

# POWER BI

SHARED BY: THUNNM



Top	2,781	\$1.13
Steel	7,040	\$2.27
Choice	6,815	\$2.31
Alloy	5,851	\$2.28
Quality	6,272	\$2.23
Wing	6,433	\$2.12
Flare	6,433	\$2.23
Flare	6,433	\$2.23
Time	6,433	\$2.18
West	6,433	\$2.12
by	6,433	\$2.46
region	6,433	\$2.09
line	6,433	\$2.09
to	6,433	\$2.09
set	6,067	\$1.92
on	5,556	\$2.06
on	5,556	\$2.06

# COURSE OUTLINE



## 1. Introducing Power BI Desktop

## 2. Connecting & Shaping Data

## 3. Creating a Data Model

## 4. Adding Calculated Fields with DAX

## 5. Visualizing Data with Reports

- *Installing Power BI, exploring the Power BI workflow, comparing Power BI vs. Excel, etc.*
- *Connecting to source data, shaping and transforming tables, editing, merging and appending queries, etc.*
- *Building relational models, creating table relationships, understanding cardinality, exploring filter flow, etc.*
- *Understanding DAX syntax, adding calculated columns and measures, writing common formulas & functions, etc.*
- *Inserting charts and visuals, customizing formats, editing interactions, applying filters and bookmarks, etc.*

# INTRODUCING THE COURSE

## 1. THE BRIEF

- Your client needs a way to **track KPIs** (*sales, revenue, profit, returns*), **compare regional performance**, **analyze product-level trends and forecasts**, and **identify high-value customer**.

## 2. THE OBJECTIVE

- **Use Power BI Desktop to:**
  - ✓ Connect and transform the raw data
  - ✓ Build a relational data model
  - ✓ Create new calculated columns and DAX measures
  - ✓ Design an interactive report to analyze and visualize the data

# DAY 4 – VISUALIZING DATA WITH REPORTS

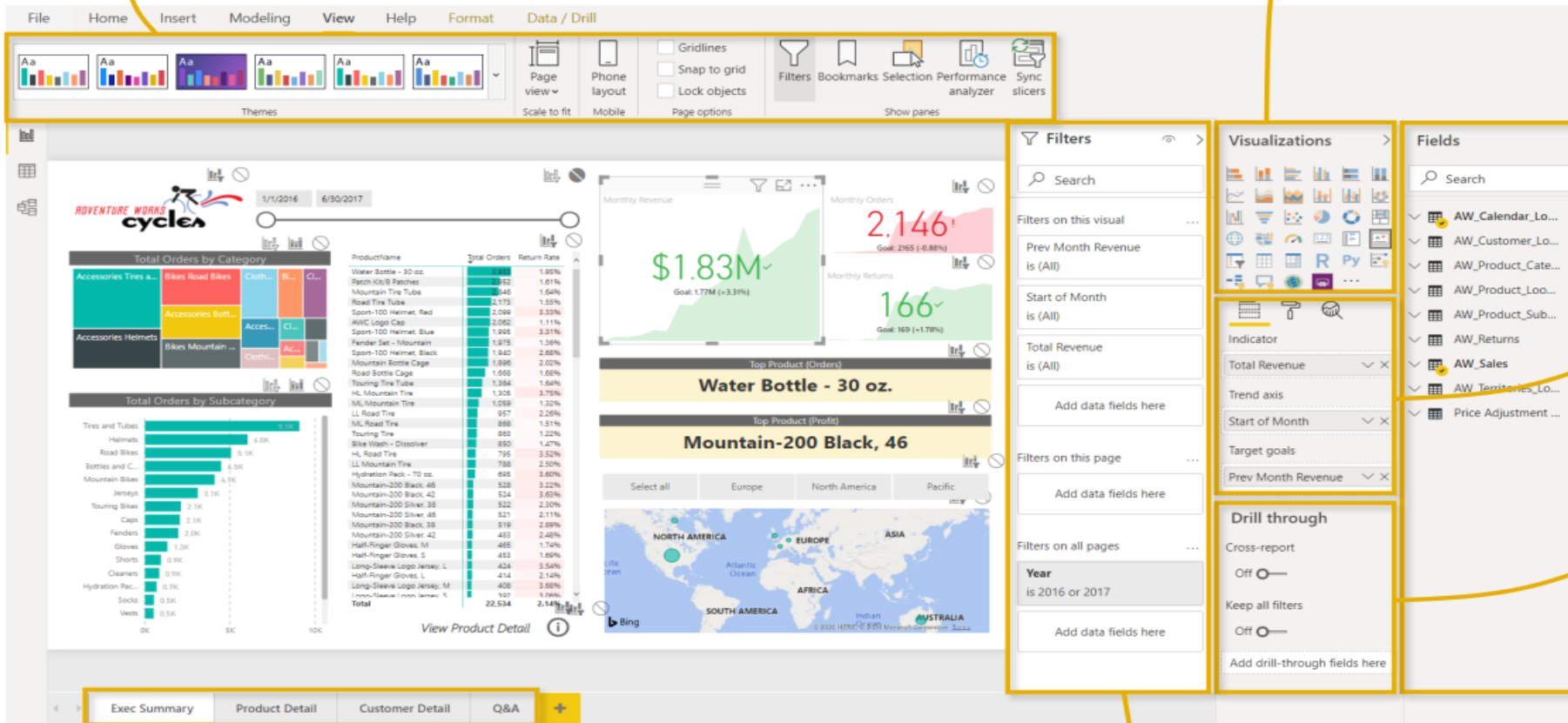
# OBJECTIVE

- *Inserting charts and visuals, customizing formats, editing interactions, applying filters and bookmarks, etc.*

# THE POWER BI REPORT VIEW

**View Options** (Themes, Layouts, Gridlines, Filter/Bookmarks/Selection Panes, etc)

**Visualization Options** (Charts, Slicers, Maps, Matrices, etc)



**Report Pages** (Similar to Excel tabs; each is a blank reporting canvas)

**Filters Pane** (Visual-Level, Page-Level, and Report-Level Filters)

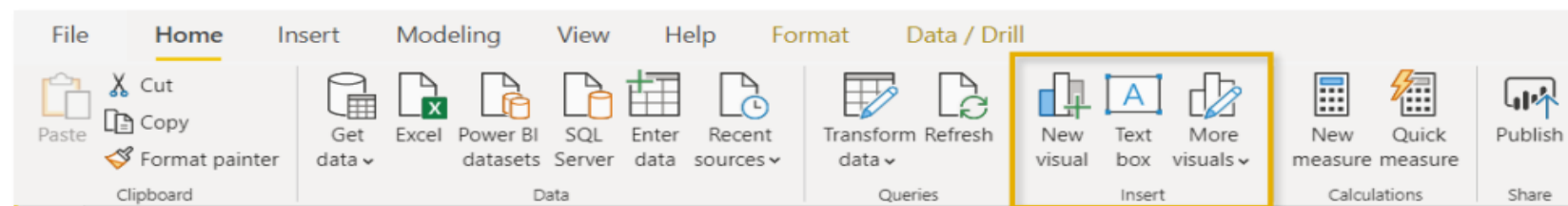
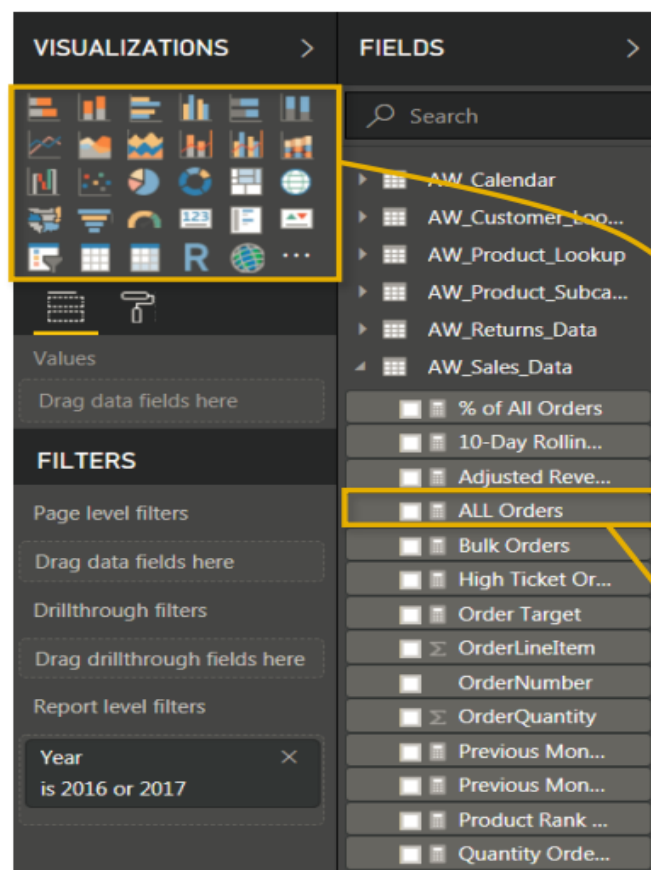
**Field List** (Tables, Columns, Measures)

**Fields/Format/Analytics Pane**  
(Visual-specific configuration & formatting tools)

**Drill through Filters** (Options for page-level drill through filters)



# INSERTING OBJECTS & BASIC CHARTS



Click on a visualization type or use the “*New Visual*” option in the **Home** tab to insert a blank chart template (usually a column chart by default)

**Note:** You can also add new visuals, along with Pages, Buttons, Images, and more from the **Insert** tab



Drag fields or measures directly into the report canvas to automatically generate a new visual

# FORMATTING OPTIONS

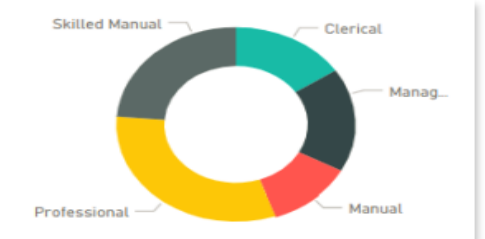
Example: Line & Column Chart



Example: Matrix

ProductName	Total Orders	Return Rate
Water Bottle - 30 oz.	1,164	1.96 %
Road Tire Tube	829	1.63 %
AWC Logo Cap	803	0.93 %
Patch Kit/8 Patches	798	1.57 %
Sport-100 Helmet, Red	753	2.79 %
Touring Tire Tube	702	1.35 %
Sport-100 Helmet, Blue	666	3.15 %
Sport-100 Helmet, Black	626	3.67 %
Road Bottle Cage	560	1.58 %
Mountain Tire Tube	554	1.95 %
Mountain Bottle Cage	539	1.38 %

Example: Donut Chart



Formatting options for Line & Column Chart:

- General
- Legend: On
- X-Axis: On
- Y-Axis: On
- Data colors
- Data labels: Off
- Shapes
- Plot Area
- Title: On
- Background: Off
- Lock aspect: Off
- Border: Off

Advanced controls for X-Axis:

- Type: Continuous
- Scale type: Linear
- Start: Auto
- End: Auto
- Color: [Color Picker]
- Text size: 11
- Font fam...: Segoe UI
- Display ...: Auto
- Value de...: Auto

Formatting options for Matrix:

- General
- Matrix style
- Grid
- Column headers
- Row headers
- Values
- Subtotals
- Grand total
- Field formatting
- Conditional formatting
- Title: Off
- Background: Off

Advanced controls for Conditional formatting:

- Total Orders
- Backgro...: Off
- Font col...: Off
- Data bars: On

Formatting options for Donut Chart:

- General
- Legend: Off
- Data colors
- Detail labels: On
- Title: On
- Background: Off
- Lock aspect: Off
- Border: Off
- General

Advanced controls for Detail labels:

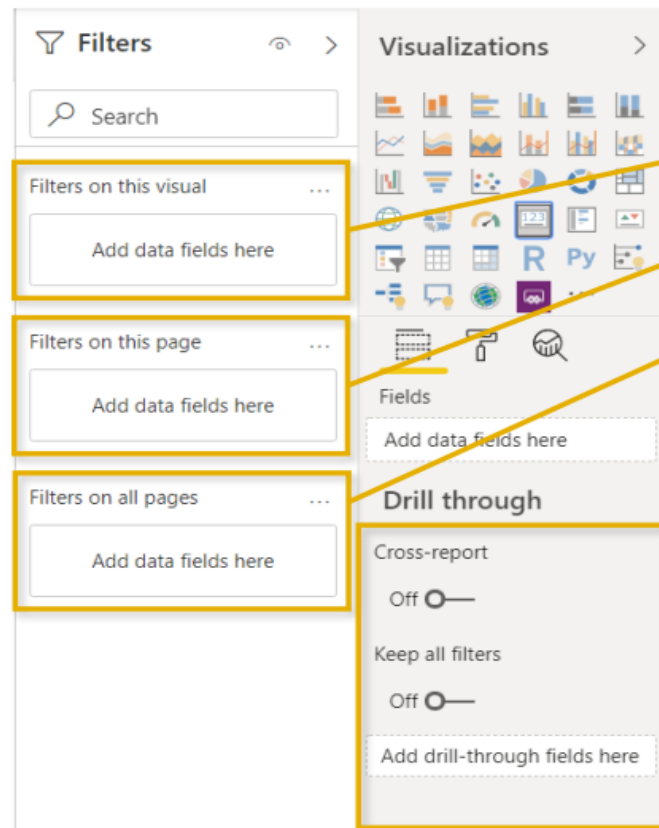
- Label style: Category
- Color: [Color Picker]
- Display ...: Auto
- Text size: 9
- Font fam...: DIN
- Revert to default

Advanced controls for Title:

- Title Text: Total Orders ...
- Font color: [Color Picker]
- Background color: [Color Picker]
- Alignment: [Alignment Options]
- Text size: 8
- Font fam...: Segoe UI
- Revert to default



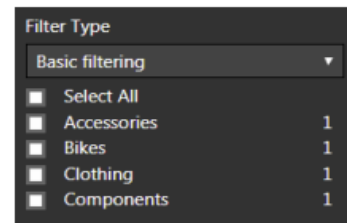
# FILTERING OPTIONS



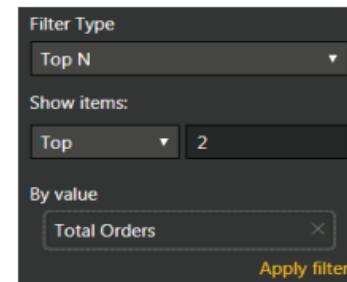
There are **four (x4)** primary filter types in Power BI reports:

1. **Visual Level:** Applies only to the *specific visual* in which it is defined
2. **Page Level:** Applies to *all visuals on the specific page* in which it is defined
3. **Report Level:** Applies to *all visuals* across *all pages* of the report
4. **Drill through:** Applies to *specific pages*, and *updates* based on the item clicked

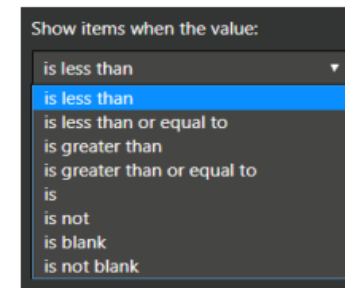
*Filter settings include Basic, Advanced, and Top N options*



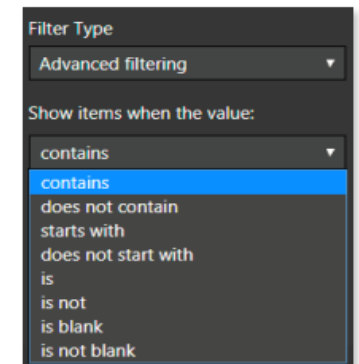
**Basic Options**



**Top N Options**

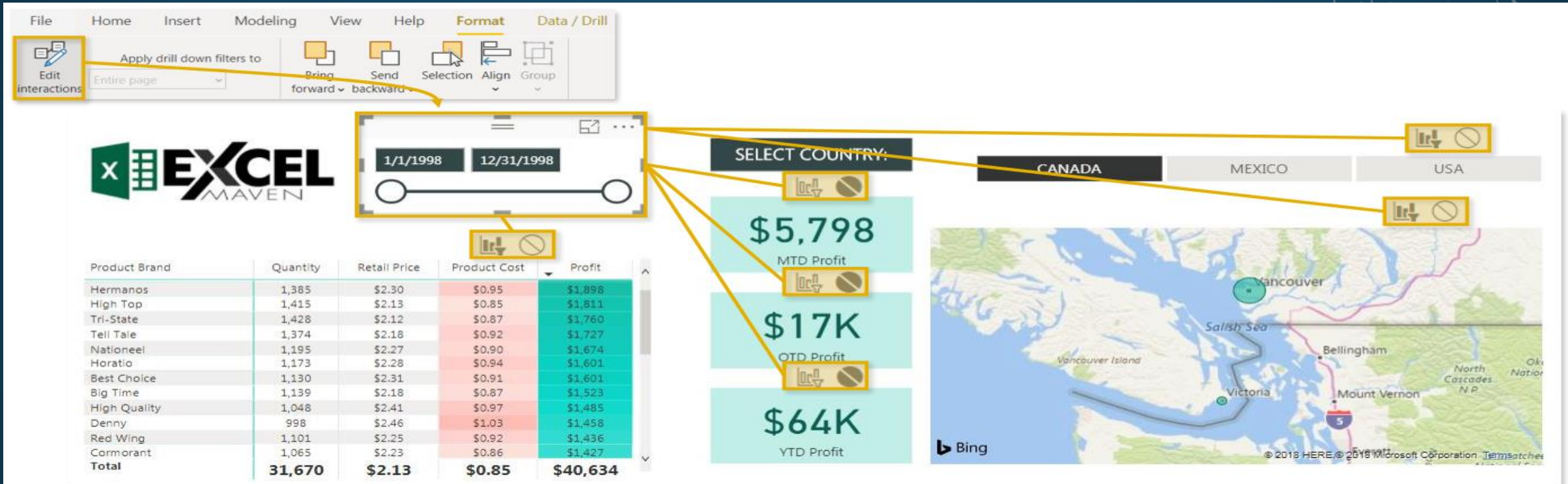


**Advanced (Values)**







**Advanced (Text)**

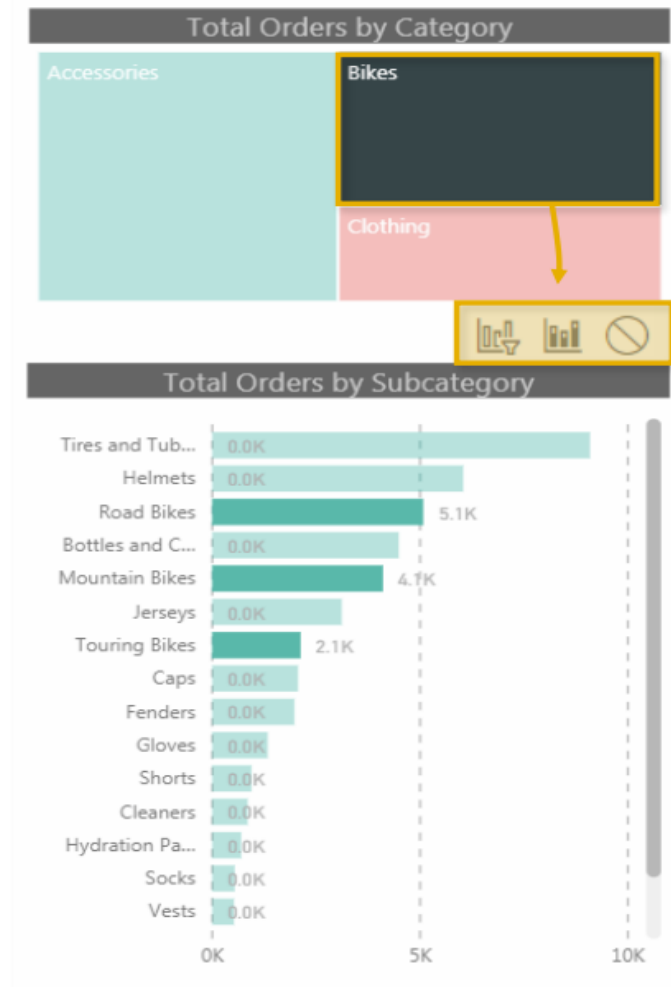
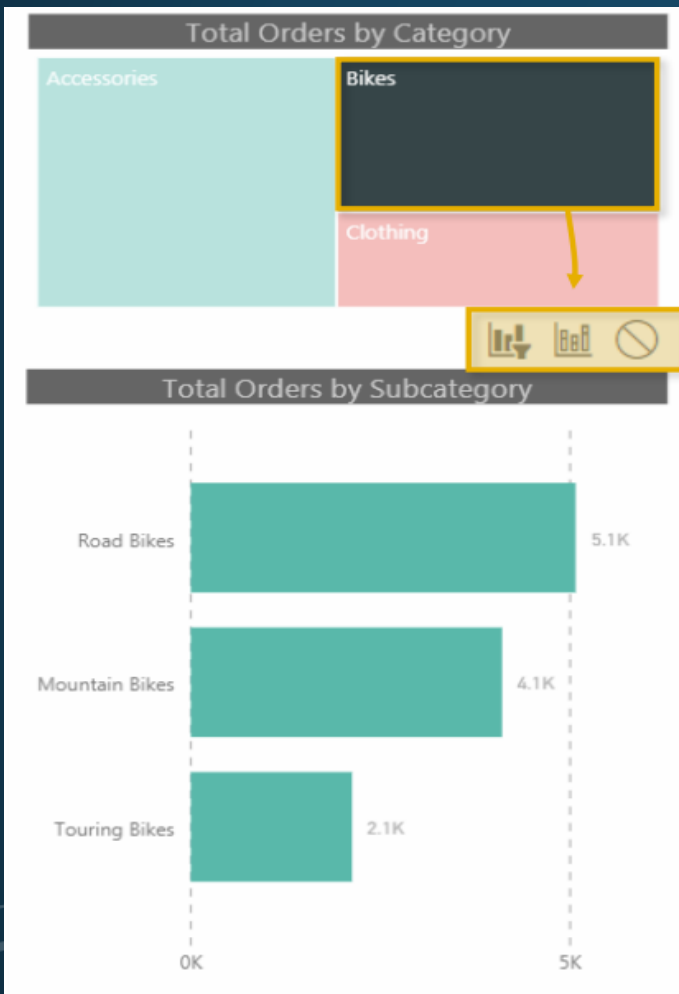
# EDITING REPORT INTERACTIONS



**Report interactions** allow you to determine how filters applied to *one* visual impact the *others*

- For example, by selecting the Timeline visual and enabling “*Edit interactions*” from the **Format** tab, we can manually determine which visuals should “*react*” when the date range changes
- In this case the **Product matrix**, **Country slicer** and **Map** will filter in response to timeline changes (   ), but the **MTD**, **QTD**, and **YTD Profit** cards *will not* (   )

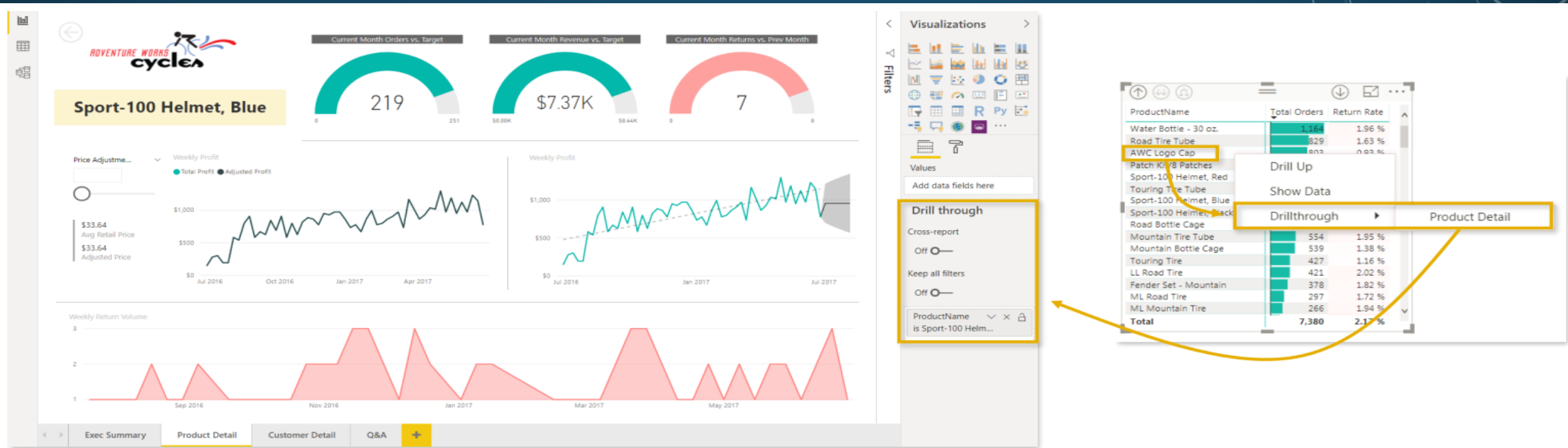
# EDITING REPORT INTERACTIONS (CONT.)



For certain types of visuals, a third option allows you to “**highlight**” sub-segments of the data, rather than simply filtering vs. not filtering

- When the interaction mode is set to “**filter**”, selecting the “**Bikes**” category in the treemap produces a filtered list of subcategories in the chart below
- When the interaction mode is set to “**highlight**”, selecting the “**Bikes**” category in the treemap highlights the relevant subsegment of data in the chart below

# DRILLTHROUGH FILTERS

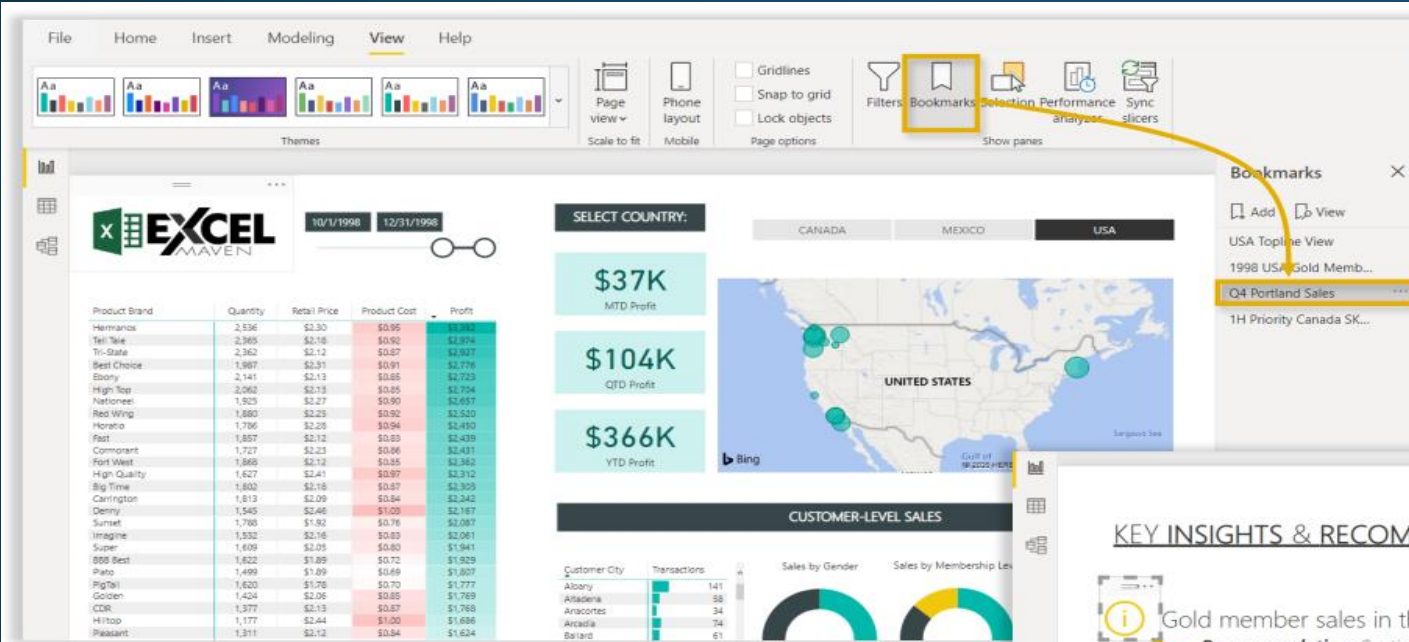


**Drill through filters** allow users to jump to different report pages (*like bookmarks*), while simultaneously filtering based on the *specific item selected*

- Here we've built a report page ("**Product Detail**") featuring *product-level* performance, and added a Drillthrough filter for **ProductName**; users can now right-click any report visual containing product names, and jump straight to a pre-filtered version of this page ("**Sport-100 Helmet, Blue**" shown in the example above)



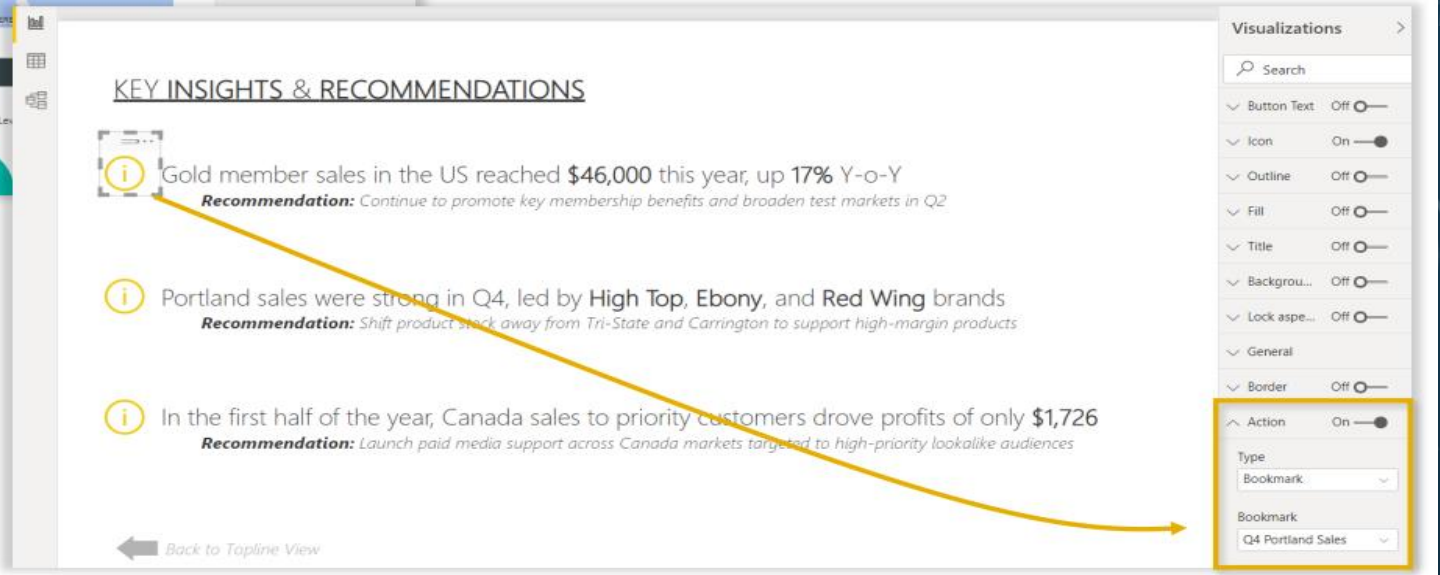
# ADDING & LINKING BOOKMARKS



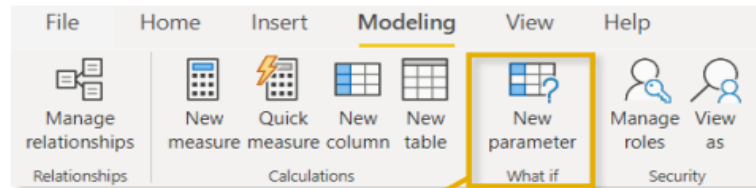
In this example, we notice that Q4 sales were particularly strong in the Portland market, so we add a new **bookmark** (View > Bookmarks Pane > Add) and name it “Q4 Portland Sales”

On a new page, we present our key insights, insert buttons, and link them to bookmarks using the object “**Action**” properties

Now we’re able to create a *narrative* from the data, and really bring our insights to life!



# “WHAT-IF” PARAMETERS



What-if parameter

Name  
Price Adjustment %

Data type  
Decimal number ▼

Minimum  
-1

Maximum  
1

Increment  
0.1

Default  
0

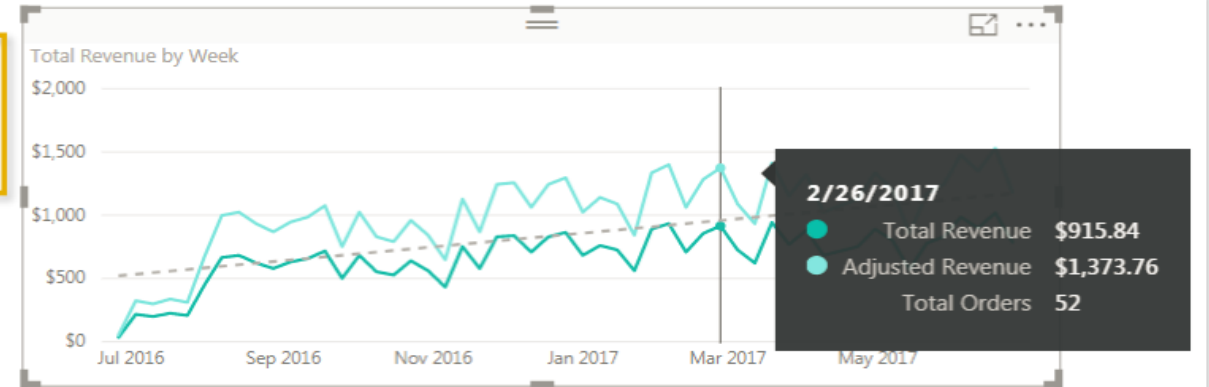
☒ Add slicer to this page

OK Cancel

Price Adjustment (%)

0.50

\$8.64  
Avg Retail Price  
\$12.96  
Adjusted Price



“What If” Parameters are essentially pre-set measures that produce values within a given range, based on user-inputs (*data type, min/max, increment, and default*)

These can be great tools for forecasting or scenario testing; here we’ve created a “**Price Adjustment %**” parameter in order to compare **Total Revenue** (based on the *actual price*) against **Adjusted Revenue** (based on the *parameter-adjusted price*)

**NOTE:** When you create a parameter, a new table is automatically added with DAX calculations for “Parameter” and “Parameter Value”, which look something like this:

Parameter = GENERATESERIES(-1, 1, 0.1)

Parameter Value = SELECTEDVALUE(Parameter[Parameter], 0)



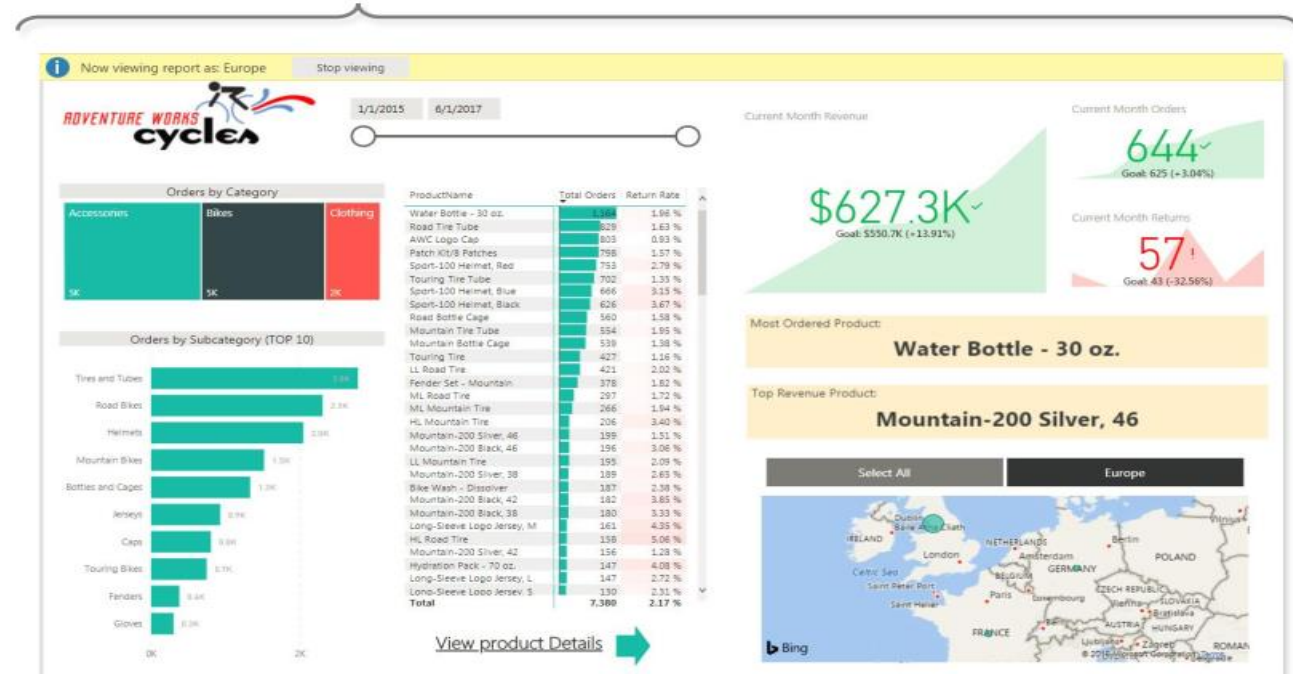
# MANAGING & VIEWING AS ROLES

The screenshot shows the Power BI ribbon with the 'Modeling' tab selected. The 'Manage roles' and 'View as' buttons are highlighted. Below, the 'Manage roles' dialog is open, showing a list of roles: Europe, North America, and Pacific. The 'Europe' role is selected. The 'Table filter DAX expression' field contains the expression: `[Continent] = "Europe"`. The 'AW\_Territory\_Lookup' table is selected in the 'Tables' list.

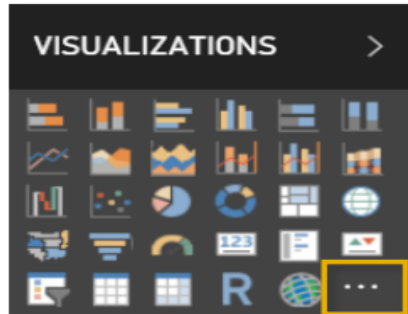
The 'View as roles' dialog is shown with the 'Europe' role selected. The options are: None, Other user, Europe (checked), North America, and Pacific.

**Roles** allow you to define filtered views that can be tailored to specific audiences

- In this example we've created views for each territory manager (**Europe, North America, and Pacific**) based on simple DAX filter statements



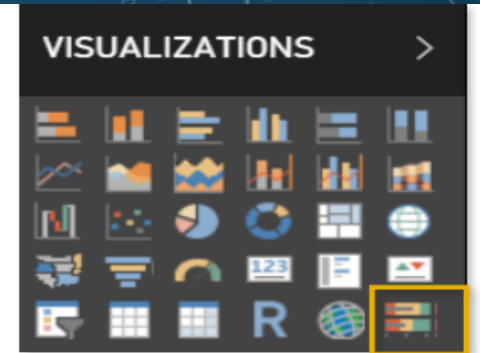
# IMPORTING CUSTOM VISUALS



## Import custom visual

The visual was successfully imported into this report.

OK



## Power BI Visuals

MARKETPLACE | MY ORGANIZATION

Add-ins may access personal and document information. By using an add-in, you agree to its Permissions, License Terms and Privacy Policy.

Search

Category

All

Editor's Picks

Filters

KPIs

Maps

Advanced Analytics

Time

Gauges

Infographics

Data Visualizations



### Bullet Chart

A bar chart with extra visual elements to provide additional context. Useful for tracking goals

★★★★☆



### Histogram Chart

Visualises the distribution of data over a continuous interval or certain time period

★★★★☆



### Dual KPI

Efficiently visualizes two measures over time, showing their trend on a joint timeline

★★★★☆

Add

Add

Add

Click the ellipsis in the visuals pane to import **custom visuals** from files or from the Power BI Marketplace, directly into the report (*no installation or restart necessary*)

In this case we've added a **Bullet Chart** from the marketplace



# THANK YOU

# Q&A