CAR PRICE ANALYSIS

Description (2–3 Lines):

This project focuses on analyzing and visualizing car data to explore how different factors like brand, year, and fuel type affect selling prices. Using Python's Pandas, Matplotlib, and OpenPyXL, the data is processed and visualized through bar charts, pie charts, and line graphs, helping to understand key market trends.

Key Features (Within 1 A4 Page):

1. **Comprehensive Dataset:**
    - Real-world data containing attributes such as *Car ID*, *Year*, *Price*, *Present_Price*, *Fuel Type*, *Transmission etc*.
    - Suitable for both analysis and predictive modeling.
2. **Data Processing:**
    - Conducted using **Pandas** for importing, filtering, and summarizing data.
    - Checked for missing values and data consistency to ensure reliability.
3. **Visual Analysis:**
    - **Bar Chart:** Shows average selling price by car brand to identify top-performing brands.
    - **Pie Chart:** Displays fuel type distribution, revealing market share among petrol, diesel, and other fuels.
    - **Line Graph:** Illustrates year-wise price trends to observe depreciation or appreciation patterns.
4. **Tools and Libraries Used:**
    - **Pandas** – Data handling and manipulation.
    - **Matplotlib** – Graphical visualization.
    - **OpenPyXL** – Integration with Excel files.
    - **HTML, CSS, JavaScript** – For creating a simple, interactive dashboard layout.
5. **Dashboard Integration:**
    - Designed a web dashboard displaying all three charts together for clear and interactive insights.
    - Visuals are responsive, neatly organized, and easy to interpret.
6. **Insights Derived:**
    - High-brand cars maintain better resale value.
    - Diesel and petrol dominate the market composition.
    - Car prices decline predictably with model year, confirming depreciation trends.
7. **Applications:**
    - Helpful for **price prediction models**, **used-car market studies**, and **buyer-seller decision support**.
    - Can be expanded for machine learning prediction or business dashboards.