

1. INTRODUCTION

1.1 Overview

This project aims to predict CO₂ emissions from different types of vehicles by building a model using Machine Learning.

1.2 Purpose

To build a machine learning model using data and understand the behaviour of cars and their features to reduce the CO₂ emissions.

2. LITERATURE SURVEY

2.1 Existing problem

The transport sector is a major source of CO₂ emissions accounting to about 20% of total CO₂ emissions. This leads to increase in greenhouse effect and contributes to air pollution. As more thermal energy gets trapped by the atmosphere, the planet becomes warmer. Earth's temperature rises and this leads to increase in the global warming levels.

2.2 Proposed solution

Proposed solution is to reduce the global warming levels and worst impacts of climate change by reducing the amount of CO₂ emissions from vehicles. This can be achieved by increasing the efficiency of vehicle technology, using lower carbon fuels and electrification of cars. Using cleaner fuels is also necessary.

3. THEORITICAL ANALYSIS

3.1 Software designing

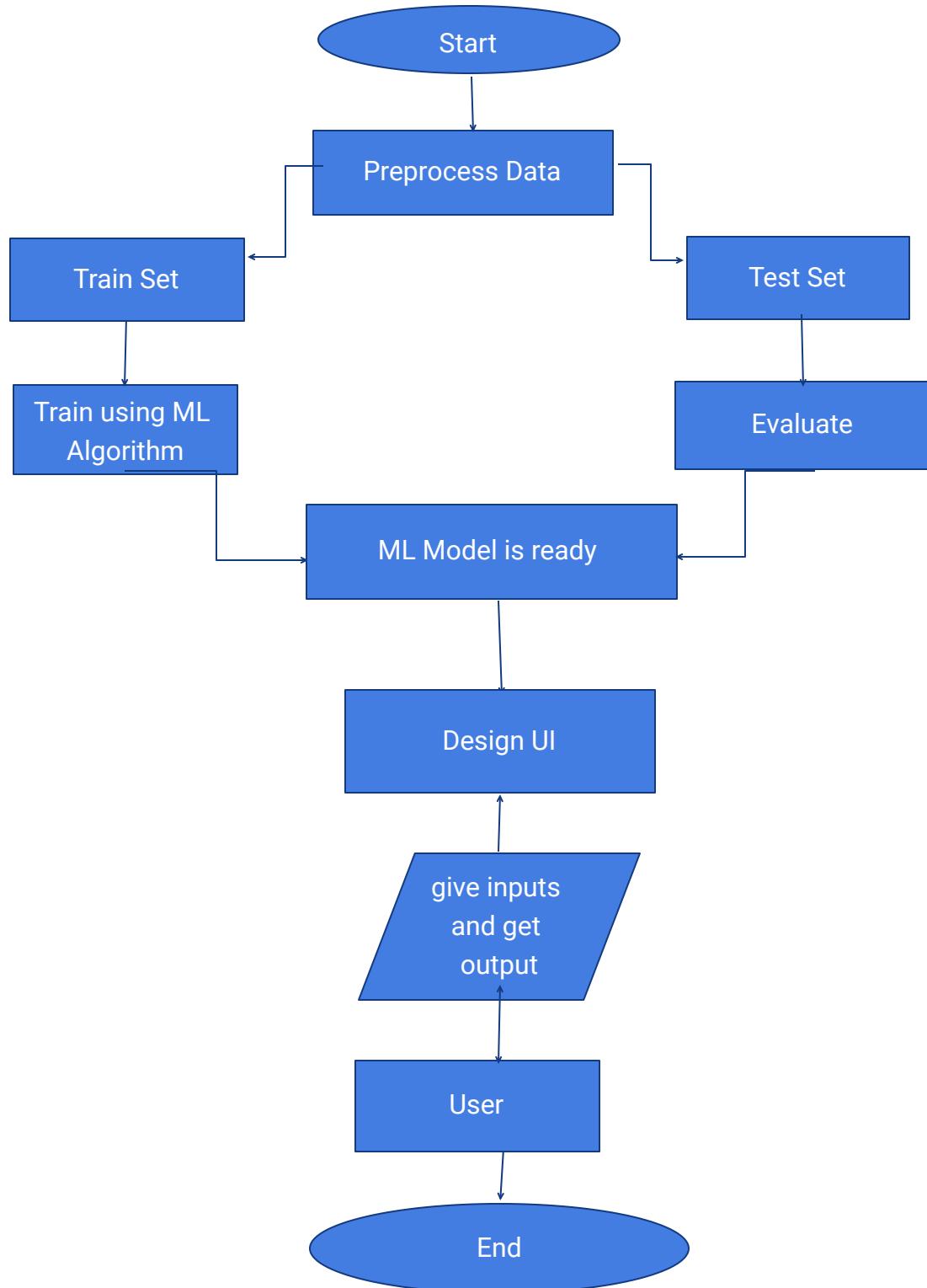
Anaconda Navigator-Jupyter,Spyder, packages such as numpy,seaborn,matplotlib,pandas,sklearn were used. Flask was used to build the web framework.

4. EXPERIMENTAL INVESTIGATIONS

As fuel consumption of the vehicle increases, so do the emissions. Diesel and gasoline contribute more to pollution than natural gas. Bigger engine size consumes more fuel and hence

leads to more emission. Automatic transmission is better than manual transmission.

5. FLOWCHART

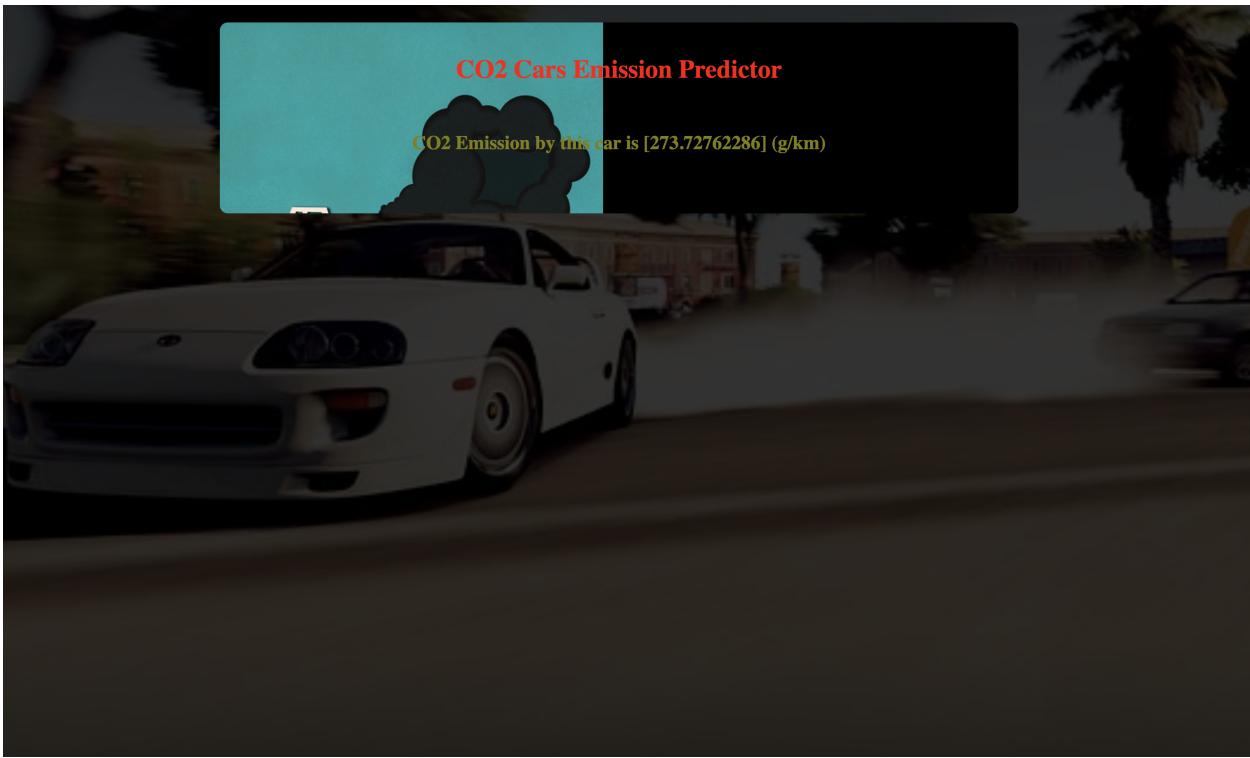
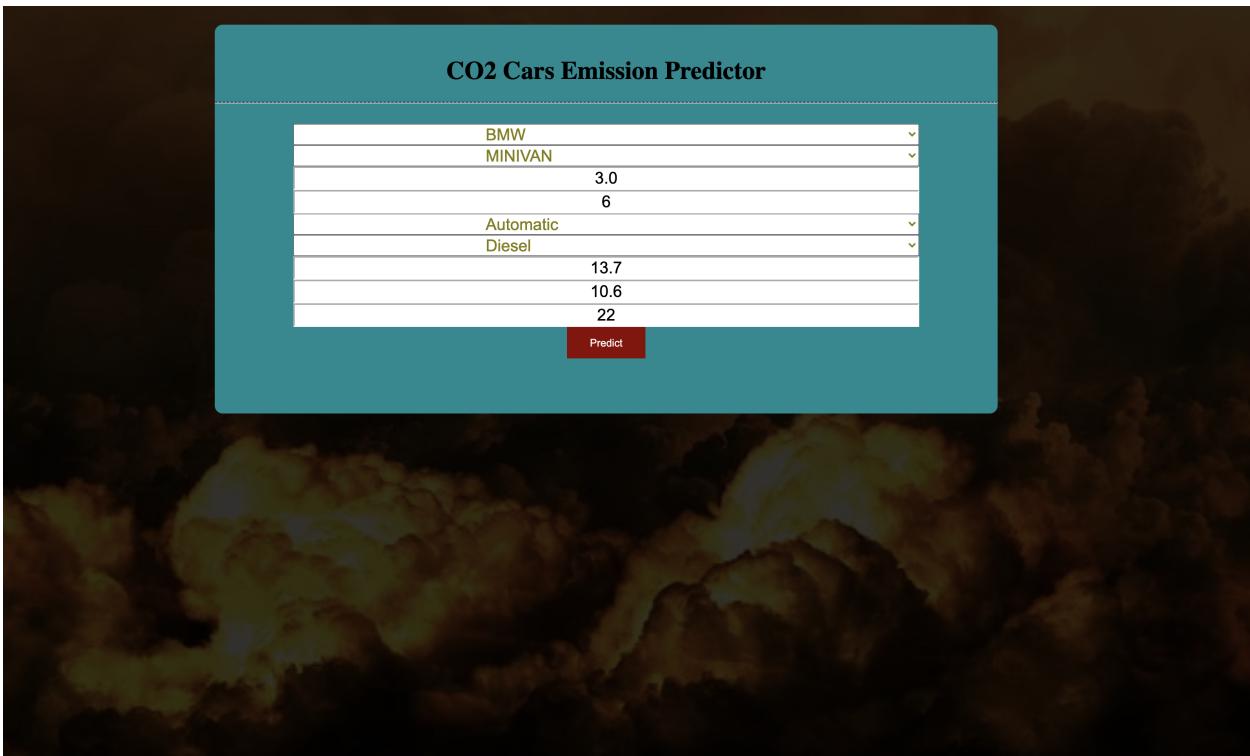


6.RESULT

The image shows a screenshot of a web application titled "CO2 EMISSION FROM CARS". The header features the "Smart Internz" logo and navigation links for "HOME" and "Prediction". The main title "CO2 EMISSION FROM CARS" is displayed prominently. Below the title is a teal-colored form titled "CO2 Cars Emission Predictor". The form contains several input fields and dropdown menus:

- Select the type of CAR
- Select the Car Class
- Enter the engine size
- Enter the Cylinders size
- Select transmission of the car
- Select the Fuel TypeRegular Gasoline
- Enter the Fuel Consumption City(L/100km)
- Enter the Fuel Consumption Highway(L/100km)
- Enter the Combine Fuel Consumption(mpg)

A red "Predict" button is located at the bottom of the form. The background of the page features a blurred image of a red car.



7. ADVANTAGES AND DISADVANTAGES

Prediction of CO₂ emissions is important to minimise their negative impact on climate change and global warming. Learning from past predictions and mistakes helps improve their future predictions. By understanding which type of vehicles emit the most CO₂ we can improve their efficiency or reduce the fuel consumption. This will have a huge impact on the environment. Disadvantage is that it is highly susceptible to errors if there is a lack of correct data.

8. APPLICATIONS

This model helps to predict the CO₂ emitted by vehicles and increase the fuel economy of cars. It can be used to understand the behaviour of vehicles and which fuel is more efficient and safer for the environment. It can also be used for future predictions and betterment of the environment.

9. CONCLUSION

Vehicles are needed for transportation in our day-to-day lives. But we also have to keep a track of the amount of CO₂ they are emitting and should switch to cleaner fuels for the safety of the environment. By building models using machine learning using past data, such problems can be tackled.

10. FUTURE SCOPE

This project can be used as a base for developing bigger projects on a larger scale. New features can also be added as and when required.

