Data Manipulation and Reporting with Power BI

simplilearn

Visualizing Data

Learning Objectives

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

- Choose the right visuals to represent your data
- Create different types of visuals using Power BI Desktop
- Work with custom visuals
- Create a mobile view

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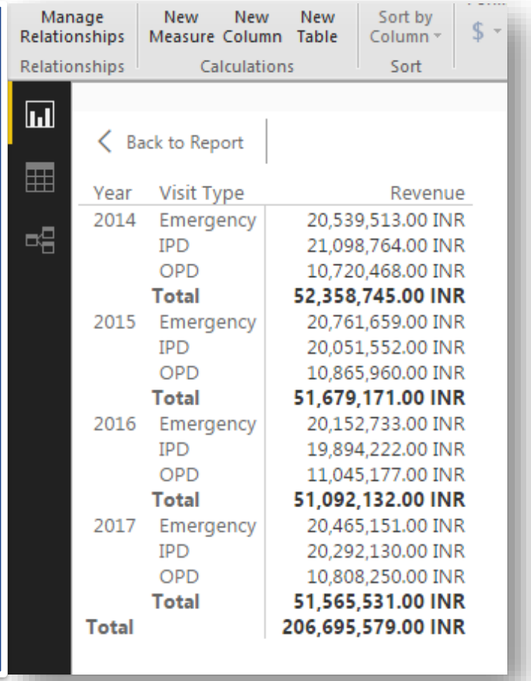
Working with Visuals

Creating Visuals: Table

A table visual is a logical series of rows and columns. It contains related data. Tables work well when you want to view detailed data and extract values from different measures for the single dimension.

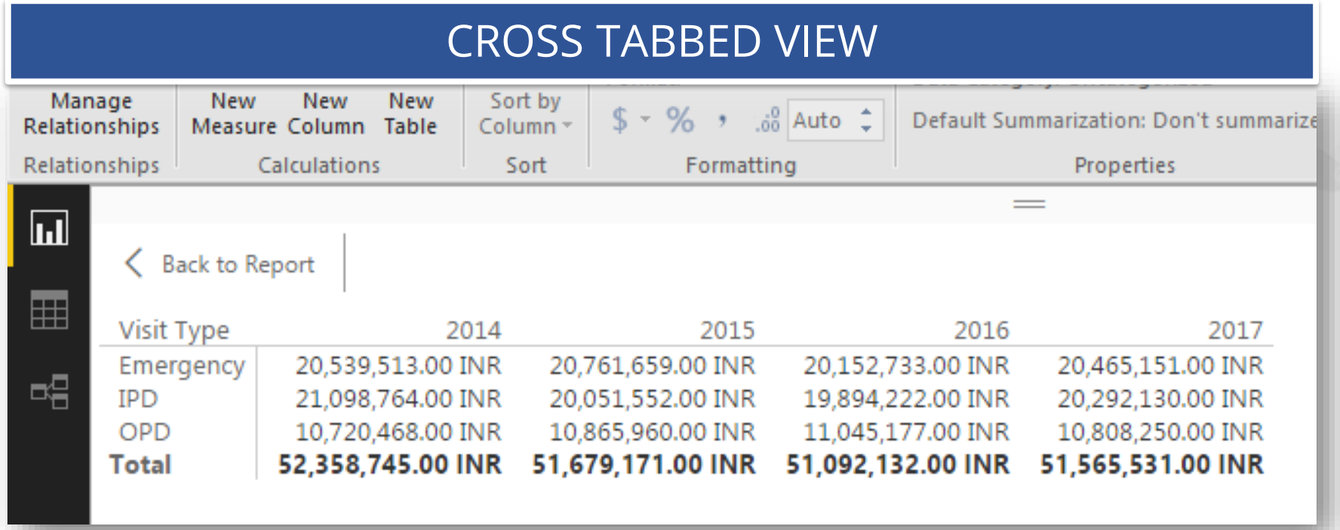
The “Table” visual is used for creating a tabular view. Whereas, the “Matrix” visual can be used for creating a cross tabbed view.

TABULAR VIEW



Year	Visit Type	Revenue
2014	Emergency	20,539,513.00 INR
	IPD	21,098,764.00 INR
	OPD	10,720,468.00 INR
	Total	**52,358,745.00 INR**
2015	Emergency	20,761,659.00 INR
	IPD	20,051,552.00 INR
	OPD	10,865,960.00 INR
	Total	**51,679,171.00 INR**
2016	Emergency	20,152,733.00 INR
	IPD	19,894,222.00 INR
	OPD	11,045,177.00 INR
	Total	**51,092,132.00 INR**
2017	Emergency	20,465,151.00 INR
	IPD	20,292,130.00 INR
	OPD	10,808,250.00 INR
	Total	**51,565,531.00 INR**
Total		**206,695,579.00 INR**

CROSS TABBED VIEW



Visit Type	2014	2015	2016	2017
Emergency	20,539,513.00 INR	20,761,659.00 INR	20,152,733.00 INR	20,465,151.00 INR
IPD	21,098,764.00 INR	20,051,552.00 INR	19,894,222.00 INR	20,292,130.00 INR
OPD	10,720,468.00 INR	10,865,960.00 INR	11,045,177.00 INR	10,808,250.00 INR
Total	**52,358,745.00 INR**	**51,679,171.00 INR**	**51,092,132.00 INR**	**51,565,531.00 INR**

Creating Visuals: Cards

1. It is necessary that the most important information (KPIs) should appear the biggest.
2. If all the information represented on your dashboard are of the same size, it’s going to be hard focusing on what's most important.
3. Card visualizations are a good way to display an important number accurately.
4. Cards can show single value, multiple rows of values or a single value over an area graph.

Creating Visuals: Cards

CARD

206.70MINR
Revenue

MULTI-ROW CARD

Emergency
81,919,056.00 INR
Revenue

IPD
81,336,668.00 INR
Revenue

OPD
43,439,855.00 INR
Revenue

KPI

Revenue by Visit Type

43.44MINR

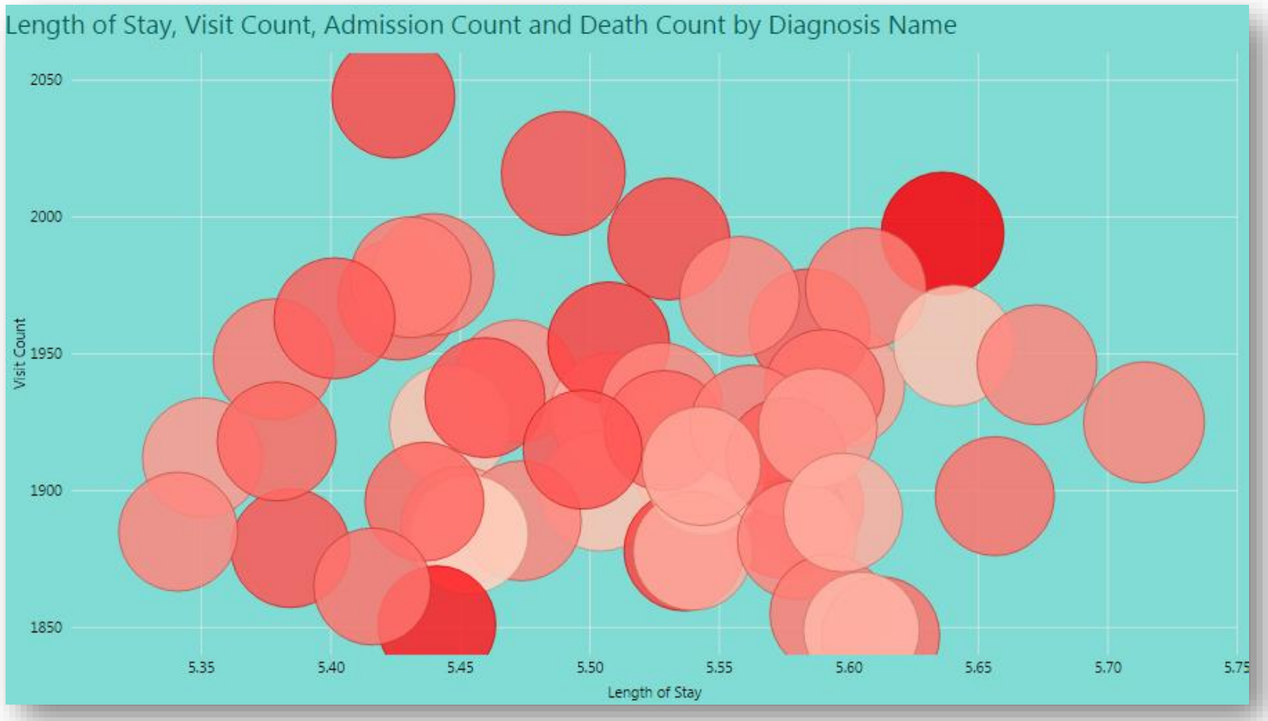
Creating Visuals: Treemap

Hierarchical data that is displayed as a set of nested rectangles are called as **Treemaps**. Rectangles colored in the same color belong to the same level of hierarchy. Color changes for different levels of hierarchies.

The size of the rectangle is based on the quantitative value being measured. These rectangles are then arranged in size from largest to smallest, from top left (largest) to bottom right (smallest), respectively.

Creating Visuals: Scatter Chart

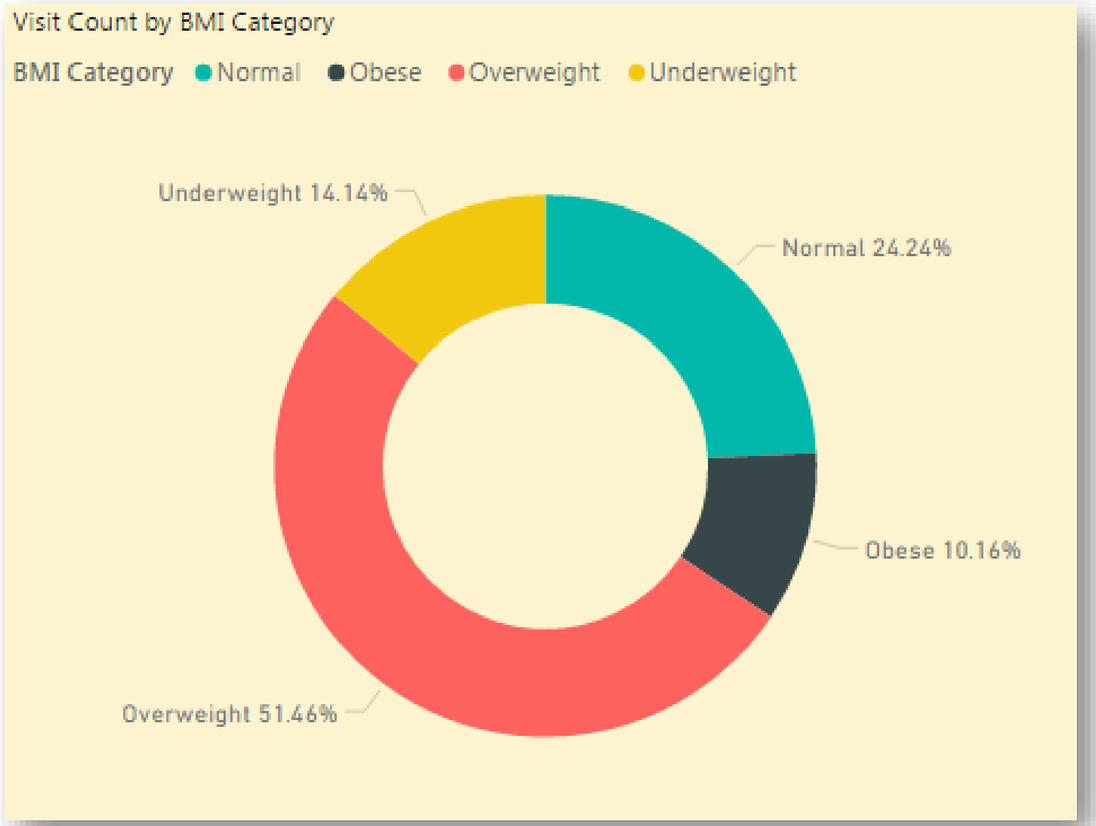
- Scatter chart consists of two value axes. One of the values is plotted along the X-axis, while the other on the Y-axis.
- The chart displays data points at the intersection of X and Y. It usually combines the X and Y values into a single data point.
- Further, these data points are replaced with bubbles, where, the size of the bubbles represents an additional data dimension.



Creating Visuals: Donut Chart

A donut chart is used to assess percent-to-total contribution of business elements. It is quite like a pie chart, except, you can place a label or icon, with a blank center which gives the impact of a donut.

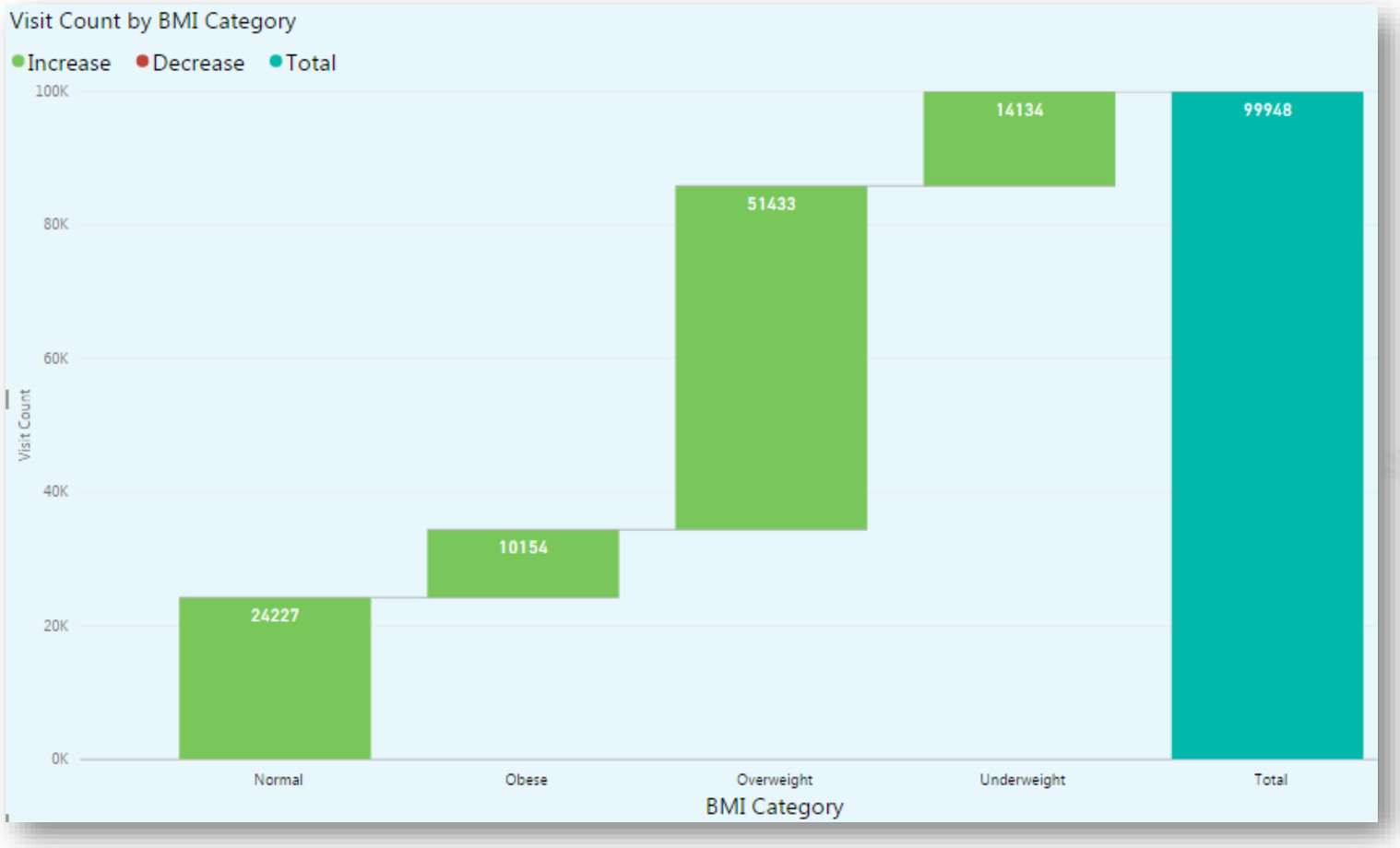
To make the best use of a donut chart, the sum of the chart values must add up to 100%. Too many categories make it difficult to read and interpret.



Creating Visuals: Waterfall Chart

1. A waterfall chart is used to depict a running total because the values are subtracted or added.
2. The different colors of columns lets you quickly assess the increase or decrease in the values.
3. The horizontal axis consists of the final and the initial value columns, and the floating columns represent the intermediate values. The look of the waterfall charts has gotten them named as ‘bridge’ charts.
4. Waterfall charts are best used when you want to measure across the time dimension, or you have changes across different categories.

Creating Visuals: Waterfall Chart

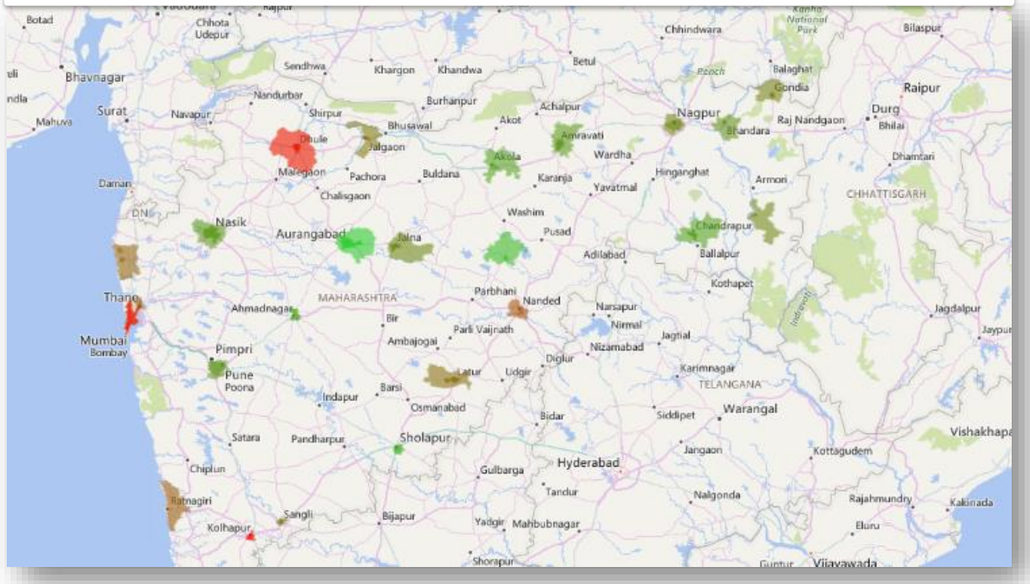


Creating Visuals: Map

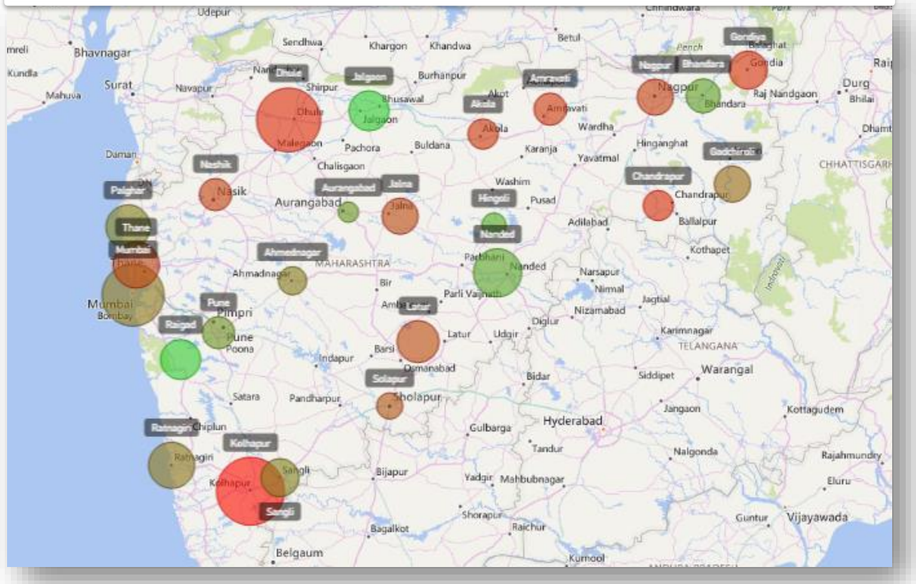
Power BI has been giving a tough competition on the map visuals. It has been integrated with Bing maps. With this integration, geo-coding happens in the background to provide you with default map coordinates.

Map visual is best when you want to plot a geographic dimension on a map. For the map visual to work, the dimension used must be marked as one of the geographic categories. In Power BI, you can create either a "Map" or a "Filled Map" visual.

FILLED MAP



MAP

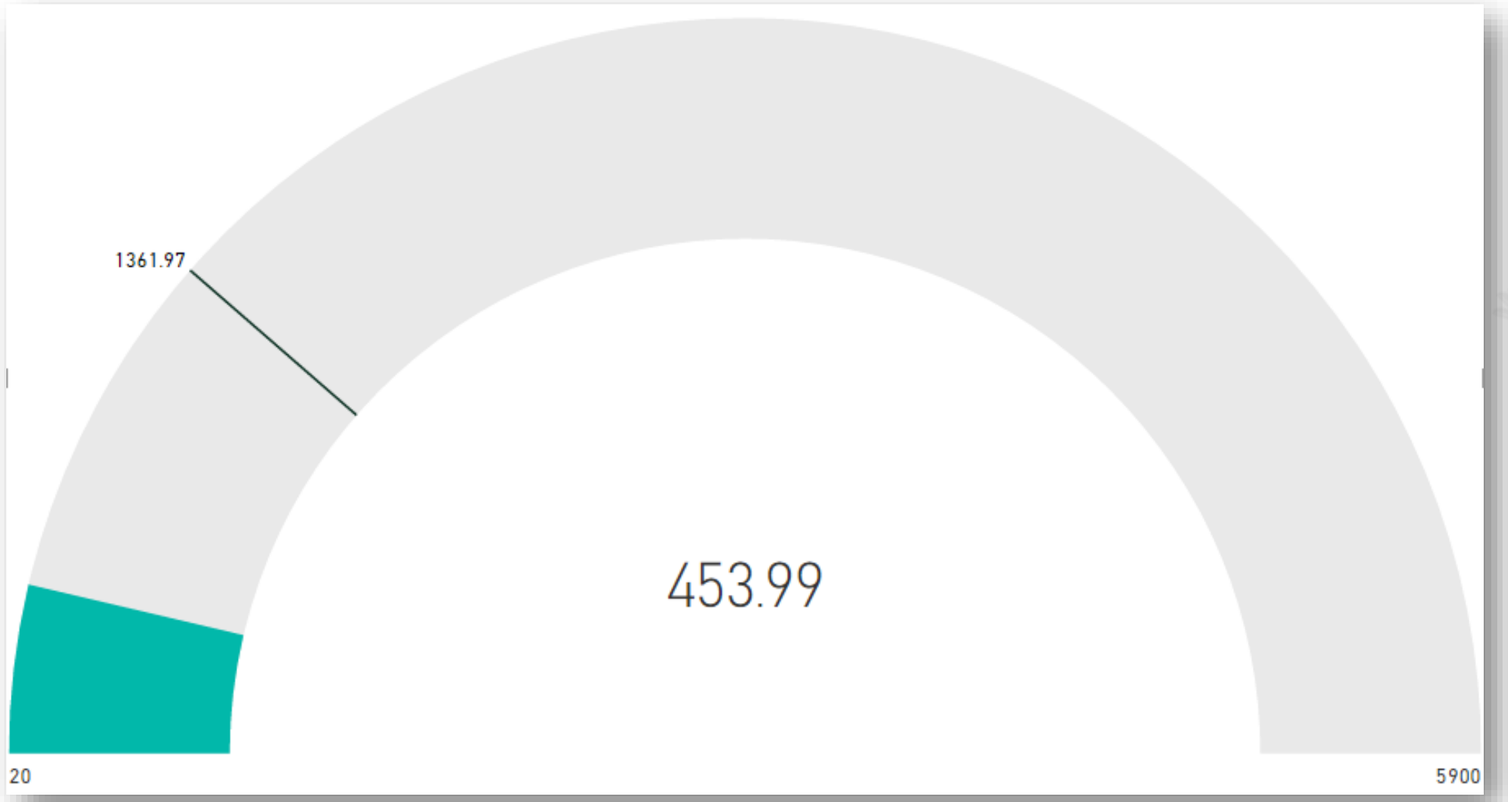


Creating Visuals: Gauge

1. A radial gauge chart displays a single value using a circular arc which measures the progress towards a goal. The needle in the chart represents a goal, or a target value.
2. An opaque background color represents the progress towards the goal.
3. Radial gauges are best used when you want to show progress towards a target or show the health of a single measure.

Creating Visuals: Gauge

The following image represents a gauge:



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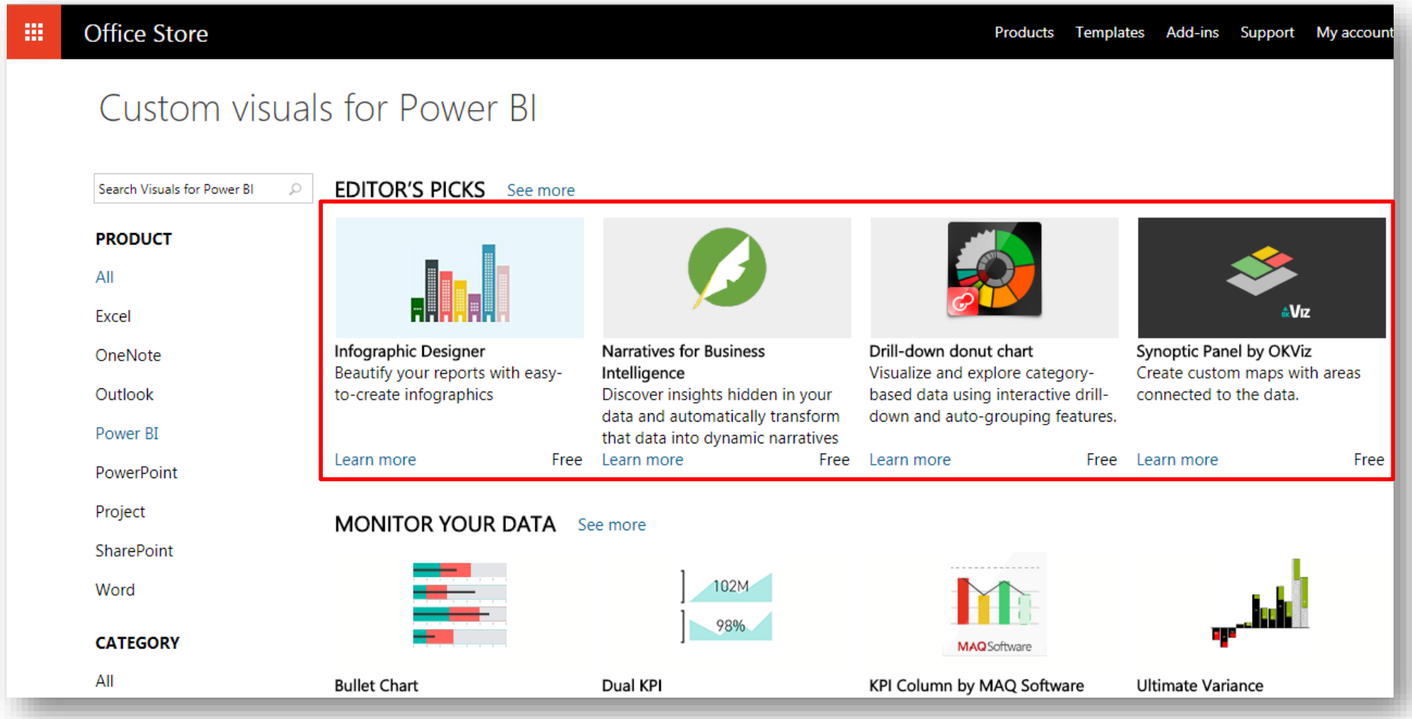
Using Custom Visuals

Custom Visuals

We have explored different types of data visuals in Power BI. However, there is always requirement for new types of visualizations that is not built-in. Using Power BI, you can download custom visuals from the office store and use it in your own dashboard. These visuals are created by members of the community and by Microsoft.



Custom Visuals

Office Store Approved
Can be run in browsers, reports, and dashboards

Power BI Certified
Have passed rigorous testing, and supported in additional scenarios, such as email subscriptions, and export to PowerPoint

Categories of Custom

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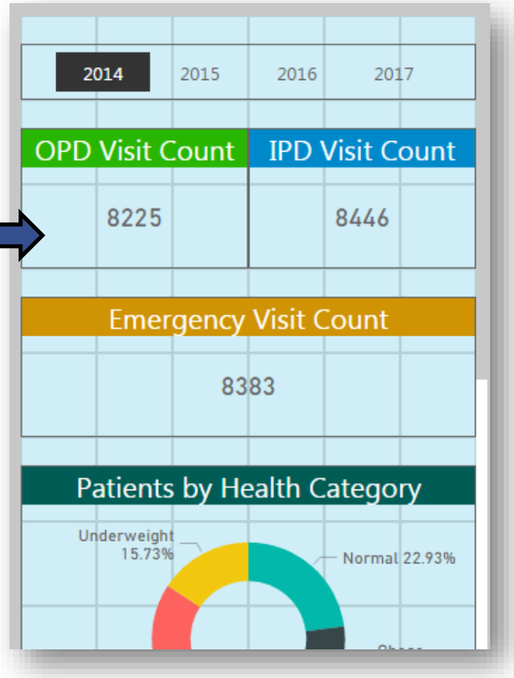
Creating Mobile Layout

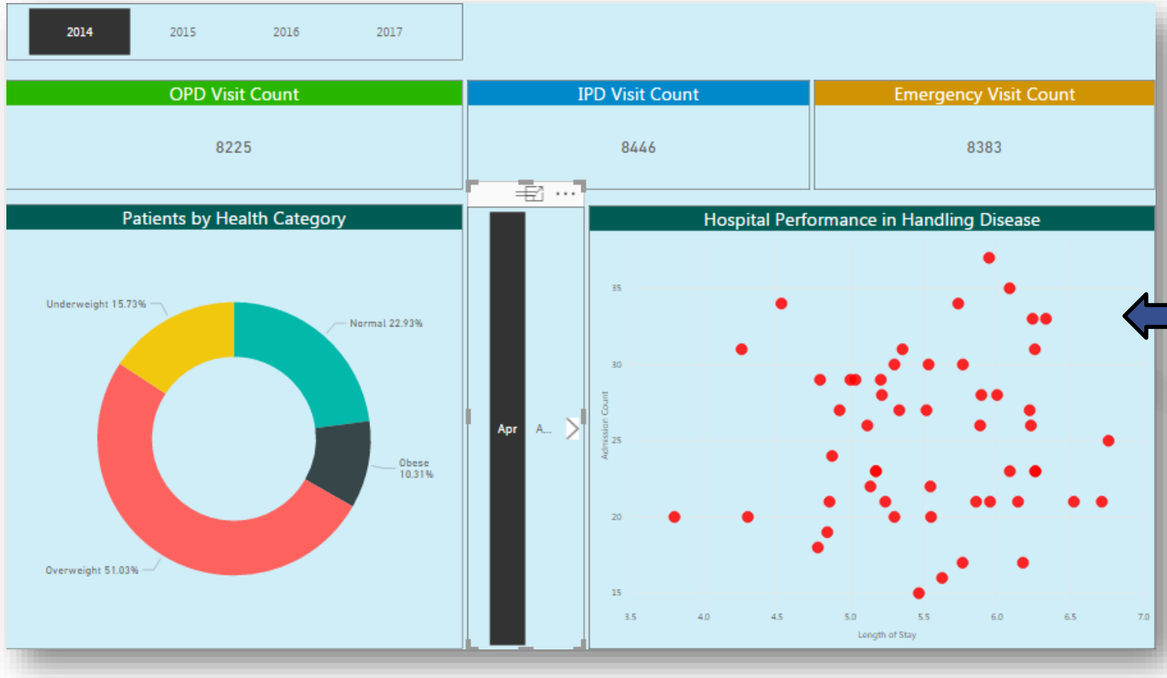
Creating Mobile Layout

1. Creating a mobile friendly version of your dashboard is simply achieved in Power BI.
2. You can reuse the visuals created earlier and create a mobile specific view out of it.
3. Dashboard tiles in a mobile view are laid out one after another, all of the same size.
4. When you hold the mobile device in portrait view, the mobile specific dashboard view is displayed. However, changing the orientation to landscape changes the view back to the web view.

Creating Mobile Layout

Mobile View





Web View

Create a Mobile Layout

Objective: To use Power BI Desktop and the Power BI service to rearrange and resize report visuals for an optimal experience in the portrait mode.

Access: To execute the practice, follow these steps:

Step 1: Under “Report View” in the Power BI Desktop, select Phone Layout from the View tab.

In the Power BI service, select Edit Report > Mobile Layout.
You can now see a blank canvas shaped like a phone. All of the visuals on the original report page are listed in the “Visualizations” pane on the right.

Step 2: To add a visual to the phone layout, drag it from the “Visualizations” pane to the phone canvas.
Phone reports use a grid layout. As you drag visuals to the mobile canvas, they snap to that grid.

Step 3 :You can add some or all the master report page visuals to the phone report page. You can add each visual only once. You don't have to include all the visuals.

Step 4: You can resize your visuals on the grid, as you would for tiles on dashboards and mobile dashboards.

ASSISTED PRACTICE

Visuals for Data Representation

Objective: To create a Card, Tree Map, Scatter Plot, Donut Chart, and a Table using a sample dataset of Twitter.

Access: To execute the practice, follow these steps:
Note: The dataset used in this demo is a sample dataset of Twitter, which contains user reviews. You can use any of the other dataset or create your own.

Create a Card:

Step 1: Import the data to Power BI.

Step 2: In the left panel, click on the **report** icon to see the reports. It will be empty at the start as the visualization is not done.

Step 3: In the right pane, under **Visualizations**, select **cards** to create one.

Step 4: Under the **Fields** tab, select the field you want to add to the card.

ASSISTED PRACTICE

Visuals for Data Representation

Objective: To create a Card, Tree Map, Scatter Plot, Donut Chart, and a Table using a sample dataset of Twitter.

Access: To execute the practice, follow these steps:
Note: The dataset used in this demo is a sample dataset of Twitter, which contains user reviews. You can use any of the other dataset or create your own.

Tree Map:

Step 1: Under **Visualizations**, select the treemap icon.

Step 2: Under **Fields**, select the fields you want to add. You will be able to see the treemap being displayed.

Creating a Scatter plot:

Step 1: Under **Visualizations**, select the scatter chart icon.

Step 2: Under **Fields**, select the fields you want to add. You will be able to see the chart being displayed.

ASSISTED PRACTICE

Visuals for Data Representation

Objective: To create a Card, Tree Map, Scatter Plot, Donut Chart, and a Table using a sample dataset of Twitter.

Access: To execute the practice, follow these steps:
Note: The dataset used in this demo is a sample dataset of Twitter, which contains user reviews. You can use any of the other dataset or create your own.

Creating a Donut chart:

Step 1: Under **Visualization**, select the donut chart icon.

Step 2: Under **Fields**, select the fields you want to add. You will be able to see the chart being displayed.

Creating a Table:

Step 1: Under **Visualizations**, select the table icon.

Step 2: Under **Fields**, select the fields you want to add. You will be able to see the table being displayed:

ASSISTED PRACTICE

Visuals for Data Representation

Objective: To create a Waterfall Chart, Map, and a Gauge Chart using a sample dataset of Twitter.

Access: To execute the practice, follow these steps:

Note: The dataset used in this demo is a sample dataset of Twitter, which contains user reviews. You can use any of the other dataset or create your own.

Creating a Waterfall Chart:

Step 1: Import the data to Power BI.

Step 2: In the left panel, click on the **report** icon to see the reports. It will be empty at the start as the visualization is not done.

Step 3: In the right pane, under **Visualizations**, select **Waterfall Chart** to create one.

Step 4: Under the "Fields" tab, select the field you want to add to the card.

ASSISTED PRACTICE

Visuals for Data Representation

Objective: To create a Waterfall Chart, Map, and a Gauge Chart using a sample dataset of Twitter.

Access: To execute the practice, follow these steps:

Note: The dataset used in this demo is a sample dataset of Twitter, which contains user reviews. You can use any of the other dataset or create your own.

Creating a Map:

Step 1: Under **Visualizations**, select the map icon.

Step 2: Under **Fields**, select the fields you want to add. You will be able to see the map being displayed.

Creating a Gauge Chart:

Step 1: Under **Visualizations**, select the **gauge chart** icon.

Step 2: Under **Fields**, select the fields you want to add. You will be able to see the chart being displayed.

ASSISTED PRACTICE

Knowledge Check

Knowledge Check

1

Which visual cannot be used without applying a category on the dimension?

a. Treemap

b. Map

c. Both a and b

d. None of the above

Knowledge Check

1

Which visual cannot be used without applying a category on the dimension?

a. Treemap

b. Map

c. Both a and b

d. None of the above

The correct answer is **b.**

Map cannot be used without applying a category on the dimension.

Knowledge Check

2

Which visual is more appropriate to show percent to total?

a. Pie Chart

b. Gauge Graph

c. Both a and b

d. None of the above

Knowledge Check

2

Which visual is more appropriate to show percent to total?

a. Pie Chart

b. Gauge Graph

c. Both a and b

d. None of the above

The correct answer is **a.**

Pie chart is more appropriate to show percent to total.

Knowledge Check

3

Is it possible to see, both mobile view and web view of a dashboard, using a mobile device?

a. Yes

b. No

Knowledge Check

3

Is it possible to see, both mobile view and web view of a dashboard, using a mobile device?

a. Yes

b. No

The correct answer is **a.**

Yes, it is possible to see, both mobile view and web view of a dashboard, using a mobile device.

Key Takeaways

You are now able to:

- Choose the right visuals to represent your data
- Create different types of visuals using Power BI Desktop
- Work with custom visuals
- Create a mobile view