

A PROJECT ON

“Vehicle Management System”

SUBMITTED IN

PARTIAL FULFILLMENT OF THE REQUIREMENT

FOR THE COURSE OF DIPLOMA IN ADVANCED COMPUTING FROM CDAC



SUNBEAM INSTITUTE OF INFORMATION TECHNOLOGY

Hinjawadi

SUBMITTED BY:

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UNDER THE GUIDANCE OF:

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Faculty Member Sunbeam Institute of Information Technology, Pune.

CERTIFICATE

This is to certify that the project work under the title 'Vehicle Management System' is done by Fegade Suyog M, Patil Sanket V, Talele Vaibhav K, Lidhure Eshwar G. and Rane Mayur A. in partial fulfillment of the requirement for award of Diploma in Advanced Computing Course.

Mrs Pooja Bhandare
Project Guide

Mr. Yogesh Kolhe
Course Co-Coordinator

Date: 01.09.2023

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We are deeply indebted and grateful to them for their guidance, encouragement and deep concern for our project. Without their critical evaluation and suggestions at every stage of the project, this project could never have reached its present form.

Last but not the least we thank the entire faculty and the staff members of Sunbeam Institute of Information Technology, Pune for their support.

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DAC March 2023 Batch, SIIT Pune

ABSTRACT

The purpose of Vehicle Management System is to automate the existing manual system by the help of computerized equipments and full-fledged computer software, fulfilling their requirements, so that their valuable data/information can be stored for a longer period with easy accessing and manipulation of the same. The required software and hardware are easily available and easy to work with.

Vehicle Management System, as described above, can lead to error free, secure, reliable and fast management system. It can assist the user to concentrate on their other activities rather to concentrate on the record keeping. Thus it will help organization in better utilization of resources. The organization can maintain computerized records without redundant entries. That means that one need not be distracted by information that is not relevant, while being able to reach the information.

The aim is to automate its existing manual system by the help of computerized equipments and full-fledged computer software, fulfilling their requirements, so that their valuable data/information can be stored for a longer period with easy accessing and manipulation of the same. Basically the project describes how to manage for good performance and better services for the clients.

INDEX

Sr. No.	Title	Pg. No.
1	Introduction	6
1.1	Objectives	7
1.2	Functionalities	7
2	Need of Project	8
3	Requirement	9
3.1	Functional Requirement	9
3.2	Non Functional Requirement	10
3.3	Other Requirements	10
4	Database Design	11
5	Coding Standard Implemented	15
6	Project Management Related Statistics	17
7	Appendix A	19
8	Appendix B	22
9	References	33

1. INTRODUCTION

The " Vehicle Management System" has been developed to override the problems prevailing in the practicing manual system. This software is supported to eliminate and in some cases reduce the hardships faced by this existing system. Moreover this system is designed for the particular need of the entity to carry out operations in a smooth and effective manner.

The application is reduced as much as possible to avoid errors while entering the data. It also provides error message while entering invalid data. No formal knowledge is needed for the user to use this system. Thus by this all it proves it is user-friendly. Vehicle Management System, as described above, can lead to error free, secure, reliable and fast management system. It can assist the user to concentrate on their other activities rather to concentrate on the record keeping. Thus it will help organization in better utilization of resources.

It helps to overcome and manage the information of Car, Car Specification, Booking, Maintainance Services, Test Drive, Insurance, Finance facilities. In accordance with different Car related services needs, we have designed exclusive salesperson management systems that are adapted according to managerial requirements. This is designed to assist in strategic planning, and will help you ensure that your organization is equipped with the right level of information and details for your future goals. This system will ultimately allow you to better manage resources.

This project Vehicle Management System enables the user to access various services available. The system will track the services opted by user for cars, booking of car, managing insurance, finance, test drive for car.

1.1 Objective of Project on Vehicle Management System:

The main objective of the Project on Vehicle Management System is to manage the details of Car, Car Booking, Test drive, Insurance, Finance. The project is built in accordance to the user perspective so that there is easy to use interface, salesperson will have control over the services opted by the user and the internals will be managed by admin. The purpose of the project is to build an application program to reduce the manual work for managing the Car and all the relating services offered.

1.2 Functionalities provided by Vehicle Management System are as follows:

- Provides the facility to view various services available on the platform.
- Provides easy to use interface
- Shows the information and description of the Car
- Vehicle Management System also manage the vehicle type details online for car specifications relating the specific models, service details
- It tracks all the information of car booking.
- It manages car maintainance services provided on the platform
- It manages and keeps track of insurance, finance facilities
- It tracks and manages test drives.
- Editing, adding and updating of Records is improved which results in proper resource management of data.

2. NEED OF VEHICLE MANAGEMENT SYSTEM

A vehicle management system can provide numerous benefits, including :

1. **Improved Efficiency:** With an online vehicle management system, user can easily search for the desired car according to his personal needs.
2. **Efficient Data Management:** An online system allows for centralized storage of vehicle-related data, such as registration details, maintenance records, insurance information, and more. This streamlined data management eliminates the need for manual record-keeping and reduces the risk of data loss.
3. **Cost Savings:** By automating the vehicle management process, the need for manual labour and associated costs can be reduced.
4. **Improved Customer Satisfaction:** User can enjoy a more streamlined and convenient car booking, test drive experience, with the ability to quickly find available car models and pay for opted services without having to physically interact with anyone.
5. **Enhanced Data Collection:** The system can generate useful data about car booking patterns, which can be used to inform future decisions and improvements in the vehicle management process.
6. **Scalability:** As a business grows or the size of the vehicle fleet changes, the online system can be easily scaled to accommodate the evolving needs.

Overall, an online vehicle management system can lead to a more efficient, secure, and satisfying experience for users, while also providing cost savings and valuable data insights for operators.

3. REQUIREMENTS

3.1 FUNCTIONAL REQUIREMENTS

FR1: Admin must be able to add a new car.

FR2: Admin must be able to update data of existing car.

FR3: Admin must be able to view the information of all the car bookings, logged in users, salespersons.

FR4: Admin must be able to add and delete salesperson.

FR5: Salesperson must be able to view the information of all the car bookings, users, car maintenance services opted by user.

FR6: Salesperson must be able to manage test drive schedules

FR7: Salesperson must be able to manage i.e add and delete finance and insurance

FR8: User must be able to view the details of a selected car such as the car brand name, model name, description, fuel type, image, mileage, price, transmission type, year

FR9: The user must be able to book a car, book test drive for a car, book car maintenance services, opt for insurance and finance during car booking

FR10: The user must be able to calculate EMI for car by the functionality provided on the platform.

FR11: Backend management system must be able to Authenticate users, admin and salesperson before updating any sensitive information.

FR12: Backend management system must be able to Accept booking of cars.

FR13: Backend management system must be able to enable modification of finance and insurances by salesperson.

3.2 NON FUNCTIONAL REQUIREMENTS:

NFR 1: Overall website should be visible to user without registration and login.

NFR 2: The system must be interactive and easy to use.

NFR 3: The delays involved must be less. In case of loading forms for data filling, popping of error messages the delay must be below 2 seconds.

NFR 4: User should be notified upon successful booking of car, car maintainance services, test drive.

NFR 5: System should not stale if accessed by multiple users.

NFR 6: Information transmission should be securely done with server without any changes in information.

NFR 7: Proper login mechanism should be used to avoid hacking.

3.3 OTHER REQUIREMENTS:

Hardware Interfaces:

The SPMS is expected to function on Intel PIII 900 MHz Processor equivalent or above, 128 MB RAM, 20 GB HDD.

Software Interfaces:

The SPMS shall work on MS Windows operating systems family (MS Windows 98, MS Windows NT Workstation, MS Windows 2000, MS Windows XP). It configures to work with Oracle database. This System works on Apache Tomcat server. It uses browser IE 5.0 & above. It uses IIS 5.0 server.

4. DATABASE DESIGN

4.1 Database Design

The following table structures depict the database design.

Table 1: User Details:

Column Name	Data Type	Length	Allow Null (1=Yes;0=No)
user_id	bigint	8	0
address	varchar	255	0
email	varchar	25	0
first_name	varchar	20	0
last_name	varchar	20	1
password	varchar	255	0
phone	varchar	10	0
user_roles	varchar	15	0

Table 2: Car Details:

Column Name	Data Type	Length	Allow Null (1=Yes;0=No)
car_id	bigint	8	0
brand_name	varchar	50	1
description	varchar	150	1
fuel_type	varchar	50	1
image	longblob	-	1
mileage	double	8	0
model_name	varchar	50	1
price	double	8	0
transmission_type	varchar	50	1
year	int	4	0

Table 3: Car Specification Details:

Column Name	Data Type	Length	Allow Null (1=Yes;0=No)
id	bigint	8	0
car_color	varchar	50	1
dimensions	double	8	0
car_engine	varchar	50	1
horsepower	double	8	0
car_id	bigint	8	1

Table 4: Car Services:

Column Name	Data Type	Length	Allow Null (1=Yes;0=No)
service_id	bigint	8	0
description	varchar	250	1
booking_date	date	-	1
service_name	varchar	50	1
car_id	bigint	8;	0

Table 5: Test drive Details:

Column Name	Data Type	Length	Allow Null (1=Yes;0=No)
test_drive_id	bigint	8	0
comments	varchar	255	1
testdrive_date	date	-	0
car_id	bigint	8	1
user_id	bigint	8	0

Table 6:Booking Details:

Column Name	Data Type	Length	Allow Null (1=Yes;0=No)
booking_id	bigint	8	0
booking_date	date	-	0
delivery_date	datetime	6	0
payment_status	varchar	255	0
car_id	bigint	8	1
finance_id	bigInt	8	1
insurance_id	bigint	8	1
user_id	bigint	8	0

Table 7:Insurance:

Column Name	Data Type	Length	Allow Null (1=Yes;0=No)
id	bigint	8	0
claim_amt	double	8	1
insurance_provider	varchar	50	1
mode	varchar	255	1
policy_no	bigint	8	1
premium_amt	double	8	1
year	bigint	8	1

Table 8:Finance Details:

Column Name	Data Type	Length	Allow Null (1=Yes;0=No)
id	bigint	8	0
finance_name	varchar	255	0
interest_rate	double	8	0
loan_amt	double	8	0
monthly_payment	double	8	0

5. CODING STANDARDS IMPLEMENTED

Naming and Capitalization

Below summarizes the naming recommendations for identifiers in Pascal casing is used mainly (i.e. capitalize first letter of each word) with camel casing (capitalize each word except for the first one) being used in certain circumstances.

Identifier	Case	Examples	Additional Notes
Class	Pascal	Person, BankVault, SMSMessage, Dept	Class names should be based on "objects" or "real things" and should generally be nouns . No ‘_’ signs allowed. Do not use type prefixes like ‘C’ for class.
Method	Camel	getDetails, updateStore	Methods should use verbs or verb phrases.
Parameter	Camel	personName, bankCode	Use descriptive parameter names. Parameter names should be descriptive enough that the name of the parameter and its type can be used to determine its meaning in most scenarios.
Interface	Pascal with "I" prefix	Disposable	Do not use the ‘_’ sign
Property	Pascal	ForeColor, BackColor	Use a noun or noun phrase to name properties.
Associated private member variable	_camelCase	_foreColor, _backColor	Use underscore camel casing for the private member variables
Exception Class	Pascal with "Exception" suffix	WebException,	

Comments

- Comment each type, each non-public type member, and each region declaration.
- Use end-line comments only on variable declaration lines. End-line comments are comments that follow code on a single line.
- Separate comments from comment delimiters (apostrophe) or // with one space.
- Begin the comment text with an uppercase letter.
- End the comment with a period.
- Explain the code; do not repeat it.

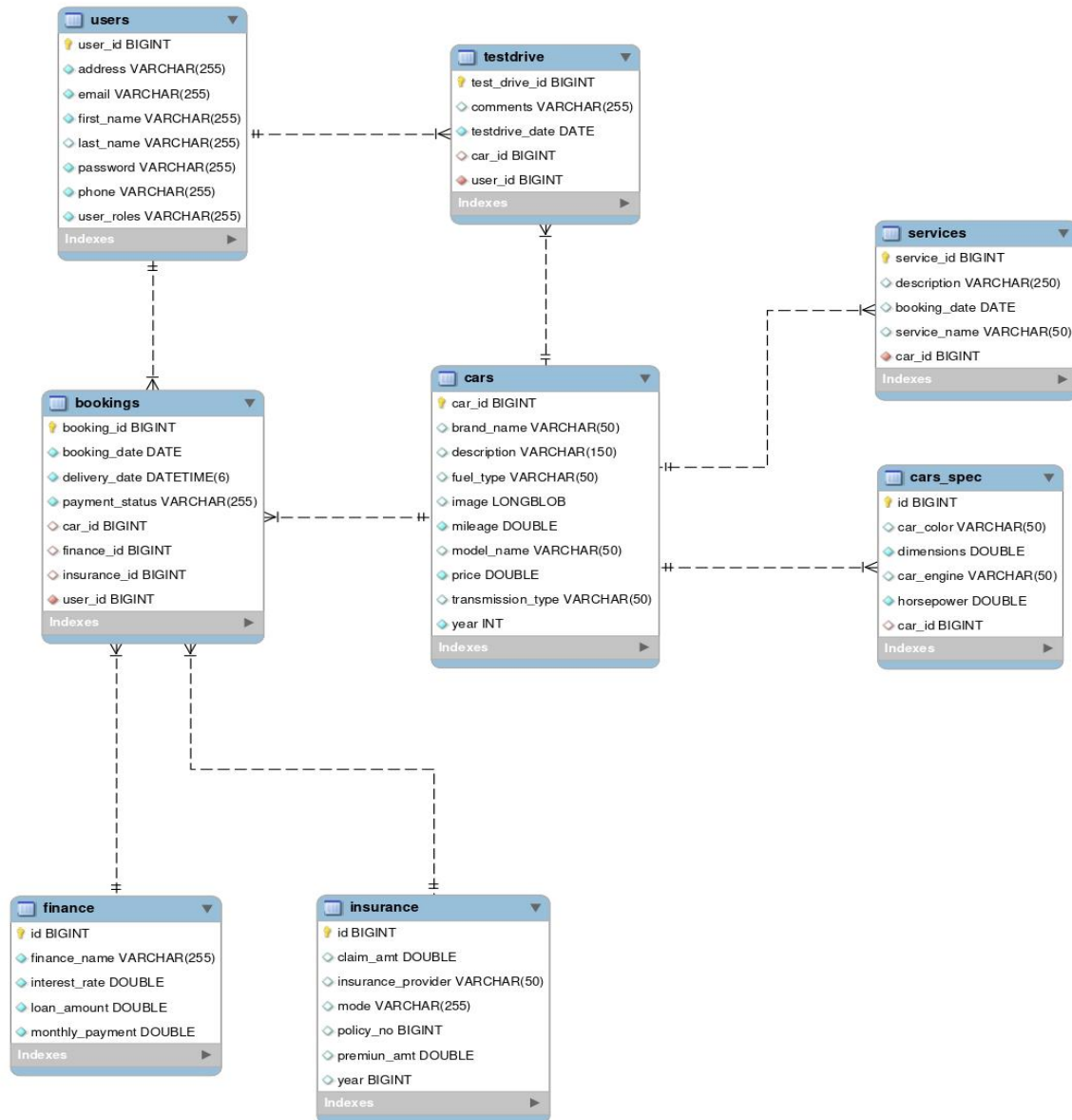
6. PROJECT MANAGEMENT RELATED STATISTICS

DATE	WORK PERFORMED	SLC Phase	Additional Notes
Oct 15,2022	Project Allotment and User Requirements Gathering	Feasibility Study	-----
Oct 25,2022	Initial SRS Document Validation and Team Structure Decided	Requirement Analysis (Elicitation)	The initial SRS was presented to the client to understand his requirements better
Nov 28,2022	Designing the use-cases, Class Diagram, Collaboration Diagram, E-R Diagram and User Interfaces	Requirement Analysis & Design Phase	Database Design completed
Feb20,2022	Business Logic Component design Started	Design Phase	-----
Feb 20, 2022	Coding Phase Started	Coding Phase	70% of Class Library implemented.
Feb21,2023	Implementation of Web Application and Window Application Started	Coding Phase	Class Library Development going on.
Feb25,2023	Implementation of Web Application and Window Application Continued	Coding Phase and Unit Testing	Class Library Modified as per the need.
Feb 26, 2023	Implementation of Web Application and Window Application Continued	Coding Phase and Unit Testing	--
Feb26,2023	After Ensuring Proper Functioning the Required Validations were Implemented	Coding Phase and Unit Testing	Module Integration was done by the Project Manager

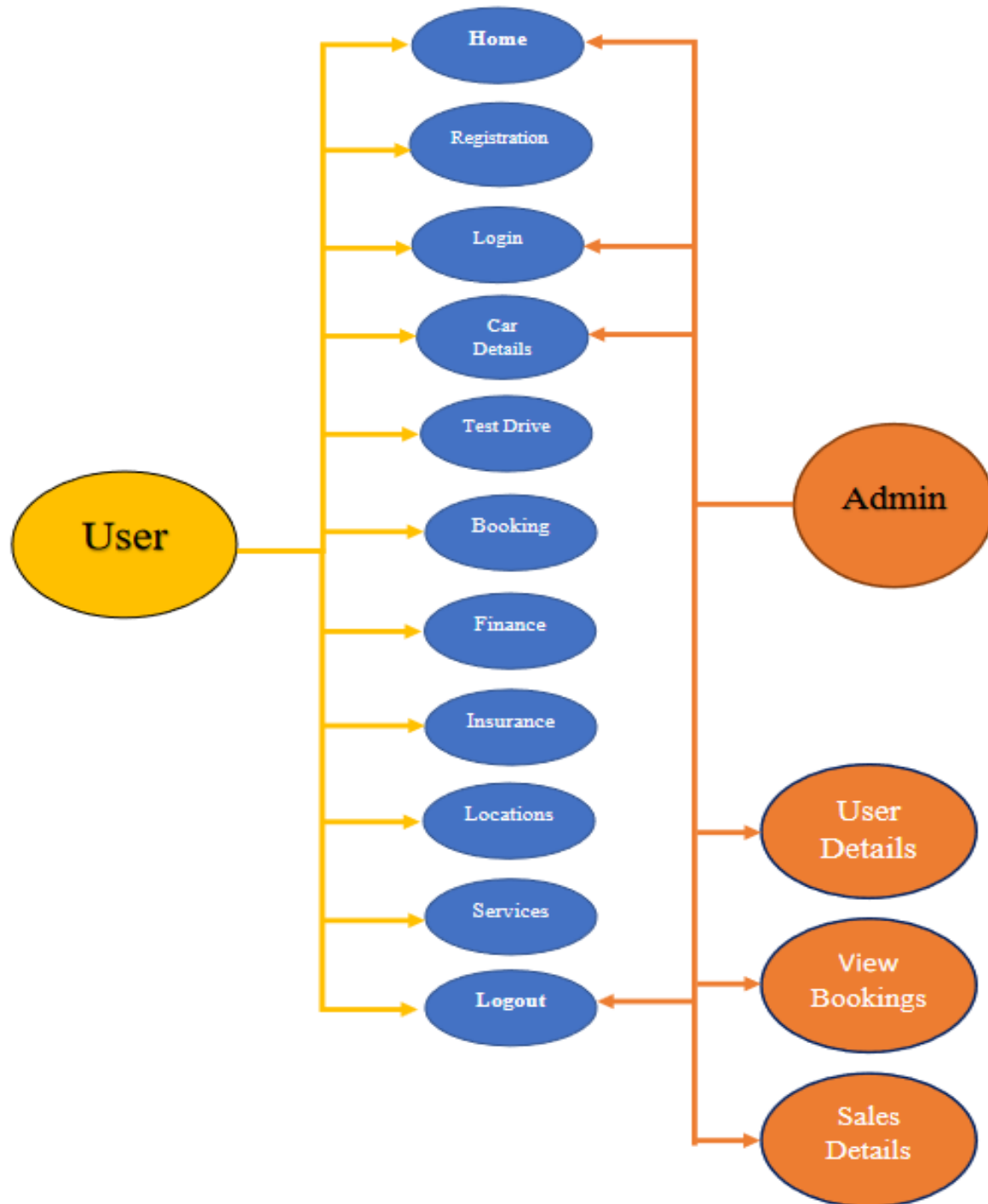
March 27,2023	The Project was Tested by the respective Team Leaders and the Project Manager	Testing Phase (Module Testing)	--
March 3,2023	The Project was Submitted to Other Project Leader of Other Project Group For Testing	Testing Phase (Acceptance Testing)	The Project of Other Team was Taken up by the Team for Testing
March 4,2023	The Errors Found were Removed	Debugging	The Project was complete for submission
March 9,2023	Final Submission of Project		

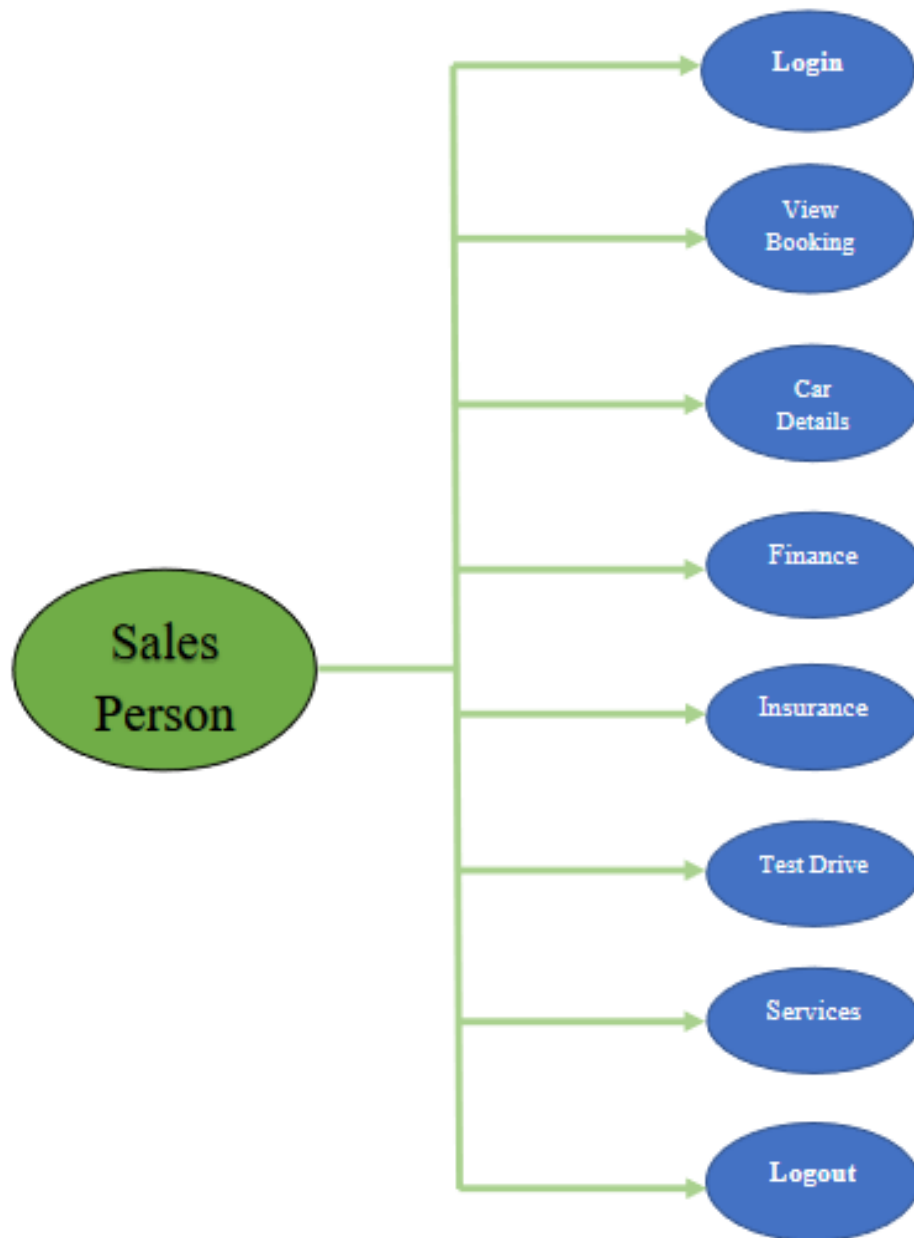
Appendix A

Entity Relationship Diagram:



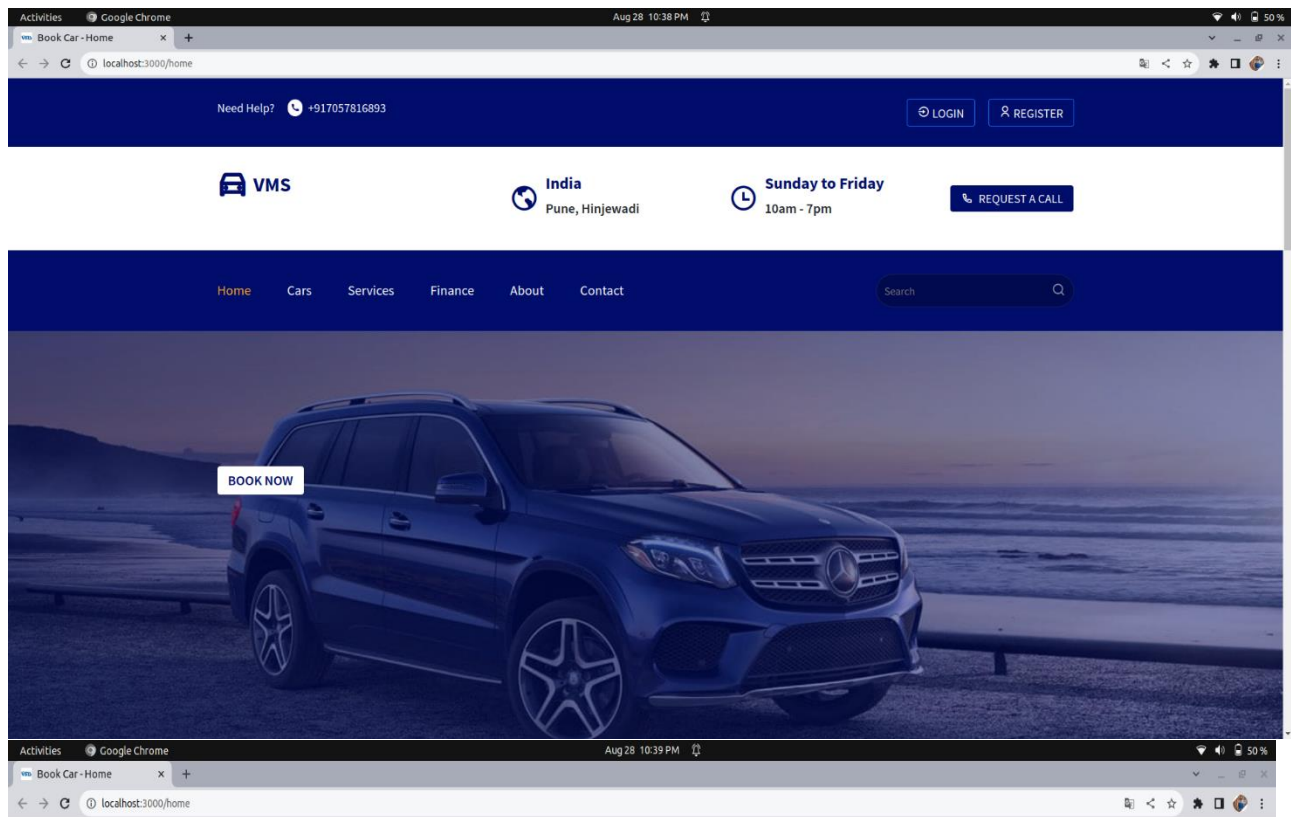
Class Diagram:



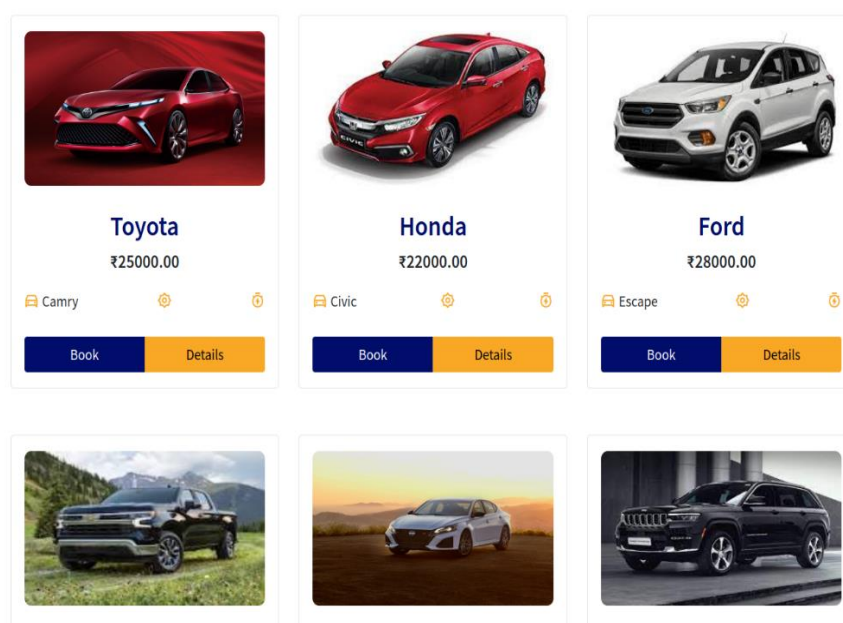


Appendix B

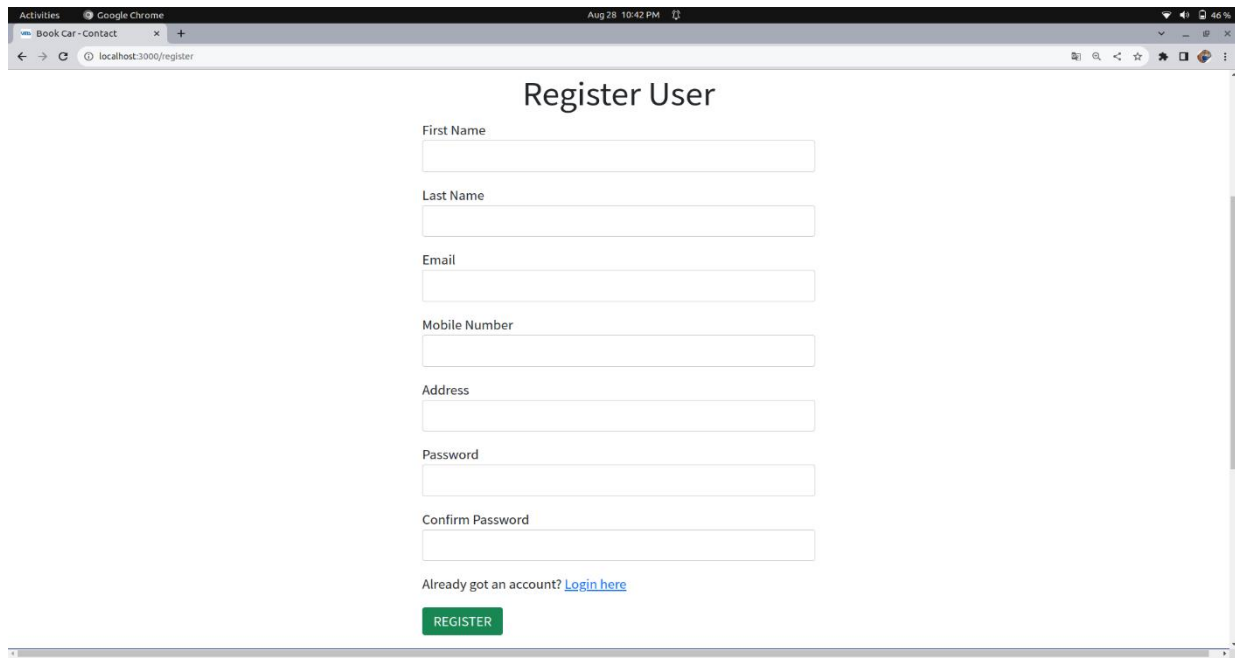
Homepage:



Come with Hot Offers



Register:



A screenshot of a web browser showing a registration form titled "Register User". The form is located at the URL "localhost:3000/register". It contains several input fields for user information: First Name, Last Name, Email, Mobile Number, Address, Password, and Confirm Password. Below the form, there is a link "Already got an account? [Login here](#)" and a green "REGISTER" button.

Activities Google Chrome Aug 28 10:42 PM

Book Car - Contact x +

localhost:3000/register

Register User

First Name

Last Name

Email

Mobile Number

Address

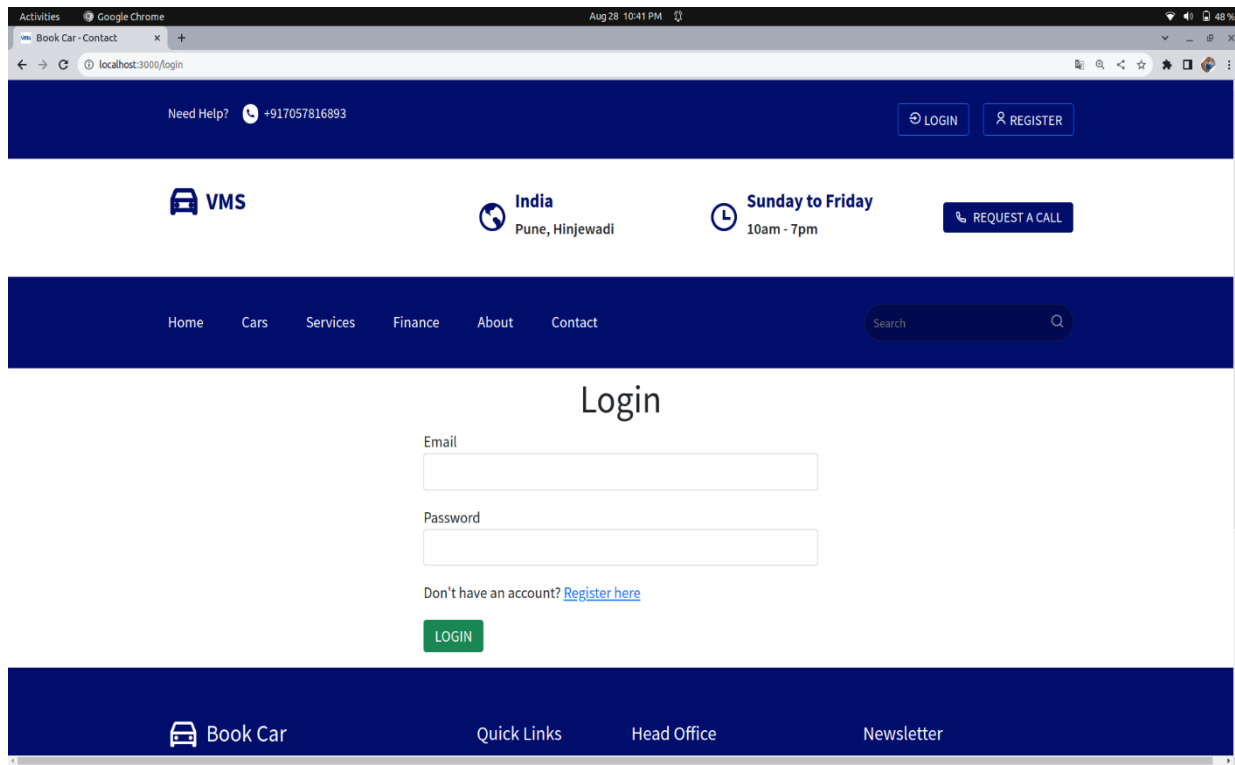
Password

Confirm Password

Already got an account? [Login here](#)

REGISTER

Login:



A screenshot of a web browser showing the login page of a Vehicle Management System. The page has a dark blue header with a "Need Help?" link and a phone number "+917057816893". There are "LOGIN" and "REGISTER" buttons in the header. Below the header, there is a navigation bar with links for "Home", "Cars", "Services", "Finance", "About", and "Contact", along with a search bar. The main content area is titled "Login" and contains input fields for "Email" and "Password". Below the form, there is a link "Don't have an account? [Register here](#)" and a green "LOGIN" button. The footer contains links for "Book Car", "Quick Links", "Head Office", and "Newsletter".

Activities Google Chrome Aug 28 10:41 PM

Book Car - Contact x +

localhost:3000/login

Need Help? +917057816893

LOGIN REGISTER

VMS

India
Pune, Hinjewadi

Sunday to Friday
10am - 7pm

REQUEST A CALL

Home Cars Services Finance About Contact

Search

Login

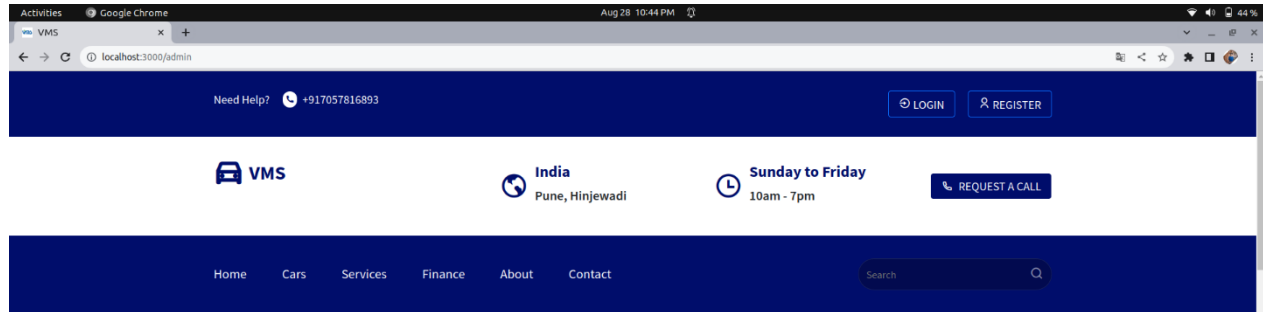
Email

Password

Don't have an account? [Register here](#)

LOGIN

Book Car Quick Links Head Office Newsletter

Admin Dashboard:

Admin Dashboard

Car Bookings				
Name	Mobile	Car Brand	Car Model	Price
Eshwar Lidhure	7586965485	Jeep	Cherokee	₹32000
Mayur Patil	7585456968	Toyota	Camry	₹25000
Lalit Patil	8458969686	Jeep	Cherokee	₹32000
Lalit Patil	8458969686	Jeep	Cherokee	₹32000
Total Price: ₹121000				

Activities

Google Chrome

Aug 28 10:45 PM

VMS

localhost:3000/admin

Users

ID	Name	Email	Phone	Address
4	Eshwar	eshwar@gmail.com	7586965485	Pune
5	Mayur	mayur@gmail.com	7585456968	Nashik
6	Lukesh	lukeshchaudhari03@gmail.com	6098841585	pune
7	Lalit	lalit@gmail.com	8458969686	Pune
8	Bhagyashri	bhagyashri@gmail.com	96534567765	at.post,bamnmod

Salesperson

ID	Name	Email	Phone	Address	
2	Suyog	suyog@gmail.com	8569965452	Mumbai	DELETE
3	Sanket	sanket@gmail.com	7854255452	Pune	DELETE

Cars with Details

Id	Brand-Name	Model-Name	year	Fuel-type	Price	Color
1	Toyota	Camry	2022	Gasoline	25000	Blue

Choose file

No file chosen

UPLOAD IMAGE

DELETE

Vehicle Management System

Activities Google Chrome Aug 28 10:45 PM

VMS localhost:3000/admin

Cars with Details

Id	Brand-Name	Model-Name	year	Fuel-type	Price	Color				
1	Toyota	Camry	2022	Gasoline	25000	Blue	Choose file	No file chosen	UPLOAD IMAGE	DELETE
2	Honda	Civic	2022	Gasoline	22000	Red	Choose file	No file chosen	UPLOAD IMAGE	DELETE
3	Ford	Escape	2022	Hybrid	28000	Silver	Choose file	No file chosen	UPLOAD IMAGE	DELETE
4	Chevrolet	Silverado	2022	Gasoline	35000	Black	Choose file	No file chosen	UPLOAD IMAGE	DELETE
5	Nissan	Altima	2022	Gasoline	24000	White	Choose file	No file chosen	UPLOAD IMAGE	DELETE
6	Jeep	Cherokee	2022	Gasoline	32000	Green	Choose file	No file chosen	UPLOAD IMAGE	DELETE
7	Hyundai	Elantra	2022	Gasoline	23000	Gray	Choose file	No file chosen	UPLOAD IMAGE	DELETE
8	Kia	Sorento	2022	Hybrid	29000	Blue	Choose file	No file chosen	UPLOAD IMAGE	DELETE
9	Subaru	Outback	2022	Gasoline	27000	Silver	Choose file	No file chosen	UPLOAD IMAGE	DELETE
10	Volkswagen	Jetta	2022	Gasoline	24000	Red	Choose file	No file chosen	UPLOAD IMAGE	DELETE

ADD-CAR

BACK

Salesperson Dashboard:

Activities Google Chrome Aug 28 10:45 PM

VMS localhost:3000/salesperson

Need Help? +917057816893 LOGIN REGISTER

VMS India Pune, Hinjewadi Sunday to Friday 10am - 7pm REQUEST A CALL

Home Cars Services Finance About Contact Search

Salesperson Dashboard

Car Bookings

First Name	Mobile	Car Brand	Car Model	Booking Date	Payment Status	
Eshwar Lidhure	7586965485	Jeep	Cherokee	2023-08-26	PENDING	ACCEPT-PAYMENT
Mayur Patil	7585456968	Toyota	Camry	2023-08-28	PENDING	ACCEPT-PAYMENT
Lalit Patil	8458969686	Jeep	Cherokee	2023-08-28	PENDING	ACCEPT-PAYMENT
Lalit Patil	8458969686	Jeep	Cherokee	2023-08-28	SUCCESSFUL	

Vehicle Management System

Activities Google Chrome Aug 28 10:45 PM

VMS localhost:3000/salesperson

Finances

Loan Amount	Interest Rate	Monthly Payment	Financer	
100000	8.6	2000	Bajaj	DELETE
450000	7.2	2000	ABC	DELETE

Users

Name	Email	Phone	Address
Eshwar Lidhure	eshwar@gmail.com	7586965485	Pune
Mayur Patil	mayur@gmail.com	7585456968	Nashik
Lukesh Chaudhari	lukeshchaudhari03@gmail.com	6098841585	pune
Lalit Patil	lalit@gmail.com	8458969686	Pune
Bhagyashri Rane	bhagyashri@gmail.com	96534567765	at.post,bamnrod

Insurances

Insurance Provider	Policy Number	Premium Amt	Claim Amt	Years	Status
LIC	54565875	20000	150000	5	ACTIVATE

Activities Google Chrome Aug 28 10:45 PM

VMS localhost:3000/salesperson

Insurances

Insurance Provider	Policy Number	Premium Amt	Claim Amt	Years	Status
LIC	54565875	20000	150000	5	ACTIVATE
SBI	54567875	22000	200000	7	ACTIVATE

Test Drives

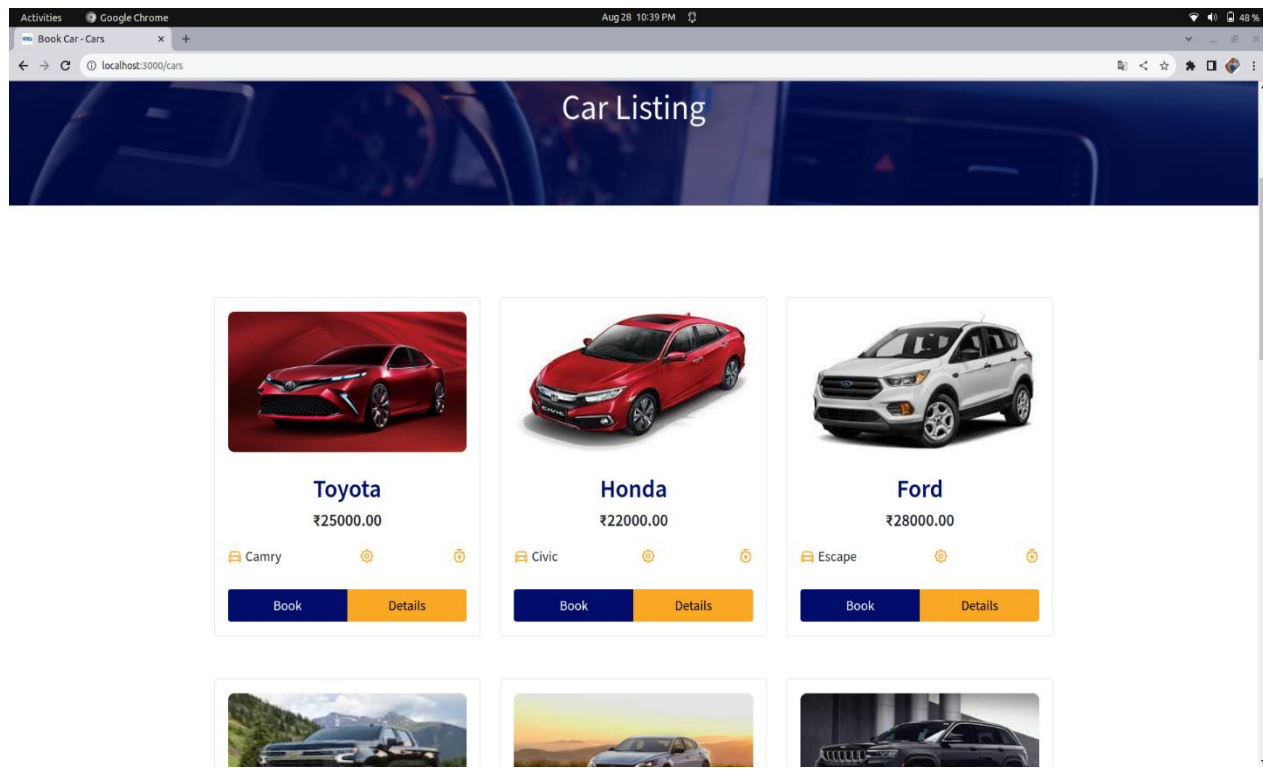
Name	Car	Date	
Eshwar Lidhure	Jeep	2023-08-31	DELETE

Car Services

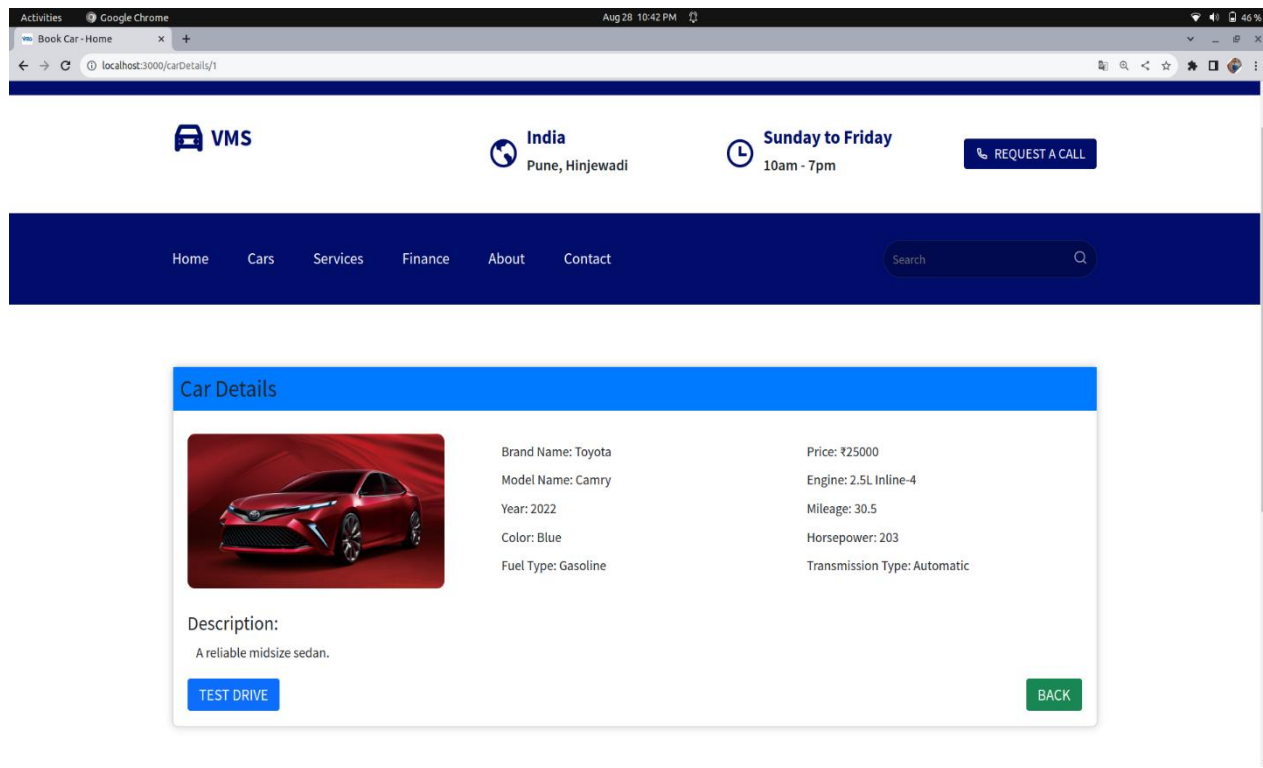
Service Name	Description
Brake Inspection	Hii
Engine Tune-Up	Heyy
Engine Tune-Up	Hii
Tire Rotation	hii

[BACK](#)

Car Listing:



Car Details:



Booking:

Activities Google Chrome Aug 28 10:42 PM 46%

Book Car - Home x +

localhost:3000/booking/4

Select Insurance

LIC

Premium Amount: 20000

Year: 5

SBI

Premium Amount: 22000

Year: 7

Select Finance

Bajaj

Loan Amount: 100000

Interest Rate: 8.6

ABC

Loan Amount: 450000

Interest Rate: 7.2

Activities Google Chrome Aug 28 10:42 PM 46%

Book Car - Home x +

localhost:3000/booking/4

Delivery Date:

dd/mm/yyyy

Enter Payment Details

☐ Card Payment ☐ Cash Payment


Card Number:

Enter card number

CW:

Enter CVV

PAYMENT

 **Book Car**

Welcome to VMS, where automotive excellence meets personalized service. With a diverse selection of hand-picked vehicles, we strive to

Quick Links

About

Head Office

123 Hinjewadi, Phase 1, Pune, India

Newsletter

Subscribe our newsletter

Email

Test Drive:

Need Help? +917057810893

[LOGIN](#) [REGISTER](#)

VMS

India
Pune, Hinjewadi

Sunday to Friday
10am - 7pm

REQUEST A CALL

[Home](#) [Cars](#) [Services](#) [Finance](#) [About](#) [Contact](#)

Test Drive Page

Car Brand:

Car Model:

Full Name:

Phone Number:

Email:

Test Drive Date:

Comments:

Additional comments...

Request Test Drive

Book Car

Welcome to VMS, where automotive excellence meets personalized service. With a diverse selection of hand-picked vehicles, we strive to provide a seamless and enjoyable car-buying experience. Our knowledgeable team is dedicated to understanding your needs and helping you find the perfect vehicle that fits your lifestyle and aspirations. We ensure that every vehicle in our showroom meets the highest standards of quality and performance.

Quick Links

[About](#)
[Privacy Policy](#)
[Car Listing](#)
[Contact](#)

Head Office

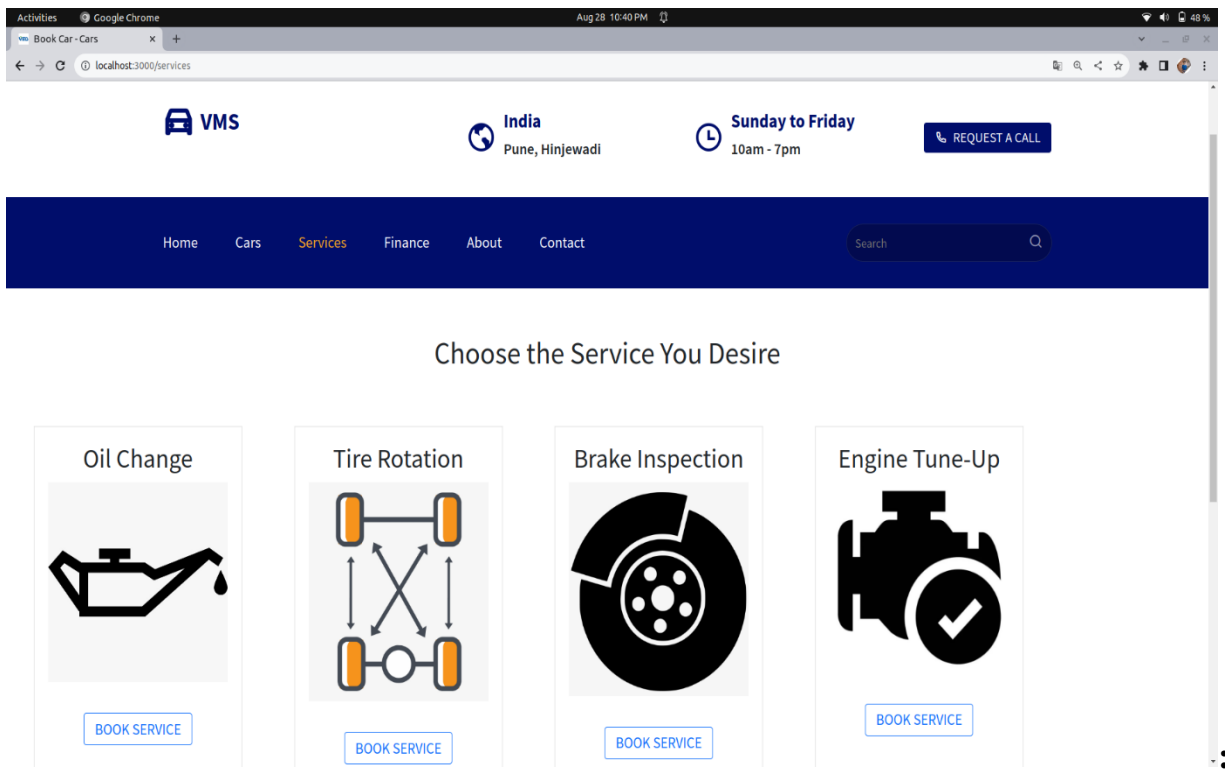
123 Hinjewadi, Phase 1, Pune, India
Phone: +91-7057810893
Email: valthavk12@gmail.com
Office Time: 10am - 7pm

Newsletter

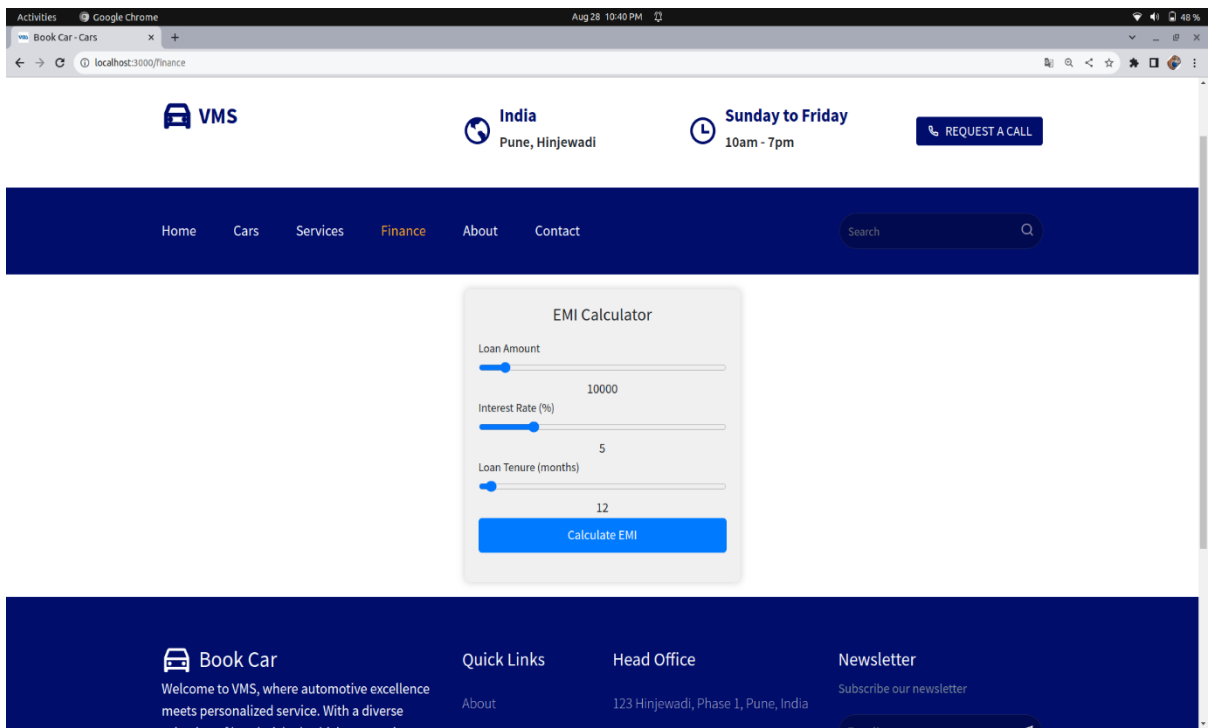
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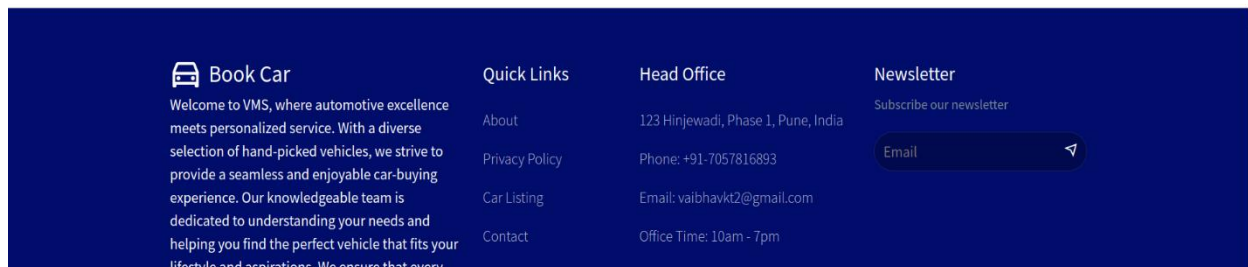
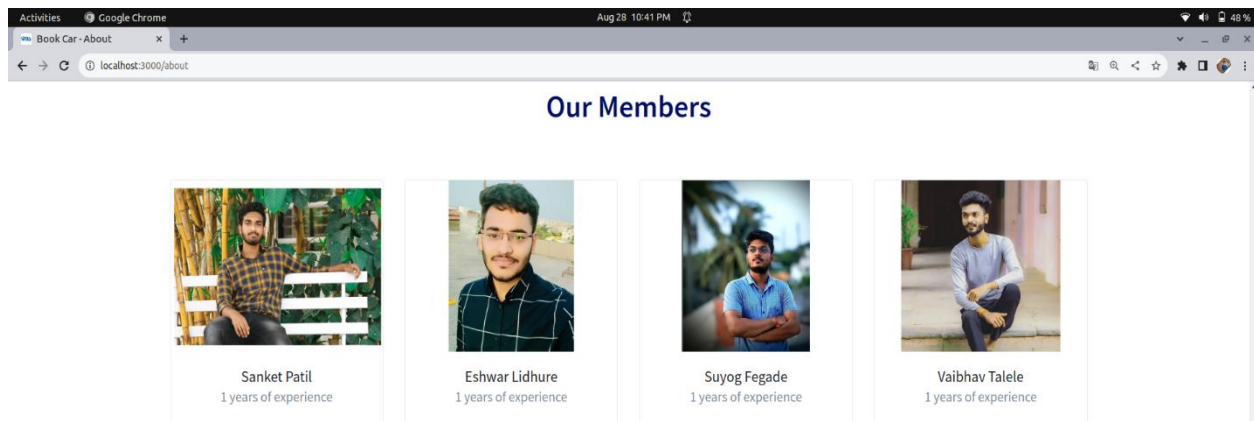
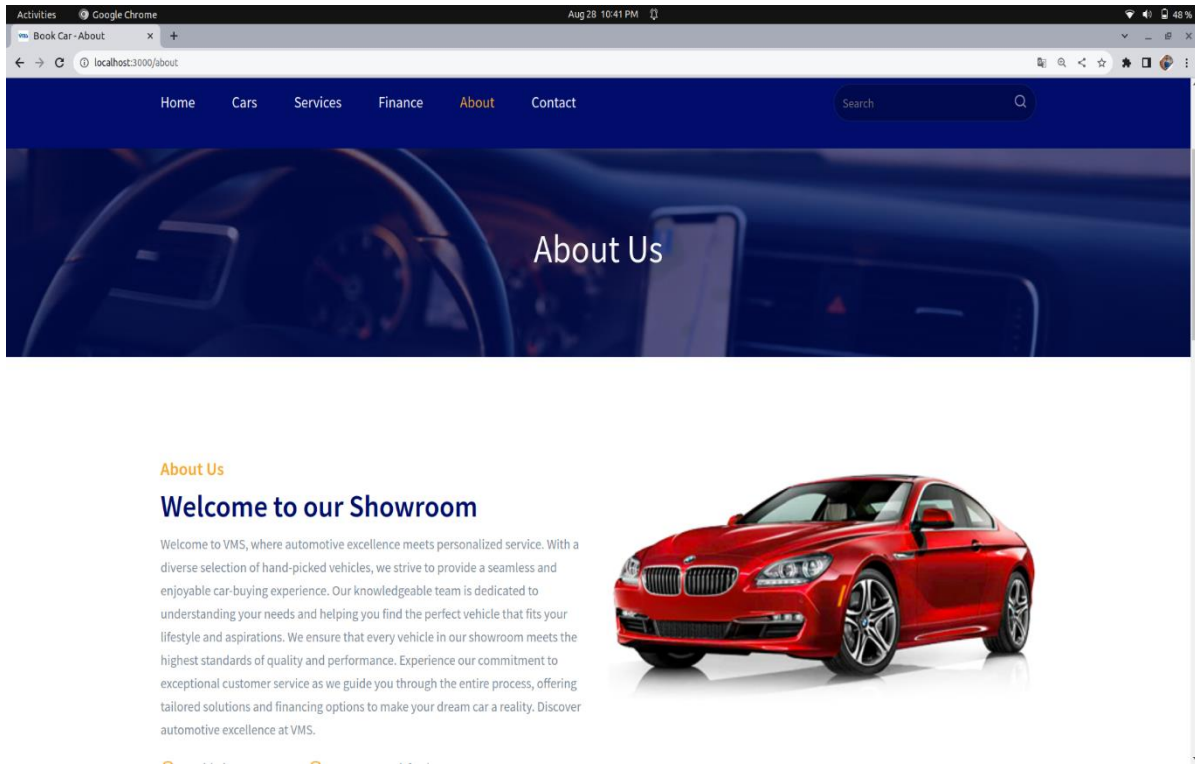
Services:



Finance:



About Us:



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