

Power BI Assignment 2

- 1 What are the different data sources we can connect to Power BI. Submit ScreenShot for any 3 data connectivity.

Power BI supports a wide variety of data sources, allowing users to import or connect live to on-premises and cloud data.

Main Categories of Data Sources:

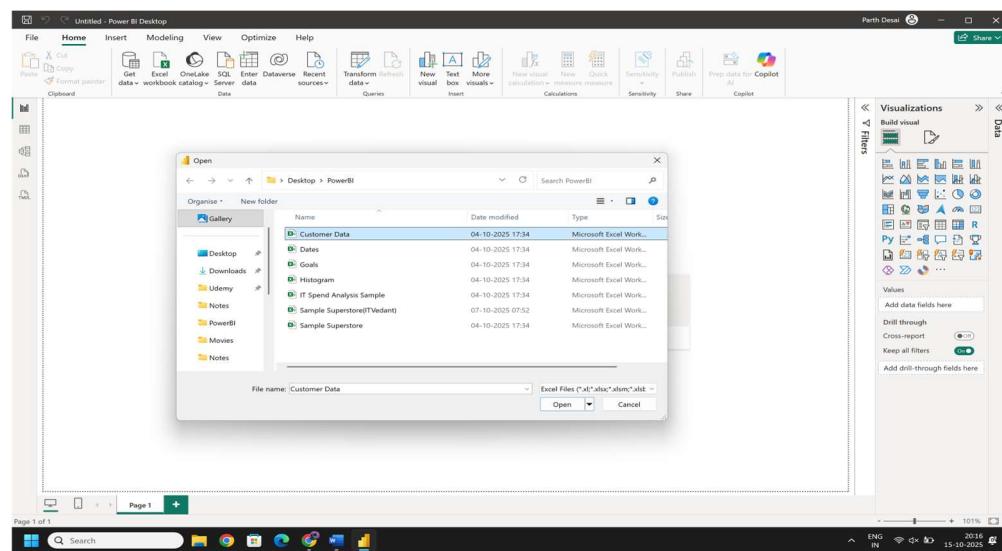
Category	Examples
File-Based Sources	Excel (.xlsx), CSV (.csv), XML, JSON, PDF, SharePoint Folder
Database Sources	SQL Server, Oracle, MySQL, PostgreSQL, IBM DB2, Snowflake, Access
Power Platform Sources	Power BI Datasets, Power BI Dataflows, Dataverse, Power Platform Dataflows
Azure Cloud Sources	Azure SQL Database, Azure Synapse Analytics, Azure Blob Storage, Azure Data Lake
Online Services	SharePoint Online, Dynamics 365, Google Analytics, Salesforce, GitHub
Other Sources	Web Data (URL), OData Feed, REST API, R Script, Python Script

Below are the three example data source connectivity types typically available in Power BI Desktop → Home Tab → Get Data window.

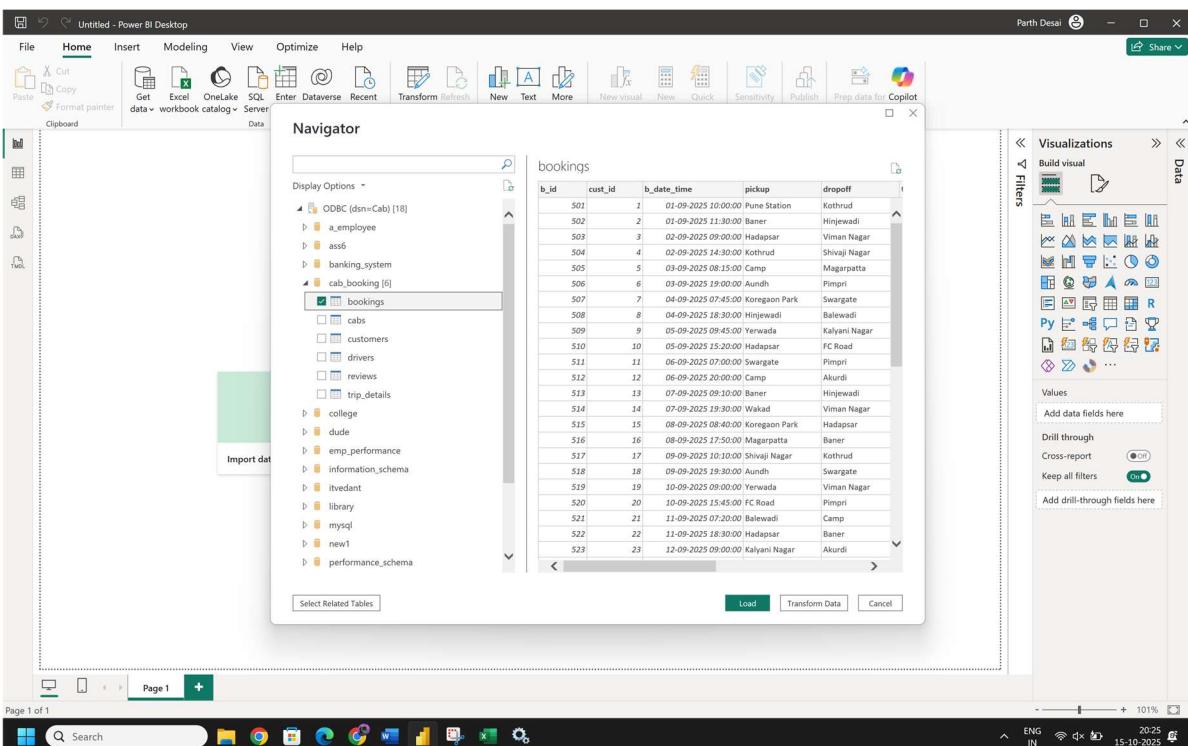
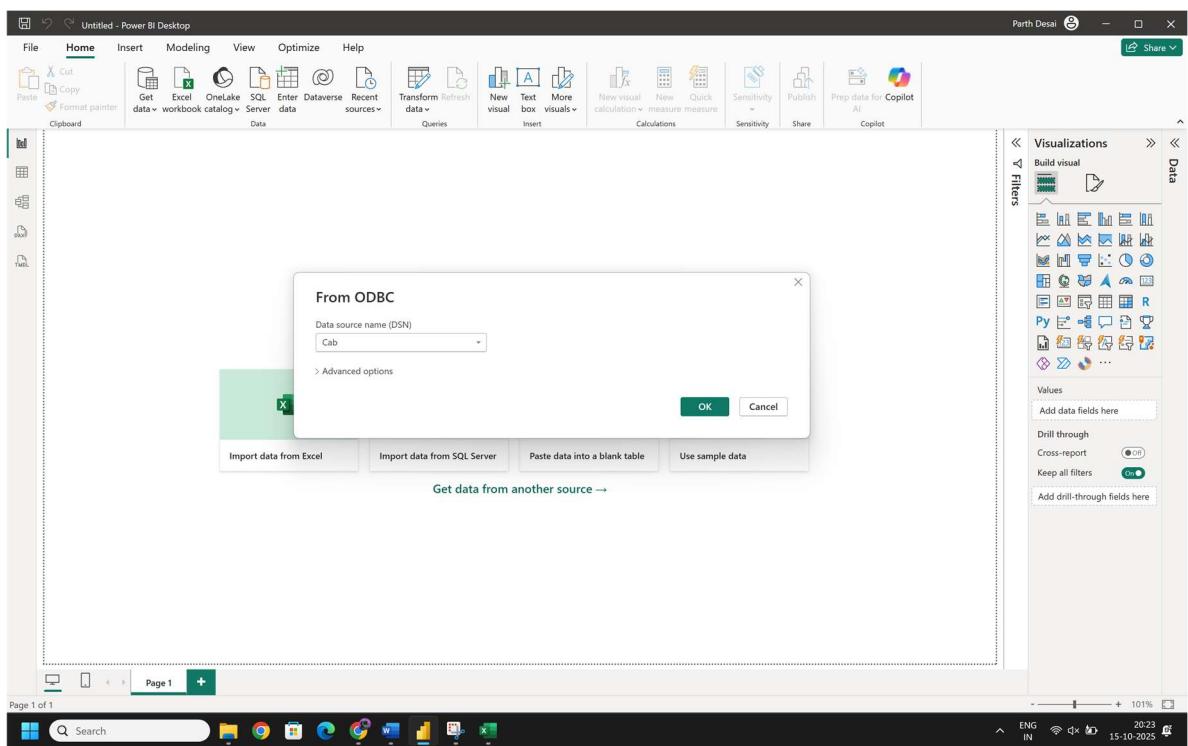
Data Source Type	Example Screenshot Description	Path to Access
Excel Workbook	Shows the dialog box to select an Excel file.	Home → Get Data → Excel
SQL Server Database	Displays connection dialog where server name & database are entered.	Home → Get Data → SQL Server

You can take screenshots from Power BI Desktop showing:

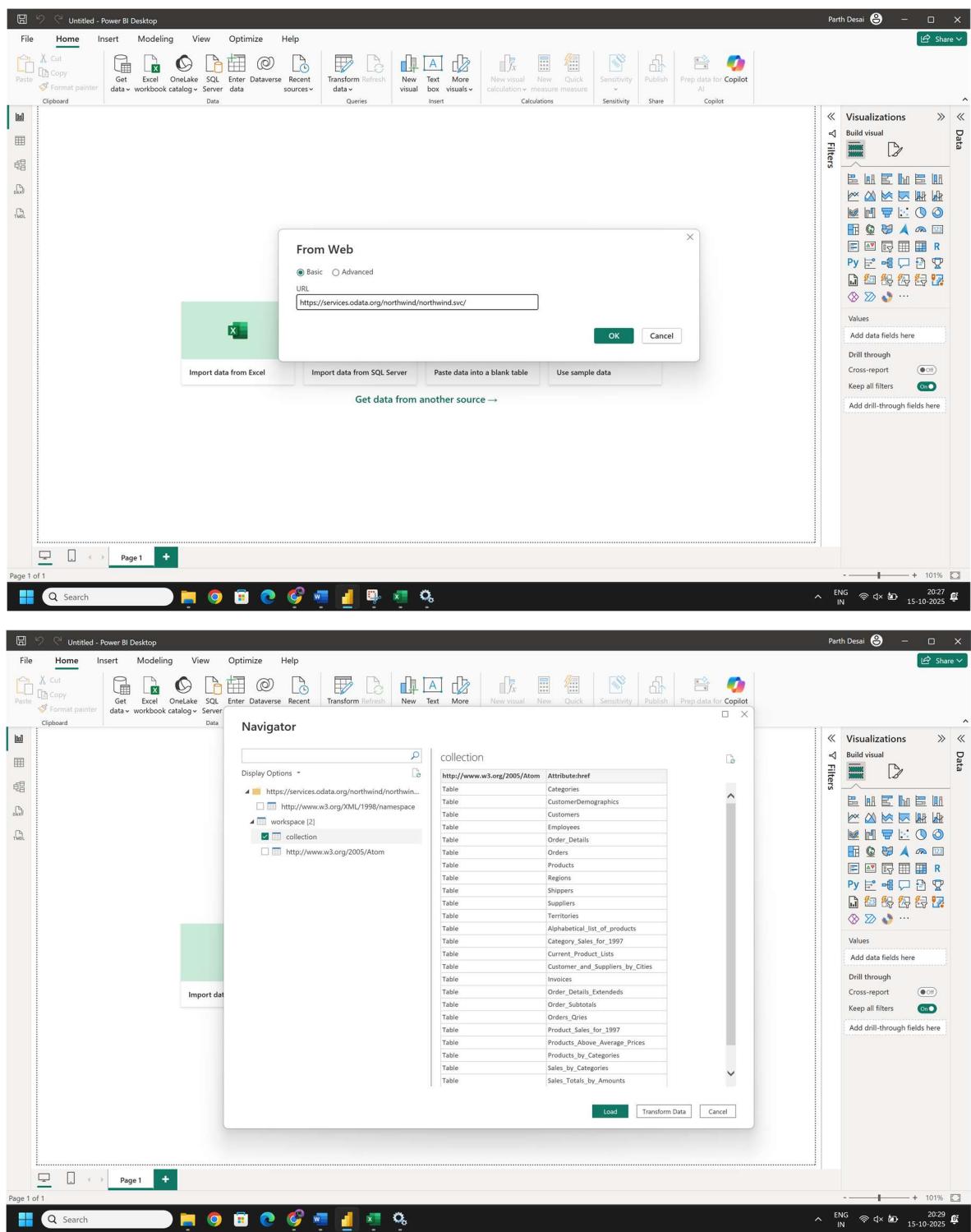
- Excel connection dialog



- SQL Server connection window



- Web data import dialog



2 What is the New Name of Power BI Dataset?

The new name of Power BI Dataset is *Semantic Model*.

Explanation:

Microsoft rebranded “Power BI Dataset” to Semantic Model in 2023–2024 to better reflect its expanded capabilities, such as:

- Reusability across multiple workspaces and reports.
- Integration with Microsoft Fabric (unified data platform).

- Advanced modeling, calculation groups, and Direct Lake mode.

● Old Term: Dataset

● New Term: Semantic Model

Different Components of Power BI Desktop Tool

Power BI Desktop consists of three major components:

Component	Purpose
1. Power Query Editor	Used for data extraction, cleaning, and transformation (ETL process).
2. Data Model (Model View)	Used to define relationships between tables, create measures, and design data schema.
3. Report View (Visualization Layer)	Used to design interactive reports and dashboards with charts, visuals, and filters.

Working of Each Component in Brief

1 Power Query Editor (Data Preparation Layer)

- Performs ETL (Extract, Transform, Load) operations.
- Connects to data sources → cleans data → applies transformations like removing nulls, splitting columns, merging tables.
- Uses the M Language behind the scenes.
- Output: “Cleaned” data loaded into the data model.

 Example operations:

- Remove duplicates
- Change data type
- Combine multiple files

2 Data Model (Model View / Relationship Layer)

- Defines relationships between multiple tables (one-to-many, many-to-one).
- Uses DAX (Data Analysis Expressions) to create:
 - Calculated columns
 - Measures (e.g., Total Sales = SUM(Sales[Amount]))
- Helps in building a semantic layer for data analysis.

 Key functions:

- Manage table relationships
- Optimize data model performance

- Handle hierarchies and key fields
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Report View (Visualization Layer)

- This is where visual storytelling happens.
- You use charts, KPIs, maps, slicers, and visuals to represent data insights.
- Offers interactive features like drill-down, filters, and cross-highlighting.
- Uses Power BI visuals gallery for custom visuals.

 Example visuals:

- Bar chart
 - Line chart
 - Pie chart
 - Map
 - Card (for KPIs)
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