Lesson 2

Topic: Importing Data into Power BI
Prerequisites: Download Sales_Data.csv file

1. **List three data sources Power BI can connect to.**

   Power BI can connect to a wide range of data sources. Here are three common ones:

   1. Excel Workbook – Power BI can import data directly from Excel files (.xlsx, .xls), including tables, named ranges, and Power Query queries.

   2. SQL Server Database – Power BI can connect to SQL Server to retrieve and analyze data from relational databases.

   3. SharePoint Online List – Power BI can pull data from SharePoint Online, which is useful for collaboration scenarios in organizations using Microsoft 365.

2. **What is the first step to import data into Power BI Desktop?**

   The first step to import data into Power BI Desktop is to click on the **"Get Data"** button on the Home tab. This allows you to choose the data source you want to connect to (e.g., Excel, SQL Server, Web, etc.).

3. **How do you refresh imported data in Power BI?**

   To refresh important data in Power BI Desktop, you can click the "Refresh" button on the Home tab. This updates the data in your report by reloading it from the original data source.

4. **What file formats can Power BI import directly? (Name two.)**

   Power BI can directly import data from several file formats. Two common ones are:

   1. Excel files (.xlsx, .xls).

   2. CSV files (.csv).

5. What does the "Navigator" window show after selecting a data source?

After selecting a data source in Power BI, the "Navigator" window shows a list of available tables, sheets, or objects from that source. It allows you to preview the data and select which table or data elements you want to load into Power BI.

6. Import Sales_Data.csv and load only the "Product" and "Price" columns.

1. Open Power BI Desktop.
2. Click on "Get Data" -> choose "Text/Csv" -> click "Connect".
3. Browse and select the Sales_Data.csv file -> click "Open".
4. In the Navigator window, preview the data.
5. Click "Transform Data" to open Power Query Editor.
6. In power BI query. Select only the "Product" an "Price" columns.
7. Click "Close & Apply" to load the selected columns into Power BI.

7. How would you change Order Date to a date format during import?

1. After importing the data, click **"Transform Data"** to open **Power Query Editor**.
2. Find the **"Order Date"** column.
3. Click on the column header, then click the **data type icon** (usually showing "ABC" or current type).
4. Select **"Date"** from the dropdown list.
5. Power BI will convert the column to **date format**.
6. Click **"Close & Apply"** to save the changes and load the data.

8. What is the difference between "Load" and "Transform Data" in the import dialog?

- **Load**:
  Directly loads the selected data into Power BI without making any changes. It's quick and used when the data is already clean and ready to use.
- **Transform Data**:

Opens the Power Query Editor, where you can clean, filter, rename, change data types, remove columns, and perform other data preparation tasks before loading it into Power BI.

9. **Why might you see an error when connecting to a SQL database? (Name one reason.)**

Incorrect server name or database credentials – If the server name, database name, username, or password is wrong, the connections will fail.

10. **How do you replace a data source after importing it?**

   1. Go to the Home tab.
   2. Click on Transform Data -> then Data Source Settings.
   3. In the Data Source Settings window, select the current data source.
   4. Click Change Source
   5. Browse or enter the new data source.
   6. Click OK, then Close, and refresh the data.

11. **Write the M-code to import only rows where Quantity > 1.**

   let

      Source = Csv.Document(File.Contents("C:\Path\To\Your\File.csv"), [Delimiter=",",
   Columns=5, Encoding=65001, QuoteStyle=QuoteStyle.None]),

      PromotedHeaders = Table.PromoteHeaders(Source, [PromoteAllScalars=true]),

      ChangedTypes = Table.TransformColumnTypes(PromotedHeaders, {{"Quantity",
   Int64.Type}}),

      FilteredRows = Table.SelectRows(ChangedTypes, each [Quantity] > 1)

   in

      FilteredRows

12. **How would you change the data source if Sales_Data.csv changed?**

   1. Go to the Home tab.
   2. Click on Transform Data -> then Data Source Settings.
   3. In the window that appears, find and select Sales_Data.csv.

4. Click Change Source
5. Browse to the new file location or select the updated file.
6. Click OK, then Close the settings window.
7. Click Refresh to update your data.

13. Troubleshoot: Your CSV import fails due to a "mixed data type" error—how do you fix it?

1. Open Power Query Editor:
   Go to Home-> Transform Data.
2. Identify the problematic column:
   Look for a column with a yellow warning icon or unusual data.
3. Change the data type manually:
   Click on the column header -> Click the data type icon -> Choose the correct data type.
4. Handle errors (optional):
   If there are rows that don't fit the selected type, you can:
   Remove errors: Right-click the column -> Remote Errors.
   Replace errors: Right-click the column -> Replace Errors
5. Apply changes:
   Click Close & Apply to save and return to Power BI.

14. Connect to a live SQL database with parameters (e.g., filter by year).

1. Create a Parameter
   - In Power BI Desktop, go to Home -> Manage Parameters -> New Parameter.
   - Name it something like SelectYear.
   - Set the data type to Whole Number or Text, depending on your SQL column type.
   - Choose List of values or allow any value -> enter default value
2. Connect to SQL Server
   - Go to Home ->Get Data -> SQL Server
   - Enter the Server name and Database name
   - Choose DirectQuery (for live connection).
   - Click OK.
3. Use the Parameter in the Query

- When prompted to select tables, choose the needed table and click Transform Data
- In Power Query Editor, filter the Year column using your parameter:
  - Click the filter icon on the Year column -> choose Text Filters or Number Filters -> Equals.
  - In the filter Window, instead of a fixed value, click the small box and select Parameter -> choose SelectYear.

4. Apply Changes
   - Click Close & Apply.
   - Now your report will only show data for the selected year.

15. How would you automate data imports using Power BI and Power Automate?

Use Power Automate to Trigger Dataset Refresh:

1. Go to Power Automate.

2. Click Create -> Choose a trigger:

   - Example: When a file is created or modified in OneDrive/SharePoint.

3. Add an Action:

   - Search for Power BI.
   - Select "Refresh a dataset".

4. Choose your workspace and the dataset you want to refresh.

5. Save the flow.