**Documentation for Car Price Prediction Web App**

**Introduction**

This web application, referred to as AutoValue Insight, predicts the selling price of a car based on various input features such as the car's year of manufacture, kilometres driven, fuel type, transmission type, and additional information. The model employed for prediction is a Random Forest Regressor, which was initially trained on a dataset containing data on various cars and their selling prices.

**Data Preprocessing and Feature Engineering**

Feature engineering is essential for enhancing machine learning models' functionality. This is an explanation of the features' handling:

* **Year**: The year of manufacture was directly used as a numerical feature.
* **Kilometres Driven**: Since this feature offers useful data on the vehicle's usage, it was also utilized directly and unmodified.
* **Fuel Type**: A mapping dictionary was used to translate categorical values, such as "Petrol," "Diesel," "CNG," "LPG," and "Electric," into numerical values. This makes it possible for the model to handle categorical input efficiently.
* **Seller Type**: Similar mapping was done for this categorical feature, where values such as "Individual," "Dealer," and "Trustmark Dealer" were translated to numbers.
* **Transmission Type**: This either 'Manual' or 'Automatic', was also converted to numerical values for model usage.
* **Owner Type:** The variety of past owners is crucial for calculating the depreciation of a car. After assigning numerical values to categorical descriptors, this functionality was utilized directly.
* **Mileage, Engine, Maximum Power, Seats, Torque (Nm and RPM):** These numerical features were used directly as they are crucial indicators of a vehicle's performance and state.