Data Collection and Preprocessing Phase

Date	6 July 2024
Team ID	739652
Project Title	Trip-Based Modelling of Fuel Consumption in Modern Fleet Vehicles Using Machine Learning
Maximum Marks	2 Marks

Data Collection Plan & Raw Data Sources Identification Template

Elevate your data strategy with the Data Collection plan and the Raw Data Sources report, ensuring meticulous data curation and integrity for informed decision-making in every analysis and decision-making endea

Data Collection Plan Template

Section	Description
Project Overview	Using machine learning and advanced data analytics, the Trip-Based Modelling of Fuel Consumption in Modern Fleet Vehicles project seeks to increase fleet management fuel efficiency. By analyzing historical trip data which includes factors like traffic conditions, topography, vehicle load, and driver behavior the research develops predictive models that accurately predict fuel use for future travels. By using these models, fleet managers may optimize routes, change their driving patterns, and make well-informed decisions that result in significant fuel and operating expenditure savings. The project makes a substantial contribution to modern fleet management by guaranteeing smooth deployment and thorough reporting through integration with current fleet management systems.

Data Collection Plan	The data collection plan calls for obtaining information on vehicle specifications, trip characteristics, and driver behavior in addition to telemetry data (GPS, distance, speed, fuel usage) from onboard devices and external data (traffic, weather, and route kinds) via APIs. A centralized database will house all of the data that is continuously gathered and kept for use in real-time analysis and model training. Data relevance and accuracy will be ensured by routine validations and updates.
Raw Data Sources Identified	Raw data sources typically identified for predicting the fuel consumption for a trip include collecting vehicle telematics data (GPS coordinates, speed, acceleration, fuel consumption rates), and trip specifics (start/end times, distances, routes). Additionally, external data such as traffic conditions, weather reports, and road types will be gathered to enhance model accuracy with machine learning models for accurate fuel predictions

Raw Data Sources Template

Source Name	Description	Location/URL	Format	Size	Access Permissions
Drive Dataset	Raw data sources typically identified for predicting the fuel consumption for a trip include	https://drive.google.com/file/d/1TEeLjX_56Qk0Cz_43O3eA0oTHNzl8jih/view?usp=sharing	measurements.xls	(124.93 kB) GB	Public