Power BI Files: [monika-4dec/Data-Visualization-using-Power-BI](https://github.com/monika-4dec/Data-Visualization-using-Power-BI)

[Power BI](https://app.powerbi.com/home?experience=power-bi)  
Web Data: importing data  
<https://en.wikipedia.org/wiki/UEFA_European_Football_Championship>   
<https://en.wikipedia.org/wiki/List_of_U.S._state_abbreviations>  
<https://en.wikipedia.org/wiki/List_of_U.S._state_abbreviations>

real time streaming data  
<https://www.pubnub.com/demos/real-time-data-streaming/?show=demo>  
Hi all,

Below is the Day 1 Lab exercise:-

**Lab Exercise: Power BI Desktop – Get Data & Walkthrough**

**Objective:**

Participants will:

* Learn the Power BI Desktop interface
* Use “Get Data” from multiple sources
* Understand the data model and data view
* Create simple visuals to interpret the data

**Pre-Requisites:**

* Power BI Desktop installed
* Sample files provided:
  + HR\_Data.xlsx
  + Sales\_2024.csv

**Lab Instructions**

**Part 1: Power BI Desktop Walkthrough**

1. **Open Power BI Desktop**
   * Observe the **Home tab**, **Report View**, **Data View**, and **Model View**
2. **Familiarize Yourself With:**
   * **Ribbon** options (Home, Insert, Modeling, etc.)
   * **Visualizations Pane**
   * **Fields Pane**
   * **Pages and Filters Panel**
3. **Create a New Report**
   * Save it as MyFirstReport.pbix

**Part 2: Get Data – Excel**

1. Go to **Home → Get Data → Excel**
2. Select HR\_Data.xlsx
3. Load the worksheet **Employees**
4. Explore the columns in the **Data View**:
   * Identify columns like Department, Gender, Salary

*Task: Rename the column “Emp\_ID” to “Employee ID”*

**Part 3: Get Data – CSV**

1. Go to **Home → Get Data → Text/CSV**
2. Load Sales\_2024.csv
3. Explore the table:
   * Identify fields like Region, Sales Amount, Product Category

*Task: Change the data type of “Date” column to Date*

**Part 4: Model View**

1. Go to **Model View**
2. Check for any automatic relationship between Employees and Sales\_2024
3. If not present, create a relationship:
   * Use **Region** or **Department**, if common

*Task: Create a relationship between Department columns (if applicable)*

**Part 5: Simple Visuals**

1. Go to **Report View**
2. Create the following visuals:
   * **Bar Chart**: Total Sales by Region
   * **Pie Chart**: Gender distribution in Employees
   * **Card Visual**: Total Sales Amount

*Task: Add Title to each chart and format it using Visualizations pane*

Agenda: Process the data- feature Engineering on the parameters of our dataset

Power BI files: [monika-4dec/Data-Visualization-using-Power-BI](https://github.com/monika-4dec/Data-Visualization-using-Power-BI)

Post Read AI Insights for Power BI: [Connect to AI Insights in Power BI Desktop - Power BI | Microsoft Learn](https://learn.microsoft.com/en-us/power-bi/transform-model/desktop-ai-insights)  
Quick Hands on Exercisr-

Use sales data:

1. Calculate total sales in each region and show it in a new query
2. create a relationship between these two creates and identify the cardinality between them
3. Measure number of Quantity sold
4. apply split operation in the right set of parameters and replace it with the value that converts t data type one to another

= Table.TransformColumnTypes(Source, {  
    {"Column1", type text},  
    {"Column2", type number},  
    {"Column3", type date}  
})

**Power BI Lab Exercise: Query Editor - Home & Transform Tabs**

**Objective:**

To gain hands-on experience in using Power BI’s Query Editor to load, clean, and transform data using the **Home** and **Transform** tabs.

**Dataset: Sales\_Data.csv**

**Part A: Using the Home Tab in Query Editor**

**Step 1: Load Data**

* Open Power BI Desktop
* Go to **Home > Get Data > Text/CSV**
* Load the Sales\_Data.csv

**Step 2: Launch Query Editor**

* From the top ribbon, go to **Home > Transform data**

**Step 3: Explore Home Tab Options**

Perform the following actions:

1. **Remove Rows**
   * Use **Remove Rows > Remove Top Rows** → Remove first 1 row
   * Use **Remove Rows > Remove Blank Rows**
2. **Keep Rows**
   * Try **Keep Top Rows** → Keep first 10 rows
3. **Use First Row as Headers**
   * If your headers are in Row 1, use **Use First Row as Headers**
4. **Split Column**
   * Split the Order Date column using **Split Column > By Delimiter** (e.g., space or slash)
5. **Group By**
   * Group data by Region and aggregate Sales using **Sum**
6. **Sort Data**
   * Sort Sales column in descending order

**Part B: Using the Transform Tab in Query Editor**

**Step 4: Data Type Changes**

* Change Sales and Quantity columns to **Decimal Number**
* Change Order Date to **Date** format

**Step 5: Formatting Columns**

* Rename Product column to Product Name
* Use **Format > Trim** on Region column to remove leading/trailing spaces

**Step 6: Replace Values**

* Use **Replace Values** to replace “North” with “North Region” in the Region column

**Step 7: Pivot/Unpivot**

* Try **Unpivot Columns** for Sales and Quantity
* Revert with **Pivot Column** (optional)

**Step 8: Add Column from Example**

* Go to **Add Column tab > Column from Examples** and extract **Month** from Order Date
* Folder Import - Combine method & without combine method: EMT1360 files
* Import individual datasets into queries
* Append Query Method - 6 states data
* Merge Query Method - 6 states data+manager data

NEw columns from examples: [Add a column from examples in Power BI Desktop - Power BI | Microsoft Learn](https://learn.microsoft.com/en-us/power-bi/create-reports/desktop-add-column-from-example)  
  
Day 3 Exercise: [Data-Visualization-using-Power-BI/03+Financial+Data.zip at main · monika-4dec/Data-Visualization-using-Power-BI](https://github.com/monika-4dec/Data-Visualization-using-Power-BI/blob/main/03%2BFinancial%2BData.zip)

Data-Visualization-using-Power-BI/03+Financial+Data.zip at main · monika-4dec/Data-Visualization-using-Power-BI

Contribute to monika-4dec/Data-Visualization-using-Power-BI development by creating an account on GitHub.

**Power BI Query Editor** exercises you can do with your dataset.

These tasks focus on data transformation, cleaning, and preparation—no methods, just what to find and do:

* Remove any rows where essential columns (like Country, Product, Units Sold) are blank or null.
* Change data types:
  + Convert Units Sold, Manufacturing Price, Sale Price, Gross Sales, Discounts, Sales, COGS, and Profit to numeric types.
  + Change Date to a date type, Month Number to whole number, Year to whole number.
* Format columns:
  + Remove currency symbols (like $) from price and sales columns.
  + Standardize text columns (e.g., set Segment and Product to uppercase).
* Filter data:
  + Exclude rows where Discount Band is 'None'.
  + Show only data for a specific Country or Segment.
* Split columns:
  + If Date is in a combined format (e.g., "1/1/2014"), split into Day, Month, and Year columns.
* Create new columns:
  + Add a column for Net Sales (Sales minus Discounts).
  + Add a column for Profit Margin (Profit divided by Sales).
* Rename columns for clarity (e.g., change "COGS" to "Cost of Goods Sold").
* Remove duplicates based on a combination of Segment, Country, Product, and Date.
* Group data:
  + Aggregate Units Sold and Profit by Year, Country, or Product.
* Sort data by Date, Profit, or Sales in descending order.
* Pivot or unpivot columns to restructure data for analysis (e.g., unpivot Month columns if present).
* Replace values:
  + Replace any "-" or blank values in Discounts with 0.
* Remove unnecessary columns (e.g., if both Month Name and Month Number exist, keep only one).

These tasks will help you explore, clean, and prepare your dataset for reporting and analysis in Power BI Query Editor