**ASSIGNMENT 2**

PDA-BTP

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().