

The background of the image is a gradient from red on the left to yellow on the right. A large, faint, stylized head of an animal, resembling a woodpecker or similar bird, is visible in the background, facing right. The head is composed of several overlapping circular and semi-circular shapes in shades of red and orange.

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Part of the Power BI
Bootcamp Series

Microsoft Power BI Bootcamp

— — — —

Introduction to Business Intelligence & PBI

Instructors:

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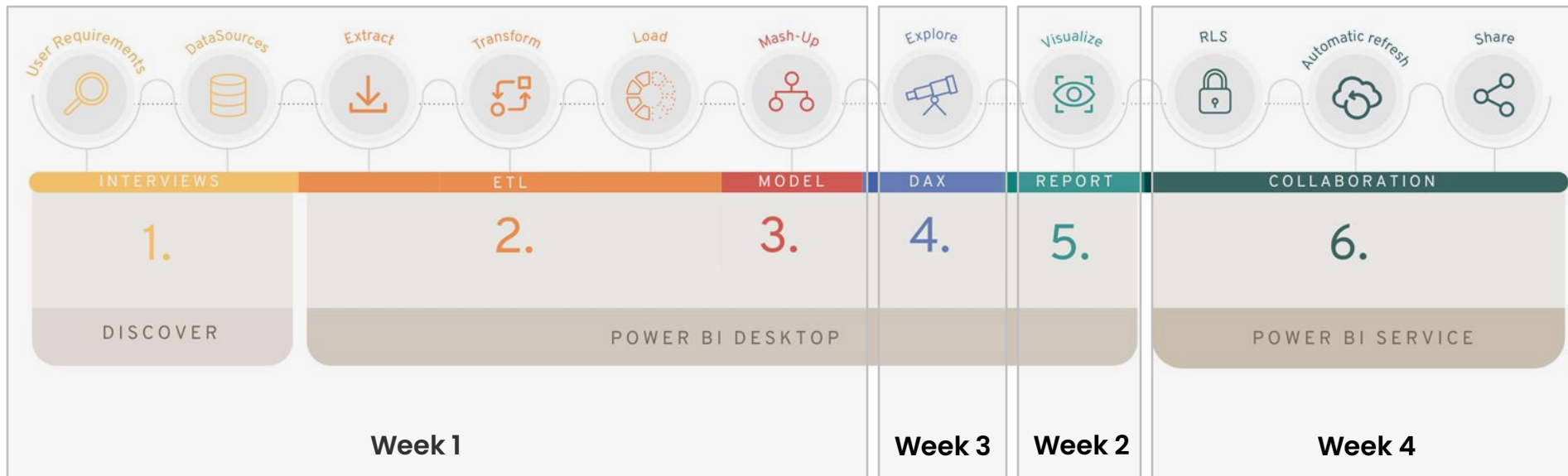


Course Agenda

- **Week 1:** Introduction to Business Intelligence, Power BI and Power Query.
- **Week 2:** Advanced and Interactive Visuals.
- **Week 3:** Calculated measures, columns & custom tables with Power BI Programming Language (DAX).
- **Week 4:** Ways to collaborate and share in Power BI.



Our Method: Flow of Report Development





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Visit Our Website:

- www.analyticmood.com for resources, upcoming events, and blog articles.

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Exercise 0.0 – Initial set up

- ✓ To get started, download all the files from:
www.analyticmood.com/resources
- ✓ Ensure all files are downloaded before proceeding.



NOTE: use the latest version of Power BI Desktop.



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WEEK 02

Advanced and
Interactive Visuals



Week 2: Advanced and Interactive Visuals.

- Identify common types of data visualization and their uses.
- Create an interactive report with Power BI Desktop.
- How to customize those visuals to meet your organization's requirements and to direct the user's attention to exactly where you want it while helping to make the visual easier to read and interpret.
- You will also learn about how to use key performance indicators (KPIs).
- How to use buttons and other navigation techniques.





Designing and changing the format of visuals

- Demo 1.3:
- How to change the format of fields.
- Design and change the format of visuals.
- Design two pages that contain:
 - Maps, Bar chart, Line chart, Slicers, Pie chart
- Exercise Case 1.3: Designing and changing the format of visuals

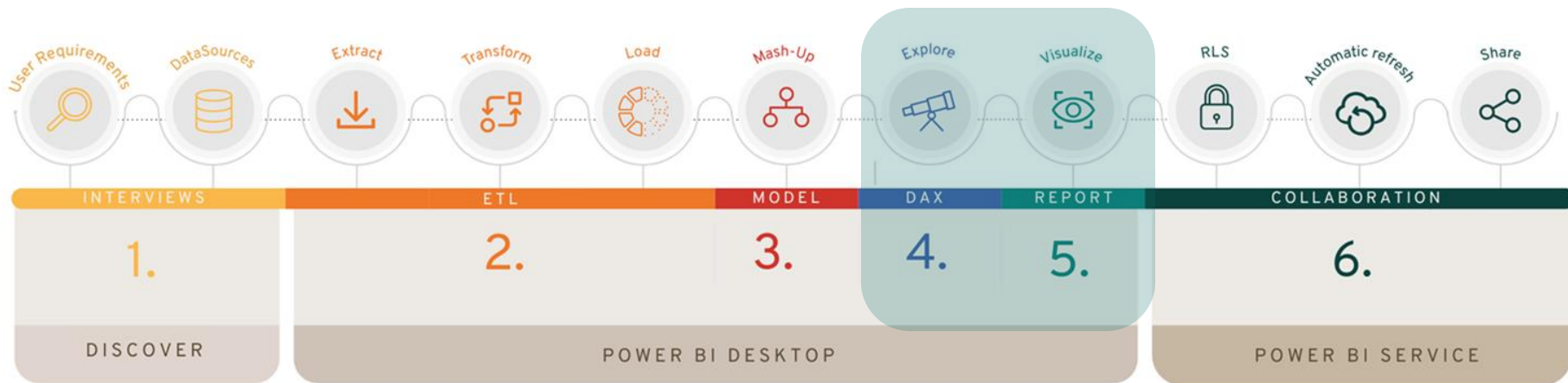


Demo 2.0



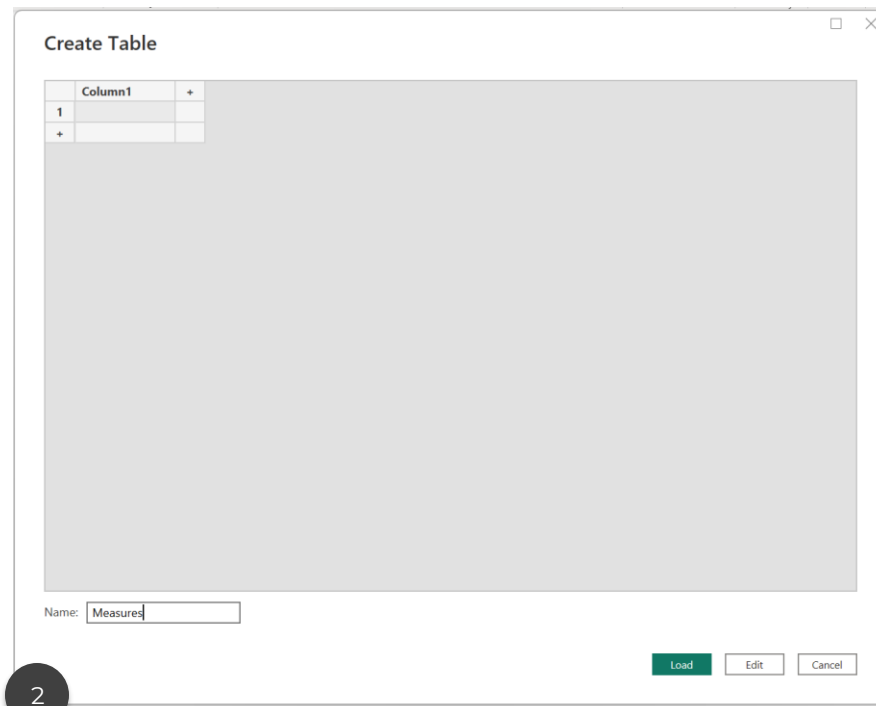
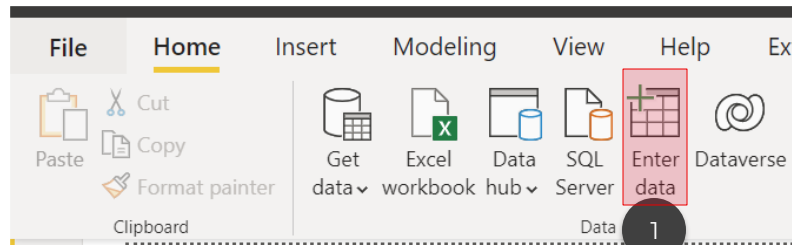


Our Method: Flow of Report Development





Create Measure table



Measures



File Home Insert Modeling View Optimize Help External tools

Paste Cut Copy Format painter Clipboard

Get data Excel workbook Data SQL Server Enter data Datasource Recent sources

Transform Refresh data Queries

New visual

Insert

Text box More visuals

New measure Quick measure Calculations

Sensitivity Sensitivity

Publish Share

Filters Search

Filters on this page Add data fields here

Data Search

Measure More options Customer Data

File Home Insert Modeling View Optimize Help External tools

Paste Cut Copy Format painter Clipboard

Get data Excel workbook Data SQL Server Enter data Datasource Recent sources

Transform Refresh data Queries

New visual

Insert

Text box More visuals

New measure Quick measure Calculations

Sensitivity Sensitivity

Publish Share

Filters Search

Filters on this page Add data fields here

Data Search

Measure New measure New column New quick measure Refresh data



Measures

File Home Insert Modeling View Optimize Help External tools Table tools **Measure tools**

Name Sales Format Whole number Data category Uncategorized

Home table Measure \$ % 0

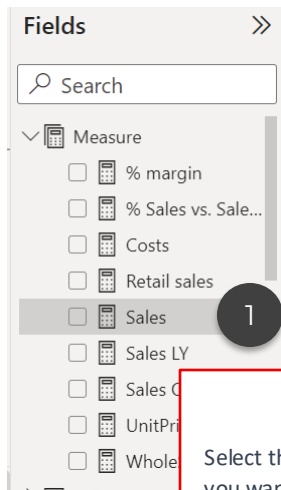
Structure Formatting Properties Calculations

1 Sales = SUM(Sales[Total Sales])

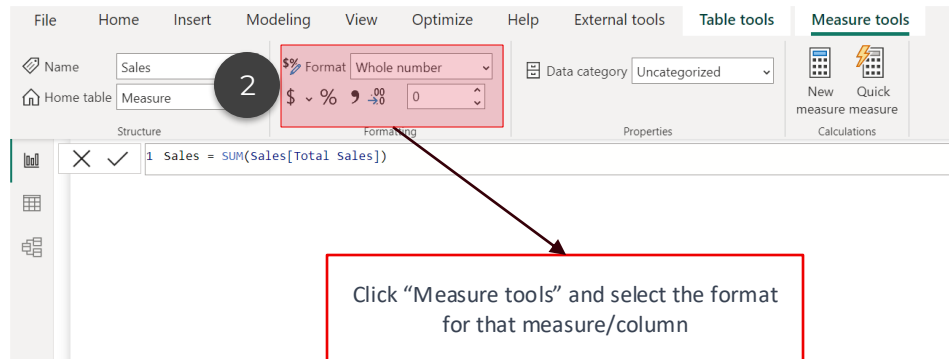
3



How to change the format of fields



Select the column or measure that you want to change the format, by clicking in the middle of the word.



Click "Measure tools" and select the format for that measure/column



How to change the format of visuals

2

1

3

Select more options if available

Select the visual

Format

Search

Visual Properties

Size and style

Title

Y-axis

X-axis

Legend

Small multiples

Gridlines

Zoom slider

Bars

Colors

Default

Show all

Depending on the kind of visual, you will have different format options to change colors, fonts, sizes, etc.

Category	Total Sales
Computers	3.5bn
Cameras and cam...	3.2bn
TV and Video	1.8bn
Cell phones	1.2bn
Music, Movies an...	0.2bn
Audio	0.1bn



Change data category

The screenshot shows the Power BI interface. The ribbon is at the top with tabs: File, Home, Insert, Modeling, View, Optimize, Help, External tools, **Table tools**, and **Column tools**. Under the **Table tools** tab, the **Properties** group contains a 'Data category' dropdown menu currently set to 'Image URL'. A red box highlights this dropdown, and a red arrow points from it to a text box that says 'Change data category'. To the right, the **Data** pane is open, showing a list of fields under the 'Product' category. The field 'ProductCategory...' is highlighted. Below the screenshot, the text 'Build visuals with your data' is followed by 'Select or drag fields from the Data pane onto the report canvas.' and a small visual representation of a report canvas.

File Home Insert Modeling View Optimize Help External tools **Table tools** **Column tools**

Name: ProductCategoryN...
Data type: Text
Format: Text
Summarization: Don't summarize
Data category: Image URL

Structure Formatting Properties Sort Data groups Manage relationships New column

Change data category

Build visuals with your data
Select or drag fields from the Data pane onto the report canvas.

Data

- Calendar
- Channel
- Product
 - BrandName
 - ClassName
 - ColorName
 - Manufacturer
 - ProductCategory...
 - ProductCateg...**
 - ProductDescripti...
 - ProductKey
 - ProductName
 - ProductSubcate...

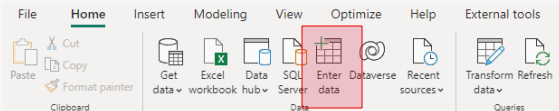


Exercise 2.0

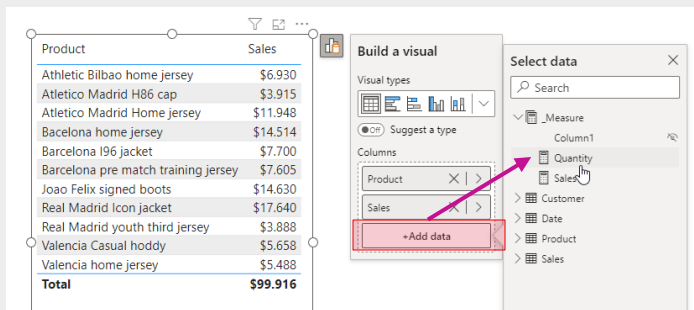


Exercise 2.0. Open the file **Exercise2.0.pbix** (Location: C:\PowerBI\Bootcamp\Week02\Exercises\Exercise2.0.pbix)

- 1 Create a “**Measure**” table and two measures: **Quantity** and **Sales**. (**Let's do this step together*)

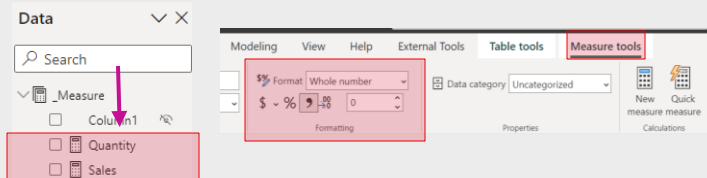


- 2 Replace the quantity column in the matrix with the **MEASURES** “**Quantity**” and “**Sales**” (“_Measure” table).



- 3 Display the format of the **measures**:

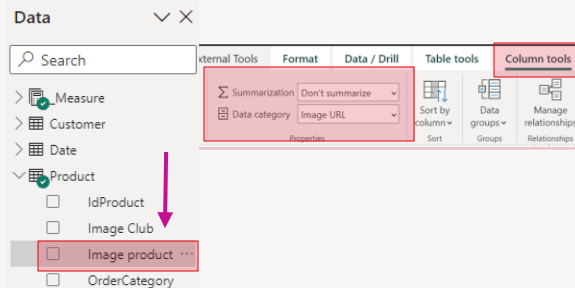
- Quantity with commas as thousands separator.
- Sales to currency.



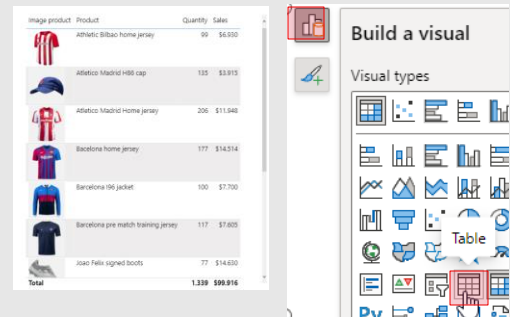
Note: Demo data is different from your data.

Product	Quantity	Sales
Athletic Bilbao home jersey	99	\$6,930
Atletico Madrid H86 cap	135	\$3,915
Atletico Madrid Home jersey	206	\$11,948
Barcelona home jersey	177	\$14,514
Barcelona 196 jacket	100	\$7,700
Barcelona pre match training jersey	117	\$7,605
Joao Felix signed boots	77	\$14,630
Real Madrid icon jacket	180	\$17,640
Real Madrid youth third jersey	54	\$3,888
Valencia Casual hoddie	62	\$5,658
Valencia home jersey	112	\$5,488
Total	1,339	\$99,916

- 4 In the **Products** table, assign the columns of the **Image product** and **Image Club** to the data category: **Image Url**.



- 5 Add this column (**Image product**) to the matrix. Change the matrix to a table visual.





Demo 2.1 & 2.2





Sort by column

File Home Help External Tools **Table tools** **Column tools**

Name: Month
Data type: Text
Format: Text
Summarization: Don't summarize
Data category: Uncategorized

Sort by column

Month
Date
Month number
Week
Week number
Year

1

2

3

To set up a custom sort order logic, you must have a column with a numeric value. In case this column is not available in the data source, it has to be created manually.

Date	Year	Month number	Month	Week	Week number
miércoles, 1 de enero de 2020	2020	1	Jan	Wed	4
jueves, 2 de enero de 2020	2020	1	Jan	Thu	5
viernes, 3 de enero de 2020	2020	1	Jan	Fri	6
sábado, 4 de enero de 2020	2020	1	Jan	Sat	7
domingo, 5 de enero de 2020	2020	1	Jan	Sun	1
lunes, 6 de enero de 2020					
martes, 7 de enero de 2020					
miércoles, 8 de enero de 2020					
jueves, 9 de enero de 2020					
viernes, 10 de enero de 2020					
sábado, 11 de enero de 2020					
domingo, 12 de enero de 2020	2020	1	Jan	Sun	1
lunes, 13 de enero de 2020	2020	1	Jan	Mon	2
martes, 14 de enero de 2020	2020	1	Jan	Tue	3
miércoles, 15 de enero de 2020	2020	1	Jan	Wed	4
jueves, 16 de enero de 2020	2020	1	Jan	Thu	5



Show value as percent of grand total

1

ProductCategoryName	Sales	%GT Sales
Audio	154.044.157,84	1,82%
Cameras and camcorders	2.602.598.410,46	30,73%
Cell phones	904.564.508,37	10,68%
Computers	3.256.222.893,81	38,45%
Music, Movies and Audio Books	168.501.907,33	1,99%
TV and Video	1.382.006.435,71	16,32%
Total	8.467.938.313,52	100,00%

2

Build a visual

Visual types

Columns

ProductCateg... X | >

Sales X | >

%GT Sales

+ Add data

Remove field

Rename for this visual

Move >

Conditional formatting >

Remove conditional formatting

Don't summarize

✓ Sum

Average

Minimum

Maximum

Count (Distinct)

Count

Standard deviation

Variance

Median

Show value as

3

No calculation

✓ Percent of grand total

Add Sales field and right click

Click on the arrow and select show value as
→ percentage of grand total



Exercise 2.1



Exercise 2.1: Creating visuals. Open the file *Exercise2.1.pbix*

- 1 Adjust the **size of the image** within the existing table by making it smaller (**25x25**)

Product Sales Quantity

Valencia Casual hoddy	\$5.658	82
Real Madrid Icon jacket	\$17.640	180
Athletic Bilbao home jersey	\$6.930	99
Joao Felix signed boots	\$14.630	77
Atletico Madrid Home Jersey	\$11.948	206
Barcelona home jersey	\$14.514	177
Valencia home iersev	\$5.488	112

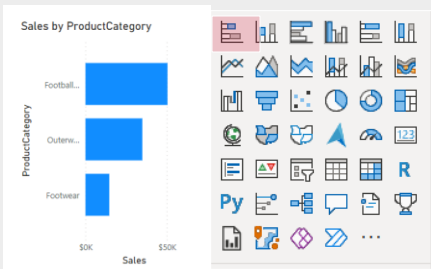
Image size

Height: 25 px

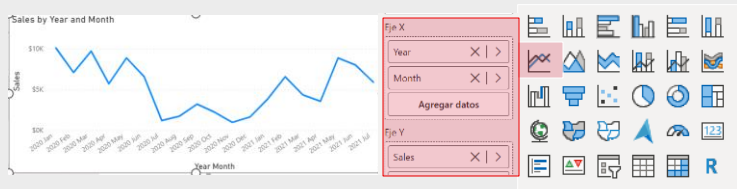
Width: 25 px

Reset to default

- 3 Create a bar chart illustrating sales by product category.
- Utilize the 'Sales' measure for accurate representation.



- 2 Insert a **line chart** that displays **sales trends by year and month**.



Ensure the 'month' column is sorted according to 'month num'.

Name: Month

Data type: Text

Format: Text

Summarization: Don't summarize

Data category: Uncategorized

Sort by column: Month Num

- 4 Modify the **line chart's format** as follows:

- Navigate to Format / Visual / X-Axis/ Values.
- **Deselect the 'Concatenate labels' option.**



Format

Visual

X-axis

Values

Concatenate labels

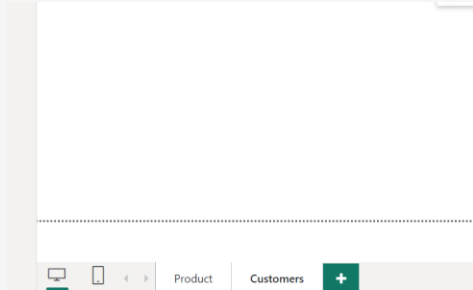


Exercise 2.2

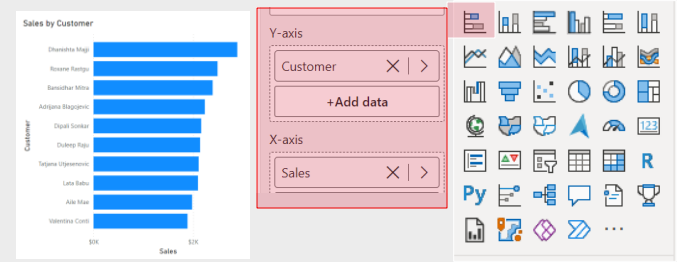


Exercise 2.2: Creating a New Page and Visuals. Open the file *Exercise2.2.pbix*

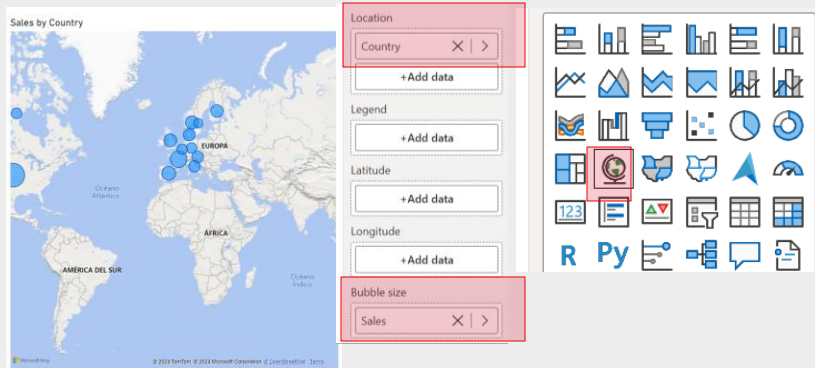
1 Rename the current page to **"Products"** and then create a new page titled **"Customers"**.



2 On the **"Customers"** page, add a bar chart to visualize **sales** by **customers**:



3 On the **Customers** page, create a map to display **sales** by **country**:



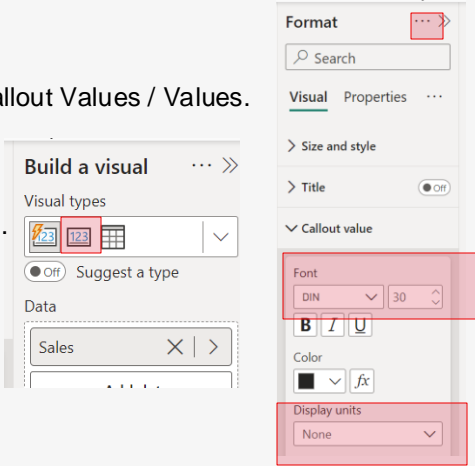
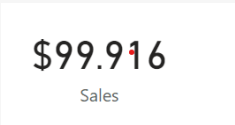
4 On the **Customers** page, insert a **card** visual.

Add measure **Sales**.

Navigate to Format / Visual / Callout Values / Values.

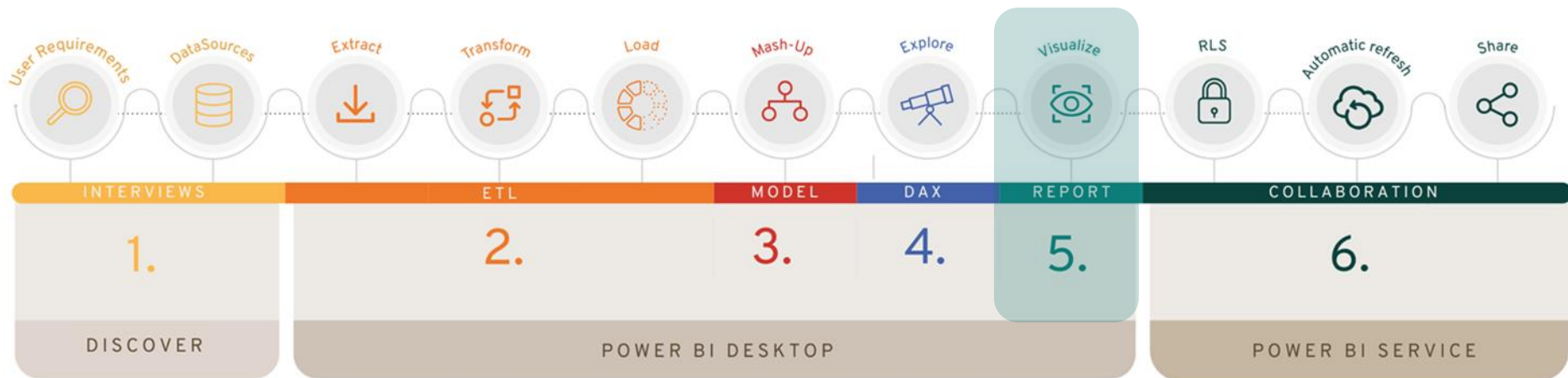
Set the **font size** to 30.

Set the **display units** to 'None'.





Our Method: Flow of Report Development





Refresh Report

Click here to refresh reports (pbi connects to datasources, refreshes steps in Pquery and then the visuals)

File Home Insert Modeling View Optimize Help External tools

Paste Cut Copy Format painter Clipboard

Get data Excel workbook Data SQL Server Enter data Dataverse Recent sources Transform data Refresh

New visual Insert Text box More visuals Calculations Sensitivity Publish

Get the latest data by refreshing all visuals in this report.

ProductCategoryName	Sales	%GT Sales
Audio	154.044.157,84	1,82%
Cameras and camcorders	2.602.598.410,46	30,73%
Cell phones	904.564.508,37	10,68%
Computers	3.256.222.893,81	38,45%
Music, Movies and Audio Books	168.501.907,33	1,99%
TV and Video	1.382.006.435,71	16,32%
Total	8.467.938.313,52	100,00%

Sales by Product Category

ProductCategoryName

Sales

0bn 2bn 4bn

Format

Search

Page information

Canvas settings

Canvas background

Wallpaper

Filter pane

Filter cards



Designing and Personalizing Tooltips

- Demo 2.1
- Add a visual to Power BI;
- Design a tooltip and a personalized tooltip.
- Exercise 2.1: Designing and Personalizing tooltips
- Q&A



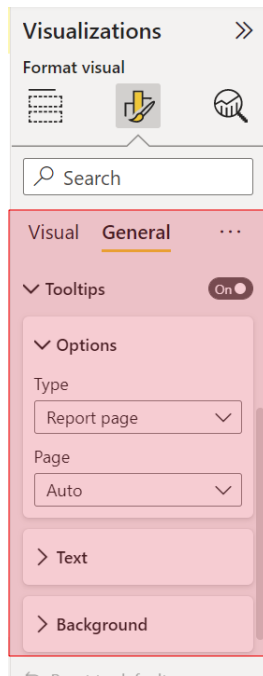
Demo 2.3





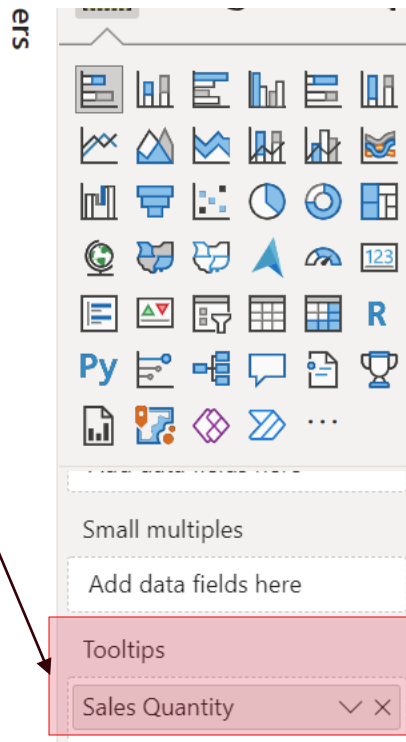
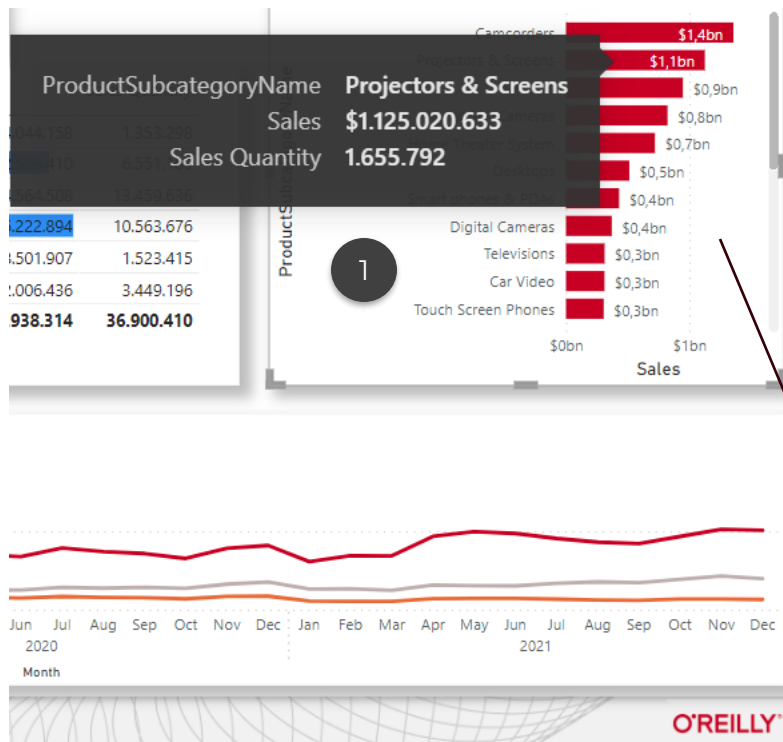
Change format of Tooltips

It is possible to change the format of the tooltips in the following options.





Tooltips

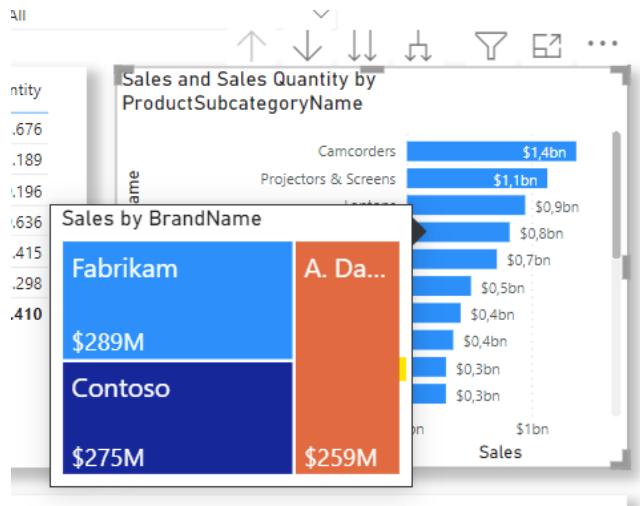


It is possible to show a simple chart with only one measure and then add extra info in the tooltip.



Personalize Tooltips

- What if you need to analyze the brand's sales by each subcategory?



You can design your personalize tooltips on another sheet.



Personalize Tooltips

1

Add a new page

2

Visualizations

Format page

Search

Page information

Name

Tooltip Prod

Allow use as tooltip On

Allow Q&A On

Reset to default

Canvas settings

Type

Custom

3

Sales by BrandName

Fabrikam \$2bn

Ad... \$1bn

Pr... \$1...

Contoso \$2...

The Ph... \$1...

Design the tooltip in that new page

4

Format visual

Visual General

Tools

Options

Type

Report page

Page

Tooltip Prod

Use that page as tooltip on other visual.



Adding Backgrounds and Navigating Reports

- Demo Case 2.2
- Add a background to both pages of the report.
- Create buttons to navigate the report.
- Exercise Case 2.2
- Q&A



Adding a background to reports

- To add a background to the report, select the Format icon from the Visualizations panel. Drop down the Background Page option and click on Add Image.
- Browse your local folder or network environment for the desired image and then click on OK.
- You can create your own background it using figma, canva, power point, etc

Visualizations



Format page



Search

> Canvas settings

✓ Canvas background

Color



Image

Background.png

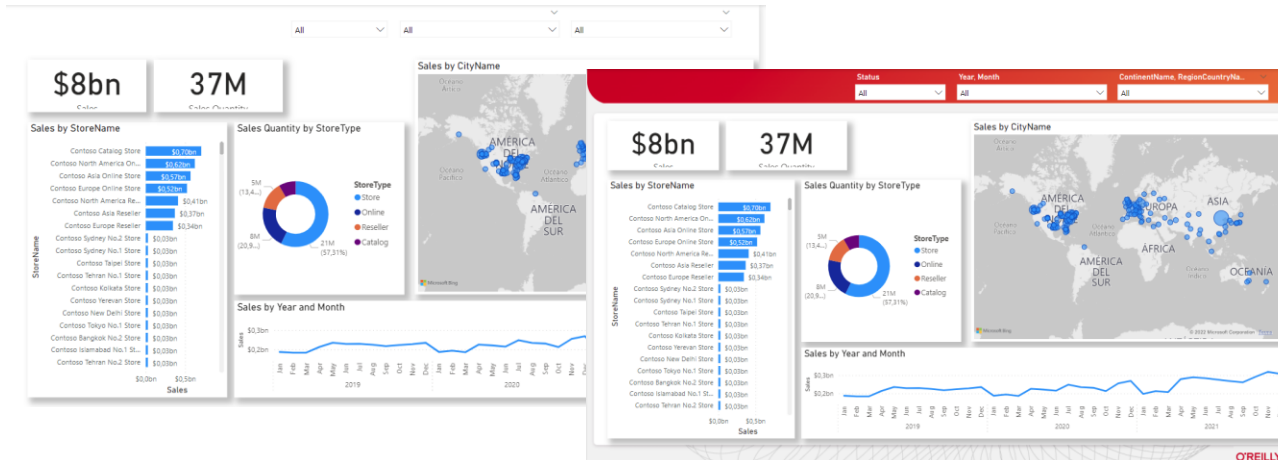


Image fit

Normal

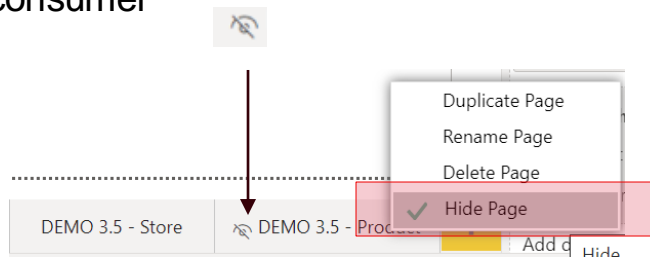


Transparency

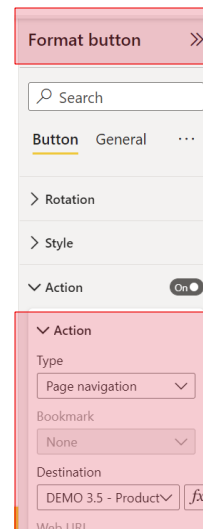


Hide pages from reading mode

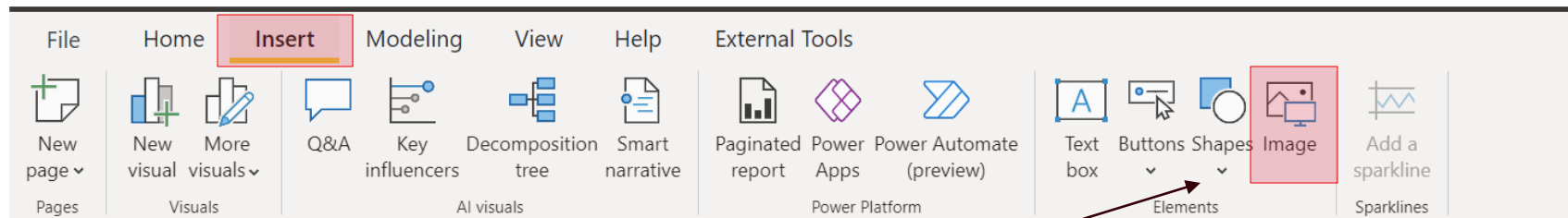
- A report author can hide a page from the view of the report consumer until the report is accessed via a page navigation action.
- In Power BI Desktop A report author can hide a page from the view of the report consumer



- But in the service of Power BI that page won't be shown until the page is accessed via a page navigation action.



Add Images



Corporate images or the company logo can be added to make the report more attractive from the following option.



Exercise 2.3



Exercise 2.3: Enhancing Visual Appeal with Backgrounds and Navigation. Open the file **Exercise2.3.pbix**

1

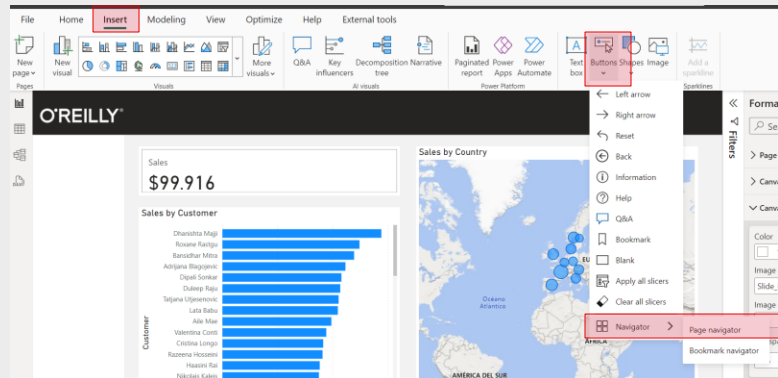
For both "Product" and "Customers" pages, update the canvas background:

- Click on the canvas to select it.
- Format / **Canvas background** / add "Slide_Background" image from "PowerBIBootcamp\Session02\Visual Gallery..."
- Image fit ="Fit" / Transparency to 0%.



2

Enhance page navigation by adding a **Page Navigator** in both pages.



Note: Use 'Ctrl + click' to test the navigation functionality of the buttons.

Products

Customers

3

Hide Customers page.



Change the Theme of your Report

- Demo Case 2.3
- Show how to edit the current theme, export or import a new one.
- Exercise Case 2.3



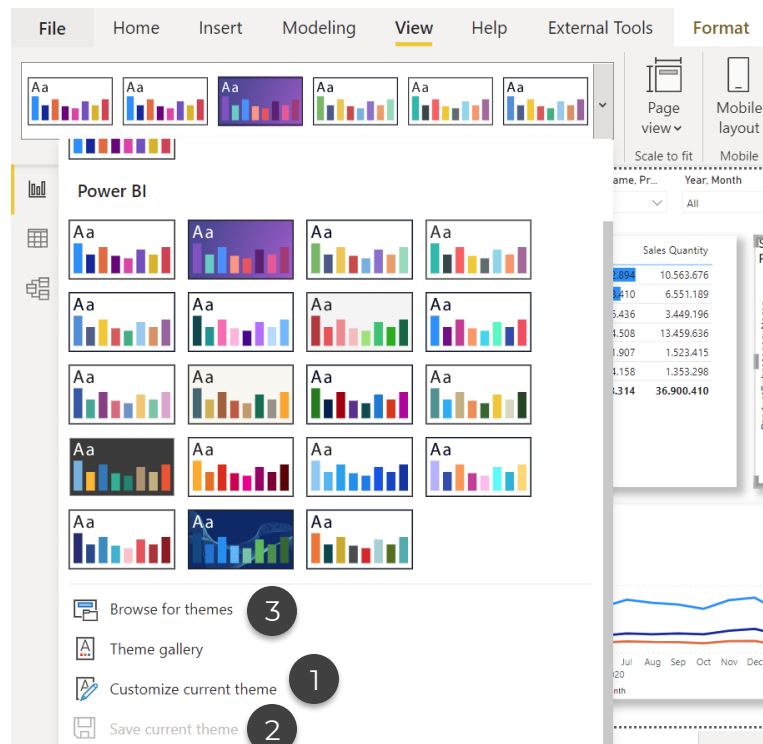
Demo 2.4





Create your own theme

- In the “View” tab there is a default pre-selected theme and all visuals in the report use those colors, fonts and sizes.
- If you want to create your own theme for your company, click on “Customize current theme”.
- After that, you will be able to save that theme and share it with your colleagues to use it in all your Power BI Files.





Customize current theme

Customize theme

Name and colors

Text

Visuals

Page

Filter pane

Name and colors

Advanced

Name and colors

Name

Name your custom theme

Theme colors

Color 1

Color 2

Color 3

Color 4

Color 5

Color 6

Color 7

Color 8

Sentiment colors ⓘ

Negative

Positive

Neutral

Divergent colors ⓘ

Apply

Cancel

Customize theme

Name and colors

Text

Visuals

Page

Filter pane

General

Title

Cards and KPIs

Tab headers

Cards and KPIs

Format the callout values in card and KPI visuals.

Font family

DIN

Font Size

25 pt

Font color

Reset to default

Apply

Cancel

Edit interactions

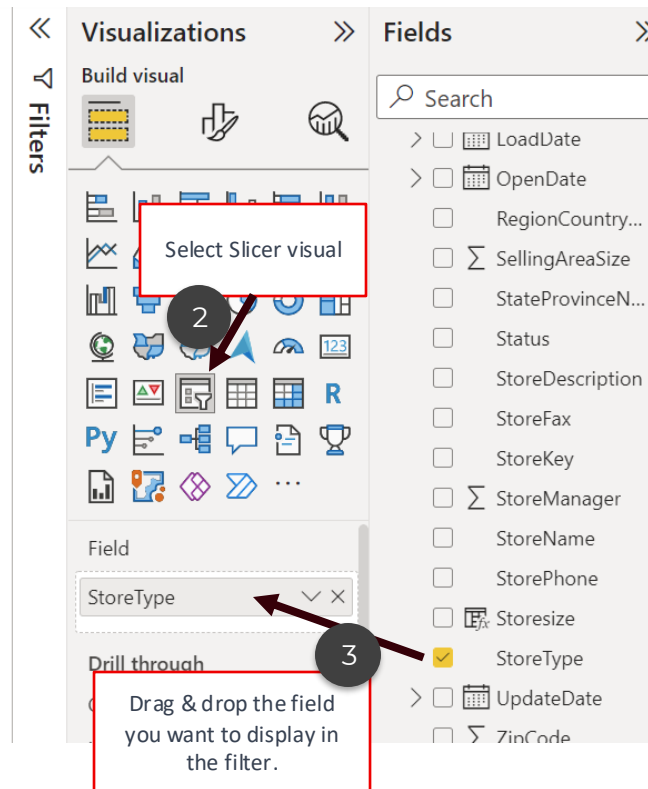
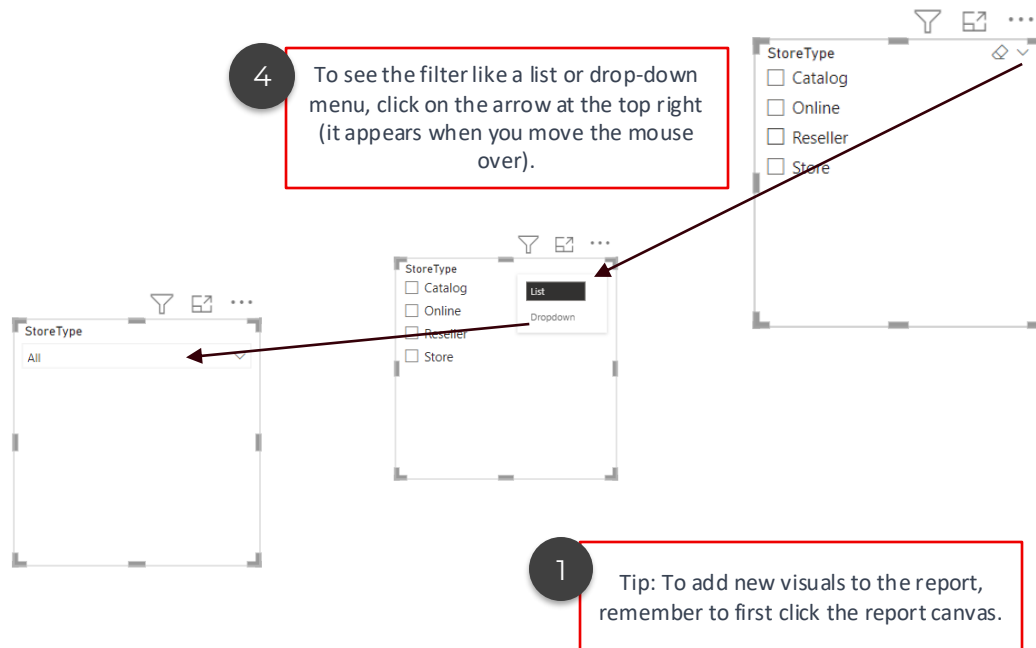
- Use visual interactions to exclude some page visualizations from being affected by others.

The screenshot shows the Power BI Desktop interface with the following elements and annotations:

- Annotation 1:** A red box with the text "Select the slicer you need to change interaction with other" points to a slicer titled "Clase" with options: EcActividómico, Económico, Lujo, and Regular.
- Annotation 2:** A red box with the text "Click edit interactions" points to the "Edit Interactions" button in the top ribbon.
- Annotation 3:** A red box with the text "Select the new interaction option in the other visual." points to the interaction options (None, Filter, Drill Down, Drill Up, Highlight, Hide) for the selected visual.
- Annotation 4:** A red box with the text "This tab is shown if you have any visual selected in your report." points to the "Data / Drill" tab in the top ribbon.
- Visuals:** A donut chart titled "Cantidad por Clase" is shown, with a legend for "Clase" (EcActividómico, Regular, Lujo, Económico). The chart data is as follows:

Clase	Count	Percentage
EcActividómico	54	6.3%
Regular	294	30.8%
Lujo	1	0.0%
Económico	1,96	62.54%

Slicers





Filter pane

The screenshot shows the Power BI interface with a bar chart titled "Sales by StoreName" and the Filter pane on the right. The chart displays sales data for various stores, with the y-axis labeled "Sales" and the x-axis labeled "StoreName". The Filter pane is divided into three main sections: "Filters on this visual", "Filters on this page", and "Filters on all pages". Each section has a search bar and a list of filters. The "Filters on this visual" section shows filters for "Sales" and "StoreName". The "Filters on this page" and "Filters on all pages" sections are currently empty.

Filters on this visual

- Sales is (All)
- StoreName is (All)

Filters on this page

Filters on all pages

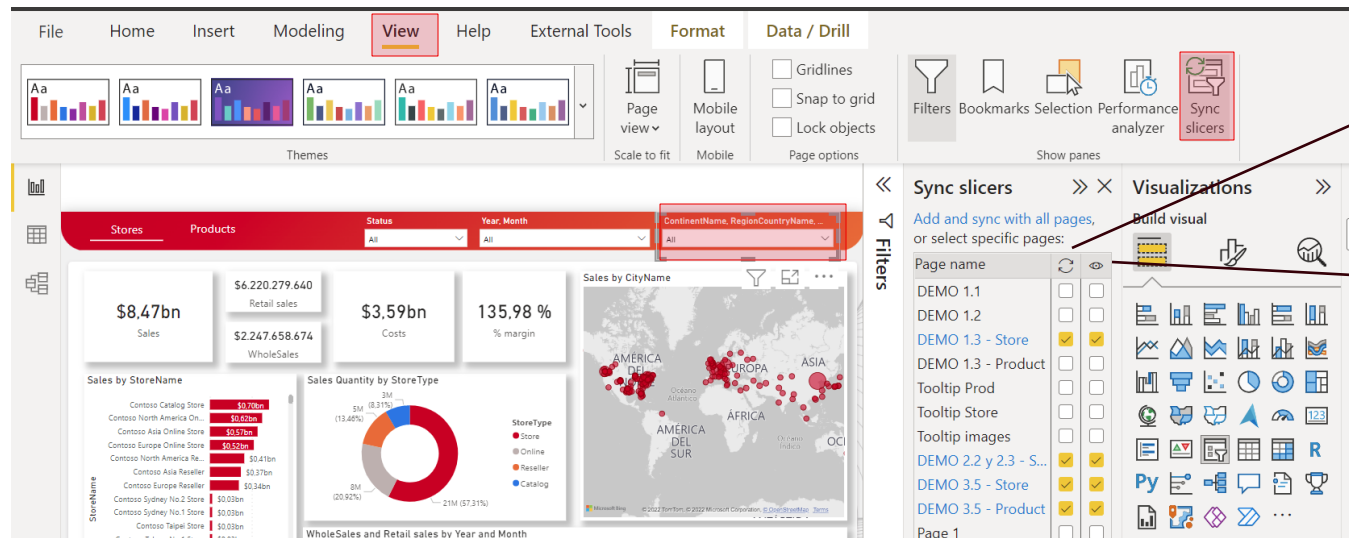
Annotations explain the functionality of each section:

- Filters on this visual:** Add filters to the selected visual element. Delete some products or make a top 5 to display only the most or least sold products.
- Filters on this page:** Add filters to the page
- Filters on all pages:** Add filters to the report



Sync slicers

- You can sync a slicer and use it on any or all pages in a report.



With the Sync slicers pane, you can sync the Continent slicer to these pages, so that slicer selections on any page affect visualizations on all pages.

If you sync a slicer to a page but don't make it visible on that page, slicer selections made on the other pages will still filter the data on the page.



Visual Reference

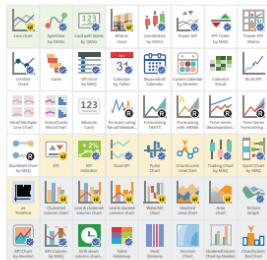
COMPARISON

To compare the magnitude of measures



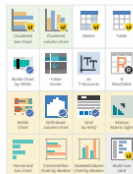
CHANGE OVER TIME

To display the changing trend of measures



RANKING

To rank measures in an order



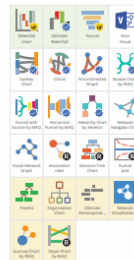
SPATIAL

To display measures over spatial maps



FLOW

To display a flow or dynamic relations



PART-TO-WHOLE

To identify the parts making up a measure total



DISTRIBUTION

To display the distribution of values



CORRELATION

To show correlations between measures



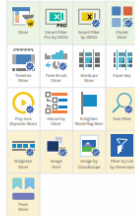
SINGLE

To present single values



FILTER

To control report filters

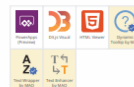


NARRATIVE

To tell a story with data



MISCELLANEOUS



Recommended There is a better alternative Don't use in the category Built-in visual Certified visual R required

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<https://www.sqlbi.com/wp-content/uploads/visuals-reference-sep2018-A3.pdf>

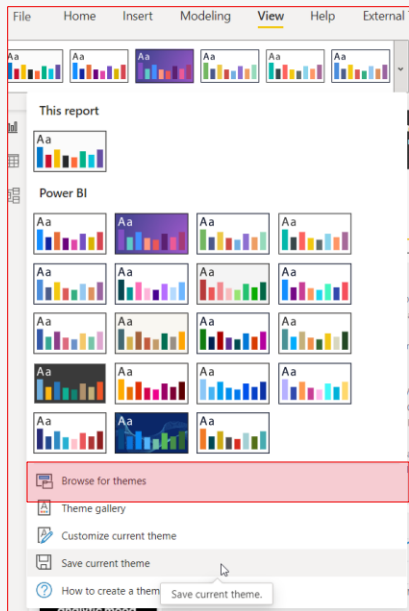


Exercise 2.4



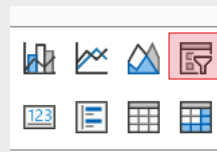
Exercise 2.4: Change theme and add slicers. Open the file *Exercise2.4.pbix*

- 1 Change the current theme by importing one from the folder: Visual gallery → VisualTheme.json
(Location: "C:\PowerBIBootcamp\Week02\Visual Galery\VisualTheme.json")

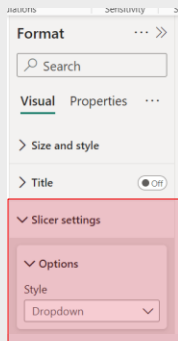


- 2 On the "**Product**" page, add slicers for the following categories:

1. Slicer:

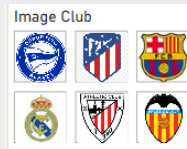


- Season (Slicer settings = **Dropdown**)
- Date (Slicer settings = **Between**)
- Product (Slicer settings = **Dropdown**)

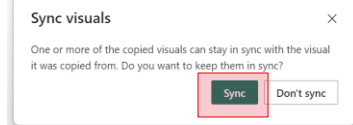


2. Slicer (New):

- Image Club



- 3 Duplicate all slicers to the "**Customers**" page and ensure they are synchronized across both pages.





Poll

If there is more than one visual on a Power BI page, which of the following is true?

- All visualizations should be different
- Interacting with one visual may filter the others
- You can't have more than one visual on the same Power BI page
- The maximum number of visualizations is 10 per page.





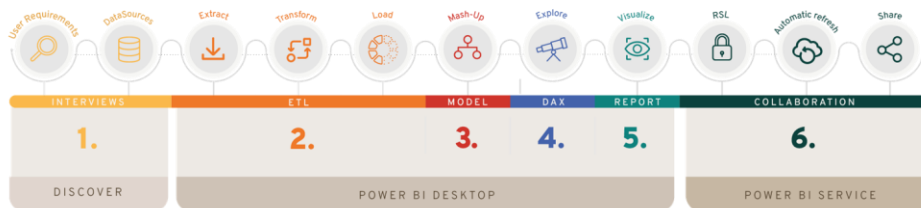
Recommendations for Next Steps

Part of the Power BI
Bootcamp Series

Advanced Learning Path:

- 1) Power BI Bootcamp: Building the Foundations for Power BI
- 2) Power Query: Data Connections and Transformations
- 3) Data Modeling for optimal structure & DAX for calculations
- 4) Visualizations for impactful reporting & Power BI Service

This Bootcamp





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Q&A



- Write your questions in the chat so that we can answer them and discuss them together.



The background of the image features a large, faint, stylized head of an animal, likely a beaver or similar rodent, which is the iconic logo for O'Reilly. The head is rendered in a light orange or yellow color, blending into the background. The background itself is a gradient of warm colors, transitioning from a deep red on the left to a bright yellow on the right. The text "O'REILLY" is centered in the middle of the image, written in a bold, white, sans-serif font. A registered trademark symbol (®) is located at the top right of the word "REILLY".

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