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Resell Car Price Prediction Using JS

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Abstract

In the contemporary automotive business, precise car price prediction is important for used car sales. Conventional tools are manual or rely on machine learning frameworks and, therefore, are sophisticated and out of reach for most people. This document offers an easy, light, and web-based approach with HTML, CSS, and JavaScript to predict car prices based on predetermined logical rules. The system in question enables car parameters such as model, year, fuel type, mileage, and condition to be entered and instantly offers an estimated price in terms of rule-based algorithms. This system is highly portable, cost-effective, and well-suited for academic tasks and personal use.

Key Words — Smart glass, object recognition, sign language interpretation, Text-to-Speech, Assistive Technology, Artificial Intelligence, computer vision, Access.

1. Introduction

Since online car marketplaces have become increasingly popular, buyers and sellers both need updated estimators of vehicle prices on an ongoing basis. The solutions currently available tend to be sophisticated machine learning systems and backend servers that are not easily within the reach of low-volume or entry-level users.

This work provides an alternate solution proposing a static client-side application implemented in HTML, CSS, and JavaScript to calculate the price of cars depending on data supplied by users. The idea is to produce an easily understandable solution with no dependence on server-based infrastructure that would provide instantaneous feedback in relation to predefined price rules.

The system eliminates the need for a backend or database, making it lightweight and easily deployable on any modern browser. It is run entirely client-side, not needing any kind of internet connection other than during the initial load. By implementing rule-based logic using JavaScript, the system makes estimations of car prices instantly based on input provided by the user including brand, year, mileage, and condition.

This makes it extremely practical for educational purposes, small-scale uses, and personal car valuations. Nonetheless, most solutions so far have used sophisticated machine learning models and backend servers, making them less user-friendly for beginners or unsuitable for small-scale applications. This project suggests a static browser application using JavaScript to predict car prices based on user input. The goal is to have a solution that is user-friendly, needs no internet connection for anything except the first load, and offers instant feedback according to pre-established pricing logic.

2. System Architecture

Hardware ComponentsThe hardware for this project is minimal as it is a complete web-based application. The essential components are:

- User Device (Laptop)
- Serves as the platform of execution where the application operates.
- Web Browser (Chrome, Firefox, etc.)

Offers the environment to execute and load the HTML, CSS, and JavaScript files.

This configuration makes the system extremely portable and usable on any device without requiring additional hardware.

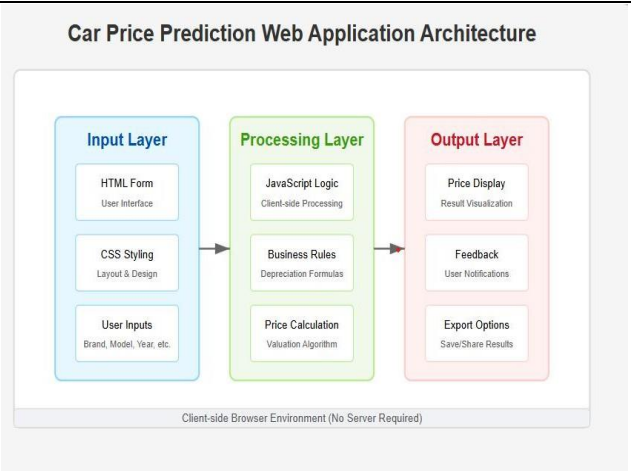
The application is built on the following software layers:

- HTML/CSS – Used to design the layout and apply styling to the web application's user interface.
- JavaScript Logic Layer – It is responsible for processing input data and determining the estimated price according to rule-based conditions.
- DOM Manipulation – It is utilized to perform dynamic updates to show the result immediately on the same page.

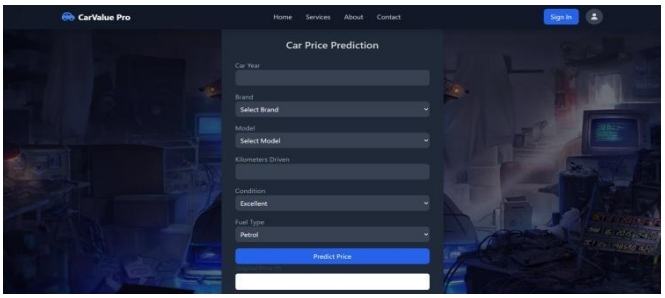
The integration of these technologies provides a light-weight, client-side architecture that doesn't rely on servers or databases.The architecture has three primary layers:

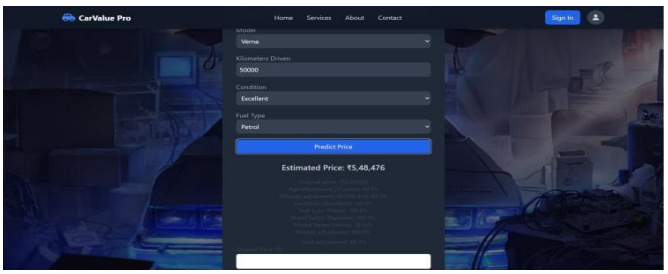
- Input Layer: HTML form to input car information (model, year, fuel type, etc.).
- Logic Layer: JavaScript executes calculations on data using if-else statements to determine price.
- Output Layer: DOM manipulation shows the output directly on the same page.

No server or backend interaction is required, and the application executes entirely on the client side.



3. Actual Implementation





4. Algorithm

Algorithm used in the Car Price Prediction Web Application is rule-based and consists of the following steps:

- **User Input Collection :-** The user enters car information like brand, model, manufacturing year, fuel type, transmission type, kilometers traveled, and overall condition in a web form.
- **Input Validation :-** JavaScript checks all the fields to make sure they are properly filled and that values such as year and mileage are within acceptable boundaries.
- **Base Price Assignment :-** A base price is chosen according to the model and brand of the vehicle,

based on average market prices for that setup.

- **Adjustment Logic :-** JavaScript adjusts the base price according to the characteristics of the vehicle:

Older cars get depreciation-based reductions.

Increased mileage means lower prices.

Good condition or desirable fuel/transmission types (e.g., petrol, automatic) increase value.

- **Price Calculation :-** The final price is calculated by adding the base price with all relevant additions and reductions.

- **Output Display :-** Estimated price of the car is shown real-time on the same page with DOM manipulation without page refresh or backend call.

After the form is submitted by the user, JavaScript initially validates the input fields to check for the presence of all required information and proper format. The app then calculates a base price from the chosen model and brand. This base figure is an estimate of a typical market rate for such a vehicle in good shape and low usage.

The system then makes a series of adjustments based on conditions. If the vehicle is an older one, deductions are calculated to factor in depreciation. Again, if mileage is above standard, it reduces the value even further. Favorable adjustments are made for vehicles in good condition or for transmission types and fuels that are currently more popular (e.g., petrol or autos).

Lastly, JavaScript determines the final estimated price by merging the base price with the adjustment values. The outcome is rendered dynamically on the web page via DOM manipulation, giving the user an instant and obvious price estimate without reloading the page.

4. Advantages

- Instant output with no server delay.
- Simple user interface.
- Works offline once loaded.
- Platform-independent; accessible on any modern browser.
- Ideal for educational purposes and basic market evaluations.

5. Integration and Performance

Integration:

The tool is crafted for seamless integration into any static website, learning portal, or small business website. Being client-side, it does not need any backend services, making it suitable for platforms such as GitHub Pages, Netlify, or plain local file running. It can also be integrated on dealership websites or utilized as a standalone tool for rapid valuation assistance.

Performance:

The system executes all operations within the browser, providing instant response times with no latency because of server communication. Basic JavaScript usage guarantees fast execution, and the lack of network dependency ensures reliability even in offline or low-connectivity situations. The performance is smooth on devices and browsers overall, thanks to its lightweight nature and minimal hardware demands.

6. Limitations

The system, although suitable for simple use, has some restrictions to be taken into account:

- No Real-Time Market Data: Pricing logic is static rules-based, which can fail to capture up-to-date market changes.
- No Machine Learning Integration: It does not learn from user data or trends like AI-based systems, keeping the forecast accuracy low.
- Limited Input Parameters: It does not account for sophisticated factors such as accident history, service history, or geographical pricing differences.
- Manual Logic Updates: Any updates in pricing schemes or car trends need to be updated manually in the script.
- Basic Aesthetic Design: Functional yet basic in design and user interface for ease of access, without complex UX/UI elements.

7. Future Developments

Planned Improvements

- Machine learning API integration for dynamic pricing.
- API support for real-time automobile market data.
- Mobile app equivalent.
- PDF or email export to share price reports.

8. Conclusion

The given car price prediction system implemented in JavaScript illustrates the possibility of implementing rule-based logic to offer a quick and user-friendly solution for estimating the price of used cars. Although less sophisticated compared to machine learning-based models, it is good enough for light applications, individual use, and educational demonstration. Its simplicity, portability, and real-time responsiveness make it a usable tool for users requiring immediate estimates without sophisticated infrastructure

References

[1] Mozilla Developer Network (MDN), HTML, CSS, and JavaScript Documentation [Online]. Available: https://developer.mozilla.org/

[2] W3Schools, "Web Development Tutorials and References." [Online]. Available: https://www.w3schools.com

[3] Stack Overflow, "Web Development Community Support." [Online]. Available: https://stackoverflow.com

[4] S. Patel, R. Kumar, 2020, "Rule-Based Car Price Estimation Without Machine Learning," International Journal of Computer Applications. [Online]. Available: https://www.ijcaonline.org

[5] CarDekho, "Used Car Valuation and Trends." [Online]. Available: https://www.cardekho.com