BUS BOOKING SYSTEM

A PROJECT REPORT SUBMITTED IN PARTIAL FULFILMENT OF REQUIREMENT FOR THE AWARD OF THE DEGREE

MASTER OF COMPUTER APPLICATIONS (MCA)

OF

MAHATMA GANDHI UNIVERSITY, KOTTAYAM

BY

Lido Charles

Reg. No:22pmc136

MARIAN COLLEGE
KUTTIKKANAM
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MAKING COMPLETE

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Under the guidance of
Ms. RENY JOSE
Assistant Professor
PG Department of Computer Applications
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PG DEPARTMENT OF COMPUTER APPLICATIONS

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KUTTIKKANAM – 685 531, KERALA.

CERTIFICATE

This is to certify that the project work entitled

"BUS BOKKING SYSTEM"

is a bonafide record of work done by

Lido Charles

Reg. No:22pmc136

In partial fulfilment of the requirements for the award of Degree of

MASTER OF COMPUTER APPLICATIONS [MCA]

During the academic year 2022-2023

Ms. Reny Jose
Assistant Professor
PG Department of Computer Applications
Marian College Kuttikkanam Autonomous

Mr Win Mathew John
Head of the Department
PG Department of Computer Applications
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External Examiner

External Examiner

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Finally, I express my deep appreciation to all our friends and family members for the moralsupport and encouragement they have given to complete this project successfully.

Lido Charles

ABSTRACT BUS BOOKING SYSTEM

The Bus Booking System is a web application developed using the Django framework. It is designed to facilitate the process of booking bus tickets online. The system allows users to search for bus routes, view available buses, and make reservations for their desired travel dates.

The system consists of several modules that work together to provide a seamless booking experience. These modules include user authentication, bus management, reservation management, and payment processing.

User authentication ensures that only registered users can access the booking system. New users can create an account by providing their personal details and creating a username and password. Existing users can log in using their credentials to access their profile and make bookings.

The bus management module allows administrators to add and manage bus routes, along with their respective schedules, fares, and available seats. This information is stored in a database and is used to provide real-time availability to users during the booking process.

The reservation management module handles the process of making and managing bus reservations. Users can search for available buses based on their preferred origin and destination, as well as the travel dates. They can view the available buses and select the desired seats. Once the seats are chosen, the user can proceed to the payment process.

The payment processing module securely handles the financial transactions associated with the bus bookings. Users can make payments using payment methods.

Overall, the Bus Booking System provides a convenient and user-friendly platform for users to book bus tickets online. It streamlines the booking process, reduces manual effort, and improves the efficiency of bus ticket reservations.

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1.INTRODUCTION

1.1 OVERVIEW OF THE PROJECT

The bus booking system allows users to conveniently book bus tickets online without the need for physical visits to bus stations or travel agencies. With this system, users can access a website or mobile application to search for available bus routes, select their preferred seats, and complete the booking process securely. The system provides an online platform where users can easily check bus schedules, seat availability, and fares. It eliminates the need for manual ticketing processes and offers a streamlined and efficient way for passengers to book their bus tickets. By leveraging technology, the bus booking system simplifies the booking experience, saving time and effort for both users and bus operators.

The user can register and login to this site and book ticket, and proceed to payment. And after the booking they can logout from the site. To booking again, they need to login with the username and password already created for the further booking.

2.SYSTEM STUDY

2.1 EXISTING SYSTEM

The current system of bus booking requires passengers to physically visit the bus station or travel agencies to book their bus tickets. They have to check the availability of buses, choose their preferred seats, and make the payment at the counter. This manual process involves a significant amount of manpower to manage the bookings. It can be time-consuming for passengers, and the information provided about bus routes and schedules is often limited. Online booking and payment options are not available in this system.

- It is less user-friendly.
- Users must go to the bus station or travel agencies to book tickets.
- Involves a lot of human efforts for booking management.
- Time-consuming for both passengers and staff.
- Limited information about bus routes and schedules.

2.2 PROPOSED SYSTEM

The proposed system for bus booking aims to provide a more convenient and streamlined process for passengers to book their bus tickets. It eliminates the need for physical visits and introduces online booking capabilities. The key features of the proposed system include:

- It is very users friendly.
- User need not go to the bus station or travel agencies to book tickets.
- Involves a less of human efforts.
- Time consuming is less.
- Description of the bus information is detailed.

3.SYSTEM ANALYSIS

3.1 REQUIREMENT DEFINITION

Requirements Analysis is the process of defining the expectations of the users for the website that is to be built or modified. The goal is to produce a document of the client's requirements and fulfill their needs. This document forms the basis of development and software validation. It involves all the tasks that are conducted to identify the needs of different stakeholders.

ADMIN

- Admin can add bus and add routes.
- Delete and update buses and routes.
- Can see the details of buses and routes.
- Can receive the payment.
- Can view the bookings.

USER

- Users can view the bus routes.
- Users can book bus ticket.
- Can pay money online.

4.FUNCTIONAL REQUIREMENTS

4.1 MODULE SPECIFICATION

- Login Module
- Registration Module
- Search Bus Module
- Bus List Module
- Book Module
- Payment module
- Cancel Boking Module
- User Profile and Password Module

User Login Module

This feature allows users who have already registered with the system to log in using their credentials, such as username and password.

User Registration Module

This feature allows new users to create an account on the bus reservation system by filling in their personal information such as username, first name, last name, email, phone number, and password. After successful registration, users can log in to the system to access the bus booking and other related services.

Search Bus Module

This feature enables users to search for buses based on various criteria such as departure location, destination and travel date.

List of Bus Module

This feature provides a comprehensive list of available buses that match the search criteria entered by the user. Users can view the bus details such as bus name, fare, available seats, and travel time.

Booking Module

This feature allows users to enter passenger details and book the seats on the bus and confirm their booking.

Payment Module

This feature enables users to make payment for their bookings.

Cancel Bookings Module

This feature allows users to cancel their bookings if they have a change of plans or for any other reason.

Update User Profile and Password Module

This feature enables users to update their personal information and change their login password. Users can modify their name, phone number, and other details as per their requirements.

5.NON FUNCTIONAL REQUIREMENTS

5.1 *NON-FUNCTIONAL REQUIREMENT*

5.1 Reliability

The reliability of the overall project depends on the reliability of the separate components. The main pillar of reliability of the system is the backup of the database which is continuously maintained and updated to reflect the most recent changes, Also the system will be functioning inside a container. Thus, the overall stability of the system depends on the stability of container and its underlying operating system.

5.2 Availability

The system should be always available, meaning the user can access it using a web browser, only restricted by the down time of the server on which the system runs. A customer-friendly system which is accessible to people around the world should work 24 hours. In case of a hardware failure or database corruption, a replacement page will be shown. Also, in case of a hardware failure or database corruption, backup of the database should be retrieved from the server and saved by the Organizer. Then the services will be restarted. It means 24 X 7 availability.

5.3 Maintainability

A commercial database is used for maintaining the database and the application server takes care of the site. In case of a failure, a re-initialization of the project will be done. Also, the software design is being done with modularity in mind so that maintainability can be done efficiently.

5.4 Supportability

The code and supporting modules of the system will be well documented and easy to understand. Online documentation and help system requirements.

6.SYSTEM DESIGN

6.1 INPUT DESIGN

In the input design, the user-oriented inputs are converted into computer recognizable format. The collection of input data is the most expensive part of the system in terms of equipment used, time and number of users involved. Input design is the process of converting user-oriented inputs to a computer-based format. The goal of designing input data is to make data entry as easy, logical and free from errors as possible.

- Registration Form- Here the user creates their accounts using the relevant details asked to fill in and it is stored on the database and used whenever it is needed.
- Login Form- The admin and the user login to the website, to their account using their username and password.
- Booking Form- The user can book a ticket using this form filling in the relevant information about passengers such as passenger name, age and gender.
- Payment Form- The user needs to fill in the cvv, and account number of the atm card to send or pay money to the admin.

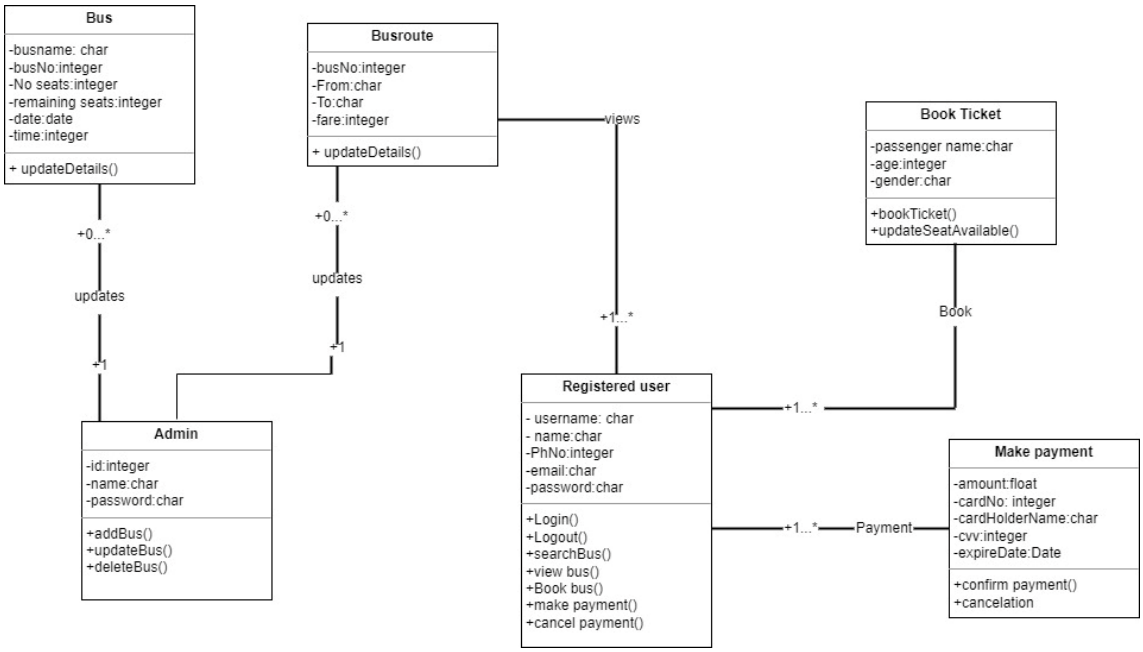
6.2 OUTPUT DESIGN

The goal of the output design is to capture the output and get the data into format suitable for the computer. One of the important features of an information system for users is the output it produces. Output is the information delivered to the users through the information system. Without quality output the entire system appears to be unnecessary so that users will avoid using it. The output design is the key to the success of any system because it is the system relationship with the user, we must determine the information is present and arrange the information in the acceptable format that is when to display the information.

- Search Bus. This button helps the user to view the buses that are added by the admin.
- Book Now. This button helps the user to book bus tickets.
- Proceed to payment. This button redirects the user to the payment form so that they can pay the money to place their order.
- Logout- The button that helps the user to log out from the website.
- Login- The button helps to log in to the website to purchase their product.
- Register- The button that allows the user to register for their account to book bus tickets.

6.3 DATABASE DESIGN

6.3.1 CLASS DIAGRAM



6.4 TECHNICAL ASPECTS

Programming Language	: Python
Web Framework	: Django (backend)
Frontend Framework	: HTML, CSS, JavaScript
Database	: SQLite (supported by Django)
Third Party Libraries	: Django allauth , Jazzmin

6.5 ARCHITECTURE FOR BUS BOOKING SYSTEM

Presentation Layer (Frontend):

HTML/CSS: Responsible for the user interface and styling.

JavaScript: Handles interactivity and client-side validation.

Application Layer (Backend):

Web Server: Receives HTTP requests and routes them to the appropriate components.

Authentication and Authorization: Manages user authentication and authorization for secure access to the system.

Business Logic: Implements the core functionalities of the bus booking system.

API: Defines endpoints to expose functionalities for frontend and external integrations.

Error Handling: Captures and handles exceptions, providing appropriate responses to users.

Database Layer:

Database Management System (DBMS): Stores and manages the system's data. Relational Database (SQLite): Handles structured data related to users, bookings, buses, etc.

Object-Relational Mapping (ORM): Interacts with the database, abstracting away low-level queries and providing a higher-level interface.

7. CHALLENGES FACED

7.1 CHALLENGES FACED

Developing a bus booking system using Django, I faced several challenges. The most difficult challenge I faced was ensuring secure user authentication, designing a user-friendly interface, implementing validation mechanisms, and managing a robust database structure.

- User Authentication and Security
- Designing User Interface
- Validation Mechanisms
- Database Design and Management

8. FUTURE ENHANCEMENT

8.1 FUTURE ENHANCEMENT

The project, Bus Booking System, has a vast scope for future enhancements. The software is developed using Python and SQLite as the back-end, and HTML and CSS as the front-end. In the future, the system can be further modified to include additional features easily. Here are some potential enhancements for the bus booking system:

Multiple Admin Access: The system can be modified to allow multiple administrators to manage the bus booking platform. This would enable efficient administration of the system, with different admins having specific roles and permissions.

Integration with Other Modes of Transportation: The bus booking system can be seamlessly integrated with other modes of transportation like trains, flights, and taxis. This integration would provide users with a comprehensive travel solution, allowing them to plan and book their entire journey through a single platform.

Real-Time Updates: Implementing real-time updates regarding bus schedules, delays, and cancellations would greatly benefit passengers. Users can receive timely notifications through mobile apps or email, keeping them informed about any changes in their travel plans.

Payment Gateway Integration: Integrate popular payment gateways to facilitate secure and convenient online transactions for bus ticket bookings. This would provide users with various payment options and enhance the overall user experience.

User Reviews and Ratings: Incorporate a user review and rating system, allowing passengers to provide feedback on their bus travel experiences. This would help other users make informed decisions when booking their bus tickets.

By incorporating these future enhancements, the bus booking system will become more efficient and user-friendly, offering a seamless and comprehensive booking experience for bus travelers.

9.CONCLUSION

9.1 CONCLUSION

The proposed bus booking system offers a convenient and user-friendly platform for user to book bus tickets. By leveraging technologies such as Python, SQLite, HTML, and CSS, the system streamlines the booking process and enhances the overall experience for passengers.

The user registration module ensures privacy and allows registered users to access and book bus tickets for various destinations. The system aims to provide a consolidated resource where users can conveniently browse and select their preferred bus routes, while maintaining the confidentiality of their personal information.

With the ability to check bus fares and examine available seats, users have greater control and flexibility in their bus booking experience. The system allows users to view details about buses and indicating seat availability.

Overall, the proposed bus booking system aims to provide a user-friendly interface, efficient booking process, and comprehensive travel solutions for passengers. By automating key operations and leveraging technology, the system reduces manual work and provides a seamless booking experience for bus travelers.

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10.1 REFERENCES

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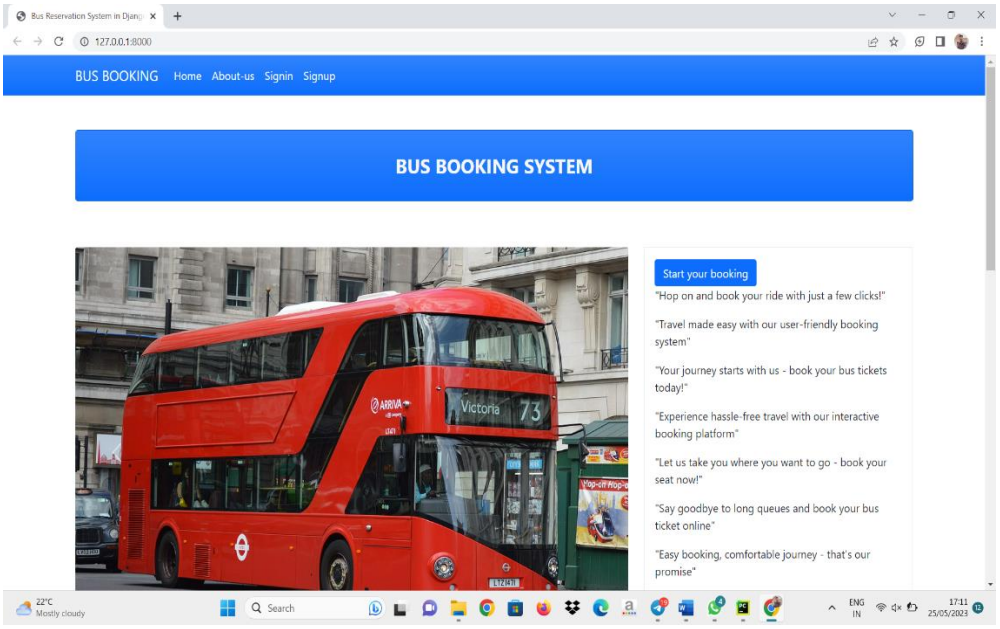
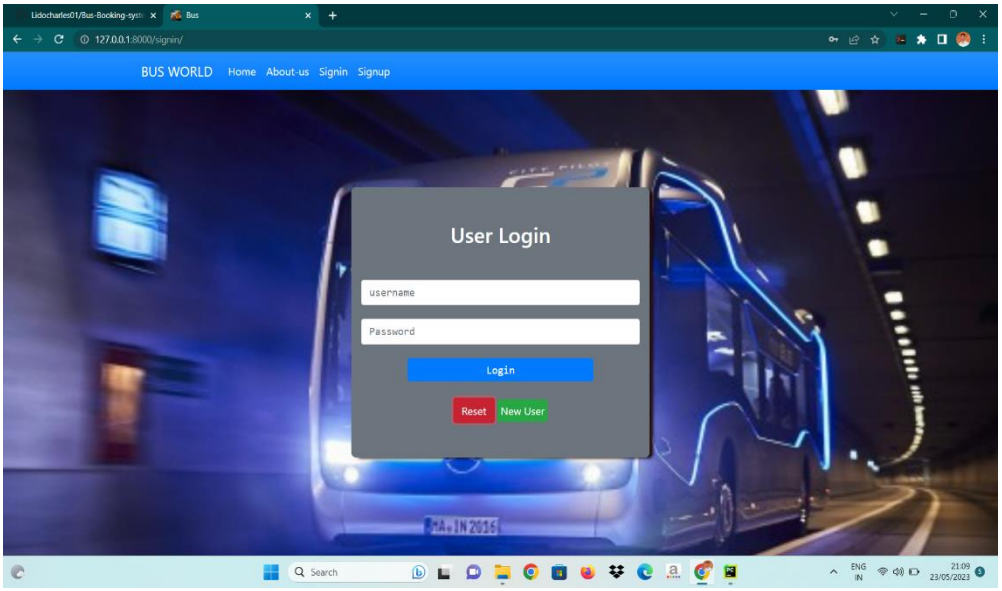
4. https://youtube.com/playlist?list=PL-51WBLyFTg2vW-_6XBoUpE7vpmoR3ztO

11.APPENDIX

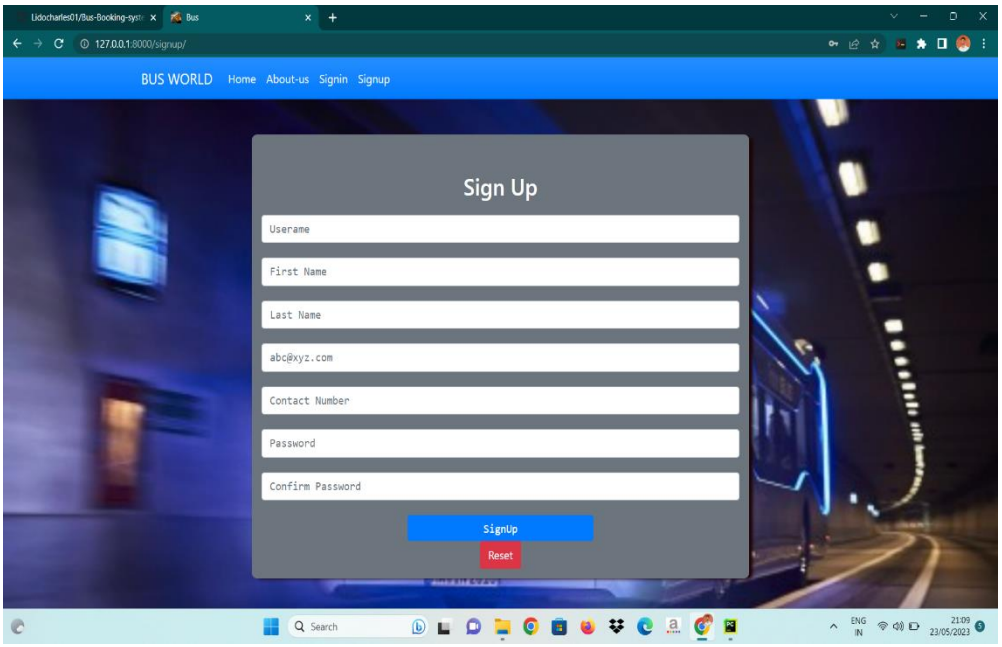
HOME PAGE



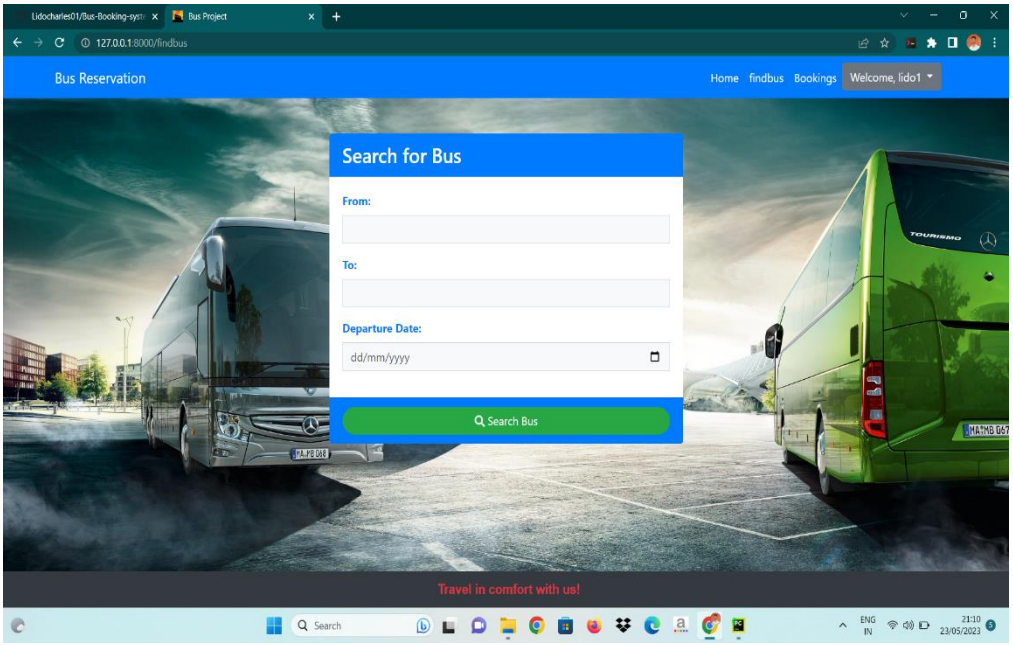
LOGIN PAGE



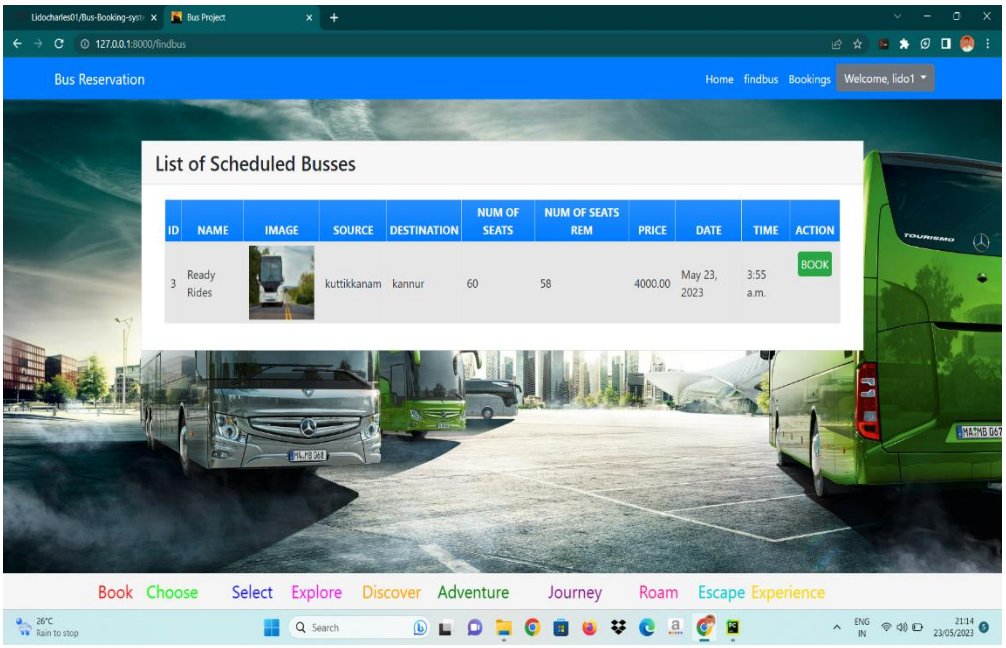
REGISTRATION PAGE



BUS SEARCH PAGE



LIST OF BUSES PAGE



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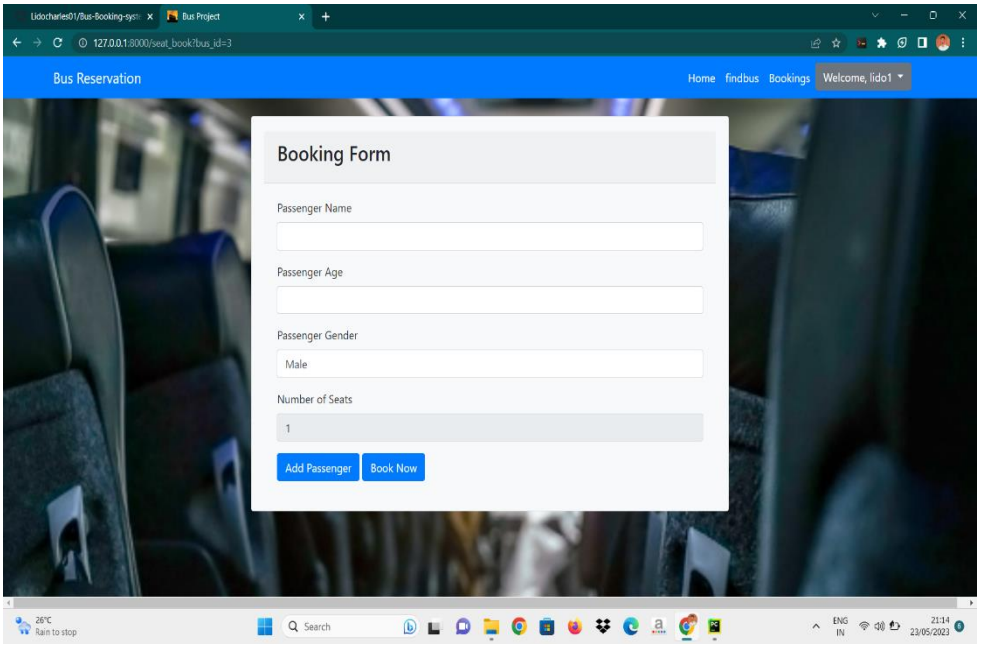
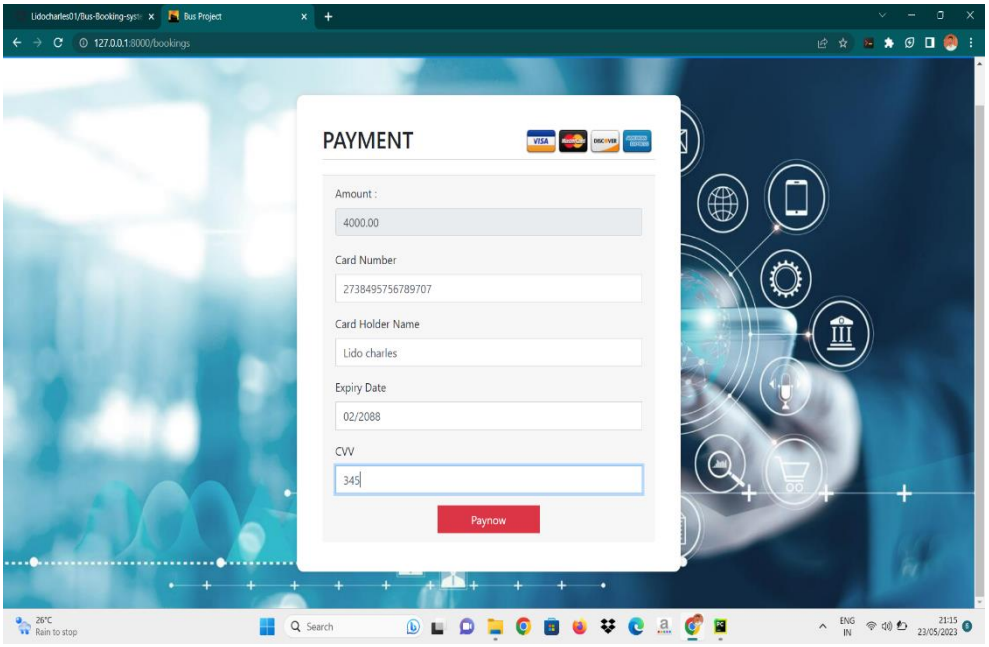
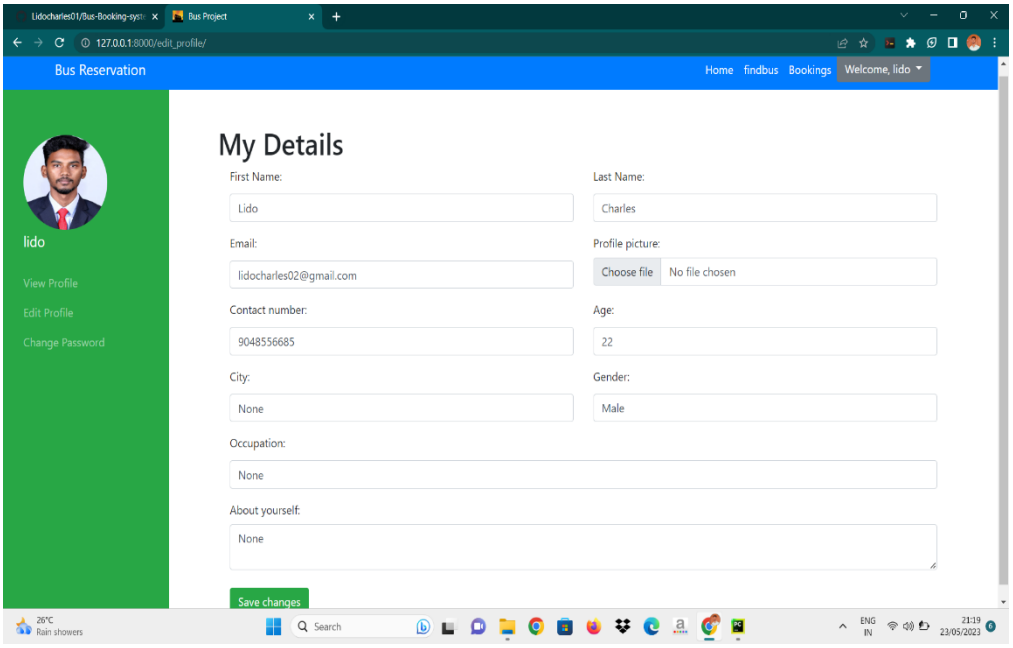


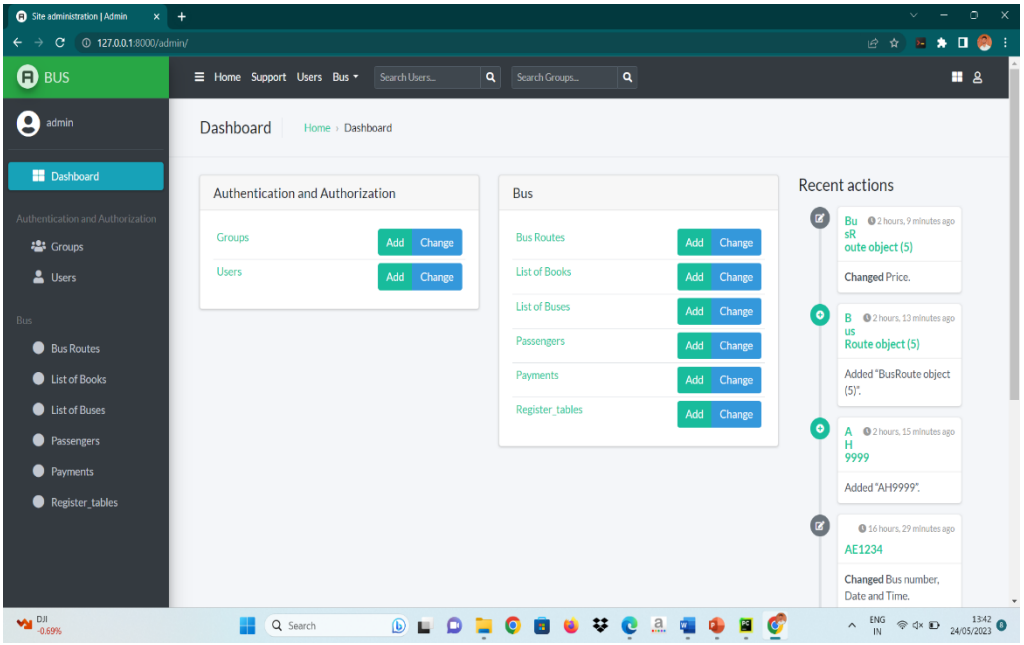
PAYMENT PAGE



USER PROFILE PAGE



ADMIN PAGE


Site administration | Admin
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BUS
admin
Dashboard
Authentication and Authorization
Groups
Users
Bus
Bus Routes
List of Books
List of Buses
Passengers
Payments
Register_tables
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Dashboard
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Users Add Change
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