

Vision Document
On
“Rent A Car - a Car Rental Management system”

Project Team members:

Name	ID
Md Shah Jalal Mazumder	615720
Md Moynul Islam	615869
Sujit Kumar Chanda	615185
Asif Ahammad Miazee	615156

1. Introduction

In today's fast-paced world, the automobile rental industry is essential since it offers both individuals and businesses flexible and convenient mobility alternatives. However, there are several obstacles to overcome when running an effective vehicle rental company. These include processing reservations, keeping an eye on the fleet, handling invoicing and payment procedures, making sure there is security, and streamlining operations to maximize profit. We introduce "Rent A Car," a comprehensive car rental management system designed to transform the way car rental companies function, in response to these difficulties.

A solid and user-friendly worldwide car rental management system is the goal of the software engineering course project Rent A Car. Owners, managers, front desk employees, fleet managers, billing and payment teams, customers, risk and security managers, and business analysts are the system's target audience. Rent A Car project aims to improve customer satisfaction, streamline rental processes, and spur business expansion through the integration of state-of-the-art technologies and an intuitive user interface.

2. Positioning

2.1 Business Opportunity

This will be a single, general platform that links consumers looking to take rides in various modalities with vehicle rental firms, suppliers, and merchants. The service will improve the ride-renting experience for customers and make it easier for transportation vendors to enroll in the system without creating a complicated workflow. A little portion of both vendor and customer commission will be deducted from the minimum registration fee for merchants, and this will result in a miniscule amount of revenue for the platform.

2.2 Problem Statement

The problem of	Lack of a platform for communication between car rental companies and clients, inadequate facilities, and convoluted processes.
Affects	Vehicle rental companies and clients.
the impact of which is	Difficult, drawn-out rental car procedure without any flexible options for choosing a vehicle, hourly prices, etc.
a successful solution would	Expand the number of rental providers included, make it simple for users to reserve, rent cars, or take rides, boost platform revenue, and work with administrators and business

	analysts to better analyze data and forecast rental trends in the future.
--	---

2.3 Product Position Statement

For	Customers and car rental companies come first, followed by fleet managers, administrators, and business analysts.
Who	will be able to rent or book cars easily, discover a global platform to register with available cars, and have access to data to study growth and forecast future rental patterns.
The (product name)	Rent A Car is a system for managing car rentals.
That	Facilitates easy booking and hire of transports by connecting car rental companies with customers.
Unlike	complicated, rigid manual automobile rental systems
Our product	can be accessed instantly via browsers or mobile apps by vendors and customers, negating the need for manual labor or human resources. a great deal of automation and booking confirmation by email and it reduces the paper work.

3. Stakeholder Descriptions

A complete solution created to simplify and improve a car rental company's operations is rent-a-car management software. The program facilitates the effective management of numerous tasks, procedures, and interactions for a broad range of stakeholders involved in the automobile rental industry. The following enumerates the principal parties and their functions about the Rent-a-Car Management Software.

3.1 Stakeholder Summary

Name	Description	Responsibilities
Car Rental Company Owners/Manager	They manage revenue and expenses, keep an eye on business performance, and	These stakeholders are responsible for the overall management and success of the car rental business.

	utilize the software to make data-driven decisions.	
Front Desk and Reservation Staff	They utilize the software to manage customer bookings, check vehicle availability, and complete rental agreements.	These stakeholders handle customer inquiries, reservations, and check-ins/outs at the rental counters.
Fleet Managers	They rely on the software to track vehicle availability, monitor maintenance schedules, and schedule repairs.	These stakeholders oversee the car fleet and ensure its optimal utilization and maintenance.
Payments and Billing	They utilize the software to generate invoices, track payments, and manage accounts receivable.	These stakeholders are responsible for financial management, including billing, invoicing, and financial reporting.
Customers	In order to maintain their reservations, check car possibilities, and make reservations, they communicate with the software via mobile applications or web portals.	Customers are the end-users of the car rental service.
Risk And Security Managers	They rely on the software for risk analysis, incident management i.e. accidents/thefts, dispute resolution and imposing security guidelines	These stakeholders are responsible for communicating and resolving risk factors and taking security measures, post-incident compensations
Business Intelligence	They analyze the performance metrics, customer trends, and market insights provided by the software.	Business analysts within the car rental company leverage the software's data and reporting capabilities.

3.2 User Environment

3.2.1 Task Involvement:

Depending on the scale and complexity of the vehicle rental company, different personnel may be required to do different activities within the user experience of a rent-a-car management software. Usually, there are a number of parties involved, including customers, fleet managers, front desk and reservation employees, accounting and financial staff, maintenance technicians, and business analysts. The exact number of participants will vary based on the operational needs and organizational structure. As the company expands, new positions are added, or employee assignments are modified, this figure may vary.

3.2.2 Task Cycle:

Depending on the nature of the activity, a task cycle's duration can change in the rent-a-car management software system. For instance, whereas fleet management or financial reporting chores may require more time, reservation processing or creating a rental agreement may be very quick processes. The intricacy of each work, the effectiveness of the software, and the users' skill level will determine how much time is spent on it. As users simplify their routines and grow more accustomed to the program, these times may vary.

3.2.3 Unique environmental constraints:

The user environment of a rent-a-car management software can differ with respect to environmental constraints. While some jobs can be completed with desktop or laptop computers in an office setting, others can call for mobile access for on-site operations like customer check-ins and check-outs or vehicle inspections. For the software to meet the varied needs of users in various contexts, it should preferably support desktop and mobile platforms. For smooth cross-platform use, it ought to offer responsive design or have separate mobile applications.

3.2.4 System platforms:

The operating systems that are now in use for rent-a-car management software can be found on desktop computers running Windows, macOS, or Linux, and mobile devices running Android or iOS. These are widely used platforms that the program ought to support in order to serve a diverse user base. It is possible that platforms in the future will switch to newer operating systems or technologies; in this case, the software should also change to ensure compatibility and a seamless user experience.

3.2.5 Integration with other applications:

To increase usefulness and efficiency in other applications, a rent-a-car management software may need to integrate with several systems. To enable safe and easy online payments, for instance, it might have to interface with payment gateways. Additionally, it might interface with GPS tracking systems for real-time vehicle tracking or accounting software to simplify financial procedures. The particular integrations needed will vary based on the requirements of the company and the software ecosystem that is currently in place; the rent-a-car management software should have adaptable integration features to meet these needs.

4. Product Overview

4.1 Product Perspective

A fleet management system is a full-featured software program created to optimize and simplify fleet asset or vehicle management. It offers a consolidated platform for real-time tracking, monitoring, analysis, and management of different fleet operations. A fleet management system offers a comprehensive and adaptable way to streamline fleet operations, boost output, better utilize assets, boost performance, simplify time-consuming tasks, and cut expenses. For efficient fleet management, it simplifies procedures, automates jobs, and permits data-driven decision-making.

4.2 Assumptions and Dependencies

A fleet management system must consider several suppositions and dependencies. It's thought that the fleet's vehicles have telematics or trustworthy GPS systems installed for accurate tracking and data gathering. In order for the software and cars to exchange real-time data, a dependable internet connection is necessary. Furthermore, it is assumed that the company complies with all applicable laws and industry standards, guaranteeing adherence to criteria for vehicle maintenance, driver safety, and data security and privacy. Assuming that fleet managers and drivers would embrace the technology and receive sufficient training for efficient system utilization, user adoption and training are essential prerequisites.

Lastly, this approach is predicated on the availability of vendor maintenance and support, guaranteeing timely upgrades, bug patches, and technical help to resolve any potential problems.

4.3 Needs and Features

No	Module	Need	Priority	Feature	Planned Release
Admin					
01	Car Rental Company Owners/Manager	These are responsible for the overall management and success of the car rental business		They use the software to monitor and analyze business performance,	
02	Front Desk and Reservation Staff	For making the customer reservation		Online reservation portal for customers	
03		Create flexibility for customer reservation		Reservation creation, modification, and cancellation	
04		Create feature for automated pricing		Automated price calculation based on rental duration, vehicle type, and additional services	
05		Tracking the rental vehicle		Real-time vehicle availability tracking	
06	Fleet Managers	Managing the inventory of the vehicles		Centralized inventory management for rental vehicles	
07		Monitoring tracking status of Vehicle		Vehicle tracking and status monitoring (available, rented, in maintenance)	

08		Maintenance the Vehicle scheduling and tracking		Vehicle maintenance scheduling and tracking	
09		Making automated reservation		Vehicle assignment to reservations and automated scheduling optimization	
10		Managing rental agreement and check-in and check-out process		Rental Agreements and Check-In/Check-Out:	
11		Creating rental agreement template according to customer requirement		Rental agreement generation with customizable templates	
12		Creating digital agreement signing process		Customer check-in and check-out process with digital signatures Vehicle condition recording and damage documentation	
13		Customer identification verify process		Integration with ID verification systems for customer identification	
Payment && Billing					
14		Creating invoice and billing		Invoicing and billing functionality	

15	Financial Manager	Creating payment process		Integration with payment gateways for secure online payments	
16		Creating for tracking payment status		Accounts receivable and payment tracking	
17		For analyzing financial report and analyzing revenue and expense		Financial reporting and analytics for revenue analysis and expense tracking	
18		For tracking customer rental history		Customer database management with contact details and rental history	
19		For promoting customer communication with business		Customer communication and notifications (email, SMS) for reservation updates and promotions	
Risk & Security Manager					
20	User Access and Security	Role based user permission		Role-based access control to manage user permissions	
21		Authenticated user verification		User authentication and secure login process	
22		Creating user activities		Audit logs for tracking user activities	

23	Vehicle risk manager	Tracking accident on the way		Tracking the accidental issue on way	
24		Estimating Vehicle damage cost		Maintaining Vehicle damage in accident issue	
Business Intelligence					
25	Data Visualization	Visualize the overall data for fleet management		dashboards and visualizations to present fleet data in a meaningful way	
26	Performance Analytics	Tracking the data for analyze the performance		track and analyze various key performance indicators (related to fleet operations	

4.4 Alternatives and Competition

There are a number of competitors and alternatives in the fleet management market that provide comparable products. Among them are reputable suppliers of fleet management software, who provide complete fleet management solutions with functions like maintenance scheduling, route optimization, and vehicle tracking. Fleet management integrated hardware and software solutions are provided by certain telematics businesses. The fleet management market is highly competitive, which fosters innovation and provides organizations with a variety of solutions to select from, contingent upon their needs and financial constraints.