DIU TRANSPORT MANAGEMENT SYSTEM

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This Report Presented in Partial Fulfillment of the Requirements for the Degree of Bachelor of Science in Computer Science and Engineering.

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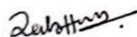
DHAKA, BANGLADESH

APPROVAL

This Project/internship titled **"DIU Transport Management System"**, submitted by Amit Biswas, ID No: 183-15-2288 and Omme Hany, ID No: 183-15-2242 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 Bachelor of Science in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 14.09. 2022.

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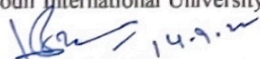Faculty of Science & Information Technology
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We hereby declare that this project has been done by us under the supervision of **Dr. S.M. Aminul Haque, Associate Professor, Department of CSE** Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for the award of any degree or diploma.
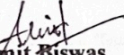
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ABSTRACT

Transportation isn't just a method for movement but on the other hand, is a method for business development. Transportation assumes an exceptionally helpful part in the improvement of the creation area in a country as well as the assistance arrangement insofar as an organic market is a worry. The point of a client is to have their merchandise conveyed to that person on time which means to give the client fulfillment. The DIU Transport the board framework is the framework that deals with the transport administration, transport plan, search course, and furthermore deals with the internet-based ticket booking framework. After effectively logging, the understudies can see the transport timetable and quest for the transport by means of transport number, course, objective, and time stretch. Additionally, understudies can book their transport tickets utilizing this web application. The principal reason for the advancement of this framework is to assist the college with transporting administration and their exercises and to assist the understudies with getting to realize all the data about transport administrations. In the proposed framework, the understudies can look for transport of their decision as per the transport number, course, and area.

TABLE OF CONTENTS

CONTENTS   **PAGE**

CHAPTER

REFERENCE: **28**

LIST OF FIGURE:

LIST OF TABLES:

TABLES	PAGE NO
Table: 3.2: Requirement analysis	8
Table 5.3: Testing report	25

CHAPTER 1

Introduction

1.1 Introduction

DIU Transport Management System is a web application administration where instructors and understudies can without much of a stretch get all the data about the transport administration and furthermore the framework that deals with the transport administration, transport plan, search course, and furthermore deals with internet-based ticket booking framework. Understudies have confronted a ton of obstacles while purchasing transport tickets in the early evening at the transport counter, particularly for female understudies, it turns out to be extremely challenging, which will turn out to be exceptionally simple through our site. Through this site, understudies will actually want to know the specific number of the transport and where the transport goes, and where it is hanging tight, and in the event that under any circumstance the transport number changes, educators and understudies will get the update effectively through this site.

1.2 Objective

The purpose of the development of this project is to help the university bus service and their activities and to help the students to get to know all the information about transport services. Also, students can book their bus tickets and make payments online.

- To ensure that students, especially fresher students and Faculty can get all information about the DIU bus service.
- To ensure that students can book their tickets easily, especially female students.
- To ensure the exact time management of the bus service.

1.3 Motivation

Transport helps in the development of individuals, products, and materials starting with one spot and then onto the next. It helps in the dissemination of merchandise after creation. In the training area transportation is a significant issue for the two understudies and guardians. The greater part of the college understudies is full adequately grown to travel their grounds without anyone else. In these cases, understudies utilize public vehicles from better places. A guardians Car and an emergency vehicle are likewise accessible for the understudies and their folks. A complete transportation framework is overseen from our Ashulia grounds. Every one of the vehicles is moving for the understudies on various courses and grounds from Ashulia Campus. Understudies simply have to introduce their ID cards to get to this office. As indicated by the distance they pay a limited quantity for the vehicle office. It is tedious and furthermore sets aside cash. Additionally, this assistance is extremely useful for our female understudies. They can without much of a stretch keep away from the inescapable conditions or any sorts of undesirable circumstances.

1.4 Expected Outcome

- From this web application, all Faculty and students will get the right information about the bus service.
- Students will be able to reach the campus before class in less time.
- If for any reason the bus number changes, then the students can easily get it through this web application.
- In the future, we can use tracking devices to track the bus & route location.

CHAPTER 2

Background

2.1 Background of the project

The world is moving at a high speed, and innovation is the fuel that is running it. Innovation guarantees a major piece of the regular routines of purchasers, and their dependence on it is irrefutable. What's more, vehicles have made this excursion simpler for us. The most straightforward method for moving starting with one spot and then onto the next is by utilizing vehicles. What's more, the utilization of vehicles for understudies is certain. In the training area transportation is a significant issue for the two understudies and guardians. The vast majority of the college understudies are adequately adults to travel their grounds without anyone else. In these cases, understudies utilize public vehicles from better places. Since they need to utilize vehicles to come to the college. All things considered, pondering this issue, the college specialists have given transport to the understudies of our Daffodil International University.

The 'DIU Transport Management System' has been created to make the college's transport administration more open to understudies. It will assist understudies with getting transport plans, search courses, and furthermore dealing with the internet-based ticket booking framework. After effectively logging, the understudies can see the transport timetable and quest for the transport through transport number, course, and area. Likewise, understudies can make online installments for booking tickets. In the event that the transport number, area, and course change because of any explanation the understudies can see the updates following the administrator refreshes those things.

2.2 Challenges

- Construct a smoothed-out yet alluring web framework that will interest the understudies and clients.
- Ensure the client enlistment and logging framework is working appropriately.
- Keeping up with the security of the data set is likewise an essential piece of this venture.
- Interference of unapproved visits to the organization board.
- Ensure clients and understudies can get all administrations appropriately from this framework.
- Keep up with high security in exchanges.
- Keeping up with the security of the data set is likewise an essential piece of this venture.

CHAPTER 3

Requirement of specification

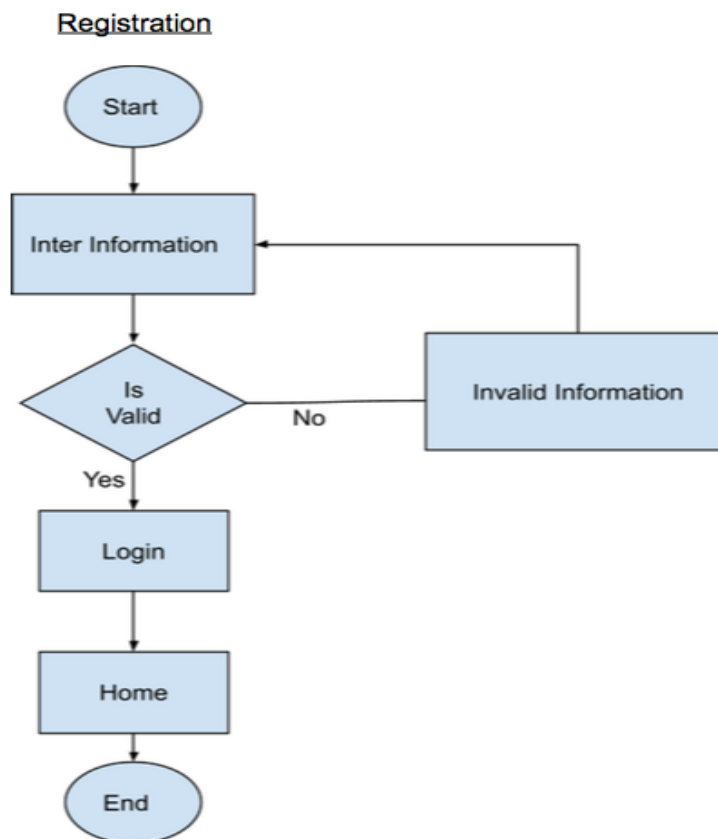## 3.1 Activity Diagram

Registration

Figure: 3.1.1: Activity Diagram

In figure: 3.1.1, The user will enter all the data which is expected for enlistment. On the off chance that the data is substantial, the client can log in accurately, or probably it will return to the enrollment page.
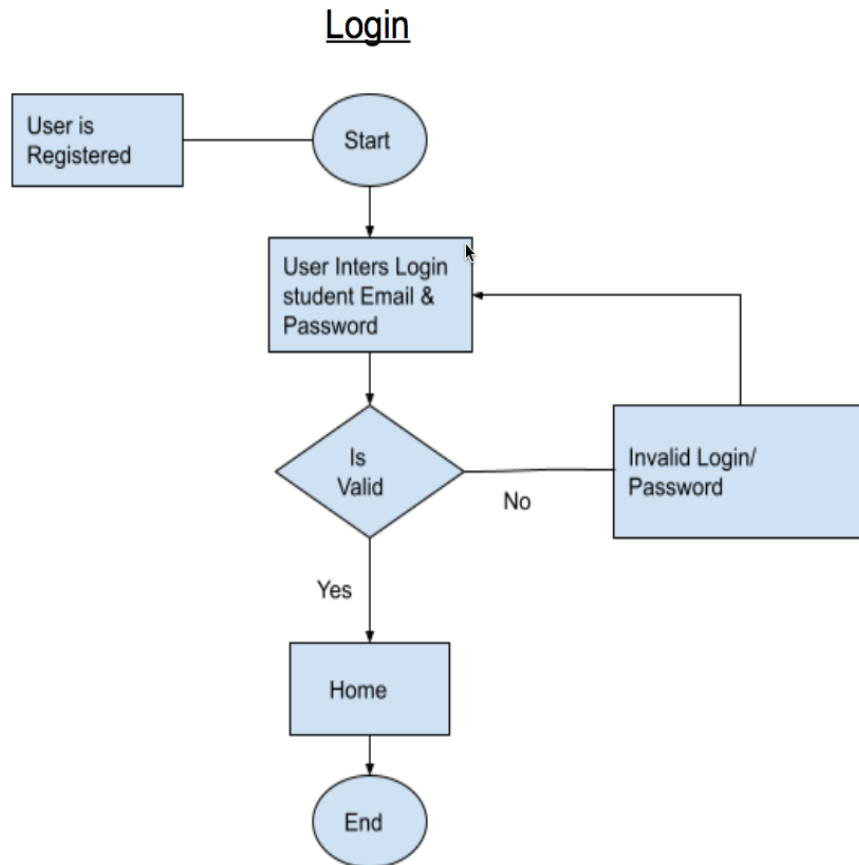
3.1 Activity Diagram

Login

Figure: 3.1.2: Activity Diagram

In figure: 3.1.2, After effective enrollment, the client will enter the email and secret key which is expected for login. On the off chance that the data is substantial, the client can log in accurately, or probably it will return to the login page.
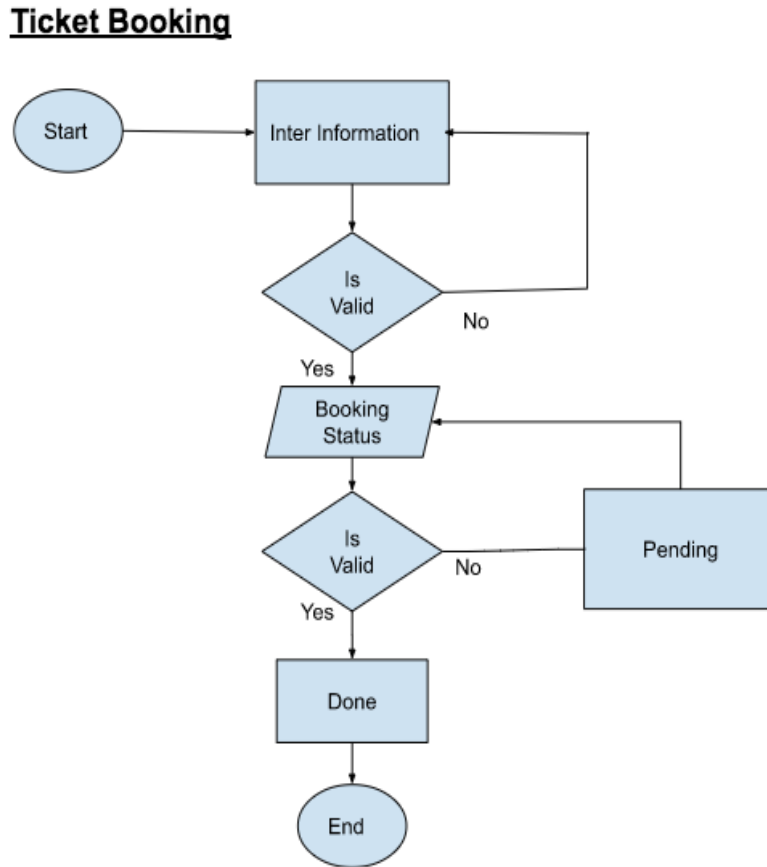
3.1 Activity Diagram

Ticket Booking

Figure: 3.1.3: Activity Diagram

In figure: 3.1.3, The user will enter all the information which is required for ticket booking. If the information is valid then the user will go to the booking status or else it will go back to the previous page. After going to booking status, if all information is valid then it will be done or else it will be pending.

3.2 Requirement Analysis

In our framework, there are a few prerequisites that are expected for utilizing this framework. Some of them are given beneath in table 3.2:

Table 3.2: Requirement analysis

Serial No	Requirement name	Requirement name
01	Admin login	To adjust any index of the site, the administrator should be signed in with an email and password.
02	Students / Users registration	Students / Users need to register to the system prior to visiting the site and view all data.
03	Students / Users Login	Currently enlisted Students or Users need to log in with his/her enrolled email and secret key.
04	Search	For looking through the transport, Students/Users need to give the transport number/area/ course.
05	Tickets booking	For booking tickets, Students/Users need to give his/her understudy id.

3.3 Use case modeling and description

Use case charts are utilized to accumulate the necessities of a framework including inside and outside impacts. Use case chart for our framework is displayed underneath.

Actors: - Admin, Student, System User

The related use cases for these entertainers are: -

Administrator: Login, logout, Update profile, Change secret key, View Route, Manage plan, Add transport, Insert, Delete, Update, Bill, affirm.

Understudy: Registration, Login, logout, Change secret key, View Route, View framework, View transport Schedule, Ticket booking, Make installment, Send a message.

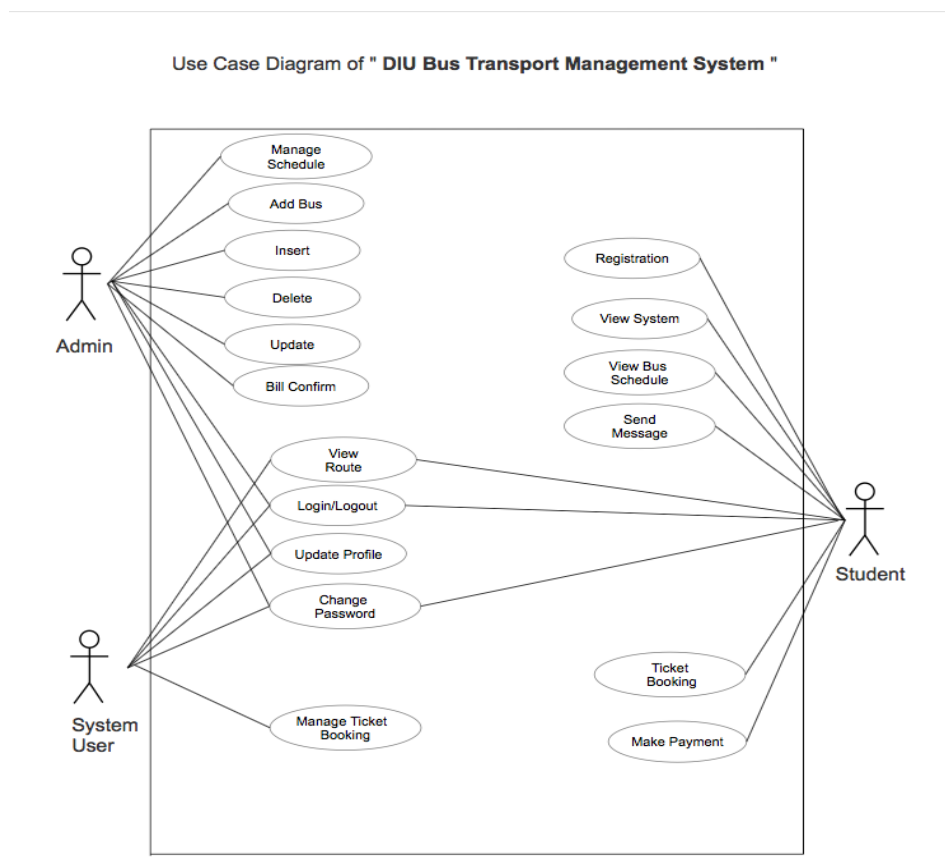Framework Users: login, logout, Update profile, Change secret key, View Route.

Figure: 3.1.3: Use Case Diagram

3.4 Design Requirements

Our system is a dynamic website. Some web programming languages are used to develop the front end and back end of our site. We used HTML, CSS, BOOTSTRAP, and PHP LARAVEL framework for developing websites. We used HTML, CSS, and BOOTSTRAP for frontend design On the other hand, a well-known programming language LARAVEL is used to develop the back end. MySql database server helps here to make it dynamic.

HTML:

Contingent upon what sort of additional room you need to make in your HTML code on a site page, there are various ways you can do this. A wide range of ways to deal with making additional room utilizing HTML and CSS are canvassed in the accompanying segments.

CSS:

CSS is the language to address the introduction of website pages, including varieties, configuration, and text styles. CSS is sans HTML and can be utilized with any XML-based markup language. It is utilized to make site pages look outwardly engaging. Visual engaging quality is vital for a site.

Bootstrap:

Bootstrap is an HTML, CSS, and JS library pointed toward making it simple to fabricate instructive pages (instead of web applications). The primary justification for remembering it for a web project is to apply variety, size, textual style, and design determinations to that task

PHP:

Highlights. Bootstrap is an HTML, CSS, and JS library pointed toward making it simple to construct enlightening site pages (instead of web applications). The fundamental explanation for There is various old insights on the Web that lead new PHP clients adrift, spreading awful practices and shaky code. PHP: The Right Way is a simple to-peruse, fast

reference for PHP popular coding principles, hyperlinks to legitimate instructional exercises across the Web, and what the people make sure to be incredible practices at the predominant time. There is no standard way to apply PHP. This web webpage focuses to acquaint new PHP developers with certain subjects which they'll currently never again figure out till it's miles past the point of no return and focuses to introduce expert experts to a few clean considerations on the one subject they've been accomplishing for a really long time while never rethinking. web website might even presently never again educate you regarding them one's gear to apply, but as an option give pointers to numerous choices, while practical making sense of the varieties in technique and use-case. This is a residing record and could keep awake to date with extra helpful measurements and models as they end up being available used online eating place sites with weighty amounts of traffic. Secure sites for installment. Email net website facilitating stages. Database control and social platforms. Content Management Systems remembering it for a web project is to apply variety, size, textual style, and design determinations to that venture.

Laravel:

Laravel is an internet utility improvement framework. It is simple to learn. Also, the Laravel framework is simple to enforce and its syntax is simple. We trust improvement to be an enjoyable, innovative experience. Laravel allows us to meet those necessities and attempt to take the ache out of improvement with the aid of easing not unusual place responsibilities used inside the majority of net projects, together with authentication, routing, sessions, and caching. Laravel pursuits to make the improvement procedure a nice one for the developer without sacrificing utility functionality. Happy builders make the fine code. To this end, we have tried to integrate the very fineness of what we've visible in different net frameworks, including frameworks applied in different languages, together with Ruby on Rails, and ASP.NET MVC.

CHAPTER 4

Design specification

4.1 Front-end Design

The plan of a site that can see clients is called a front-end plan. It makes a site readable and justifiable to clients. All that a client sees on a site page is called a front-end plan. The front finish of a site is planned utilizing dialects like HTML and CSS and BOOTSTRAP. It gives a way for clients to speak with the server.

The main part of a site is the front-end plan. A UI that is both alluring and easy to utilize.

The UI of a site draws in guests as well as makes it simple for them to draw in with the site.

Our framework's front end has been intended to be basic and clear to utilize. It helps the understudies in essentially helping out the framework.

4.2 Back-end Design

Back-end configuration is the interior and intelligent piece of a site. It is otherwise called the server-side plan. Back-end configuration helps make a site dynamic. It characterizes how the Site ought to function. Web security, design, and content of the webpage. The backend is the most convoluted and significant piece of site advancement. The whole electronic framework depends on the back or server side. A back-end designer needs to manage different confounded parts, for example, confirmation, meeting, information approval, data set administration, information sharing, security, and so on. We involved PHP as the server site language to give all of the rationales to our framework. The Laravel structure is utilized to foundationally deal with the whole interaction. MySQL data set is utilized to store our information and to deal with our framework data set.

4.3 Implementation Requirements

- The Back-end of the system should be developed using PHP.
- MySQL is the preferred database for keeping and managing all the data.
- For Developing and structuring web pages we need HTML and CSS.
- Verify all the form-protected XSS (cross-site scripting) attacks.
- Unauthorized access needed to prevent in a proper way
- Implementing workable session management.
- Any invalid data input in the form should be warned by various error messages.
- All the database queries should work properly.
- A bootstrap framework should be used in front-end design to make it better looking as well as responsive for all devices.

Run XAMPP Server:

XAMPP is AN ASCII text document bundle created by Apache Friends. XAMPP programming bundle contains Apache dispersions for Apache server, MariaDB, PHP, and Perl. What's more, it's basically a nearby host or a local server. This nearby waiter deals with your own work area or compact PC. XAMPP is to check the buyers or your site before transferring it to the remote net server.
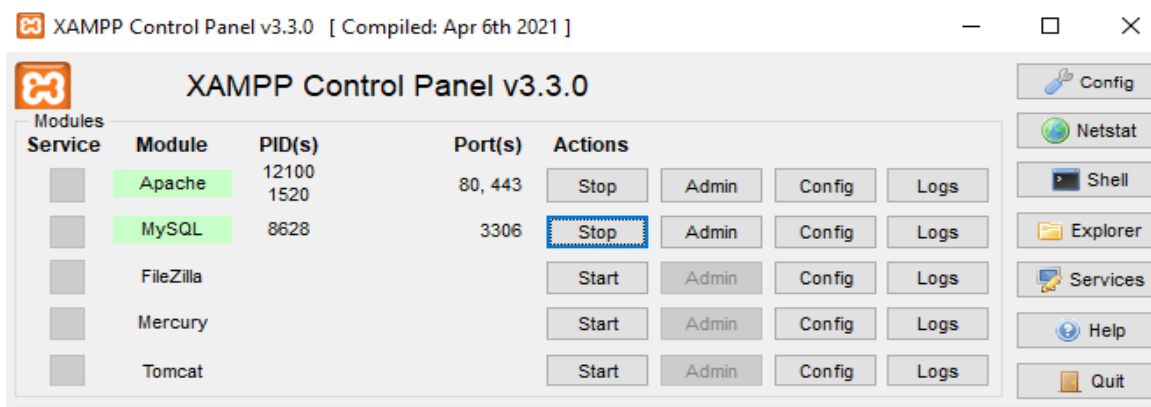
Figure: 3.1.3: XAMPP Server

Create Database through MySQL

Go to http://localhost/phpmyadmin/ and create a new database by using the following Query -CREATE DATABASE <DATABASENAME>

Initialize Laravel development server

To run our project based on the Laravel framework in our local host, we need to initialize it by executing the following bash command in figure 4.3.2.
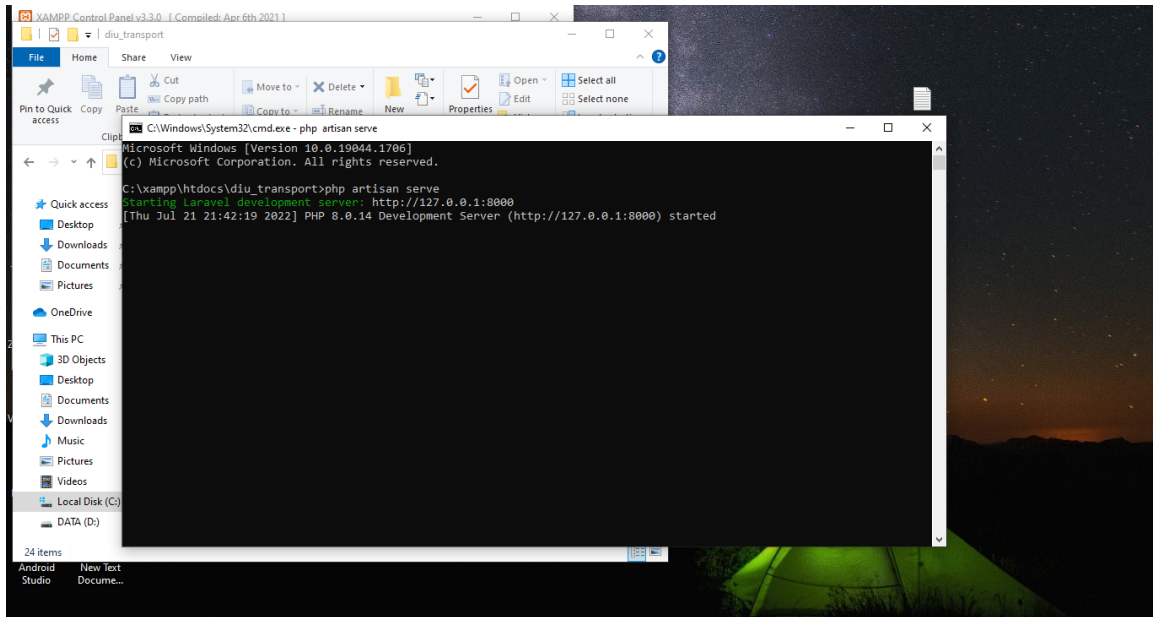
Figure: 4.3.2: Initialize Laravel Development server
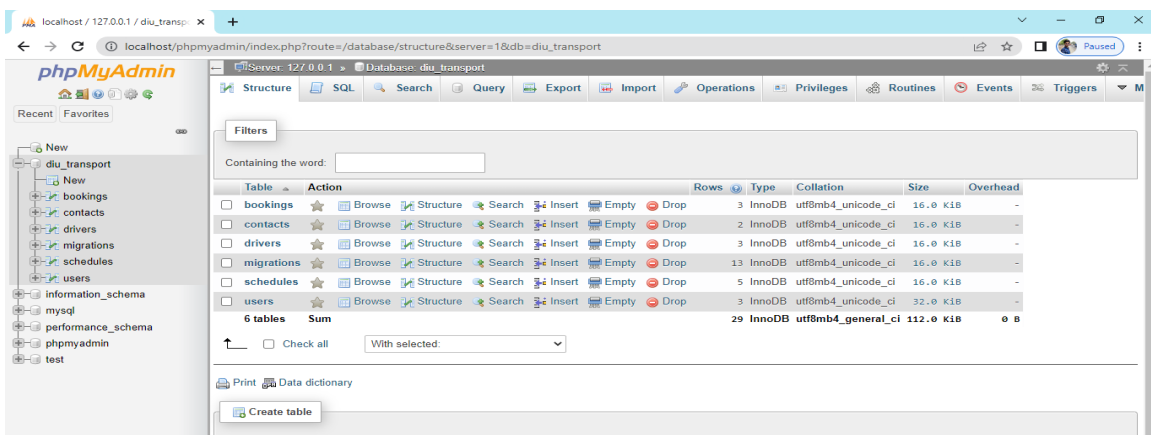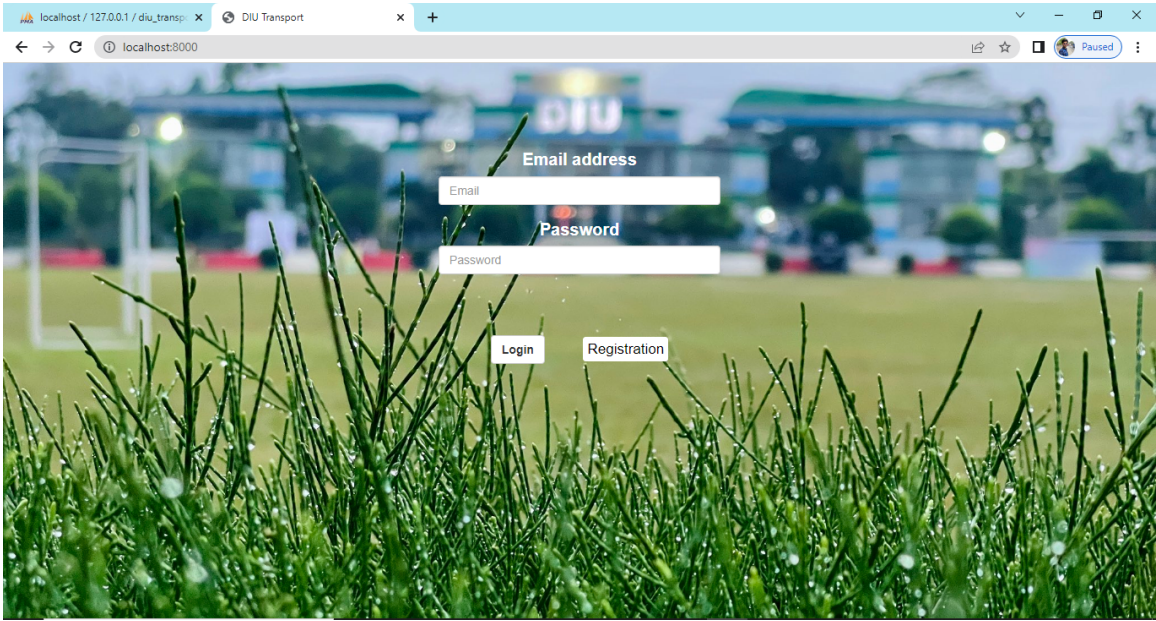
It will run the project on http://127.0.0.1:8000

Figure: 4.3.3: Database Table

Figure: 4.3.4: User Login Page
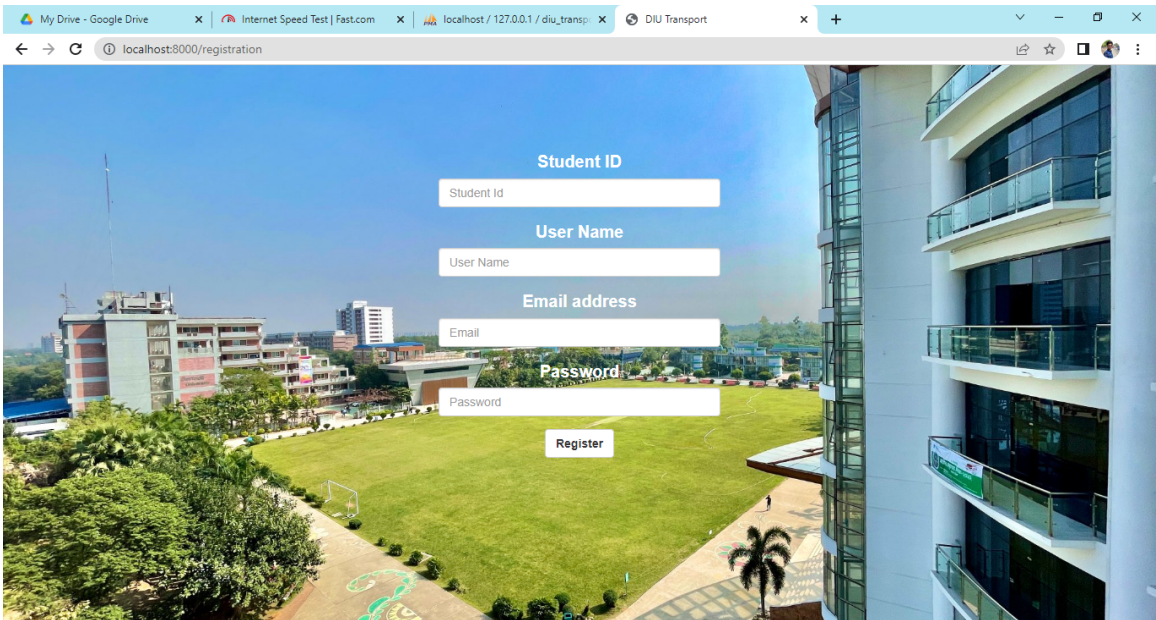
Figure: 4.3.5: User Registration page
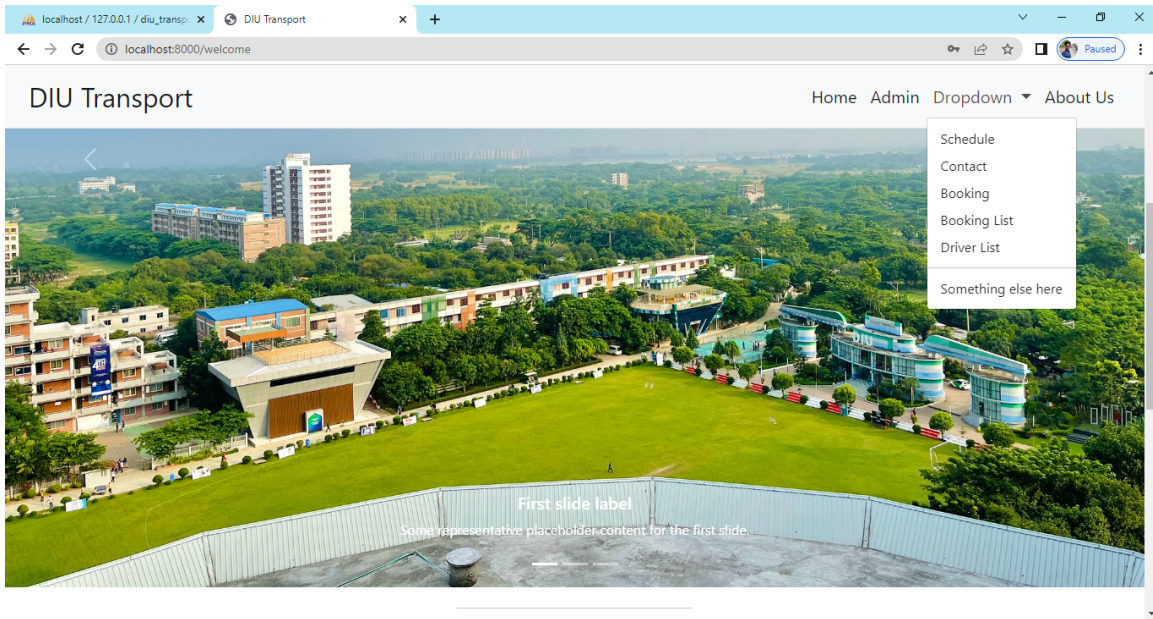
Figure: 4.3.6: Home page

Figure: 4.3.6: Home page

Bus Schedules
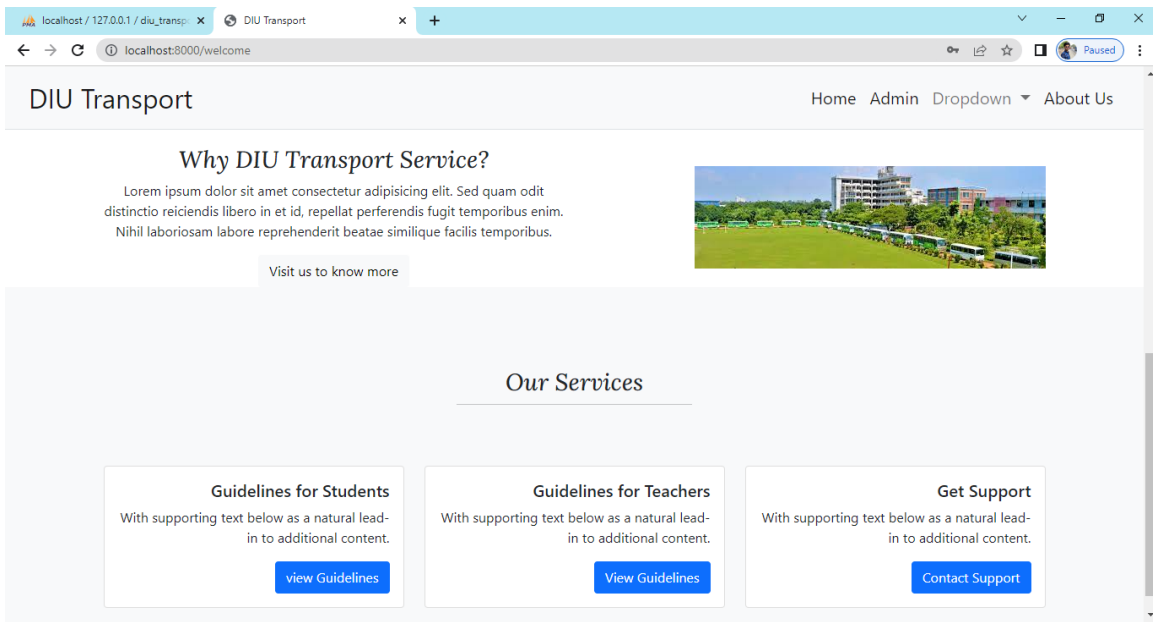
Start Time	Bus Number	Previous Location	Destination Location	Destination Time	Route	Interval Time
9:00am	14	Dhanmondi	Campus	10: 15 am	Dhanmondi - Sobhanbag <> Shyamoli Square <> Technical Mor > Majar Road Gabtoli <> Konabari Bus Stop <> Eastern Housing Rup Nogor <> Birulia Bus Stand <> Daffodil Smart City	1 hour 15 min
7:00 am	14	Dhanmondi	Campus	8: 15 am	Dhanmondi - Sobhanbag <> Shyamoli Square <> Technical Mor > Majar Road Gabtoli <> Konabari Bus Stop <> Eastern Housing Rup Nogor <> Birulia Bus Stand <> Daffodil Smart City	1 hour 15 min
2:45 pm	14	Dhanmondi	Campus	4:00 pm	Dhanmondi - Sobhanbag <> Shyamoli Square <> Technical Mor > Majar Road Gabtoli <> Konabari Bus Stop <> Eastern Housing Rup Nogor <> Birulia Bus Stand <> Daffodil Smart City	1 hour 15 min
7:00 am	21	Uttara - Rajlokkhi	Campus	8:15 am	Uttara - Rajlokkhi <> House building <> Grand Zomzom Tower <> Diyabari Bridge <> Beribadh <> Birulia Khagan <> Daffodil Smart City	1 hour 15 min

Figure: 4.3.7: Schedule page

search bus number [ ] submit

search route [ ] submit

search destination [ ] submit

search time interval [ ] submit

Figure: 4.3.8: Search Bus

Figure: 4.3.9: Ticket Booking
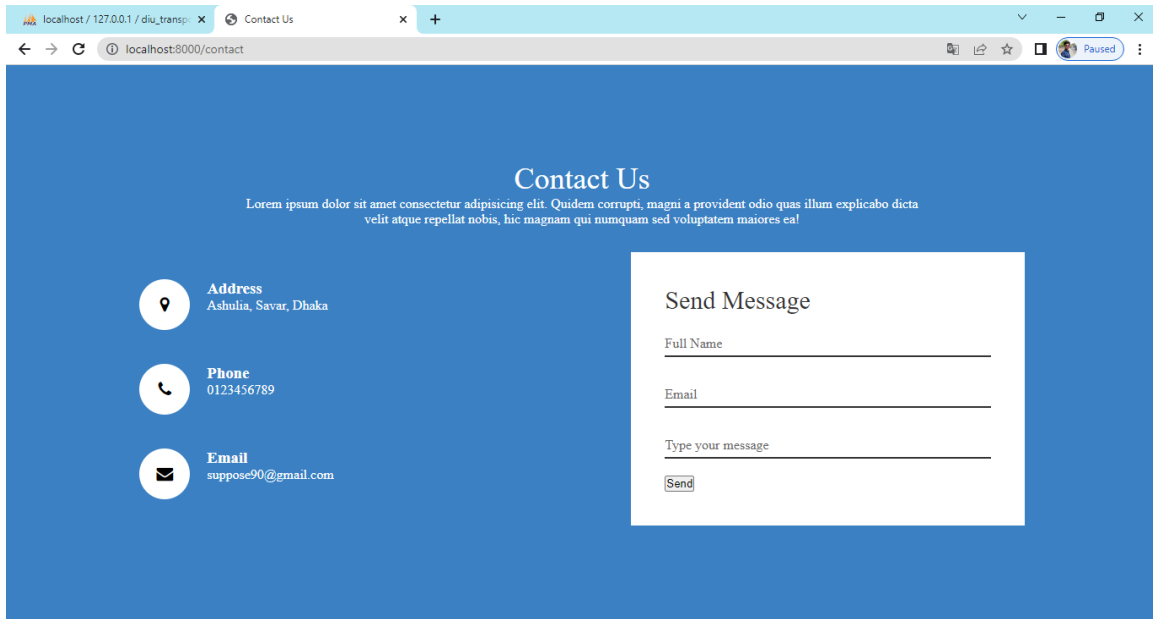

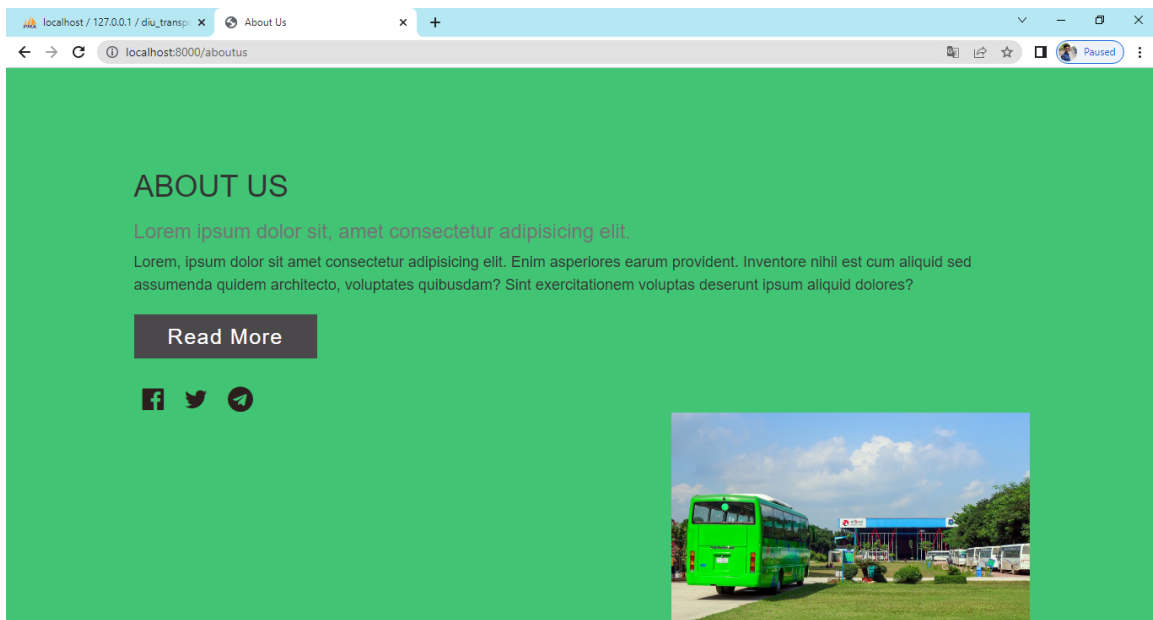Figure: 4.3.10: Booking List

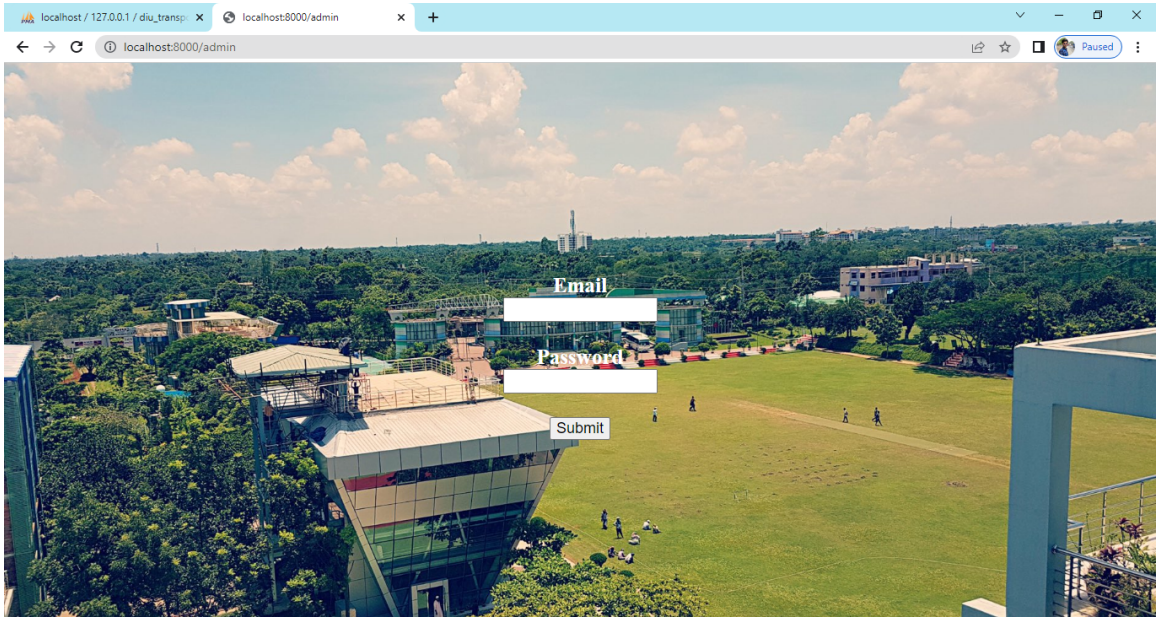Figure: 4.3.11: Contact Us page

Figure: 4.3.12: About Us page

Figure: 4.3.13: Admin Login page
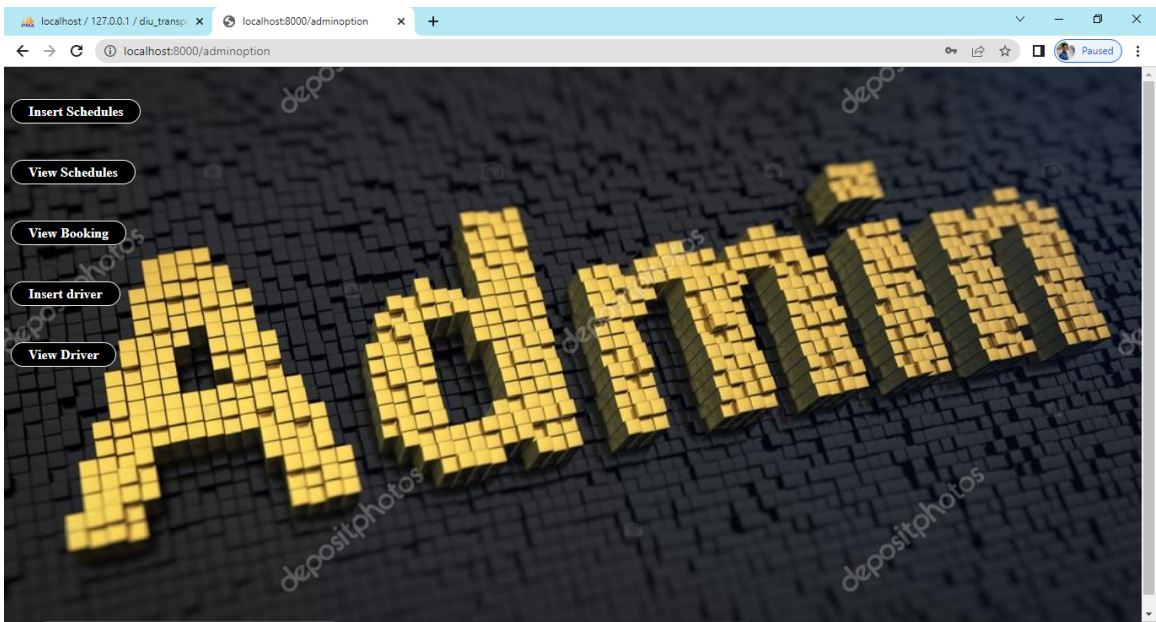
Figure: 4.3.14: Admin Option page

Figure: 4.3.15: Insert Schedule page

Figure: 4.3.15: Insert Schedule page

Figure: 4.3.16: Admin Update Schedule page

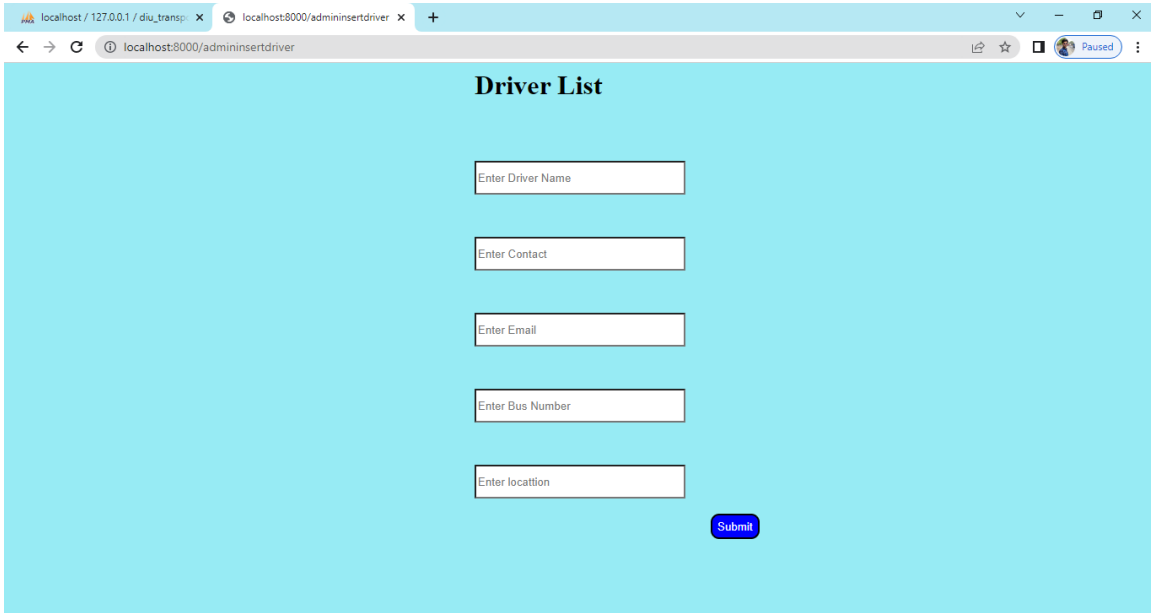Figure: 4.3.17: Admin View Booking List

Figure: 4.3.15: Insert Driver page
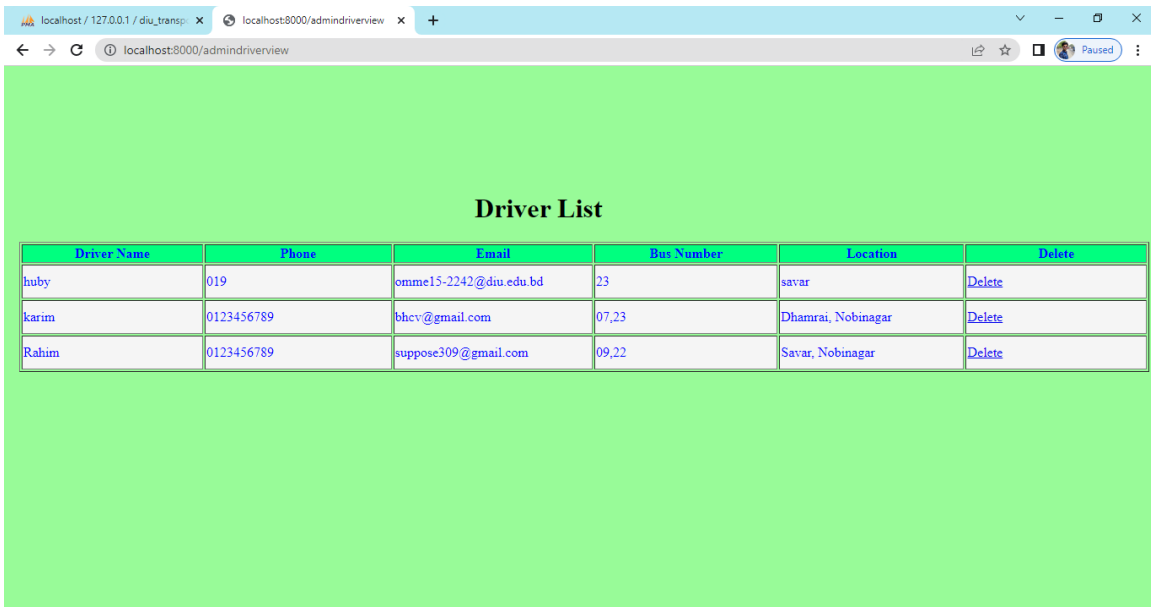
Figure: 4.3.15: Update Driver page

CHAPTER 5

Testing and implementation

5.1 Database Implementation

We have created our database desk via means of the use of Laravel migration. We have finished the following command to migrate all of the tables "PHP artisan serve".

Since MySQL is a version controller database, we didn't want direct questions to carry out actions. We can get entry to our database via means of beginning a MySQL server from XAMPP and going to http: // localhost / phpmyadmin /.

5.2 Front End Implementation

Our main goal was to design a front-end to ensure a simple user interface for the students. So we have tried to keep our web pages as simple as possible. We also kept in mind that the design should be attractive and easy to use when implementing the front-end design. We, therefore, used the reactive bootstrap technique to make our site responsive. Our front-end design includes the following:

- Simple but attractive homepage design.
- Easily understandable on the site.
- User-friendly registration and login page.
- Attractive and easy-to-use ticket booking system design.

5.3 Testing Implementation

Testing software is as important as developing it. We have tried our best to make our web-based system easy and secure. So, we have performed testing by implementing some test cases for our system. Our testing report is shown in the following table 5.1:

Table 5.3: Testing report

Test No	Description	Test Data	Expected Result	Actual Result
01	By clicking the login button with substantial email and wrong secret phrase	Email:amit12288@gmail.com Password : 2242	Wrong username or password	Pass
02	During enrollment check, the information mail is now enlisted	Email:amit2288@gmail.com	Email already taken	Pass
03	By clicking the login button with an invalid email or password or both.	Email:ummehoney@gmail.com Password: "honey"	No user with this email	Pass
04	By clicking the login button with a valid email and password	Email:amit2288@gmail.com Password:"2288"	Redirect to view home page	Pass

CHAPTER 6

Impact on society and sustainability

6.1 Impact on society

Through this framework, it will be not difficult to control the exercises and administrations of the college transport. By seeing this framework and the board, other college school universities will consider executing this framework for their understudies.

6.1 Impact on environment and sustainability

Feasible transportation is the ability to help the versatile needs of the general public in a way that is the most un-damageable to the climate and doesn't disable the portability needs of people in the future. The development of this worldly system into the idea of supportability incorporates three significant points of support:

- Social value. Social value is generally the most difficult component of the idea of supportability to characterize. It ought not to be mistaken for uniformity of result, where oppressive practices are executed for one financial gathering and against one more with the expressed target to embrace a remedy of seen disparities.

- Monetary proficiency. Concerns conditions empowering more elevated levels of monetary effectiveness with regards to asset and work utilization. It centers around capacities, seriousness, adaptability underway, and giving labor and products that supply market interest.

- Ecological obligation. It includes fostering an impression of human exercise, which is lesser than the limit of the climate to oblige. This incorporates the stock of assets and the protected removal of waste. Its center precepts incorporate the preservation and reuse of items and assets.

CHAPTER 7

Conclusion and future scope

7.1 Conclusion

The objective of this undertaking was to foster a site or a web application that would make the college transport administration more straightforward for understudies. The venture will assist the understudies with getting all the data about transport administrations of transports and through login this framework, understudies will enter the framework and they can see the transport plan, they can look through the transport by their comfort utilizing transport number, objective, time span, and course.

Additionally, understudies can see the updated timetable of transport and they can likewise see the driver's data of transport. Understudies will book their transport tickets through this framework with practically no issue.

In the event that any understudy deals with any sort of issue, they can contact the transport council utilizing the reach us page.

Most importantly, This framework will make transport administration simpler for understudies and college too.

7.1 Conclusion

- We will add more features to improve our design.
- We, Will, try to add more options and facilities for users.
- In the future, we can use tracking devices to track the bus & route location.
- We are also working on the integration of the online payment system.

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