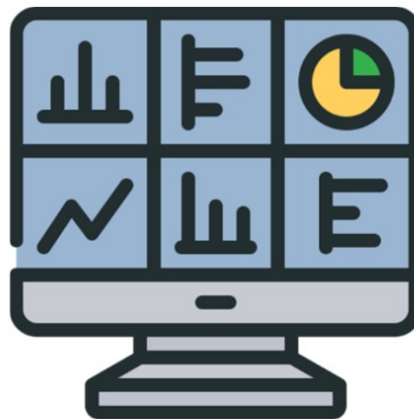# PASS VIRTUAL SUMMIT 2020

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Enhancing *User Experiences* With Advanced Reporting Features

- Reid Havens,
- He/Him,
- Owner,
- Havens Consulting

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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

Enhancing User Experiences With Advanced Reporting Features

Understanding Bookmark Capture States

Configuring and Formatting Buttons

Applying Measure Based Formatting
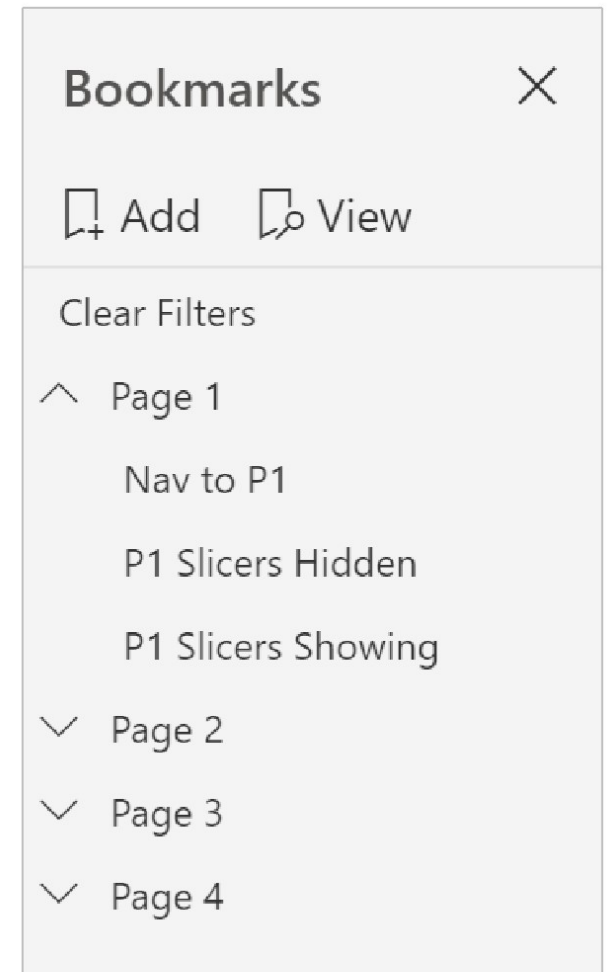
Implementing Report Tooltips

Enhancing User Experiences With Advanced Reporting Features

Understanding Bookmark Capture States

Configuring and Formatting Buttons

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Implementing Report Tooltips

Understanding Bookmarks
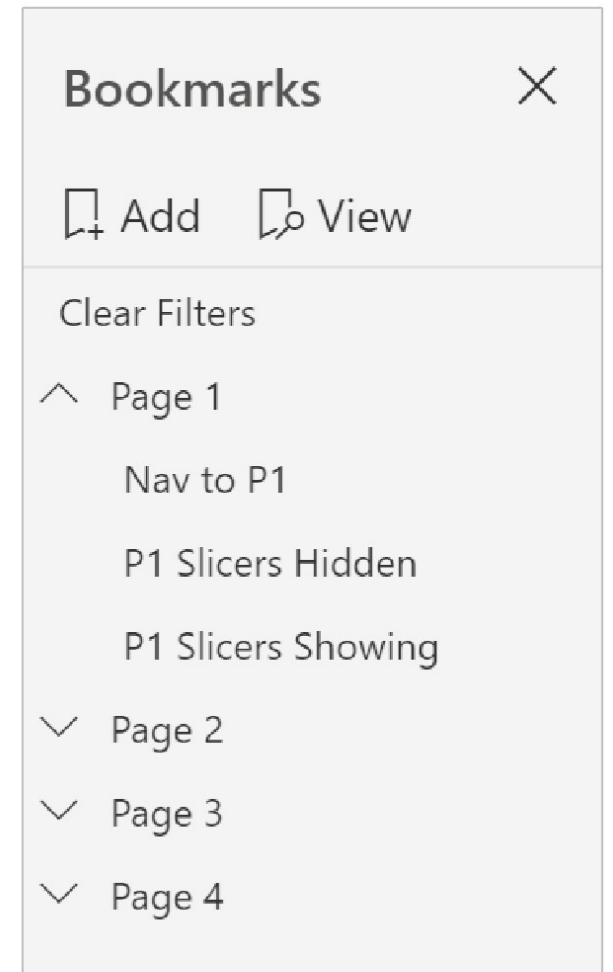
Bookmarks Introduction

- **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*

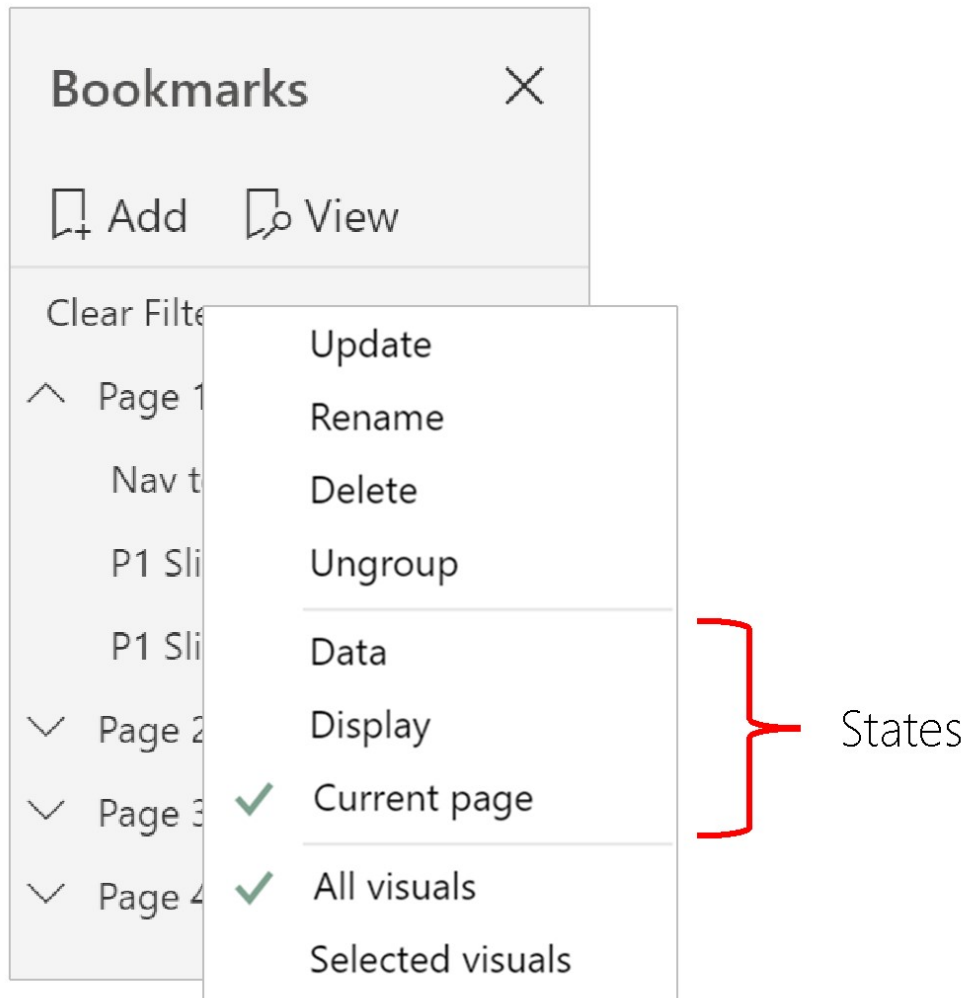- Report users can open the Bookmarks pane at *view-time*

Bookmarks	✕
Add	View

Clear Filters

⌃ Page 1

    Nav to P1

    P1 Slicers Hidden

    P1 Slicers Showing

⌄ Page 2

⌄ Page 3

⌄ Page 4

Understanding Bookmarks

- **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

Bookmarks ✕

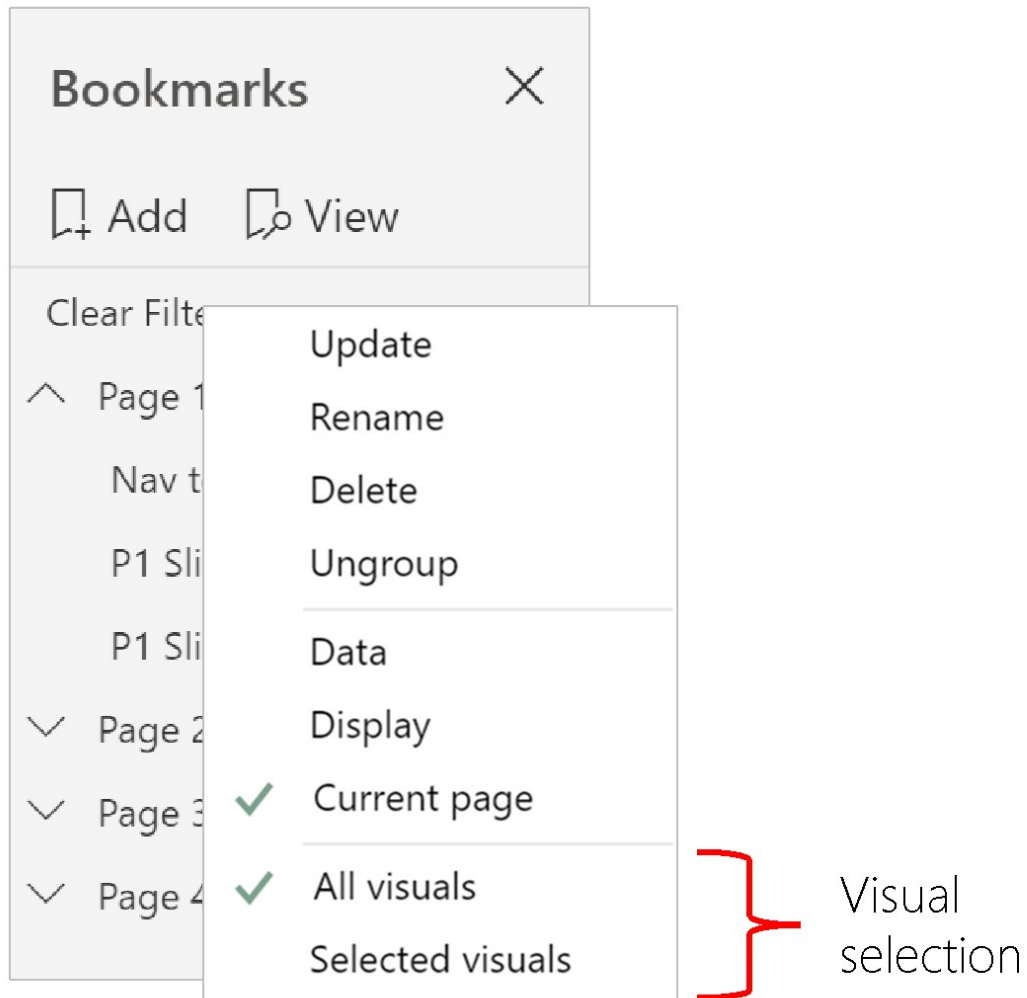☐ Add   ☐ View

Clear Filters

⌃ Page 1

    Nav to P1

    P1 Slicers Hidden

    P1 Slicers Showing

⌄ Page 2

⌄ Page 3

⌄ Page 4

Understanding Bookmarks

Bookmarks ✕

⊡ Add   ▷ View

Clear Filte...

∧ Page 1

   Nav t...

   P1 Sli...

   P1 Sli...

∨ Page 2

∨ Page 3

∨ Page 4

Update

Rename

Delete

Ungroup

Data

Display

✓ Current page

✓ All visuals

Selected visuals

States

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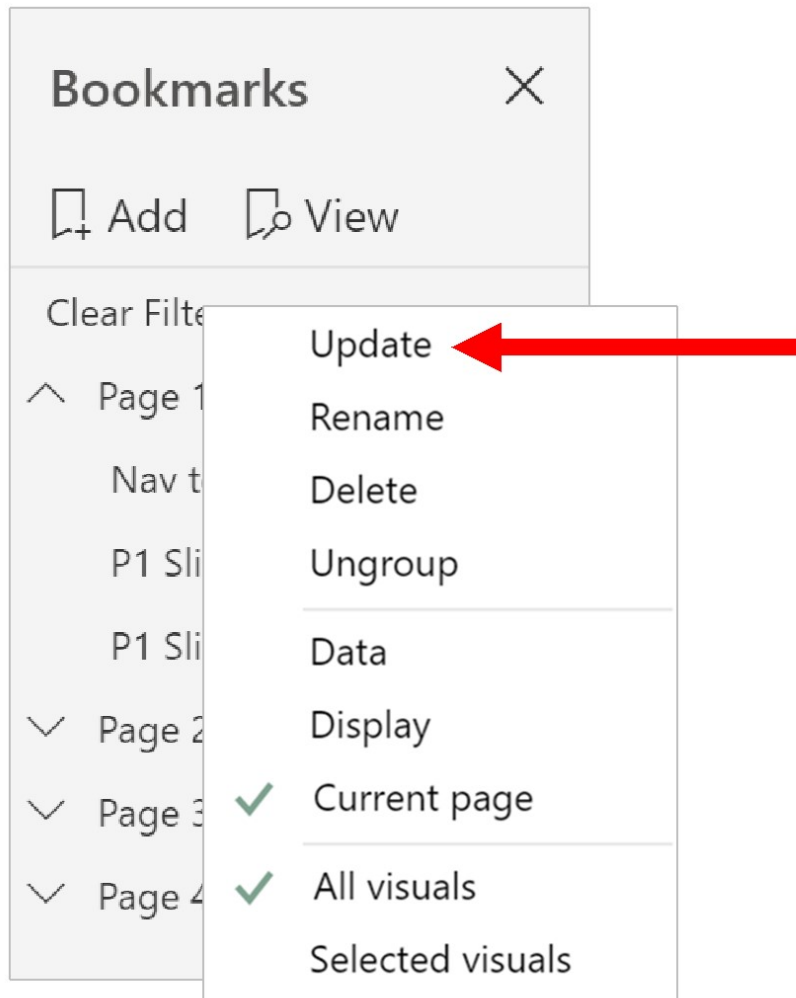
Understanding Bookmarks

Bookmarks ► Settings

Bookmarks ✕

⬜ Add ⬚ View

Clear Filte

Update

Rename

⌃ Page 1

Delete

Nav t

P1 Sli

Ungroup

P1 Sli

Data

Display

⌄ Page 2

✓ Current page

⌄ Page 3

✓ All visuals

⌄ Page 4

Selected visuals

Visual selection

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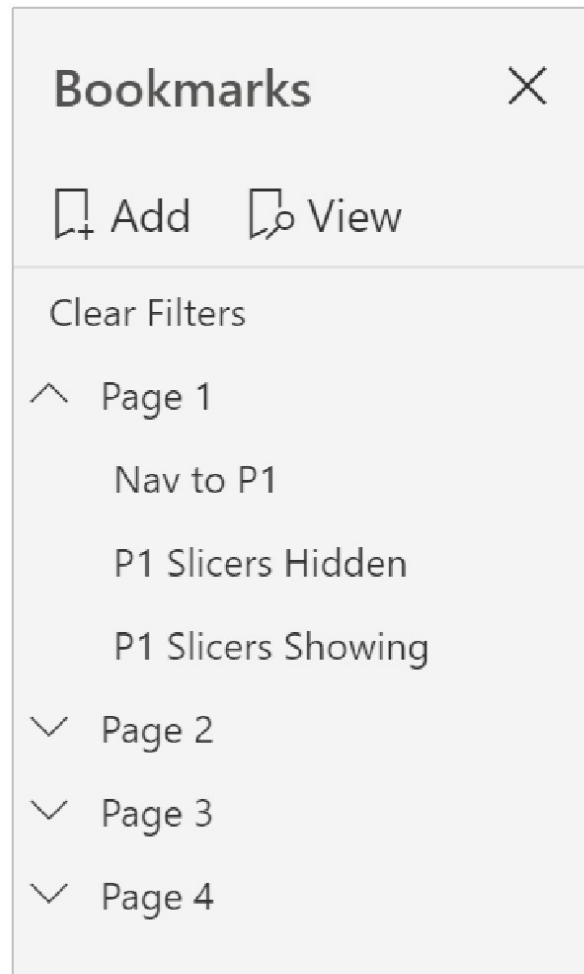 - Selected visuals

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

Bookmarks

✕

⊡ Add   🔍 View

Clear Filters

⌃ Page 1
  Nav to P1
  P1 Slicers Hidden
  P1 Slicers Showing

⌄ Page 2

⌄ Page 3

⌄ Page 4

Page 1 Group

- 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

- The **Selection** pane is a list all objects on a report page – configurations include:
  - *Order* of objects
  - V*isibility* 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

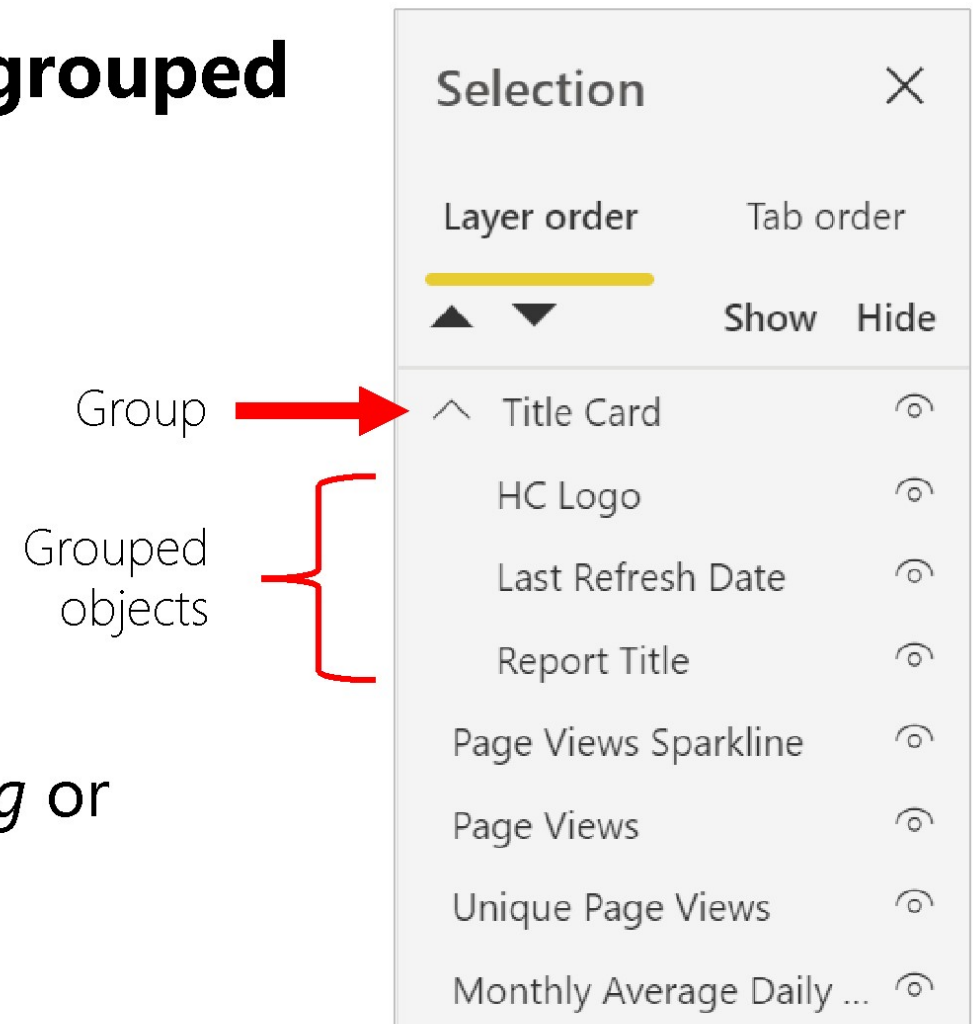- Report users can open the pane at *view-time*

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

Selection ✕

Layer order | Tab order

▲ ▼ | Show | Hide

Visible →

HC Logo ◉

Last Refresh Date ◉

Report Title ◉

Page Views Sparkline ◉

Page Views ◉

Unique Page Views ◉

Hidden →

Monthly Average Daily ... ⦸

Unique Page Views Spa... ◉

Understanding Bookmarks

- 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

Selection ✕

Layer order   Tab order

▲ ▼   Show   Hide

Group → ∧ Title Card ◎

Grouped objects ⎰ HC Logo ◎

Last Refresh Date ◎

Report Title ◎

Page Views Sparkline ◎

Page Views ◎

Unique Page Views ◎

Monthly Average Daily ... ◎

Demonstration

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[1]
    - Bookmark
    - Q&A
    - Web URL
    - Page navigation
    - Drillthrough navigation

1: Navigates back to the previous report page

Buttons

← Left arrow

→ Right arrow

↩ Reset

⊙ Back

ⓘ Information

⑦ Help

🗩 Q&A

🔖 Bookmark

Blank

Demonstration

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-pDQnieuRXH9LnFK-E0t

Enhancing User Experiences With Advanced Reporting Features

Understanding Bookmark Capture States

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Applying Measure Based Formatting

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Applying Measure Based Formatting
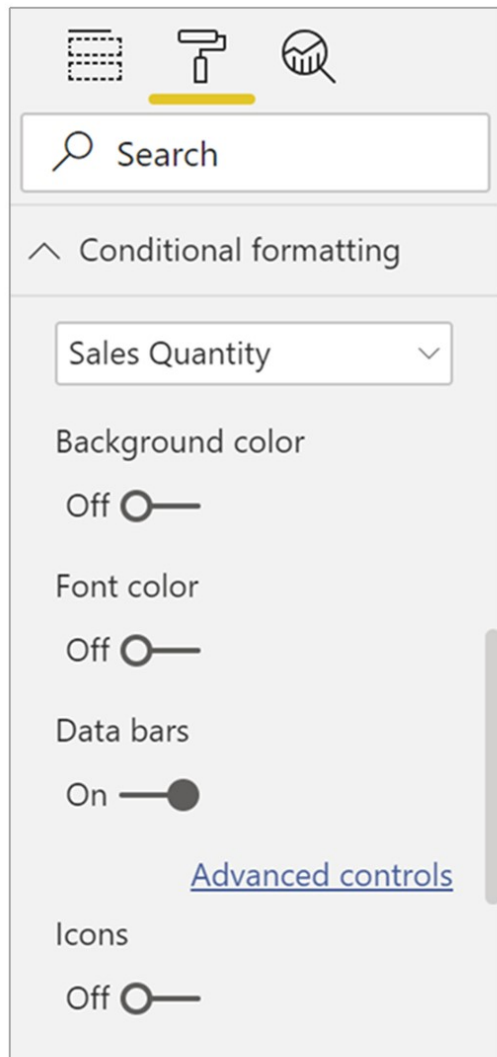## Conditional Formatting

- Conditional formatting can be applied to calculated measures in either the *table* or *matrix* visuals
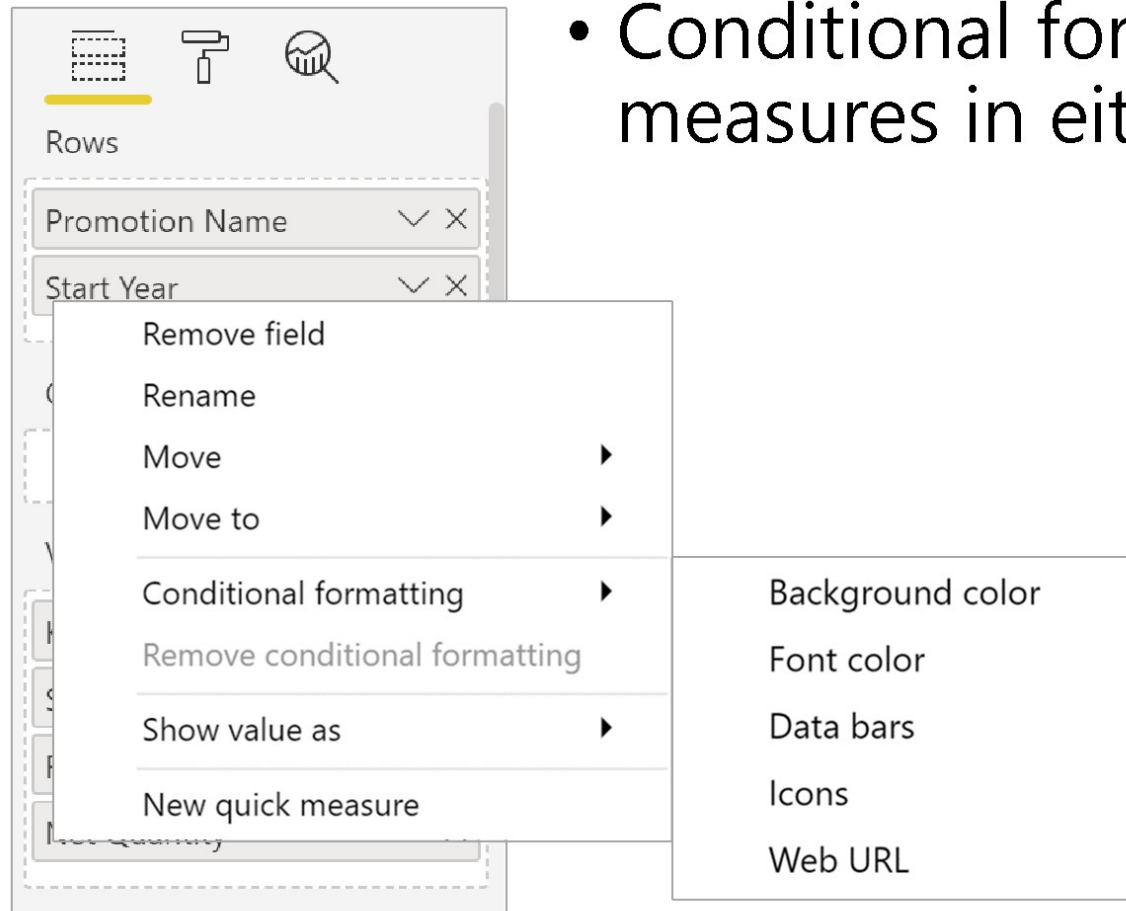
Page Title & Geo	Page Views ▼	Unique Views	Searches	Bounce Rate
⊞ Havens Consulting	4,326	3,587	546	◆ 47.6%
⊞ Files & Templates — Hav...	4,270	3,424	225	● 72.8%
⊞ Blog / Media — Havens ...	3,464	2,921	35	● 73.2%
⊞ Blog Posts — Havens Co...	2,695	2,050	33	▲ 63.6%
⊞ Power BI Vs. Excel — Hav...	2,367	2,202	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%
Total	**29,936**	**24,836**	**4,512**	**70.0%**

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[1]
  - 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

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**

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 specifics 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 ▾

Based on field

Top Selling Product ▾

Apply to

Values only ▾

Learn more

OK   Cancel

Field value formatting will be outside the scope of this presentation

Applying Measure Based Formatting

- **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*

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
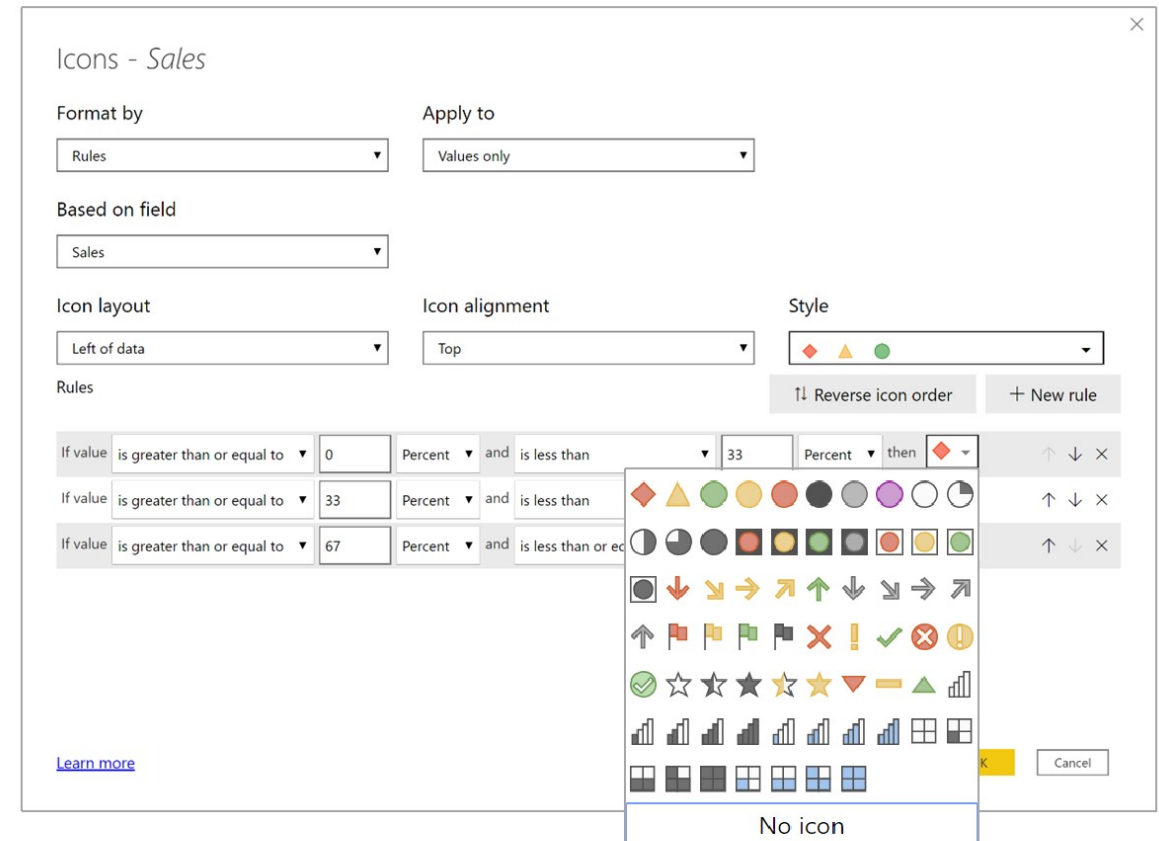
Applying Measure Based Formatting

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 ▾ |

Sales Details

Country	Sales	YoY Sales	YoY Sales %	Top Selling Product
United States	**$21,814,465**	**$5,470,851**	**33%**	**A. Datum Slim Di...**
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...
Canada	**$5,313,337**	**$1,196,486**	**29%**	**Contoso Wireless ...**
Regular	$2,985,745	$700,125	↓ 31%	A. Datum Bridge Di...
Deluxe	$1,710,997	$358,646	↓ 27%	Contoso Wireless N...

Applying Measure Based Formatting

- Conditional formatting can also be applied to the *subtotals* and *totals* in *matrix tables*

- **Thresholds** and **ranges** must be set manually when applied[1]

1: Only numbers be applied – not percentages

Font color - *Sales*

Format by: Rules

Apply to: Values and totals

Based on field: Sales

Rules — ↕ Reverse color order — + New rule

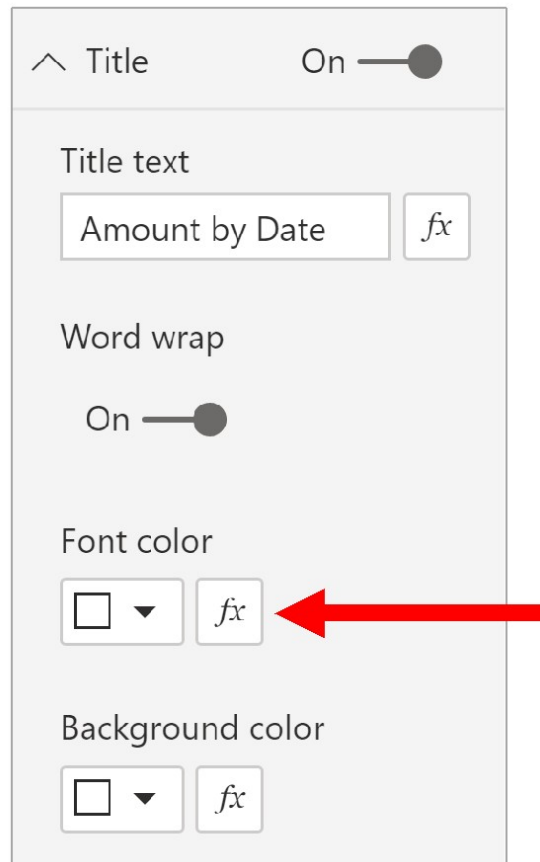If value is greater than or equal to 0 Number and is less than 500 Number then
If value is greater than or equal to 500 Number and is less than 5000 Number then

Sales Details

Country	Sales	YoY Sales	YoY Sales %	Top Selling Product
United States	**$21,814,465**	**$5,470,851**	→ **33%**	**A. Datum Slim Di...**
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...
Canada	**$5,313,337**	**$1,196,486**	↓ **29%**	**Contoso Wireless ...**
Regular	$2,985,745	$700,125	↓ 31%	A. Datum Bridge Di...
Deluxe	$1,710,997	$358,646	↓ 27%	Contoso Wireless N...

Applying Measure Based Formatting

Title — On

Title text

Amount by Date | *fx*

Word wrap

On

Font color

☐ ▾ | *fx* ⬅

Background color

☐ ▾ | *fx*

- **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*, R*ules*, or *Field value*
  - **Text** – Logic is based on: *Field value*[1]

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

Demonstration

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=PLzN99cpDw6oCYtf0aftU8dAyXfdWpQbj

Enhancing User Experiences With Advanced Reporting Features

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Implementing Report Tooltips

Implementing Report Tooltips

- **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*[1]

- Fields may be *added* to the tooltips well to provide *additional data points*

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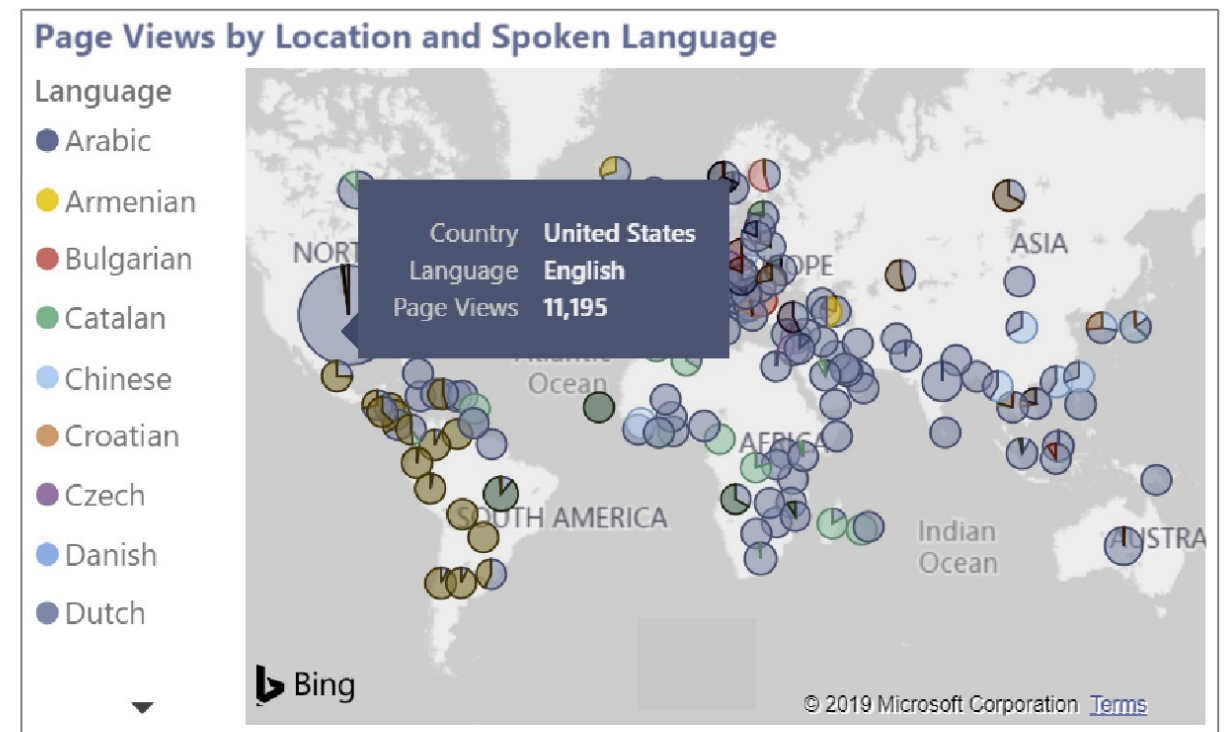
Implementing Report Tooltips

- 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[1]

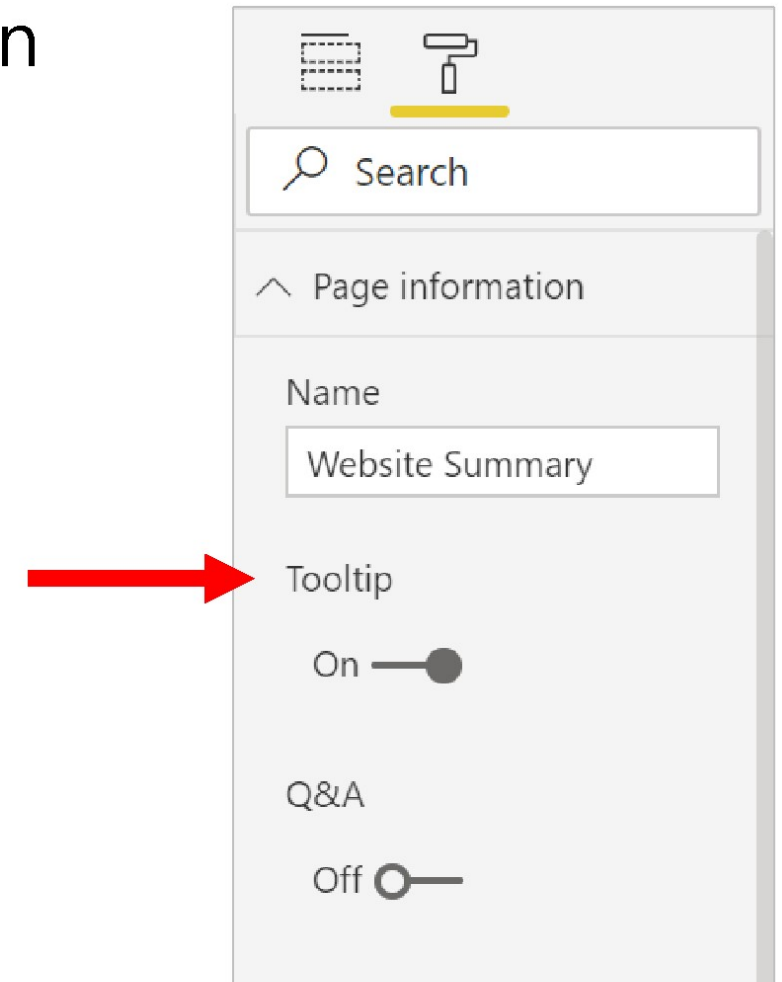**1:** Elements such as *slicers, hierarchy controls, drillthrough*, etc. cannot be clicked
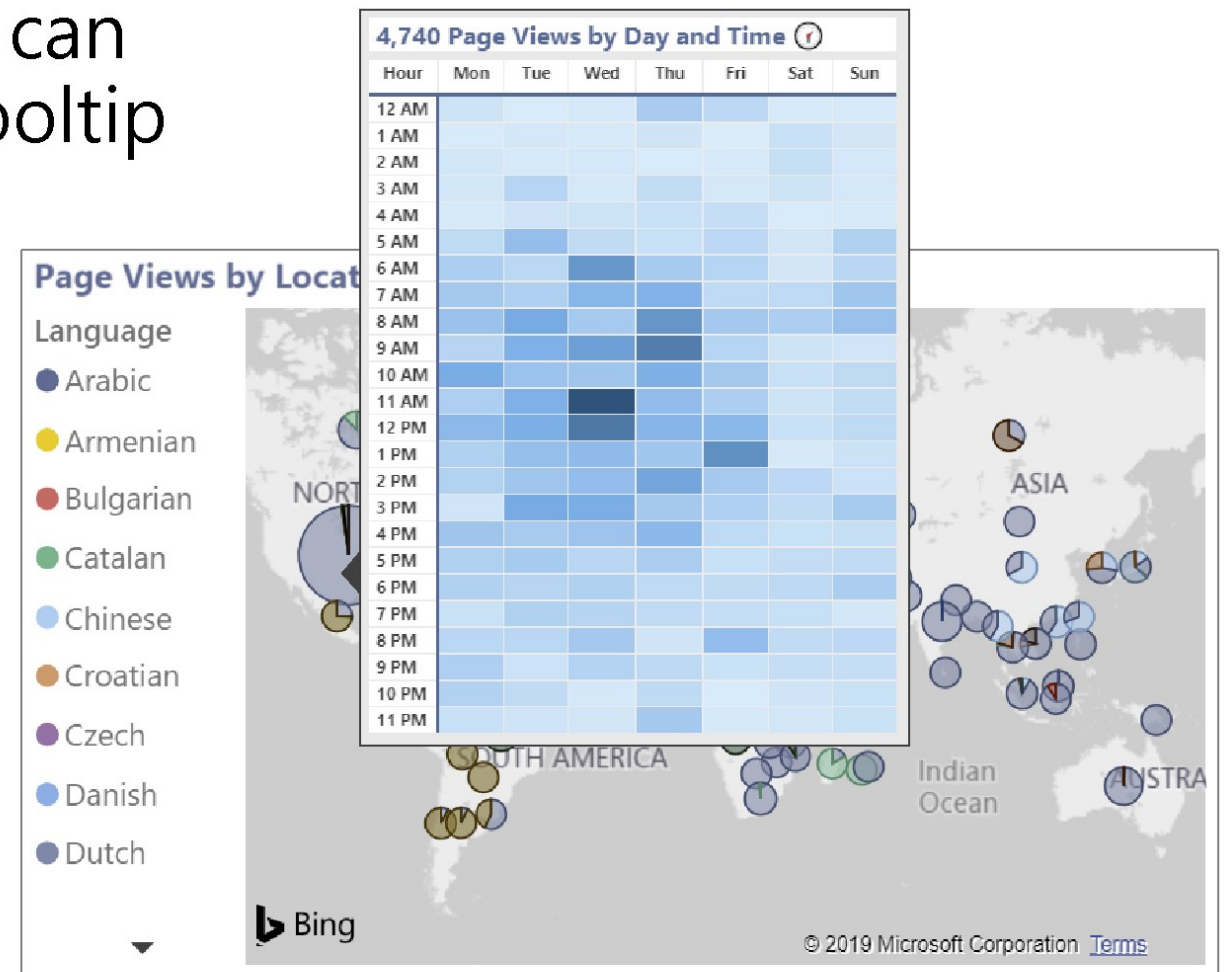
Implementing Report Tooltips

- Configurations for report tooltips are accessed in the *format pane* for the *report page*[1]

- **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

- Configurations for report tooltips are accessed in the *format pane* for the *report page*[1]

- **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

Search

Page information

Page size

Type

Tooltip

16:9

4:3

Letter

Tooltip

Custom

Page sizes
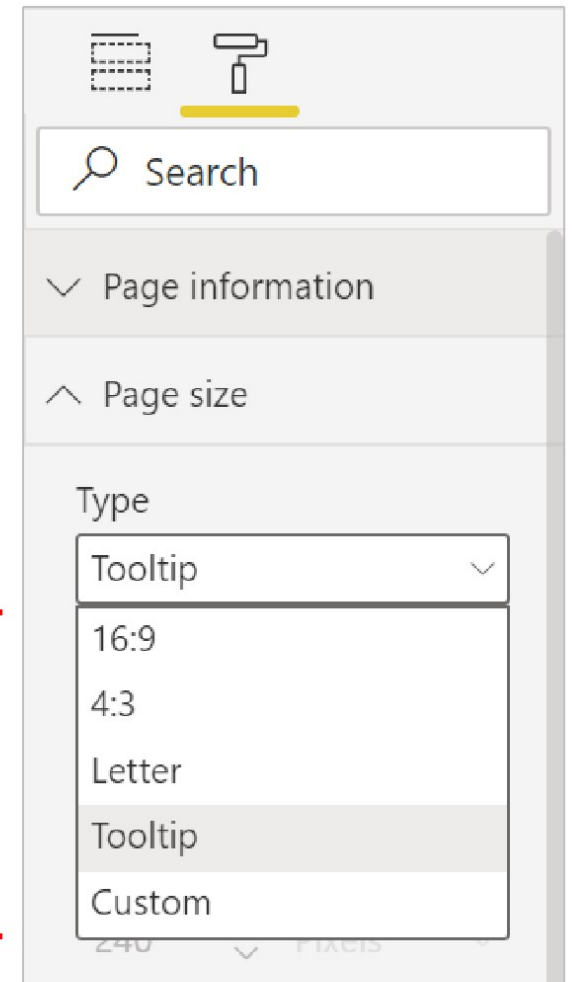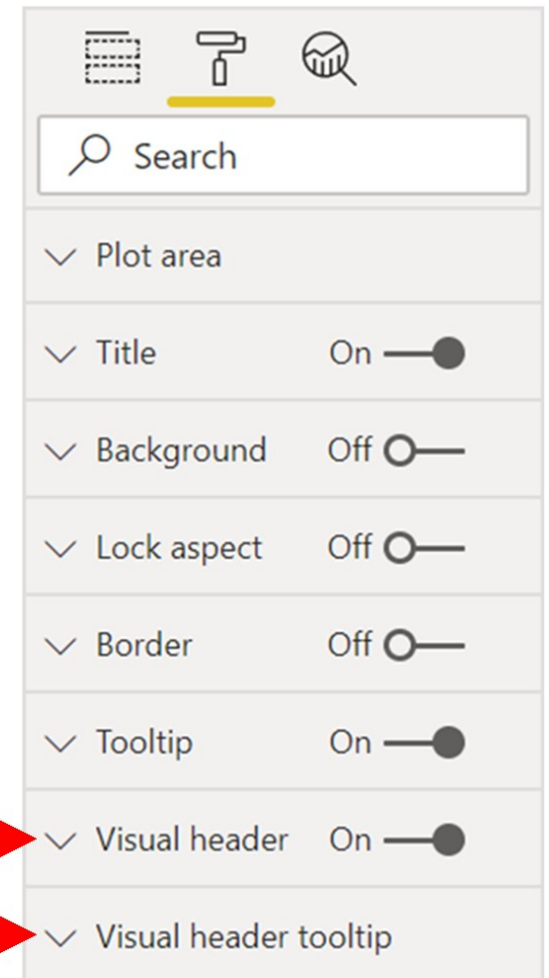
Implementing Report Tooltips

- **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
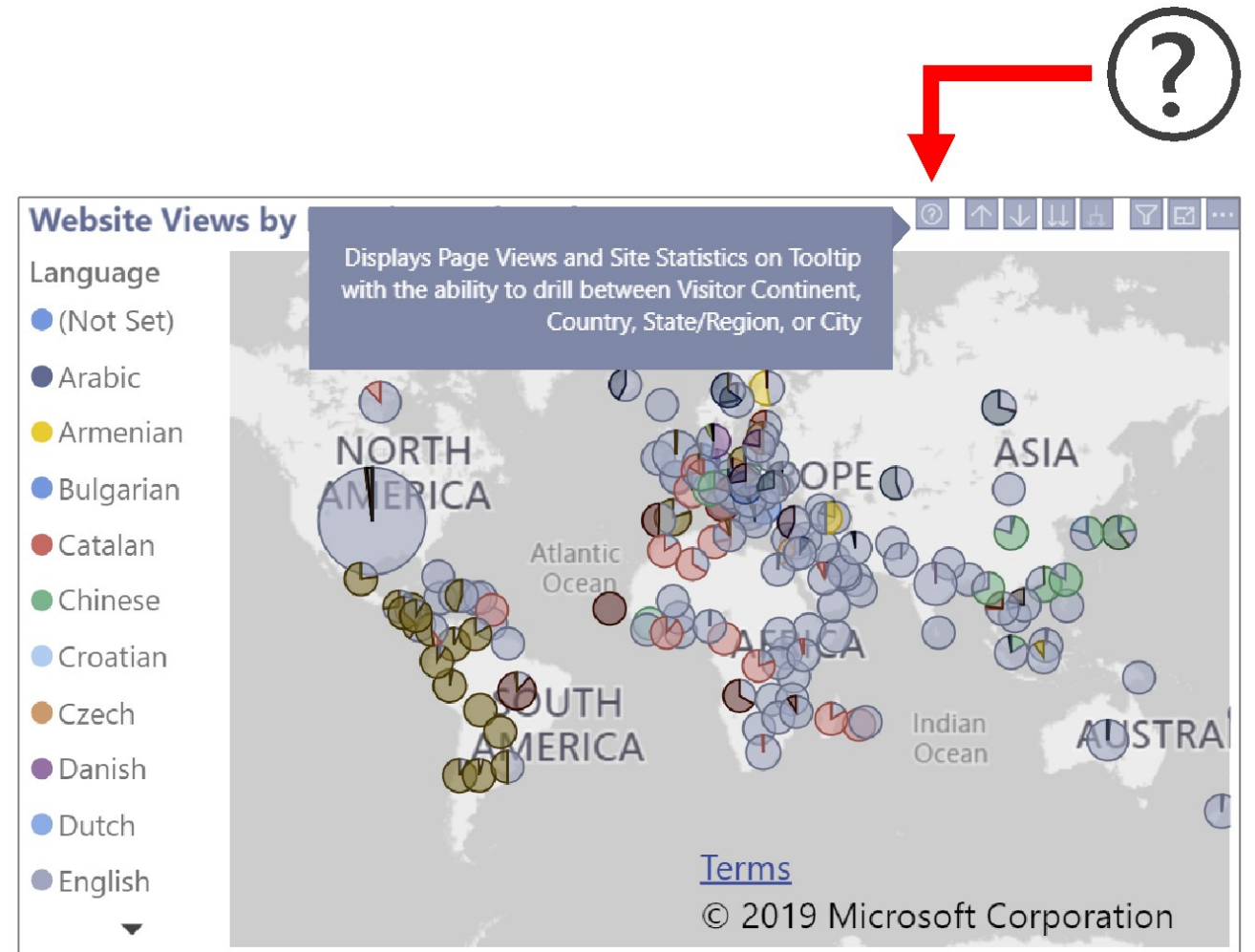
Implementing Report Tooltips

- 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** located here ➡

Displays when **toggle is on** ➡

Implementing Report Tooltips

- 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
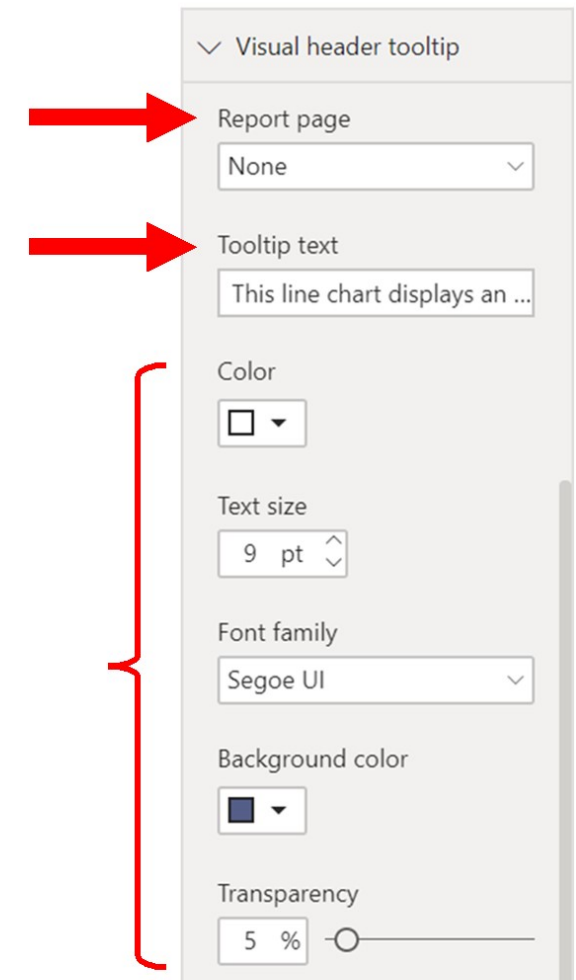 - **Visual header tooltip** (*menu*) – contains all configuration options, such as:
    - *Report Page* – which page to assign to tooltip (if desired)
    - *Tooltip Text* – text to display inside tooltip
      - Up to 250 characters
    - *Formatting options*
      - E.g. font size, color, background, 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 <u>not</u> 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

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