Tuesday 28-01-2025

Assignment: Traffic Analysis Project

Dear Trainees,

As part of our training program, I am assigning you a task to help solidify your understanding of the concepts we have covered in our sessions, I am assigning a practical task to help you apply what you have learned.

* This assignment will focus on practicing key attributes and functions using Google Colab or any tools.

Tasks: Using the dataset provided, answer the following questions:

1. **Vehicle Distribution Analysis**:
   What is the distribution of vehicle counts for cars, bikes, buses, and trucks?
   - Use boxplots, histograms plots to visualize the distribution.
2. **Traffic Situation Distribution**:
   What is the distribution of traffic situations?
   - Use a bar chart or pie chart to visualize.
3. **Variation by Day of the Week**:
   How does the vehicle count vary by day of the week?
   - Extract the day of the week from the Time column and create a comparison using bar plots or boxplots.
4. **Car Count vs. Traffic Situation**:
   What is the relationship between car count and traffic situation?
   - Use scatter plots, boxplots, or violin plots to visualize.
5. **Bike Count vs. Traffic Situation**:
   What is the relationship between bike count and traffic situation?
6. **Bus Count vs. Traffic Situation**:
   What is the relationship between bus count and traffic situation?
7. **Truck Count vs. Traffic Situation**:
   What is the relationship between truck count and traffic situation?
8. **Total Vehicle and Count Traffic Situation**:
   How does the total vehicle count vary by traffic situation?
   - Calculate the total count for each traffic situation and compare.
9. **Busiest Hours of the Day**:
   What are the busiest hours of the day for traffic?
   - Analyze the total vehicle counts by hour and visualize with a bar chart or heatmap.

Deliverables:

A well-documented Python notebook (**.ipynb**) containing:

- Code for data preprocessing and analysis.
- Visualizations answering each question.

Submit your assignment by **Sunday 01/02/2025 Until 12:00PM**

Additional Notes:

- If you have any questions or need clarification, feel free to reach out to me.
- This assignment is an opportunity to practice and apply your knowledge, so make the most of it.

Best regards,

DS. Tariq