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SMART CAR WASH

In partial fulfilment of the requirements for the degree of
Bachelor of Science in Information Technology

Supervisor: Bilal Shahid

Department of Computer Sciences
Bahria University, Lahore Campus

June 2022

Certificate



We accept the work contained in the report titled

“Smart CarWash”

written by

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as a confirmation to the required standard for the partial fulfilment of the degree of
Bachelor of Science in Computer Science.

Approved by:

Supervisor:

(Signature)

Date: 14 June, 2022

DECLARATION

We hereby declare that this project report is based on our original work except for citations and quotations which have been duly acknowledged. We also declare that it has not been previously and concurrently submitted for any other degree or award at Bahria University or other institutions.

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SMART CAR WASH

ABSTRACT

As world is moving towards online platforms we have seen the use of online platform in recent pandemic. Online platform provides ease of use facility to stay in house or elsewhere to get the facility of booking order etc. In typical car wash areas usually people have to wait to get their number. As time is everything these days and automobile industry is very big. This type of system is very common in foreign countries but in Pakistan no online based system is available.

The solution to this problem is facilitating people by giving them online platform where they can easily save their time by only reaching to this application and booking appointment early. This idea would be very useful for the market. We will use waterfall methodology to achieve our target.

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CHAPTER 1

1.1 Background

Now days everything is online based system and introducing online booking facility and simply booking schedule for car wash would be very useful and time saving for car owners as automobile industry is growing very fast. 40% of the industry is also converted to the online system except car wash system. Providing such facility would be very useful.

Our System will provide a mobile app and web-based platform where the customer can book his appointment. Many categories will be provided to user such as simple carwash, detailing, polishing, ceramic coating, heat coating.

1.2 Problem Statements

In Pakistan such type of system is not common and not available as compare to the foreign countries and our automobile industry is growing rapidly. Every second or third family in metropolitan city have their own vehicles, providing such facility would hit the market easily. Now in our county usually manual based system is used but our project would convert this industry into the automate industry. In the beginning everyone who would be visiting car wash we will give them offer if they sign up to our web based system they can avail the discount and with this market strategy we can start gaining our targeted audience and once we get enough record, we will be sending them to emails that now they can easily book their schedule a week ago month ago whenever they are willing.

1.3 Aims and Objectives

- To reduce human interaction by providing online platform
- To facilitate the customer by analyzing their customized request
- To save the customer waiting time

1.4 Scope of Project

The purpose of a project is to make booking at home easier and people can book their schedule by using our website and mobile application very easily, also time is everything these days using this platform people can simply save their time and get their vehicles washed on their booked time. Our platform will provide multiple options such as detailing, coating which includes sub-categories like ceramic coating, heat coating. There will be search module where a person will find his nearest carwash running our system. Owner of this system can easily find his budget usage material, income revenue on daily basis and with the help of this he can expand his business

CHAPTER 2

LITERATURE REVIEW (and/or SRS)

In the 21st century converting manually work in to automation is the key aspect of moving forward to remain in touch with the world is necessarily important while Every day car industry is growing as per the human requirement the main objective of working on this idea is to provide such platform innovative idea to provide the platform of online based car wash booking system is necessary .this could improve many thing economically beneficiary for the user and the consumer could increase the monthly gross and most importantly could save time

2.1 Software Requirements Specifications:

Our System is intended for the following users:

2.1.1 Admin panel

- Log in
- Manage User account
- Add services
- Delete services
- View services
- Change schedule
- Economic review

2.1.2 User panel

- Create account
- Log in
- Book schedule
- Contact
- Feedback

2.2 Operational Environment

AS we are using online booking system in case of that will be having the latest framework so we need a laptop with a minimum of 8GB RAM and with SSD because the platform we use SSD would be more efficient than hard disk.

2.2.1 Software Environment

Table 2.1: Environment

Tools & Technologies	Reasons for Using
VS Code	IDE for Web Development
Browsers	For Testing UI and Debugging
Html/Bootstrap	For Front-end Web Development
Laravel	For Back-end Web Development
MySQL	For Database

2.2.2 Hardware Environment

There is no specific hardware required to access this product, as the website does not directly interact with the hardware. Minimum hardware recommended to access the web application are as below:

Computer:

A Personal Computer with windows installed. At least a web browser application installed to view the application is required

CHAPTER 3

DESIGN AND METHODOLOGY

3.1 Use Case Description

This chapter gives an overview of the design of Smart Car Wash. The system architecture design gives the total perspective of the system. This will enable developers and clients to see and check the design plan in detail. Following artifacts incorporated in this Chapter.

- Use case diagrams.
- Sequence Diagrams.
- Entity relationship diagram
- Class Diagram
- Domain Diagram

3.2 Use Case Diagram

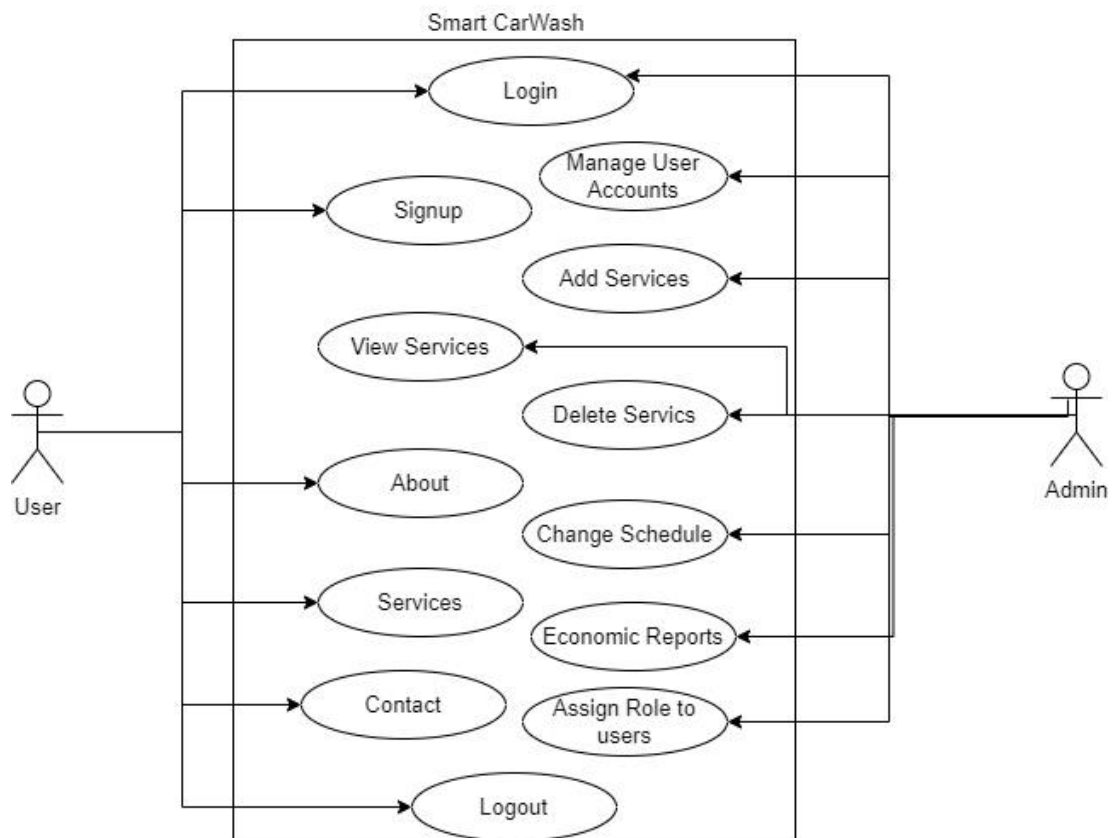


Figure 3.1: Use Case Complete

3.2.1 Register Use Case

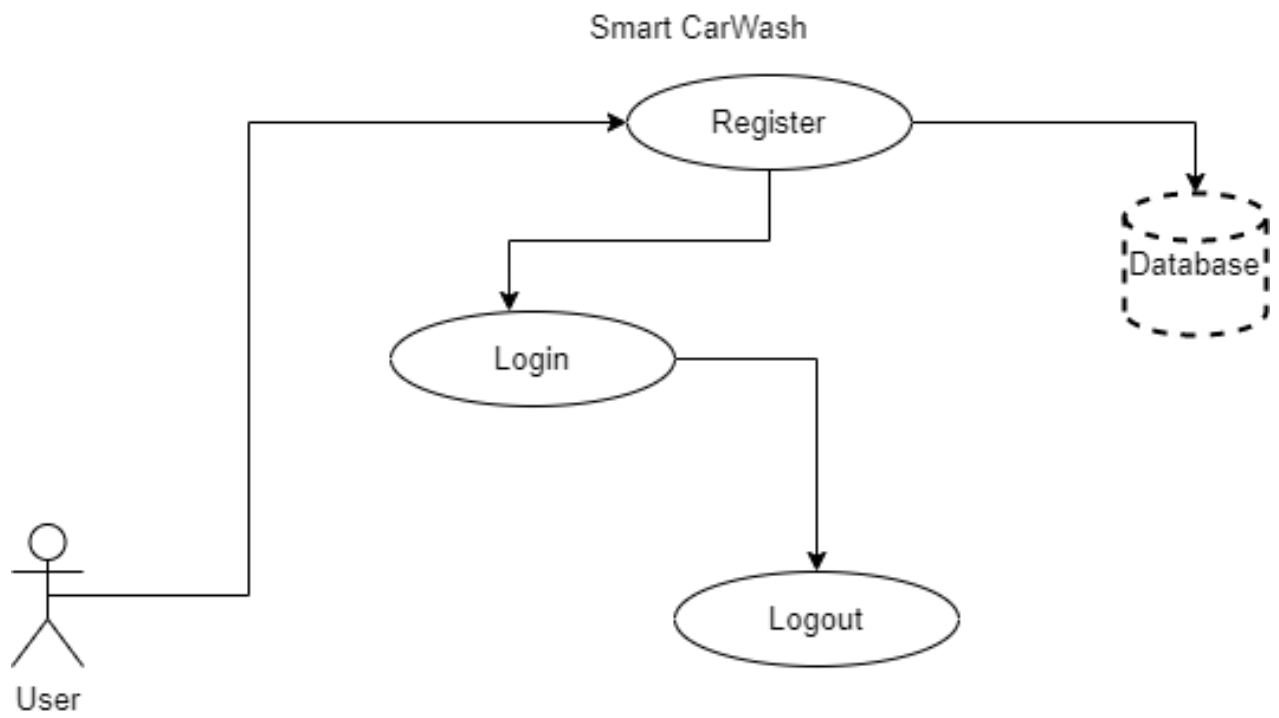


Figure 3.2: Register Use Case

Table 3.1 : Register

	Name	Register
1.	Use-case-ID	U1
2.	Objective	Users will always login with their Mobile Number and password
3.	Priority	High
4.	Initiating Actor	User
5.	Actor's Goal	To create a new profile.
6.	Pre-conditions	User is viewing the Register screen of the system
7.	Post-conditions	System displays the home screen
8.	Flow of Events for Main Success Scenario:	<ol style="list-style-type: none"> 1. Users enter his personal information and press submit button. 2. System checks if similar the user 'id already exists. 3. System creates a new entry with user's information and displays the login screen.
8.1	Basic flow	After success creates profile user go to login page.
9.	Flow of Events for Extension (Alternate Scenario):	No alternate flow must sign up to proceed further.
10.	Use case	No other use case use

3.2.2 Login Use Case

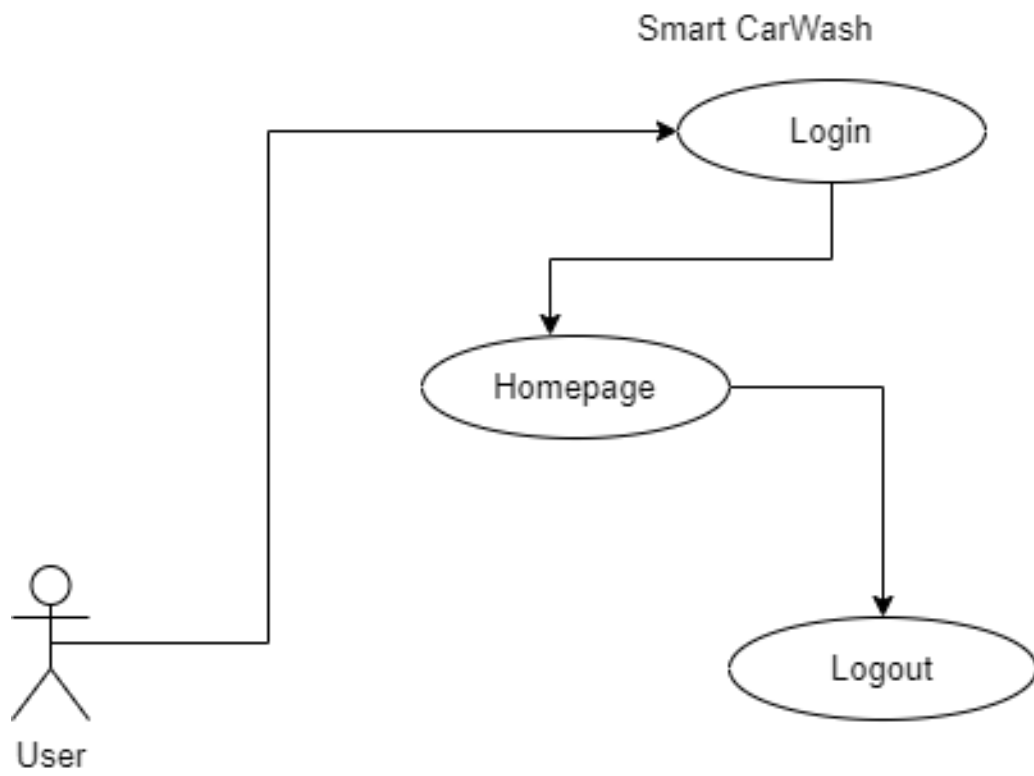


Figure 3.3: Login Use Case

Table 3.2: Login

	Name	User Log in
1.	Use-Case ID	U2
2.	Objective	The user will sign in with the credentials.
3.	Priority	High
4.	Source	Database
5.	Actors	User
6.	Flow of Events	Open Website or Mobile Application Enter Sign in Enter Mobile Number and Password Click on Sign-in Button
6.1.	Basic Flow	After successful sign-in user will go to HomePage
6.2.	Alternate Flow(s)	No alternate flow, User must sign-in to proceed further
6.3.	Exception Flow(s)	Invalid Mobile Number Invalid Password
7.	Includes	U1
8.	Preconditions	must sign up
9.	Post conditions	Taken to Homepage
10.	Notes/Issues	If the User will sign-in with the right credentials no problem will occur

3.2.3 Booking Use Case

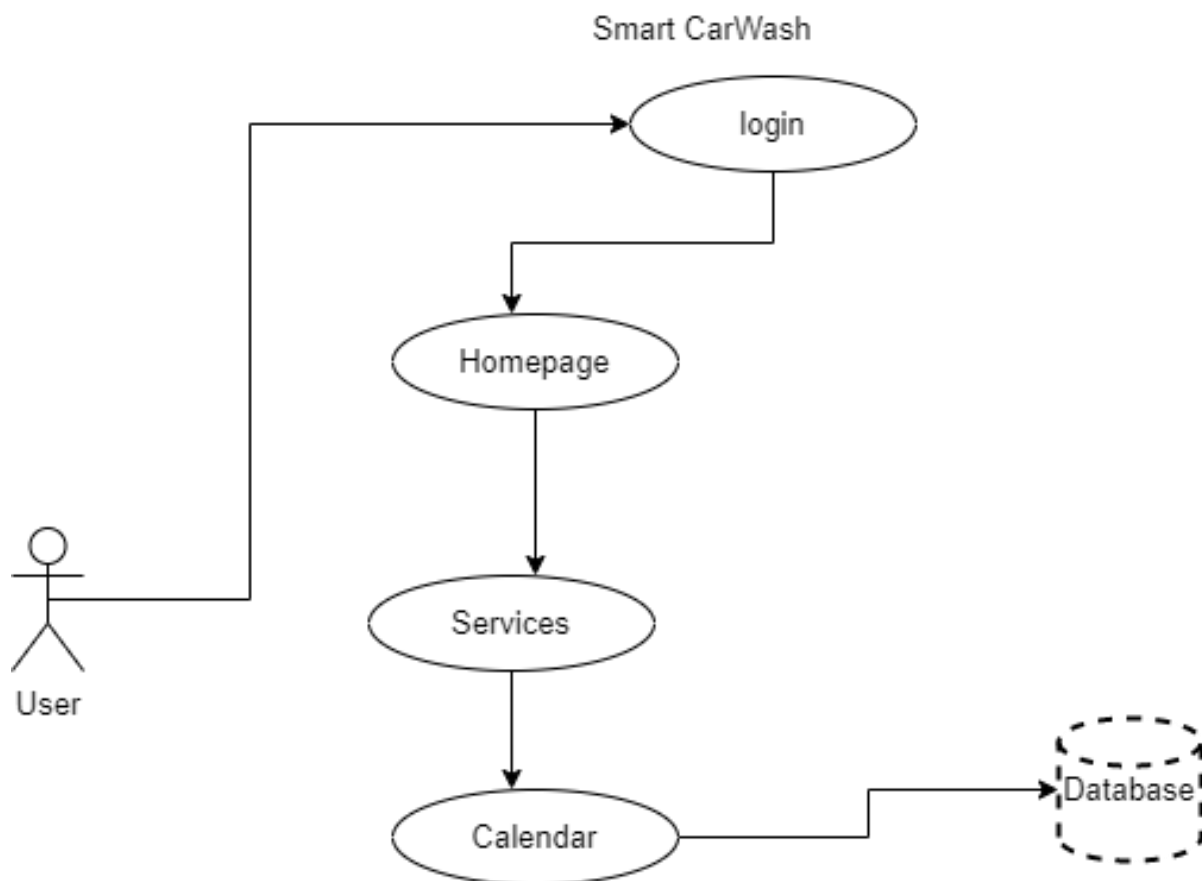


Figure 3.3: Booking Use Case

Table 3.3: Booking

	Name	Book Required Service
1.	Use-Case ID	U3
2.	Objective	In this use case, user will be able to book the desired service
3.	Priority	High
4.	Source	User is the main source of this use case
5.	Actors	User
6.	Flow of Events	Login Select Services from the homepage Click Book Now button of the desired service Select Schedule (if Available) Submit schedule Message Sent to user's mobile number
6.1	Basic Flow	User will be able to book services
6.2	Alternate Flow(s)	No alternate flow
6.3	Exception Flow(s)	No exception flow
7.	Includes	Use case U3
8.	Preconditions	User must be login
9.	Post conditions	Message sent with booking date and time

3.3 ERD Diagram

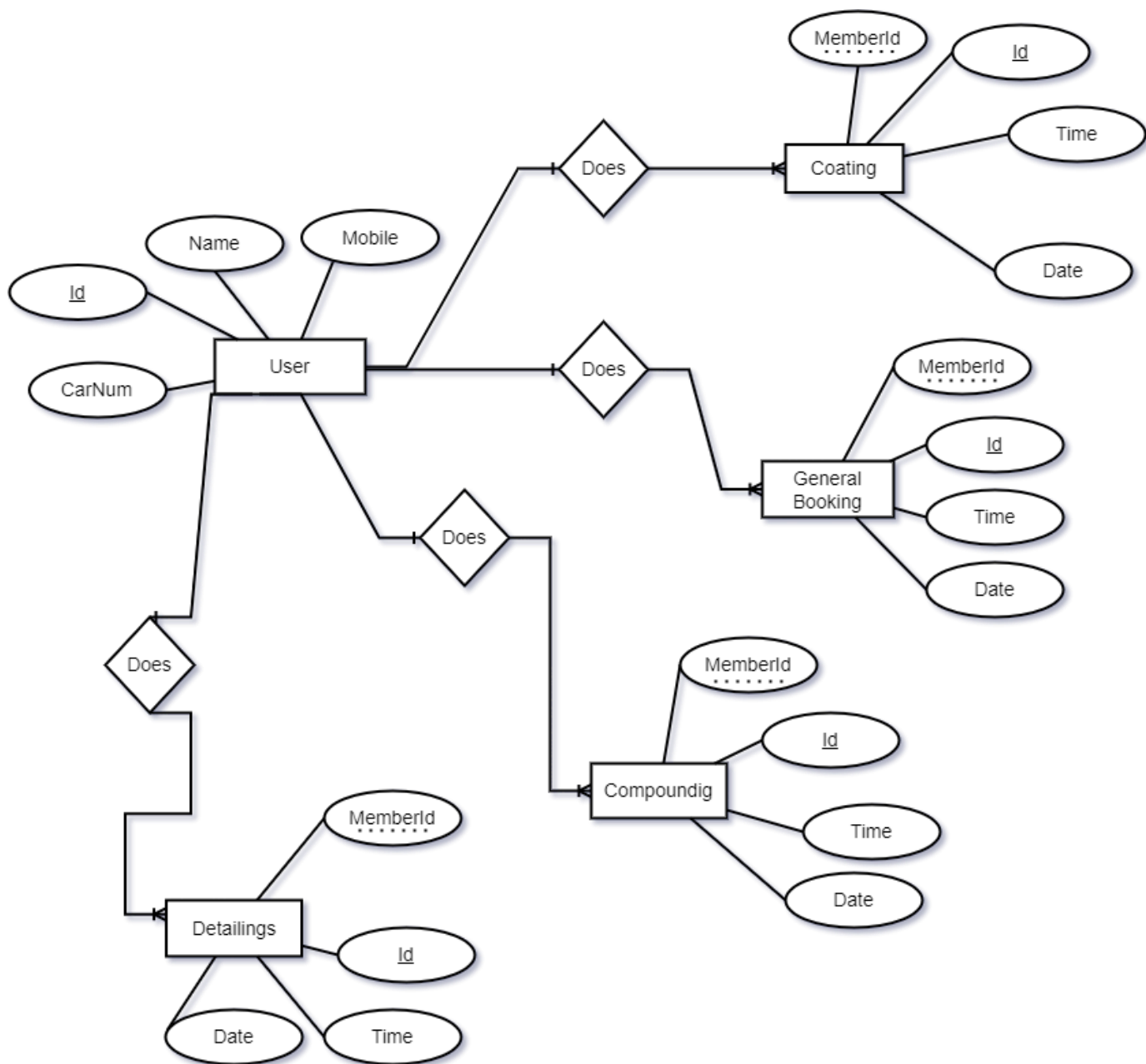


Figure 3.4: ERD

3.4 Class Diagram

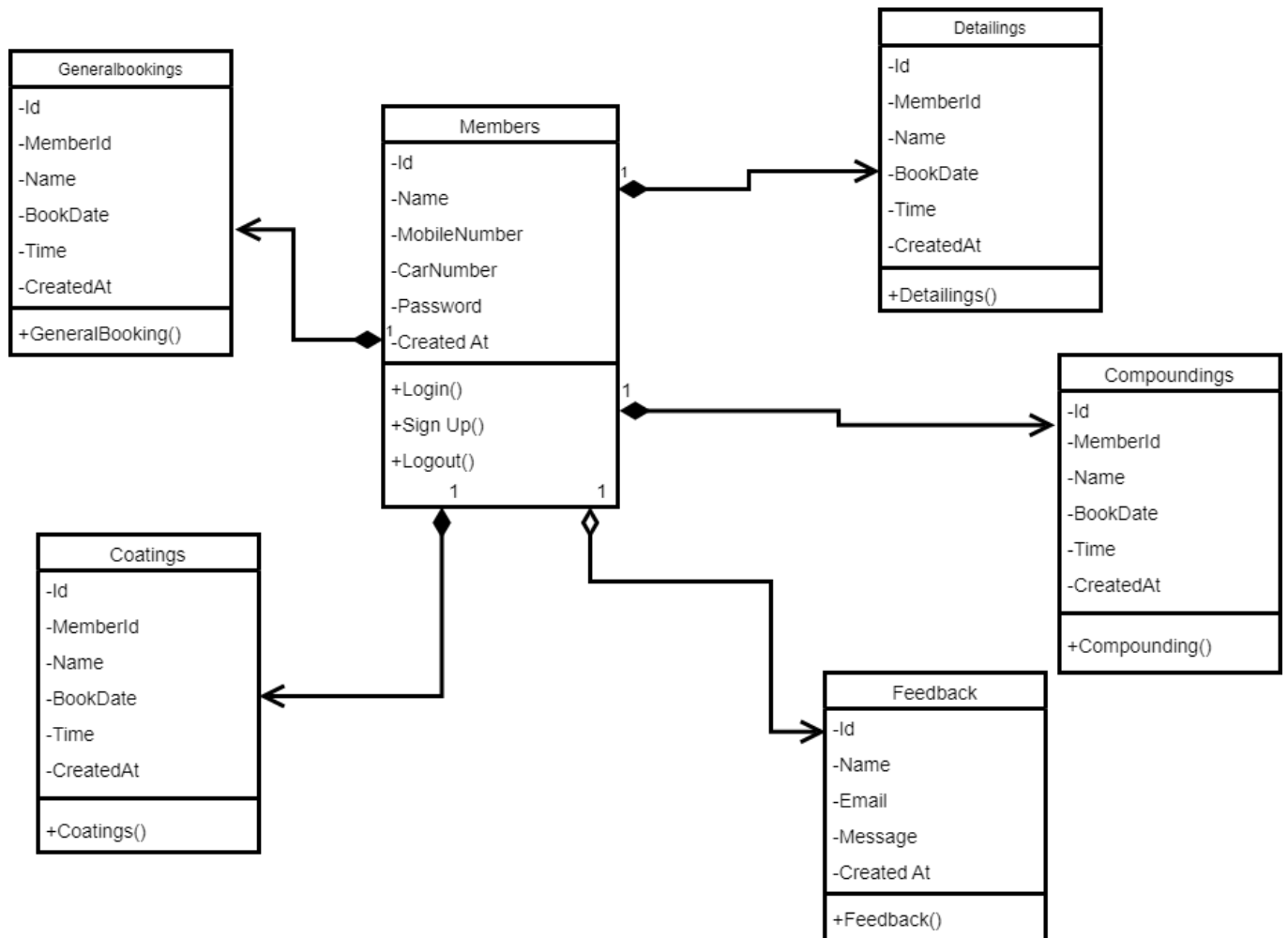


Figure 3.5: Class Diagram

3.5 ER Model

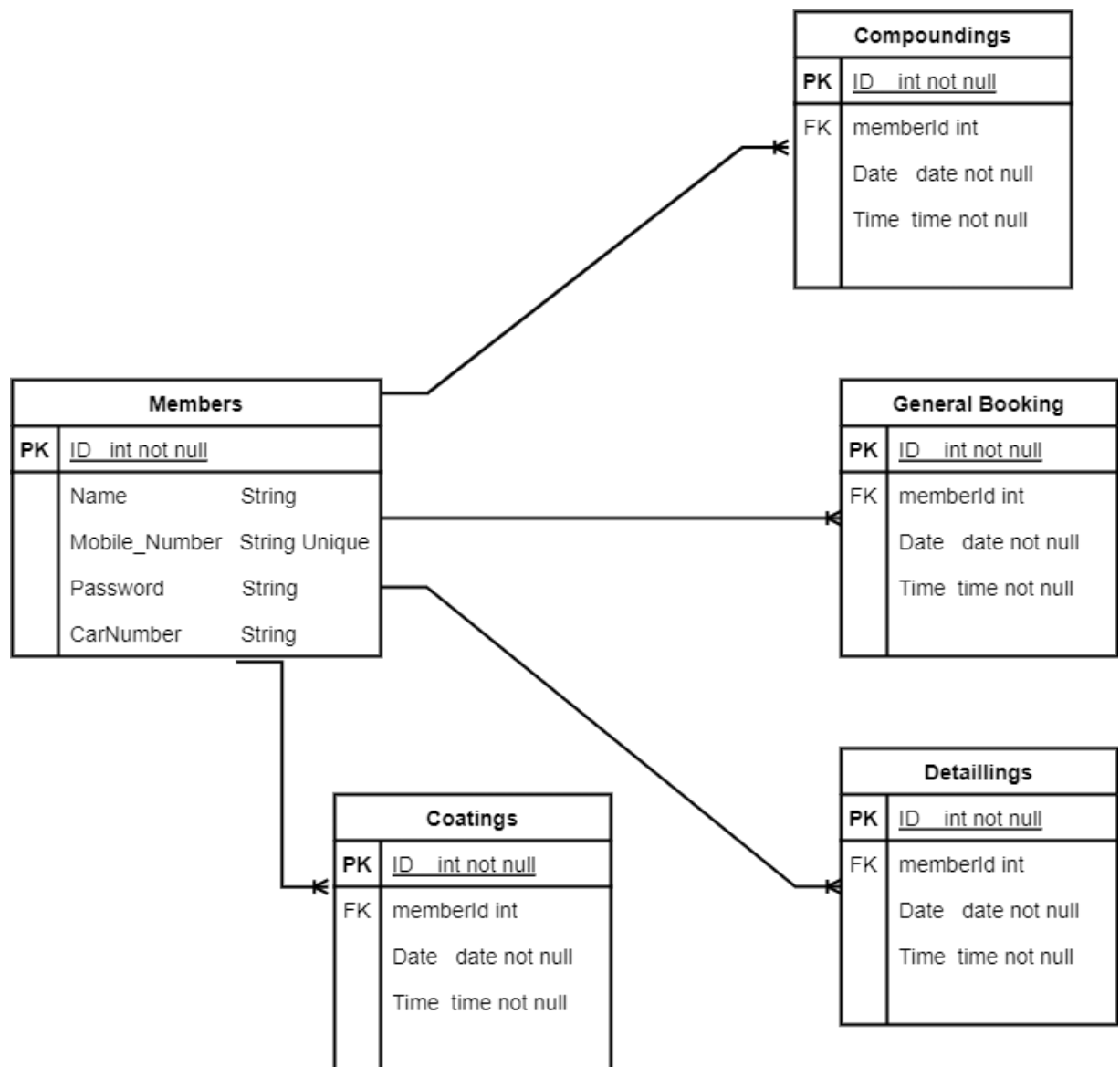


Figure 3.6: ER Model

3.6 Sequence Diagrams

3.6.1 Login Diagram

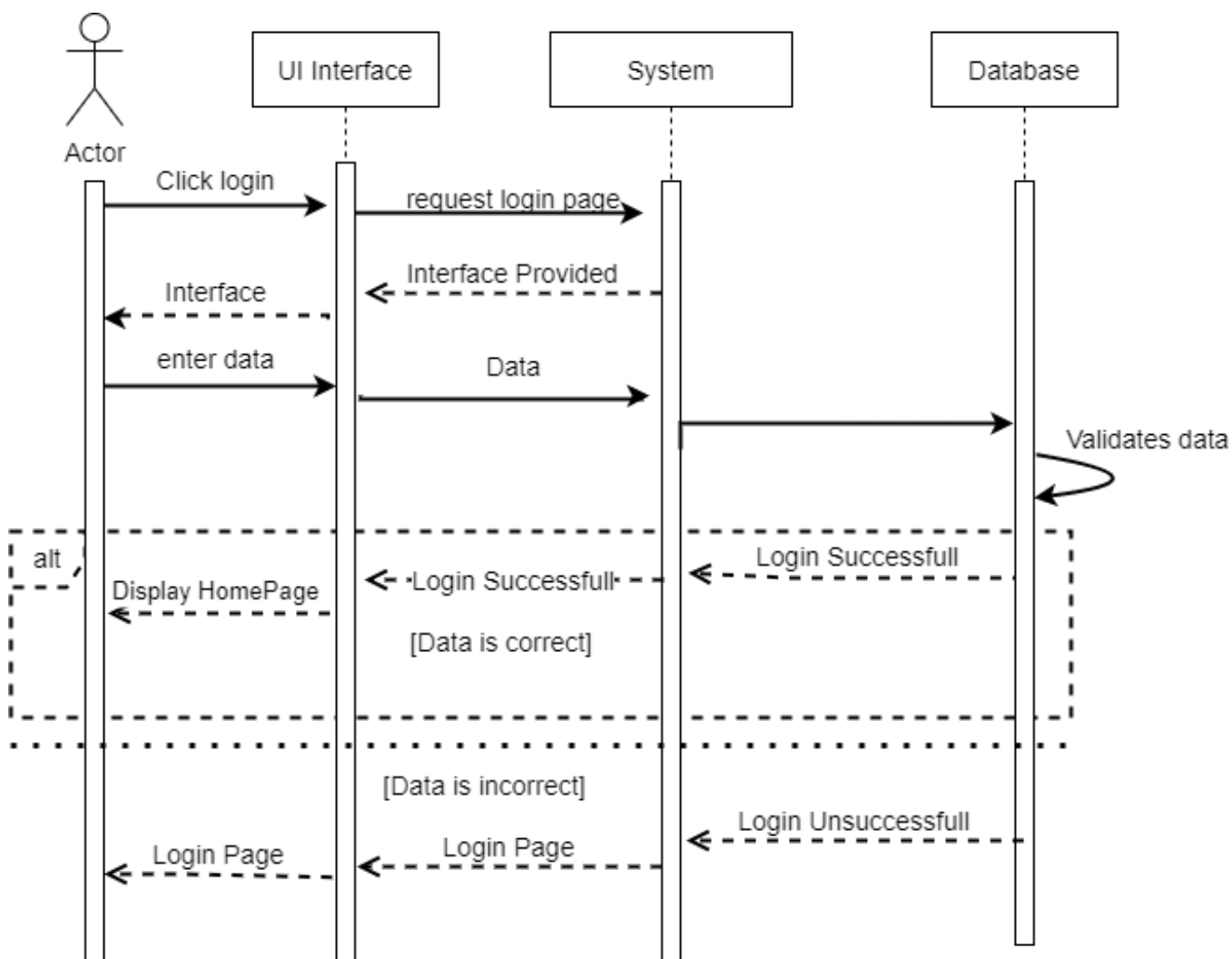


Figure 3.7: Login

3.6.2 Register Diagram

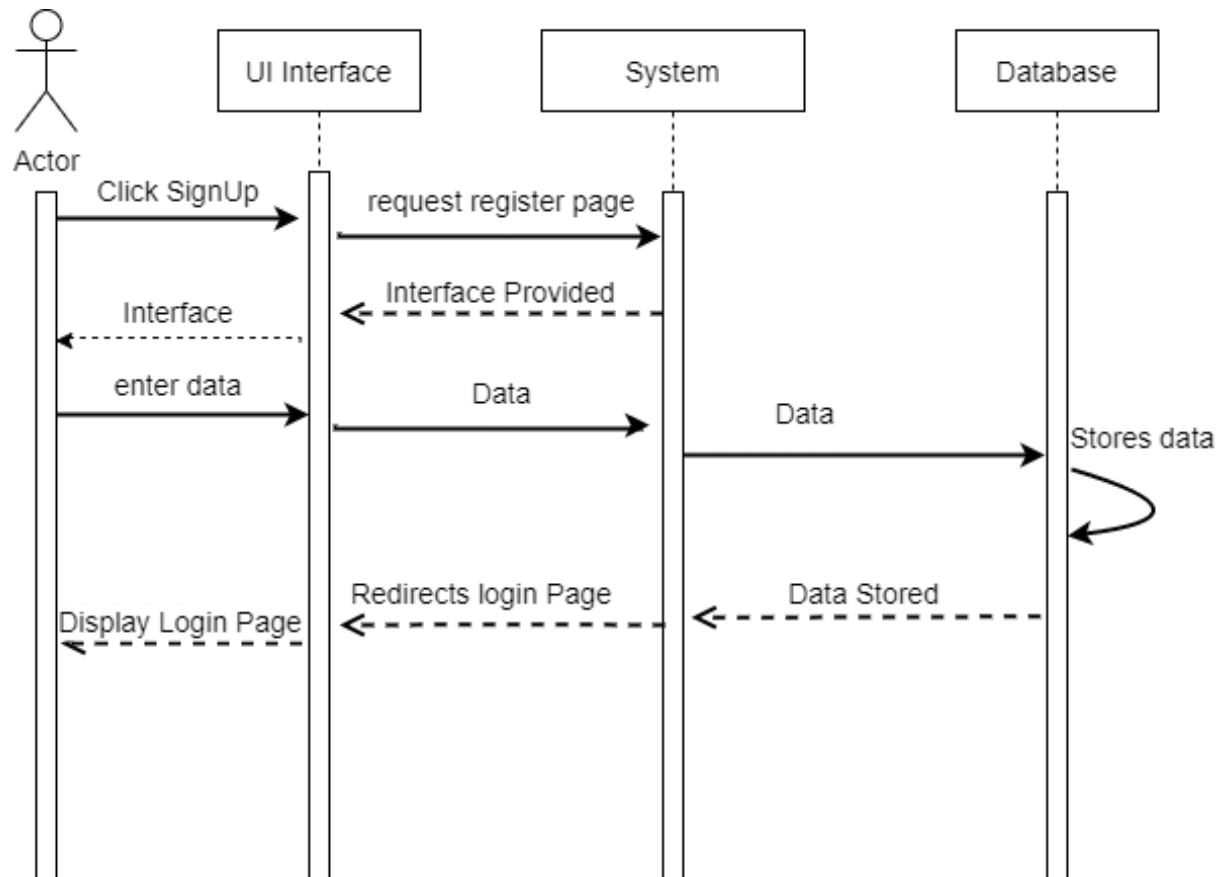


Figure 3.8: Register

3.6.3 Booking Service Diagram

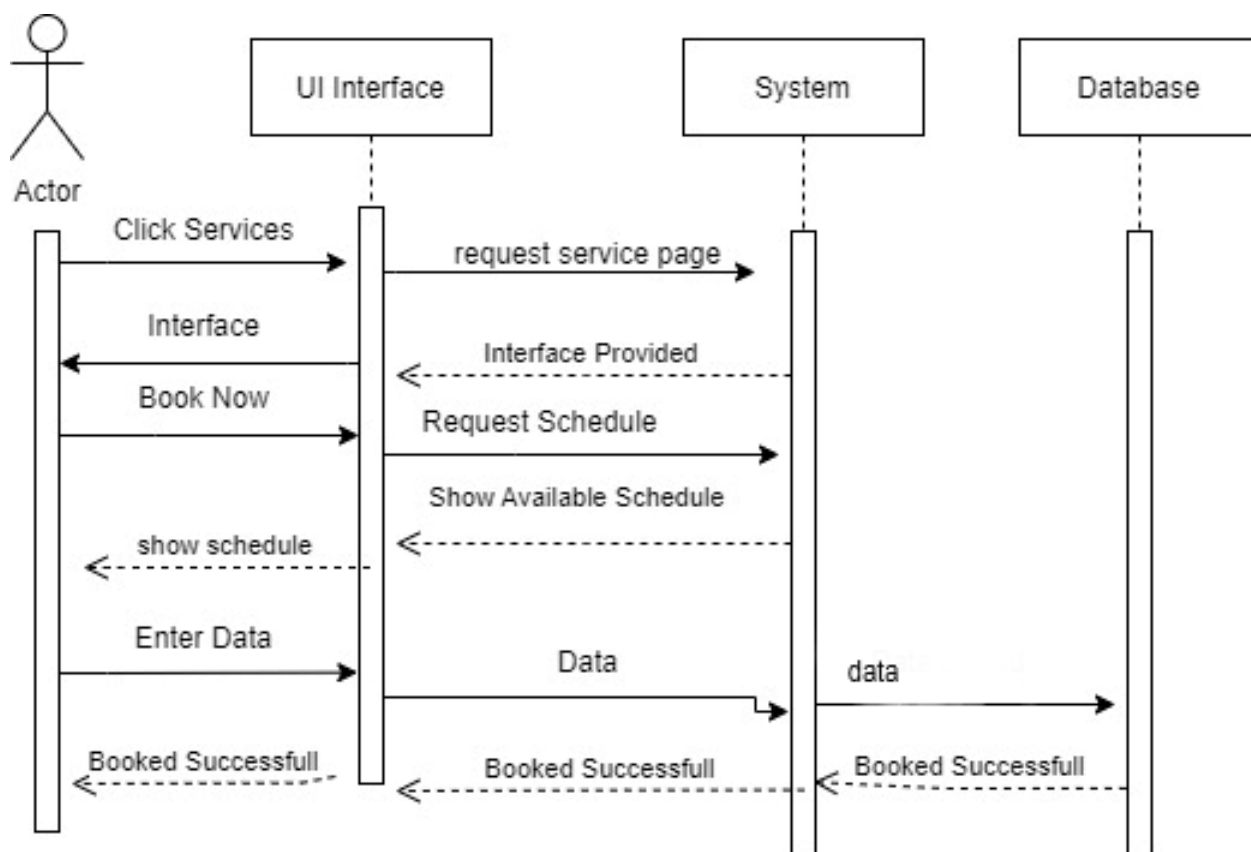


Figure 3.9: Booking

Methodology:

We are working on the bases of waterfall methodology:

- Requirements Gathering: Gather requirements from the customers at the beginning of the project. Gathering the required tools for the project. Tools may be related to hardware and might be software.
- Design: Designing the UML diagrams like use cases, class diagrams, etc. design to complete the aspects that are coming to developing a project.
- Implementation: Developing website and a mobile application.
- Verification: Acceptance testing

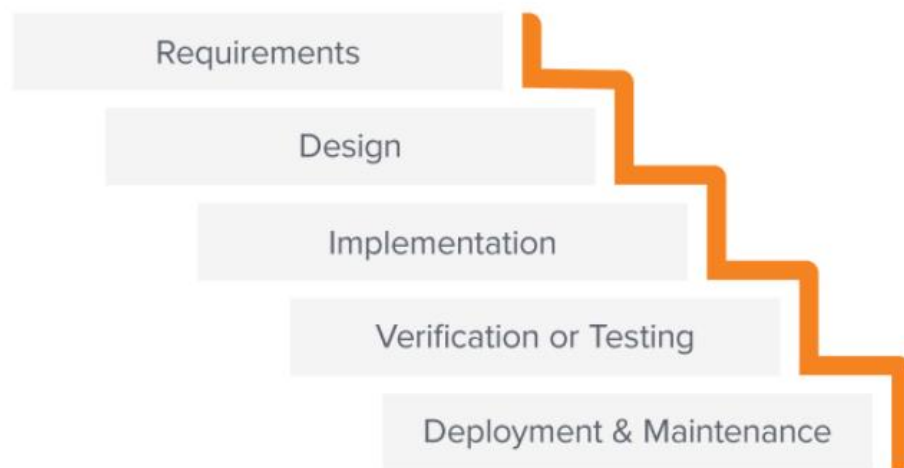


Figure 3.10: Waterfall

CHAPTER 4

DATA AND EXPERIMENTS (and/or IMPLEMENTATION)

The software development process generally involves a set of different phases. These phases involve planning and design, implementation, testing, documentation, deployment, and maintenance.

- **Planning and design**

This is the beginning of the software development process. The user and the consumer provide the requirements and analysis. The various users of the system have defined everything needed for the creation of this website and mobile application.

- **Implementation**

The system structure is converted into an executable program at this point. Laravel and CSS were utilized as programming languages. MySQL will be the database management system used in this project. A specific programming language will be used to write the program.

- **Tests**

This include executing the system and analyzing any flaws that may develop, as well as taking corrective action. Unit tests are used to test the many components of the website, such as the system interfaces, data storage, and how the various taking services and booking activities are carried out.

- **Documentation**

This phase entails noting and recording all activities that occur during the development process. The documentation is useful for any system modifications or upgrades that may be required, as well as for future reference while performing maintenance.

- **Deployment and Maintenance**

The completed software product must be submitted to the Computer Science department. The product can then be adjusted to match the user's specific requirements before being put into use. Newly identified weaknesses can be fixed, and requirements that are missing can be added.

- **Technical aspect of Smart Car Wash**

Since the auto industry huge online market, this website is an integrated system, both web server and database management system are needed. The system consists of a front-end and back-end application and is classified into the following categories:

- 1. Hardware**

Hardware contains necessary hardware as PC, Android mobile.

- 2. Backend**

Backend involves Laravel, MySQL, Php.

- 3. Frontend**

HTML, CSS, Bootstrap, jQuery

CHAPTER 5

RESULTS AND DISCUSSIONS (or USER MANUAL)

5.1 Login

User or admin can login by entering correct existing mobile number and password. If Mobile number or password is incorrect than it redirect on a page with message of incorrect mobile number or password

Smart CarWash

HOME ABOUT SERVICES CONTACT LOGIN SIGN UP

Login

Mobile Number:

Password:

Remember me

[LOGIN](#)

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

Car Wash

(+92) 304 1286 524
contact_smartcarwash@gmail.com

Opening hour

Mon-Sun (9.00-05.00)
Fri(Closed)

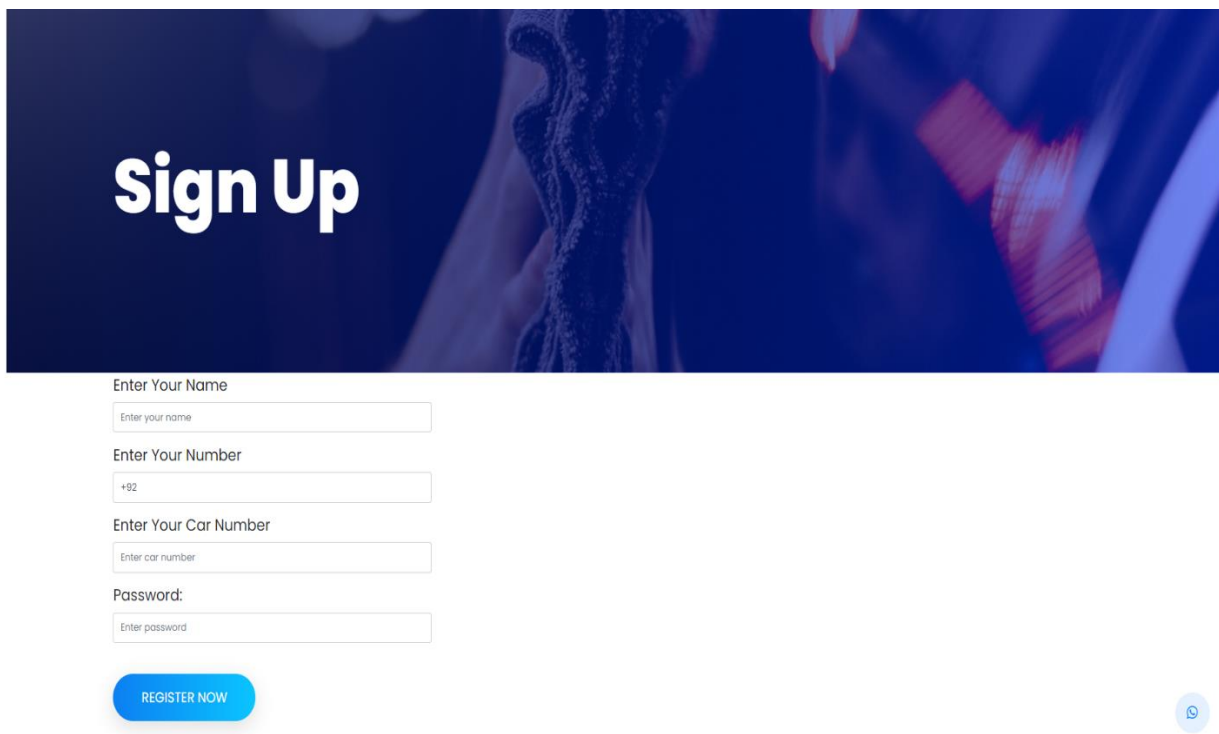
Navigation

Home
About
Services

Figure 5.1 : Login

5.2 Register

A user can redirect to registration page by clicking on register button. User have to add his Name, Phone Number, Car Number and password.



The image shows a registration form titled "Sign Up". The form is set against a dark blue background with a blurred image of a person's hands. The form contains the following fields and elements:

- Enter Your Name:** A text input field with the placeholder text "Enter your name".
- Enter Your Number:** A text input field with the placeholder text "+92".
- Enter Your Car Number:** A text input field with the placeholder text "Enter car number".
- Password:** A text input field with the placeholder text "Enter password".
- REGISTER NOW:** A blue button with white text.
- WhatsApp icon:** A small blue circular icon with a white speech bubble and a checkmark, located in the bottom right corner of the form area.

Figure 5.2 : Sign Up

5.3 Home Page

Homepage is the first page which is displayed to user when the website or mobile app is opened. The user can go anywhere from homepage.

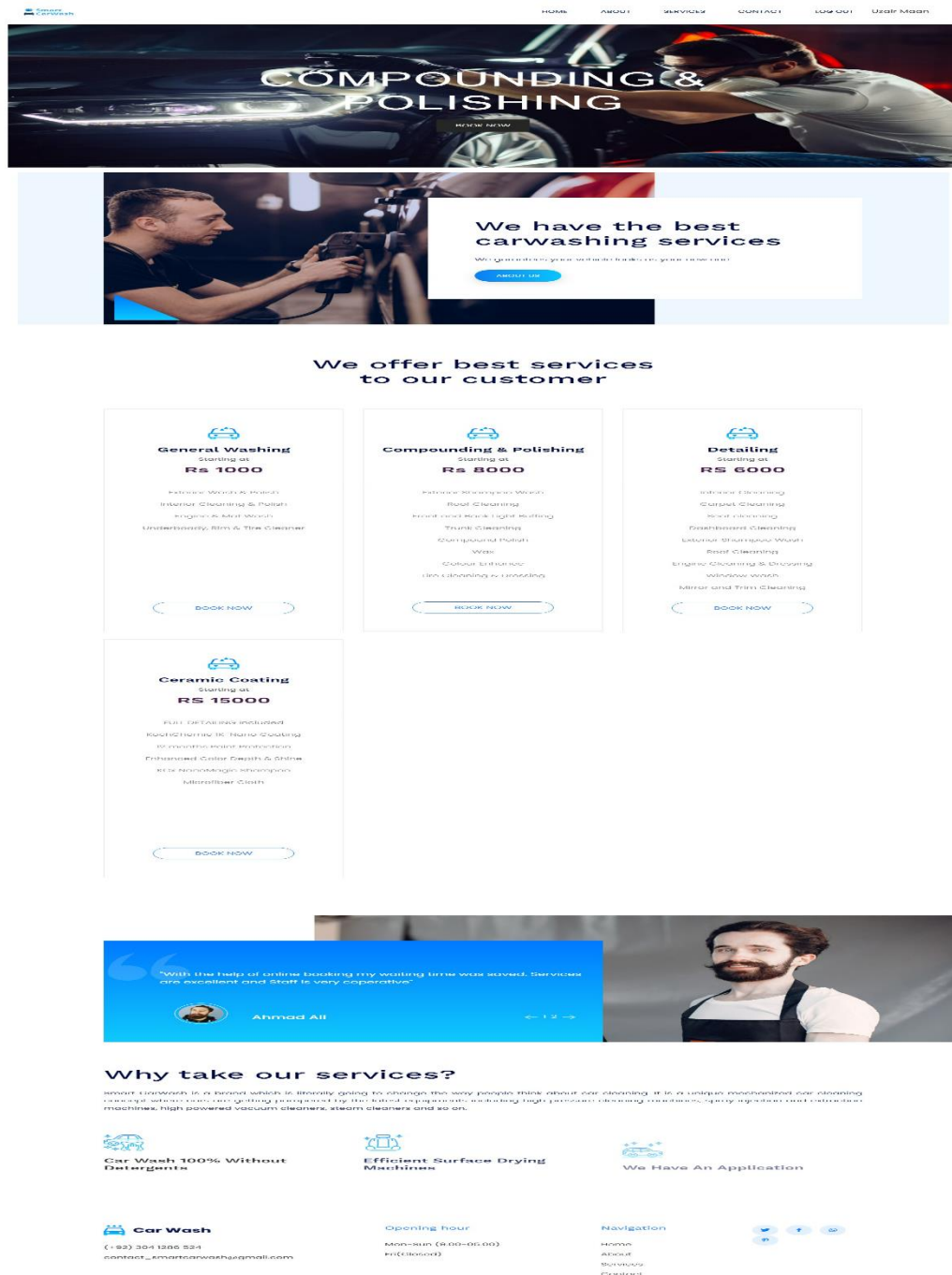


Figure 5.3 : Home

5.4 About Us

This page displays the information about our brand. A customer can get location of our carwash on google map from this page

Smart Car Wash HOME ABOUT SERVICES CONTACT LOG OUT Uzair Maan

About Us

We have the latest equipment
We guarantee your vehicle looks as your new one

Who We Are

Welcome to Smart Car Wash a concept devlop to organize the Car Cleaning segment to give the community a new definition of car care and detailing services which are not professionally followed in Pakistan. Based as Lahore our endeavour is to spread the awareness amongst car users about the Clean Car Culture & Car Hygiene.

Smart Car Wash is a brand which is literally going to change the way people think about car cleaning. It is a unique mechanized car cleaning concept where cars are getting pampered by the latest equipments including high pressure cleaning machines, spray injection and extraction machines, high powered vacuum cleaners, steam cleaners and so on.

In this fast moving life today we tend to spend more time in travelling as a result spend hours in the car, navigating the traffic jams. Air Pollution, Dust, Rain, Sunlight and Adverse road conditions all keeps adding on woes of common car users. And as a result, there is a severe need of Professional Car Cleaning Organization to take care of all Car Cleaning jobs and give us the finest and ultimate car cleaning experience and satisfaction.

Smart Car Wash is here to stay and work dedicatedly towards spreading the awareness among car users about their car hygiene habits, cleanliness, durability of exterior look and other common cleaning tips.

At Smart Car Wash we do a plethora of research on the car care and maintenance, the aim is to deliver best of service and bring in new concept to the car market. In the beginning we are focusing on educating our customers about the whole concept of Clean Car Culture, we have strong belief that our efforts will not only please you but definitely surprise you.

Why take our services?

Smart CarWash is a brand which is literally going to change the way people think about car cleaning. It is a unique mechanized car cleaning concept where cars are getting pampered by the latest equipments including high pressure cleaning machines, spray injection and extraction machines, high powered vacuum cleaners, steam cleaners and so on.

- Car Wash 100% Without Detergents**
- Efficient Surface Drying Machines**
- We Have An Application**

Doctors Hospital & Medical Center, PAST NUGES Lahore, KANIS TOWN, MODEL TOWN, JOHAR TOWN, Akbar Chowk Township, BLOCK G, University of Management & Technology (UMT), Kot Lakhpat, University of Central Punjab, TOWNSHIP, QU MILLA

Car Wash
(+92) 304 1285 524
contact_smartcarwash@gmail.com

Opening hour
Mon-Sun (9.00-05.00)
Fri(Closed)

Navigation
Home
About
Services
Contact

Figure 5.4 : About

5.5 Contact Us

User can contact the website admin through this page. There is a contact form on this page which can be used by the customer to query anything from administrator.

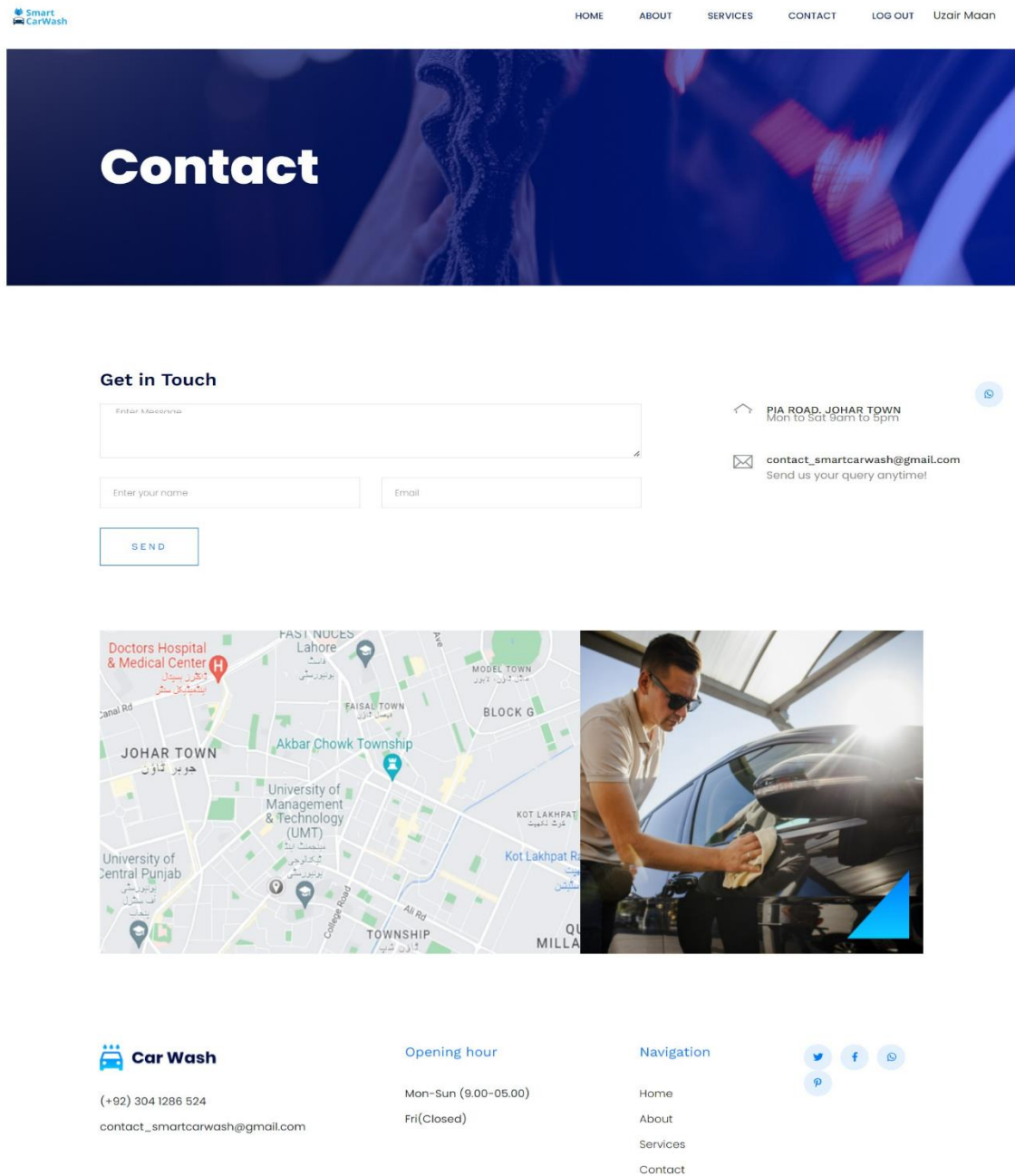


Figure 5.5 : Contact

5.6 Services

This page displays the services and plans offer by the Smart Car Wash. From this page user can book his required services

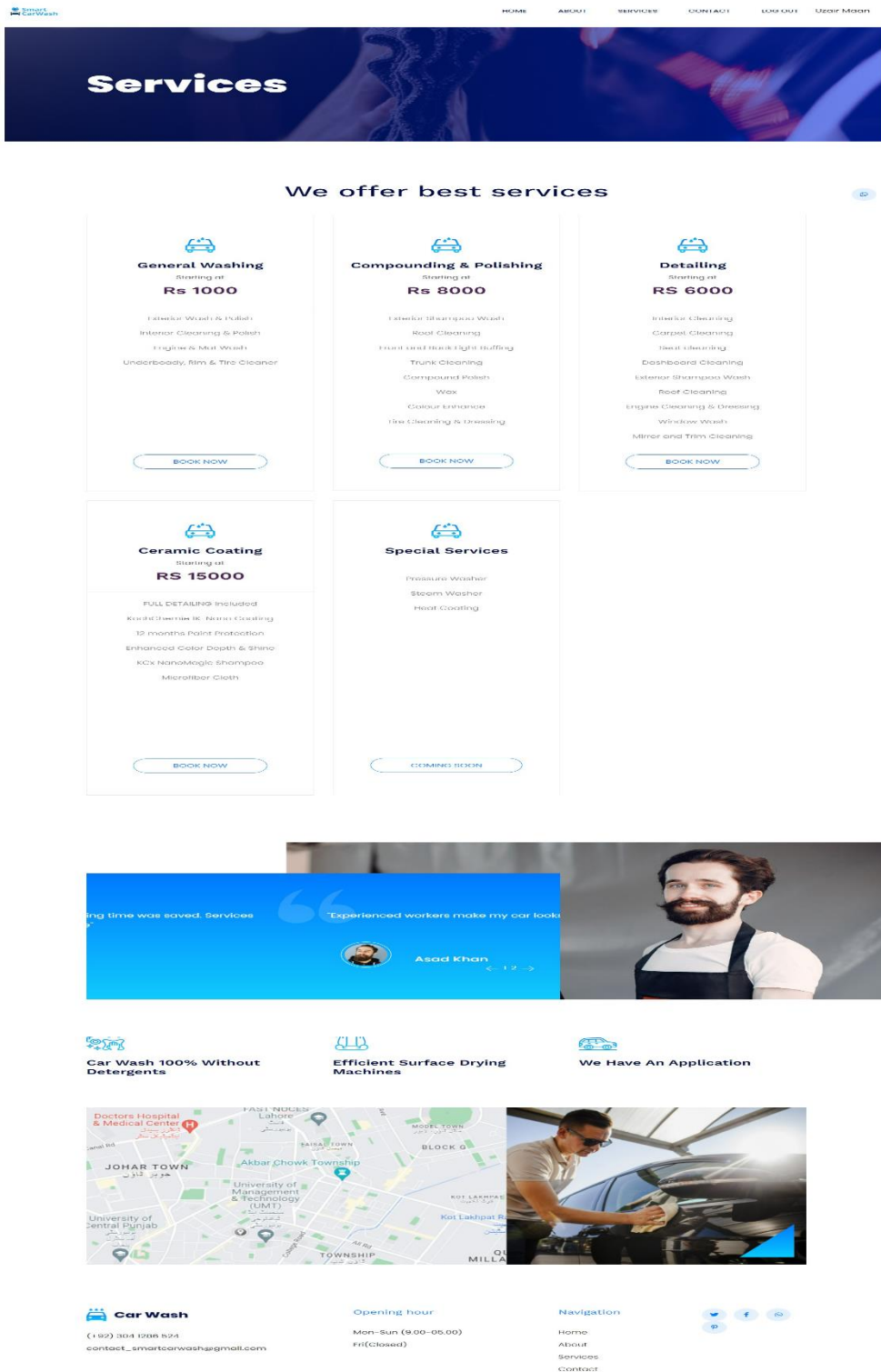
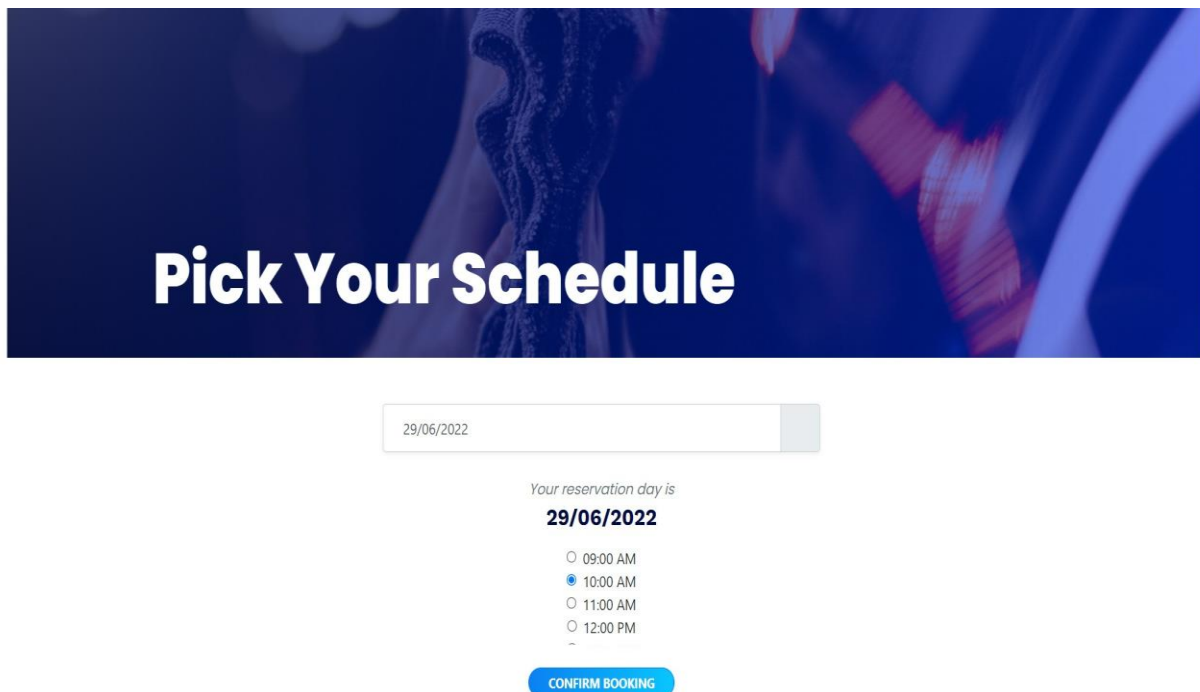


Figure 5.6 : Services

5.6.2 Calendar

This Page shows the time schedule for booking. User Must be logged in to access this page.



The screenshot shows a booking interface with a dark blue header containing the text "Pick Your Schedule" in white. Below the header is a date selection field showing "29/06/2022". Underneath, it states "Your reservation day is" followed by "29/06/2022" in bold. There are four radio button options for time slots: "09:00 AM", "10:00 AM" (which is selected), "11:00 AM", and "12:00 PM". At the bottom of the form is a blue button labeled "CONFIRM BOOKING".

Figure 5.7 : Calendar

5.6.3 Booking Successful

If the schedule is available on the selected date than this page will appear and a message is sent to user mobile number.

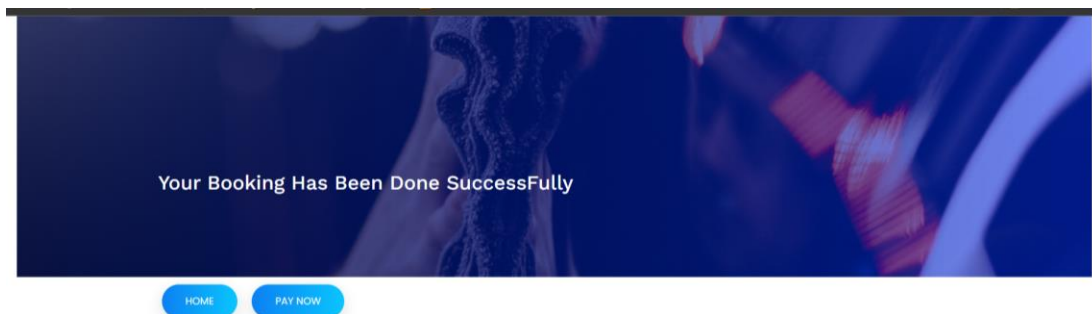


Figure 5.8 : Successful Booking

5.6.4 Admin Login

There is a different login page for the admin

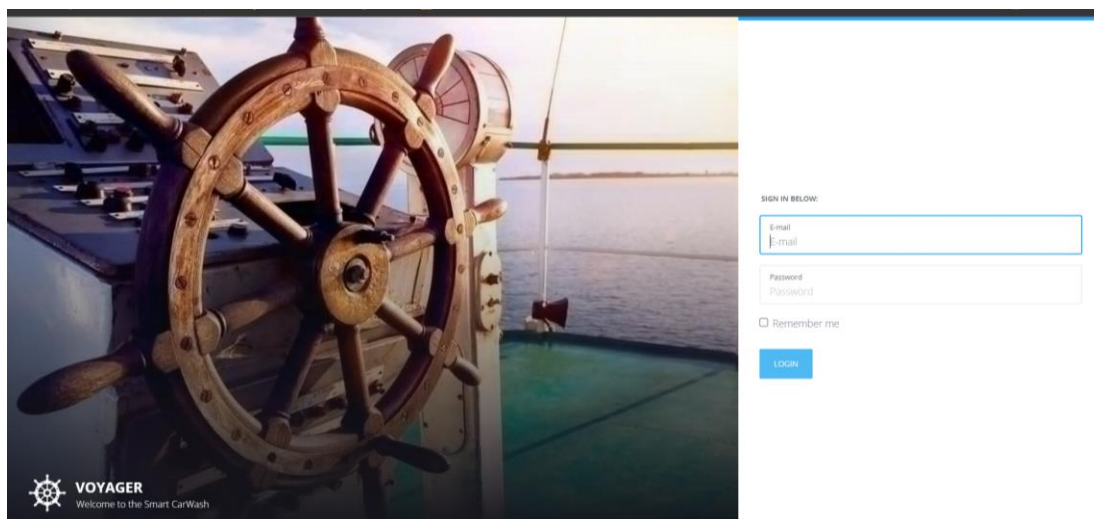


Figure 5.9 : Admin Login

5.7 Admin Panel

There are administrator tasks such as viewing database which can be performed through this page.

The screenshot displays the Voyager Admin Panel's Database management interface. On the left is a dark sidebar with navigation options: Admin, Dashboard, Users, Roles, Members, Database (selected), GeneralBookings, Detailings, Compoundings, Coatings, Feedback, Tools, and Settings. The main content area shows a breadcrumb trail 'Dashboard > Database' and a 'Database' header with a 'Create New Table' button. Below this is a table listing database tables with their names and associated actions. The 'categories' table is currently selected, showing a dropdown menu with 'Add BREAD to this table'. Other tables listed include 'coatings', 'compoundings', 'detailings', 'feedbacks', 'generalbookings', 'members', 'menus', 'pages', and 'users'. Each table row has three action buttons: 'Browse BREAD', 'Edit BREAD', and 'Delete BREAD'. To the right of the table, under 'Table Actions', are 'View', 'Edit', and 'Delete' buttons for the selected table.

Table Name	Table Actions
categories	View Edit Delete
coatings	Browse BREAD Edit BREAD Delete BREAD View Edit Delete
compoundings	Browse BREAD Edit BREAD Delete BREAD View Edit Delete
detailings	Browse BREAD Edit BREAD Delete BREAD View Edit Delete
feedbacks	Browse BREAD Edit BREAD Delete BREAD View Edit Delete
generalbookings	Browse BREAD Edit BREAD Delete BREAD View Edit Delete
members	Browse BREAD Edit BREAD Delete BREAD View Edit Delete
menus	Browse BREAD Edit BREAD Delete BREAD View Edit Delete
pages	Browse BREAD Edit BREAD Delete BREAD View Edit Delete
users	Browse BREAD Edit BREAD Delete BREAD View Edit Delete

Made with by The Control Group - v1.5.2

Figure 5.10 : Admin Panel

CHAPTER 6

CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

The main purpose of this website is to provide a platform to customers where they can save their time to get their desired carwash services. They don't have to wait in line. Simply they can book their schedule by visiting website and mobile application by just one click.

6.2 Recommendations

In near future we will upgrade this system by adding payment gateways like jazz cash, easy paisa and credit cards. We will add additional services like car maintenance and oil changing services, wheel balancing and wheel alignment.

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