

SMART PARKING SYSTEM FOR BANGLADESH: CITY PARKING

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Degree of Bachelor of Science in Computer Science and Engineering

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APPROVAL

This Project titled “**Smart parking system for Bangladesh: City parking**”, submitted by **Smaran Kumer Shaha, Sree Shourov Kumar Ray Joy and Md. Tanvir Ahamed** to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 31th MAY 2021.

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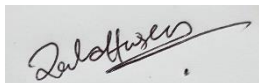
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We hereby declare that, this project has been done by us under the supervision of **Warda Ruheen Bristi, Lecturer, Department of CSE** Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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ABSTRACT

In our project, we are implementing a system which is known as city parking system. We are trying to build a complete a whole parking system by which people of different area in Dhaka city will know about the parking spaces in his/her location. We already know that day by day people are facing more traffic on the roads. One of the main reason is many people park their cars or motorcycles here and there on the road. As a result, many spaces of road are blocked for their vehicle and that's why sometimes it causes too much traffic jam. So, we make a proper parking system so that everyone can use parking system anywhere in the city. For example, suppose a man wants to do the shopping and there is no parking space in the shopping mall, he/she can easily access our parking system to find out if there is any nearby parking space is available or not. If there are any parking spaces available nearby the person, that person can use our system to book a parking space hourly or we can also provide a monthly package. So this is our aim to build a system properly.

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CHAPTER 1

Introduction

1.1 Introduction

The industrialization of the country, population growth, sluggish urban development, and maladministration of the limited parking space have caused parking issues. A safe, intelligent, effective, and consistent system is urgently needed to look for the unoccupied parking facility, guide the parking facilities, negotiate the car park fee and maintain the parking facility appropriately. Our system can be used to direct parking, control parking facilities, and provide an insight into the economic analysis of these programs. The systems addressed will mitigate the challenges resulting from the lack of a reliable, accessible, and new parking infrastructure, while the financial analysis techniques can help to analyze the viability of the projects. The world's economic development is mirrored in the growing number of cars on the world's highways, which created many issues related to parking. The concern was further heightened by slow city planning. A time-consuming mechanism in the search for parking space impacts not just the quality of commercial operations, but also the social connections and costs. Network providers cannot provide upgraded parking facilities online, because there is no cooperation between parking facilities and businesses. Any large vehicles cannot be fitted into the parking spaces usually open. Therefore, a framework is needed that takes into account all pertinent details to locate a parking vacancy. Human mistakes are the main cause of road crashes, and thus in-auto technology is an integral field of study to monitor the car park, prevent accidents and provide advice on the car park. The aim of these innovations is to reduce driver pressure, increase traffic capacity, and provide stable and safe automotive functions.

1.2 Motivation

Based on modern functions, the city parking infrastructure, which is part of the Intelligent Transport System (ITS), provides separate parking facilities. This service handles not only the internal activities of the car park but also works on other aspects specific to the car park. The details concerning the allocation of unoccupied spaces; the parking space information system is given before the driver enters the building. The driver will book a vacant parking lot by using the parking booking system. The continuous entry and exit scheme makes it easier for a driver to get rid of time-consuming systems like ticketing and right to choose either payment form. The navigation system in the facility is used to find the vacant lot and then guide the driver to this car park. Additional changes lead to even improved systems, such as online parking and using the smart card, to make it fast, secure and easy for the driver to locate the destination. Since the machine does not need man power, it will also know the entry and exit rate of vehicles and the installation occupancy. The traffic congestion can also be reduced by such schemes, as the number of cars on the road decreases. This new system are going to maximize the number of customers in the parking industry. The new technological progress also has led to sophisticated in-vehicle information systems, the basic equipment of costly and luxury vehicles. These systems are made up of mobile phones, electronic maps and satellites to navigate road situations through wireless technology in real-time. As a result of expansion of road networks, the number of private vehicles has increased considerably, resulting in road congestion and direct impacts of traffic movement and citizens' lives. In the developing centers, parking becomes a major issue.

1.3 Objective

The following facilities can be provided by the City Parking System:

- The parking accessibility information technology and parking reservation system should have automated routing systems, and these will be provided by the City Parking System in the future.
- The electric mobile trade machine and an electrically charged continuously running gate system are to be collected.
- Safe driving can be helped by an automatic navigation system.
- The best possible traffic flow should be ensured by an in-facility navigation system.
- Effective safety provision for automotive safety.
- Strong functions to facilitate the operation of the parking facilities by staff and managers.

As the number of cars on the road is proliferating, there are no doubt that there are traffic issues. This is because the existing transport system and parking facilities are inadequate to cope with the stream of vehicles on the route. The smart parking system has been designed to mitigate the above-mentioned problems. Through implementing the intelligent parking scheme, employers can conveniently find and reserve a vacant parking space in any parking lot which they consider convenient. The introduction of the hassle-free payment system also makes vehicle entry and exit easier. The following solutions are analyzed as vehicle identification plays an essential role on the smart car parking infrastructure, in addition to recent studies and commercial systems on the market.

1.4 Expected Outcome

Certain schemes do not have the finest parking facilities because parking charges are not taken into account. The customers miss the ability to find a cheaper and better parking position in the absence of negotiating on the cost. Therefore, for making a decision, the negotiable parking price margin needs to be taken into account through the Smart Agent System that would choose the best parking facility for the driver as mentioned above. The officers will prepare, travel, execute, monitor and organize their work. A smart parking negotiating and guidance system that connects the mobile agent with several systems is proposed for the providing of a negotiating forum to the customer. Mobile agencies may be used to negotiate between cars and car parks in an involved, stable and quick manner. The agent's movement tends to reduce negotiations and the volume of data exchanged via the cellular network. They still have a negotiating algorithm equivalent to human negotiations.

1.5 Report Layout

We will address the presentation of the study in this segment. The first chapter discusses the implementation of a complaint management scheme, why we choose the project, the purpose of the project and what the desired results will be. We also explained in the second chapter the history studies and related work, as well as the comparative studies and problems that you face and the complexity of the issue. In the third chapter, we introduced market modeling and what the project needs to do Modeling the design specifications afterwards. We showed the diagram of the event, the chain, ER diagram and the state diagram in the next section. We addressed in the following chapter the front end architecture and the backend design, user experience and implementation specifications. In the next part we explored how the database is implemented, how front-end designs are implemented, and we added a couple of photos of the project and how these images will really understand the project's function. We addressed some test cases and test implementations thereafter. We addressed the environmental and social impacts in the next segment. We addressed the upcoming developments and findings in the last chapter.

CHAPTER 2

Background Studies

2.1 Introduction

Recent days have become the everyday concern of people for looking for a car park, especially in heavily populated towns because it takes a long time. We propose a unique scheme whereby people living in the vicinity of busy streets will rent their empty car park to solve problems such as waiting in long line and circle around the blocks to locate a vacant parking area. Using this technique, the parking challenge can be efficiently managed during peak hours. This method also makes it easy for consumers to locate an empty parking space by cutting the amount of time it takes to secure a vacant space by reserving it.

Heavy car traffic is increasing and is becoming a big concern. Every day, approximately 1400 new cars reach Dhaka highways. It is also really difficult to see an empty parking spot within peak hours. That, in fact, made parking in busy public areas, such as restaurants and malls at peak hours, harder. Every day we burn about a million barrels of oil. A new study showed that the driver spends more time looking for a parking lot and takes almost 8 minutes to park his car. This search results in a traffic jam of 30 to 40 percent. The study states that, if applied effectively, intelligently, smart parking could save 2,20,000 gallons of fuel by 2030 and approximately 3,00,000 gallons of fuel by 2050, respectively. It may take longer than 10 minutes for about 66% of visitors to find space at weekends or public holidays. Our key aim is to reduce the cost, space and time of three of the most critical variables. It also allows centers to better control traffic on the parking lot. Through steering the vehicles through our independent framework, the workforce is reduced significantly.

2.2 Related Work

In our project, we have used LARAVEL Framework for back and purpose and in the front end, we have used HTML, CSS, Bootstrap. We have learned from various resources like YouTube and other documentation websites. We have learned about the LARAVEL framework from some YouTube videos and from the w3school website. [1] [2] also use PHP and there are a lot of resources on the internet which is related to PHP so we have some resource websites and you do videos to learn PHP from that. [3] we have used MySQL to create the database for our system. MySQL is one of the most popular systems to create a database for a project. [4] we have also added some parts which are related to Java Script and I have learned it and use it properly. [5] [9] [10] [11] what the front and purpose we have used HTML CSS and Bootstrap and there are a lot of resources available on the internet to create a beautiful front end user interface by using HTML CSS and Bootstrap. [6] [7] [8] Google map API. [12] [13] Related website. [14] [15]

2.3 Comparative Studies

The established parking systems essentially collect the information from empty car parks using different sensor networks and upgrade the data to guide drivers. The problem is, though, that the drivers cannot be directed at their respective car parks. Blind search is a popular method of looking for empty rooms when parking information is not available. The drivers continue to look for vacant parking areas within easy reach.

The drivers can only see through until a vacant room is found and the search area continues to expand. The way information about parking space slots is shared is updated to address the issue of many-vehicle case-single-slots. When designers post the details, they will

deliberately reduce the amount of slots available and serve as buffer slots. If several vehicles choose to park in a finite number of spaces open, additional spaces would be allocated for this scheme to avoid dispute. However, the number of buffer spaces available are a difficult task to estimate. If the room allotted is too limited, we can't solve the dilemma of many cars. If the buffer is too high, so there is no efficient parking space. Range and volume of traffic are two efficiency metrics for dealing with such problems. Few systems such as the performance reservation scheme, in which the system is constantly collecting data about the performance parameters and storing them, are already proposed to overcome these issues, which include parking spots (employed or vacant), time of reservation, precise parking and driver identification. The machine can automatically check driver identification to block this space until the space reserved is filled by a car. Iris-net also suggested a device using sensors, movement detectors and microphones. These sensors can be used to identify empty parking spaces available. It also acquires information on empty parking spaces through its web applications in real-time. The problem, however, is that the data generated is massive. High energy use and technological aspects are one of the key constraints of this framework

2.4 Challenges

While doing this project we have faced a lot of issues. We have to use Google Map API for using Google map location to locate the garage nearby any person for parking space. We have used the LARAVEL framework to implement the back end of this project and we have used HTML CSS bootstrap for the front end. We have to make a simple and lightweight design so that it can load faster. As we have to store customer information, garage owner information, and admin information all have to be maintained properly.

2.5 Scope of the Problem

In order to combine parking slots and payment systems, e-parking system makes use of the new technology. A driver may use this to find out about the availability of empty car parks, to book parking in its preferred location and to pay after leaving. You can use the above device from a smartphone or via the internet. However, the condition of the parking space is yet to be determined by traditional detectors. The automatic parking system allows for a finite number of parking spaces to be used effectively. The smart parking system will make it easy to find a vacant parking spot, especially in crowded public areas. This scheme allows people to rent their unused car park. Calls will reduce the annoyance facing drivers, in particular by using the smart parking scheme. This system allows users to book online parking spots. A few minutes before the user arrives or within a certain distance from the car park, the applications/website should be booked by the user. It gives the passenger a unique identification and if a driver arrives at the car park the unique id is read and the app leads the drivers to their slots. The tension of drivers is minimized as he knows where to park in advance. The data on car occupancy in each slot is reliable and in real time.

CHAPTER 3

Requirement Specification

3.1 Business Process Modeling

Corporate Process Modeling in corporate and machine engineering is a process describing a corporation to evaluate, develop and simplify the existing process. BPM is usually carried out by industry researchers who provide experience in the field of modelling; by topic specialists who have expertise in the systems being modeled; or more often by a team that includes both. The process model can instead be extracted using software for process mining directly from event logs. A market method may be broken up into many sub-processes that have their own characteristics but still add to the overall objective. In general, business process analysis involves mapping processes and sub-processes to their level of operation. A business process model is a model of one or more business processes which describes how activities are conducted to achieve an organization's intended objectives. This model continues to be an abstraction which relies on the expected use of the model. The workflow or collaboration of business processes may be defined. It can be built on many layers.

Applying a treatment approach to the technical definition of the built Secret Office IT device that processes sensitive information. The paper explains the use of the incremental modelling approach of BPMN-based business processes to identify processes currently manually and aim processes using the Modern technology to automate them. Furthermore, examples were given to check the correctness and reliability of the structural and dynamic analyze methods (process simulation). The expansion of the procedure analysis approach means that procedures and process mining techniques can be deployed.

3.2 Requirement Collection and Analysis

- 3.2.1 **User:** User can search location without login in our system. But while booking a parking lot the user must have to be registered and signed in, in after sign in and searching the location user can do there booking by completing the payment system using online payment system like Bkash, Rocket, Nagad.
- 3.2.2 **Search Location:** User search in location but near my location is still not available in our project we are working on that. After searching the location user can see the nearby available parking slots.
- 3.2.3 **User Booking process:** After searching the location user can login for booking process. In booking system that user can book the parking slot for hourly, daily, and monthly process. And user can complete their payment using the available online payment system in Dhaka city.
- 3.2.4 **View Bookings:** In this feature user can see all the previous bookings he or she have done by using our system. And the location of the bookings and all the details like booking type, payment, location and other things.
- 3.2.5 **Admin:** Admin have the authority to access everything in this project. Admin can see how many users are using this system, how many e garage for parking location have been registered by the host, and also the number of parking slots have been booked. User can create a new area of service. And also maintaining and access the previous area to change or add some new features.
- 3.2.6 **Hosts:** Post and the person who can create new parking slot and give them in rent. Our system has some fixed area of service, in that area people those who have parking slots can give as rent through our system.

3.2.7 Registration: Both user and host have to be registered in our system. The user can book the parking slot and the host can keep their party in slot in rent. Show both of host and user have to be registered to access all the facilities we are providing in our project.

3.2.8 Login failure: If no user provides the details, an error message appears.

3.3 Use Case Modeling and Description

The case schedule shows how machine users communicate with the Software. The user can search the application with the login option. You must log in or enter the device first as a new user. In the use case only the system's main feature is shown. The clients participate or participate. The case showing characteristics:

- User Registration.
- Login respectively.
- Host add parking places for rent.
- Admin add new area of service.
- Admin observes all the activities.
- User book parking slot.

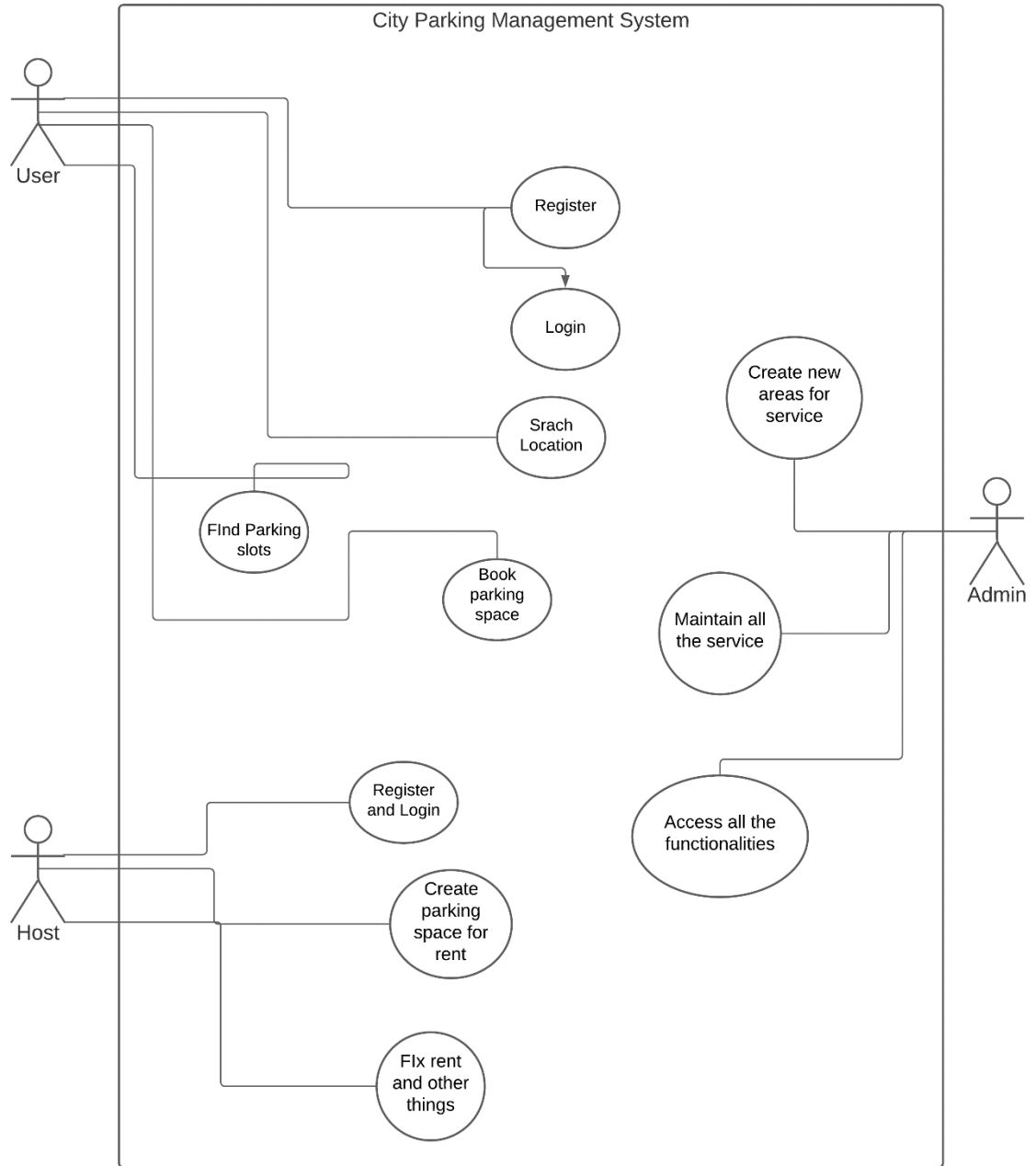


Figure 3.3.1: Use Case Diagram

3.4 Logical Data Model

The qualities and relationships of database objects to a database dictionary and crossover table are discussed here. This data objects are considered. The Car Parking management scheme consists of three main database communities. The first is to store user records, the second is to store complaints' data module and the third is to store the user data registration module. Logically, a machine represents data contained in a logical data model database.

3.5 Design Requirements

Design is the phase after demand and building requirements. The software architecture involves three technical tasks – design, coding, execution and testing which, after analyzing and defining the sound parameters, are essential for the design and verification of software. At this point, design activities are paramount as decisions impact the success and ease of program deployment. Ultimately, these decisions concern the efficiency and maintenance of the system. Design is the best way to properly turn consumer specifications into finished program or device. Architecture is the place for quality-promoting growth. Computer design is a mechanism by which specifications can be transformed into a representation of software. The program is designed with two stages. The first step is to transform demands into numbers.

- 1) Use case Diagram
- 2) Sequence Diagram
- 3) The ER Diagram
- 4) The State Diagram

3.5.1 The ER Diagram

ER is a chart that shows a reference of the set of entities saved in a database, which also is known as the ERD chart. ER graphs, in other words, tend to illustrate database reasoning. ER diagrams are based on three fundamental concepts: entities, attributes and links.

ER graphs involve various representations using rectangles to represent the persons, ovals and diamond forms to represent relationships. ER graphs ER Modeling allows you to continuously evaluate data criteria in order to create an efficient database. So before applying the database, it is considered a better practice to complete ER modelling. Helps you identify terms and conditions for the simulation of business relationships. Enter a glimpse of the link between all tables and the fields on each table. Helps identify individuals, characteristics, and relationships

ER diagrams can be converted to relationship tables that enable you to quickly create databases

As a blueprint for data implementation in particular software environments, ER diagrams may be used by database designers. By using the ERP diagram, the database builder can better understand the details in the database. ERD Diagram will interact with the users' logical database layout.

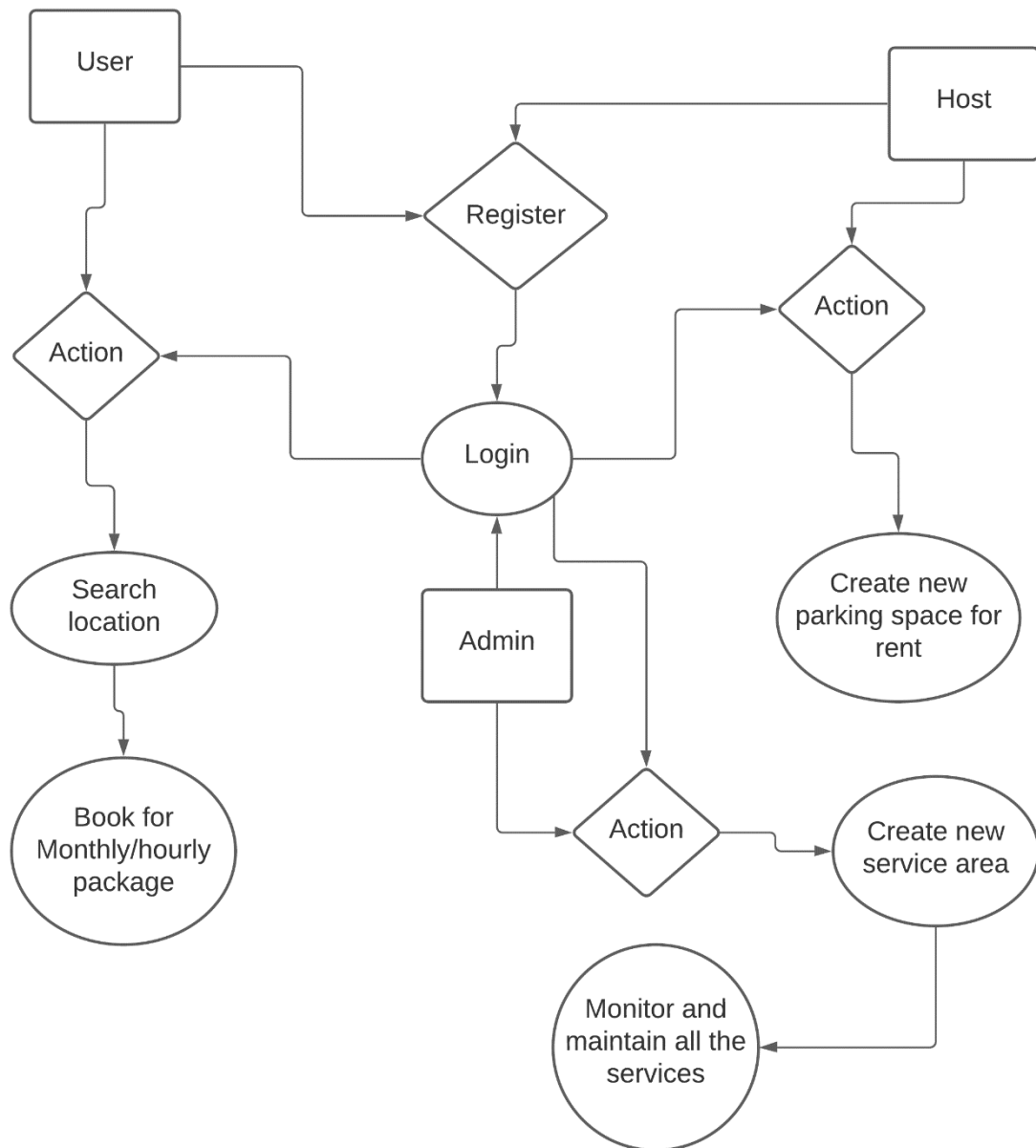


Figure 3.5.1: ER Diagram

3.5.2 Sequence Diagram

A sequence diagram illustrates time-specific relationships of objects. It shows the objects in the scenario and the series of messages between objects necessary to carry out the scenario functionality. Sequence diagrams are usually linked to case studies in the Logical View of the developing method. Sequence charts are often referred to as incident charts or event scenarios.

In a sequence diagram, various processes or objects exist concurrently as parallel vertical lines and, in the order in which they take place, the signals transmitted between them as horizontal arrows. This enables basic runtime scenarios to be defined graphically.

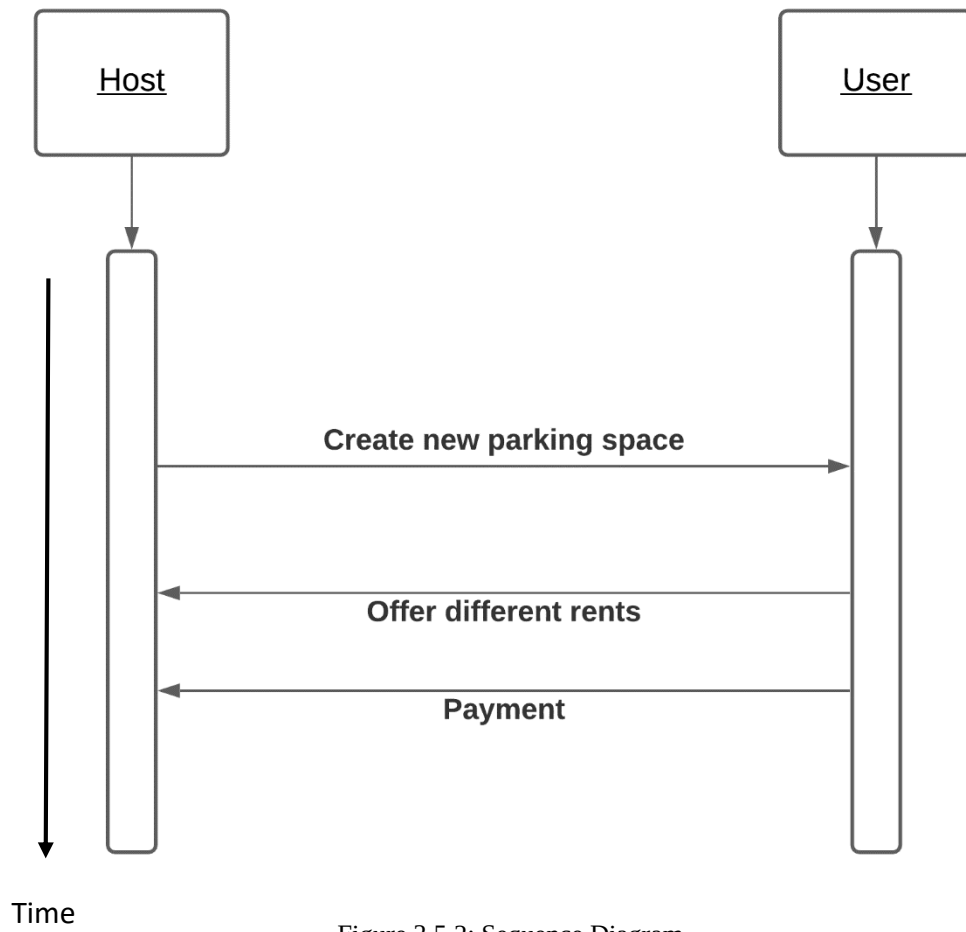


Figure 3.5.2: Sequence Diagram

3.5.3 State Diagram

A diagram of state is a kind of diagram used for describing systems activity in computer sciences and associated areas. State schemes require a limited number of states to make up the structure described; often, this is true, although at other times, this is a logical abstraction. There are several types of state diagrams with minor differences and distinct semantics.

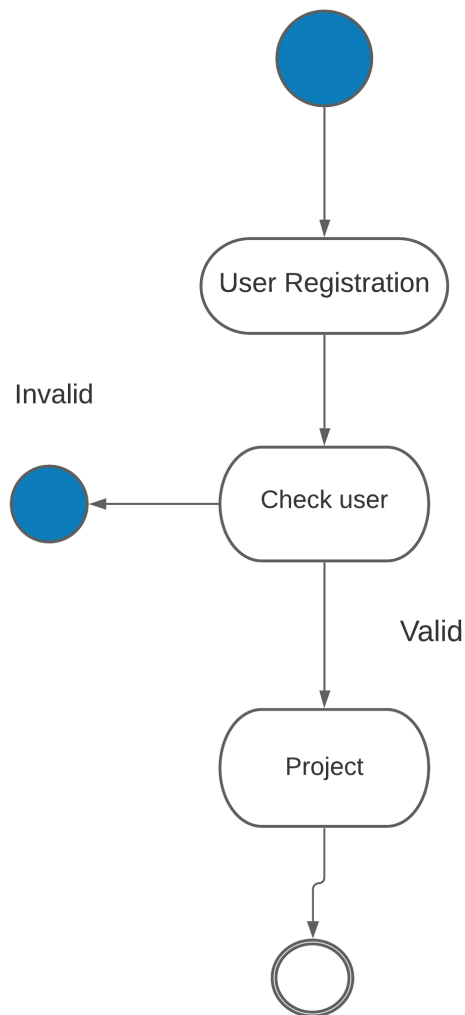


Figure 3.5.3: State Diagram

CHAPTER 4

Design Specification

4.1 Front-end Design

The front end comes with what you see – HTML, CSS, Bootstrap etc. The front end is used. For several days at the front, JAVASCRIPT, CSS, Html have been used to render a simple template and CSS has been used for style of the website. LARAVEL is used for customer-side behavior. Web designer forum. The coding must not be touched. Web is an application language that is mostly used. Here's Web Html for the construction of the client user interface.

Bootstrap is a powerful front-end platform for the development of modern websites and mobile applications. It is open and free to use but has various HTML and CSS templates, including buttons and forms to use with the UI GUI. The JS extension supports Bootstrap as well.

4.2 Back-end Design

The back-end site is the side of the website. SQL is a structured query language relationship database. Many servers are open, such as SQL and MYSQL SQL has many versions and runs in any editor applications. SQL functions by update, delete, attach, etc. In reverse development, a dynamic website must be built. The creator works with the Android language to decrypt the database for Android. Web developers deal on web pages such as PHP for applications, and they have everything they know about the database. You send the code you write to the server and then you tell the program how the database can work. LARAVEL is a web platform built on PHP, based mostly on the MVC. LARAVEL is designed to simplify the start-up of PHP projects by developers. LARAVEL gives you less

insight into the structure, design and dependences of a project and gets directly into the product.

4.3 Interaction Design and UX

Interaction architecture is extremely important in terms of user interface. It's a useful model. Interaction Architecture specifically refers to the design of a webpage user interface. Because of the user-friendly design of this interface for a website, UX is essentially user-friendly. The term "UX" refers to the process of implementing the front end. Via a developer's experiments, it determined how they use an app/site and make improvements. It ensures customer loyalty by improving performance and functionality.

4.4 Implementation Requirements

LARAVEL is a web application platform that features expressive, elegant syntax. To be genuinely rewarding, we believe creation must be an enjoyable and imaginative process. LARAVEL aims to make programming easier by simplifying basic tasks found in the majority of web projects, such as authentication, routing, sessions, and caching.

LARAVEL strives to make the development process more enjoyable for developers while maintaining product features. The best programming is written by happy developers. To that end, we've tried to incorporate the best of what we've seen in other web architectures, including frameworks written in other languages like Ruby on Rails, ASP.NET MVC, and Sinatra. LARAVEL is simple to use while also having the powerful resources needed for massive, robust applications. A fantastic inversion of control container, articulate migration framework, and closely optimized unit testing help provide you with the resources you need to construct whatever application you are entrusted with.

CHAPTER 5

Implementation and Testing

5.1 Implementation of Database

Data management is an important aspect for most information systems. Any IT machine produces, reads, updates and deletes data. Data can be included in a file and in a database. However, the retention of data in the file has several pitfalls. The database is designed to transform the logical data model (ERD) into physical database schemes. A database system is the physical model built on the chosen data base technologies. Database architecture is built on a method of database management (DBMS). In addition to supporting overarching development and reengineering of information structures, the Relative Database Management framework (RDMS) supports. The connection database gathers information on tables that are linked by foreign keys. When the technology archive is built The Object Oriented Database System is the first candidate to incorporate the objects tested. However, a new invention persists in the object-oriented database and is not commercially used. The relational database is also a recommended way of using object databases because of the following advantages. We've used Relational Database due to my different advantages in architecture. The database is protected against server failure, commercial errors and program failure. Many people are able to browse the database and read and write the same database at the same time. Transparency supports the data contained in the archive. The data in the archive is not being read or written illegally. We are adding the photo of the dataset.

Server: 127.0.0.1 » Database: parking » Table: users

Options: Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

	id	name	email	phone	email_verified_at	password	remember_token
☐ Edit ☐ Copy ☐ Delete	2	Nawjesh Soyeb	nawjeshbo@gmail.com	NULL	NULL	\$2y\$10\$uv5uljAYtkvCY4ccRaOORvubWSm4ueMOTbACfFE8...	NULL
☐ Edit ☐ Copy ☐ Delete	3	admin	admin@admin.com	01515263960	2021-03-15 02:29:44	\$2y\$10\$uv5uljAYtkvCY4ccRaOORvubWSm4ueMOTbACfFE8...	NULL
☐ Edit ☐ Copy ☐ Delete	4	Nawjesh Soyeb	madcoderez.01@gmail.com	NULL	NULL	\$2y\$10\$Hw8AQWbwqjYw0taPm8hp1OhZ72XXvGjwbn0rEwwH4H...	NULL
☐ Edit ☐ Copy ☐ Delete	6	user	user@user.com	01723177901	NULL	\$2y\$10\$IK8x7a6mCGMIs1D4IK1.20lbAmm8POACdbQd3Oig...	NULL
☐ Edit ☐ Copy ☐ Delete	8	Nawjesh Soyeb	user@gmail.com	NULL	NULL	\$2y\$10\$ZLjKjcm.YlkgWH97xpWl.7nk.9DDbp4PuhNGIKqbMF...	NULL
☐ Edit ☐ Copy ☐ Delete	9	smaran shaha	smaranshaha@gmail.com	NULL	NULL	\$2y\$10\$Uo9ohgU7qNihPeUVvzDeuzwa.eYmY2lnaYtk4wM9B...	NULL
☐ Edit ☐ Copy ☐ Delete	10	nabib ahamed	nabibahamed@gmail.com	NULL	NULL	\$2y\$10\$8bsOedXudn9761WBGm.TMupg9TPCgB0b7G2V8c2jO1...	NULL
☐ Edit ☐ Copy ☐ Delete	11	shoron shaha	shoronshaha@gmail.com	01762938077	NULL	\$2y\$10\$ldqgMXITZyG4KCuYRsYuCoUrE83QqjvALNA39PY...	NULL
☐ Edit ☐ Copy ☐ Delete	12	User 2	user2@user.com	01762938078	NULL	\$2y\$10\$77BZbA/rV1Oox3w8hAPOPoRAKHL2qDBJZsiH2.J.T...	NULL
☐ Edit ☐ Copy ☐ Delete	13	joy	joy@joy.com	456789909987	NULL	\$2y\$10\$okFxp2th8GweqYngaNa.Heizn8hr3.X.aYa6SistZSC...	NULL
☐ Edit ☐ Copy ☐ Delete	14	tanvir	tanvir@tanvir.com	01234567889	NULL	\$2y\$10\$R1qMiUHouOtyE6DFBgDiBuOVkHug2PCBIDwICFDKd9...	NULL

Check all | With selected: Edit Copy Delete Export

Figure 5.1.1: User list table

Server: 127.0.0.1 » Database: parking » Table: areas

Showing rows 0 - 5 (6 total, Query took 0.0008 seconds.)

SELECT * FROM `areas`

Options: Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

	id	name	created_at	updated_at
☐ Edit ☐ Copy ☐ Delete	1	Dhanmondi	2021-03-17 00:28:07	2021-03-17 00:28:07
☐ Edit ☐ Copy ☐ Delete	2	Mogbazar	2021-03-17 00:28:58	2021-03-17 00:29:47
☐ Edit ☐ Copy ☐ Delete	3	Ajampur	2021-03-17 00:29:10	2021-03-17 00:29:10
☐ Edit ☐ Copy ☐ Delete	4	Mirpur	2021-03-17 00:29:17	2021-03-17 00:29:17
☐ Edit ☐ Copy ☐ Delete	5	Uttara	2021-03-17 00:29:24	2021-03-17 00:29:24
☐ Edit ☐ Copy ☐ Delete	6	Guishan	2021-04-05 12:50:44	2021-04-05 12:50:44

Check all | With selected: Edit Copy Delete Export

Figure 5.1.2: Area of service table

Server: 127.0.0.1 » Database: parking » Table: bookings

	id	price_id	package_id	start_date	end_date	start_time	end_time	total_time	user_id	created_at	updated_at
☐	2	2	2	2021-06-01 00:00:00	2021-06-01 00:00:00	NULL	NULL	2	6	2021-03-17 22:45:00	2021-03-17 22:45:00
☐	3	3	1	2021-03-19 13:00:00	2021-03-19 13:00:00	NULL	NULL	2	6	2021-03-18 15:06:39	2021-03-18 15:06:39
☐	4	5	1	2021-03-19 11:00:00	2021-03-19 15:00:00	NULL	NULL	4	6	2021-03-18 15:12:29	2021-03-18 15:12:29
☐	5	9	1	2021-03-18 23:22:00	2021-03-19 03:22:00	NULL	NULL	4	10	2021-03-19 03:23:40	2021-03-19 03:23:40
☐	6	5	1	2021-03-24 14:31:00	2021-03-24 20:31:00	NULL	NULL	6	10	2021-03-24 18:32:00	2021-03-24 18:32:00
☐	7	13	1	2021-04-03 14:13:00	2021-04-03 17:13:00	NULL	NULL	3	12	2021-04-03 09:13:44	2021-04-03 09:13:44
☐	8	14	2	2021-04-01 00:00:00	2021-08-01 00:00:00	NULL	NULL	4	12	2021-04-03 09:14:53	2021-04-03 09:14:53
☐	9	4	2	2021-04-05 00:00:00	2021-07-05 00:00:00	NULL	NULL	3	14	2021-04-05 13:12:54	2021-04-05 13:12:54
☐	10	19	1	2021-04-09 23:03:00	2021-04-10 02:03:00	NULL	NULL	3	14	2021-04-09 17:04:10	2021-04-09 17:04:10
☐	11	17	1	2021-04-15 14:16:00	2021-04-15 18:16:00	NULL	NULL	4	14	2021-04-15 08:18:00	2021-04-15 08:18:00

Number of rows: 25 | Filter rows: Search this table | Sort by key: None

Figure 5.1.3: Booking history data table

Server: 127.0.0.1 » Database: parking » Table: packages

Showing rows 0 - 1 (2 total, Query took 0.0062 seconds.)

SELECT * FROM `packages`

	id	name	created_at	updated_at
☐	1	hourly	NULL	NULL
☐	2	monthly	NULL	NULL

Number of rows: 25 | Filter rows: Search this table | Sort by key: None

Query results operations: Print, Copy to clipboard, Export, Display chart, Create view

Figure 5.1.4: Parking package offering table

	id	name	user_id	area_id	type	description	address	latitude	longitude	thumbnail	active	created_at
☐	2	Mannan Villa 2	2	1	bike	Mannan Villa 2	Sukrabad Jame Masjid, Sukrabad Road, Dhaka, Bangla...	23.7530766	90.3798705	1616079351.jpg	1	2021-03-18 14:55:51
☐	3	Near Ideal School	2	1	bike	When you need to reside in a very pleasant locatio...	West Dhanmondi & Shangkar, Dhaka, Bangladesh	23.7494629	90.3665972	1616079506.jpg	1	2021-03-18 14:58:26
☐	4	Rent in Dhanmondi near to Dhanmondi Ideal College	2	3	car	A wonderful locality to settle with family tree loc...	Sonkor Bus Stop, Salmasjid Road, Dhaka, Bangladesh	23.750751	90.3684172	1616079618.jpg	1	2021-03-18 15:00:18
☐	5	badhon	9	4	bike	time to time	mirpur 6,32 house, road number 20	NULL	NULL	1616080892.jpg	1	2021-03-19 03:01:32
☐	6	mirpur prince bazar	2	4	bike	mirpur prince bazar	Grand Prince Hotel Dhaka Bangladesh, Mirpur - 1, M...	23.798552	90.353914	1616871394.jpg	1	2021-03-28 04:56:34
							Azimpur					

Figure 5.1.3: Parking list data table

	id	booking_id	payment_by	transaction_id	total_amount	mobile_number	user_id	created_at	updated_at
☐	1	2	bkash		1100	01515263960	6	2021-03-17 22:45:00	2021-03-17 22:45:00
☐	2	3	bkash		60	01515263960	6	2021-03-18 15:06:39	2021-03-18 15:06:39
☐	3	4	bkash		140	01515263960	6	2021-03-18 15:12:29	2021-03-18 15:12:29
☐	4	5	bkash		80	01770889987	10	2021-03-19 03:23:40	2021-03-19 03:23:40
☐	5	6	bkash		210	01770889987	10	2021-03-24 18:32:00	2021-03-24 18:32:00
☐	6	7	bkash		105	01770889987	12	2021-04-03 09:13:44	2021-04-03 09:13:44
☐	7	8	bkash		3200	01770889987	12	2021-04-03 09:14:53	2021-04-03 09:14:53
☐	8	9	bkash		1800	01234567889	14	2021-04-05 13:12:54	2021-04-05 13:12:54
☐	9	10	bkash		90	01770889987	14	2021-04-09 17:04:10	2021-04-09 17:04:10
☐	10	11	bkash		140	01770889987	14	2021-04-15 08:18:00	2021-04-15 08:18:00

Figure 5.1.3: Payment history data table

	id	parking_id	package_id	price	total_vechile	created_at	updated_at
☐	1	1	1	20	5	2021-03-17 02:01:20	2021-03-17 03:44:18
☐	2	1	2	550	5	2021-03-17 02:01:20	2021-03-17 03:44:18
☐	3	2	1	30	5	2021-03-18 14:55:51	2021-03-18 14:55:51
☐	4	2	2	600	4	2021-03-18 14:55:51	2021-03-18 14:55:51
☐	5	3	1	35	5	2021-03-18 14:58:26	2021-03-18 14:58:26
☐	6	3	2	750	5	2021-03-18 14:58:26	2021-03-18 14:58:26
☐	7	4	1	25	5	2021-03-18 15:00:18	2021-03-18 15:00:18
☐	8	4	2	650	5	2021-03-18 15:00:18	2021-03-18 15:00:18
☐	9	5	1	20	10	2021-03-19 03:01:32	2021-03-19 03:01:32
☐	10	5	2	1200	10	2021-03-19 03:01:32	2021-03-19 03:01:32
☐	11	6	1	25	5	2021-03-28 04:56:34	2021-03-28 04:56:34
☐	12	6	2	35	5	2021-03-28 04:56:34	2021-03-28 04:56:34
☐	13	7	1	35	5	2021-03-28 04:59:57	2021-03-28 04:59:57
☐	14	7	2	800	5	2021-03-28 04:59:57	2021-03-28 04:59:57
☐	15	8	1	50	8	2021-03-28 05:29:31	2021-03-28 05:29:31
☐	16	8	2	3000	5	2021-03-28 05:29:31	2021-03-28 05:29:31
☐	17	9	1	35	10	2021-04-05 12:48:36	2021-04-05 12:48:36
☐	18	9	2	3000	10	2021-04-05 12:48:36	2021-04-05 12:48:36
☐	19	10	1	30	10	2021-04-05 13:21:36	2021-04-05 13:21:36
☐	20	10	2	3000	15	2021-04-05 13:21:36	2021-04-05 13:21:36
☐	21	11	1	30	8	2021-04-15 08:22:58	2021-04-15 08:22:58
☐	22	11	2	3000	10	2021-04-15 08:22:58	2021-04-15 08:22:58

Figure 5.1.3: Pricing for different number of vehicle data table

	id	name	created_at	updated_at
☐	1	ROLE_ADMIN	NULL	NULL
☐	2	ROLE_OWNER	NULL	NULL
☐	3	ROLE_USER	NULL	NULL

Figure 5.1.3: Role for our system data table

5.2 Implementation of Front-end Design

Another name for the construction on the front site is processing on the consumer side. For a website or web browser, the HTML, CSS and JS style is part of the client side. That an individual understands and naturally connects to them. In order to be aware that the creator learns the world continuously, the challenge of front development is to continue to change the software or methods for creating the front end of a website. The purpose of the software concept is to ensure that information is provided in an easy-to-interpret and correct format for the websites as the applications are viewed by the users.

Here are some photos of our project.

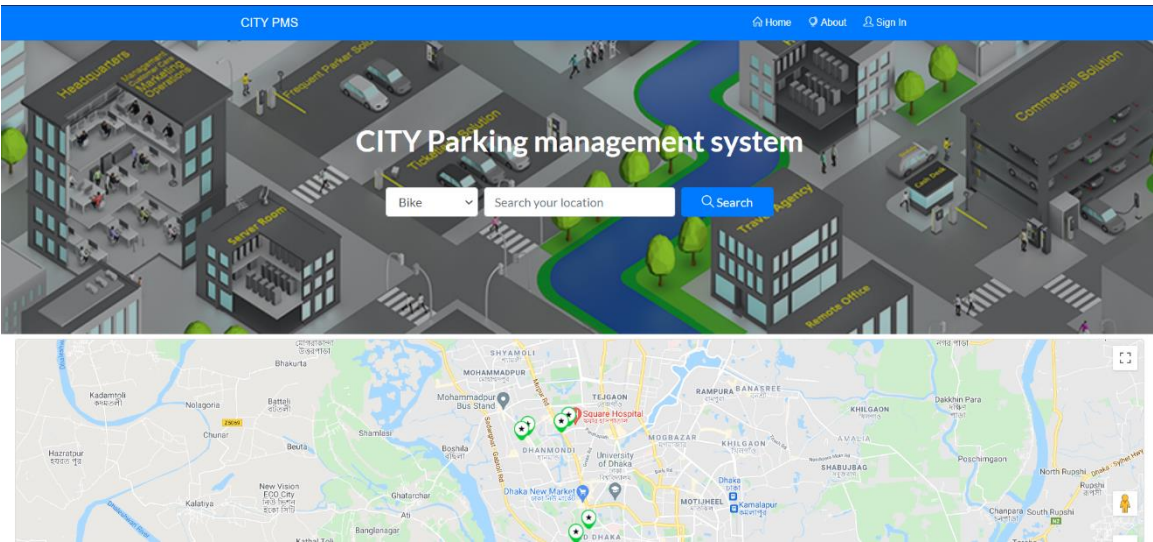


Figure 5.2.1: Home page

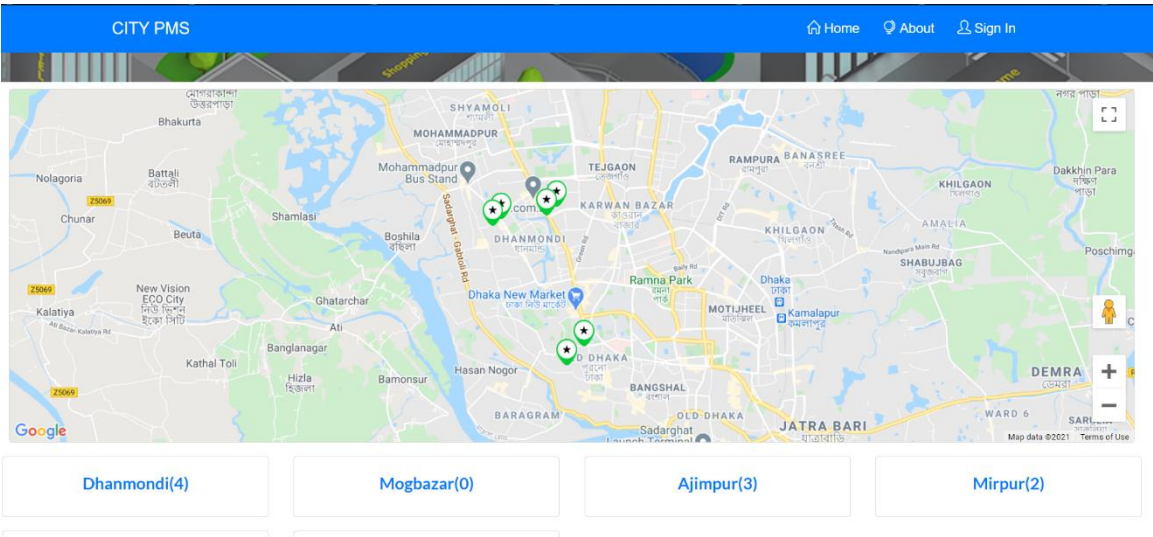
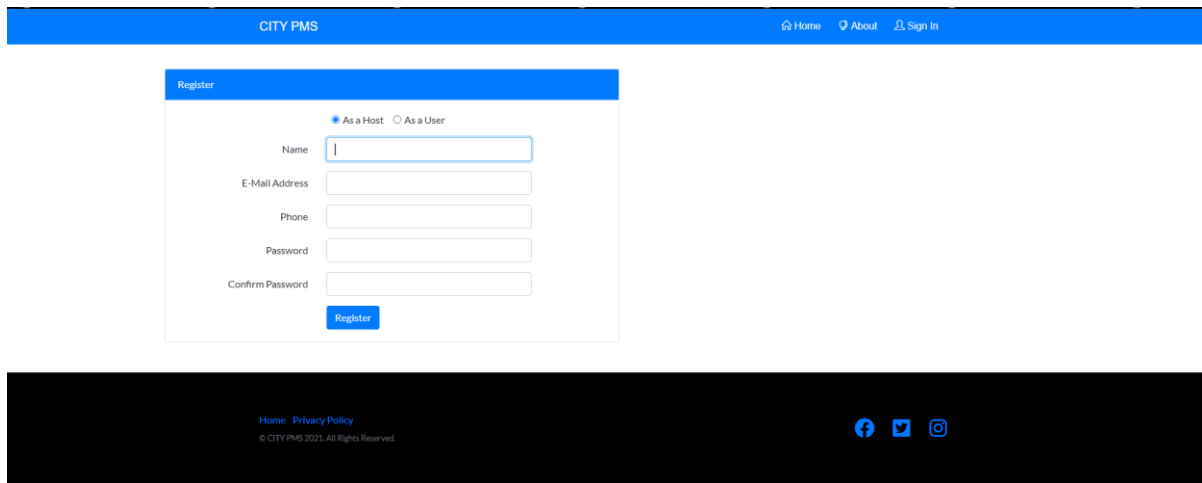
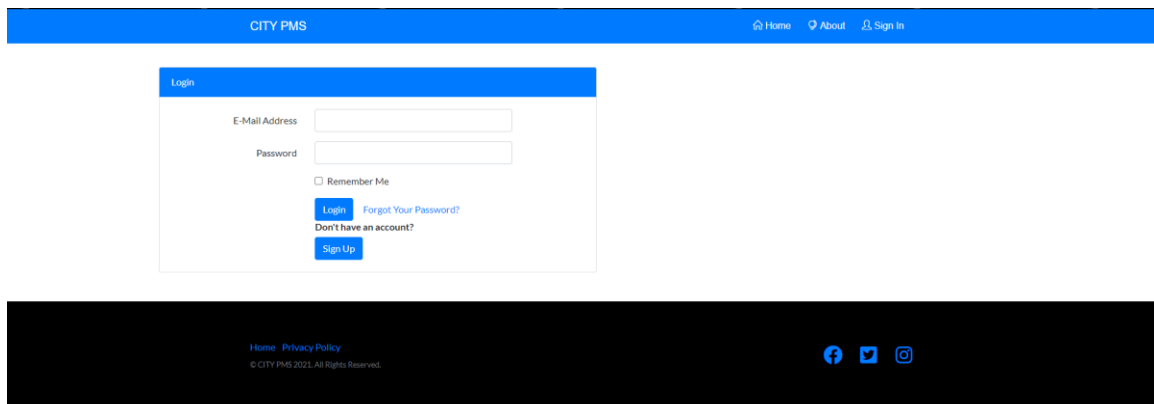


Figure 5.2.2: Home page (Map)



The registration page features a blue header with the text "CITY PMS" and navigation links for Home, About, and Sign In. The main content area contains a "Register" form with a blue header. The form includes radio buttons for "As a Host" (selected) and "As a User". Below these are input fields for Name, E-Mail Address, Phone, Password, and Confirm Password. A blue "Register" button is at the bottom of the form. The footer is black with links to Home and Privacy Policy, copyright text "© CITY PMS 2021. All Rights Reserved.", and social media icons for Facebook, Twitter, and Instagram.

Figure 5.2.3: Registration page



The login page features a blue header with the text "CITY PMS" and navigation links for Home, About, and Sign In. The main content area contains a "Login" form with a blue header. The form includes input fields for E-Mail Address and Password. Below these is a checkbox for "Remember Me". At the bottom of the form are buttons for "Login", "Forgot Your Password?", "Don't have an account?", and "Sign Up". The footer is black with links to Home and Privacy Policy, copyright text "© CITY PMS 2021. All Rights Reserved.", and social media icons for Facebook, Twitter, and Instagram.

Figure 5.2.4: Log in Page

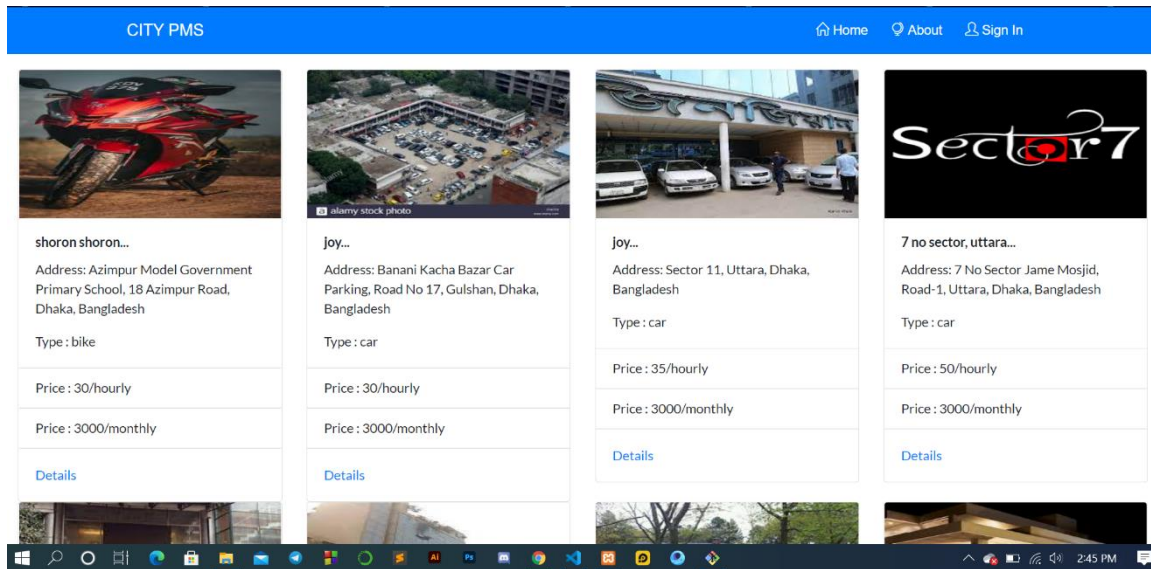


Figure 5.2.5: Parking space details

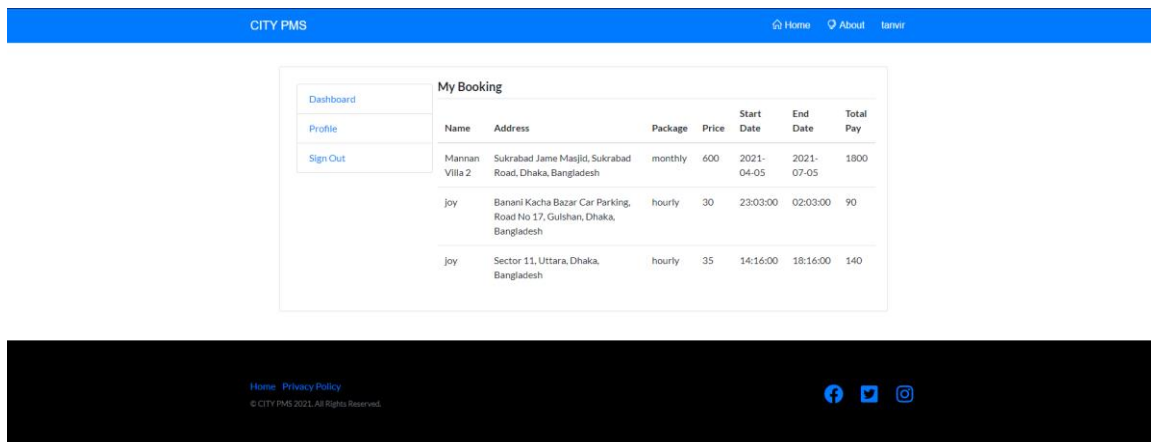


Figure 5.2.6: User dashboard

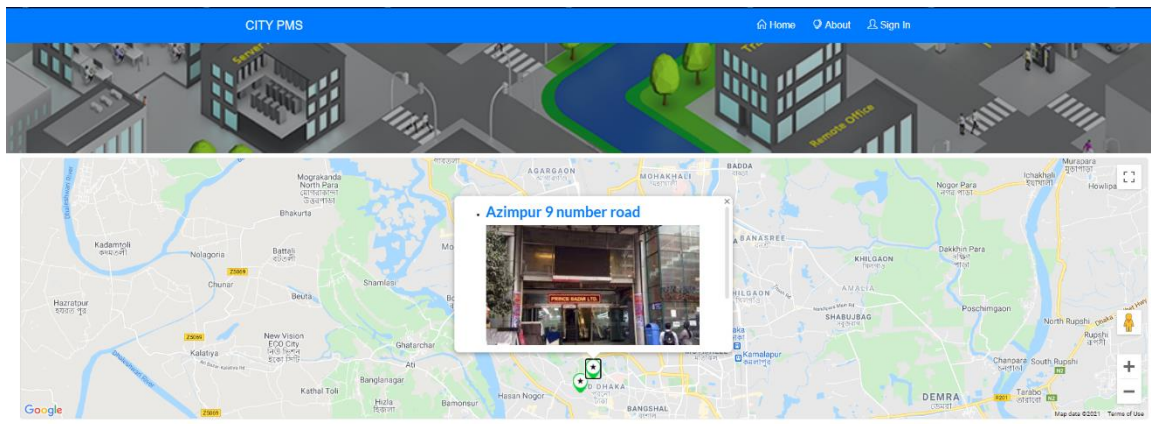


Figure 5.2.7: Nearby parking space of user

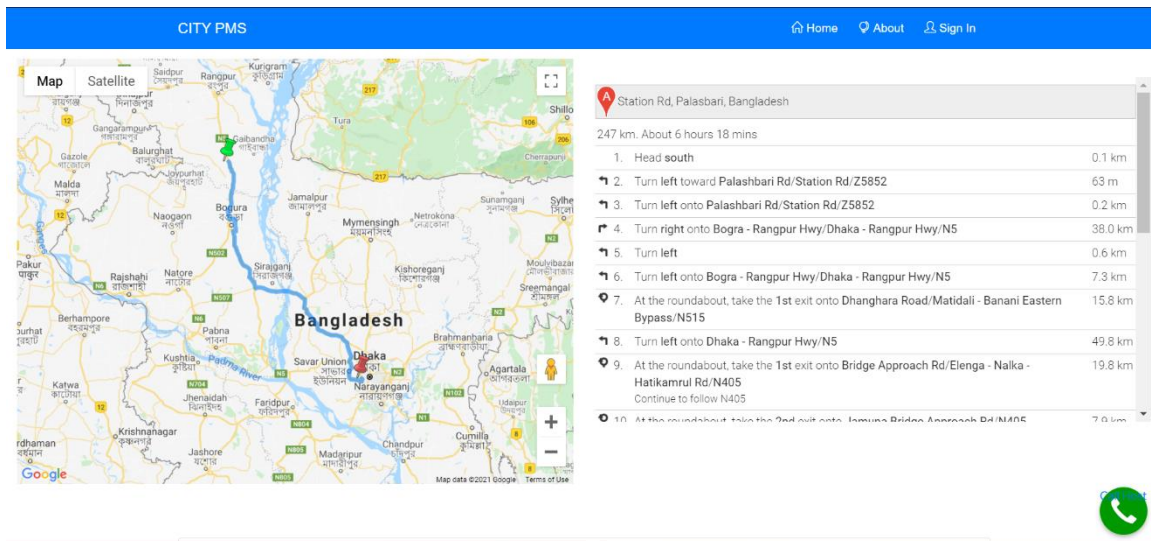


Figure 5.2.8: Distance details from user to parking space

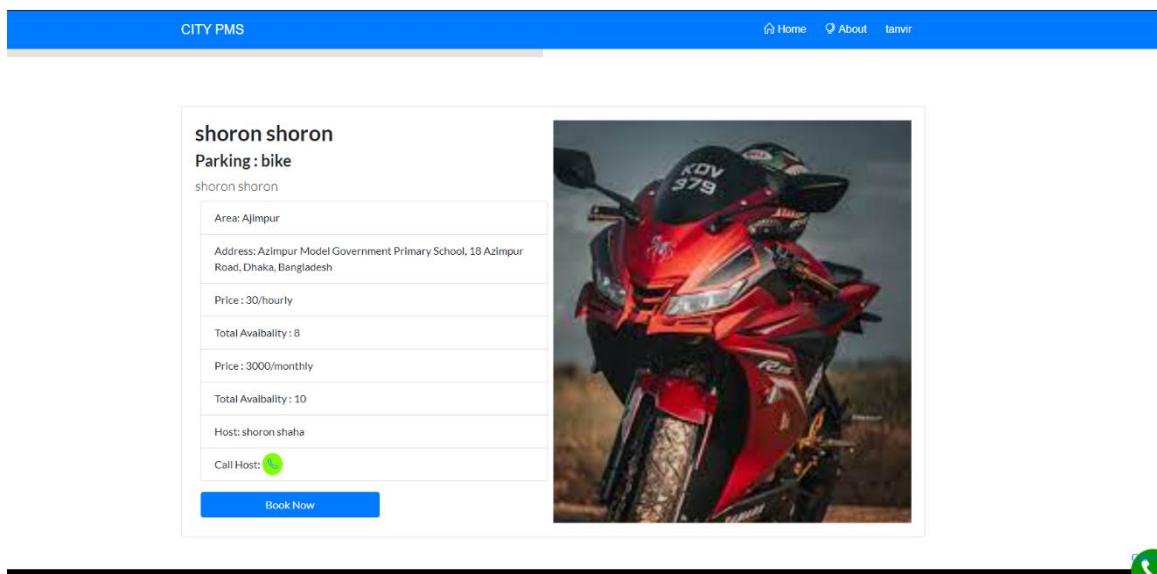


Figure 5.2.9: Available parking space for booking

The screenshot shows the CITY PMS website interface with the 'Parking: bike' booking page. The page has a blue header with 'CITY PMS' on the left and navigation links 'Home', 'About', and 'tanvir' on the right. The main content area is divided into two columns:

- Left Column:** Contains the same parking space details as Figure 5.2.9, including the name 'shoron shoron', area 'Ajimpur', address, prices, availability, host name, and contact information.
- Right Column:** Contains a 'Book Now' section with the following fields:
 - Package *:** A dropdown menu with 'hourly /30' selected.
 - Date:** A date picker showing 'mm/dd/yyyy'.
 - Time:** A time picker showing '--:-- --'.
 - No Of Hours/ Months *:** A dropdown menu.
 - Total Amount*:** A text input field.
 - Payment By*:** Radio buttons for 'bKash', 'Rocket', and 'Nogod'.
 - Number*:** A text input field with the placeholder 'Bkash /Rocket /Nogod Number'.

At the bottom of the right column is a green button labeled 'Submit'.

Figure 5.2.10: Parking space booking page

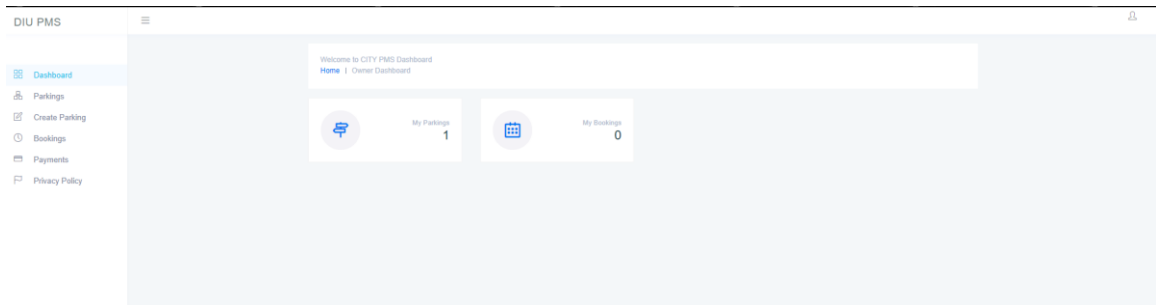


Figure 5.2.11: Host dashboard

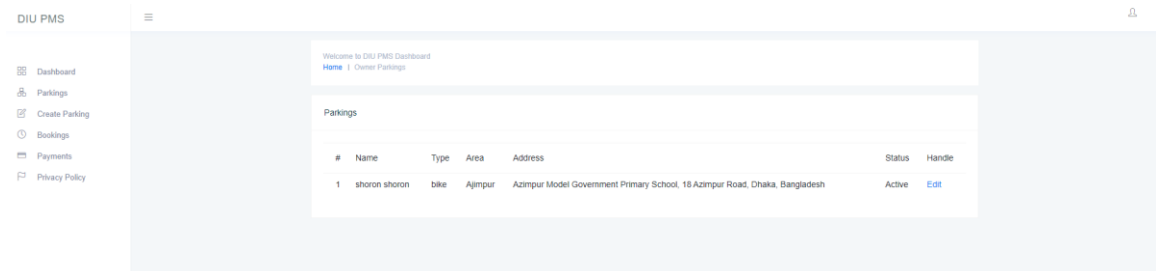


Figure 5.2.12: Parking spaces created by host

Welcome to DIU PMS Dashboard
[Home](#) | [Admin Hosts](#)

Hosts

#	Name	E-mail	Phone	Created At
1	Joy	joy@joy.com	45678909987	2021-04-05
2	shoron shaha	shoronshaha@gmail.com	01762938077	2021-04-03
3	smaran shaha	smaranshaha@gmail.com		2021-03-19
4	Nawjesh SoyeB	madcoderz.01@gmail.com		2021-03-17
5	Nawjesh SoyeB	nawjeshbd@gmail.com		2021-03-14

Figure 5.2.16: Number of host maintained by Admins

Welcome to DIU PMS Dashboard
[Home](#) | [Admin Hosts](#)

Hosts

#	Name	E-mail	Phone	Created At
1	tanvir	tanvir@tanvir.com	01234567889	2021-04-05
2	User 2	user2@user.com	01762938078	2021-04-03
3	nabib ahamed	nabibahamed@gmail.com		2021-03-19
4	Nawjesh SoyeB	user@gmail.com		2021-03-19
5	user	user@user.com	01723177901	2021-03-18

Figure 5.2.17: Number of user maintained by Admins

DIU PMS

Dashboard

Hosts

Users

Parkings

Area

Home | Admin Parkings

Parkings

#	Thumbnail	Name	User	Type	Address
1		Mannan Villa sukrabad	Navjesh Soyeb	bike	Dhanmondi 32, Mirpur Road, Dhaka, Bangladesh
2		Mannan Villa 2	Navjesh Soyeb	bike	Sukrabad Jame Masjid, Sukrabad Road, Dhaka, Bangladesh
3		Near Ideal School	Navjesh Soyeb	bike	West Dhanmondi & Shangkar, Dhaka, Bangladesh
4		Rent in Dhanmondi near to Dhanmondi Ideal College	Navjesh Soyeb	car	Sonkor Bus Stop, Salmasjid Road, Dhaka, Bangladesh
5		badhon	smaran shaha	bike	mirpur 6, 32 house, road number 20
6		mirpur prince bazar	Navjesh Soyeb	bike	Grand Prince Hotel Dhaka Bangladesh, Mirpur - 1, Mirpur, Dhaka, Ba
7		Azimpur 9 number road	Navjesh Soyeb	bike	Azimpur Bus Stand Masjid, 9 Azimpur Road, Dhaka, Bangladesh
8		7 no sector, utara	smaran shaha	car	7 No Sector Jame Masjid, Road-1, Uttara, Dhaka, Bangladesh
9		joy	joy	car	Sector 11, Uttara, Dhaka, Bangladesh
10		joy	joy	car	Banani Kacha Bazar Car Parking, Road No 17, Gulshan, Dhaka, Ban

Figure 5.2.18: Number of parking areas maintained by Admins

DIU PMS

Dashboard

Hosts

Users

Parkings

Area

Areas

Create Area

Welcome to DIU PMS Dashboard

[Home](#) | [Admin Areas](#)

Areas

#	Name	Handle
1	Dhammondi	Edit
2	Mogbazar	Edit
3	Ajampur	Edit
4	Mirpur	Edit
5	Uttara	Edit
6	Gulshan	Edit

Figure 5.2.19: Number of area created by Admins

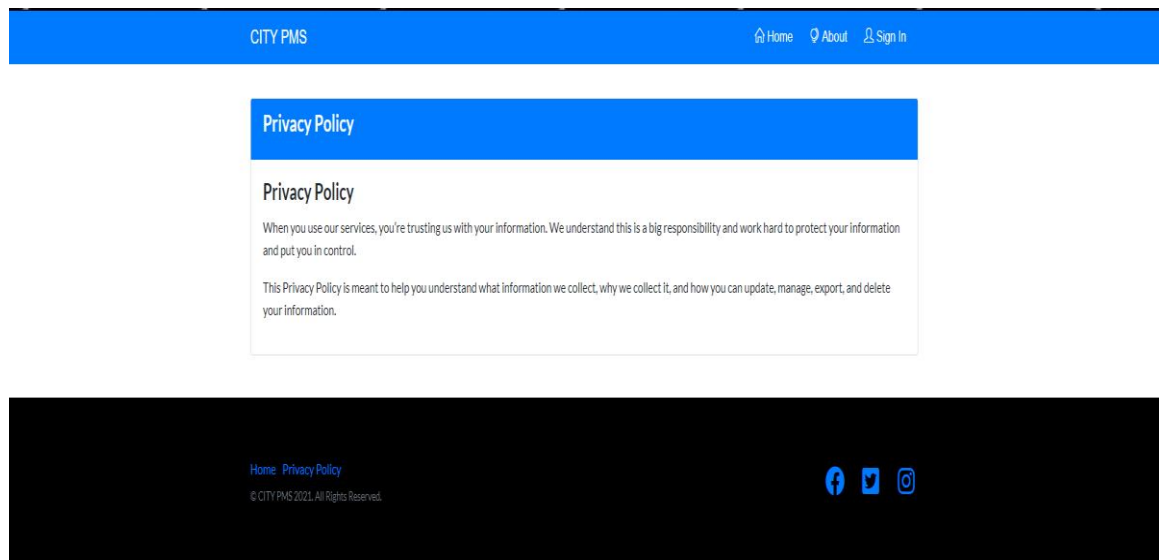


Figure 5.2.20: Privacy policy of our system

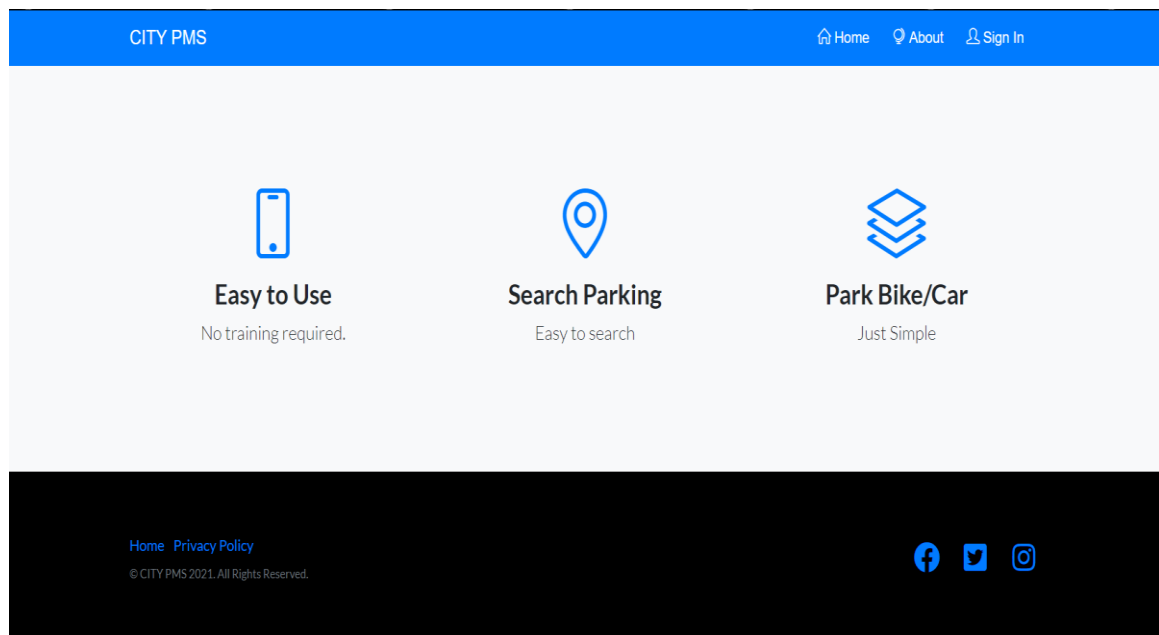


Figure 5.2.21: Footer of our system

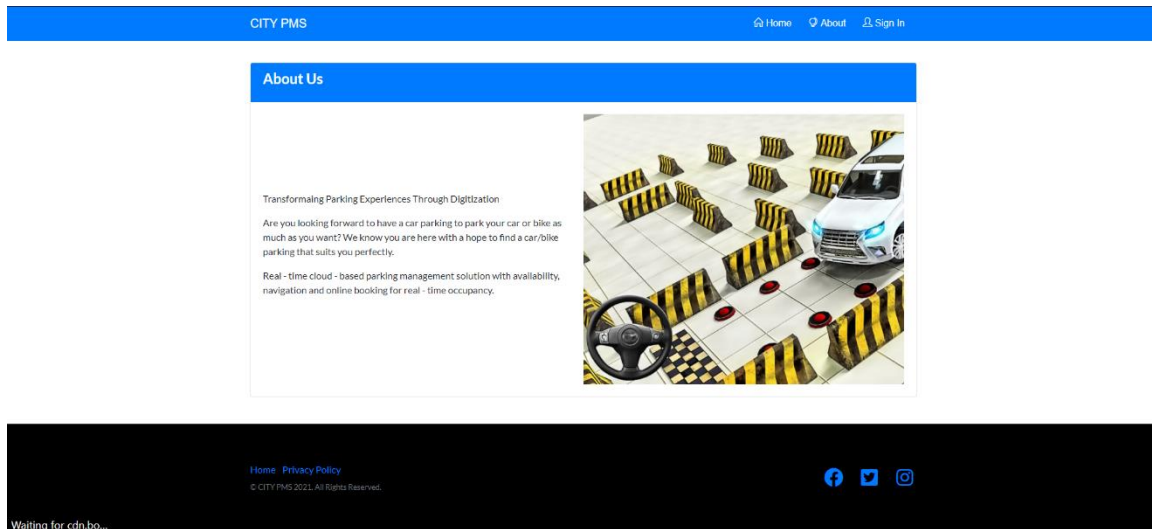


Figure 5.2.22: About us page

5.3 Implementation of Interactions

Here takes place the most creative work on a stage. Together, participants gather additional input on draft findings and optimize stage information. Activities in this process may include interviews, workshops, prototyping and electronic communications. All such communications are not recorded and considered casual as minutes, reports, monitors software or official memoranda. The aim is to encourage rather than hinder the contact process. The mechanism comes to an end when most people conclude that it is necessary to carry out a formal analysis and comment on draft findings.

5.4 Testing Implementation

Those operations are carried out once the processes of other management methodologies are finished or reviewed. Tests and evaluations can be carried out concurrently, but are significantly separate. Both are done in various ways. Prototyping is one of the techniques used most commonly and some of the others in this particular project have been designed and adopted. For the way it performed at first, the final version highlighted failures in certain ways and also rectified them, in addition to instruments. Other experiments, such as the usability evaluation, were carried out by the prototyping. The prototype can execute all experiments, including usability tests, and can be tested randomly by random people. Four major issues of this test are: how accurate positions are, how relevant are the material, presentation style and outcomes and how quickly users will perform their main tasks, using a proper password and with the main task of effectively logging in without charge. This test focuses on four main facets of the test.

5.5 Test Case

In test cases, it is tested whether the components in the Graphics Utility are compatible or not. This is a way to make sure a form works correctly. A test case is a collection of criteria or factors from which a test tester decides whether a test system satisfies or works properly. The test case process may also help to identify problems in the requirements or configuration of a request.

5.6 Unit Test

A unit test is expected to check that each device module functions without or without a bug. This also allows to decide whether the module has a logical error. Both modules in the device are tested separately during the creation phase, so that the test is successfully protected.

5.7 Integration Test

Integration evaluations usually accept checks on the correct collaboration of multiple components. Many types are used in the resource distribution procedure. It has 5 forms and functions in parallel each shape. The condition in both operations is the same as before.

5.8 Test Results and Reports

Formal representation of test results is needed in order for test results to be easily estimated. The research findings are documented so that evidence collected from organizational evaluation tests can be recorded, the atmosphere or operating situation classified, and the results compared with the goals. We would also finally obtain the findings as the benefits of usability testing. The question then is how to build the collection of instances for user interface developers to navigate it, as we have defined the general interaction architecture. In the physical universe interaction is almost everywhere. The secret to a dynamic and user-friendly interface is interaction. The development of an immersive system is very necessary, and we are doing it. As mentioned above we have certain characteristics to interact with our device.

CHAPTER 6

Impact on Society, Environment and Sustainability

6.1 Impact on Society

City parking system can improve the situation of our society. As we are trying to minimize the traffic issue and we are also trying to give people safe parking spaces in different areas it can also minimize the traffic on in the roads. People may somewhere go for official works, shopping, for any kind of works sometimes they may face some difficulties to find out a parking space for their vehicle. By using our system, we can help the user to find out a parking space for their vehicle and do their work. It can also minimize the traffic issues in the roads. Because many people do park their vehicle beside the road and it causes traffic jam.

6.2 Impact on Environment

As we developing a software so there are no direct physical impact created by our system. But by using our system there is positive impact on environment. Finding the parking slot will help us to reduce the traffic jam and other traffic issues so that people can move to their location fast and use less fuel and it will create a positive impact on the environment.

6.3 Sustainability

Our project's survival is also ongoing growth. How more users start using the platform, we will be still looking at handling the load of our website and handling and making it more secure. Reservations for parking are adequately supervised by the admin panel and the administration takes the appropriate measures.

6.4 Ethical Aspect

If the ethical dimension of our project is considered, we have a management panel that monitors all parking reservations correctly. The authenticity of bookings will be assessed by a strong team. And we are going to try to contact them, and take the appropriate measures to make the necessary findings for the administrative and guests. Admin panel will also review images posted and notify hosts to learn more about safety of the car park and other problems. We would continue to maintain the privacy of the users and hosts from an ethical perspective.

CHAPTER 7

Conclusion and Future Scope

We mention our decision and conclusion in this section. Here we are discussing the future scope and how best it would have been.

7.1 Discussion and Conclusion

In the conclusion part we I will say that our system is working fine and we will try to add some more features in future and we have plans for that. We have tried to create a user friendly environment in the system. We will do our best to give service to the customer and also the hosts. And it is not free service so the host and the user have to pay a little amount of the money to our system so that we can maintain the system more accurately and do to the obvious to maintain the system properly. It will also help us to continuous development of this project.

7.2 Scope for the Further Developments

Finally, about our project we are trying to say that we will try our best to make the system more accurate to find out the parking spaces near by the location of the user. And also you trying to create a good environment between the user and the host. And all the parking spaces should have a fair rent amount it charges weather host. And we will also try to and the payment system using the online payment system available in Dhaka city these are Nagad, Bkash, Rocket. We have plan to also accept credit card and other bank cards. By using our system, we will try together more host and create new area of services by the admin. We are trying to create a more user friendly environment in power system. And we will try to create more precise system by finding the accurate parking spot with proper photos of that parking spaces. We have plans to monitor the system closely.

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