APROG8060
PROJECT PROPOSAL

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1. Project Background and Description

This project originated as a response to the changing landscape of the automobile rental sector, in which old methods were rapidly being challenged by creative, technology-driven alternatives. It involves collaboration between our company, Car Rental Innovations Inc. and several key stakeholders such as, a development team, customers, Regulatory authorities and technology partners. The purpose of this project is to provide a user-centric automobile rental application that improves customer experience, streamlines operations for rental companies, and maintains competitiveness through efficient booking, fleet management, and maintaining current with technical improvements and industry trends.

2. Problem Statement

The goal of this project is to develop a car rental application that addresses issues such as inefficient booking, limited vehicle information, security concerns, and operational inefficiencies. The application's purpose is to improve customer satisfaction, streamline the rental process, optimize fleet management, and assure data security in the automobile rental business.

3. Project Scope

The project encompasses a wide-ranging scope, including the following essential elements:

3.1 Inclusions (What will be undertaken):

- Implement user registration, login, and profile management features to ensure secure and personalized user experiences.
- Implement a comprehensive database of available vehicles, including details such as make, model, availability, and pricing.
- Develop functionality to allow users to browse and reserve vehicles for specified dates and times.
- Integrate a secure payment gateway to handle transactions for vehicle rentals, ensuring a seamless and secure payment process.
- Enable users to rate and review their rental experiences, providing valuable feedback and enhancing transparency.
- Offer customer support features, such as inquiries, issue reporting, and assistance, to enhance user satisfaction and resolve queries promptly.

3.2 Exclusions (What will not be undertaken):

- This application will not handle vehicle maintenance, servicing, or repair scheduling.
- There will be no development of a standardized GPS or navigation system; we have to rely on the current classification technology.

4. High-Level Requirements

- Accessibility and User Interface:

The system should provide an easy-to-access website and mobile app for seamless taxi booking without requires additional software download.

It will provide an intuitive and user-friendly interface to both customers and drivers.

1. User Access:

   - The system must provide access to both internal staff and external customers.

   - Users should be able to access the system through web browsers and mobile devices without requiring any additional software downloads.

2. Vehicle Inventory Management:

   - The system must maintain an up-to-date inventory of available rental vehicles.

   - It should support adding new vehicles, updating existing vehicle information, and retiring vehicles from the fleet.

3. User Registration and Authentication:

   - Users, both customers and staff, must be able to register and create accounts.

   - Secure authentication mechanisms (e.g., username and password, two-factor authentication) must be implemented.

4. Reservation and Booking:

  - Customers should be able to search for available vehicles based on various criteria (e.g., location, vehicle type, date, time).

  - The system must allow customers to make reservations, specifying pickup and drop-off locations, dates, and times.

  - Confirmation notifications should be sent to customers upon successful booking.

5. Payment Processing:

  - The system should support various payment methods (e.g., credit card, debit card, online payment).

  - It must calculate rental charges accurately and process payments securely.

6. Customer Support:

  - Implement a customer support system for handling inquiries, complaints, and requests.

  - Include features like live chat, email support, and a knowledge base.

7. User Feedback and Ratings:

  - Collect and display user reviews and ratings for vehicles and services.

  - Use feedback to improve the rental experience and vehicle fleet.

5. Materials, Tools Required

- Development Tools and Software:

Integrated Development Environment (IDE): This may vary depending on the programming language and technology which are used. Most common used IDE:- **Visual Studio, HTML, CSS, and Visual Studio Code.**

- Unit Testing Tools: **NUnit (for .NET)** language-specific unit testing frameworks.
- Integration Testing Tools: **Selenium :-** This is used for web application framework
- Defect Tracking and Management Tools:
  - ✓ **Jira:** Most commonly used for issue and project tracking tool.
  - ✓ **Trello**: For bug tracking and task management.
- Performance Testing Tools: - For checking the performance and load used the **ApaceJMeter**.

6. References Used

- https://www.carrentaltrends.com/guide/car-rental-app-development
- https://www.w3schools.com/css/css_background.asp
- https://traveltriangle.com/agents/313438323433362d415341-asap-holidays
- https://www.geeksforgeeks.org/html-forms/