (1/5)



There is a huge marketplace where you can add powerful visuals for your projects.



Power BI visuals

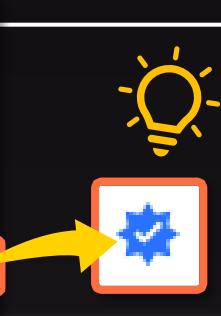
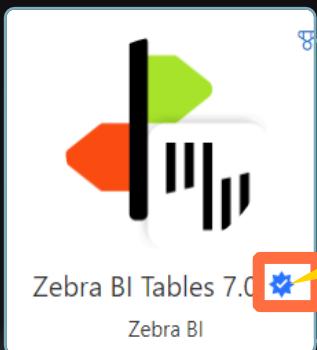
By clicking 'Add' and/or 'Download Sample' and downloading a visual, you agree to the provider's Terms and Conditions and Privacy Policy. On the visual's page and agree Microsoft can share your account details to provider for their transactional purposes. Use of Microsoft's AppSource is subject to the Microsoft Commercial Marketplace Terms and Privacy Statement.

All visuals Organizational visuals AppSource visuals Search

Explore all available visuals to magnify your business insights [Learn more](#)

Filter by: All Sort by: Popularity

Visual Name	Provider	Rating
Zebra BI Tables 7.0	Zebra BI	★★★★★ (12)
Performance Flow	xViz LLC	★★★★★ (16)
Sunburst by PowerBI	TRUVIZ INC	★★★★★ (8)



Make sure the visual is certified. This way, you will be sure that your visual can be published. Here, an incredible visual from "Zebra BI" for financial activities.

4

Add a PowerBI visual (2/5)



- 1 Add this app to your project.
- 2 Download a sample PowerBI file to check if it's what you want and how it works.
- 3 Check if the Apps is PBI Certified (by Microsoft).
- 4 See examples.
- 5 Some apps are not free, you can check here the pricing plan.
- 6 See user ratings and reviews.
- 7 Downloaded Apps will appear in the visual selection pane.

4

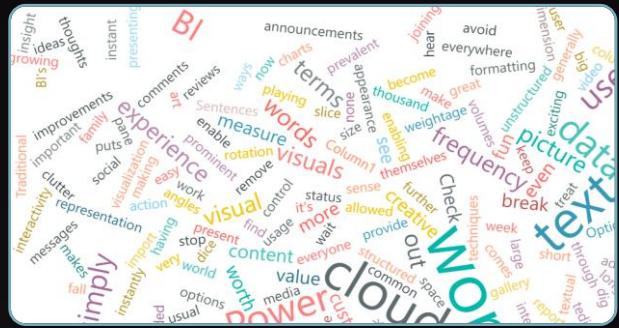
Add a PowerBI visual (3/5)



5 awesome, free and certified visual apps. These are also my favorites, and I tested them!

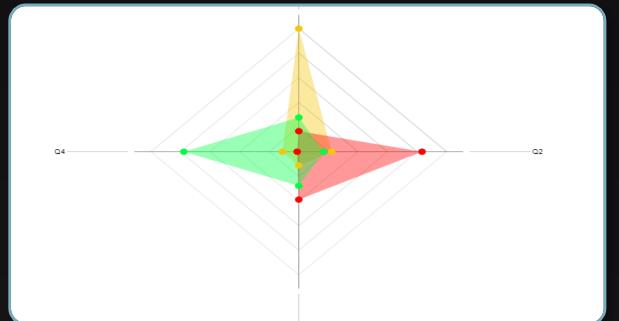
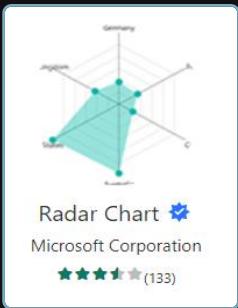
Word Cloud

Really useful for doing surveys and knowing what opinion comes up often.



Radar Chart

Interesting in finance for visualizations of the income statement according to the IBCS standard.



Start with PowerBI

"From Rookie to Rock"

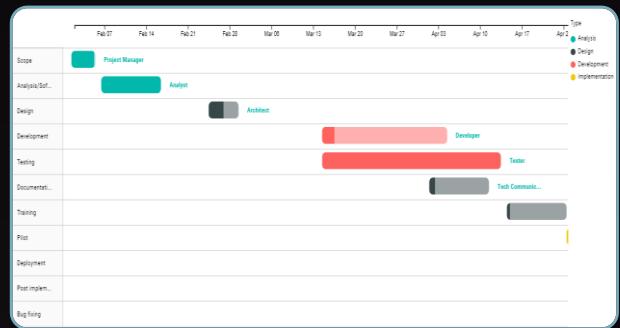
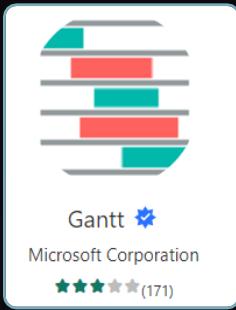
4

Add a PowerBI visual (4/5)



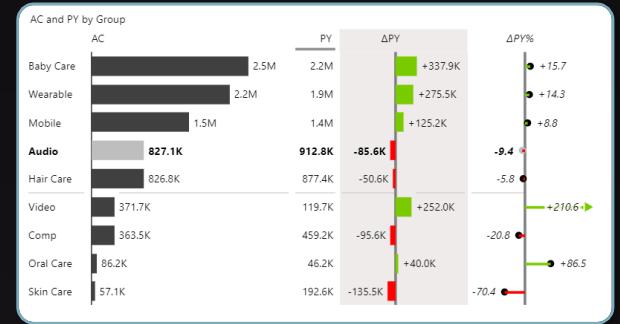
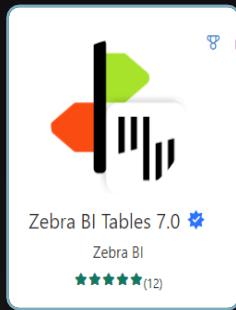
Gantt

Ideal for the project manager to create a Gantt chart and share with the teams the stages of a project.



Zebra BI Tables 7.0

Great financial visualizations of the income statement according to the IBCS standard. A must have.



Start with PowerBI

"From Rookie to Rock"

Step 4, Vizualisation

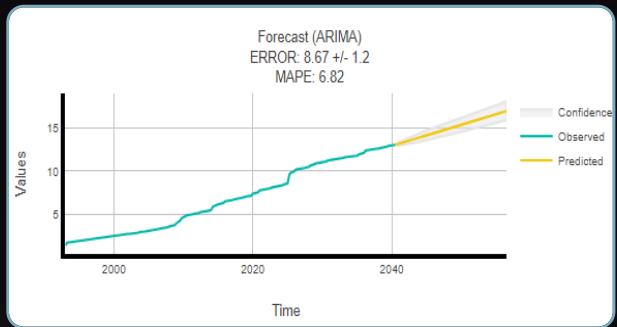
4

Add a PowerBI visual (5/5)



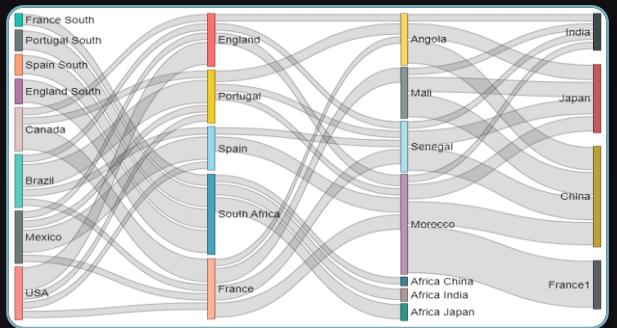
Forecast using multiple models
Add this app to your project (if you need it)

Forecast Using Mul...
MAQ LLC
★★★★★ (10)



Sankey chart
Sankey is a type of flowchart useful for visualizing the deformation of a variable through different categories.

Sankey Chart ⚡
Microsoft Corporation
★★★★★ (128)



Start with PowerBI

"From Rookie to Rock"

Step 4, Vizualisation

5

Create your own visualization! (1/12)



Practice



5.1 Customized radial chart (for income statement) What we want to build...

Part by Product ●IceCream ●Macaron

Category	IceCream (%)	Macaron (%)
Sales 1600	63%	38%
COGS 950 (59%)	53%	47%
Gross Profit 650 (41%)	77%	23%

Easy to do it...

Patou Tips #5

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

Part by Product ●IceCream ●Macaron

Category	IceCream (%)	Macaron (%)
Sales 1600	63%	38%
COGS 950 (59%)	53%	47%
Gross Profit 650 (41%)	77%	23%

To practice downloadable free resources in GitHub

To practice
downloadable free
resources in GitHub

Start with PowerBI

"From Rookie to Rock"

Step 4, Vizualisation

70

5

Create your own visualization! (2/12)



Practice



5.1 Customized radial chart (for income statement)

About this Chart and the data set...

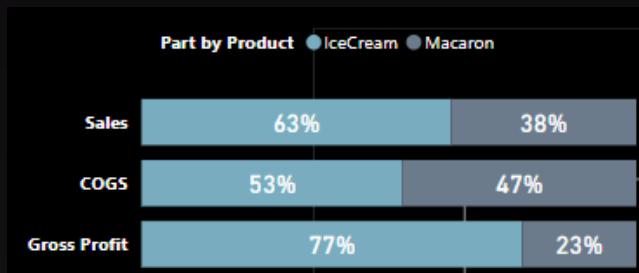
This graphic is really useful to display the repartition of dimension variable as product, customer by category result, here by income statement.



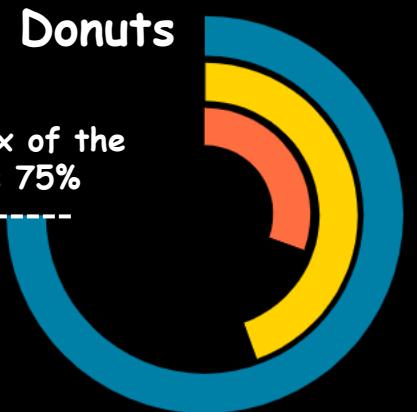
Stacked Bar Chart



Donuts



The max of the donut is 75%



Data set

Income Statement	Product	Value
Sales	IceCream	1000
Sales	Macaron	600
COGS	IceCream	500
COGS	Macaron	450
Gross Profit	IceCream	500
Gross Profit	Macaron	150



Data set come from the fictitious company based on Paris "IceCream' Macaron" from my book "Story of a Point"

Start with PowerBI

"From Rookie to Rock"

Step 4, Vizualisation

5

Create your own visualization! (3/12)



5.1 Customized radial chart (for income statement)

Create a donut...

Erase detail label and put the 25% area in the same the color like the background (here in black)

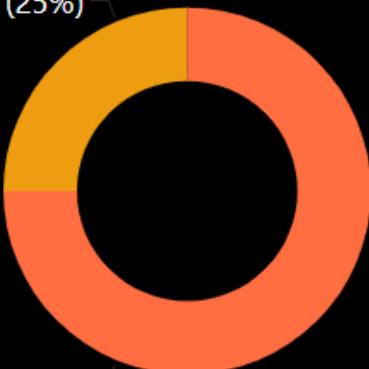
Mesure

```
Graph Value blank =
VAR Max_Value = CALCULATE(SUM(Data[Value]),Data[Income Statement]="Sales")
RETURN Max_Value-[Graph Value]
```



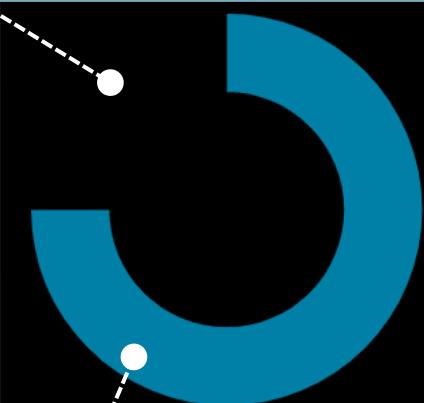
400 (25%)

1200 (75%)



Mesure

```
Graph Value =
CALCULATE(SUM(Data[Value]))*0.75
```



5

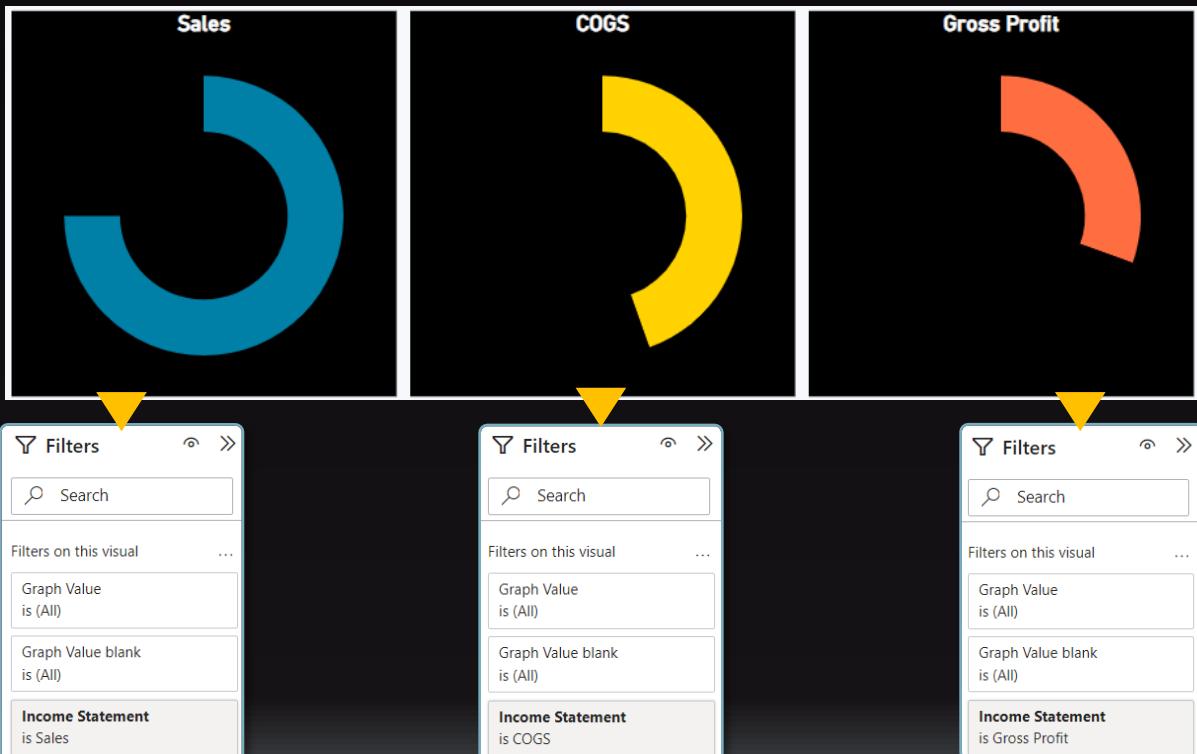
Create your own visualization! (4/12)



5.1 Customized radial chart (for income statement)

Create a donut for each category...

Assign the right filter (income statement) at each donut by the "filters panel"



Start with PowerBI

"From Rookie to Rock"

Step 4, Vizualisation

5

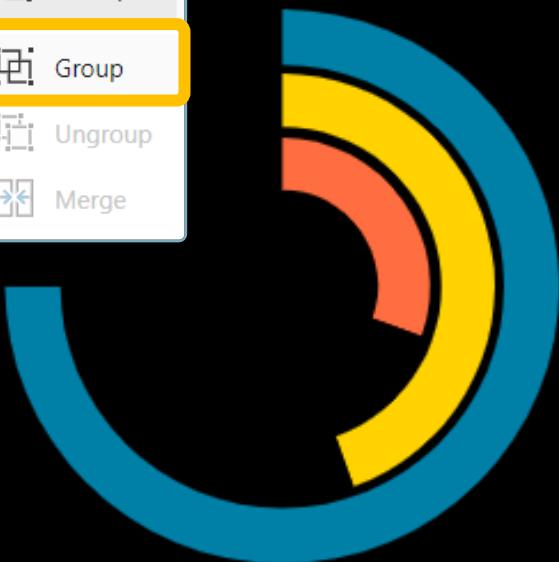
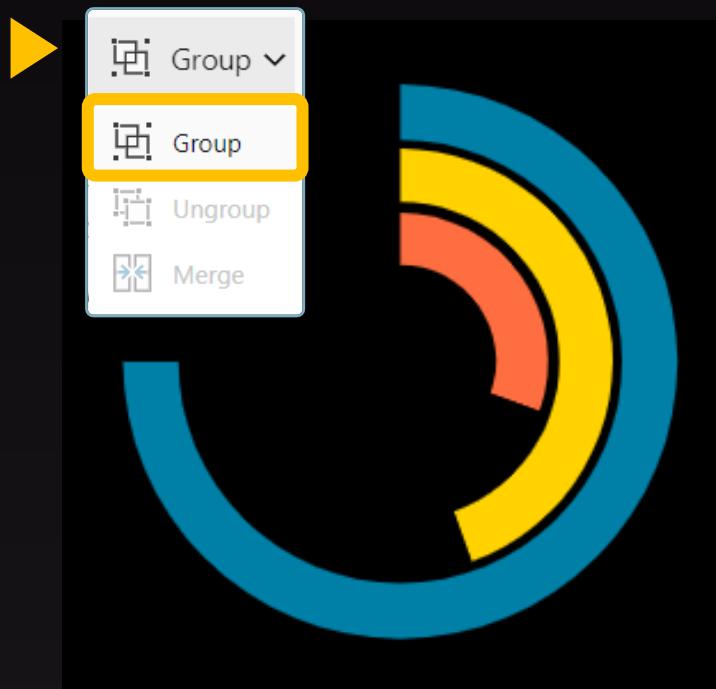
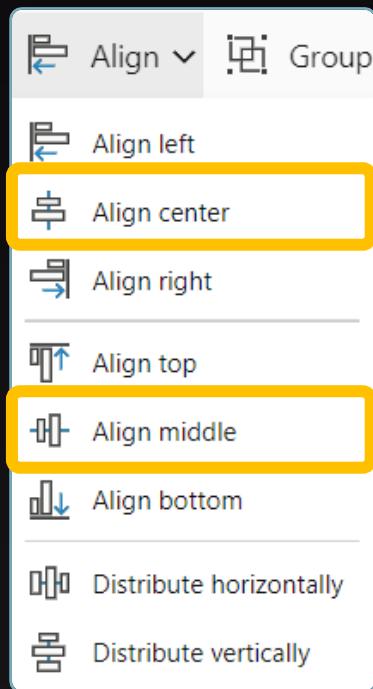
Create your own visualization! (5/12)



5.1 Customized radial chart (for income statement)

Bring together the donuts...

Align all the donuts by the center and by the middle and group it



5

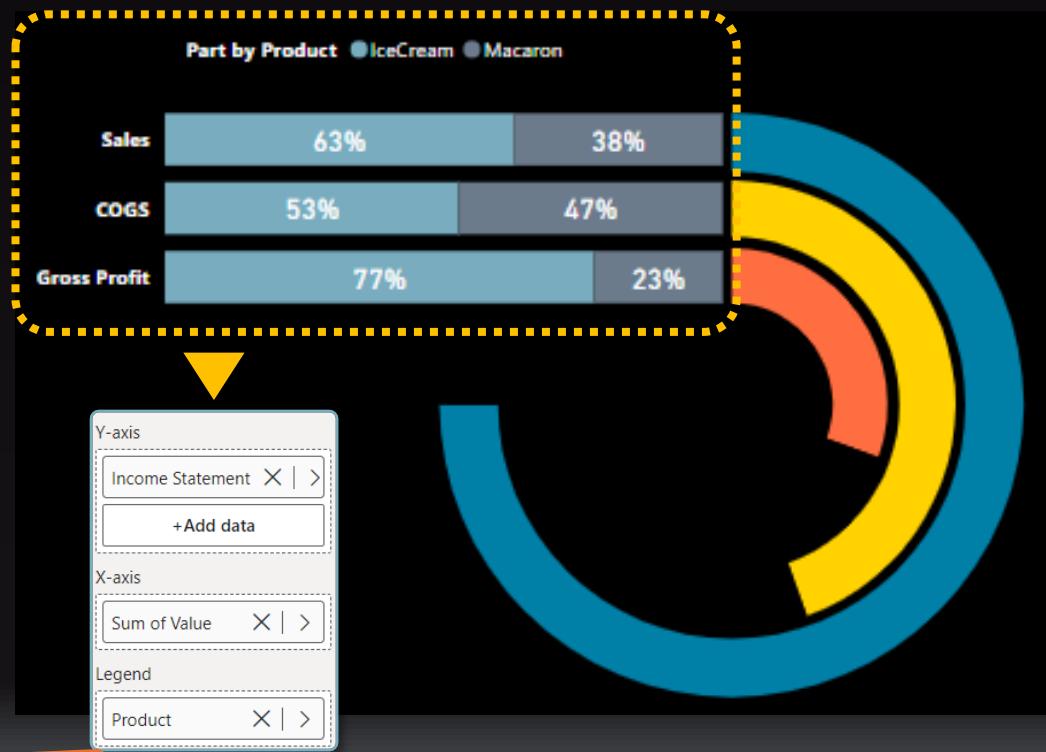
Create your own visualization! (6/12)



5.1 Customized radial chart (for income statement)

Create a "stacked bar chart"...

Create a "stacked bar chart" for the income statement distribution for each product



Start with PowerBI

"From Rookie to Rock"

Step 4, Vizualisation

5

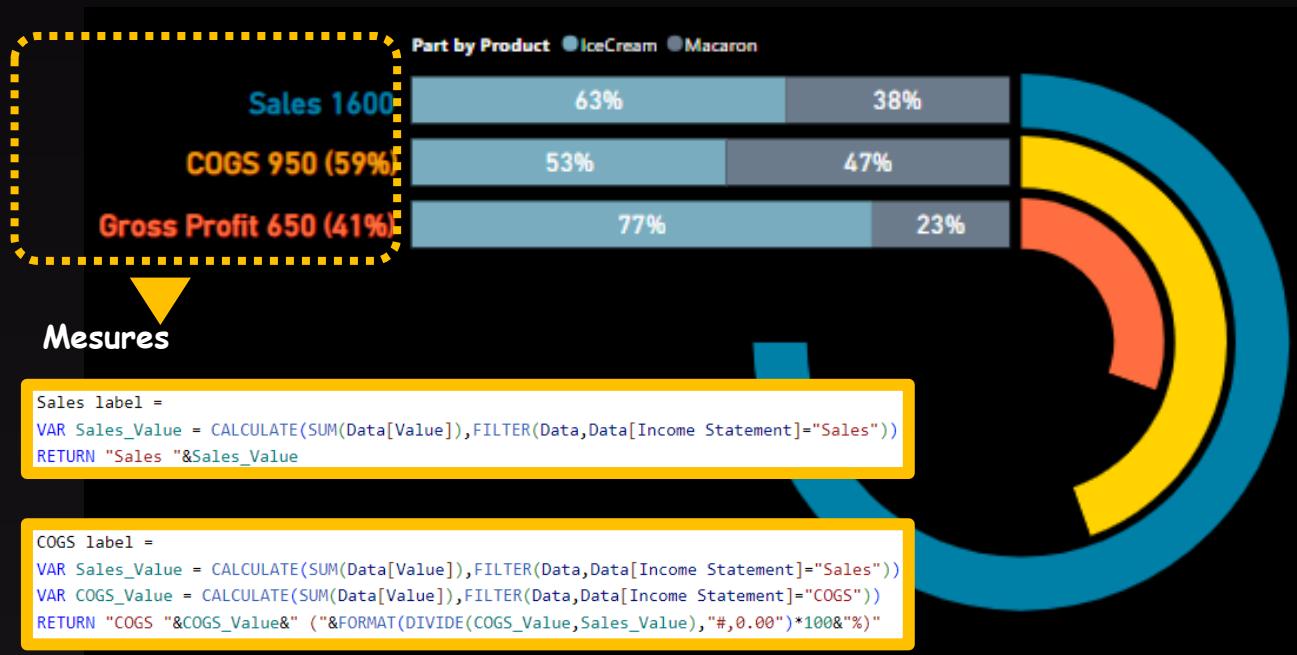
Create your own visualization! (7/12)



5.1 Customized radial chart (for income statement)

Create main labels, and it's finish!

Create labels and put colors like those of the circles.



Start with PowerBI

"From Rookie to Rock"

Step 4, Vizualisation

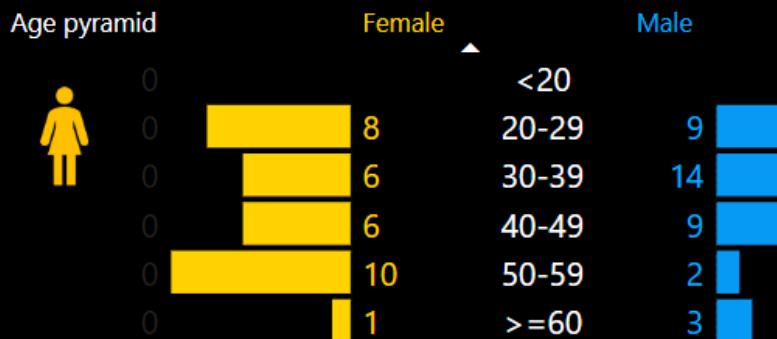
5

Create your own visualization! (8/12)

**Practice**

5.2 Age Pyramid Chart

What we want to build...

**Easy** to do it...

Patou Tips #7



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

A screenshot of a PowerBI dashboard featuring an age pyramid chart. The chart shows the population distribution for females and males across six age groups: <20, 20-29, 30-39, 40-49, 50-59, and >=60. The data is represented by horizontal bars, with females on the left and males on the right. Below the chart, there is a QR code and a link to download free resources from GitHub.

To practice
downloadable free
resources in GitHub



To practice
downloadable free
resources in GitHub

Start with PowerBI**"From Rookie to Rock"****Step 4, Vizualisation**

5

Create your own visualization! (9/12)



5.2 Age Pyramid Chart

Create the « age range »

This graphic is really useful to display the repartition of employees by gender.

Data set → Table Data "HR"

Id_Employee	Age	Female/Male	Age Range
AA10000000	39	Female	30-39
AA10000001	62	Male	>=60
AA10000002	31	Male	30-39
AA10000003	27	Female	20-29
AA10000004	47	Male	40-49
AA10000005	36	Male	30-39

Find the data and the PowerBi file to practice with the link on the first page or in the LinkedIn post.

```

1 Age Range =
2 SWITCH(TRUE(),
3     'Data HR'[Age]<20,"<20",
4     'Data HR'[Age]<30,"20-29",
5     'Data HR'[Age]<40,"30-39",
6     'Data HR'[Age]<50,"40-49",
7     'Data HR'[Age]<60,"50-59",
8     'Data HR'[Age]>60, ">=60")

```

Create a calculated column in the table "Data HR" and put the formula

Start with PowerBI

"From Rookie to Rock"

Step 4, Vizualisation

5

Create your own visualization! (10/12)



5.2 Age Pyramid Chart

Create a table and the measures...

The diagram illustrates the Power BI interface for creating an Age Pyramid Chart. It shows the following components:

- Measures pane:** Contains measures: #Female, #Female graph, #Male, and #Male graph.
- Table view:** A grid showing data for females and males across age ranges. The female data is highlighted with a yellow border.
- Visual editor:** A central area where a grid visual is being created, indicated by a yellow square icon.
- Style pane:** Shows style presets and a dropdown for 'Style'.
- DAX code snippets:**
 - #Female = CALCULATE(DISTINCTCOUNT('Data HR'[Id_Employee]), FILTER('Data HR', 'Data HR'[Female/Male] = "Female"))
 - #Female graph = [#Female]

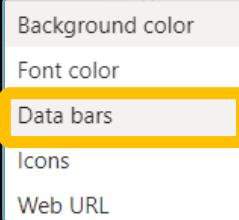
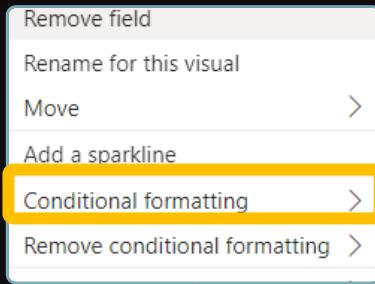


5.2 Age Pyramid Chart

Format the graph (1/2)

Column header

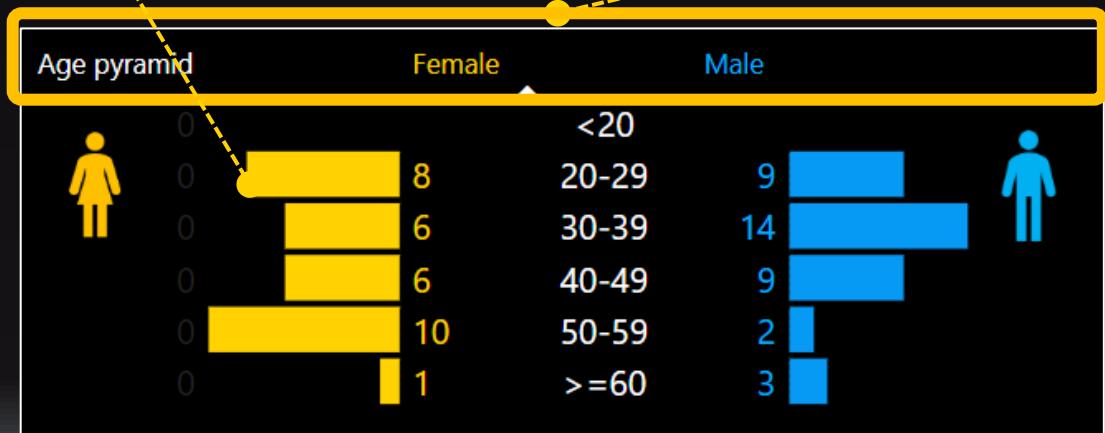
Bars



Age pyramid	X >
	X >
Female	X >
	X >
Male	X >
	X >

Rename the columns.

Use "space" to disappear some labels.

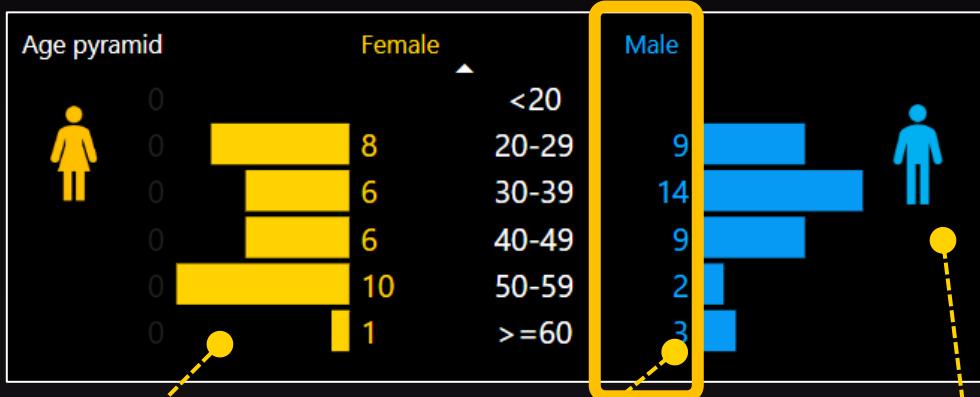


5

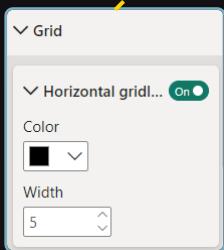
Create your own visualization! (12/12)



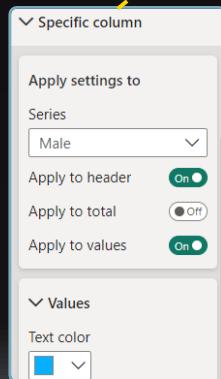
5.2 Age Pyramid Chart Format the graph (2/2)



Grid



Column



Icons
See Patou Tips #6

Start with PowerBI

"From Rookie to Rock"

Step 4, Vizualisation

To go further...



6 great ressources!



Aleksandra Godlewska

Power BI Expert | Designer | Microsoft Power
Cracow Metropolitan Area

Expérience : Visual Finance, PwC Polska



25 relations en commun



Kavita Behera

LinkedIn Top Voice | Product Manager | Dat
New Delhi

17 k abonnés



29 relations en commun



Nicholas Lea-Trengrouse

Power BI Disrupter | Head of Business Intelligence
Gloucestershire

Expérience : Columbus, Patchworks et 12 autre



34 relations en commun



Gustaw Dudek

-- Power BI Problem Solver -- Head Of Busine
Katowice Metropolitan Area

36 k abonnés



55 relations en commun



Andrzej Leszkiewicz

Power BI Developer and Consultant | IBCS® C
Cracow

9 k abonnés



30 relations en commun



Iwa Sanjaya

Reporting Analyst | Data Storyteller
Jakarta Metropolitan Area

Expérience : Plasticpay et PT. Sentra S



14 relations en commun

Start with PowerBI

"From Rookie to Rock"

Step 4, Vizualisation

Start with PowerBI

“From Rookie to Rock”



Step 5, Storytelling

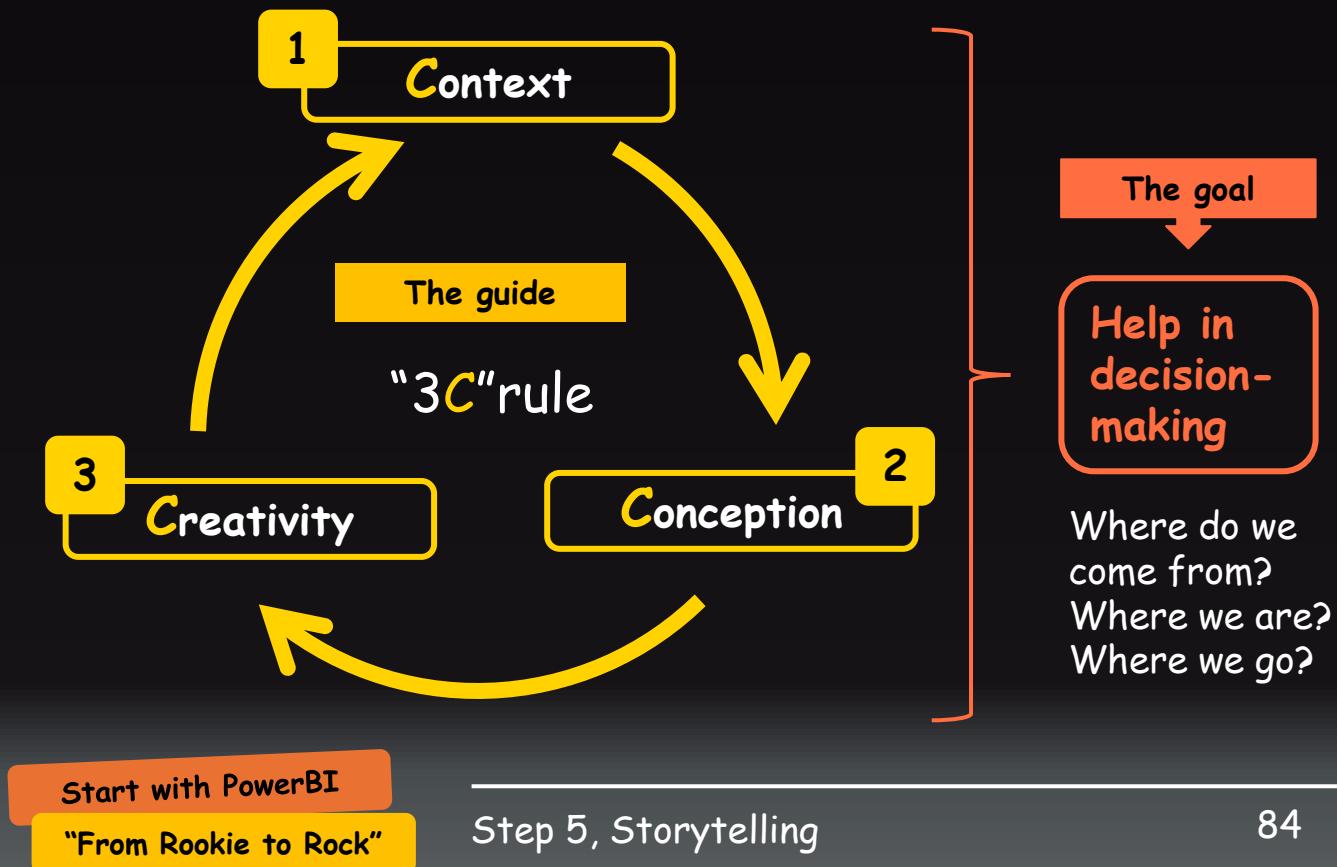
- 1 Connection with data
- 2 Data normalization
- 3 Project modeling
- 4 Visualization
- 5 Storytelling
- 6 Publication & Administration





About this step (1/2)...

This step calls upon both **reason (technical)** and **heart (feeling)**. Your project must be understood and easily exploitable and help in decision-making. Here are my main big tip, the “**3C**” rule.





About this step (2/2)...

✓ 1 → Understand Context → Create the story

✓ 2 → Conception → Build the story

✓ 2.1 Composition

✓ Dashboard anatomy

✓ Optimize page format

Practice

✓ 2.2 Colors

✓ Create a color theme, 3 main colors

Practice

✓ Use sentiment colors

Practice

✓ 2.3 UI/UX, help your users

✓ Create movie to help your users in PowerBI

Practice

✓ Increase User eXper. with Headers Icons

Practice



✓ 3 → Creativity → Give impact to your story

✓ 3.1 Colors: Get the right harmony!

✓ 3.2 Draw, don't write!

Practice



✓ 3.3 Best practices

Practice

✓ 3 → Ressources

1

Understand Context Create the story



Memo

Understand business needs and codes

- Which business?** IT, Finance, Manufacturing, Media, Healthcare, Logistics, Retail, Energy, Construction, Education...
- Which activity?** SI, Finance, Communication, Marketing, Education, Health...
- Specific things to know!** Politics elements, operational or strategic objectives, culture and history of the firm, specific calculation, data sources...

Constructing the story; beginning, middle and end

- Which audience?** Type of audience, only one, several...
- Which visual?** Table, graph, chart, text...
- Big idea!** Articulation, UI/IX relationship, relevant points, data to demonstrate...



Never work alone this step, work with at least one business professional to validate the scenarios.

The goal

Help in decision-making

Where do we come from?
Where we are?
Where we go?

Start with PowerBI

"From Rookie to Rock"

Step 5, Storytelling

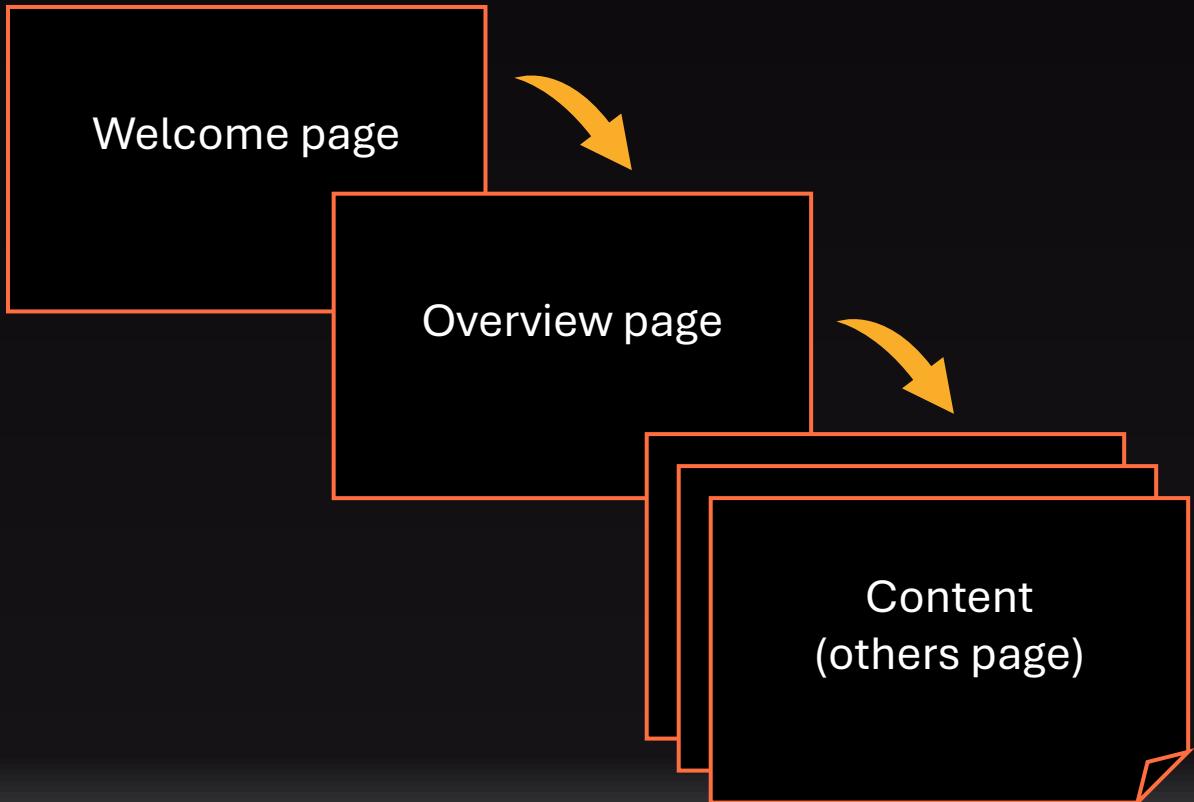
86

2

Conception Build the story



2.1 Composition (1/4) Dashboard anatomy



2

Conception Build the story



2.1 Composition (2/4)

Welcome page

KPI Report

Access to the main KPIs representative of the activity of Massachusetts General Hospital

START

Created by Patrice Fayard

in GitHub

Example: My submission for the "Maven Challenge Hospital" of June 2024



Elements on a "Welcome page":

- Dashboard Theme
- Start button (to overview page)
- Last update information
- Data date range information, data source name...
- Author: name, web link

Start with PowerBI

"From Rookie to Rock"

Step 5, Storytelling

2

Conception

Build the story



2.1 Composition (3/4) Overview "page"



Example: My submission for the "Maven Challenge Nortwind Traders" of June 2023



Elements on a "Overview page":

- 1 Firm/entity name/logo
- 2 Navigation page pane
- 3 Filters (here filters are in a pop-up)
- 4 Filter selection informations
- 5 KPI
- 6 Visualizations

Start with PowerBI

"From Rookie to Rock"

Step 5, Storytelling

2

Conception

Build the story



2.1 Composition (4/4)

Content (other pages)



Start with PowerBI

"From Rookie to Rock"

Step 5, Storytelling

90



2.1 Composition (4/4)

Optimize page format



1080 x 1920 is a very interesting format to optimize space and font. It is best for working with tables, legends, titles, subtitles, etc.

Canvas settings

Type: 16:9
Height: 720 px
Width: 1280 px

Income Statement		2022	2023	Variation
Sales		600	1000	67 % ▲
COGS		-450	-500	-11 % ▼
Gross Profit		150	500	233 % ▲

Canvas settings

Type: Custom
Height: 1080 px
Width: 1920 px

Income Statement		2022	2023	Variation
Sales		600	1000	67 % ▲
COGS		-450	-500	-11 % ▼
Gross Profit		150	500	233 % ▲

Same table, with a different page format.



2.2 Colors, create a color theme, 3 main colors (1/5)

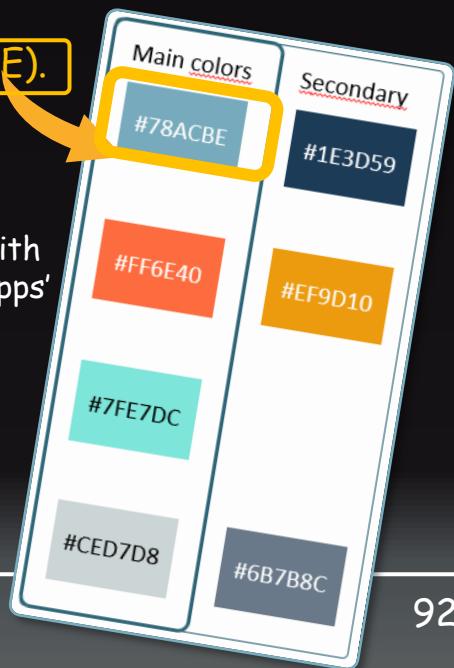
For my book "Story of a point", I took my **inspiration** from the book "Super Graphic", Tim Leong (June 2013). An amazing book for color research. When I find **3 main colors**, I search for the **hexadecimal code** with my smartphone and the "What a color?" mobile application. This application is really useful to catch the color and the **hexadecimal code**.

With PowerPoint I test a lot of colors until I find **3 main colors** (but here 4) and **3 secondary colors**. My favorite color for the book theme and for PowerBI files is the color called:

"Dark Pastel Blue (hexadecimal code: #78ACBE)".



Get hexadecimal code with
"what a color?" mobile apps'



2

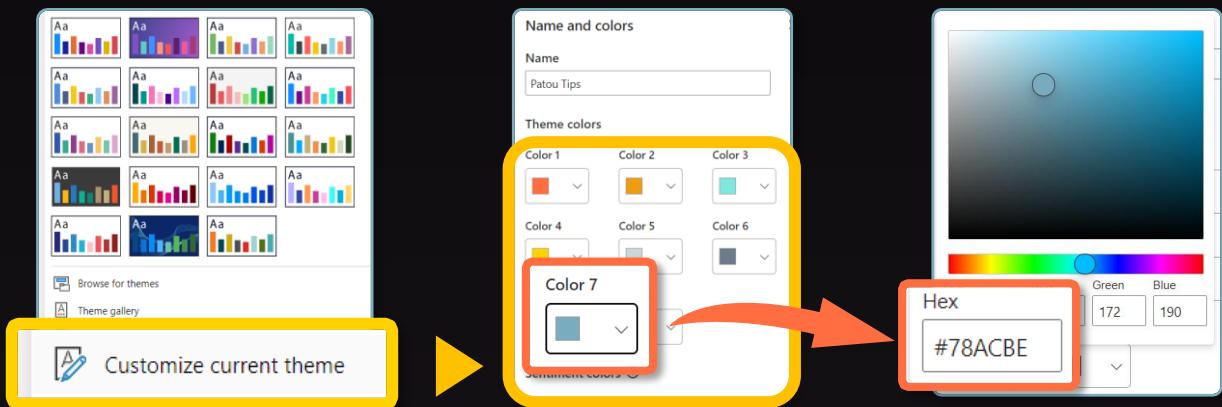
Conception Build the story



2.2 Colors, create a color theme, 3 main colors (2/5)

On PowerBI click on
“Customize current theme”
Path: View > Themes

7 colors chosen before, put the hexadecimal codes for each colors.



Save your final color theme
If you want to use it for another
PowerBi project. A json file will be
create, ready to use!

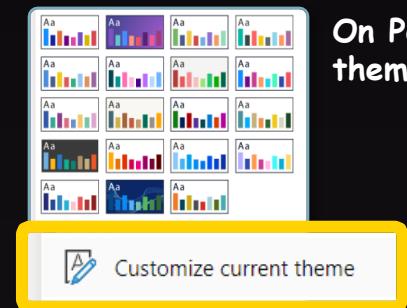
Save current theme

Patou Tips Colors.json

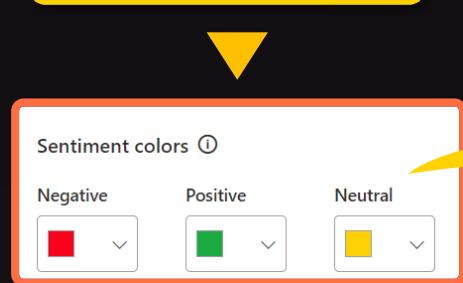


2.2 Colors, use sentiment colors (3/5)

These three colors are important to mean which result is good and what is not.



On PowerBI click on "Customize current theme" Path: View > Themes



Anatomy of
a KPI

Where we
come from?

Where
we are?

Where
we go?

Sales YTD
(until November 2024)

LY = Last Year
Act = Actual

LY
110 €

Act
100 €

Plan
90 €

Act vs LY
▼ +10 €/ +10%

Act vs Plan
▲ +10 €/ +10%



In the reality, I use only "Green (Good)" and "Red (Bad)" colors.

2

Conception Build the story



Practice



2.2 Colors, use sentiment colors (4/5) Create icons sentiments colors

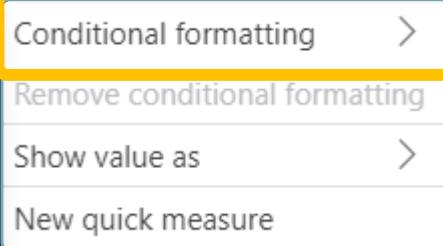
Before

Income Statement		2022	2023	Variation
Sales		600	1000	67 %
COGS		-450	-500	-11 %
Gross Profit		150	500	233 %

After

Income Statement		2022	2023	Variation
Sales		600	1000	67 % ▲
COGS		-450	-500	-11 % ▼
Gross Profit		150	500	233 % ▲

Right click on the name of the measure on the "Build" pane



Icons

2

Conception

Build the story



2.2 Colors, use sentiment colors (5/5)

Create icons sentiments colors

Icons - Variation

Format style

Apply to

Rules

Values only

What field should we base this on?

Variation

Icon layout

Icon alignment

Style

Right of data

Top

Custom

Rules

Rules

If value \geq Min Number and < 0 Number then

If value \geq 0 Number and \leq Max Number then

2

Conception Build the story



2.3 UI/UX, help your users

Create a movie to help your users in PowerBI (1/6)

For the "Maven Northwind Challenge", I wanted that the users can have inside the dashboard, a movie to show all the features of the project and how it works...



Easy to do it...

Patou Tips #4



Create a movie
to help your users
in PowerBI



downloadable free
resources to practice
in GitHub



To practice
downloadable free
resources in GitHub

Conception

Build the story



2.3 UI/UX, help your users

Create a movie to help your users in PowerBI (2/6)

When the user is drag on hover the mention "how it works?..."

...A movie appear inside the dashboard PowerBi to help the users!

Metrics Overview:

- SALES:** 440 624 (Net Sales (USD))
- CUSTOMERS:** 81 (# of Customers)
- ORDERS:** 270 (# of Orders)
- DELIVERY:** 8,04 (Av. Days To Ship)

Product Category:

Category	Sales	PY	% Change
Food	105K	96K	-1,24
Non-Alcoholic Beverages	124K	96K	13,38 %

Customer:

Customer	Sales	PY	% Change
Ernst Handel	41 211	37 217	10,9%
QUICK-Stop	37 217	36 310	2,8%
Save-a-lot Markets	36 310	36 800	1,4%
Hanari Carnes	23 821	23 821	0,0%
Rattlesnake Canyon Grocery	21 238	21 238	0,0%

Employee:

Employee	Sales	PY	% Change
Janet Leosh	30K	30K	0,0%
Michael S. Isom	30K	30K	0,0%
Robert King	30K	30K	0,0%
David H. Ladd	30K	30K	0,0%
Mark L. Loper	30K	30K	0,0%
Patricia B. Vargas	30K	30K	0,0%
Alberto F. hallo	30K	30K	0,0%
Robert R. King	30K	30K	0,0%
Terrence M. Quinn	30K	30K	0,0%
John M. Hanley	30K	30K	0,0%
Michael S. Isom	30K	30K	0,0%
Robert King	30K	30K	0,0%
David H. Ladd	30K	30K	0,0%
Patricia B. Vargas	30K	30K	0,0%
Alberto F. hallo	30K	30K	0,0%
Robert R. King	30K	30K	0,0%
Terrence M. Quinn	30K	30K	0,0%
John M. Hanley	30K	30K	0,0%

Shipper:

Shipper	Sales	PY	% Change
Alpha Shipper	30K	30K	0,0%
Beta Shipper	30K	30K	0,0%
Gamma Shipper	30K	30K	0,0%
Delta Shipper	30K	30K	0,0%
Epsilon Shipper	30K	30K	0,0%
Zeta Shipper	30K	30K	0,0%
Eta Shipper	30K	30K	0,0%
Iota Shipper	30K	30K	0,0%
Kappa Shipper	30K	30K	0,0%
Mu Shipper	30K	30K	0,0%
Nu Shipper	30K	30K	0,0%
Omicron Shipper	30K	30K	0,0%
Rho Shipper	30K	30K	0,0%
Sigma Shipper	30K	30K	0,0%
Tau Shipper	30K	30K	0,0%
Chi Shipper	30K	30K	0,0%
Psi Shipper	30K	30K	0,0%
Epsilon Shipper	30K	30K	0,0%
Zeta Shipper	30K	30K	0,0%
Eta Shipper	30K	30K	0,0%
Iota Shipper	30K	30K	0,0%
Kappa Shipper	30K	30K	0,0%
Mu Shipper	30K	30K	0,0%
Nu Shipper	30K	30K	0,0%
Omicron Shipper	30K	30K	0,0%
Rho Shipper	30K	30K	0,0%
Sigma Shipper	30K	30K	0,0%
Tau Shipper	30K	30K	0,0%
Chi Shipper	30K	30K	0,0%
Psi Shipper	30K	30K	0,0%

What are the TOP Countries?

Country	Sales	PY	% Change
USA	102 814	97 557	159 %
Austria	45 001	44 833	125 %
UK	22 624	20 668	125 %
Germany	20 668	20 402	104 %
France	20 398	19 722	317 %
Spain	18 722	18 084	5 %
Portugal	18 084	17 295	103 %

What are the TOP Products?

Product Name	Sales	PY	% Change
Côte de Blaye	13 683	13 345	132 %
Thüringer Rostbratwurst	13 345	12 993	232 %
Raclette Courdavault	12 993	12 630	98 %
Camembert Pierrot	12 630	12 000	175 %
Tarte au sucre	12 000	11 773	257 %

Most Important Categories:

Category	Sales	PY	% Change
Produce	27 470	26 533	3,6%
Seafood	10 199	9 845	3,2%
Meat & Poultry	9 845	9 346	5,3%
Dairy Products	8 773	8 346	4,8%
Condiments, Jams, Mustards, etc.	7 646	7 295	4,8%
Confections	7 295	6 773	7,7%

Start with PowerBI

"From Rookie to Rock"

Step 5, Storytelling

2

Conception

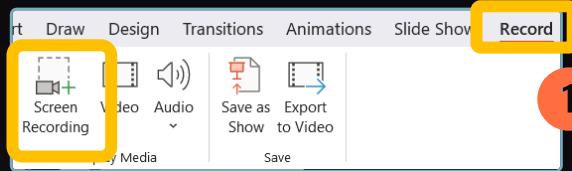
Build the story



2.3 UI/UX, help your users

Create a movie to help your users in PowerBI (3/6)

Create the movie in PowerPoint



1

On PowerPoint:
Path: Record > Screen
Recording



2

A pop-up appear, with the button "Select Area" select the area on your PowerBI project. A dashed red line indicate you the area.

3

Click on record to start and the touches
↑ + ⌘ + Q to stop the movie. It's done!

Start with PowerBI

"From Rookie to Rock"

Step 5, Storytelling

2

Conception Build the story



2.3 UI/UX, help your users

Create a movie to help your users in PowerBI (4/6)

Save the movie as an animated GIF

File name: How it works.mp4

Save as type: Media File (*.mp4)

In PowerPoint save your record as MP4 format



Convertio

Use an online service or a software to convert your file from MP4 format to an animated GIF. Here I use "Convertio"

How it works.gif



2.3 UI/UX, help your users

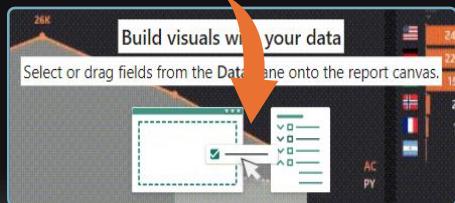
Create a movie to help your users in PowerBI (5/6)

On PowerBI, create a new page for the animated GIF

Settings of
the page

The image consists of three side-by-side screenshots of the PowerBI 'Format' pane. Each screenshot has a yellow border around its main content area. The first screenshot shows the 'Page information' section with 'Name' set to 'How it works?' and 'Page type' set to 'Tooltip'. The second screenshot shows the 'Canvas settings' section with 'Type' set to 'Custom', 'Height' at 480 px, 'Width' at 750 px, and 'Vertical alignment' at Middle. The third screenshot shows the 'Canvas background' section with 'Image' set to 'How it works.gif', 'Image fit' set to 'Fit', and 'Transparency' at 0 %.

Create a white frame to display better your movie in the dashboard, and to don't have the following display



The image shows two screenshots of the PowerBI 'Shape style' and 'Border' settings. The 'Shape style' pane has a yellow border around the 'Shape' section, which is set to 'Rectangle' and 'Rounded corners' at 0 px. The 'Border' pane also has a yellow border around its 'Color' section, which is set to white. Both panes show transparency settings at 0 %.



2.3 UI/UX, help your users

Create a movie to help your users in PowerBI (6/6)

On PowerBI, create a button

The screenshots illustrate the step-by-step configuration of a button in PowerBI:

- Buttons Shapes Image ribbon:** Shows the ribbon with the 'Buttons' icon selected.
- Text properties:** Set the text to "How it works?", font to "Segoe UI", size to 10, and font color to black.
- Icon properties:** Set the icon type to "Information", line color to black, weight to 3 px, transparency to 0%, and padding to 4px (top/bottom) and 15px (left/right).
- Properties tab:** Under the "Icons" section, the "Help tooltip" option is turned on.
- Help tooltip properties:** Set the type to "Report page", page to "How it works?", and tooltip text to "Follow the guide".

The final result: Drag on hover the button "How it works?" a help symbol (?) appear, to drag on hover this symbol will display the movie from your animated GIF.

2

Conception Build the story



2.3 UI/UX, help your users

Increase User eXperience with Headers Icons

It is interesting to increase the user experience (UX) in your PowerBI charts (and tables) with the “Header Icons” features.

Easy to do it...

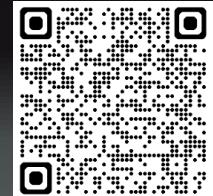
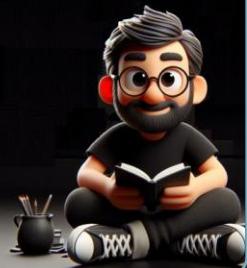
Patou Tips #11



Increase User eXperience
in your PowerBI projects
with **Headers Icons**



To practice
downloadable free
resources in GitHub



To practice
downloadable free
resources in GitHub

103

2

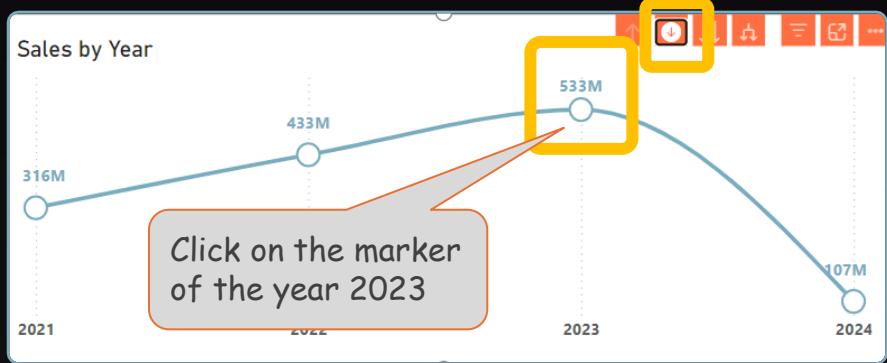
Conception Build the story



2.3 UI/UX, help your users Increase User eXperience with Headers Icons



Drill
down



Drill up to
go to the
previous
graph

Sales detail of 2023
is the new graph



Start with PowerBI

"From Rookie to Rock"

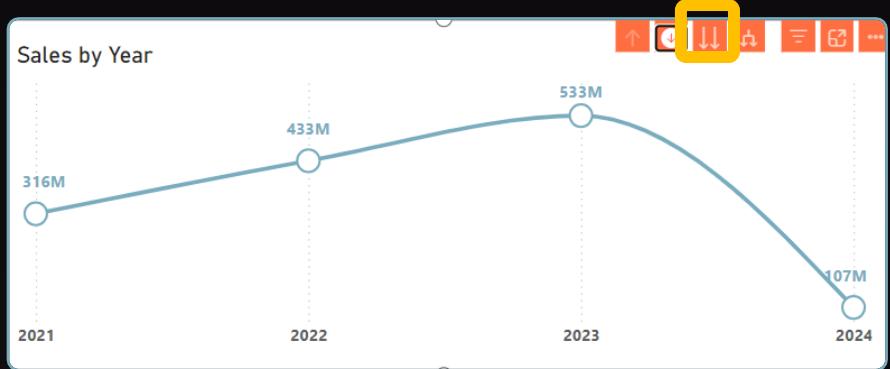


2.3 UI/UX, help your users

Increase User eXperience with Headers Icons



Show
next
level



Sales detail of all the years by month is the new graph.



In this case, this view is wrong, sales from 2021 till 2024 are aggregated by month.



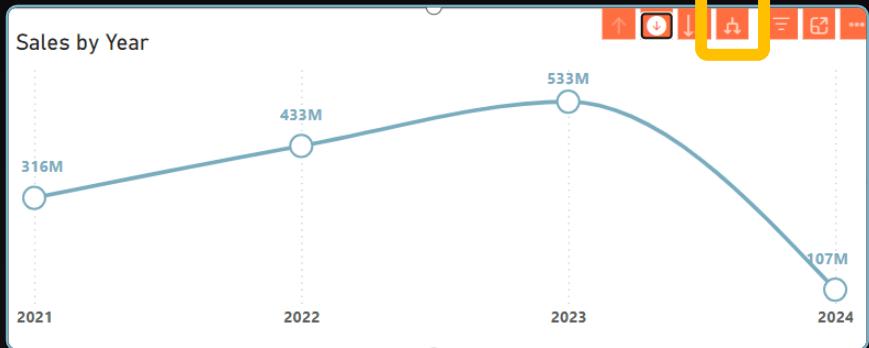


2.3 UI/UX, help your users

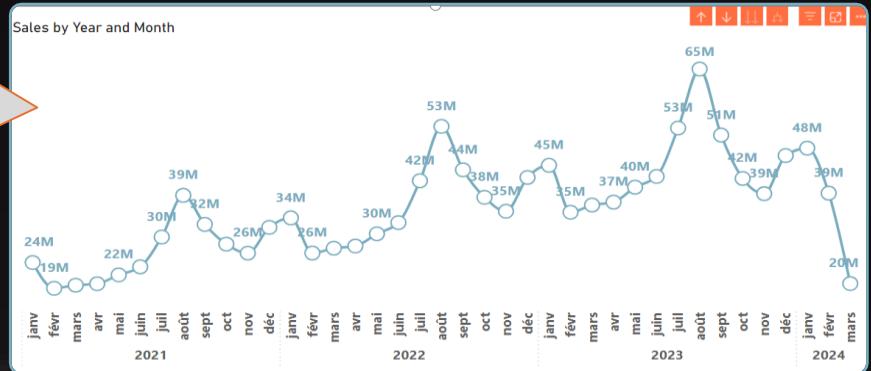
Increase User eXperience with Headers Icons



Expand to
next level



Sales detail of
all the years by
month is the new
graph.



Start with PowerBI

"From Rookie to Rock"

Step 5, Storytelling

2

Conception

Build the story



2.3 UI/UX, help your users

Increase User eXperience with Headers Icons

Now you know how it works and you can choose whether or not to enable these features. But remember that your configuration will be effective as soon as your report is published.



Drill up



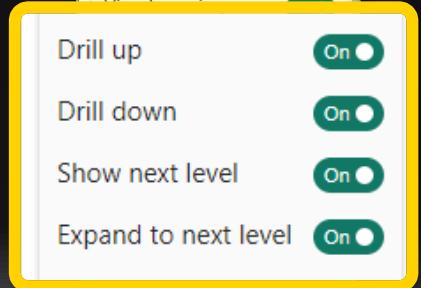
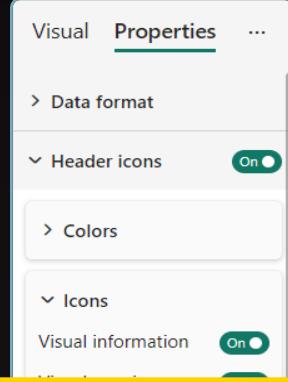
Drill down



Show next level



Expand to next level

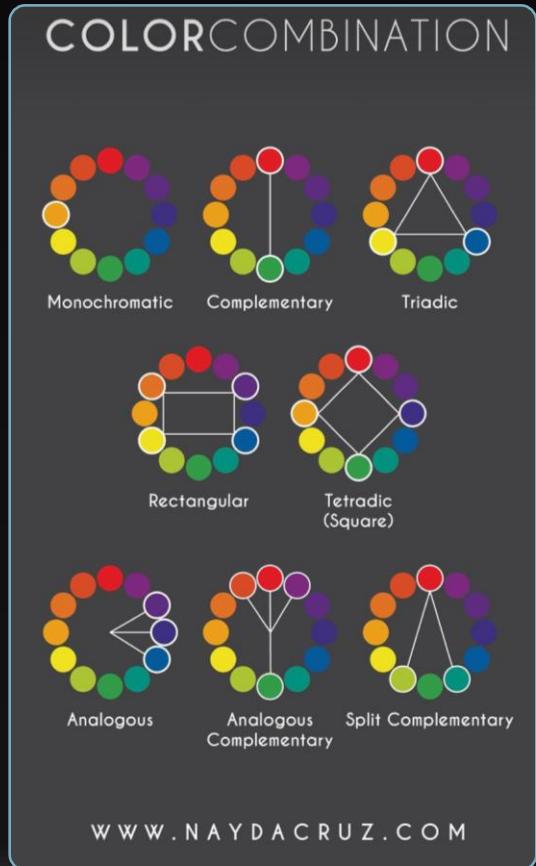


3

Creativity Give impact to your story



3.1 Colors: get the right harmony!



Anything is possible, but often it's better to create your color theme according to color combination rules.

Sometimes, when I find colors, I reopen my project a few days later just to see if the impact or mood I wanted is still the same.

Sometimes I change the theme 4 or 5 times!

Start with PowerBI

"From Rookie to Rock"

Step 5, Storytelling

108

3

Creativity Give impact to your story

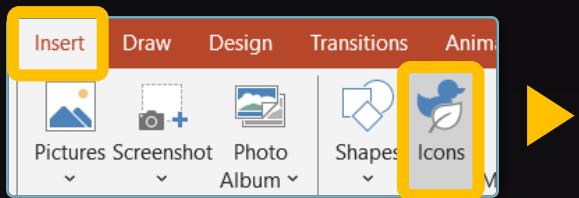


3.2 Draw, don't write!

Create Customized Icon (with PowerPoint for PowerBI)

Create icon in PowerPoint

- 1 Choose an icon from the PowerPoint library



- 2 Change the color of the icon, and right click on the new icon and select "save as Picture"

Save as Picture...

- 3 Save it as "png" format



3

Creativity

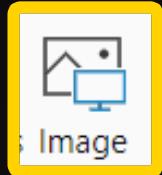
Give impact to your story



3.2 Draw, don't write!

Create Customized Icon (with PowerPoint for PowerBI)

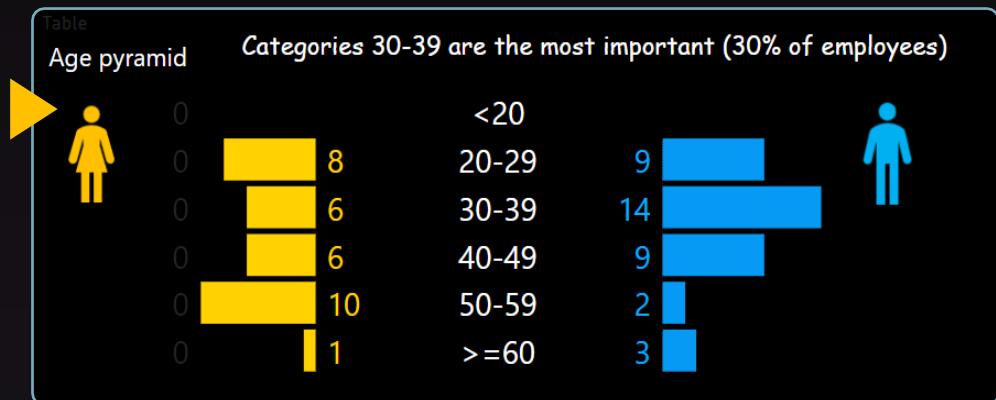
Import to add graphic elements



Insert > Images

Here I insert it as legends with the same colors as the lines.

It's faster for your users, no need to read!



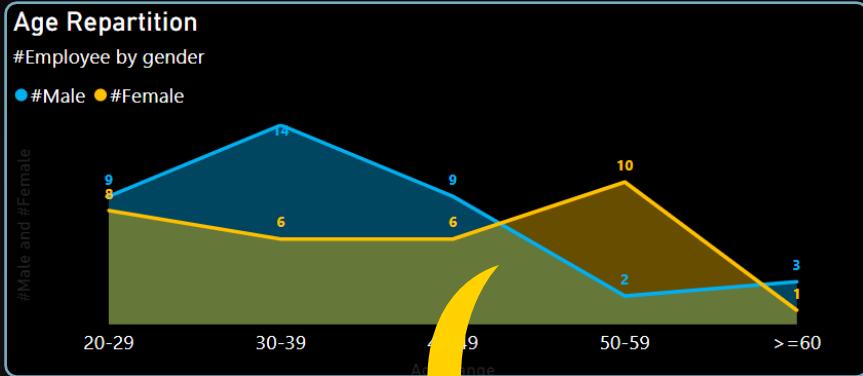
3

Creativity Give impact to your story



3.3 Best practices Choose the right chart

Why not?



Better

Bar chart is better for categories and line chart is better for time data.



Start with PowerBI

"From Rookie to Rock"

3

Creativity

Give impact to your story



3.3 Best practices

Optimize chart

Why not?

Better

Donut chart are more airy than Pie chart.

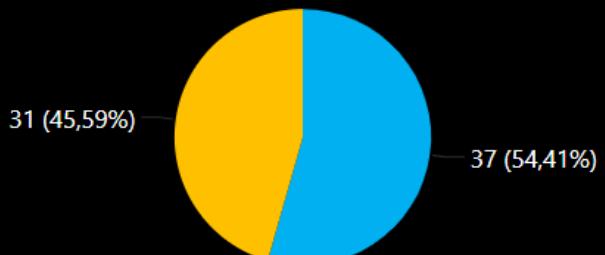


Place a KPI in the middle like a total, this gives more impact, and add a commentar to resume situation

Age Repartition

#Employee by gender

● #Male ● #Female



Age Repartition

2023 | #Employee by gender

Women represent 46% of the employees



68

Employee

31 (46%)

37 (54%)



3.3 Best practices

Declutter the X and Y axes

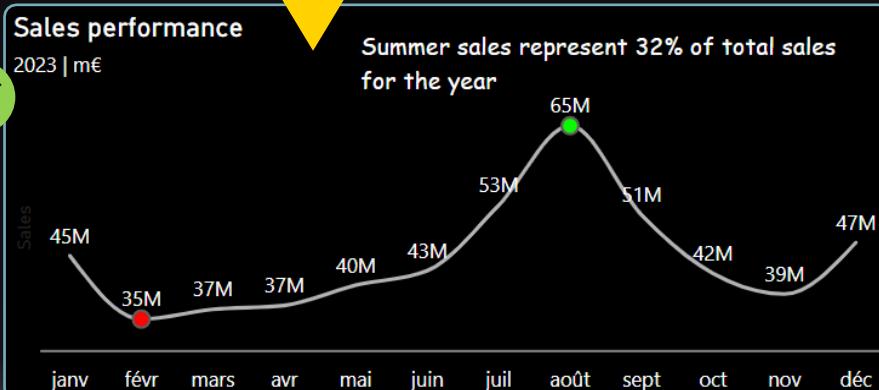
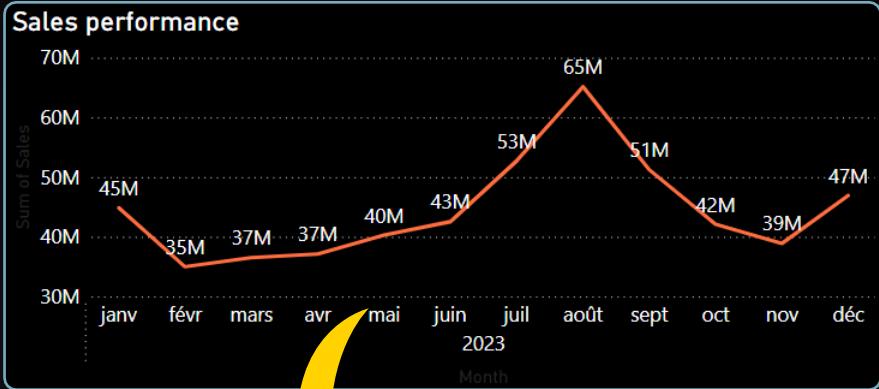
Why not?

Better

No need to have a lot of information, declutter the X and Y axes, it's important to do it!



Indicate min and max value (red and green markers), add a fine line for the X axe and a commentar to resume situation.





3.3 Best practices

Which information is important?

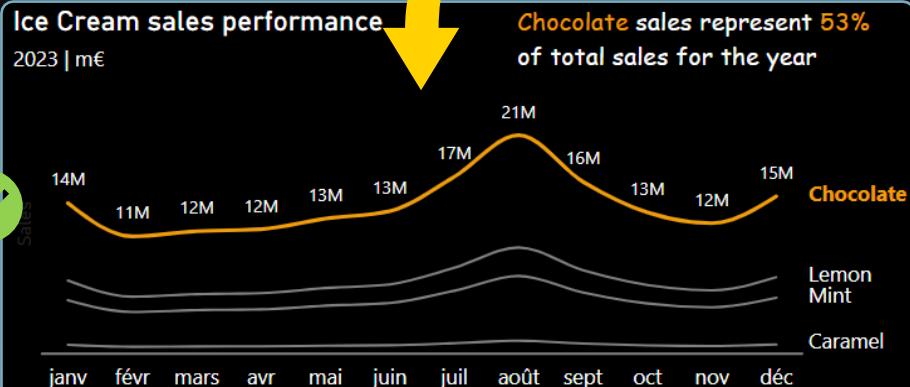
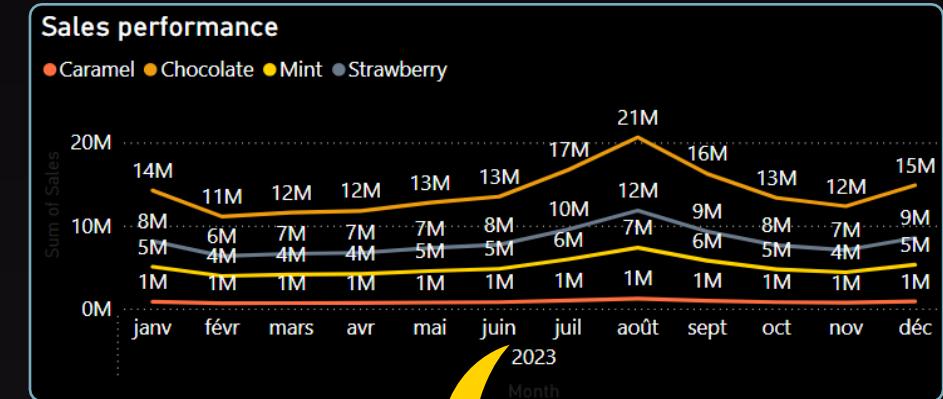
Why not?

Better

Show the most
important
information.



In this case study,
"Chocolate Ice
Cream" represents
more than 50% of
total sales!

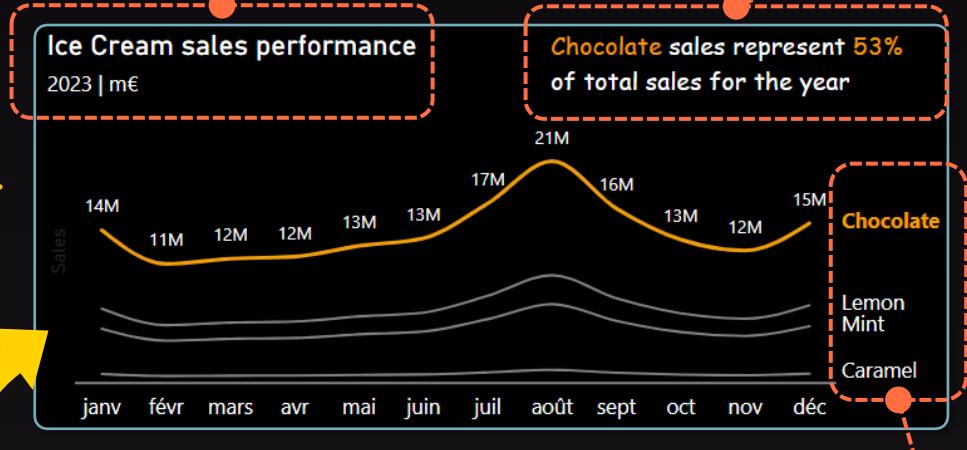




3.3 Best practices

Anatomy of a Storytelling

Title & sub-title



Summarize the situation, just facts, no interpretation!

No Y axis, but still leave a thin line for the base (here just above the months)

Avoid legends, write them directly on the graph!



Font: Try to use 1 or 2 fonts maximum and 3 different font sizes maximum.

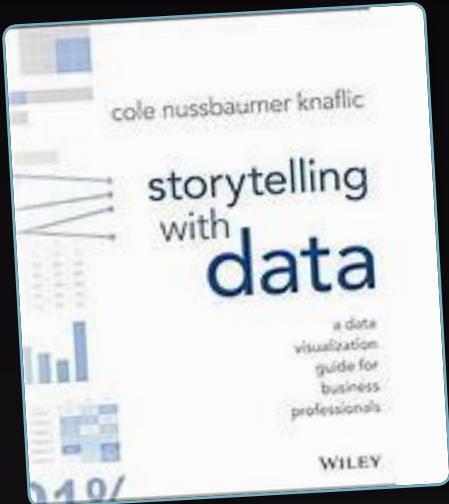
Start with PowerBI

"From Rookie to Rock"

4 Ressources



Book



**Storytelling with data
(Cole Nussbaumer
Knaflic)**

If you could only have one book, this would definitely be it!

Start with PowerBI

"From Rookie to Rock"

Images Bank

<https://unsplash.com/>
<https://www.pexels.com/>
<https://pixabay.com/>
<https://burst.shopify.com/>

Icones

<https://www.flaticon.com/>
<https://fr.freepik.com/>
<https://icons8.com/>

PowerPoint templates

<https://www.slidor.fr/en/ressources-powerpoint-gratuites>
<https://slidemodel.com/free-powerpoint-templates/>
<https://slideshop.com/>
<https://www.slideteam.net/>
<https://elements.envato.com/fr/>

Colors

<http://www.cercle-chromatique.com/>
<https://color.adobe.com/fr/create/color-wheel/>

List from Enes Akdag (pvla.com)

To go further...



6 great ressources!



Cole Nussbaumer Knaflic • 2e
CEO, storytelling with data
Milwaukee, WI

Expérience : storytelling with data, Google et 3 au

6 relations en commun



Jasmin Simader • 2e
BI Analyst & Data Viz Expert (PBI & Qlik Sense) | #gerneper Linz-Wels-Steyr Area

4 k abonnés
29 relations en commun

[Message](#) [Voir le profil complet](#)



Enes Akdag • 1er
Senior Consultant
Greater Paris Metropolitan Region

Expérience : P-Val by Circle Strategy, P-Val Conseil et 1 au

4 relations en commun

[Message](#) [Voir le profil complet](#)



Bas Dohmen • 2e
Join my next Power BI Transformation FEBRU, Willich

66 k abonnés
48 relations en commun



Armand van Amersfoort • 1
Microsoft MVP ★ Owner DEXS.studio ★ Dash Hengelo

34 k abonnés
71 relations en commun



carlos barboza • 2e
data & decision
Peru

21 k abonnés
3 relations en commun

[Message](#) [Voir le profil complet](#)

Start with PowerBI

“From Rookie to Rock”



Step 6, Publication & administration

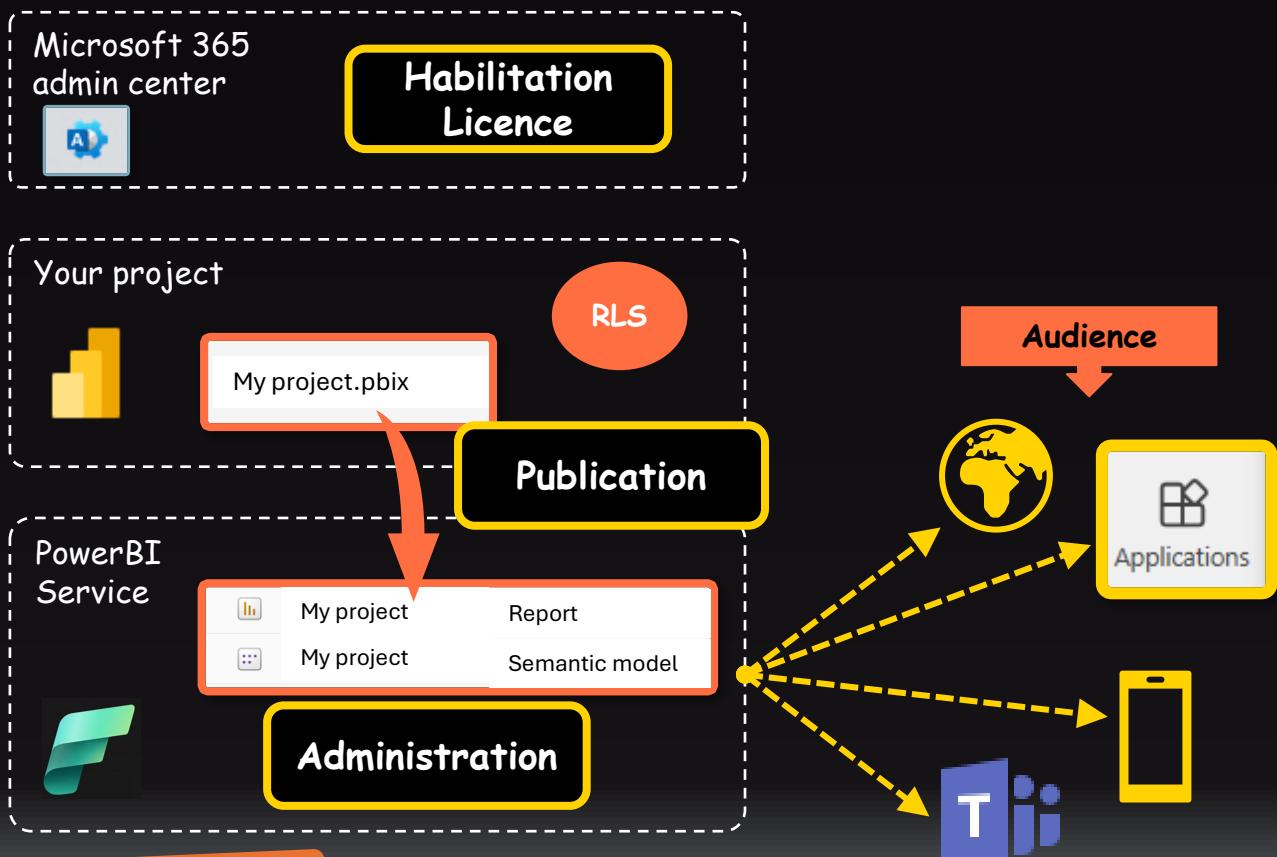
- 1 Connection with data
- 2 Data normalization
- 3 Project modeling
- 4 Visualization
- 5 Storytelling
- 6 Publication & Administration





About this step (1/2)...

Your project is ready! Now you need to share that information with the audience you want to make better decisions with data!



Start with PowerBI

"From Rookie to Rock"



About this step (2/2)...

- ✓ 1 → Microsoft 365 admin center
 - ✓ Create habilitation, assign licenses...
- ✓ 2 → PowerBI Service (a part of Fabric)
 - ✓ 2.1 Manage access
 - ✓ 2.2 Publication
 - ✓ Publication/Distribution on the web (public) Practice 
 - ✓ Publication to devices (mobile, tablet) Practice 
 - ✓ Create an application
 - ✓ Publication on teams Practice 
 - ✓ 3 → Fabric, the New Revolution
 - ✓ What is Fabric?
 - Databases, Data factory, Data Engineering, Data Wahrehouse, Data Science, Real-Time Intelligence, Power BI and OneLake

1

Microsoft 365 admin center

Create habilitation, assign licenses...



The Microsoft 365 admin center allows you to add users, reset passwords, manage roles, teams and communities.

Microsoft 365 admin center

Add a user User templates Add multiple users Multi-factor authentication

Display name ↑ Username

Patrice FAYARD Patou1967@8ynd6k.onmicrosoft.com

Patrice FAYARD

Reset password Block sign-in Delete user

Change photo

Account Devices Licenses and apps Mail OneDrive

Username and email patrice1.fayard@8ynd6k.onmicrosoft.com Manage username and email Aliases Manage username and email

Last sign-in View last 30 days Sign-out ⓘ Sign this user out of all Microsoft 365 session Sign out of all sessions

Alternate email address None provided Add address Groups 8ynd6k Manage groups

Roles No administrator access Manage roles Manager None provided Add manager

Start with PowerBI
"From Rookie to Rock"

PowerBI Service (a part of Fabric)



2.1 Manage access

Microsoft Power BI service is a cloud solution, a software as a service (SaaS), and part of Fabric.

	Name	Type
FP20 IT Help Desk Analysis	Report	
FP20 IT Help Desk Analysis	Semantic model	
Maven Challenge Hospital	Report	
Maven Challenge Hospital	Semantic model	
Maven Northwind Challenge v2	Report	
Maven Northwind Challenge v2	Semantic model	

For each PowerBI project 2 elements are created, a Report and a Semantic model.

Assign a role:
admin, member, contributor, or viewer.

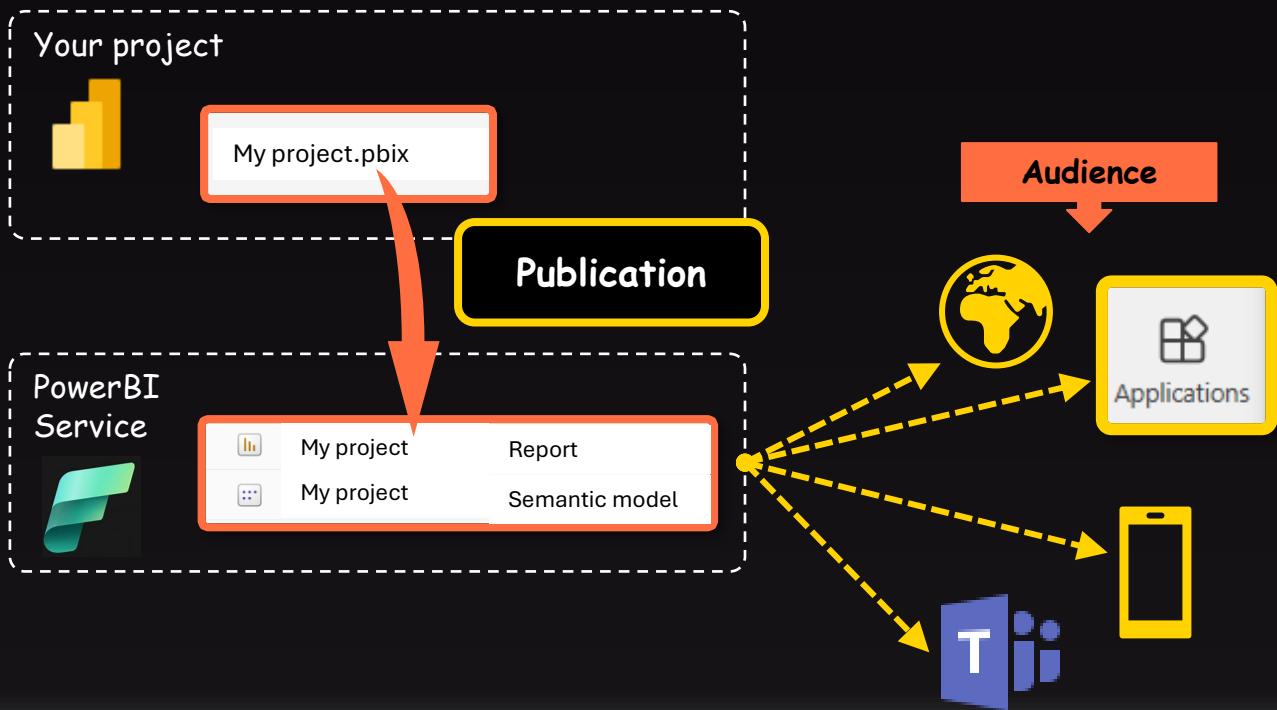
Note: If you created a group in the admin center (see previous page), you can also manage it here and assign a role to it.

Maven Northwind Challenge v2	Report
Maven Northwind Challenge v2	Semantic model



2.2 Publication (1/9)

Publishing to the Power BI Services platform will instantly propagate the update across all environments: Microsoft Teams, mobile and tablet, apps, website, etc.



2

PowerBI Service (a part of Fabric)



2.2 Publication (2/9)

The Power BI service allows you to interact with reports directly from a browser. The ability to generate insights directly is very interesting and can be a useful feature for your users.

Your project

1 Actualise your project...

2 Then published it in the PowerBI service

PowerBI Service

Your project is published in a workspace of your PowerBI Service

	My project	Report
	My project	Semantic model

Start with PowerBI

"From Rookie to Rock"

Step 6, Publication & administration

2

PowerBI Service (a part of Fabric)



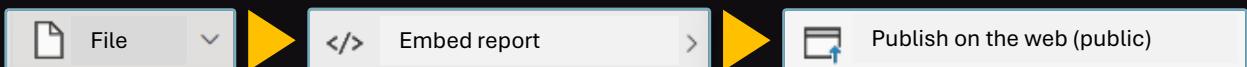
2.2 Publication (3/9)

Publication/Distribution on the web (public)

- 1 Open your report on PowerBI Service



- 2 Then follow this path



Then you get your embed code to distribute your project...

- 3 To send to your users by email

Embedded code

Link that you can send by email

<https://app.powerbi.com/view?r=eyJrIjoiMGE2M...>

Copy

- 4 To embed in a website (HTML code)

HTML code that you can paste into a website

<iframe title="Maven Northwind Challenge v2" v...

Copy

2

PowerBI Service (a part of Fabric)



2.2 Publication (4/9)

Publication to devices (mobile, tablet)

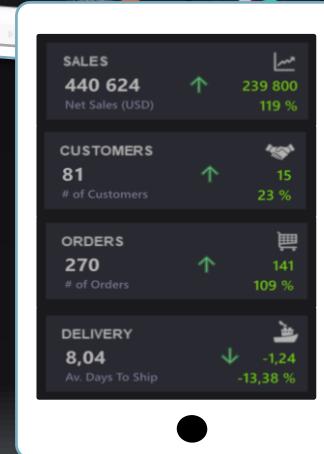
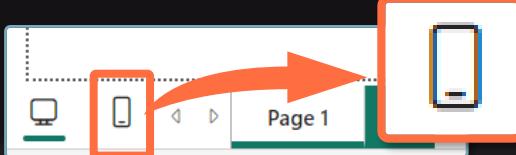
- 1 On your device, open “App Store” and search for “Power BI”. Load it and follow all the steps to link this app to your PowerBI services platform.



- 2 You can see all your PowerBI projects in your device.



- 3 On PowerBI Desktop you can optimize the views and create mobile layout. When your users tilt their mobile, they will have a view created specifically for mobile. Ideal for a summary of KPIs



Start with PowerBI

“From Rookie to Rock”

2

PowerBI Service (a part of Fabric)



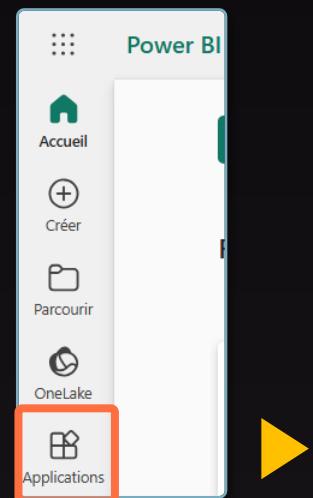
2.2 Publication (5/9)

Create an application

This feature of the PowerBI service allows you to create one application* per workspace. I use it to create my portfolio of data visualization challenges, by example.

1

On your
PowerBI
Service



Maven Northwind Challenge v2 | Données n...
Fichier
My data visualization challenges
MAVEN Challenges
Maven Northwind Challe...
Maven Challenge Hospital
Maven Tour de France Ch...
FP Challenges
FP20 IT Help Desk Analysis

*For 2025, Microsoft announces that it will be possible to create multiple applications per workspace (awesome!).

Start with PowerBI

"From Rookie to Rock"



2.2 Publication (6/9) Publication on teams (1/4)



Why to manage your PowerBI project with Teams?

- ✓ For small activities or small teams
- ✓ Effective for collaborative work
- ✓ Easy management of authorizations
- ✓ Finally, you get a large storage space!



Discover Patou Tips from #8 to #10, and learn how to manage a PowerBI project in a "Microsoft Teams" environment.

2

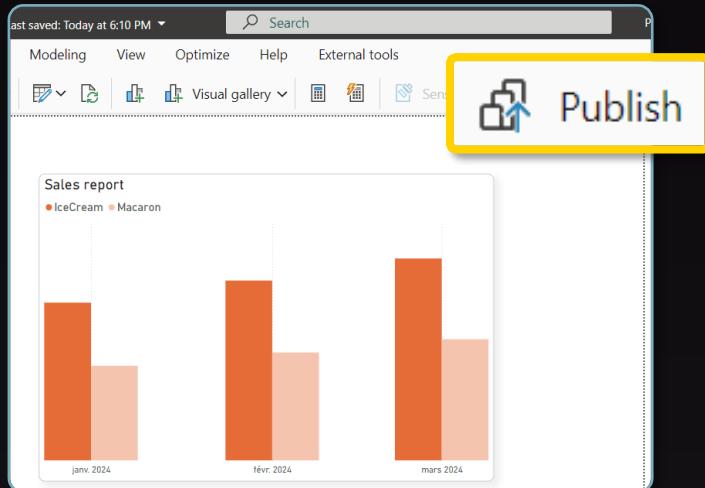
PowerBI Service (a part of Fabric)



2.2 Publication (7/9) Publication on teams (2/4)

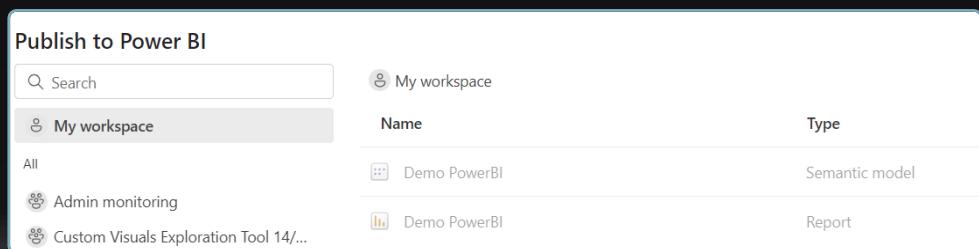


- 1 In PowerBI desktop, select Publish



2

- Then publish it in a workspace of PowerBI Service



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2

PowerBI Service (a part of Fabric)

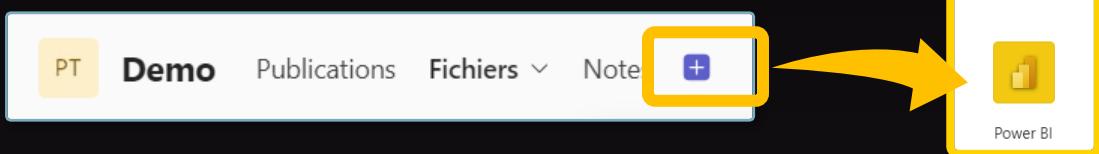


2.2 Publication (8/9)

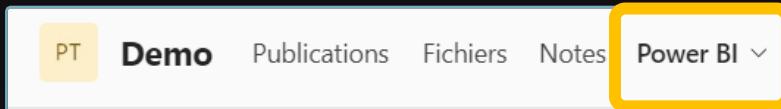
Publication on teams (3/4)



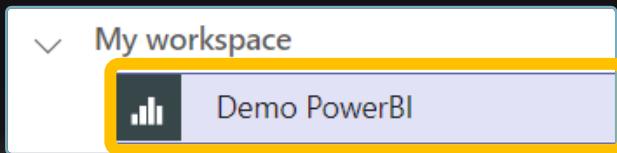
- 1 In Microsoft Teams, add the PowerBI applications



- 2 A "Power BI" menu is created, as you name it



- 3 Search the PowerBI report to publish inside Teams



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"From Rookie to Rock"

2

PowerBI Service (a part of Fabric)



2.2 Publication (9/9) Publication on teams (4/4)



That's all folks!

The PowerBI report is ready to share from « Microsoft Teams » to your team!

Demo PowerBI

Sales report

●IceCream ●Macaron

Mois	IceCream	Macaron
janv. 2024	~100	~30
févr. 2024	~120	~40
mars 2024	~150	~50

Start with PowerBI

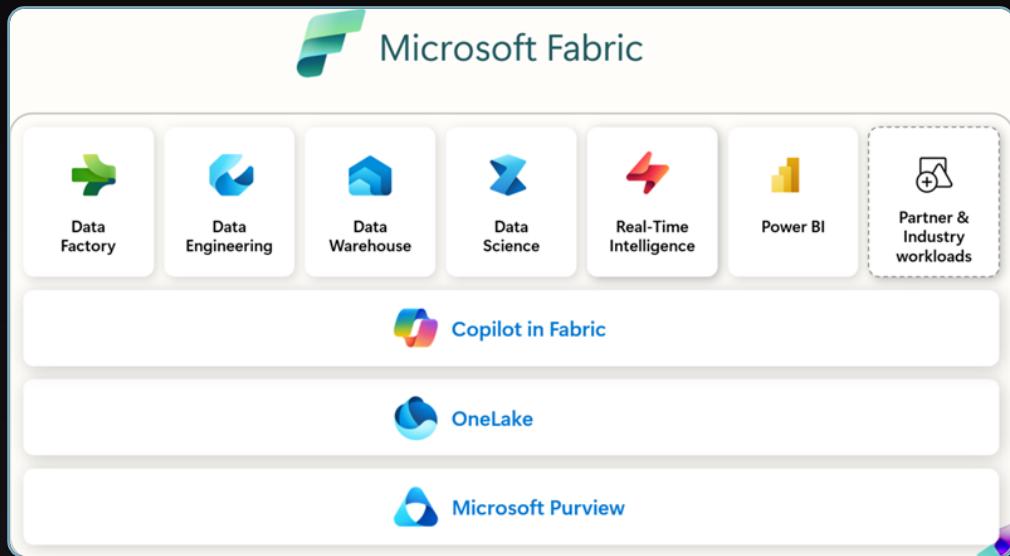
“From Rookie to Rock”

Fabric The New Revolution



What is Fabric?*

Microsoft Fabric offers a SaaS solution with features designed to optimize productivity, data management and AI integration.



Microsoft Fabric enables organizations and individuals to transform large, complex data repositories into actionable workloads and analytics.

Start with PowerBI

"From Rookie to Rock"

*Source from Microsoft documentation, but modified!

Step 6, Publication & administration

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What is Fabric?*



Databases

Databases - These are transactional databases such as Azure SQL Database, which makes it easy to create operational databases in Fabric.



Data Factory

Data Factory - Enables to ingest, prepare, and transform data from data sources. It integrates Power Query, and over 200 native connectors to connect to on-premises and cloud data sources.



Data Engineering

Data Engineering - Provides a Spark platform to build, manage, and optimize infrastructure to collect, store, process, and analyze large volumes of data. Fabric Spark's integration with Data Factory lets you schedule and orchestrate Spark notebooks and jobs.



Data Warehouse

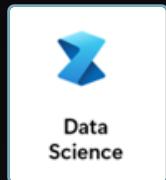
Data Warehouse - Enables SQL performance as well as scaling. It separates compute from storage, allowing independent scaling of both components. It natively stores data in the open Delta Lake format.

3

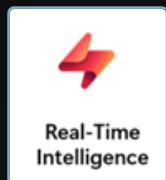
Fabric The New Revolution



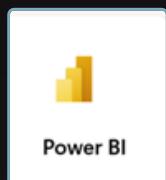
What is Fabric?*



Data Science - Enables you to build, deploy, and operationalize machine learning models. Data scientists can enrich organizational data with predictions, and business analysts can integrate these predictions into their BI reports, enabling the shift from descriptive to predictive insights.



Real-time Intelligence - It is an end-to-end solution for event-driven scenarios, streaming data, and data logs. It enables insights, visualizations, and actions on data in motion by managing data ingestion, transformation, storage, analysis, visualization, monitoring, AI, and real-time actions.



Power BI - Make it easy to connect to your data sources, visualize and discover what matters, and share that information with the audience you want to make better decisions with data.

Start with PowerBI

"From Rookie to Rock"

*Source from Microsoft documentation, but modified!

3

Fabric The New Revolution



What is Fabric?*



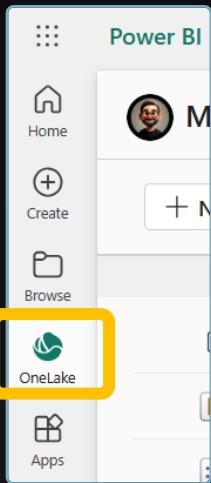
OneLake - OneLake is integrated with the Fabric platform and provides a unified location to store all organizational data in which workloads operate.



There were two solutions to work with OneLake:

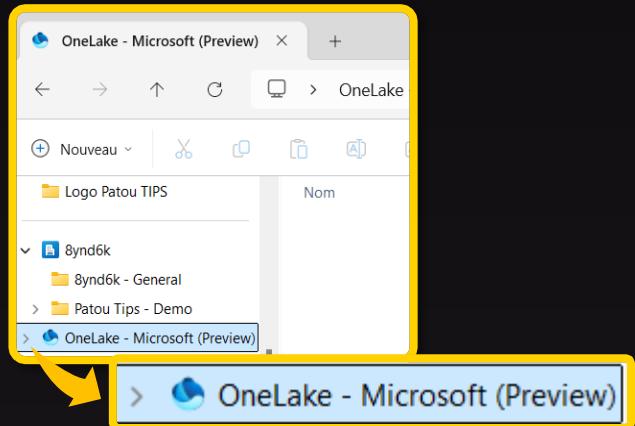
1

On your
PowerBI
Service...



2

Or via an extension to download,
directly into your Windows directory



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*Source from Microsoft documentation, but modified!

To go further...



6 great ressources!

Enzo's Data Expedition

@EnzoDataExpedition • 210 abonnés • 11 vidéos

Bienvenue sur Enzo's Data Expedition, la chaîne YouTube de Data et BI.

linkedin.com/in/enzo-rideau

[S'abonner](#)

Benjamin Ejzenberg • 1er

Consultant et Formateur Power BI | MVP Microsoft [...]
Montreal, QC

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DATA MUSIC FROM YOUR DATA

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Alexandre STEVENS • 2e

J'améliore le quotidien des contrôleurs de gesti...
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Step 6, Publication & administration

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Don't forget!

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

Patou Tips



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