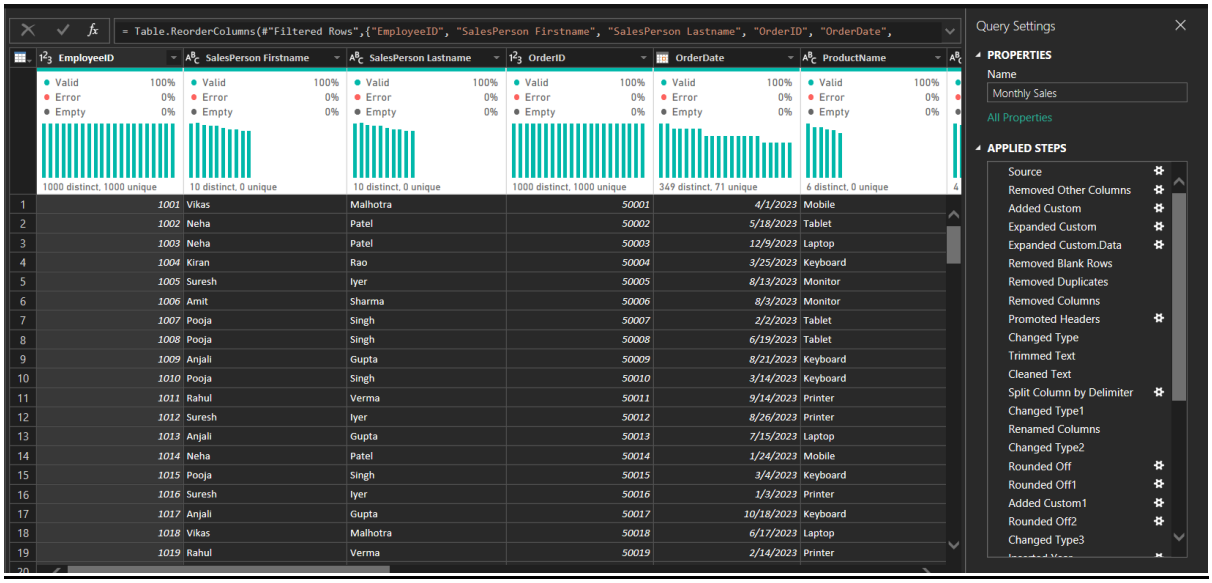
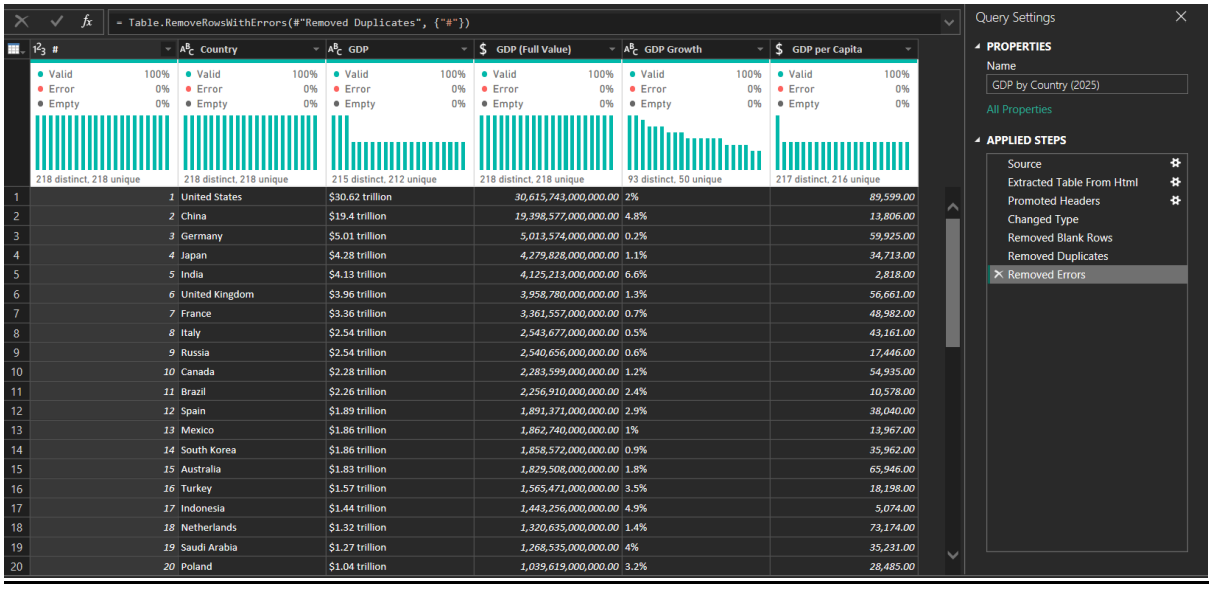
Sources Used

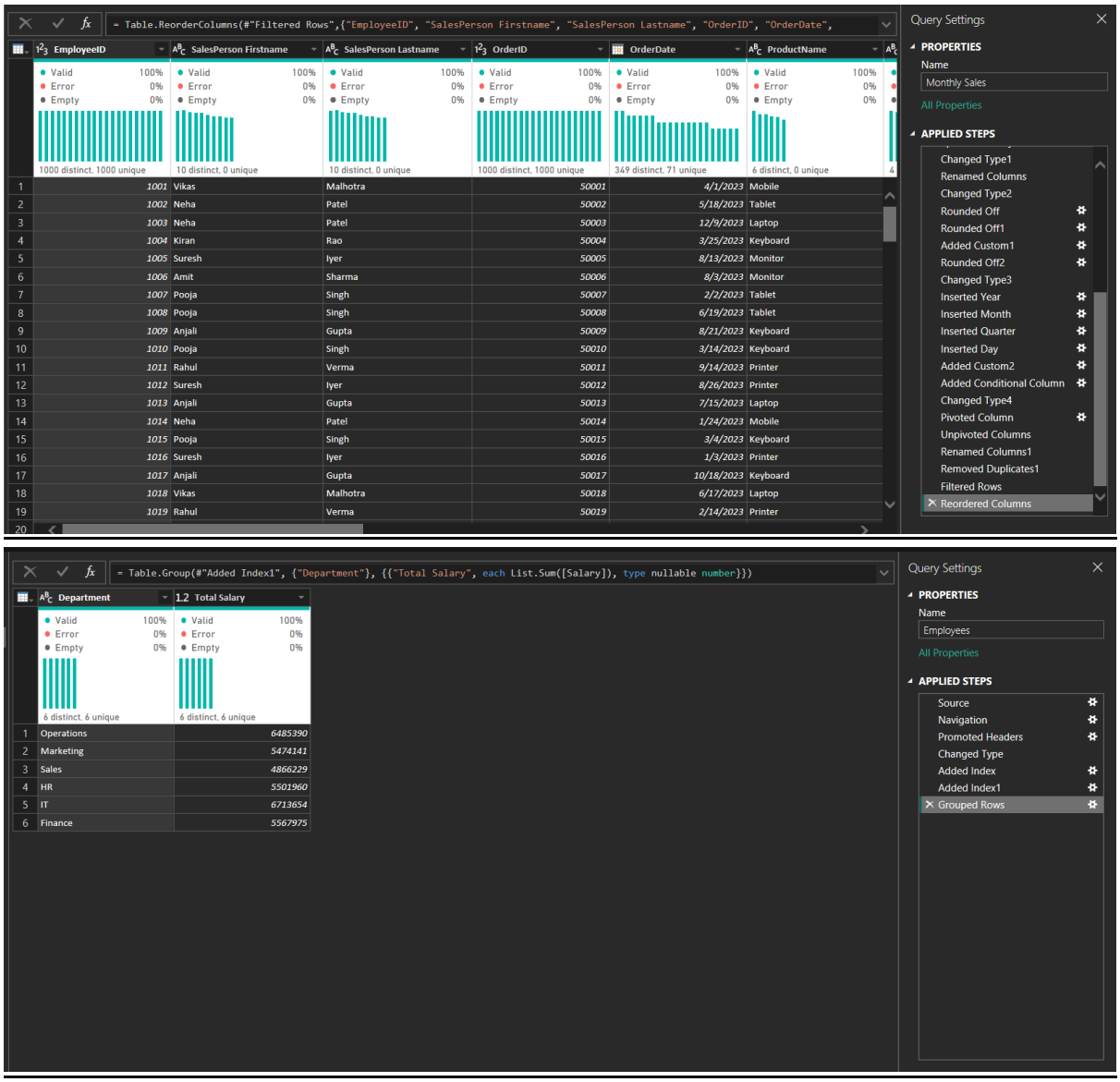
1. **Web Source (URL):**
   Sample structured data was sourced from a publicly available web page for learning and practice purposes:
   [GDP by Country (2025) - Worldometer]

2. **Generated Data Source:**
   Additional datasets (Sales data, Employee data, Monthly Excel files) were **synthetically generated using ChatGPT** exclusively for educational and project simulation purposes.
   The data does not represent any real organization or individual and was created to demonstrate Power BI Power Query concepts such as data extraction, transformation, merging, appending, pivoting/unpivoting, and refresh simulation.

Transformation applied







Challenges Faced & How They Were Solved

1. Combining Multiple Excel Files from a Folder

Challenge:
While loading multiple monthly Excel files from a folder, issues such as column order mismatch and data duplication were encountered.

Solution:
The Get Data → Folder → Combine & Transform option in Power Query was used.
A sample file structure was standardized, and Append Queries was applied to combine all files into a single consolidated dataset.

2. Incorrect Data Types

Challenge:
Several date and numeric columns were incorrectly stored as text, causing errors during calculations.

Solution:
The Change Data Type and Change Type with Locale options in Power Query were used to convert columns into appropriate date and numeric formats.

3. Pivot and Unpivot Column Misalignment

Challenge:
After performing pivot and unpivot operations, column positions changed and caused confusion in the data structure.

Solution:
Columns were reordered after unpivoting, and meaningful column names were assigned to maintain a consistent and readable structure.

4. Creating Calculated and Conditional Columns

Challenge:
Creating calculated fields such as Profit and categorizing sales into High, Medium, and Low segments was initially complex.

Solution:
Custom Columns and Conditional Columns were created in Power Query using defined business rules
(e.g., Profit = Revenue − Cost).

5. Refresh Simulation with New Files

Challenge:
Ensuring that newly added Excel files in the folder automatically followed the same transformation logic during refresh.

Solution:
A dynamic folder connection was maintained with a consistent file structure.
On refresh, Power Query automatically applied all transformations to the new files.

6. Source Settings and Parameter Management

Challenge:
Changes in data source paths caused query refresh failures.

Solution:
Parameters were used to make folder paths dynamic, and Data Source Settings were properly configured to manage credentials.