CAR SELLING PLATFROM

Submitted By

Student Name	Student ID
Mobassir Mahmud Dibbo	0242220005101718
Mst. Lamiya Khatun	0242220005101840
Omar Khayyam	0242220005101911
Durjoy Alam Chowdhury	0242220005101922
Md. Mehedi Hassan	0242220005101950

MINI LAB PROJECT REPORT

This Report Presented in Partial Fulfillment of the course **CSE316:**

Software Project III in the Computer Science and Engineering Department

DAFFODIL INTERNATIONAL UNIVERSITY

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DECLARATION

We hereby declare that this lab project has been done by us under the supervision of Mr. Mehedi Hasan, Senior Lecturer, Department of Computer Science and Engineering, Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere as lab projects.
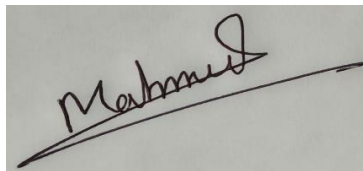
Submitted To:

Mr. Mehedi Hasan
Mr. Mehedi Hasan
Senior Lecturer
Department of Computer Science and Engineering
Daffodil International University

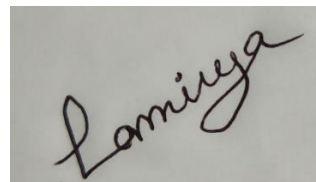**Submitted by**

Mobassir Mahmud Dibbo
ID: 0242220005101718
Dept. of CSE, DIU

Md.Mehedi Hassan
Md.Mehedi Hassan
ID:02422200051950
Dept. of CSE, DIU

Mst. Lamiya Khatun
ID:0242220005101840
Dept. of CSE, DIU

Durjoy Alam Chowdhury **Durjoy Alam** **ID:0242220005101922** **Dept. of CSE, DIU**	**Omar Khayyam** **Omar Khayyam** **ID:024222000510191** **1** **Dept. of CSE, DIU**

COURSE & PROGRAM OUTCOME

The following course have course outcomes as following:.

Table 1: Course Outcome Statements

CO's	Statements
CO1	Demonstrate a comprehensive understanding of fundamental database management concepts, including the relational data model, normalization techniques, and SQL basics
CO2	Design, implement and optimize relational databases, incorporating advanced SQL queries, indexing techniques and query optimization strategies.
CO3	Understand and analyze security measures, distributed database architectures and emerging trends in database management, demonstrating an understanding of the broader context and challenges in the field.

Table 2: Mapping of CO, PO, Blooms, KP and CEP

CO	PO	Blooms	KP	CEP
CO1	PO1	C1, C2	KP3	EP1, EP3
CO2	PO2	C2	KP3	EP1, EP3
CO3	PO3	C4, A1	KP3	EP1, EP2
CO4	PO3	C3, C6, A3, P3	KP4	EP1, EP3

The mapping justification of this table is provided in section **4.3.1**, **4.3.2** and **4.3.3**.

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1. Introduction

1.1 Introduction

The "Car Selling Platform" is a web-based application aimed at creating an online marketplace where users can buy and sell cars. The platform facilitates secure, efficient, and transparent transactions for both new and used vehicles. The primary goal of this project is to bridge the gap between car buyers and sellers through an intuitive and user-friendly interface. Additionally, the platform provides tools for users to compare car models, analyze market trends, and access expert reviews.

1.2 Motivation

The motivation for developing this platform stems from the growing demand for digital solutions in the automobile industry. Traditional methods of buying and selling cars often involve lengthy negotiations, middlemen, and limited transparency. This project aims to overcome these challenges by creating a convenient, cost-effective, and reliable digital platform.

1.3 Objectives

1. To provide a centralized platform for car trading that is accessible to users worldwide.
2. To ensure secure and verified transactions between buyers and sellers.
3. To integrate advanced features like car search, filtering, price comparison, and customer reviews.
4. To allow users to post detailed advertisements for cars, including images and specifications.
5. To empower administrators with monitoring tools to maintain the platform's quality and compliance.

1.4 Feasibility Study

The feasibility study highlights the following aspects:

- **Technical Feasibility**: Utilizes robust technologies such as React.js for the frontend, Django for the backend, and MySQL for the database, ensuring scalability and reliability.
- **Economic Feasibility**: Operates on a cost-effective model leveraging cloud hosting and open-source frameworks.
- **Operational Feasibility**: Features a user-friendly interface with secure login and intuitive navigation, ensuring ease of use for all stakeholders.

1.5 Gap Analysis

Existing platforms often lack comprehensive features, leading to inefficiencies in car trading. Common issues include poor search functionality, inadequate verification processes, and limited support for user communication. This platform addresses these gaps with advanced filtering options, secure user verification, and integrated messaging systems.

1.6 Project Outcome

The Car Selling Platform is expected to:

- Revolutionize the car trading process with its innovative features.
- Streamline interactions between buyers and sellers.
- Provide a scalable and sustainable solution adaptable to future market needs.

2. Proposed Methodology/Architecture

**2.1 Requirement Analysis & Design Specification**

2.1.1 Overview

The system includes modules for user authentication, car listings, secure transactions, and administrative monitoring. Each module is designed to ensure seamless interaction and data flow across the platform.

2.1.2 Proposed Methodology/System Design

- **Three-Tier Architecture**:
  1. **Presentation Layer**: React.js ensures a responsive and dynamic interface.
  2. **Business Logic Layer**: Django handles application logic and API integration.
- **Workflow**:
  1. Users register and authenticate.
  2. Sellers upload car details and set pricing.
  3. Buyers search and filter cars, comparing specifications and prices.
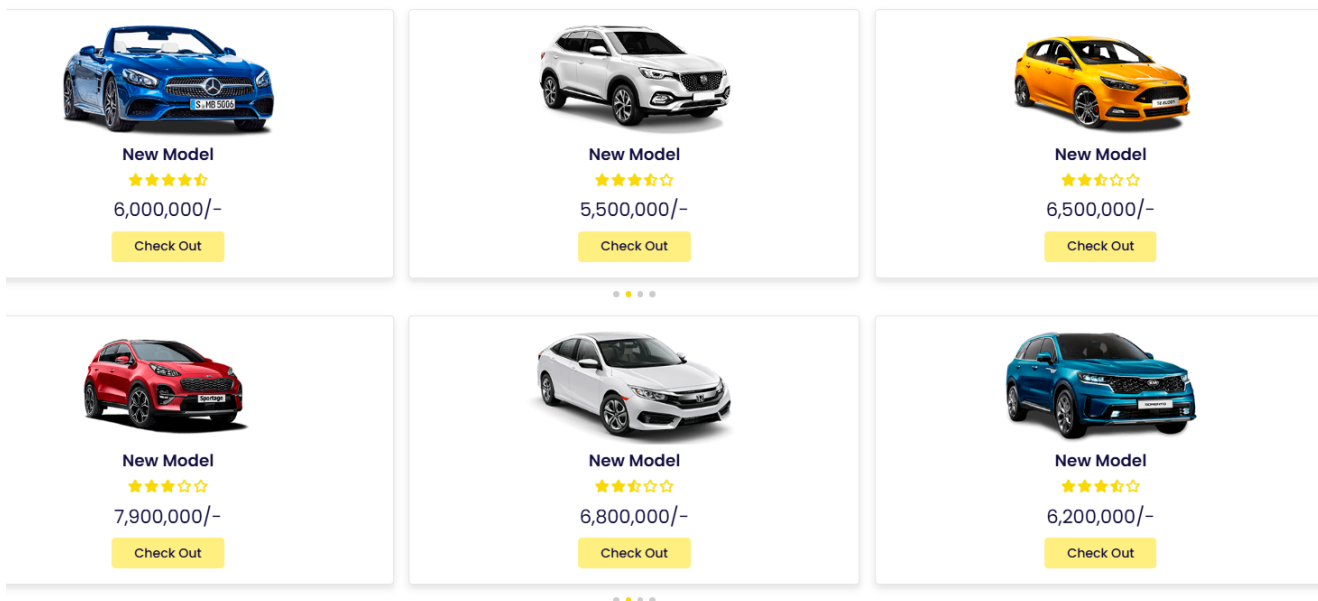 4. Transactions are processed securely through integrated payment gateways.

2.1.3 UI Design

The user interface emphasizes simplicity and accessibility, including:
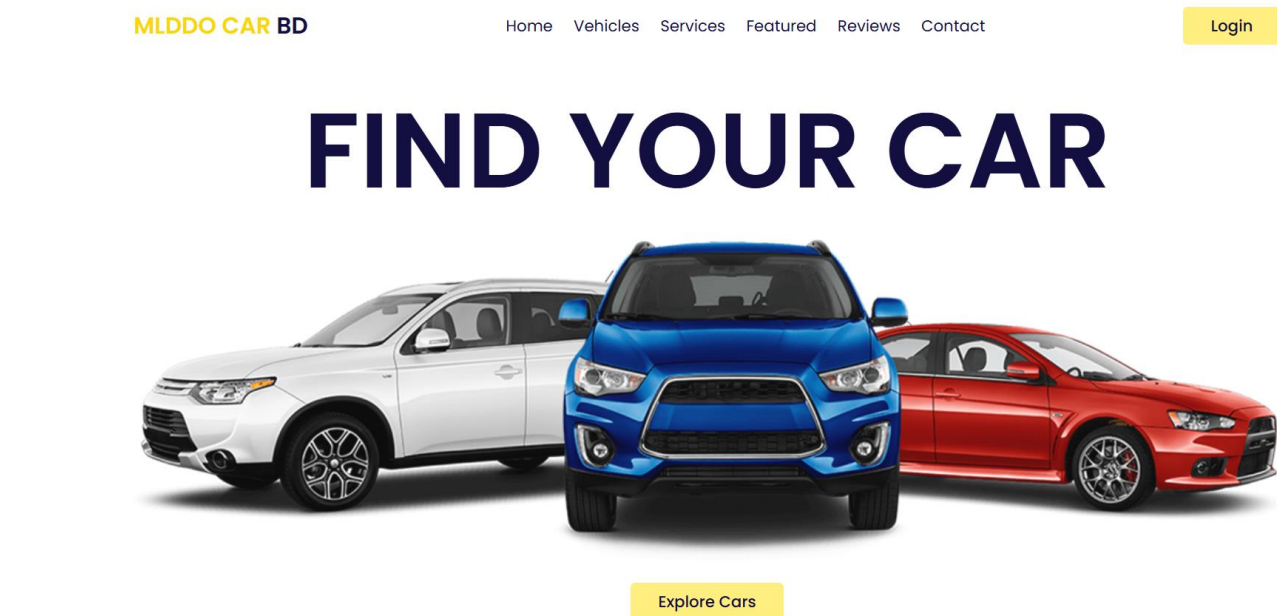
- Advanced search filters for brand, model, price range, and location.

- Interactive dashboards for user profile management and advertisement tracking.
- Responsive design optimized for both desktop and mobile devices.

2.2 Overall Project Plan

- **Phase 1**: Requirement analysis and feasibility study.
- **Phase 2**: UI/UX design and prototyping.
- **Phase 3**: Development of core functionalities.
- **Phase 4**: Integration testing and deployment.
- **Phase 5**: User feedback and iterative improvements.

3. Implementation and Results

3.1 Implementation

- **Frontend**: Built with React.js to provide a dynamic and user-friendly experience.
- **Backend**: Developed using Django to manage server-side operations and ensure secure data transactions.
- **Database**: Designed with MySQL for optimized data management and querying.

3.2 Performance Analysis

The platform was tested extensively to evaluate:

- **Responsiveness**: Quick loading times across devices and browsers.
- **Scalability**: Capability to handle increased user traffic during peak times.
- **Security**: Protection against data breaches and unauthorized access.

3.3 Results and Discussion

The Car Selling Platform met all predefined objectives. Key achievements include:

- Seamless user registration and authentication.
- Effective search and filtering mechanisms.
- Positive user feedback on navigation and transaction security.

Github Link: MLDDO CAR BD

4. Engineering Standards and Mapping

4.1 Impact on Society, Environment, and Sustainability

4.1.1 Impact on Life

The platform simplifies car trading, reducing stress and enhancing user satisfaction through transparent and efficient processes.

4.1.2 Impact on Society & Environment

By minimizing the need for physical car trading locations, the platform contributes to reduced carbon emissions and promotes eco-friendly practices.

4.1.3 Ethical Aspects

The platform ensures ethical practices by incorporating identity verification, fraud prevention mechanisms, and user guidelines.

4.1.4 Sustainability Plan

Regular updates and feature enhancements ensure the platform remains relevant and reliable in the long term.

4.2 Project Management and Teamwork

The development process adhered to Agile principles, with collaborative efforts from a multidisciplinary team to ensure timely delivery and high-quality output.

4.3 Complex Engineering Problem

4.3.1 Mapping of Program Outcome

The project demonstrates proficiency in problem-solving, critical thinking, and application of engineering knowledge to create a practical and innovative solution.

4.3.2 Complex Problem Solving

Challenges such as ensuring transaction security, optimizing database queries, and handling user scalability

were successfully addressed.

4.3.3 Engineering Activities

The project involved comprehensive activities, including system architecture design, code development, rigorous testing, and deployment.

5. Conclusion

5.1 Summary

The Car Selling Platform successfully bridges the gap between buyers and sellers by providing a secure, transparent, and user-friendly marketplace. The integration of advanced features, such as detailed filtering and secure payment gateways, ensures a seamless trading experience. This project demonstrates the effective application of engineering principles to address real-world challenges in the automobile industry.

5.2 Limitation

1. Limited support for regional languages, restricting usability for non-English speakers.
2. Lack of integration with third-party insurance and financing services.
3. Dependence on stable internet connectivity for optimal performance.

5.3 Future Work

1. Expand language support to cater to a more diverse user base.
2. Incorporate AI-driven recommendations and predictive analytics for better user engagement.
3. Develop mobile applications for iOS and Android platforms.
4. Collaborate with financial institutions to offer integrated insurance and financing options.

6. References

1. Visual Studio Code(HTML,CSS,JS)

2. Django Documentation. (n.d.). Retrieved from https://docs.djangoproject.com/

3. React.js Official Website. (n.d.). Retrieved from https://reactjs.org/

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