**WEBSITE TRAFFIC ANALYSIS**

**PHASE-4**

**1.Data Loading:**

You started by loading a dataset from a CSV file using pandas' `read\_csv` function. The dataset appears to contain information about daily website visitors.

**2. Column Renaming:**

You renamed the columns to make them more readable. The original column names were replaced with the following names:

- 'Day.Of.Week' -> 'day\_of\_week'

- 'Page.Loads' -> 'page\_loads'

- 'Unique.Visits' -> 'unique\_visits'

- 'First.Time.Visits' -> 'first\_visits'

- 'Returning.Visits' -> 'returning\_visits'

**3. Data Cleaning:**

You removed commas from numerical columns using the `data.replace` method. This is often done to convert numbers in string format (with commas) into integers or floats.

**4. Data Type Conversion:**

You converted the numerical columns ('page\_loads', 'unique\_visits', 'first\_visits', 'returning\_visits') to integer data types using the `astype` method. This ensures that the data is stored as integers, which is more suitable for analysis.

**5. Data Analysis and Visualization:**

You used various data visualization libraries, including Plotly Express and Seaborn, to generate plots and visualizations. Some of the visualizations created include line plots showing the trends of page loads and visitor types over time, histograms showing unique visits for each day, bar plots showing the sum of unique visits for each day, and a heatmap illustrating the correlation between different visitor metrics.

**6. Feature Engineering:**

You created a new binary column 'days\_f' in a DataFrame called 'pred\_df.' This column is assigned a value of 1 if the 'Day' is one of 'Tuesday,' 'Wednesday,' 'Thursday,' or 'Monday,' and 0 if not. This can be used for further analysis and modeling.

Overall, the code performs data loading, cleaning, conversion, visualization, and feature engineering on a dataset related to website visitor statistics. It prepares the data for analysis and provides insights into visitor patterns over time and on specific days of the week.