Project Report

Objective : Give the valuable insights from the dataset that related to information of the vehicle through the Exploratory data analysis(EDA) and do feature engineering.

Step 1.) Data Loading and preparation:

- In this step I load the dataset through pandas before this import the libraries which I required in this project.
- Determine the size of the dataset (number of rows and columns) then identifying the missing values in the dataset

Step 2.) Data Cleaning and preprocessing:

- Handling missing values in this step
- Handling duplicate records
- Handling the Outliers

Step 3.) Exploratory data analysis(EDA):

- In this step I perform Univariate and Bivariate analysis and finding the relationship between the variables that makes correlation in heatmap.
- Heatmap is very crucial to indentify the relationship between each variable, it show either the variables reflects strong relation or negative relation, if the value which is closer to '1' means strong relation. Through this analysis we can find which features we need to take or which features we need to ignore.
- Data visualization done in this part of analysis,
- I create Line chart, Scatterplot, barplot, violinplot, countplot

Step 4.) Feature Engineering:

- In this step I create a new feature from the existing feature that indentify the engine performance, by taking the torque percentage divided by engine load.
- Created a new column as "engine_performance" that give information about the engine performance.

Recommendations: Based on insights gathered, recommend strategies to improve vehicle performance, fuel efficiency, and operational reliability. These recommendations may include maintenance schedules based on engine performance metrics, driver behavior modifications to optimize fuel consumption, and potential upgrades or adjustments to vehicle systems based on identified correlations.

Conclusion : In conclusion, by following a structured approach from data loading to feature engineering and EDA, valuable insights have been derived regarding vehicle information. These insights not only enhance understanding of the dataset but also provide actionable recommendations for improving various aspects of vehicle operation and performance.