Data Manipulation and Reporting with Power BI

Getting Familiar with Terminologies and the Interface

Learning Objectives

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

- Explain the different Power BI technologies

- Describe the fundamental concepts of Power BI

- Know the Power BI interface

Power BI Terminologies

Fundamental Concepts

The fundamental concepts of Power BI are:

Datasets	Custom Visuals	Report View
Reports	DAX	Data View
Visualization	Drill	Relationships View
Dashboards	Interactions	Columns
Parameter	Fields	Measures

Fundamental Concepts

Dataset

- Collection of data which you connect to or import from.
- This data could be placed in a single database or may come from disparate source systems.
- The "Fields" section in the Power BI Desktop shows all the available datasets.
- You can use the data in these datasets as parameters for any new business measures or columns.
- Or, you can use these datasets to create visuals.

Reports

- One or more pages of visualizations are referred to as Reports.
- In Power BI Desktop, you can see tabs in the bottom while viewing a report.
- These tabs are the additional pages of a report.
- You can add new tabs to the report.
- You can also delete, rename, or duplicate the report pages.

Fundamental Concepts

Visualization

Visual insights of data can be viewed using various built-in functionalities known as visualizations. These visualizations could be anything ranging from a map to cards to matrices, and many more.

Dashboards

In the Power BI terminology, dashboards are created from a subset of the dataset and are customized as per the business requirement.
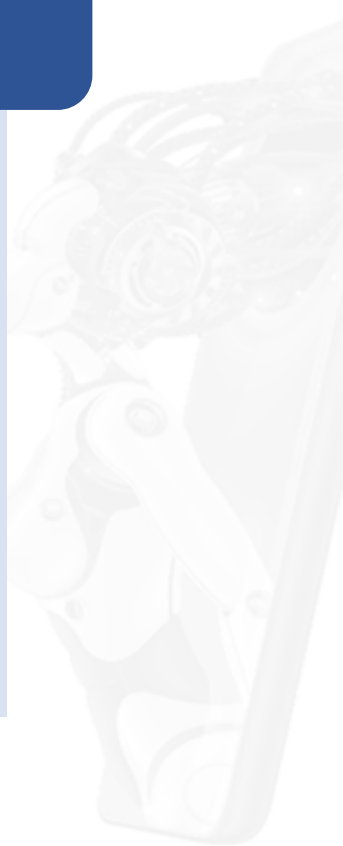
Fundamental Concepts

Parameter

Power BI facilitates easy parameter creation to be used as data sources. These parameters can also replace rows/values functions. Parameters are managed using the 'Manage Parameter' button.

Custom Visual

The Power BI community is a strong medium of communication. The community creates custom visuals which are accessible to all. These visuals can be imported into your Power BI Desktop after you have downloaded them from the visual gallery.

Fundamental Concepts

DAX

The functional formula language that is used throughout the Power BI Desktop is **Data Analysis Expressions (DAX).** The functions used in excel are like DAX functions, though DAX offers much more functionality. To show a very simple use of DAX, let us create a new measure for today's date. The measure can be defined as "TodaysDate = TODAY()". Here, "TODAY()" is a DAX function which when processed, resolves to the current date.

Drill

To edit drill-down, hierarchical data visuals can be used. To change the visual, enable the drill-down. Using this feature, you can perform a granular level analysis on the same chart. Ex: Drilling from region to call center or product to categories.

Fundamental Concepts

Interactions

In Power BI, you format to the default interaction behavior. The default behavior includes filter, cross-highlight, or ignore changes to other visual. This setting can be enabled from the Format menu by clicking the Edit interaction button.

Fields

Fields in Power BI shows you data sources, columns, measures, and calculated columns which are used in visuals, filters and many more.

Fundamental Concepts

Report View

In Power BI Desktop, one of the three views is a Report view. It is the creation of a view where you can see the data, drag it to the visuals on the canvas and create a visual which best fits.

Data View

The data view is the data modeling view in Power BI. It allows you to visualize the data after it has been modeled. You can switch between the views to ensure you are selecting the best visual for the right type of data.

Fundamental Concepts

Relationship View

In Power BI, you can use the relationship view to show all the relationships, tables, and columns. It is a graphical display which provides a better understanding of the relationship.

Column

Columns are evaluated for each row in a table. They are also known as calculated columns and get saved into the data model. You can use columns when you want to apply DAX functions into each row in a table.

Fundamental Concepts

Measures

When you create a visual in Power BI and create aggregation on data using average, sum, etc., measures are created. Since they are evaluated at the visual level, they are not saved into the data model.

Power BI Interface

Welcome Screen

A start page is a central location from which you can connect to different data sources, sign into your account, and so on.
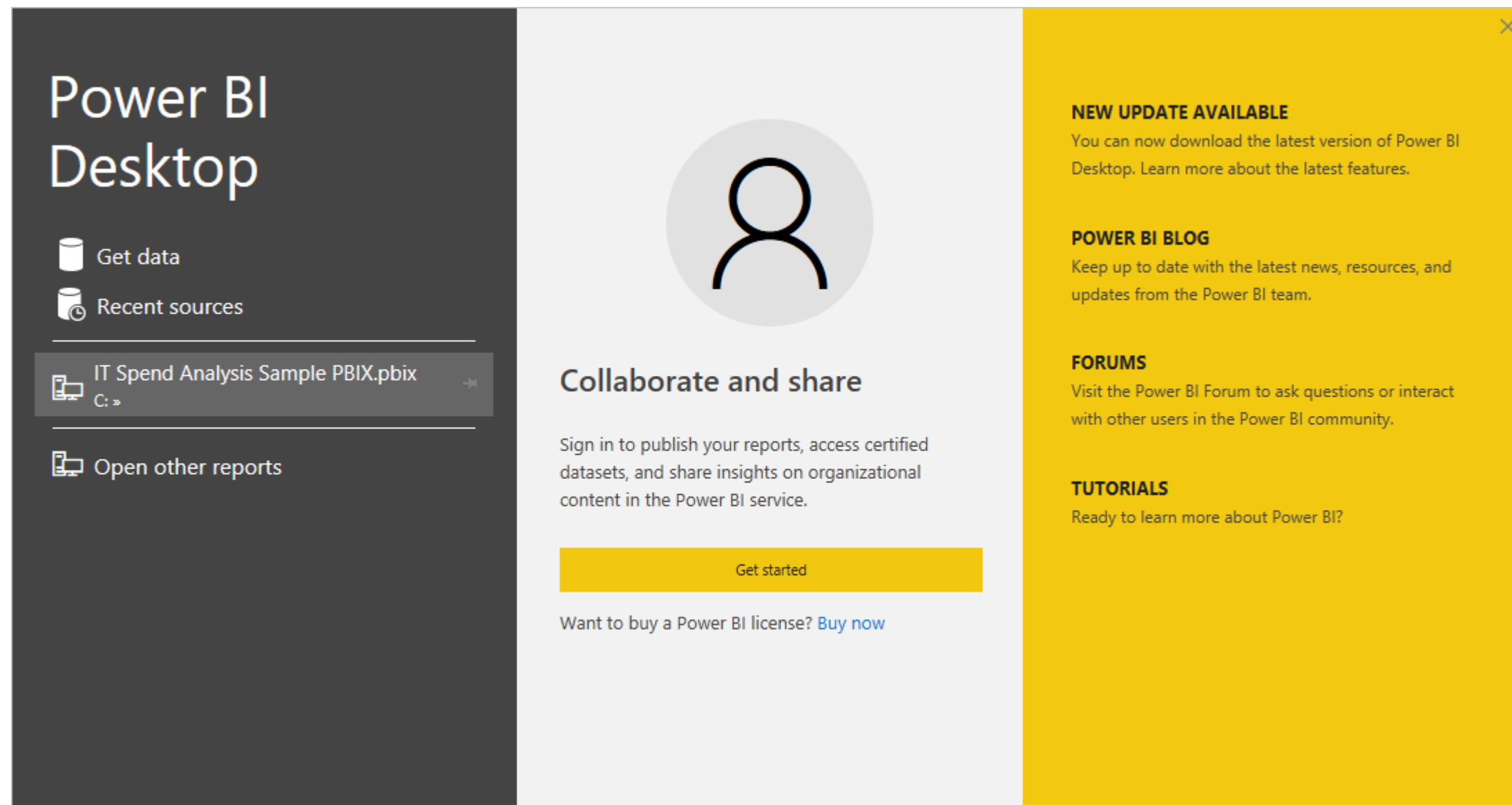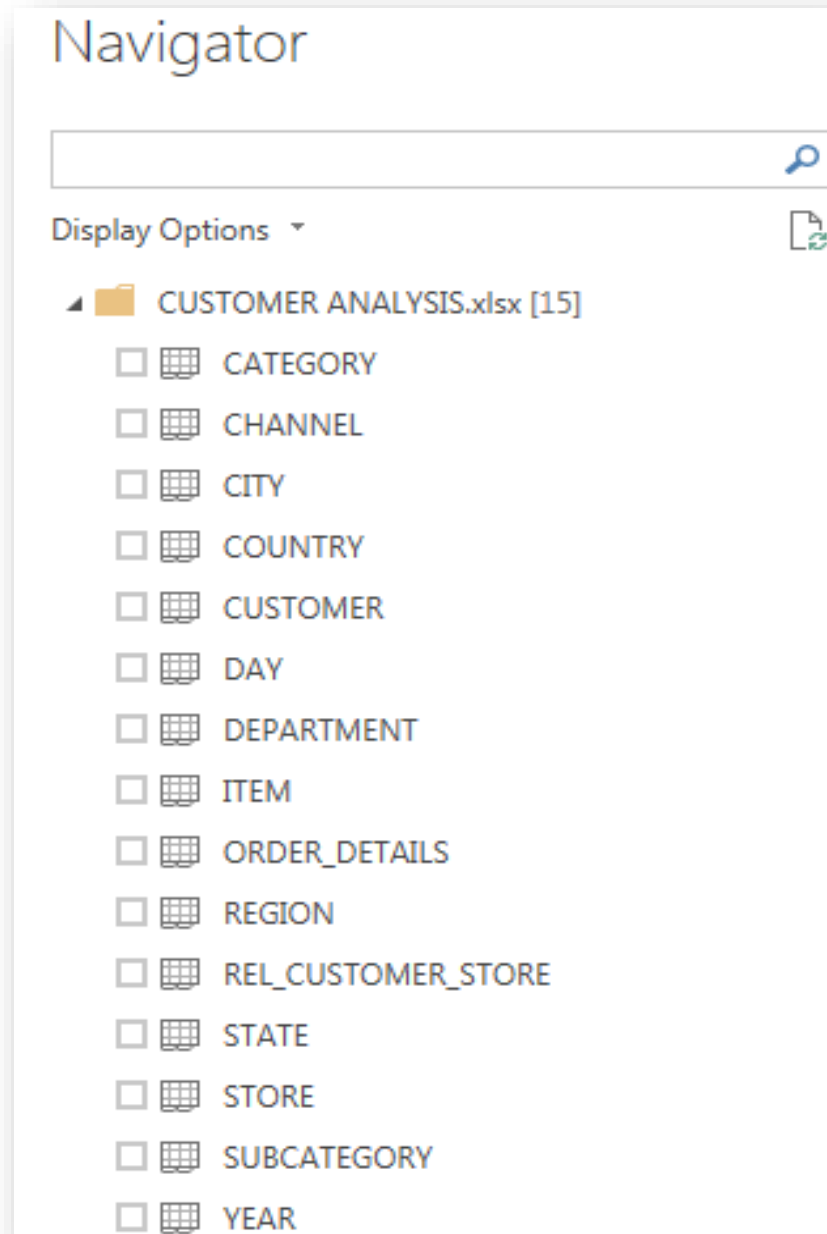
Navigator Window

Navigator window displays information about a data source/s that you are connected to.
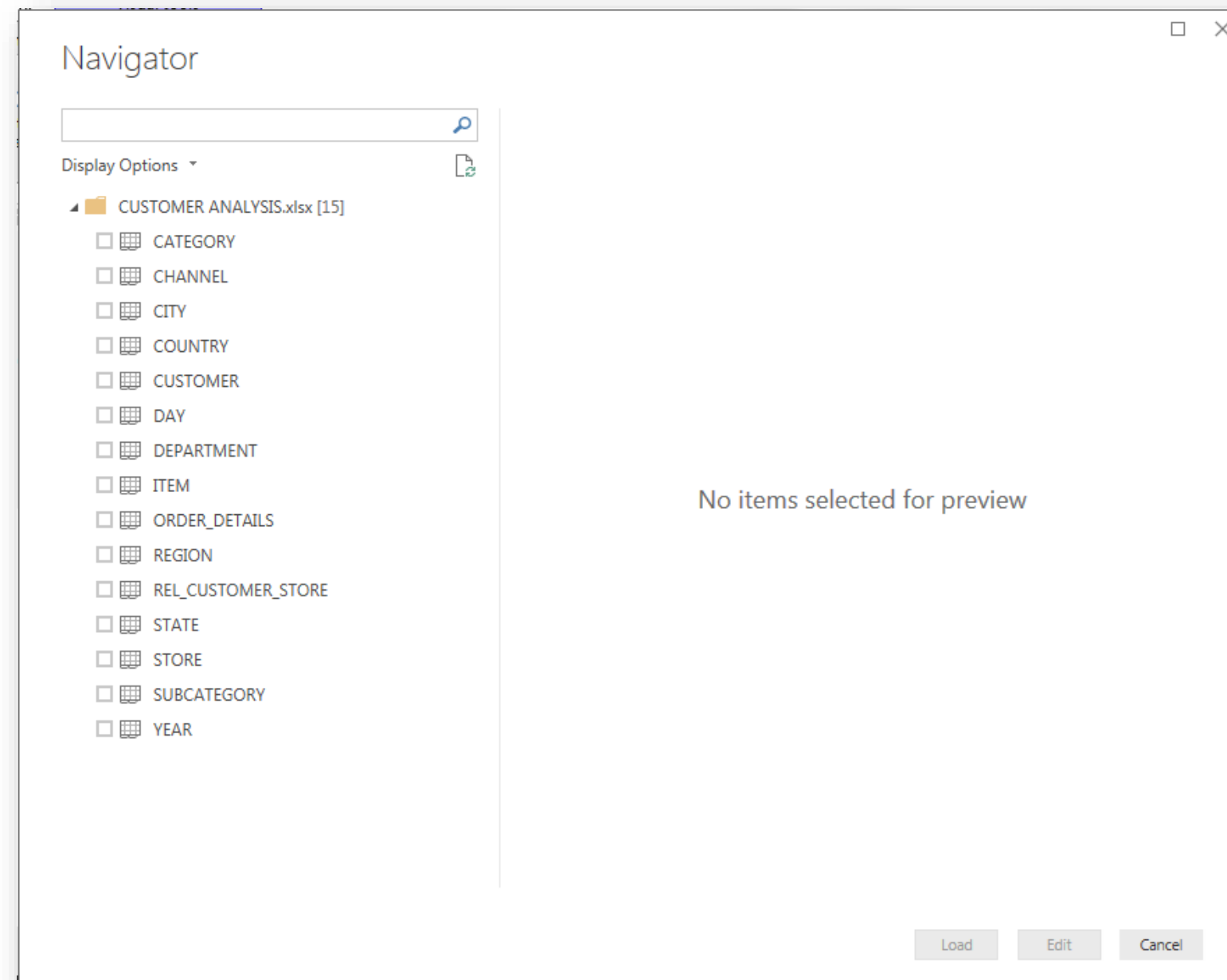
Navigator Window: Left Pane

Left pane displays the name of the dataset and the tables in that dataset.

Navigator Window: Preview Area

You can use the preview area to review the fields and the rows of the data contained in the selected tables.

REGION

Region_ID	Region_Name	Country_ID
1	NorthEast	1
2	MidAtlantic	1
3	South	1
4	West	1

Report View

You can use the report area to build a view.

Ribbon

Visualizations

Fields

Canvas

Pages
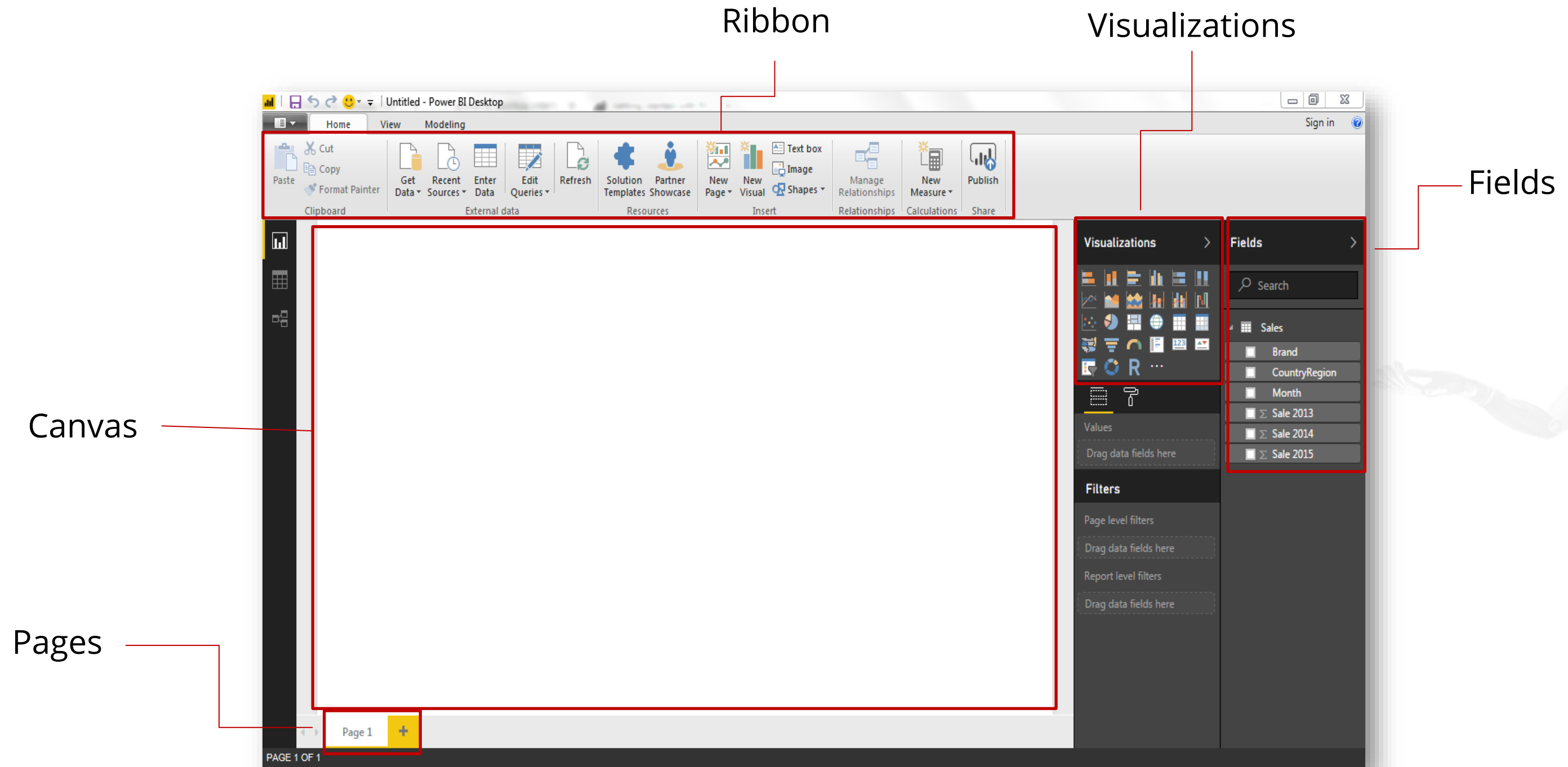
Data View

The data window shows the structure of data in each table.

Modeling ribbon

Formula bar

Grid

Search bar

Fields list

Relationship View

Relationship window displays all the tables, columns, and their relationships.
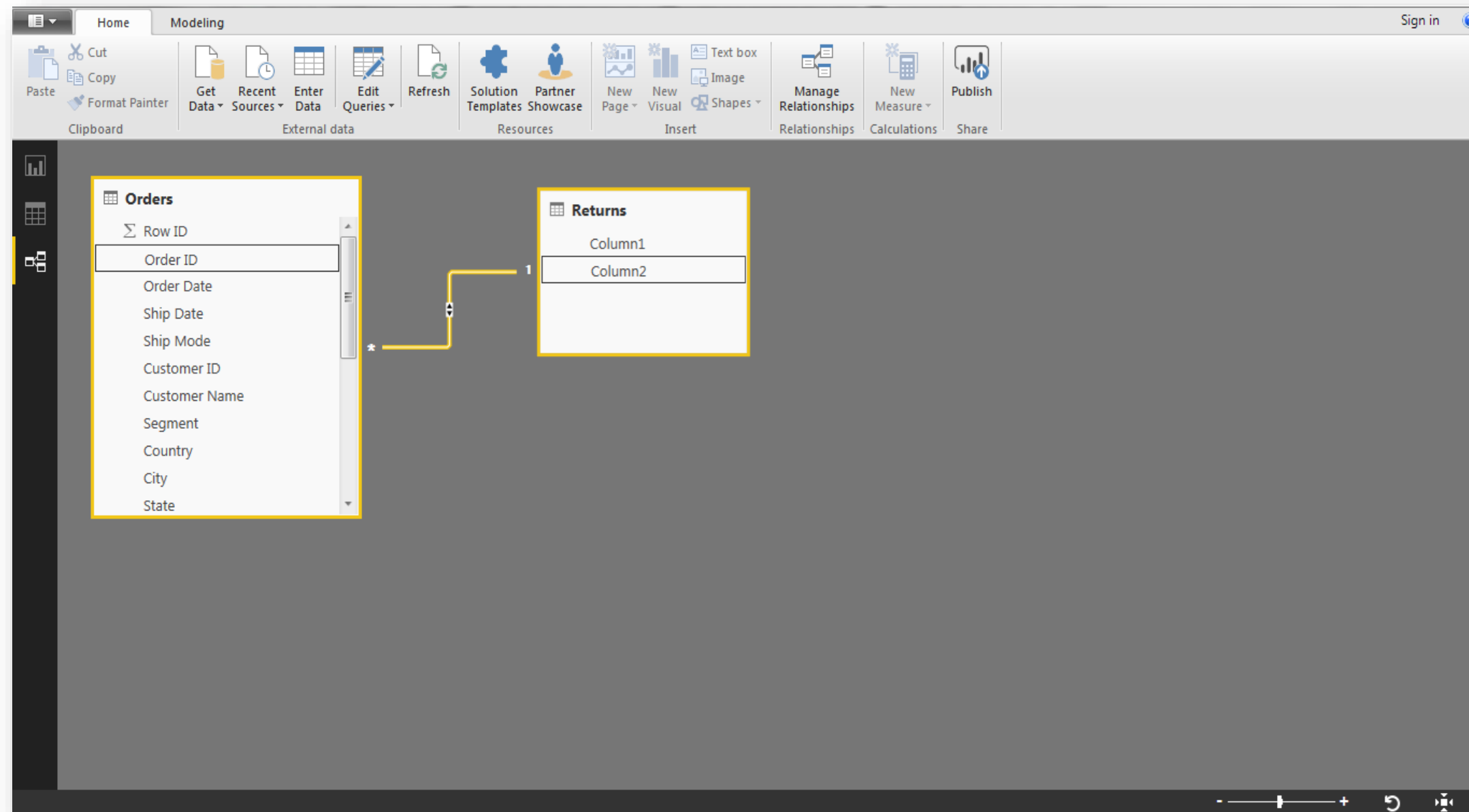
Knowledge Check

Knowledge Check

1

The view that allows you to drag and drop objects at different visuals is called a_____.

a. Data View

b. Relationship View

c. Report View

d. None of the above

The view that allows you to drag and drop objects at different visuals is called a _____ .

a. Data View

b. Relationship View

c. Report View

d. None of the above

The correct answer is   **c.**

The View that allows you to drag and drop objects at different visuals is called a Report View.

Can DAX be used to create new dimensions and measures?

a. Yes

b. No

Can DAX be used to create new dimensions and measures?

a. Yes

b. No

The correct answer is **a.**

Yes, DAX can be used to create new dimensions and measures.

Which object needs to be available for the drilling feature to work?

a. Measures

b. Hierarchies

c. Filters

d. All of the above

Which object needs to be available for the drilling feature to work?

a.   Measures

b.   Hierarchies

c.   Filters

d.   All of the above

The correct answer is   **b.**

Hierarchies need to be available for the drilling feature to work.

Key Takeaways

You are now able to:

- Explain the different Power BI technologies

- Describe the fundamental concepts of Power BI

- Know the Power BI interface