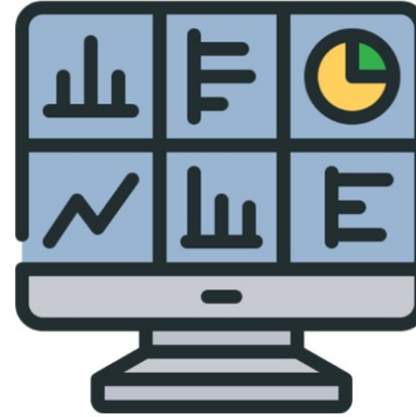


# Microsoft Power BI



# HAVENS

CONSULTING



Enhancing *User Experiences* With  
**Advanced Reporting Features**

# Presenter Introduction

- **Reid Havens**

- Founder | BI Evangelist | Consultant
- Microsoft MVP
- PBI User Group Co-Organizer – Redmond, WA
- Nickname: “The Viz Wiz”
- Specializes in teaching, consulting, and design

<https://www.havensconsulting.net>

[reid@havensconsulting.net](mailto:reid@havensconsulting.net)

**HAVENS**  
CONSULTING





# Enhancing User Experiences With Advanced Reporting Features

- Understanding Bookmark Capture States
- Configuring and Formatting Buttons
- Applying Measure Based Formatting
- Implementing Report Tooltips



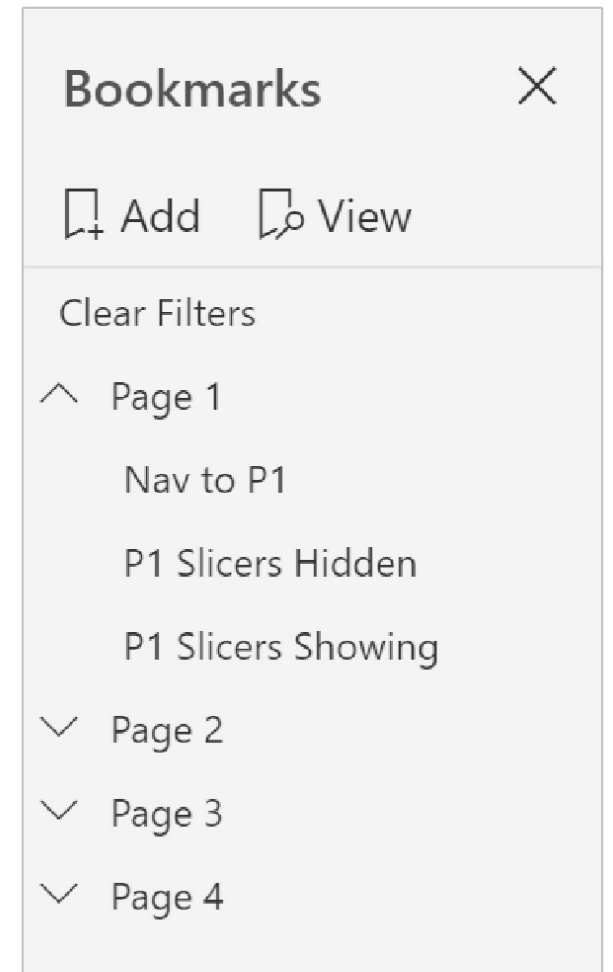
# Enhancing User Experiences With Advanced Reporting Features

- Understanding Bookmark Capture States
- Configuring and Formatting Buttons
- Applying Measure Based Formatting
- Implementing Report Tooltips

# Understanding Bookmarks

## Bookmarks Introduction

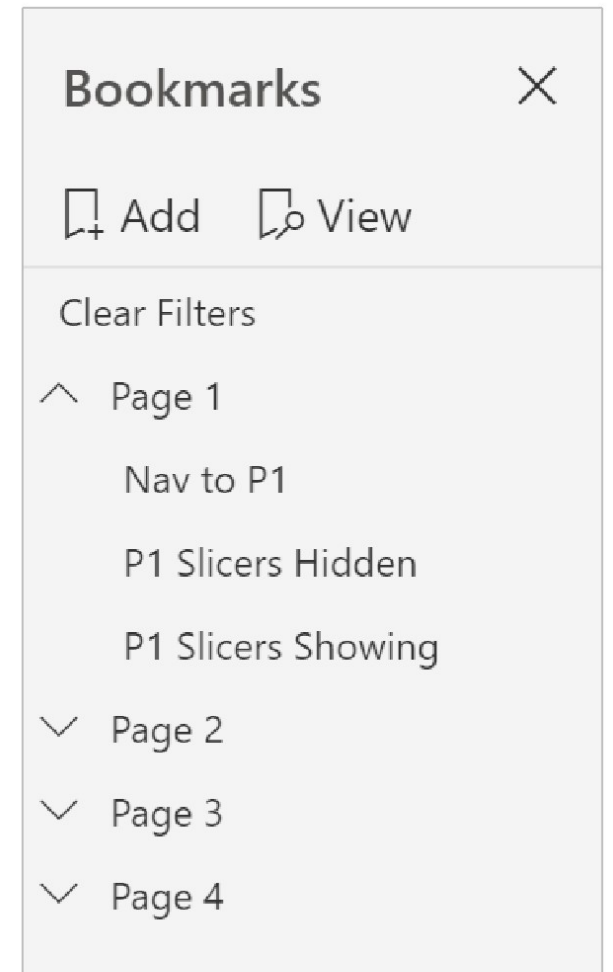
- **Bookmarks** capture the currently *configured view* of a report page at *design-time*
- **Common uses include:**
  - Map *multiple filter selections* for quick navigation
  - Dynamically *change* page visuals and objects
  - *Assign* bookmarks to *buttons* and/or *images*
- Report users can open the Bookmarks pane at *view-time*



# Understanding Bookmarks

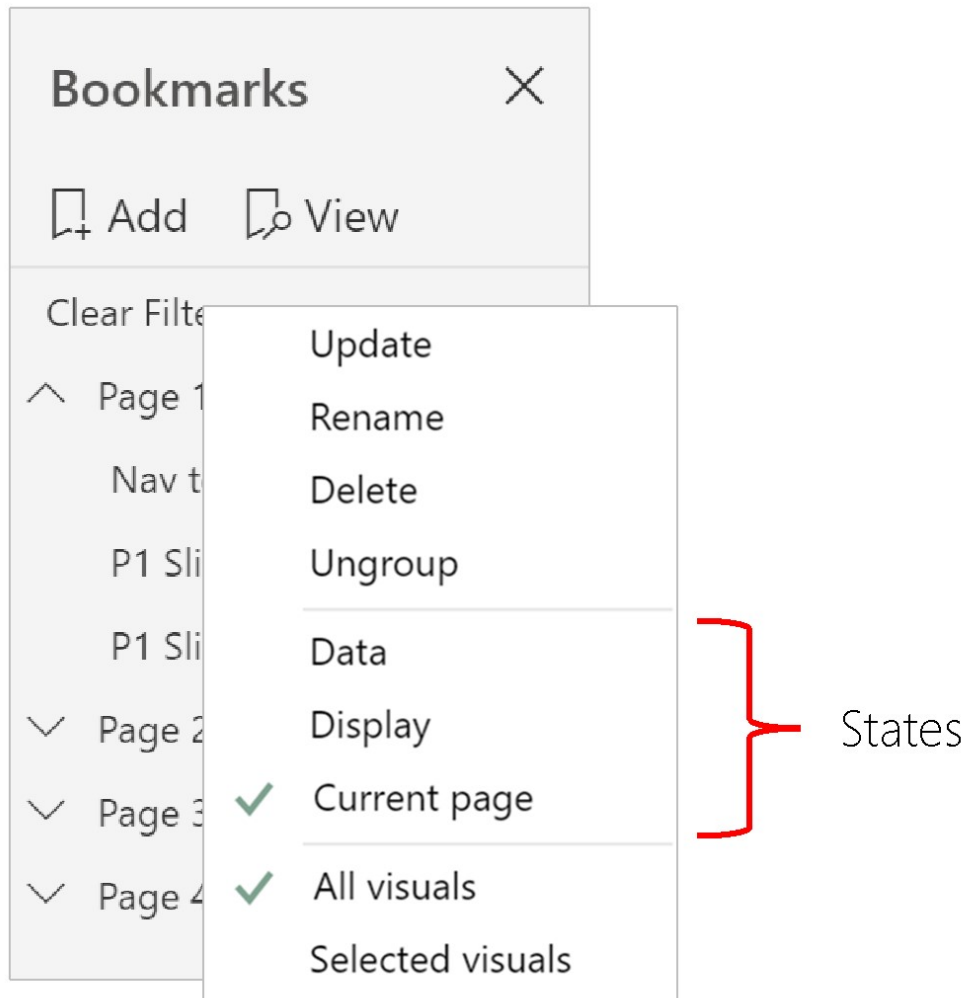
Bookmarks ► Capture States

- **Bookmarks save the following elements:**
  - Current page
  - Filters
  - Slicers (including  *slicer type*)
  - Visual selection state (*cross-highlight* and *cross-filter*)
  - Sort order
  - Drill location
  - Object visibility (observed in the Selections pane)
  - Spotlight applied to an object
  - Focus applied to an object



# Understanding Bookmarks

Bookmarks ► Settings

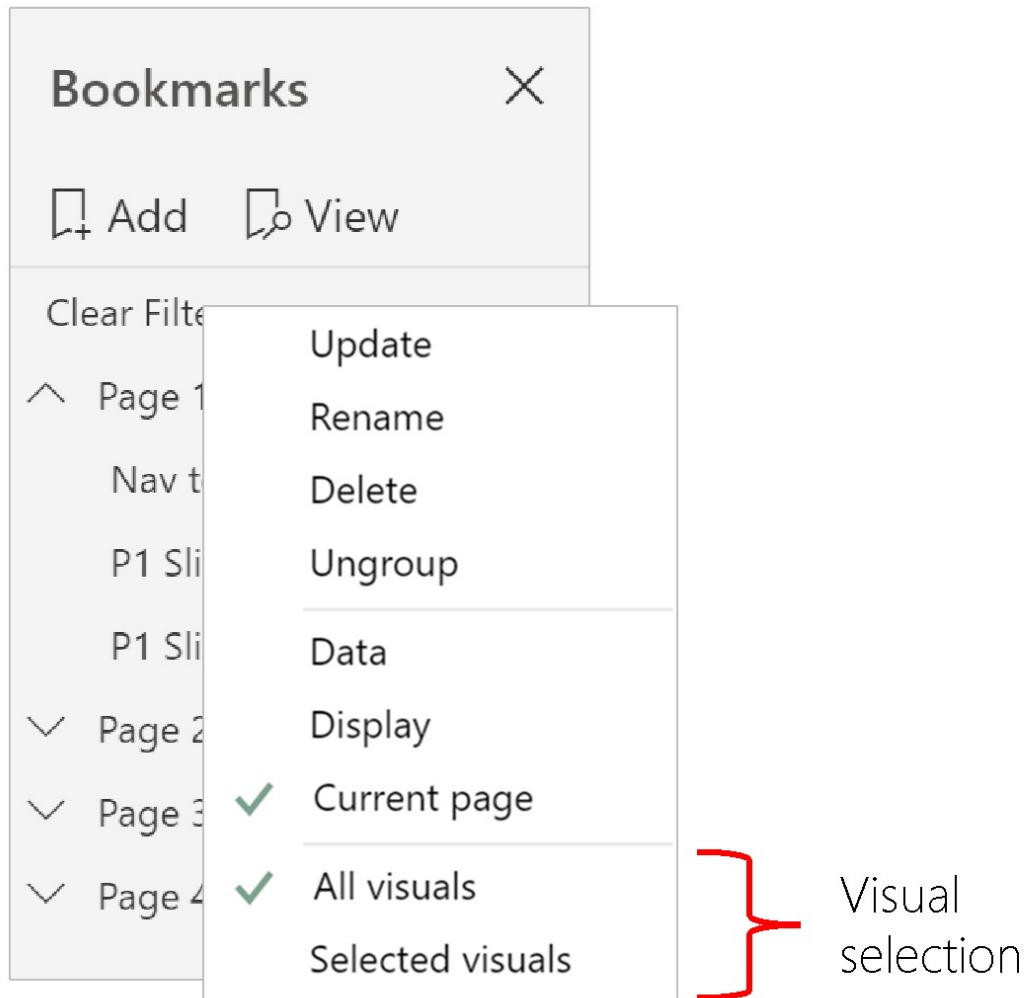


- State capture can *include/exclude*:
  - **Data**: Filters and slicers
  - **Display**: Visibility, spotlight, focus
  - **Current page**: Current page



# Understanding Bookmarks

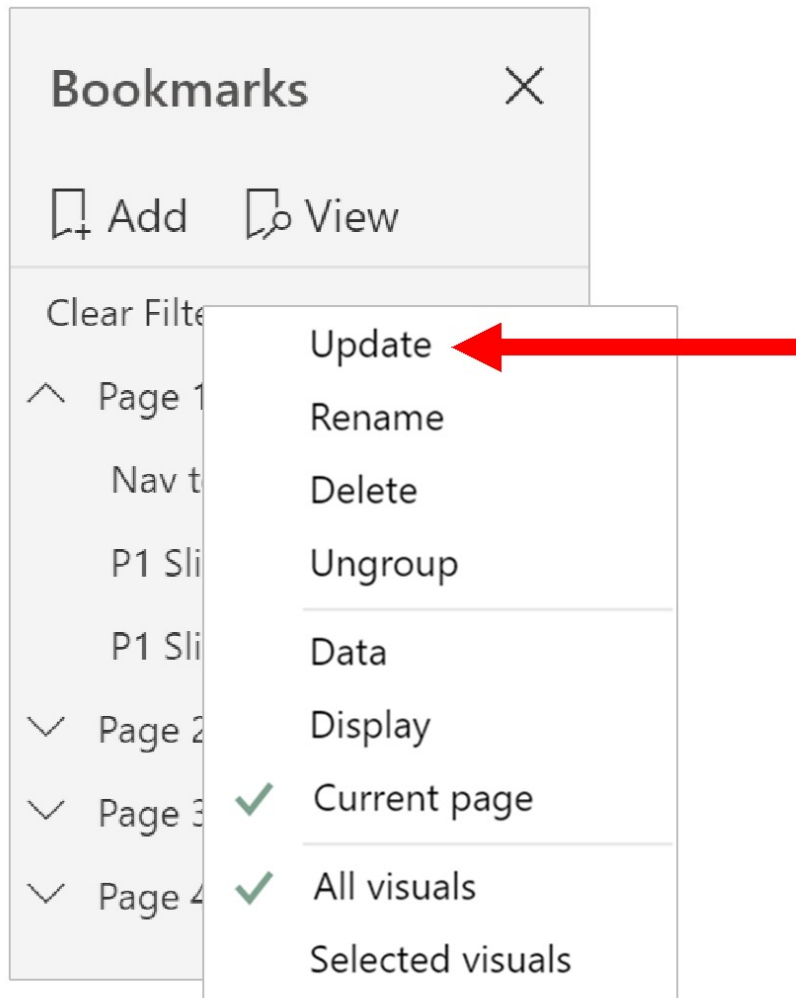
Bookmarks ► Settings



- State capture can *include/exclude*:
  - **Data**: Filters and slicers
  - **Display**: Visibility, spotlight, focus
  - **Current page**: Current page
- State capture can apply to:
  - All visuals
  - Selected visuals

# Understanding Bookmarks

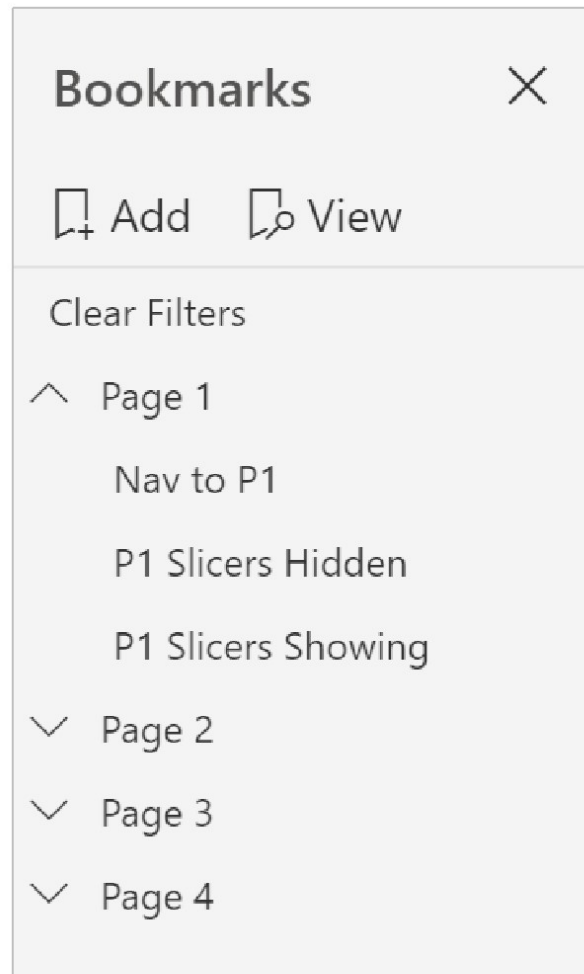
Bookmarks ► Settings



- State capture can *include/exclude*:
  - **Data**: Filters and slicers
  - **Display**: Visibility, spotlight, focus
  - **Current page**: Current page
- State capture can apply to:
  - All visuals
  - Selected visuals
- Select **Update** to re-capture state

# Understanding Bookmarks

Bookmarks ► Settings



- State capture can *include/exclude*:
  - **Data**: Filters and slicers
  - **Display**: Visibility, spotlight, focus
  - **Current page**: Current page
- State capture can apply to:
  - All visuals
  - Selected visuals
- Select **Update** to re-capture state
- Bookmarks can also be organized by named **Groups**

# Understanding Bookmarks

## Bookmarks ► Selection Pane

- The **Selection** pane is a list all objects on a report page – configurations include:
  - *Order* of objects
  - *Visibility* of objects
- **Common uses include:**
  - Order visuals so *visual headers* and other *visual pop-ups* don't display behind other visuals
  - Toggle *object visibility* to use with bookmarks
- Report users can open the pane at *view-time*

It is a recommended practice to give each object a *unique name*

Selection X

Layer order Tab order

▲ ▼ Show Hide

Visible → HC Logo (visible icon)

Last Refresh Date (visible icon)

Report Title (visible icon)

Page Views Sparkline (visible icon)

Page Views (visible icon)

Unique Page Views (visible icon)

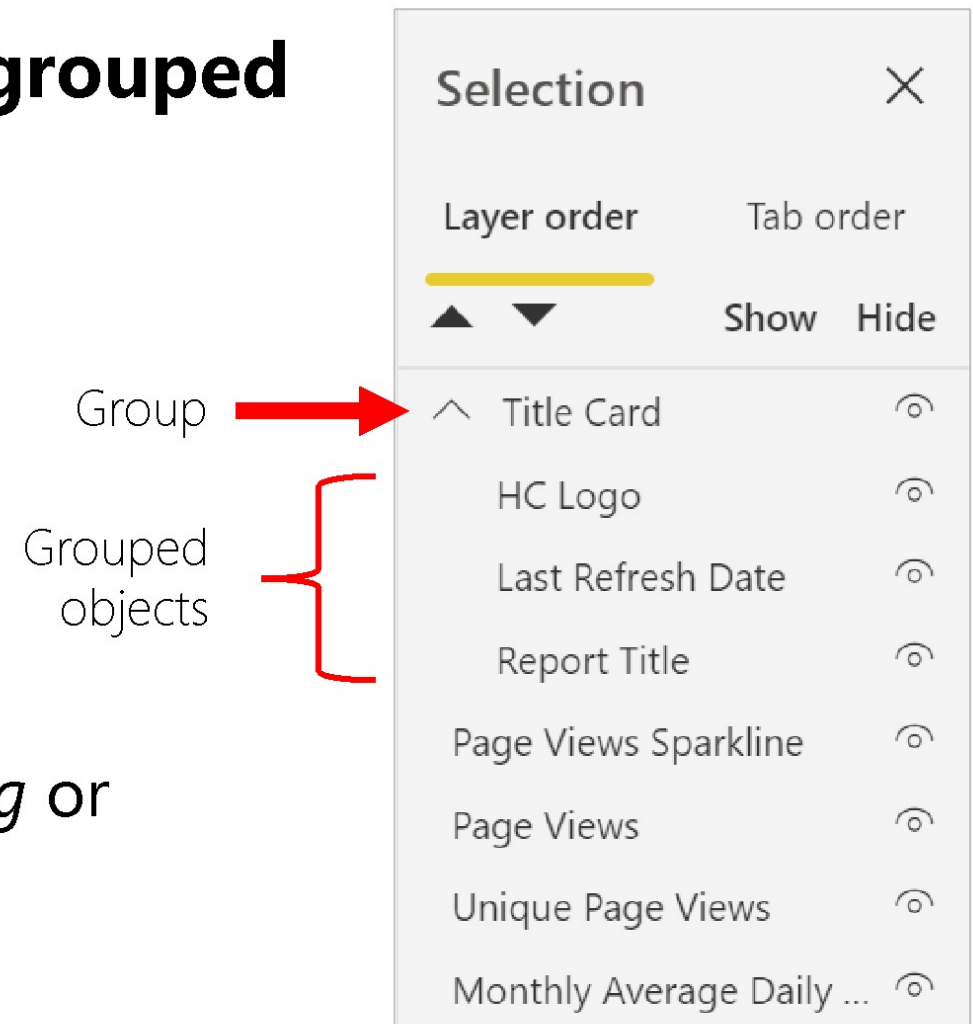
Hidden → Monthly Average Daily ... (hidden icon)

Unique Page Views Spa... (visible icon)

# Understanding Bookmarks

Bookmarks ▶ Selection Pane ▶ Groups

- Objects in the selection pane can also be **grouped**
- **Grouped objects:**
  - Behave similarly to groups in other *Microsoft Office* tools (e.g. PowerPoint)
  - Can be *moved together* as a single unit
  - Have *background color* and *transparency* settings
- **Common uses:**
  - Group similar objects together for easier *moving* or *copying-and-pasting*
  - *Organizing* the selection pane





# Demonstration

One

## Understanding Bookmarks

- Exercise 1 – Utilizing the Data Capture State
- Exercise 2 – Utilizing the Display Capture State
- Exercise 3 – Discussing the Current Page Capture State



Questions?



# References

- What are Bookmarks?
  - <https://docs.microsoft.com/power-bi/consumer/>
- Create Bookmarks to Share Insights and Tell Stories
  - <https://docs.microsoft.com/power-bi/create-reports/desktop-bookmarks>
- HC Video Playlist – Bookmarks
  - <https://www.youtube.com/playlist?list=PLzN99cpDw6oAl3EzU77Dhcrs6r0gU-uuz>





# Enhancing User Experiences With Advanced Reporting Features

- Understanding Bookmark Capture States
- Configuring and Formatting Buttons
- Applying Measure Based Formatting
- Implementing Report Tooltips

# Configuring and Formatting Buttons

## Button Introduction

- **Buttons** add functionality to reports that behave *similar to apps* – allowing users to *hover, click, interact* with objects
- *Four button states* can be individually formatted to create a *rich user experience*:
  - **Idle** – State when *inactive*
  - **Hover** – State during *mouse hover*
  - **Selected** – State during *mouse click*
  - **Disabled** – State for *page or drillthrough navigation*
- **Assignable actions include:**
  - Back<sup>1</sup>
  - Bookmark
  - Q&A
  - Web URL
  - Page navigation
  - Drillthrough navigation

**1:** Navigates back to the previous report page



Buttons

←	Left arrow
→	Right arrow
↶	Reset
⬅	Back
i	Information
?	Help
💬	Q&A
🔖	Bookmark
	Blank



# Demonstration

One

## Configuring and Formatting Buttons

- Exercise 1 – Creating Interactive Buttons
- Exercise 2 – Assigning Page Navigation Actions
- Exercise 3 – Assigning Drillthrough Navigation Actions
- Exercise 4 – Applying Images to Buttons



Questions?



# References

- Use Buttons in Power BI
  - <https://docs.microsoft.com/power-bi/create-reports/desktop-buttons>
- Create a Drillthrough Button in Power BI
  - <https://docs.microsoft.com/power-bi/create-reports/desktop-drill-through-buttons>
- HC Video Playlist – Bookmarks
  - <https://www.youtube.com/playlist?list=PLzN99cpDw6oAl3EzU77Dhcrs6r0gU-uuz>
- HC Video Playlist – Buttons
  - <https://www.youtube.com/playlist?list=PLzN99cpDw6oDi-pDQniewRXH9LnFK-E0t>



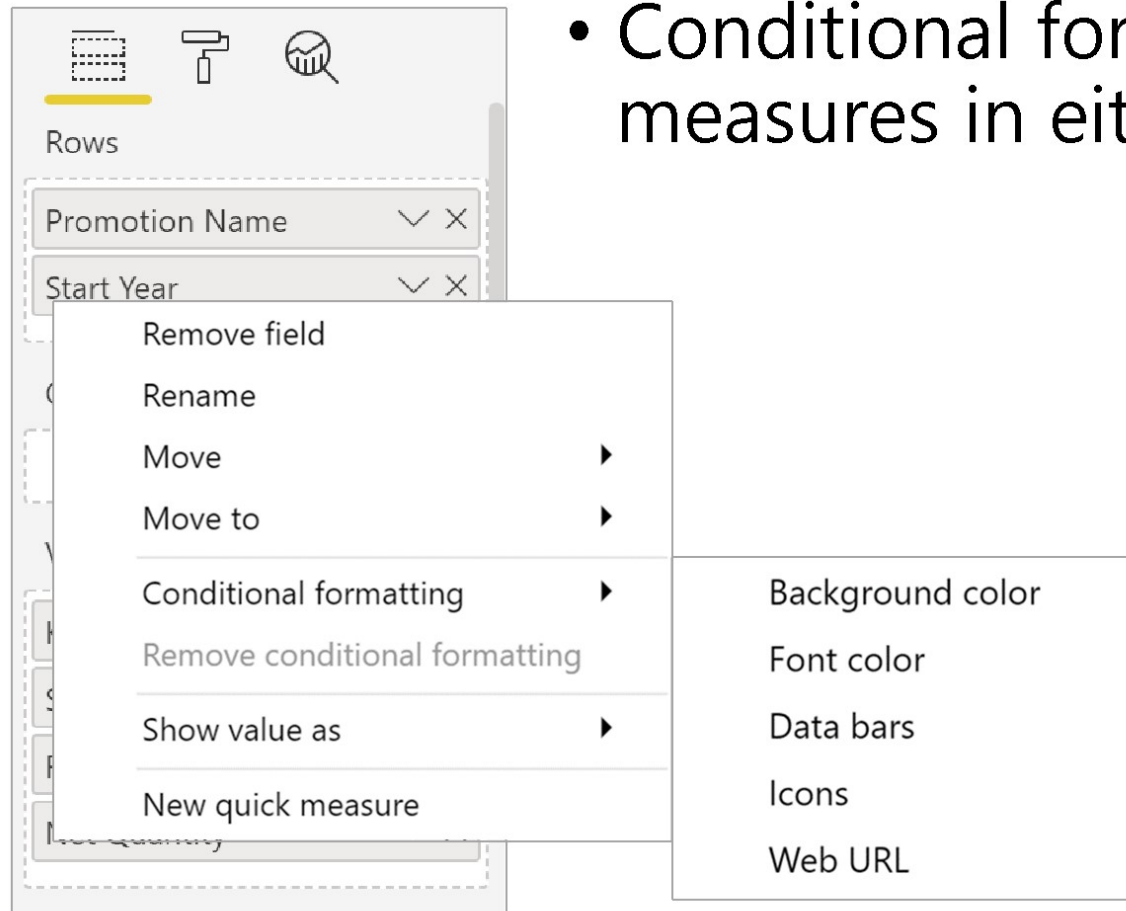
# Enhancing User Experiences With Advanced Reporting Features

Understanding Bookmark Capture States  
Configuring and Formatting Buttons  
Applying Measure Based Formatting  
Implementing Report Tooltips

# Applying Measure Based Formatting

## Conditional Formatting

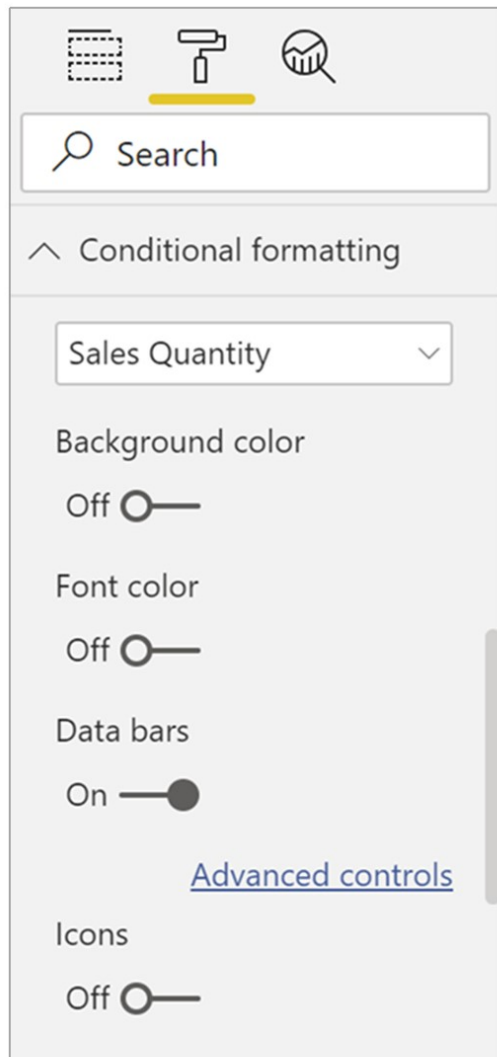
- Conditional formatting can be applied to calculated measures in either the *table* or *matrix* visuals



Page Title & Geo	Page Views	Unique Views	Searches	Bounce Rate
Havens Consulting	4,326	3,587	546	47.6%
Files & Templates — Hav...	4,270	3,424	225	72.8%
Blog / Media — Havens ...	3,464	2,921	35	73.2%
Blog Posts — Havens Co...	2,695	2,050	33	63.6%
Power BI Vs. Excel — Hav...	2,367	2,202	1,540	91.2%
Havens Consulting — Se...	1,403	1,034	0	37.9%
About Us — Havens Con...	1,226	1,049	455	47.1%
What Is Power BI? — Hav...	855	723	241	57.5%
Creating a Slicer Pop-Out...	800	679	9	80.1%
Google Analytics Report	786	710	20	80.8%
<b>Total</b>	<b>29,936</b>	<b>24,836</b>	<b>4,512</b>	<b>70.0%</b>

# Applying Measure Based Formatting

## Conditional Formatting



- Conditional formatting can be applied to calculated measures in either the *table* or *matrix* visuals
- Settings can be accessed:
  - In the **Fields** well of the **Visualizations** pane<sup>1</sup>
  - From the sub-menu under the Formatting pane



# Applying Measure Based Formatting

## Conditional Formatting ► Background and Font Colors

- **Background** and **font color** share the same *format by* settings
- Formatting logic can be based on:
  - **Color scale**
    - Applies a gradient between *min* and *max*
    - Min/Max can be set to *lowest value* or *fixed absolute value*
    - *Diverging* enables a third middle color

Background color - Sales

Format by: Color scale (dropdown)      Apply to: Values only (dropdown)


Based on field: Sales (dropdown)

Default formatting: As zero (dropdown)

Minimum: Lowest value (dropdown) [Red color swatch]      Enter a value (input)

Maximum: Highest value (dropdown) [Green color swatch]      Enter a value (input)

Diverging



[Learn more](#)      OK Cancel

# Applying Measure Based Formatting

## Conditional Formatting ► Background and Font Colors

- **Background** and **font color** share the same *format by* settings
- Formatting logic can be based on:
  - **Rules**
    - Applies colors based on one or more value ranges, each with a set color
    - Each value range starts with:
      - An **If** value condition
      - An **and** value condition
      - And a **color**

Font color - Sales

Format by: Rules Apply to: Values only

Based on field: Sales

Rules

Condition	Value	Unit	Operator	Value	Unit	Color	Actions
If value is greater than or equal to	0	Percent	and	is less than	33	Percent	then [Red] ↑ ↓ ×
If value is greater than or equal to	33	Percent	and	is less than	66	Percent	then [Yellow] ↑ ↓ ×
If value is greater than or equal to	66	Percent	and	is less than	100	Percent	then [Green] ↑ ↓ ×

↑↓ Reverse color order + New rule

[Learn more](#) OK Cancel

# Applying Measure Based Formatting

## Conditional Formatting ► Background and Font Colors

- **Background** and **font color** share the same *format by* settings
- Formatting logic can be based on:
  - **Field value**
    - Applies colors by using a *calculated measure* or a *column* that specifies a color – either using a *text value* or a *hex code*
    - Custom logic can be created inside a calculated measure to apply the desired color

Font color - Sales

Format by: Field value

Apply to: Values only

Based on field: Top Selling Product

[Learn more](#) OK Cancel

Field value formatting will be outside the scope of this presentation

# Applying Measure Based Formatting

## Conditional Formatting ► Data Bars

- **Data bars** can be set to *lowest value* or *fixed absolute value*
- **Other data Bar properties:**
  - Positive/negative bar (*color*)
  - Axis (*color*)
  - Bar direction
  - Show bar only – *hides the value*

Data bars

Format cells with bars based on their values.

Base value  
Sales Quantity

Show bar only

Minimum: Lowest value  
Maximum: Highest value

(Lowest value) (Highest value)

Positive bar: [Teal color]  
Negative bar: [Red color]

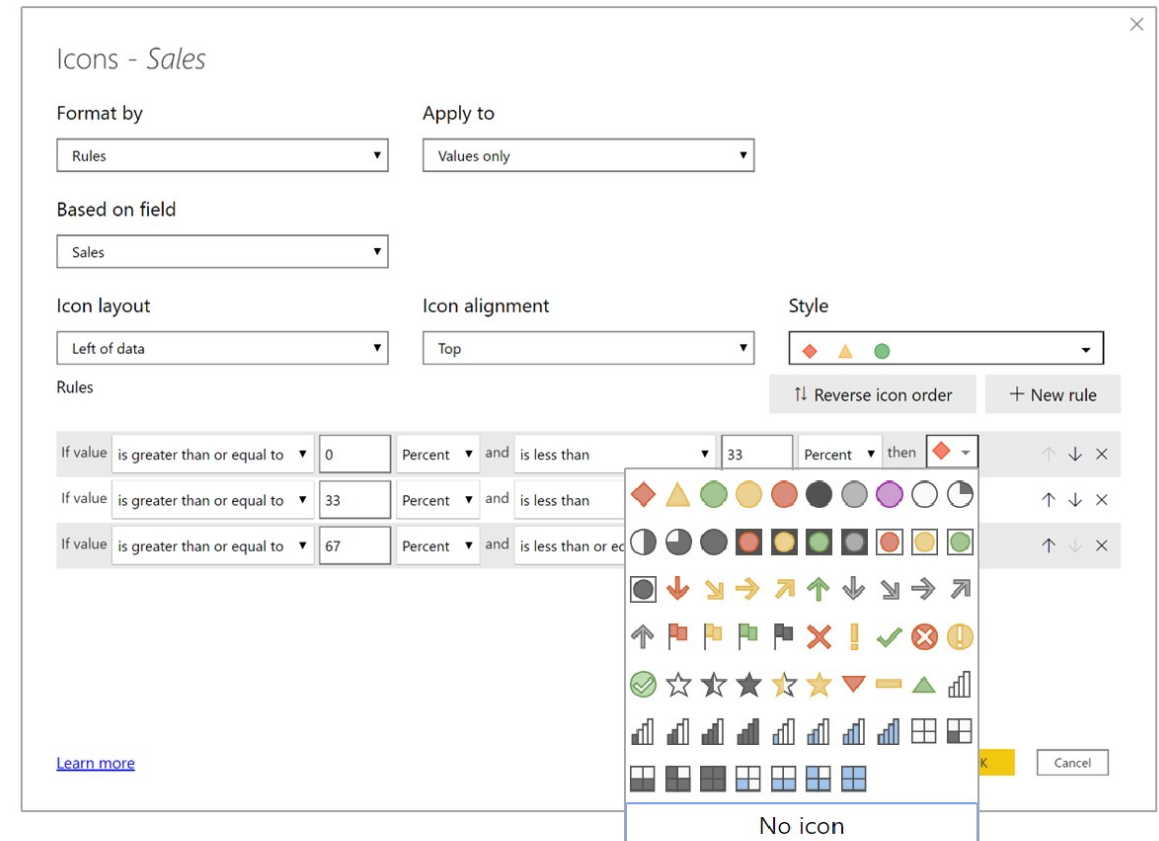
Bar direction: Left to right  
Axis: [Black color]

OK Cancel

# Applying Measure Based Formatting

## Conditional Formatting ► Icons

- **Icon sets** in Power BI are *very similar* to the ones found in *Excel*
- Formatting logic can be based on **Rules** or **Field Value**
- By default, icon rules will apply:
  - Red diamond to the *lower 33%*
  - Yellow triangle to the *middle 33%*
  - Green circle to the *upper 33%*
- *Custom* icon sets can be imported in Power BI Desktop



# Applying Measure Based Formatting

## Conditional Formatting ► Web URL

- **Web URLs** can be applied to fields as **active links** if there is a *column* or *measure* that contains a website URL
- Formatting logic is based on **Field value**
- When this formatting is applied to a field – *each row* is an active link to a website

Web URL - Sales

Format by: Field value

Apply to: Values only

Based on field: Selected Page

Country	Sales	YoY Sales	YoY Sales %	Top Selling Product
<b>United States</b>	<b>\$21,814,465</b>	<b>\$5,470,851</b>	<b>33%</b>	<b><a href="#">A. Datum Slim Di...</a></b>
Regular	\$11,932,740	\$2,911,538	↓ 32%	<a href="#">NT Wireless Transm...</a>
Deluxe	\$7,598,807	\$1,981,601	↓ 35%	<a href="#">A. Datum Super-zo...</a>
Economy	\$2,282,918	\$577,712	↓ 34%	<a href="#">A. Datum Slim Digit...</a>
<b>Canada</b>	<b>\$5,313,337</b>	<b>\$1,196,486</b>	<b>29%</b>	<b><a href="#">Contoso Wireless ...</a></b>
Regular	\$2,985,745	\$700,125	↓ 31%	<a href="#">A. Datum Bridge Di...</a>
Deluxe	\$1,710,997	\$358,646	↓ 27%	<a href="#">Contoso Wireless N...</a>

# Applying Measure Based Formatting

## Conditional Formatting ► Subtotals and Totals

- Conditional formatting can also be applied to the *subtotals* and *totals* in *matrix tables*
- **Thresholds** and **ranges** must be set manually when applied<sup>1</sup>

Font color - Sales

Format by: Rules

Apply to: Values and totals

Based on field: Sales

Rules

Reverse color order + New rule

If value is greater than or equal to 0 and is less than 500, then [Red] color

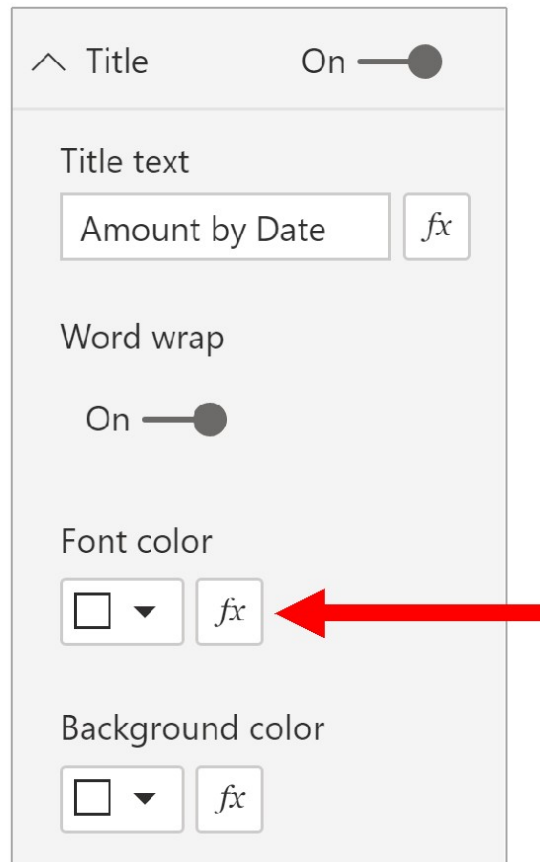
If value is greater than or equal to 500 and is less than 5000, then [Yellow] color

Country	Sales	YoY Sales	YoY Sales %	Top Selling Product
<b>United States</b>	<b>\$21,814,465</b>	<b>\$5,470,851</b>	<b>→ 33%</b>	<b>A. Datum Slim Di...</b>
Regular	\$11,932,740	\$2,911,538	↓ 32%	NT Wireless Transm...
Deluxe	\$7,598,807	\$1,981,601	→ 35%	A. Datum Super-zo...
Economy	\$2,282,918	\$577,712	→ 34%	A. Datum Slim Digit...
<b>Canada</b>	<b>\$5,313,337</b>	<b>\$1,196,486</b>	<b>↓ 29%</b>	<b>Contoso Wireless ...</b>
Regular	\$2,985,745	\$700,125	↓ 31%	A. Datum Bridge Di...
Deluxe	\$1,710,997	\$358,646	↓ 27%	Contoso Wireless N...

**1:** Only numbers be applied – not percentages

# Applying Measure Based Formatting

Conditional Formatting ► Other Applications



- **Measure Based Formatting** can also be applied to other visual and object **attributes**
  - Attributes where this formatting can be applied are *indicated* with an *fx* button next to it
- Two *primary types* of formatting are available:
  - **Color** – Logic is based on: *Color scale, Rules, or Field value*
  - **Text** – Logic is based on: *Field value*<sup>1</sup>

**1:** Creates a dynamic text string that can be changed during refresh or filter selection





# Demonstration

## Three

# Applying Measure Based Formatting

- Exercise 1 – Applying Background/Font Color Formatting
- Exercise 2 – Applying Data Bar Formatting
- Exercise 3 – Applying Web URL Formatting
- Exercise 4 – Understanding Other Applications



Questions?



# References

- Use Conditional Formatting in Tables
  - <https://docs.microsoft.com/power-bi/desktop-conditional-table-formatting>
- Tips and Tricks for Formatting in Power BI
  - <https://docs.microsoft.com/power-bi/visuals/service-tips-and-tricks-for-color-formatting>
- HC Video Playlist – Conditional Formatting
  - <https://www.youtube.com/playlist?list=PLzN99cpDw6oCYtf0aftU8dAyXfdWpQb>  
↓



# Enhancing User Experiences With Advanced Reporting Features

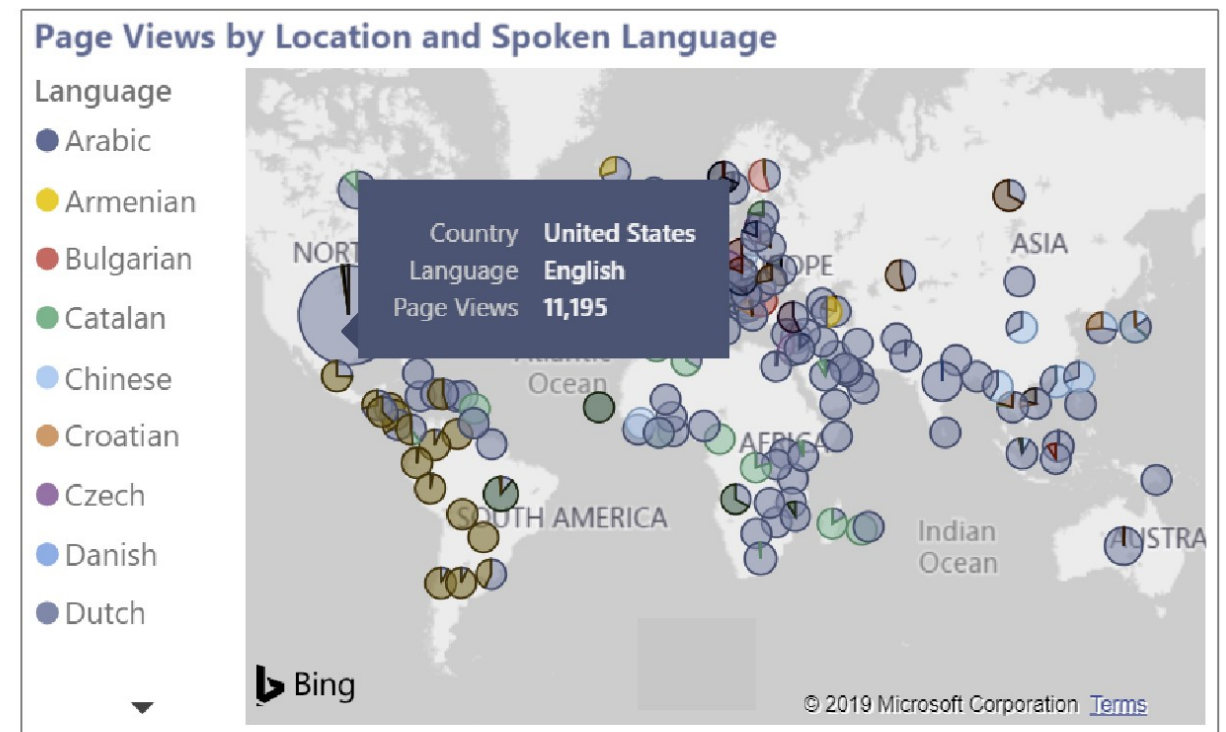
- Understanding Bookmark Capture States
- Configuring and Formatting Buttons
- Applying Measure Based Formatting
- Implementing Report Tooltips

# Implementing Report Tooltips

## Tooltips Introduction

- **Tooltips** are an elegant way of providing more *contextual information* and *detail* to data points on a visual
- By default, tooltips displays the data point's *value* and *category*<sup>1</sup>
- Fields may be *added* to the tooltips well to provide *additional data points*

**1:** Tooltips can also be *disabled* for specific visuals

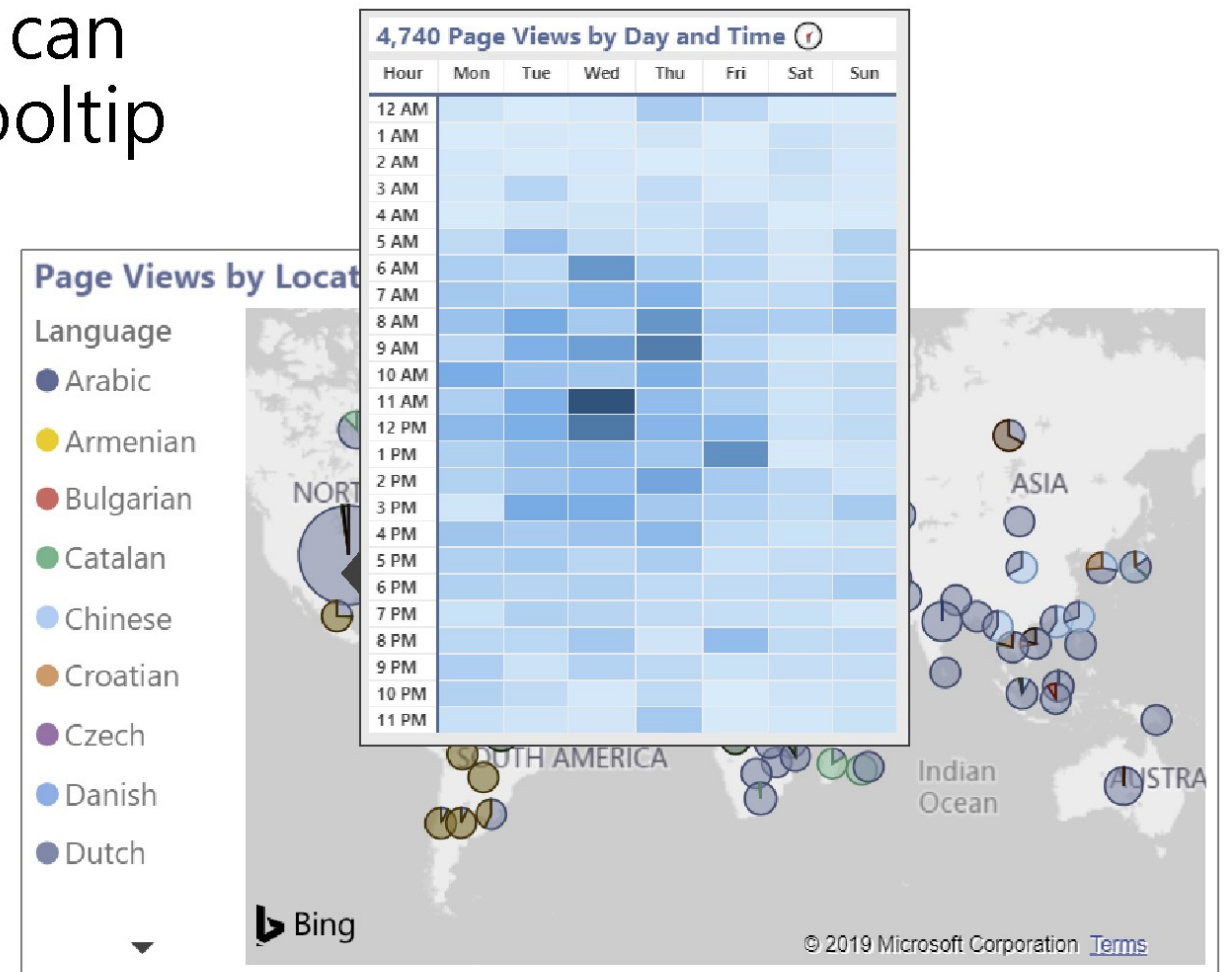


# Implementing Report Tooltips

Tooltips ► Report Tooltips

- Additionally, **report tooltip pages** can be created to display visuals as a tooltip
- **Tooltip pages:**
  - Can be set to any height or width
  - Can include any visual or object
  - Cannot be interacted with inside the tooltip<sup>1</sup>

**1:** Elements such as *slicers*, *hierarchy controls*, *drillthrough*, etc. cannot be clicked

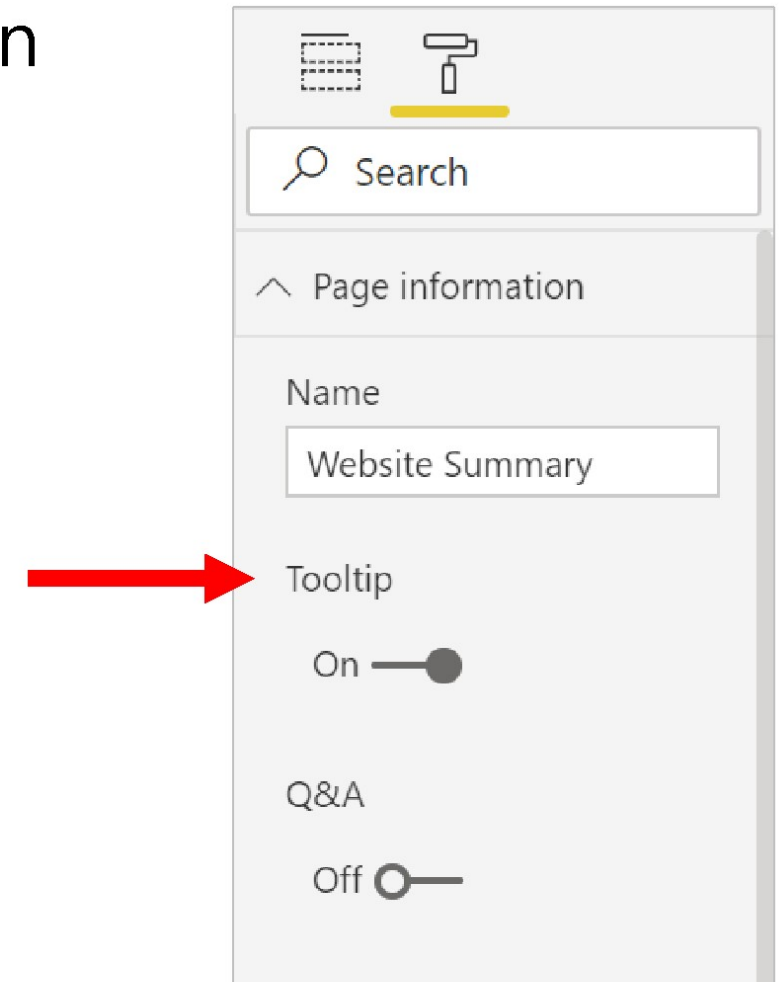


# Implementing Report Tooltips

Tooltips ► Report Tooltips ► Configuration

- Configurations for report tooltips are accessed in the *format pane* for the *report page*<sup>1</sup>
- **Report tooltip settings:**
  - **Tooltip** (*toggle*) – enables this page to be used as a tooltip by other page visuals

**1:** Page formatting is only accessible if there is not an active page visual selected



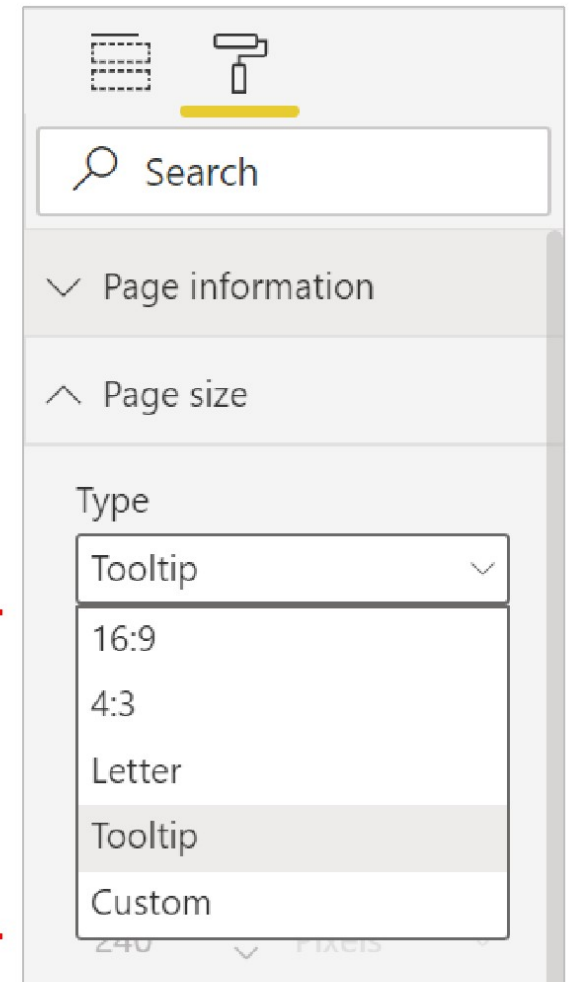
# Implementing Report Tooltips

Tooltips ► Report Tooltips ► Configuration

- Configurations for report tooltips are accessed in the *format pane* for the *report page*<sup>1</sup>
- **Report tooltip settings:**
  - **Tooltip** (*toggle*) – enables this page to be used as a tooltip by other page visuals
  - **Page size** – configuration of the pixel size and width, common configurations include:
    - *Tooltip* – 320 x 240 pixels
    - *Custom* – User defined pixel width and height

**1:** Page formatting is only accessible if there is not an active page visual selected

Page sizes

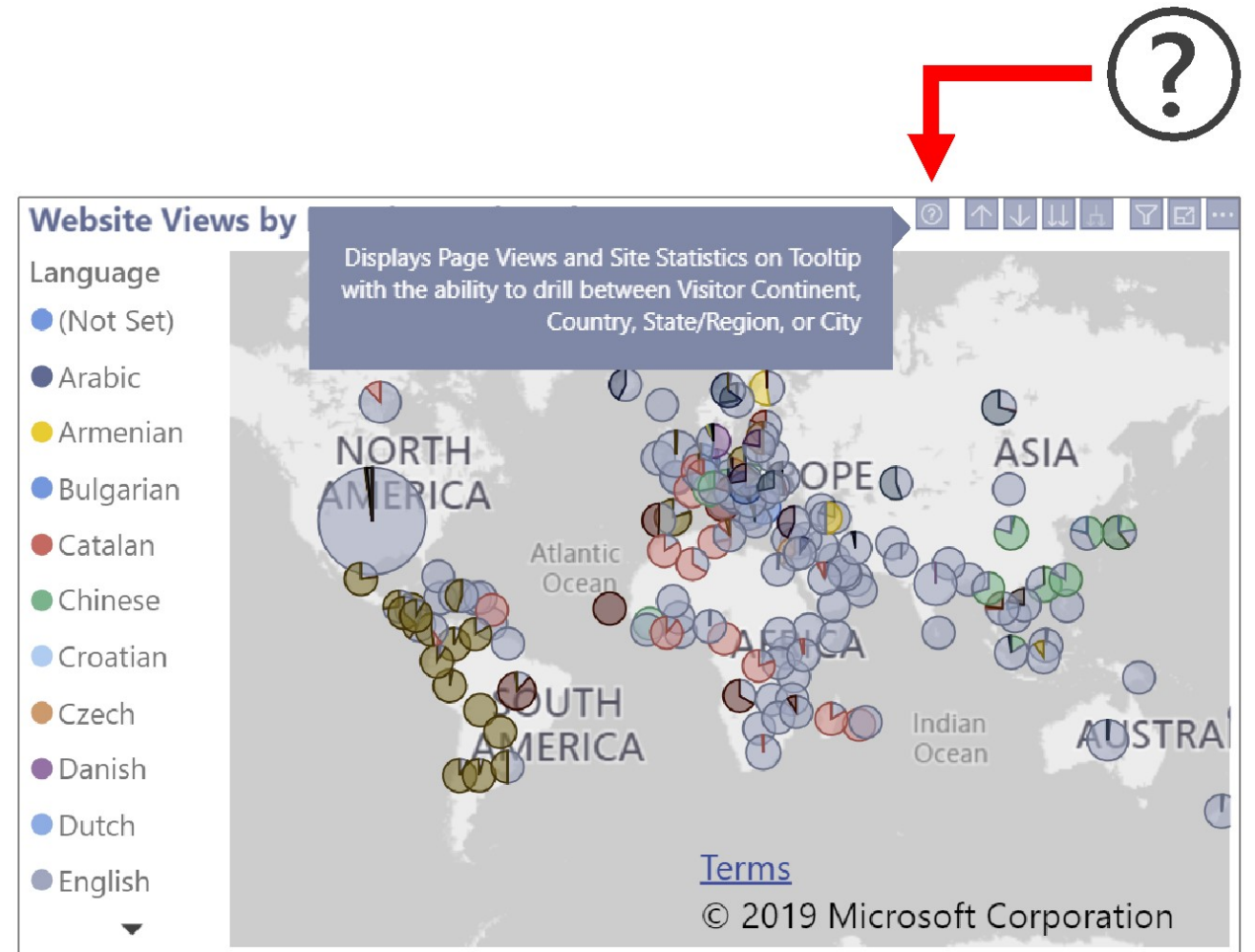




# Implementing Report Tooltips

Tooltips ► Visual Header Tooltips

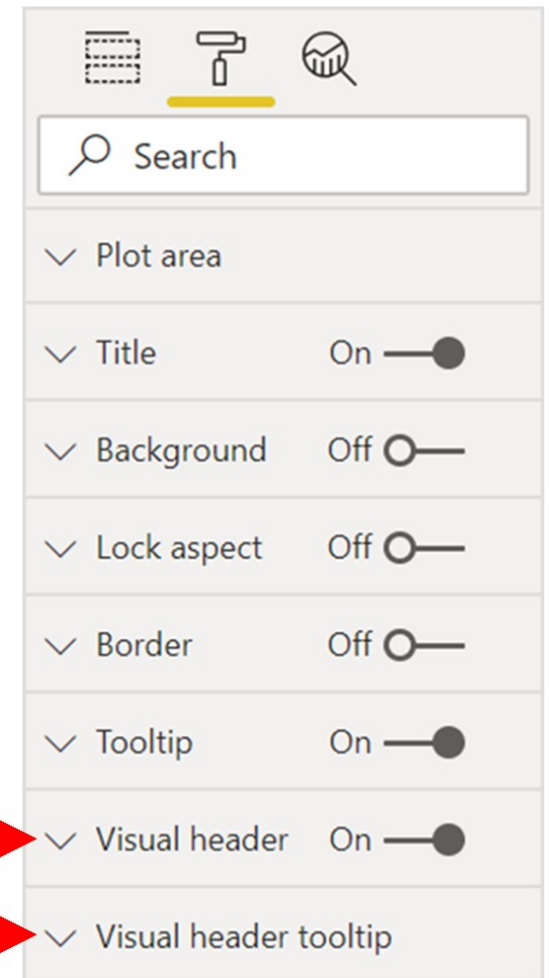
- **Tooltips** can also be created *inside* the *visual header* to display information relevant to a visual
- **Visual Header Tooltips:**
  - Can be configured to be either a *standard Tooltip* or a *Report Tooltip*
  - Can be customized for each visual



# Implementing Report Tooltips

Tooltips ► Visual Header Tooltips ► Configuration

- Configurations for visual header report tooltips are accessed in the *visual header* for the *visual*
- **Visual header tooltip settings:**
  - **Visual header tooltip icon (toggle)** – enables the tooltip icon and toggles visibility of the configuration menu for the visual header tooltip



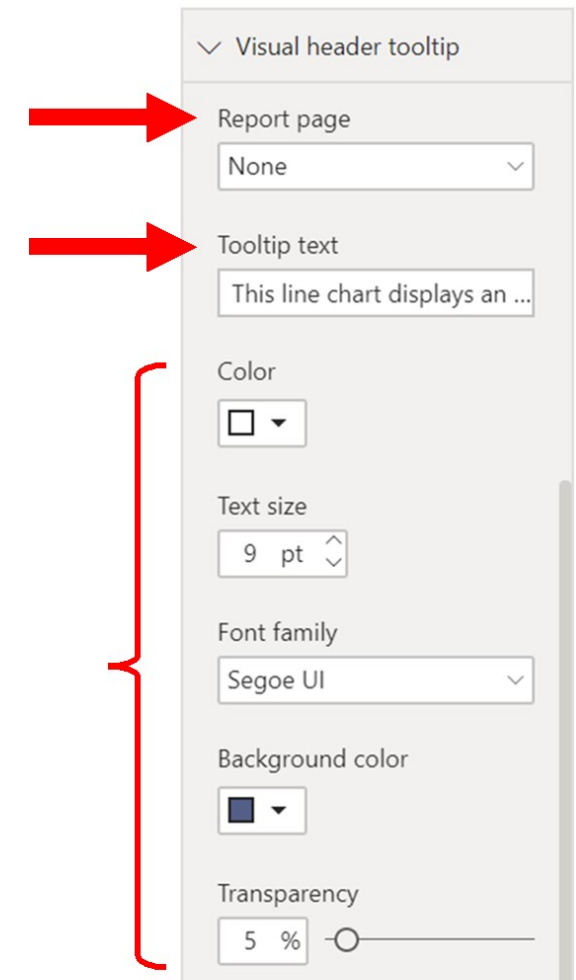
Visual header tooltip toggle →

Displays when toggle is on →

# Implementing Report Tooltips

Tooltips ► Visual Header Tooltips ► Configuration

- Configurations for visual header report tooltips are accessed in the *visual header* for the *visual*
- **Visual header tooltip settings:**
  - **Visual header tooltip icon** (*toggle*) – enables the tooltip icon and toggles visibility of the configuration menu for the visual header tooltip
  - **Visual header tooltip** (*menu*) – contains all configuration options, such as:
    - *Report Page* – which page to assign to tooltip (if desired)
    - *Tooltip Text* – text to display inside tooltip
      - Up to 250 characters
    - *Formatting options*
      - E.g. font size, color, background, transparency





# Demonstration

Four

## Implementing Report Tooltips

- Exercise 1 – Configuring a Report Tooltip Page
- Exercise 2 – Adding Report Tooltips to Visuals
- Exercise 3 – Enabling Visual Header Tooltips



Questions?



# Recommended Practices

- Consider the *audience* and their *needs*
- Just because a *feature exists* does not mean it has to be used in a report
- Use *conditional formatting* to draw attention to *important data*
- *Leverage tooltips* to provide additional relevant information to visuals
- Configure *bookmarks* to reduce the number of mouse clicks and mouse travel for users – enabling a more intuitive report experience



# References

- Create Tooltips Based on Report Pages
  - <https://docs.microsoft.com/power-bi/desktop-tooltips>
- Extend Visuals with Report Page Tooltips
  - <https://docs.microsoft.com/power-bi/guidance/report-page-tooltips>
- HC Video Playlist – Tooltips
  - [https://www.youtube.com/playlist?list=PLzN99cpDw6oAU\\_0U3cZhLDDBhVm6Ml5Pv](https://www.youtube.com/playlist?list=PLzN99cpDw6oAU_0U3cZhLDDBhVm6Ml5Pv)

# Online Resources



Presentation PDF

- <http://www.havensconsulting.net/speaking-events>



Consulting Services

- <http://www.havensconsulting.net/consulting-services>



Files & Templates

- <http://www.havensconsulting.net/files-and-templates>



30% Discount Code

- MSFT\_AUGUST\_2020



YouTube Channel

- <https://www.youtube.com/c/HavensConsulting>



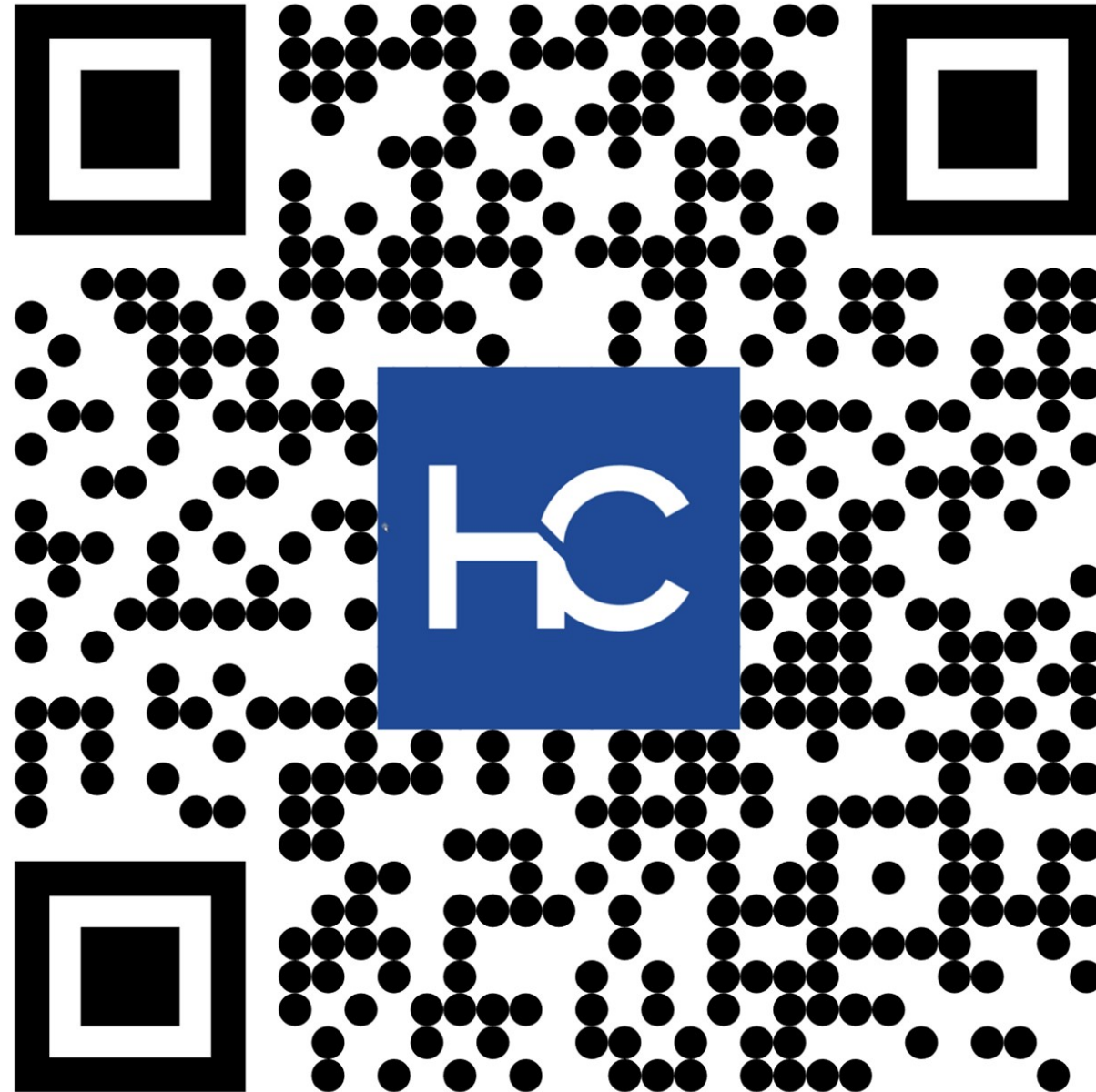
LinkedIn Page

- <https://www.linkedin.com/in/reidhavens>





# Company Website



# Blog Signup Raffle

