USED CAR PRICE PREDICTOR APP - USER GUIDE

Developer : Aashifa

<u>Welcome</u>

Welcome to the **Car Dheko - Used Car Price Predictor App**!
This app leverages **Machine Learning** to estimate the price of used cars based on various features provided by the user.

Getting Started

Step 1: Launching the Application
- Open the Streamlit app on your system by running the script using the following command:
  streamlit run app.py
- Ensure you have all the required dependencies installed and the background image and model files are in the correct directory.

Step 2: Understand the Sidebar
- Navigate to the **Sidebar** to view:
    - **App Title**: "Car Dheko"
    - **Developer Information**: Developer: **Aashifa**
    - **App Features**: A brief description of what the app does.

Using the Predictor

Step 1: Enter Car Details

- Fill in the details of the car you'd like to predict the price for:
    1. **Car Name**: Choose a car model from the dropdown.
    2. **Kilometers Driven**: Enter the number of kilometers the car has been driven.
    3. **Engine Capacity (cc)**: Specify the engine's size in cubic centimeters.
    4. **Car Age (Years)**: Enter the car's age in years.
    5. **City**: Select the city where the car is located.
    6. **Number of Owners**: Choose how many previous owners the car has had.
    7. **Mileage (kmpl)**: Enter the car's mileage in kilometers per liter.
    8. **Maximum Power (bhp)**: Specify the car's maximum horsepower.
    9. **Fuel Type**: Choose the type of fuel the car uses (e.g., Diesel, Petrol, CNG, etc.).
    10. **Transmission**: Select whether the car has a manual or automatic transmission.

Step 2: Predict the Price

- Once all the fields are filled, click the **"Predict Price"** button.
- The app will display the estimated price of the car in **INR Lakhs**.
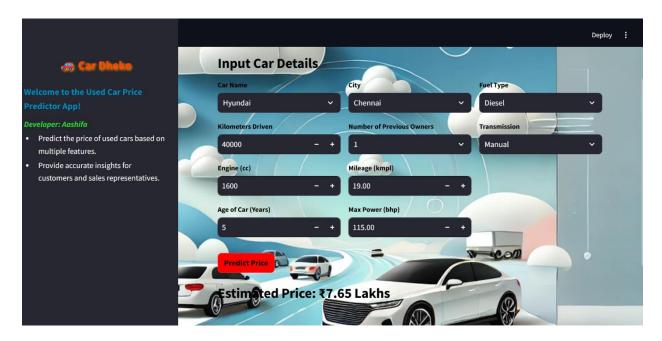
Example Use Case

A customer wants to sell a **Hyundai** car with the following details:
- 40,000 kilometers driven
- Diesel-powered
- Engine capacity of 1600 cc
- Age of the car: 5 years

- 1 previous owner
- Mileage: 19 kmpl
- Max power: 115 bhp
- Manual transmission
- Located in Chennai

Steps:
1. The customer inputs these details into the respective fields.
2. Upon clicking **"Predict"**, the application provides an estimated price, say **₹7.65 Lakhs**.
3. The customer can then use this information to set a competitive selling price.

Handling Errors

Input Validation:
The app checks for missing or invalid inputs. If an error occurs, you'll see messages like:
- "Kilometers Driven must be greater than 0."
- "Engine(cc) must be greater than or equal to 500."
- Ensure all fields are filled correctly and try again.

Model Loading Errors:
If the machine learning model fails to load, the app will notify you:
- "Model file not found. Please ensure it exists at the specified location."

Prediction Errors:
If something goes wrong during prediction, an error message will guide you:
- "Prediction failed: [Error Message]."

Key Features
1. **Interactive Input Fields**:
   - Dynamic dropdowns for car names, cities, and other options.
   - Number inputs with default values and step controls for convenience.

2. **Customizable Background**:
   o The app includes a visually appealing car-themed background image.
3. **Real-time Predictions**:
   o The app uses a pre-trained **Random Forest regression model** to make predictions.
4. **User-friendly Interface**:
   o Bright, bold text and an intuitive layout.

System Requirements
1. Python 3.7 or higher.
2. Required Python libraries:
   o streamlit, pandas, pickle, Pillow
3. **Machine Learning Model File**:
   o rf_regression_model.pkl

Credits
- **Developer**: Aashifa
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