Introduction

Since the first automobile, the Benz Patent Motor Car in 1886, Mercedes-Benz has stood for important automotive innovations. These include the passenger safety cell with a crumple zone, the airbag, and intelligent assistance systems. Mercedes-Benz applies for nearly 2000 patents per year, making the brand the European leader among premium carmakers. Mercedes-Benz is the leader in the premium car industry. With a huge selection of features and options, customers can choose the customized Mercedes-Benz of their dreams.

Problem statement

I have been asked to reduce the time Mercedes-Benz spends on the test stand.Others will work with a dataset representing different permutations of features in a Mercedes-Benz car to predict the time it takes to pass testing. Optimal algorithms will contribute to faster testing, resulting in lower carbon dioxide emissions without reducing Mercedes-Benz's standards.

Structure Of project

- ☑ Exploratory data analysis (EDA)
  - Cleaning the Dataset

    Check for any irrelevant information and null values in the Train and Test dataframe .
  - Data preprocessing

    In this step , we should transform non-numerical labels to numerical labels.

    And use PCA to reduce the number of input variables.
- ☑ Train The Model

  Use the XGBoost to predict df_test.

  We use XGBoost to train our model ,because we have a large number of observations in the dataset.
- ☑ Evaluation

  Use MSE to measure how accurate the predictions are.