POWER BI

SHARED BY: THUNNM

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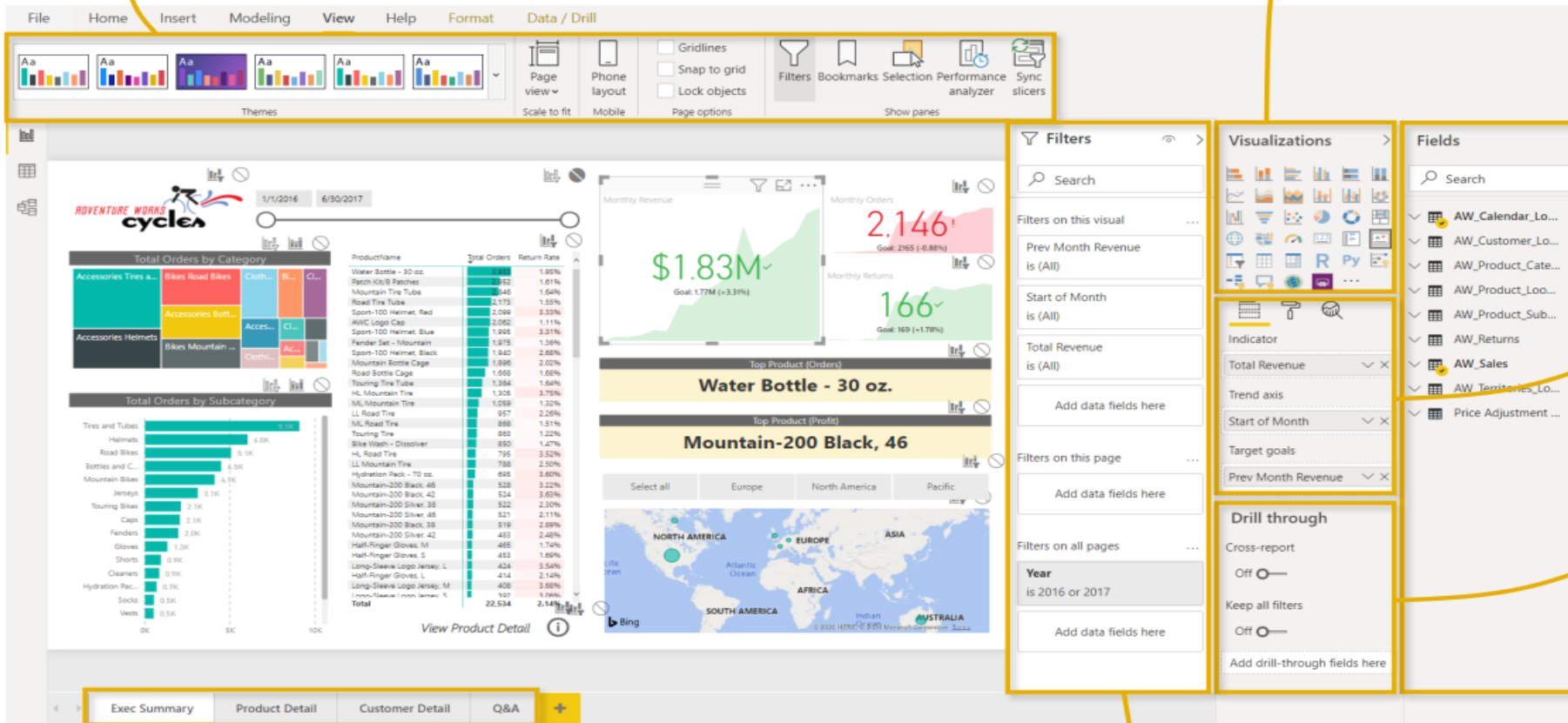
- *Inserting charts and visuals, customizing formats, editing interactions, applying filters and bookmarks, etc.*

INTRODUCING THE COURSE

1. **THE BRIEF**

2. **THE OBJECTIVE**

- 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.**

- **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*)

Field List (*Tables, Columns, Measures*)

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

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

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

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

INSERTING OBJECTS & BASIC CHARTS
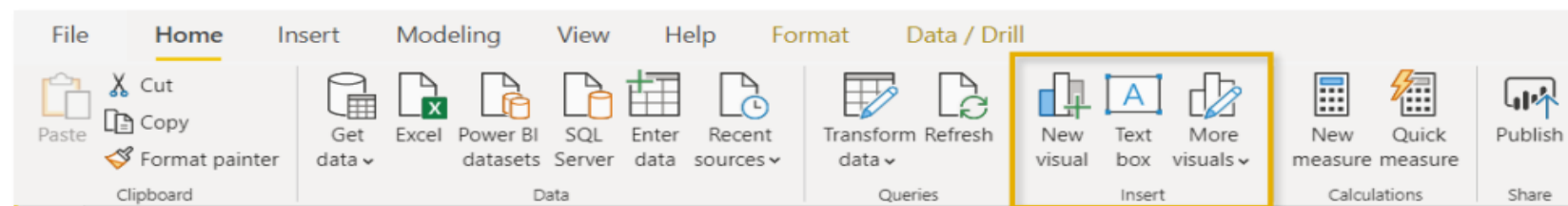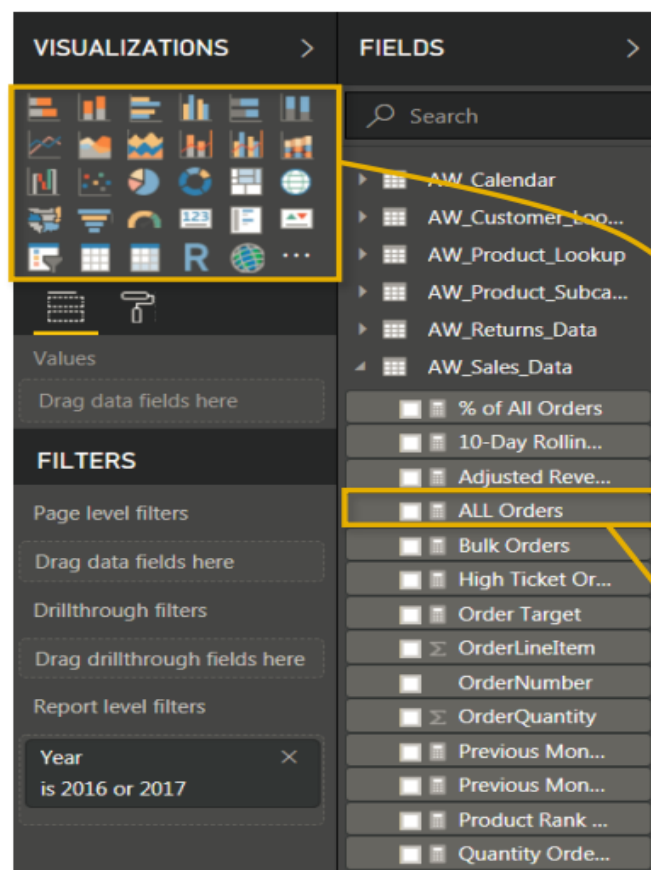
Click on a visualization type or use the "*New Visual*" option in the **Home** tab to insert a blank chart template (*usually a column chart by default*)

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

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

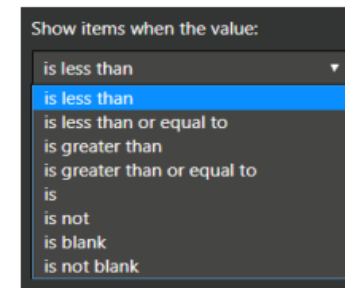4. **Drill through:** Applies to *specific pages*, and *updates* based on the item clicked

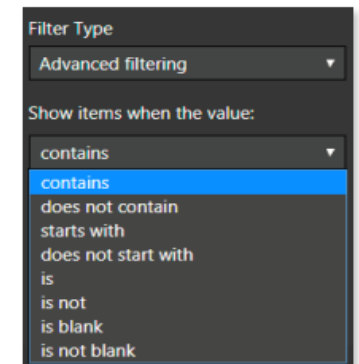*Filter settings include Basic, Advanced, and Top N options*
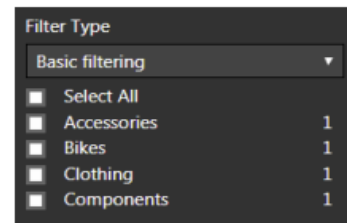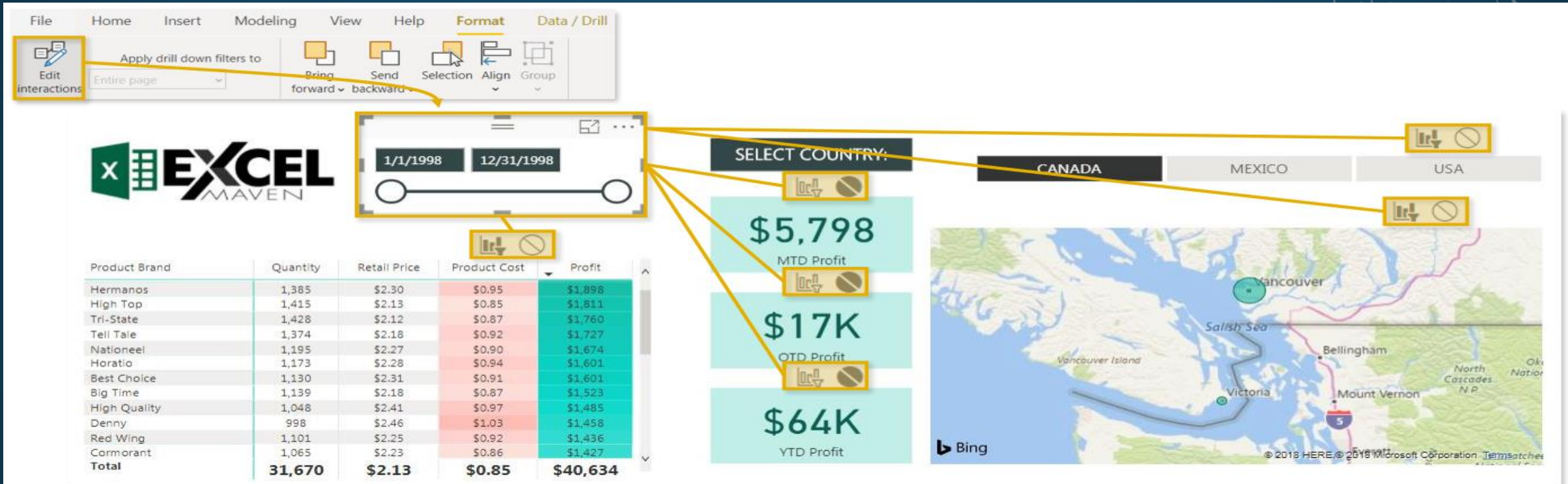
Basic Options
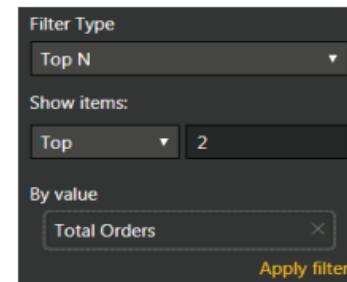
Top N Options

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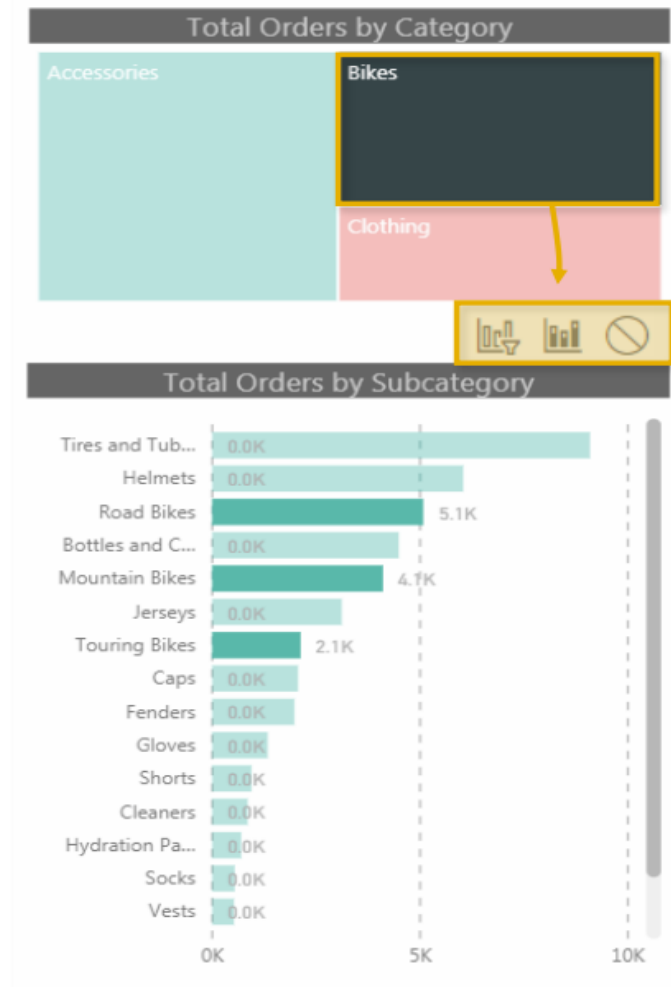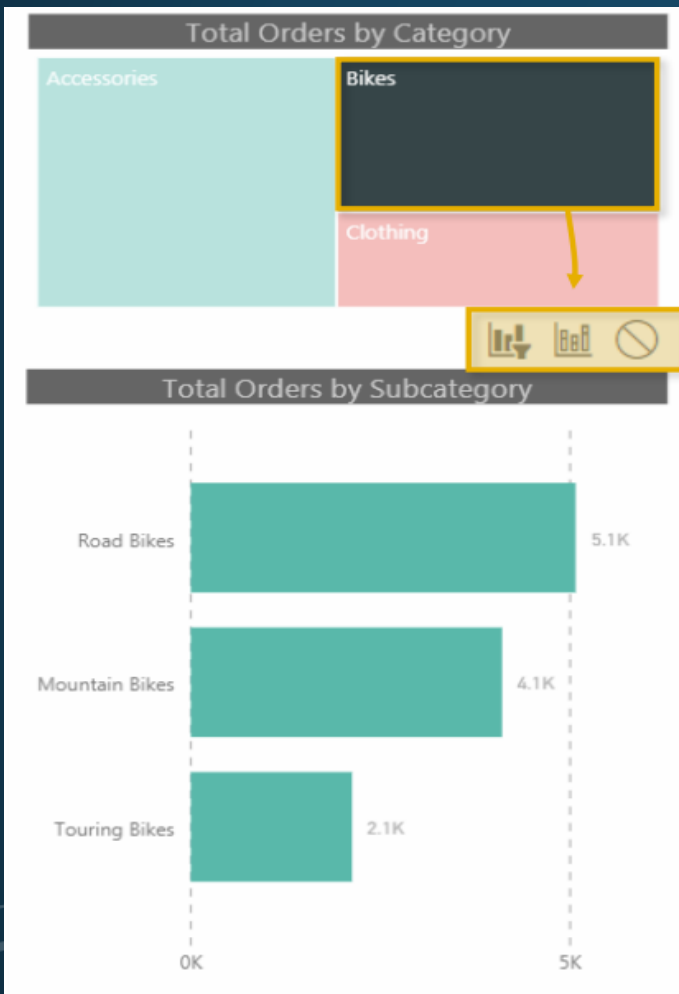
For certain types of visuals, a third option allows you to "**highlight**" sub-segments of the data, rather than simply filtering vs. not filtering

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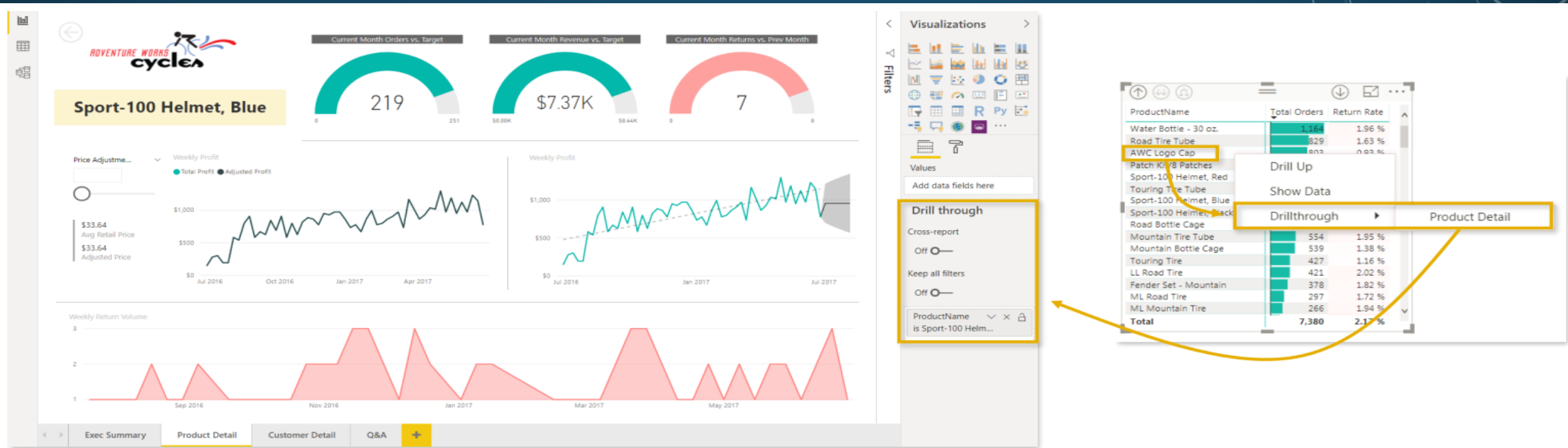
Drill through filters allow users to jump to different report pages (*like bookmarks*), while simultaneously filtering based on the *specific item selected*

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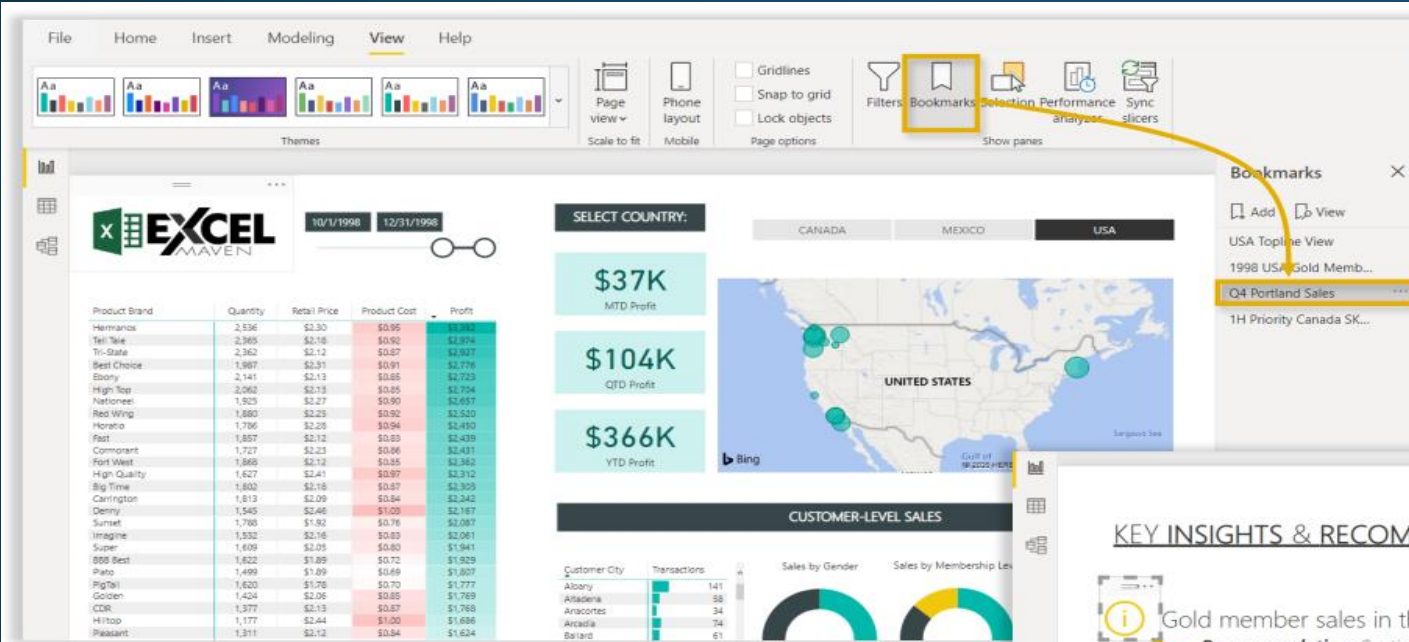
In this example, we notice that Q4 sales were particularly strong in the Portland market, so we add a new **bookmark** (*View > Bookmarks Pane > Add*) and name it "**Q4 Portland Sales**"

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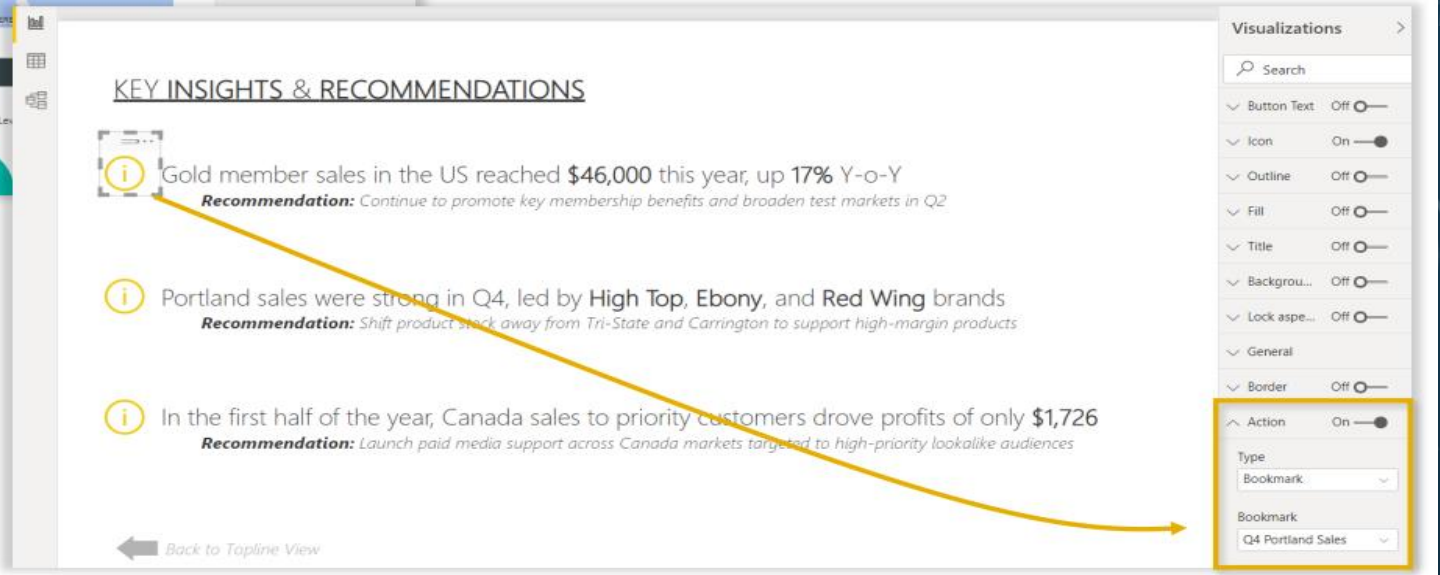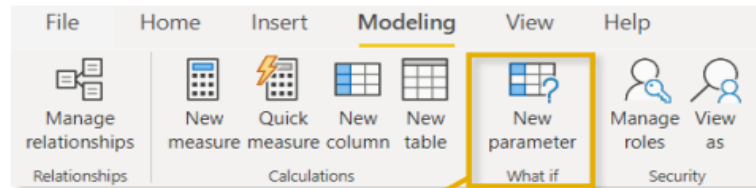
"WHAT-IF" PARAMETERS
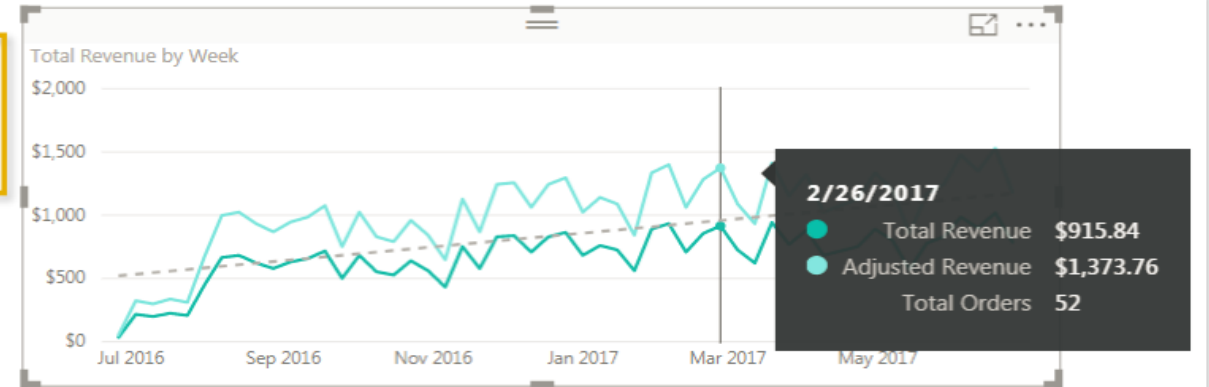
"What If" Parameters are essentially pre-set measures that produce values within a given range, based on user-inputs (*data type, min/max, increment, and default*)

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)
```
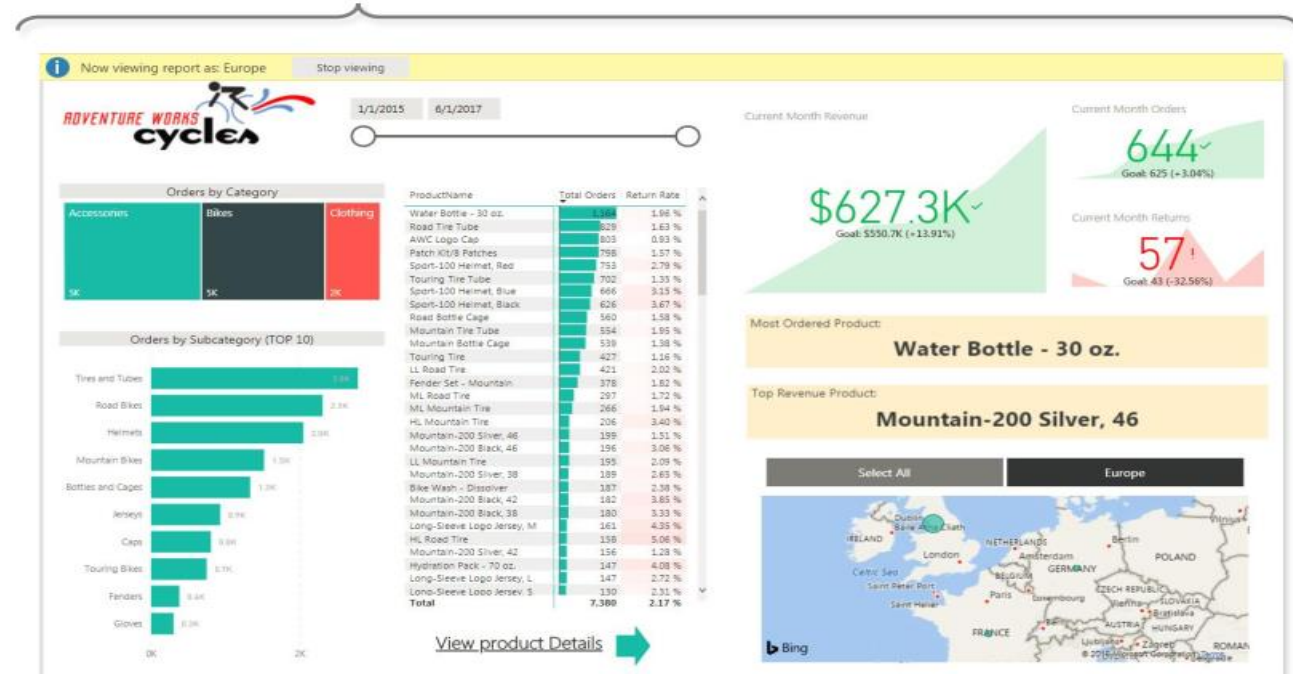
MANAGING & VIEWING AS ROLES

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
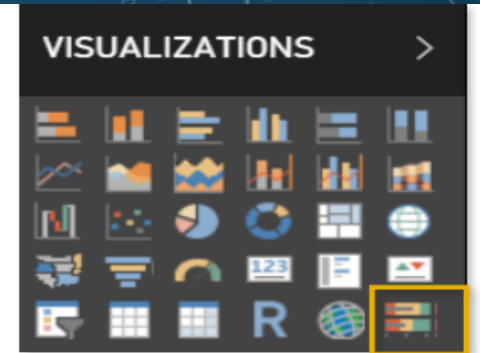
IMPORTING CUSTOM VISUALS

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 marletplace

THANK YOU

Q&A