**MILESTONE 2**

In my analysis of road infrastructure and population distribution in India, I’ve performed a comprehensive exploration using libraries such as Pandas, NumPy, Matplotlib, Seaborn, and Plotly.

**Here's a summary of my work:**

1. *Data Loading and Cleaning:* I loaded the dataset `India\_Road\_Population\_Data.csv` using Pandas and replaced NaN values with zeros to ensure data integrity.

2. *Visualization of Road Infrastructure:*

* Visualized the total lengths of different road types across India using bar plots.
* Analyzed the average road density across various road types using another bar plot.
* Explored the population distribution in India using a bar plot.

3. *State-wise Analysis:*

* Conducted a state-wise comparison of urban and rural road densities using a scatter plot.
* Investigated the distribution of road lengths across states and union territories using a tree map.

4. *Advanced Visualizations:*

* Utilized Violin plots to compare the distributions of total road length and population across states.
* Explored correlations between different road infrastructure variables and population using a correlation matrix heatmap.
* Created a choropleth map to visualize the total road length across states and union territories.

Overall, the analysis provides valuable insights into the road infrastructure and population dynamics of India, which could be useful for policymakers, urban planners, and researchers.