Data Manipulation and Reporting with Power BI

simplilearn

Interactivity and Analytics

Learning Objectives

By the end of this lesson, you will be able to:

- Sort and filter your data
- Add interactions between visuals
- Create your custom hierarchies
- Describe drilling
- Apply conditional formatting

DATA AND
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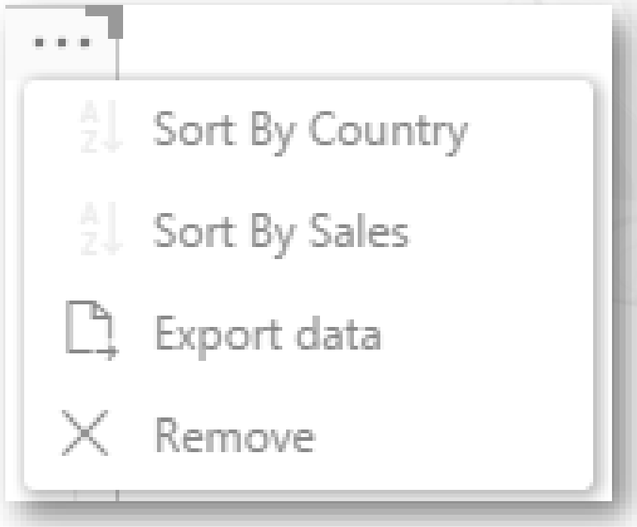
Sorting and Grouping Data

Sort Using a View

Sort allows you to change the appearance of a view. Power BI Desktop lets you sort the data in the alphabetical order, or in the ascending or descending order.

The following are the steps to sort a view:

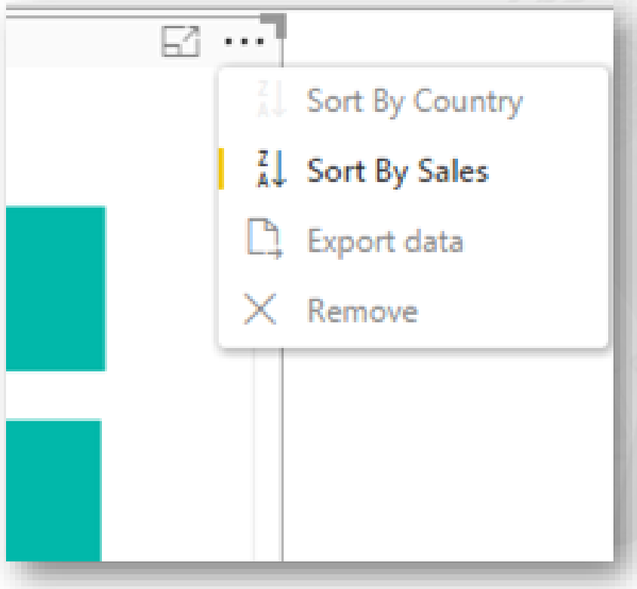
1. Click the **Ellipses** menu that appears on any view.
2. Click **Sort By** and select a field by which you want to sort your view.



Sort Using a View

The following are the steps to unsort a view:

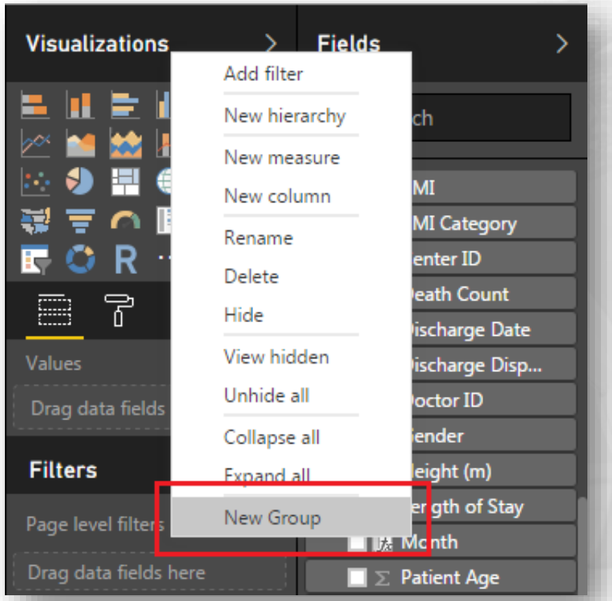
1. Select the sorted view and click on the **Ellipses** menu that appears on any view.
2. Click **Sort By** and select a column that has a yellow bar beside it.

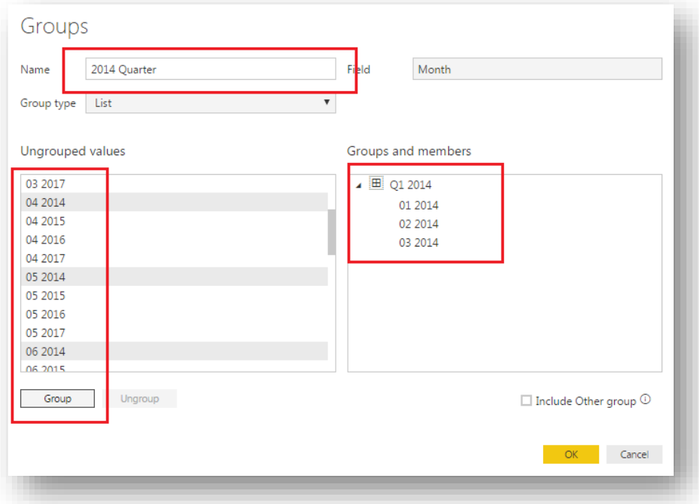


Group Data

Group provides the ability to combine related data. The following are the steps to create a group:

1. Select one or more data points on a view, right click and select **Group**.
2. To create a group using the Fields pane, right click a field and select **Group**.





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Filtering Data

Filter Data

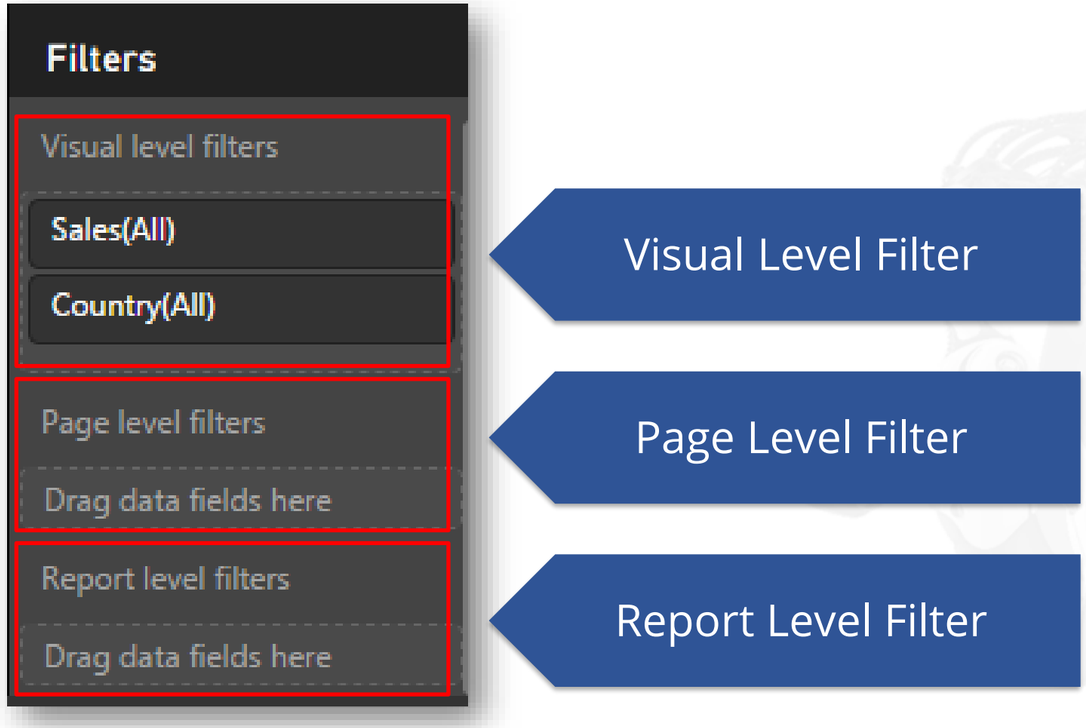
1. Filtering limits the data that you see in your view.
2. You can use the **Filters** pane to filter the data.
3. The **Filters** pane shows the tables and fields used in the view and the existing filters, if any.
4. The filters are divided up into Page level filters, Report level filters, and Visual level filters.

Filter Data: Filter Levels

Visual-Level Filter

Page-Level Filter

Report-Level Filter



Filter Data: Filter Levels

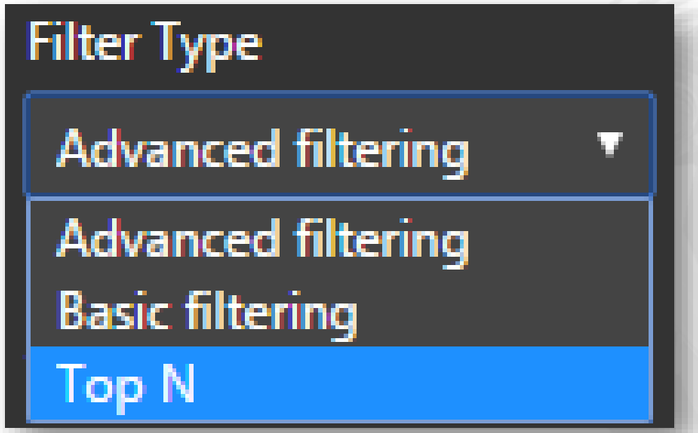
To add a visual level filter, drag and drop the field in the **Visual level filters** bucket. This type of filter targets only the selected visual.

To add a page level filter, drag and drop the field in the the **Page level filters** bucket. This type of filter targets all the visuals within the selected page.

To add a report level filter, drag and drop the field in the the **Report level filters** bucket. This type of filter targets all visuals included in the dashboard.

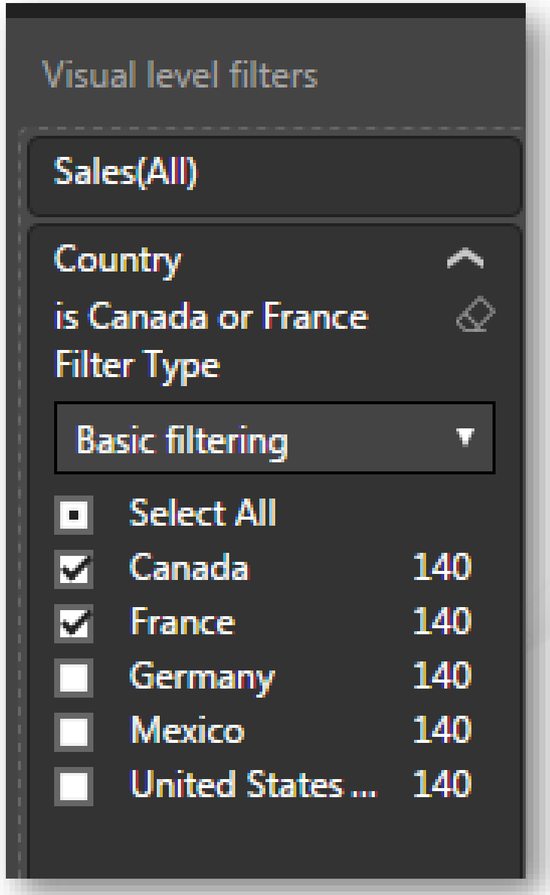
Filter Data: Types of Filters

- In case of dimensions, you can set filter type as Basic filtering, Advanced filtering, or Top N.
- By default, Power BI Desktop uses the Basic filtering type.



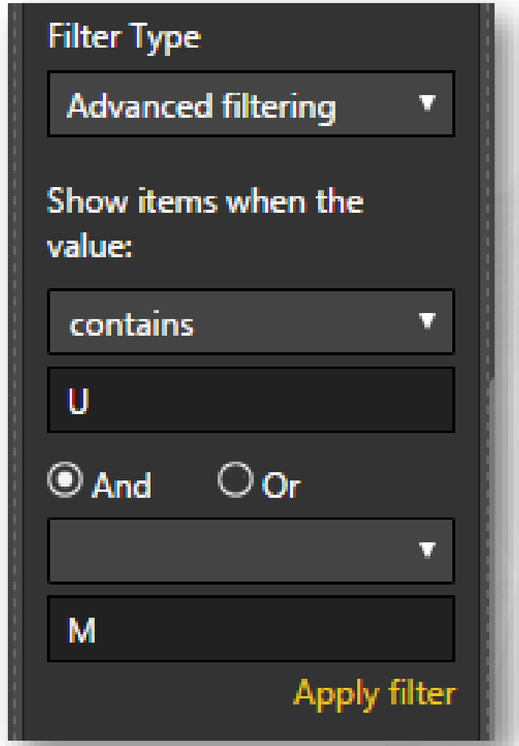
Filter Data: Basic Filtering

- The Basic filtering type displays a list of elements that you can choose from.
- You can tick a checkbox to select or deselect a member.
- The **Select All** checkbox toggles the state of all checkboxes on or off.



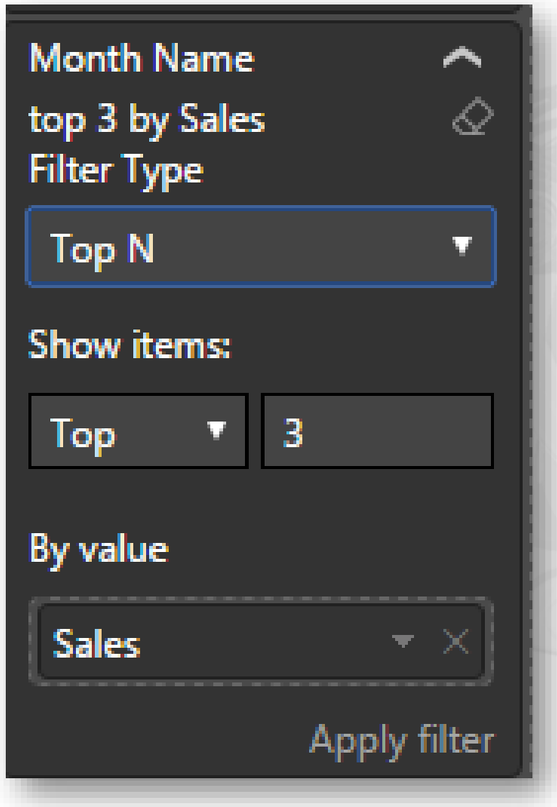
Filter Data: Advanced Filtering

- The Advance filtering option allows you to define a pattern to filter on.
- To enable the advanced mode, from the Visual level filters, select **Advanced Filtering**.
- You can use the dropdown controls and text boxes to identify which fields to include.
- You can even use **And**, and **Or** operators to create complex expressions.



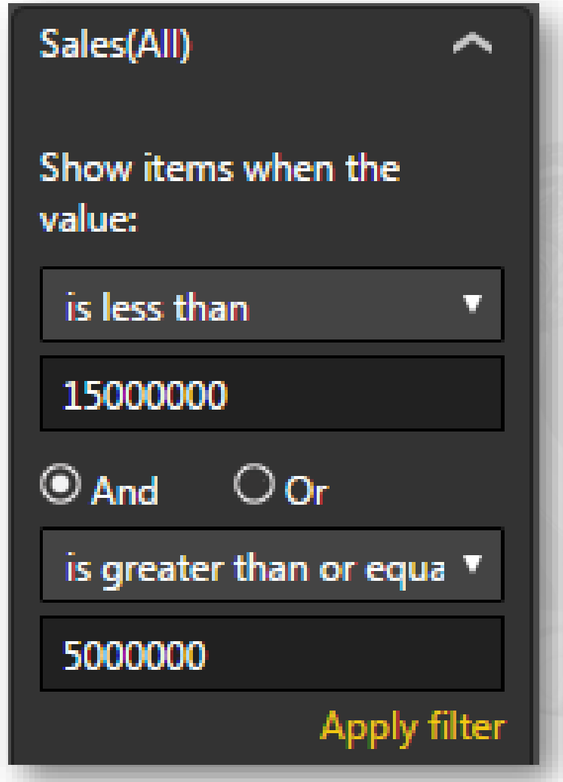
Filter Data: Top Filtering

- Top filtering lets you filter data based on top and bottom conditions.
- You can use the dropdown controls to select top, or bottom.
- In the text box, specify a value.
- Drag and drop a field into the **By value** option.



Filter Data: Numeric Values

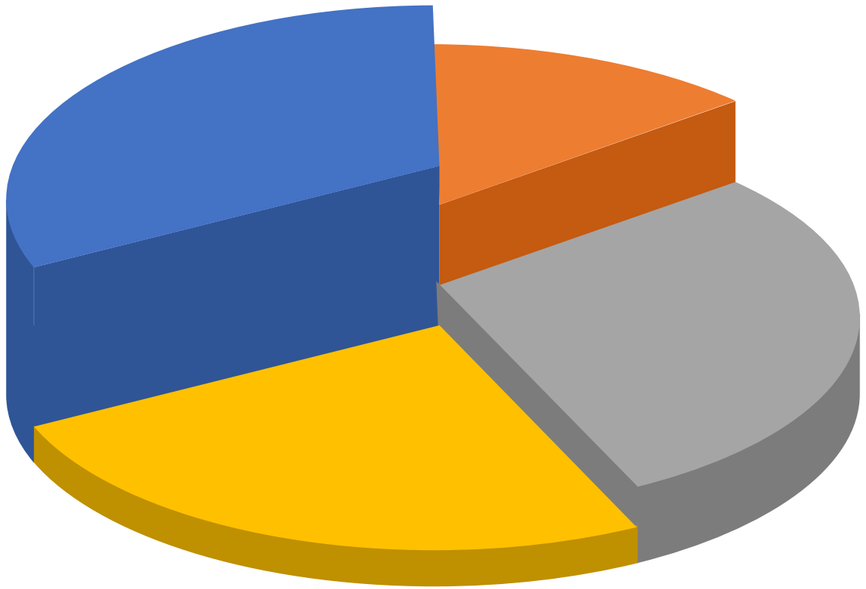
- For the numeric values, you can use the dropdown and text boxes to specify a range of values that you want to include.
- You can use **And**, and **Or** operators to create complex filter expressions.
- Once you specify all the conditions, click **Apply filter**.



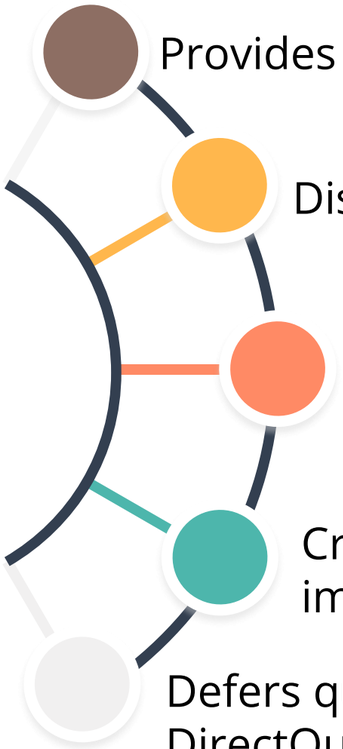
Slicing

Slicer

- Slicers can be used to edit and configure interactions between the visualizations added to the report.
- A slicer can be used to segment the data in the report by a specific value, such as year or geographical location.



Advantages of Slicer



- Provides quicker access to commonly-used or important filters
- Displays the current filtered state without opening a drop-down list.
- Filters columns that are unnecessary and hidden in the data tables
- Creates more focused reports (by putting slicers next to important visuals)
- Defers queries to the data model by using a dropdown slicer, particularly while using DirectQuery

Apply Slicer

To apply a slicer, select the Slicer icon in the visualizations pane. Then in the Fields pane, select the fields you want to include in the slicer or drag them into the slicer visualization.

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Creating Interactivity

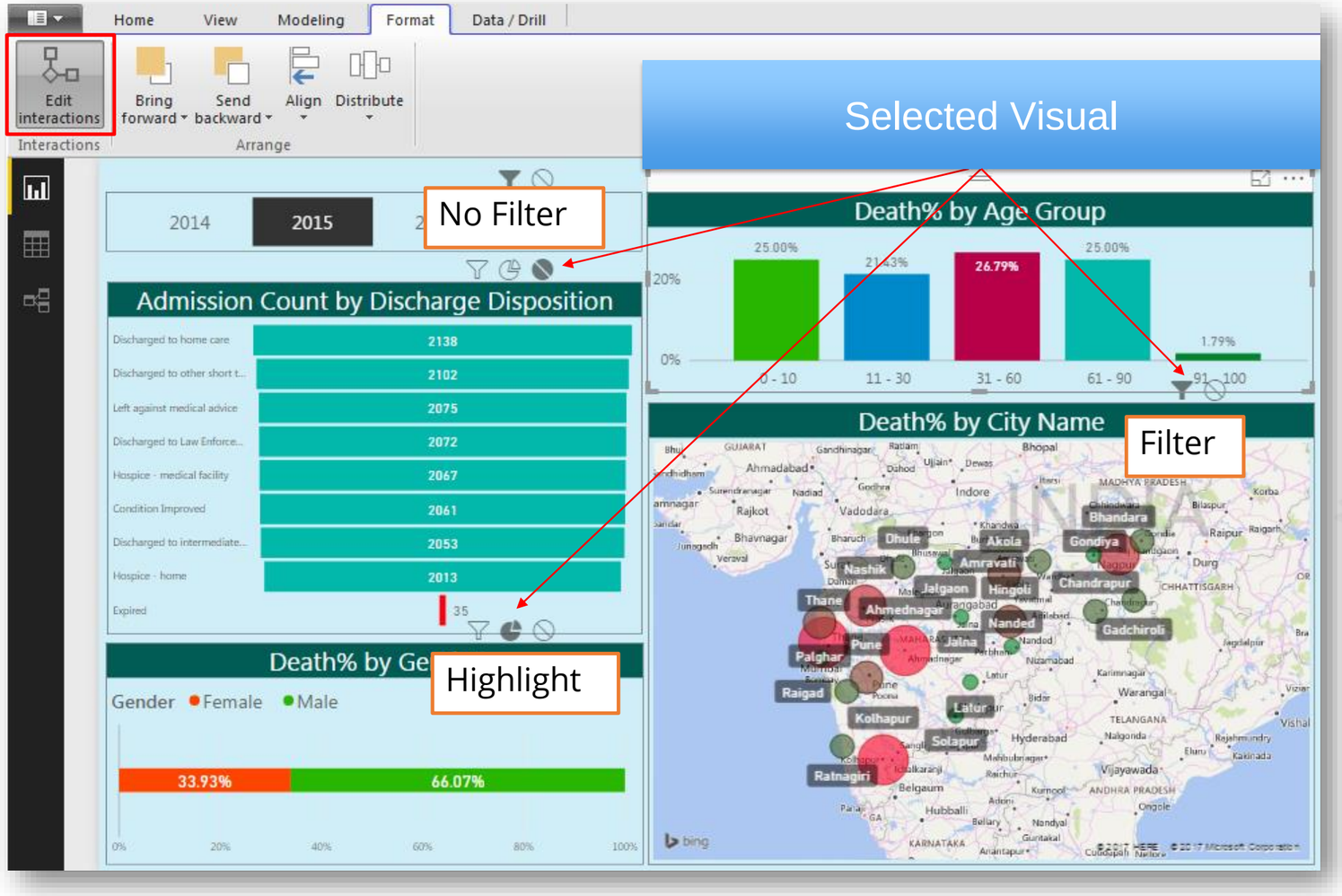
Creating Interactivity

To control this behavior, you need to enable “Edit Interactions” option and use different icons to either filter or highlight other visuals.

Visuals on a report page can be used to cross-filter or highlight data on other visuals within a page.

This type of filtering and highlighting is not saved with the report but is a fun way to quickly explore data impacts.

Creating Interactivity



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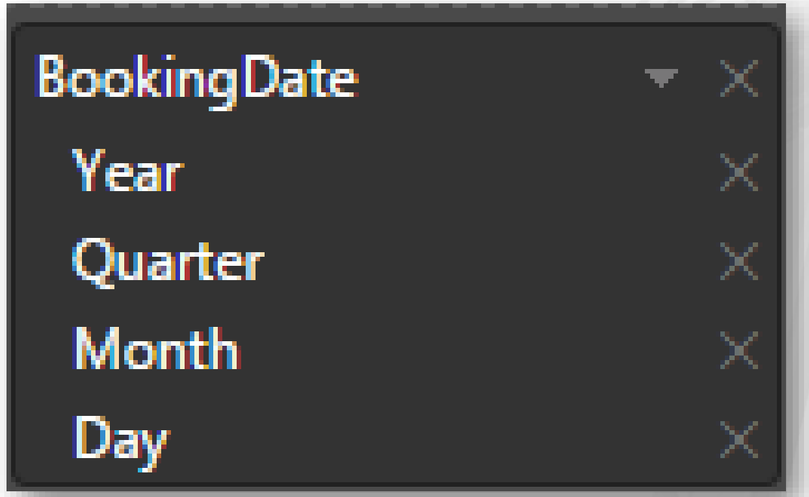
Hierarchy and Drilling

Using Built in Hierarchy

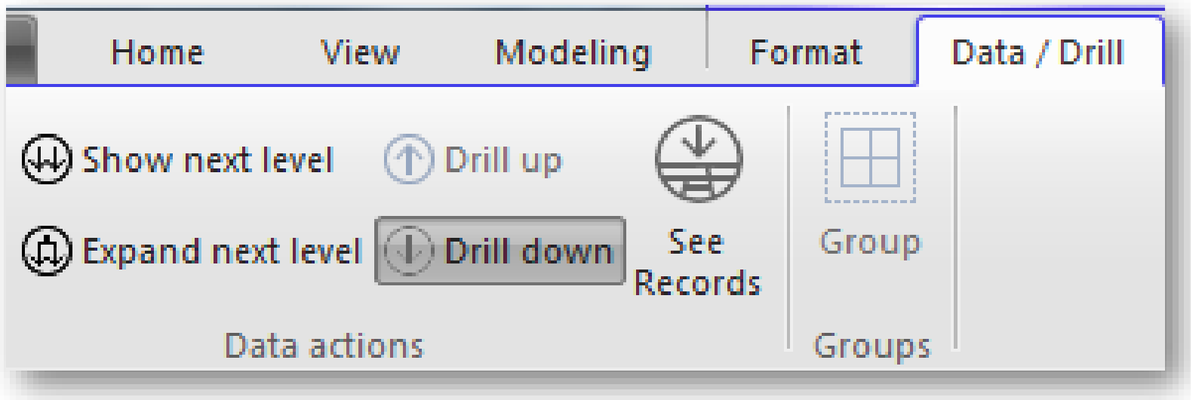
- Hierarchy allows you to change the granularity of a view.
- Hierarchy displays additional details, or the summary of your view.
- Power BI Desktop automatically generates hierarchy for a time field.
- When you add a date field to a visualization, Power BI automatically adds a time hierarchy that contains the year, quarter, month, and day.



Drill Up and Drill Down

With hierarchy, you can perform drill up and drill down operations to change the granularity.
Below are the steps on how to drill down a view:

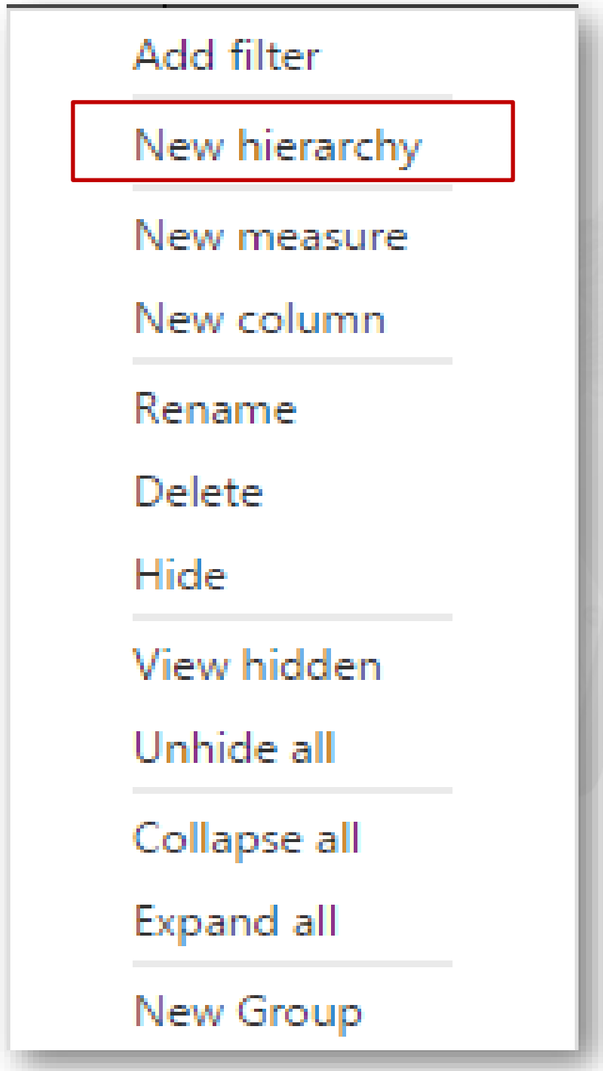
1. To enable drill down, click in the top right corner of the view.
2. To drill down, click one of the elements in your view, or click .
3. To drill up, click in the left right corner of the view.



Creating a Hierarchy

Power BI Desktop lets you create custom hierarchies. To create a hierarchy:

1. From the Fields pane, right click on the field that you want to include and select **New hierarchy**.
2. To add more fields to the existing hierarchy, right click on the field and select **Add to Hierarchy**.



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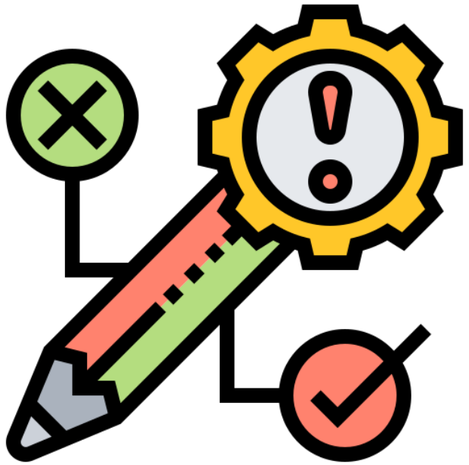
Conditional Formatting

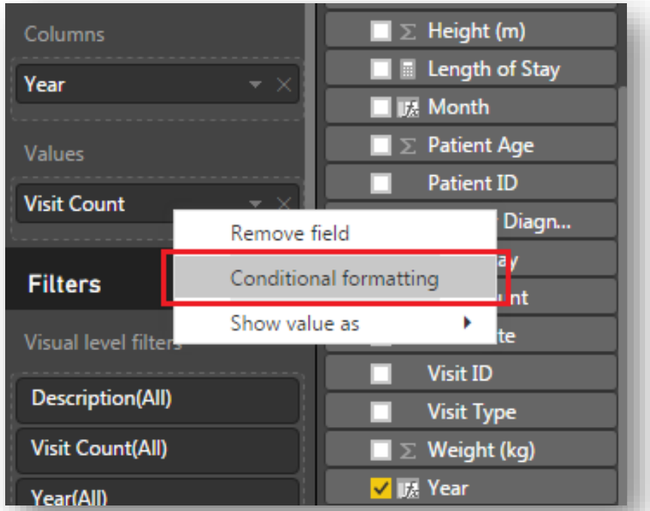
Conditional Formatting

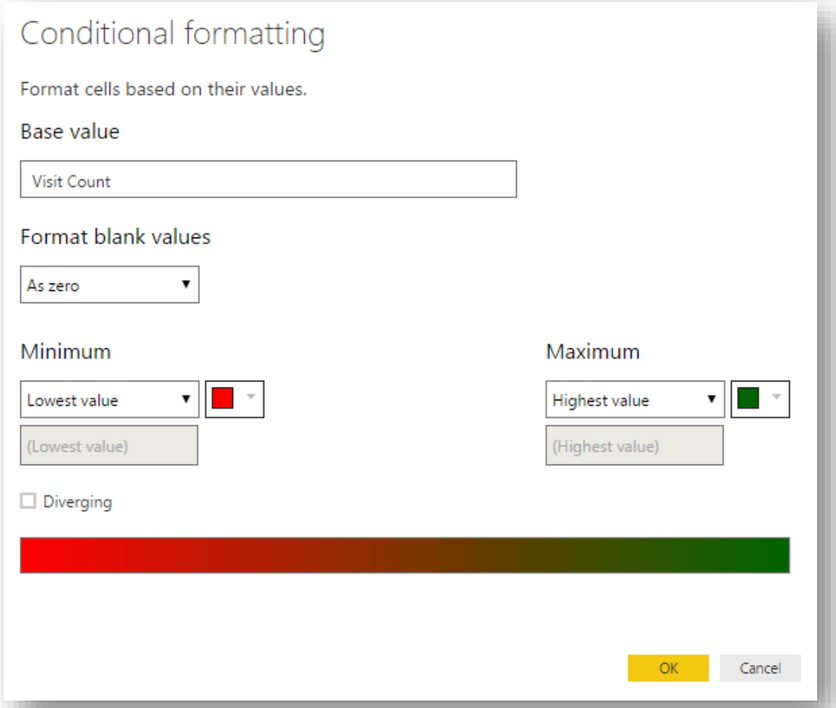


Conditional formatting in Power BI Desktop allows you to specify customized cell colors, including color gradients, based on field values or represent cell values with data bars, KPI icons, or active web links.

Conditional Formatting

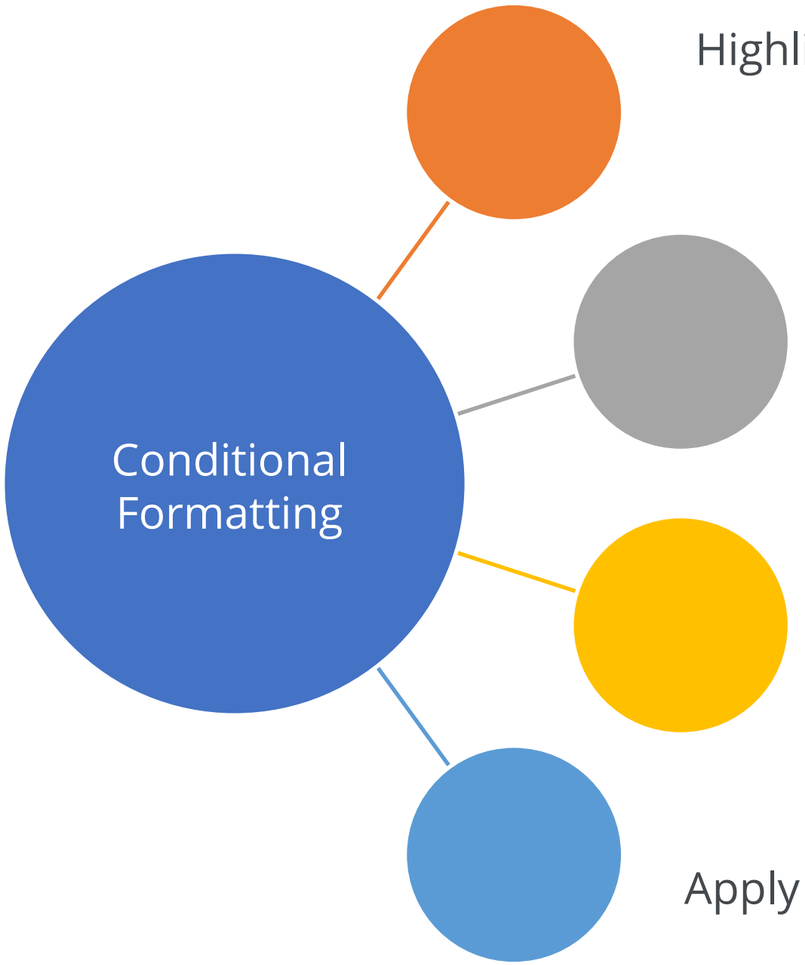
- This feature lets you customize the cell background colors of a grid based on cell values.
- To apply conditional formatting, right-click on the measure placed under the **Values** box and select **Conditional Formatting**.
- You can only manage conditional formatting for fields in the Values area of the Fields well.





Description	2014	2015	2016	2017	Total
Condition Improved	2056	2061	2040	2013	8170
Discharged to home care	2099	2138	2049	2074	8360
Discharged to intermediate care facility	2196	2053	2068	2054	8371
Discharged to Law Enforcement	2101	2072	2001	2025	8199
Discharged to other short term general hospital	2089	2102	2070	1989	8250
Expired	33	56	178	517	784
Hospice - home	2195	2013	2097	2043	8348
Hospice - medical facility	2003	2067	2012	2029	8111
Left against medical advice	2063	2075	2075	2073	8286
NA	8219	8346	8387	8117	33069
Total	**25054**	**24983**	**24977**	**24934**	**99948**

Benefits of Conditional Formatting



Highlight or differentiate the data in your visual

View key data insights at a glance

Detect highest and the lowest number in each column

Apply background colors according to the values

Creating Interactivity

Objective: To create interactivity, hierarchy and conditional formatting.

Access: To execute the practice, follow these steps:

Step 1: To remove conditional formatting from a visualization, just right-click the field again, select **Remove conditional formatting** and then the type of formatting to be removed.

Step 2: Selecting **Conditional formatting** and then **Background color scales.**

Step 3: You can select a field from your data model to base the colors on, by setting **Color based on** to that field.

-In addition, you can specify the aggregation type for the selected field with the **Summarization** value.
-The field to be colored is specified in the **Apply color to** field, so you can keep a track of it .
-You can apply conditional formatting to text and date fields, as long as you choose a numeric value as the basis of the formatting.

Step 4: To use discrete color values for given value ranges, select **Color by rules**. To use a color spectrum, leave **Color by rules** unchecked.

Step 5: When you select **Color by rules**, you can enter 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.

ASSISTED PRACTICE

Knowledge Check

Knowledge Check

1

Which object is mandatory for the drilling functionality to work?

a. Measure

b. Hierarchy

c. Both a and b

d. None of the above

Knowledge Check

1

Which object is mandatory for the drilling functionality to work?

a. Measure

b. Hierarchy

c. Both a and b

d. None of the above

The correct answer is **b.**

Hierarchy object is mandatory for the drilling functionality to work.

Knowledge Check

2

Is it possible to create interactivity between two visuals belonging to different pages?

a. Yes

b. No

Knowledge Check

2

Is it possible to create interactivity between two visuals belonging to different pages?

a. Yes

b. No

The correct answer is **b.**

It is not possible to create interactivity between two visuals belonging to different pages.

Key Takeaways

- Sort allows you to change the appearance of a view.
- **Group** provides the ability to combine related data.
- Filtering limits the data that you see in your view.
- A slicer can be used to segment the data in the report by a specific value, such as by year or geographical location.
- Power BI Desktop automatically generates hierarchy for a time field.