INTRODUCTION TO POWER BI

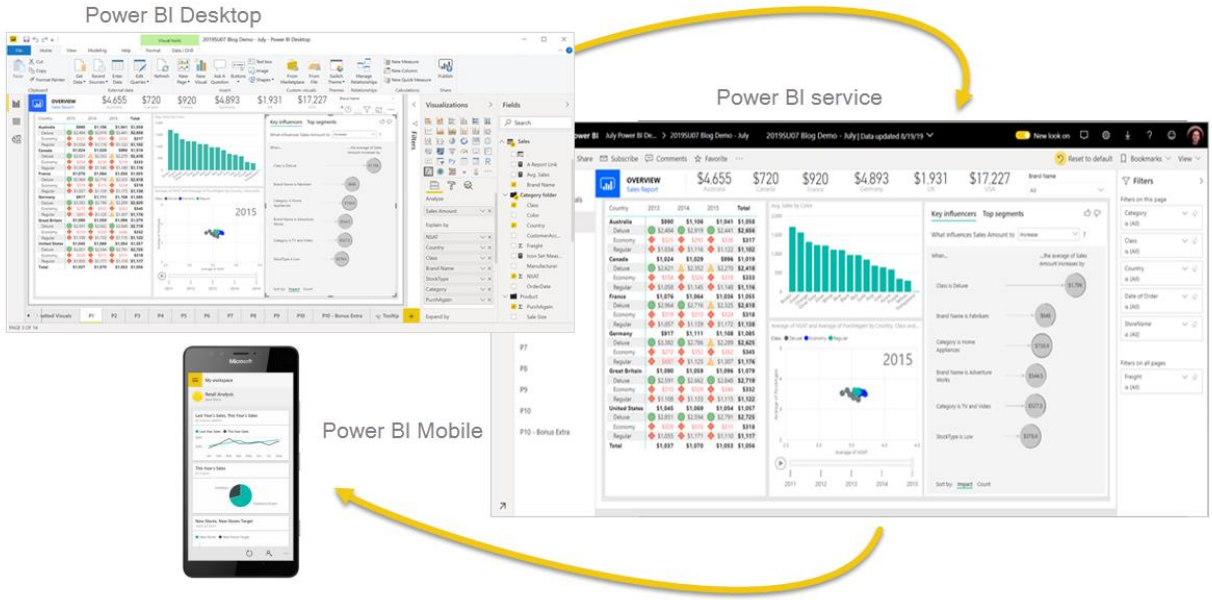
What is Power BI?

Power BI is a collection of software services, apps, and connectors that work together to turn your unrelated sources of data into coherent, visually immersive, and interactive insights. Your data might be an Excel spreadsheet, or a collection of cloud-based and on-premises hybrid data warehouses. Power BI lets you easily connect to your data sources, visualize and discover what's important, and share that with anyone or everyone you want.

The parts of Power BI

Power BI consists of several elements that all work together, starting with these three basics:

- A Windows desktop application called *Power BI Desktop*.
- An online software as a service (SaaS) service called the *Power BI service*.
- Power BI Mobile apps for Windows, iOS, and Android devices.



These three elements—Power BI Desktop, the service, and the mobile apps—are designed to let you create, share, and consume business insights in the way that serves you and your role most effectively.

Beyond those three, Power BI also features two other elements:

- **Power BI Report Builder**, for creating paginated reports to share in the Power BI service.
- **Power BI Report Server**, an on-premises report server where you can publish your Power BI reports, after creating them in Power BI Desktop.

The flow of work in Power BI

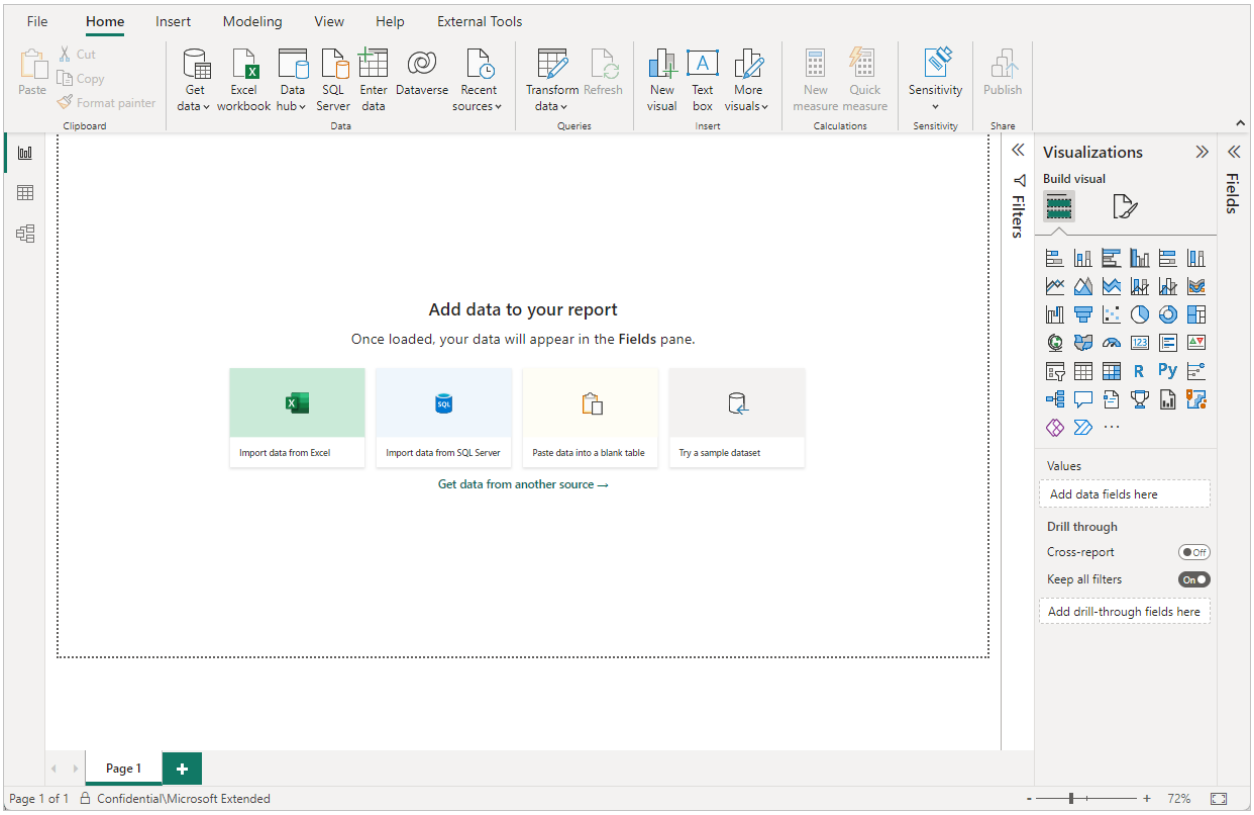
One common workflow in Power BI begins by connecting to data sources in Power BI Desktop and building a report. You then publish that report from Power BI Desktop to the Power BI service, and share it so business users in the Power BI service and on mobile devices can view and interact with the report.

This workflow is common, and shows how the three main Power BI elements complement one another

Connect to data in Power BI Desktop

Launch Power BI Desktop

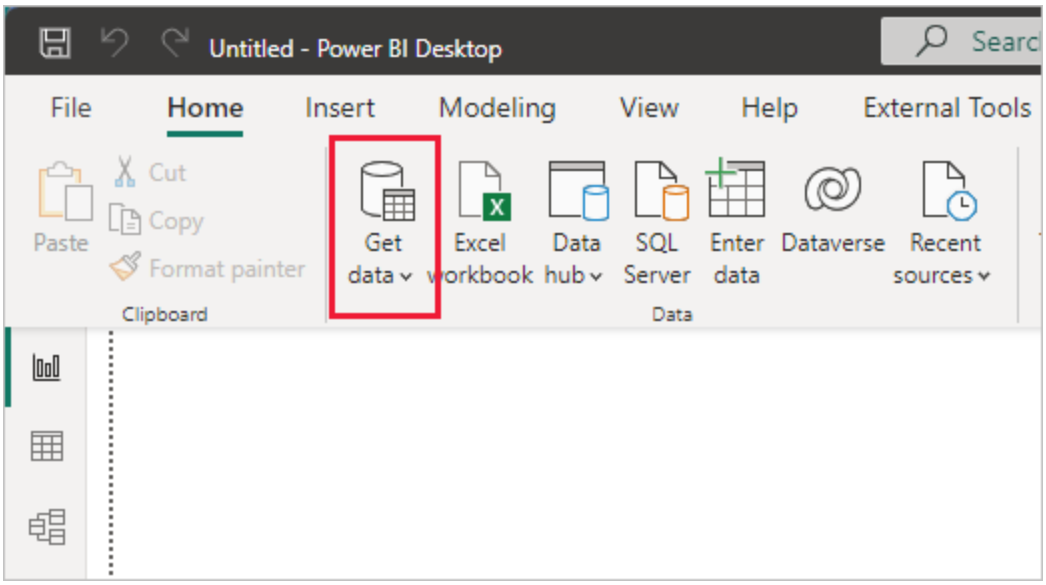
Once you install Power BI Desktop, launch the application so it's running on your local computer. You're presented with a Power BI tutorial. Follow the tutorial or close the dialog to start with a blank canvas. The canvas is where you create visuals and reports from your data.



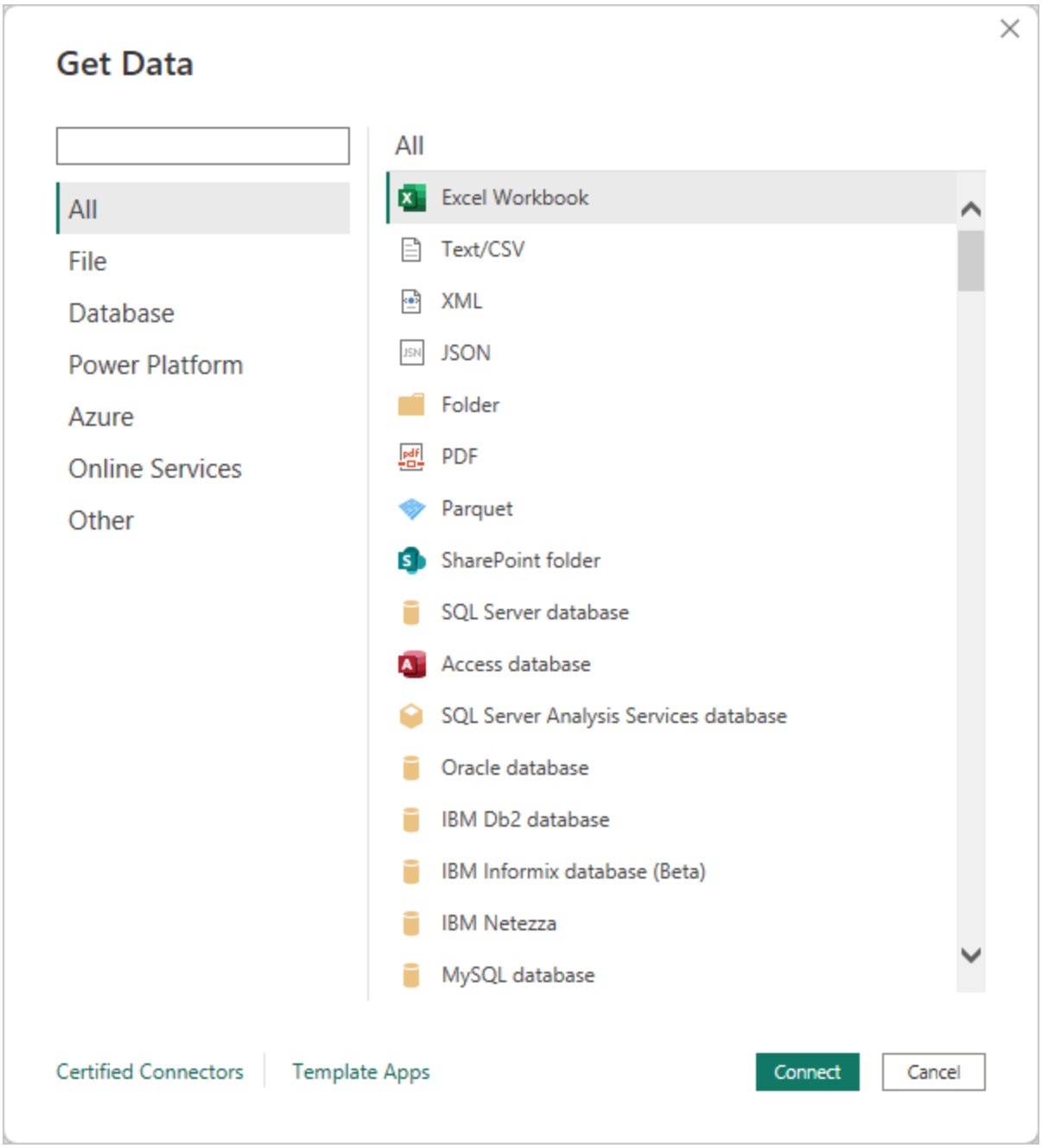
Connect to data

With Power BI Desktop, you can connect to many different types of data. These sources include basic data sources, such as a Microsoft Excel file. You can connect to online services that contain all sorts of data, such as Salesforce, Microsoft Dynamics, Azure Blob Storage, and many more.

To connect to data, from the **Home** ribbon select **Get data**.

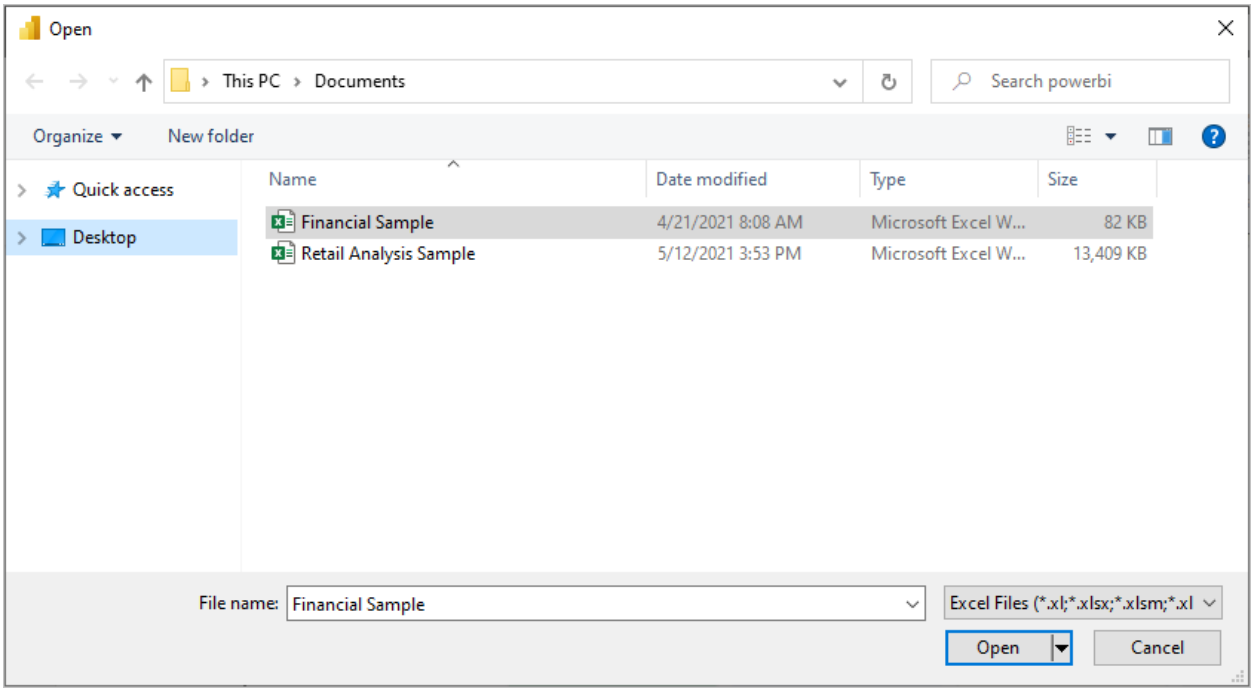


The **Get Data** window appears. You can choose from the many different data sources to which Power BI Desktop can connect. In this quickstart, use the Excel workbook that you downloaded in Prerequisites.

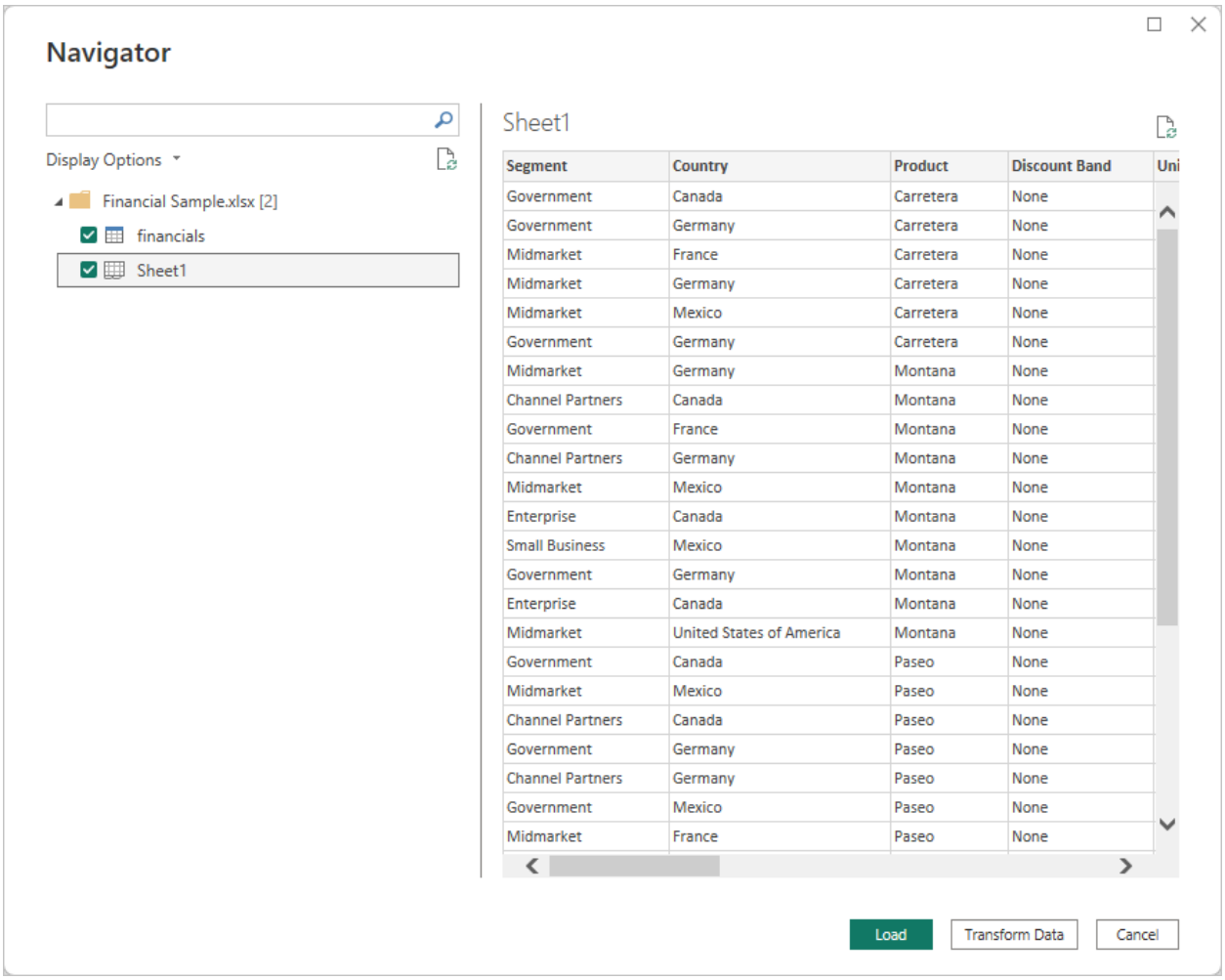


Since this data source is an Excel file, select **Excel** from the **Get Data** window, then select the **Connect** button.

Power BI prompts you to provide the location of the Excel file to which to connect. The downloaded file is called *Financial Sample*. Select that file, and then select **Open**.



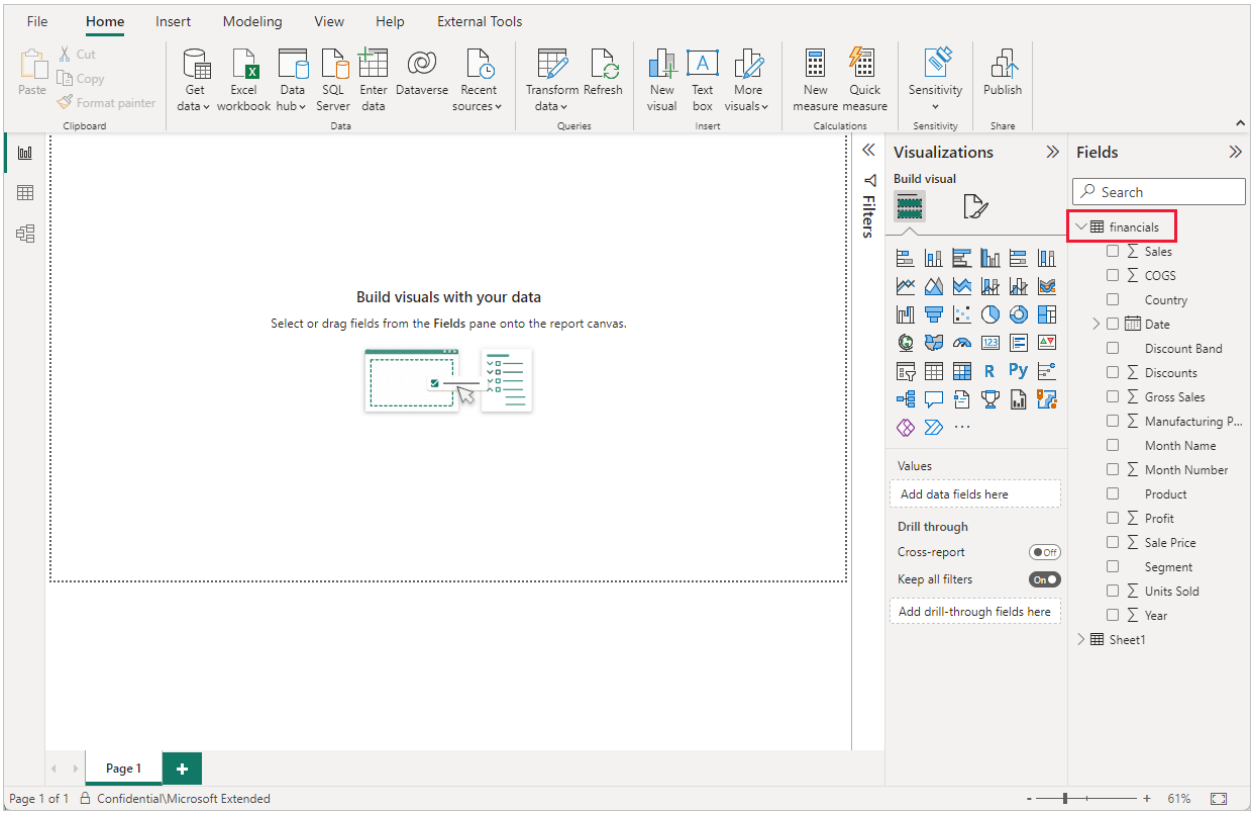
Power BI Desktop then loads the workbook and reads its contents, and shows you the available data in the file using the **Navigator** window. In that window, you can choose which data you would like to load into Power BI Desktop. Select the tables by marking the checkboxes beside each table you want to import. Import both available tables.



Once you've made your selections, select **Load** to import the data into Power BI Desktop.

View data in the Fields pane

Once you've loaded the tables, the **Fields** pane shows you the data. You can expand each table by selecting the arrow beside its name. In the following image, the *financials* table is expanded, showing each of its fields.



And that's it! You've connected to data in Power BI Desktop, loaded that data, and now you can see all the available fields within those tables.

What Is ETL?

The Extract, Transform, and Load (ETL) is a process that **extracts**, **transforms**, and **loads data from multiple sources to a data warehouse or a unified data repository.** This centrally collected data, in the repository, makes it easier to analyze further and handle the data. It also acts as a single point for accurate and consistent data requirements of teams and businesses.

What Is the Need for Power BI Extract Transform Load?

Having been briefed on the elementary steps of the Power BI Extract Transform Load mechanism, let's look at the reasons you need **Power BI ETL.** Because we are simply making a copy of the data, the whole Power BI Extract Transform Load process does not and **cannot modify** or influence anything in the original data source.

However, when **declining performance** becomes a problem, we can examine the query to discover what is causing the slowdown and what **modifications** should be made. But, we must first ensure that the query is correct before working on increasing **query** performance.

The Power Query available in Power BI uses Power BI Extract Transform Load (ETL) to **process data** and increase performance. In this article, we will look at how Power BI's Power Query handles **data processing** using the Power BI Extract Transform Load mechanism.

Extract – Pull data from source: Excel, csv, text, database file
Transform – Data processing, Data cleaning
Load – For analysis

Report View – For visualization
Table View – To see the data
Model View – To create relationship among data