

## ASSIGNMENT 2

### 1. Data Aggregation with groupby

- **Task:** Use `groupby` on a dataset to calculate aggregated metrics like sum, mean, and count for grouped data (e.g., sales by region).

### 2. Time Series Analysis

- **Task:** Load a time-series dataset, convert date columns to datetime objects, and calculate monthly averages for a numerical column.

### 3. Correlation Analysis

- **Task:** Compute the correlation matrix for a dataset and visualize it using a heatmap with `seaborn`.

### 4. Data Merging and Joins

- **Task:** Work with two related datasets and merge them using different join types (inner, outer, left, right).

### 5. Data Cleaning with Custom Functions

- **Task:** Create a function to clean a column (e.g., standardizing text format or filling missing values) and apply it to the DataFrame using `.apply()`.