CDAC Delhi

A

Project Report on

“AIRLINE RESERVATION SYSTEM”

Submitted in partial fulfillment of the requirements of
PG Diploma in Advanced Computing

SUBMITTED BY

SEPTEMBER 2022

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GUIDE BY

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CERTIFICATE

This is to certify that the Report work entitled

“AIRLINE RESERVATION SYSTEM”

Has been duly completed by the following students under the my guidance, in a satisfactory manner as a partial fulfillment of the requirement for the award of the PG- Diploma in Advanced Computing, Delhi

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Senior Technical Officer

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Declaration

I declare that this written submission represents our ideas in our own words and where others' ideas or words have been included, we have adequately cited and referenced the original sources. We also declare that we have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my submission. We understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

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Date: 13/03/2023

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Our special thanks to our parents and all of friends for help us exchanging any ideas and give the enjoyable study environment. At last, we special gratify to almighty God for blessing us with the hidden power to completing this study work.

PROJECT TEAM

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Contents

ABSTRACT

The airline reservation system project is a computerized platform that enables travelers to search, book, and manage their flight reservations online. The system incorporates various modules, including flight search, seat selection, payment gateway integration, and flight status tracking. The project aims to streamline the booking process, minimize human intervention, reduce errors, and enhance customer experience.

The system is designed using advanced technologies, such as web services, APIs, and databases, to ensure scalability, reliability, and security. It is expected to benefit both customers and airlines by providing an efficient and convenient means of managing flight reservations.

CHAPTER 2

Introduction

The airline reservation system project aims to create a platform for passengers to book and manage their flights online. The system will provide a user-friendly interface for customers to search for flights, view schedules, and make reservations. It will also enable them to manage their bookings, including changing or cancelling flights.

Overall, the airline reservation system project will streamline the booking process for customers and airlines, making it more efficient and convenient for all parties involved.

2.1 Description

In an airline reservation system, customers can search for flights based on their preferred travel dates, departure and arrival cities, and other criteria. Once they have found a suitable flight, they can book their tickets online and make payments using various payment options. The system also allows users to manage their bookings, make changes to their flights, and cancel their reservations if needed. Airlines use the system to manage their flight schedules, seat availability, and pricing, as well as to generate reports on bookings and revenue. Overall, an airline reservation system helps airlines provide better service to their customers while also increasing their efficiency and profitability.

2.2 Problem Formulation

To build an effective airline reservation system, several key components must be considered. These include user authentication and authorization, flight inventory management, pricing algorithms, payment processing, and reporting and analytics. Additionally, the system should be designed to handle high volumes of traffic and transactions, while maintaining high levels of security and reliability. The system should also be scalable and flexible to accommodate future growth and changes in customer demands. Ultimately, the goal of the airline reservation system project is to deliver a seamless and enjoyable experience for both customers and airline staff.

2.3 Motivation

An airline reservation system project is an essential tool for any airline company that seeks to enhance their customer experience, streamline their operations, and improve their overall efficiency. By providing an online platform for customers to make reservations, purchase tickets, and select their preferred seating, the airline reservation system enables airlines to provide a convenient and user-friendly experience to their customers. This, in turn, can help attract more customers and increase revenue for the airline.

2.4 Proposed System

A proposed system for an airline reservation system would be an online platform that allows customers to search for flights, view available seats, and book tickets. The system would have a user-friendly interface that enables customers to easily navigate and search for their desired flights based on their preferred travel dates, destinations, and airline carriers. The system would also integrate with payment gateways to enable secure online payments.

Additionally, the proposed system would have an administration module that allows airline staff to manage flights, schedules, and seat availability. The system would also generate reports on ticket sales, flight schedules, and revenue, which could help airlines to make data-driven decisions and optimize their operations. Overall, the proposed airline reservation system would improve the customer experience, streamline the booking process, and enhance the operational efficiency of airlines.

2.5 Scope

An airline reservation system is a software application that enables airlines to manage and automate their flight booking and inventory management processes. The scope of an airline reservation system is vast and includes a range of features and functionalities, such as online booking, ticketing, seat selection, baggage handling, check-in, flight schedule management, and pricing and revenue management.

CHAPTER 3

System Analysis

3.1 Functional Requirements

3.1.1 Login of Admin

- The admin will be able to manage the all Services.
- The admin will be able to add and delete products.
- The admin will be able to add and delete state wise category.
- The admin will be able to view all customer.

3.1.2 Login of Customer

- The Customer will be able to get registered and login.
- The Customer will be able to search all flights.
- The Customer will be able to view all flights.
- The Customer will be able to make payment.
- The Customer will get notifications via E-mail after successfully booking of ticket.

3.2 Non-functional Requirements

3.2.1 Performance Requirements

The system should store all the database records of assigned project, assigned task, completed task, task status and requested task and the application should be available for use 24*7 through the server. Also, the application should be user friendly with a proper user interface which makes it easy for the user to understand. All the options should be present in properly accessible places for user convenience.

3.2.2 Safety Requirements

All login ids and passwords of the admin and Users should be protected for privacy using whatever constraints required in the database or the application.

3.2.3 Security Requirements

All passwords of the administrators should be protected for privacy using whatever constraints required in the database or the application. Transactions regarding project admin records should be carried out properly. The database should be protected from attacks and unauthorized access. The interface should be protected from attacks. All passwords should be stored as a secure hash of the administrator password.

3.3 Software Quality Attribute

3.3.1 Availability

The system should run on a variety of operating systems that support the Java language. The system should run on a variety of hardware.

3.3.2 Accessibility

The software will be accessible to admin.

3.3.3 Compatibility

The software will be compatible with multiple platforms

3.3.4 Durability

The software will be tested for working with multiple users.

3.3.5 Effectiveness

The software will be made vandal operation effectively.

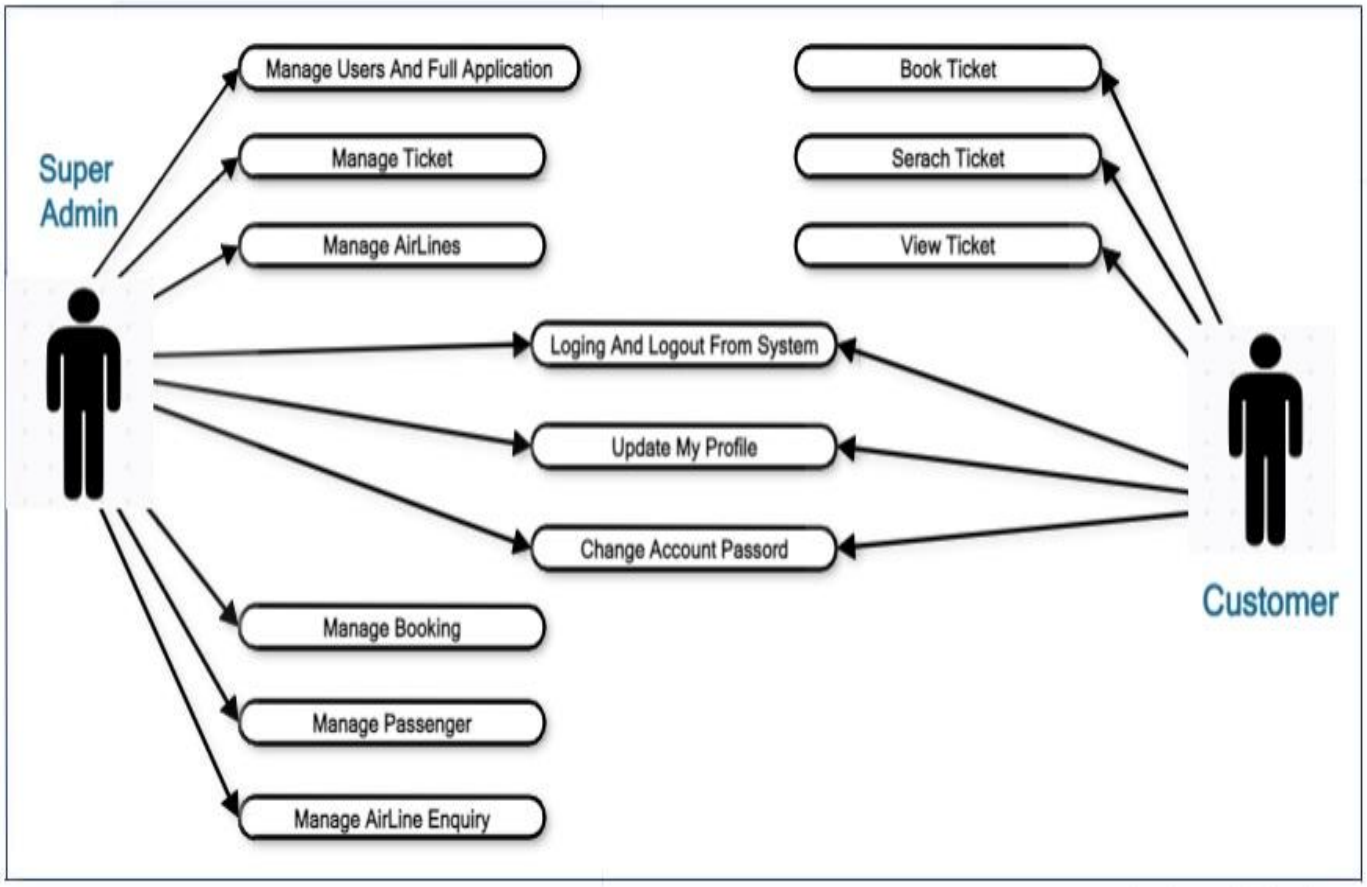
3.3.6 Maintainability

The system should be easy to maintain this should be clear separation between their interface and their business logic code. There should be a clear separation between the data.

CHAPTER 4

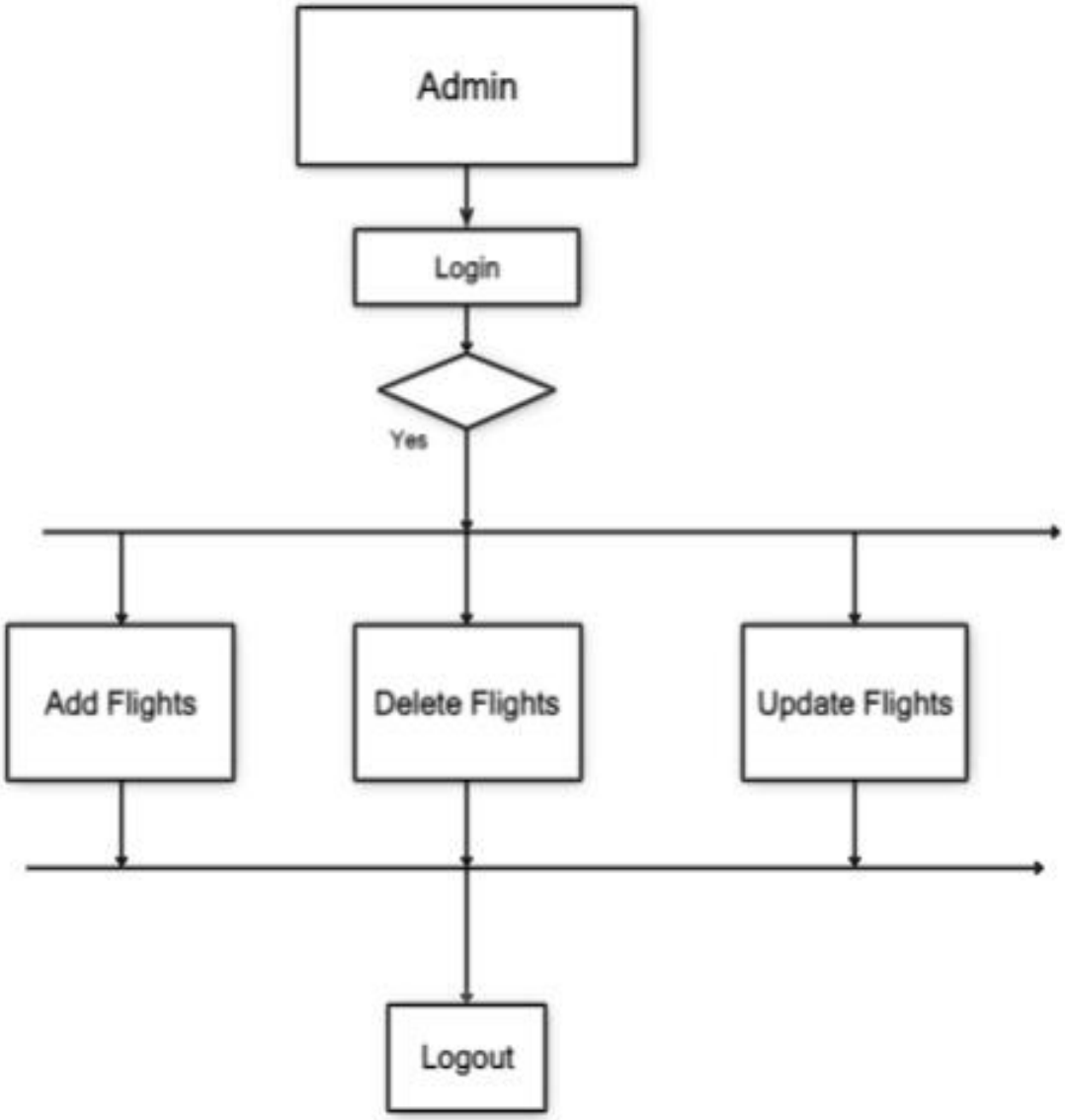
Analysis Modeling

4.1 Use Case Diagram: -

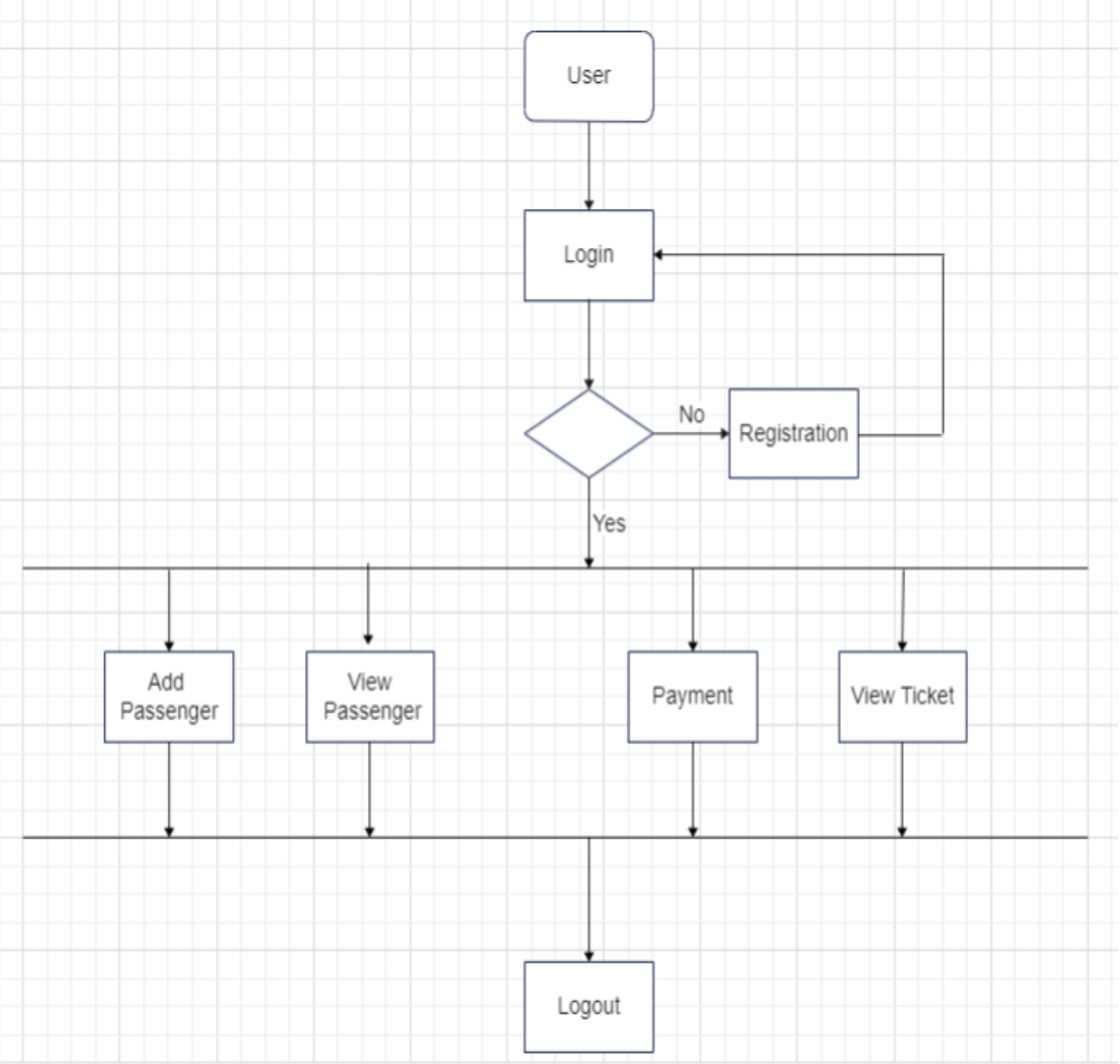


Home :

4.3.2 Admin



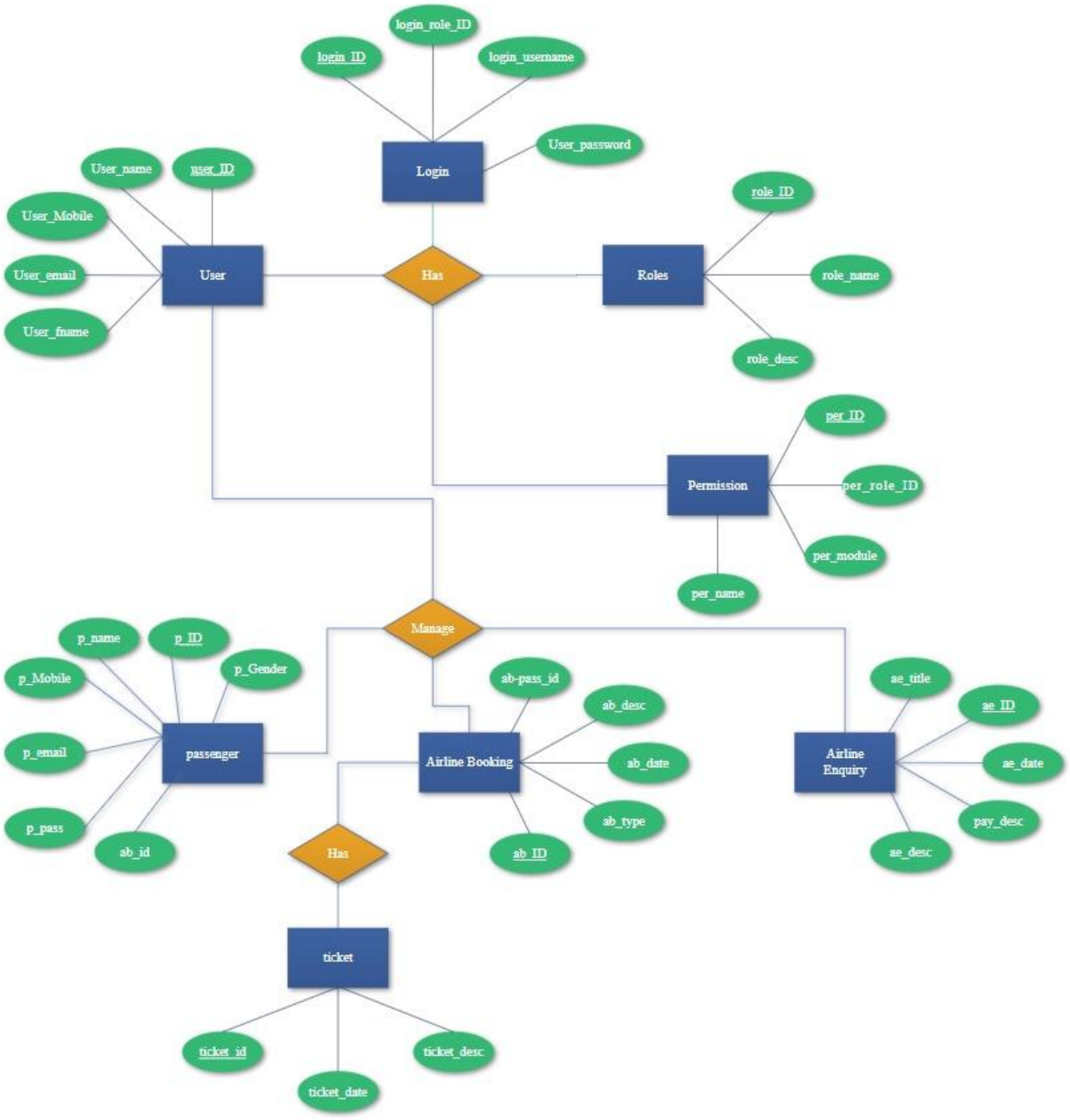
4.3.3 User:


User
Login
No
Registration
Yes
Add Passenger
View Passenger
Payment
View Ticket
Logout

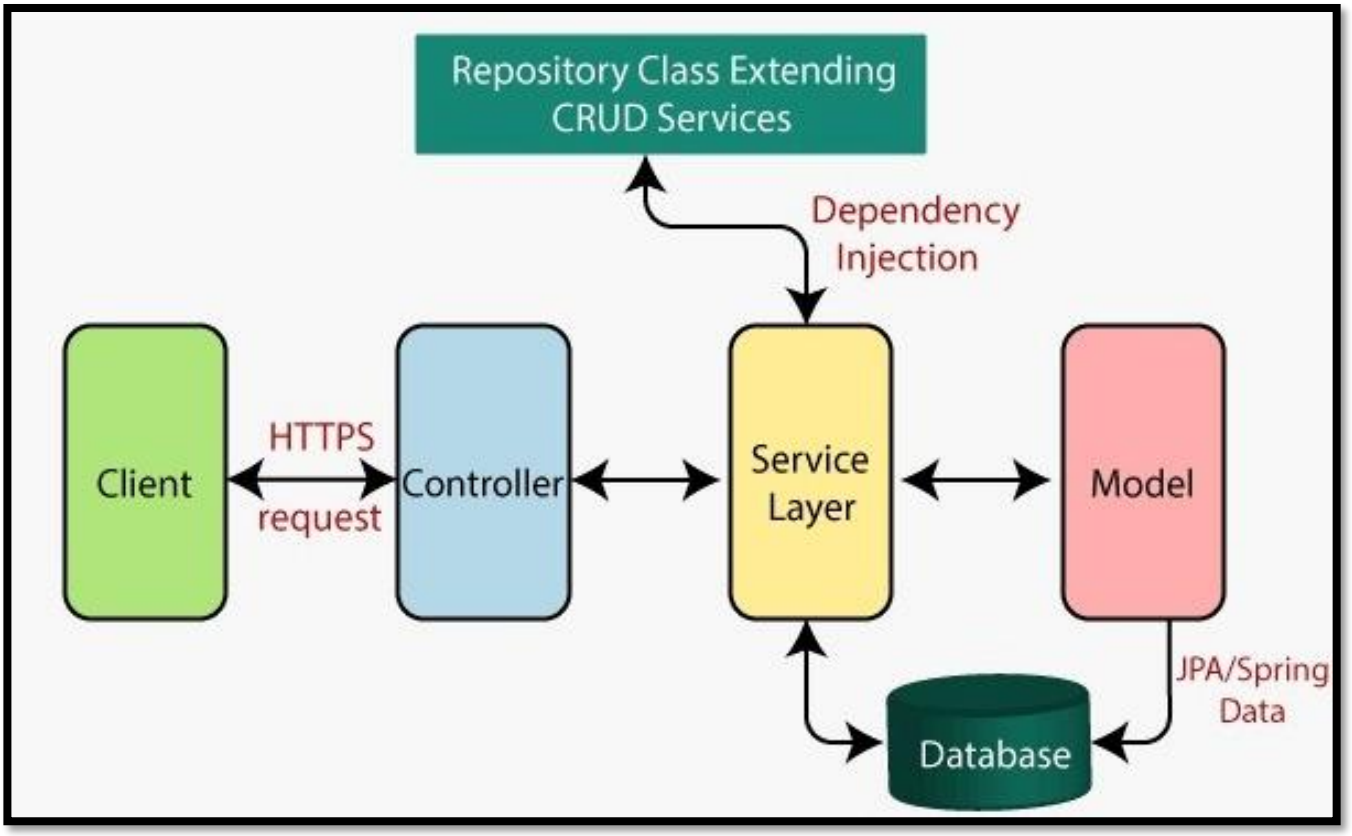
CHAPTER 5
DESIGN

5.1 Data Modeling:

Class Diagram:

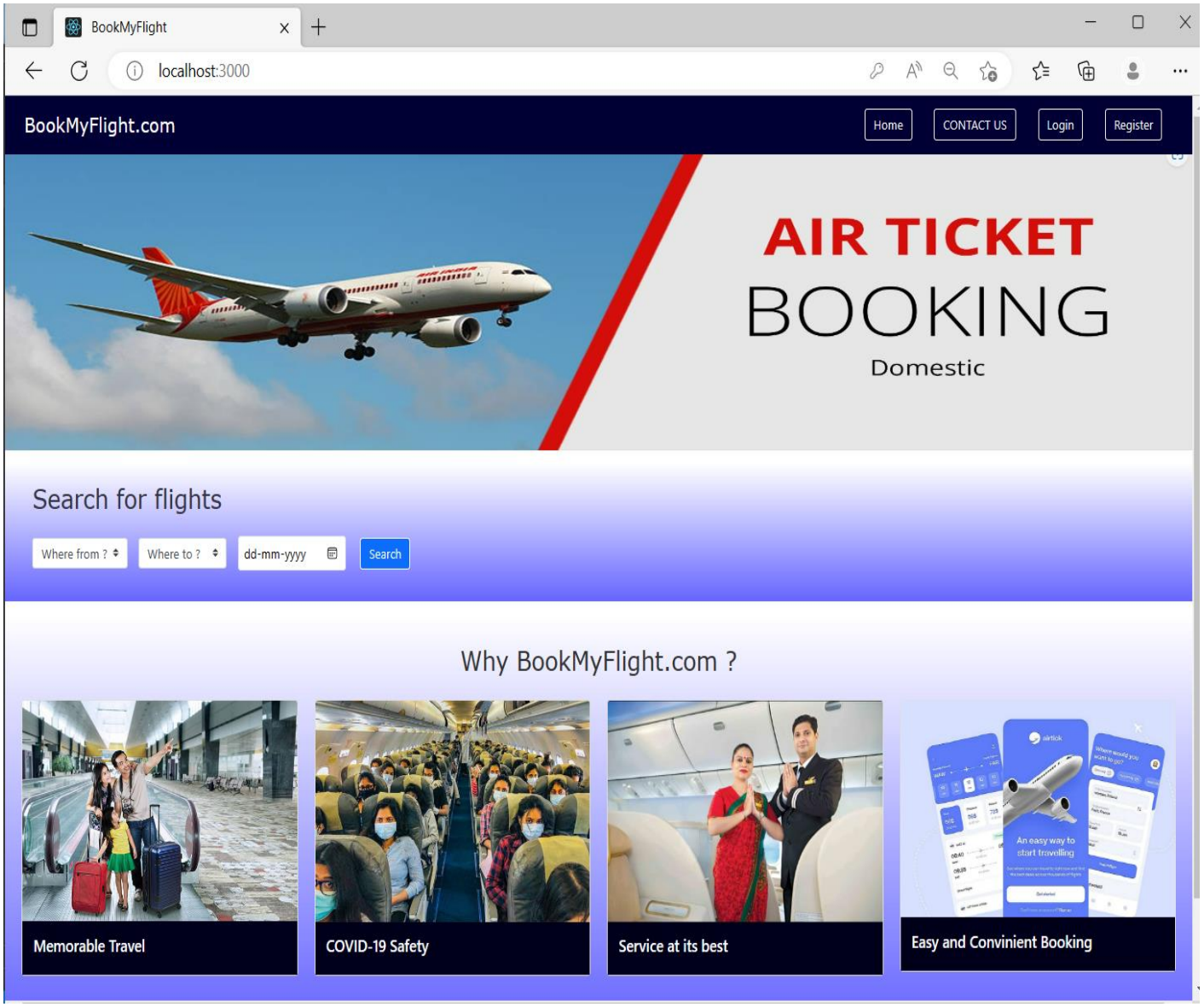


5.2 Architectural Design

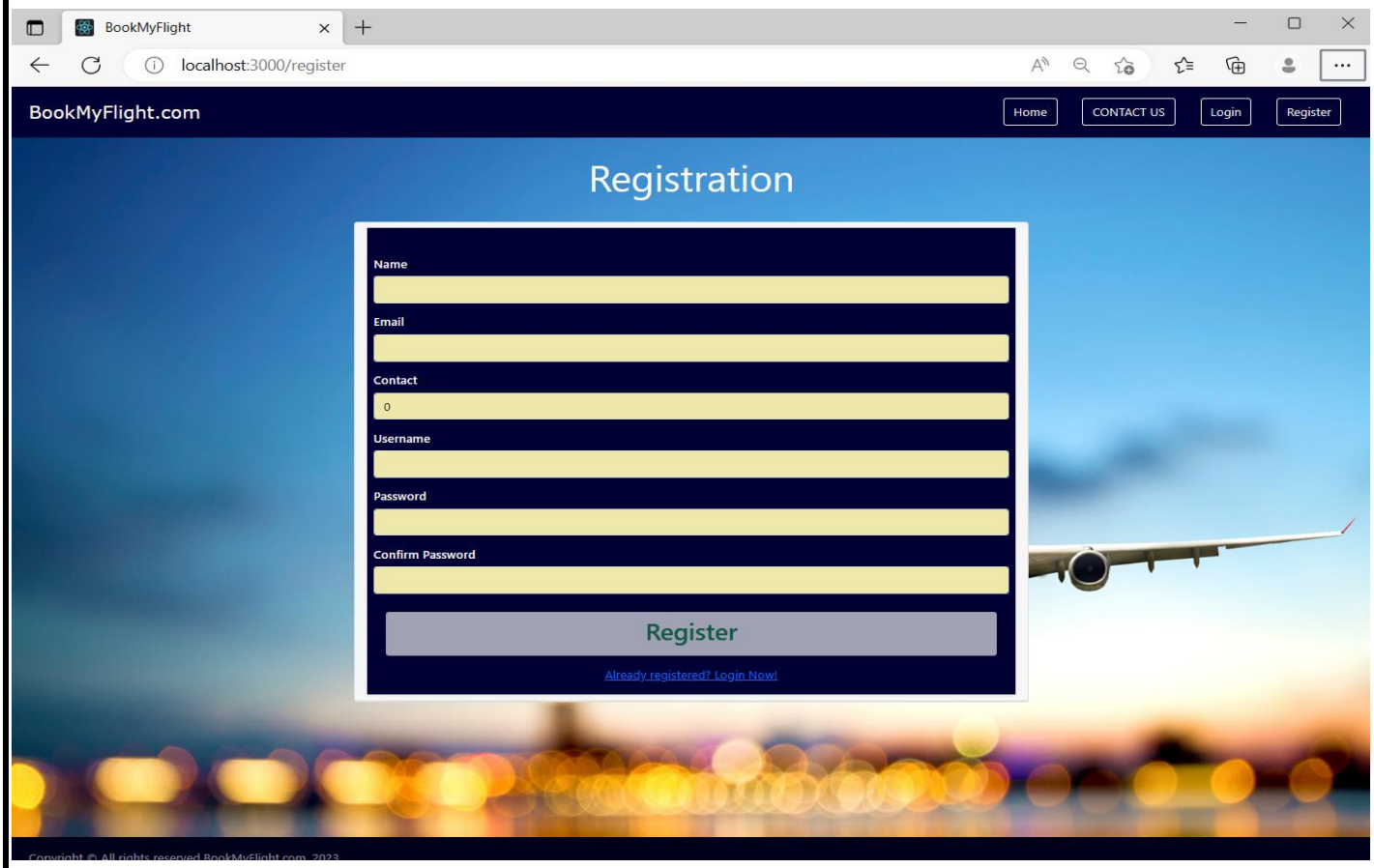


5.3 User Interface Design (GUI):

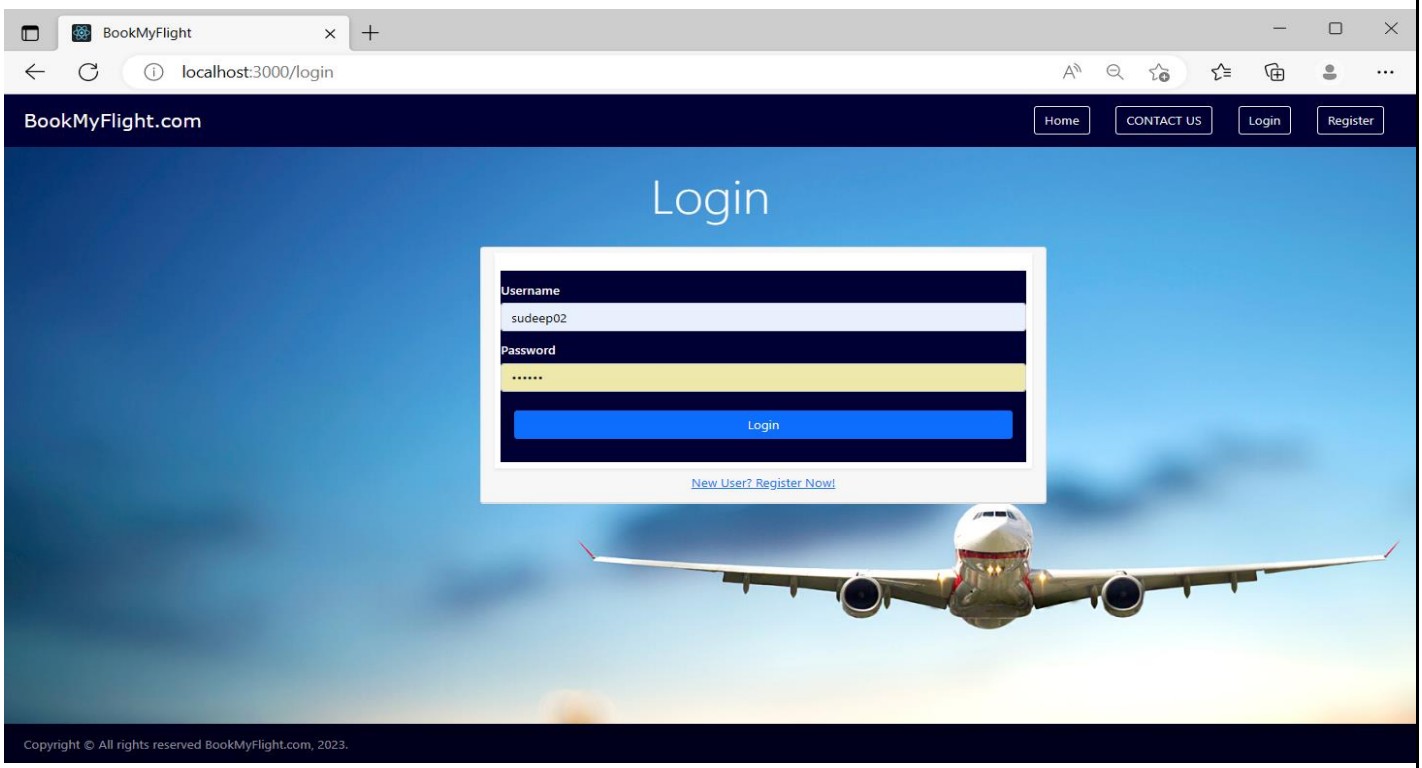
Home Page:



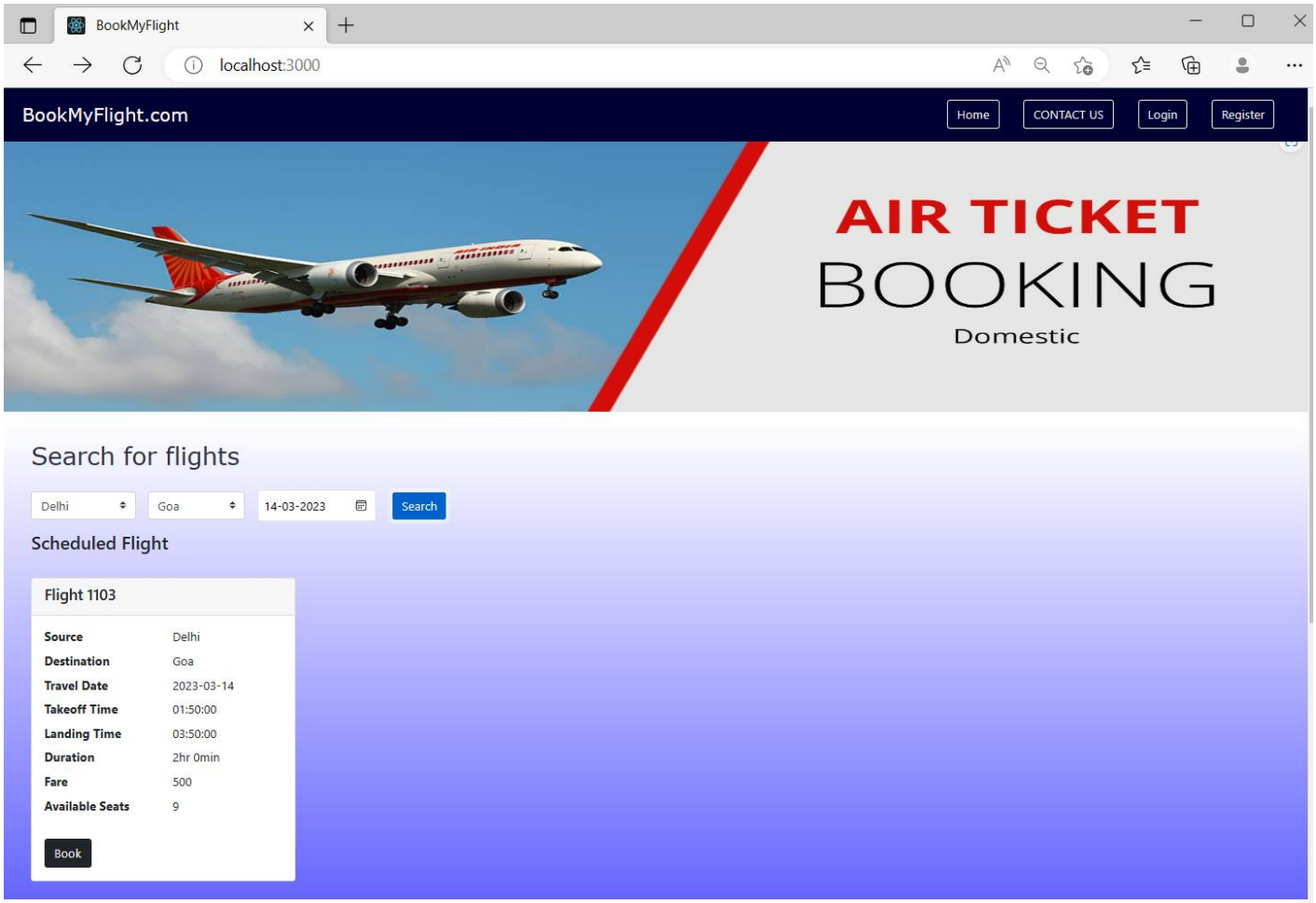
Registration Page:



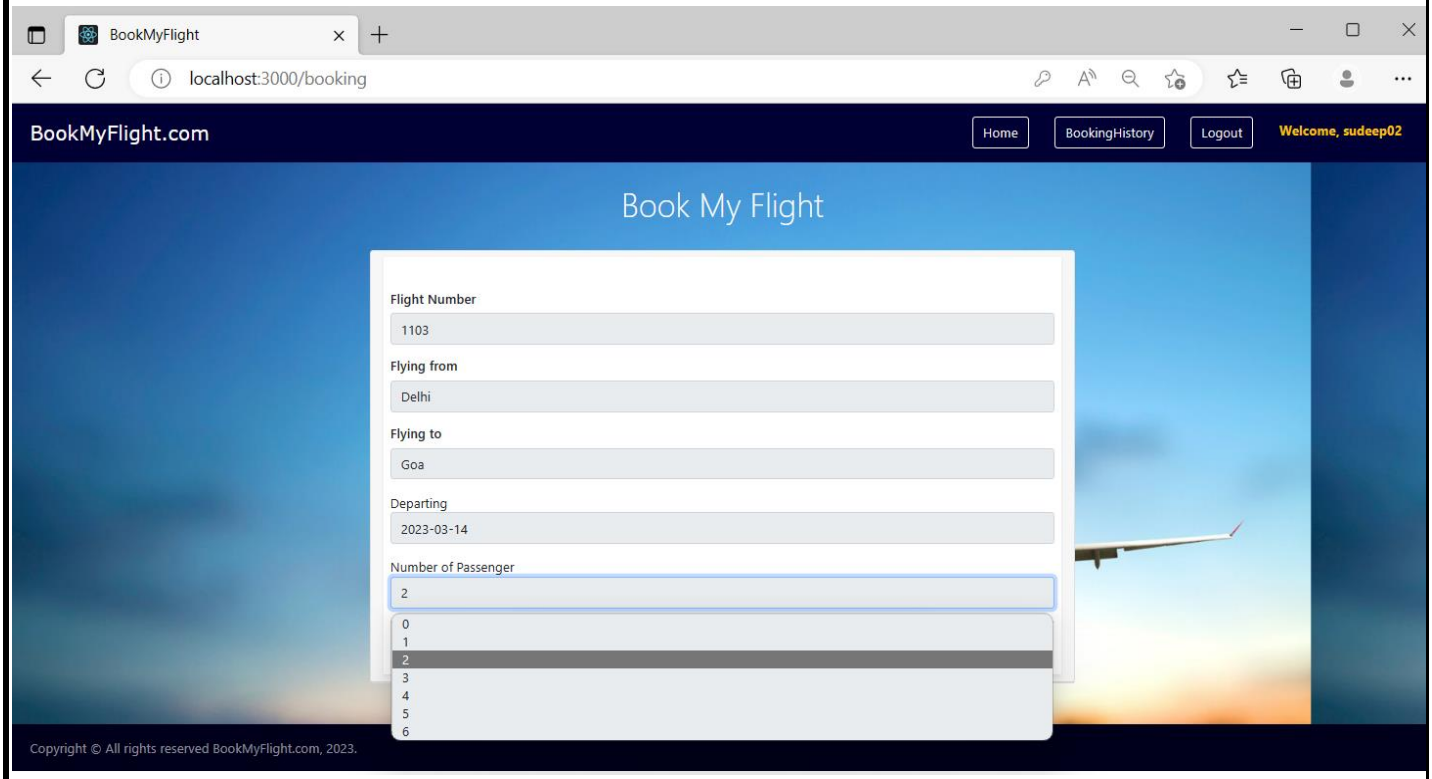
Login Page:



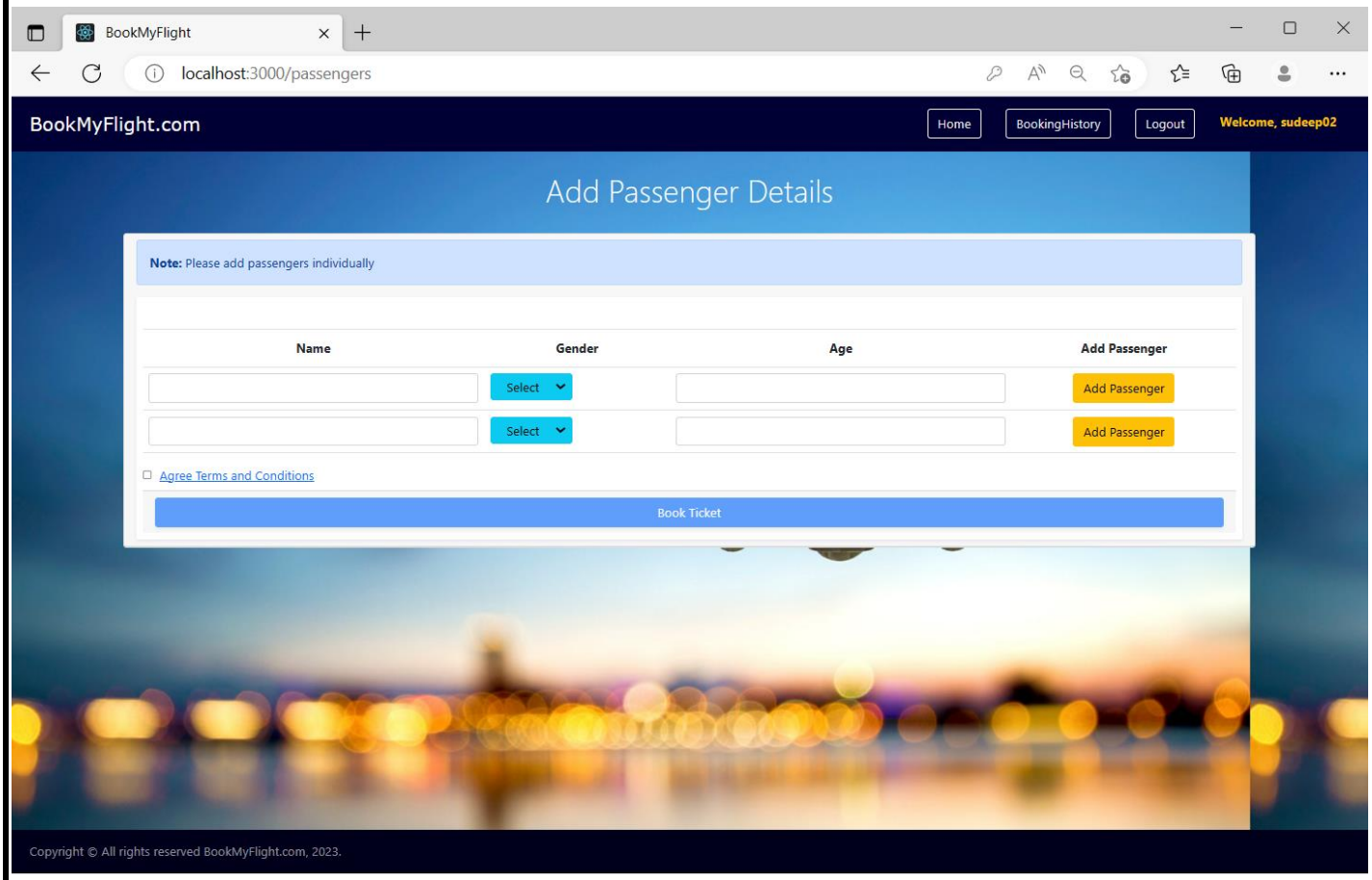
Search_Flight Page:



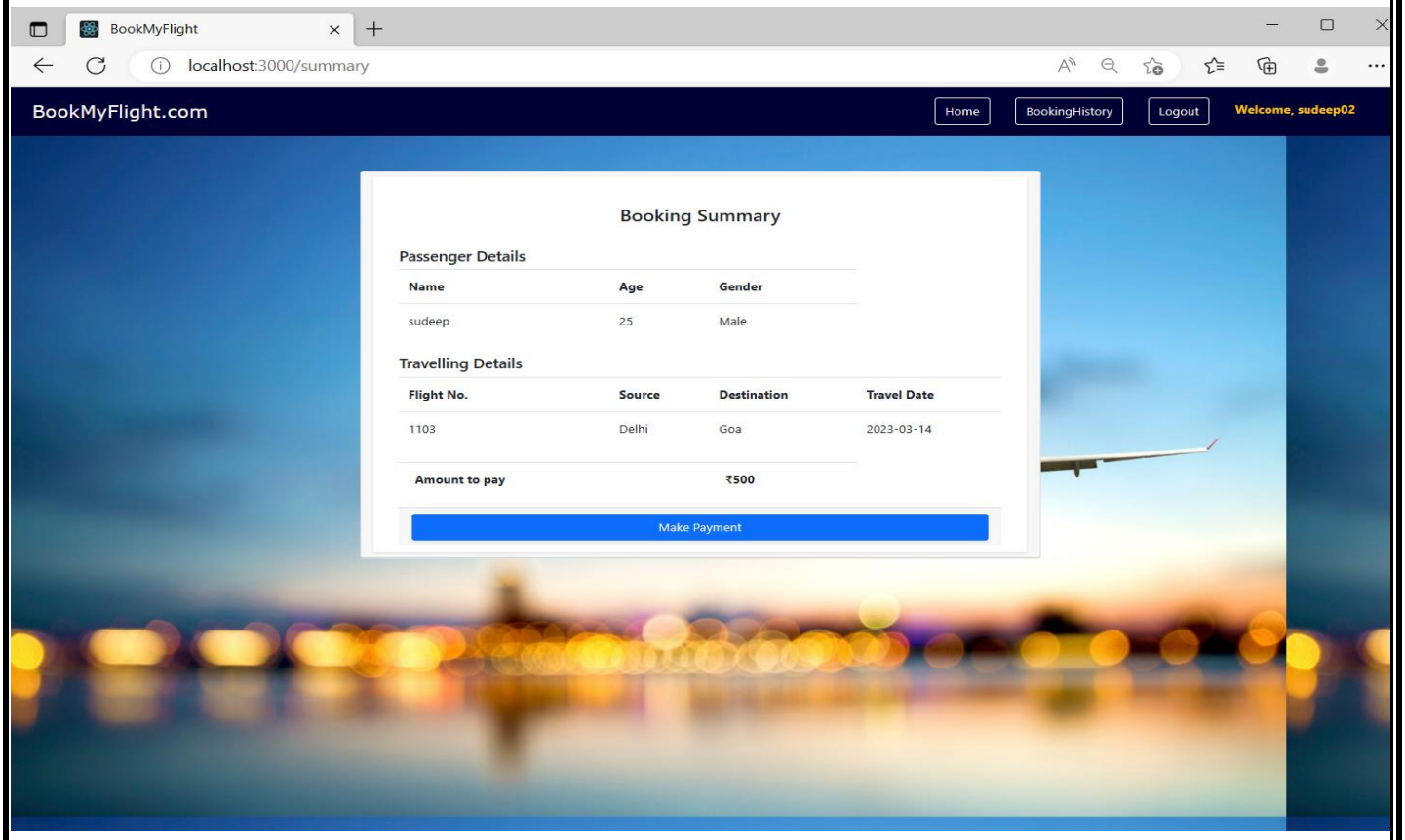
Book_Flight Page:



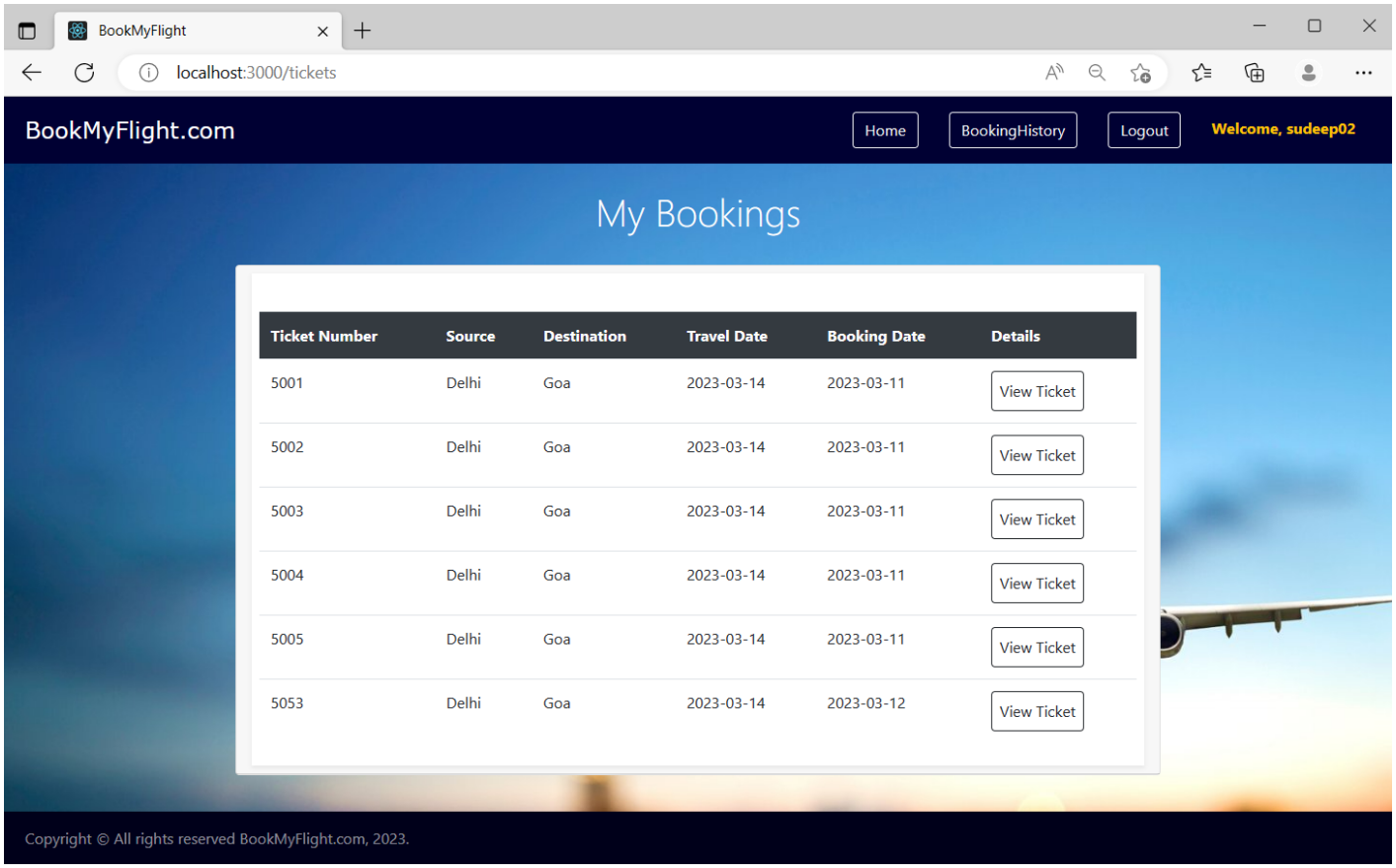
Add Passenger Page:



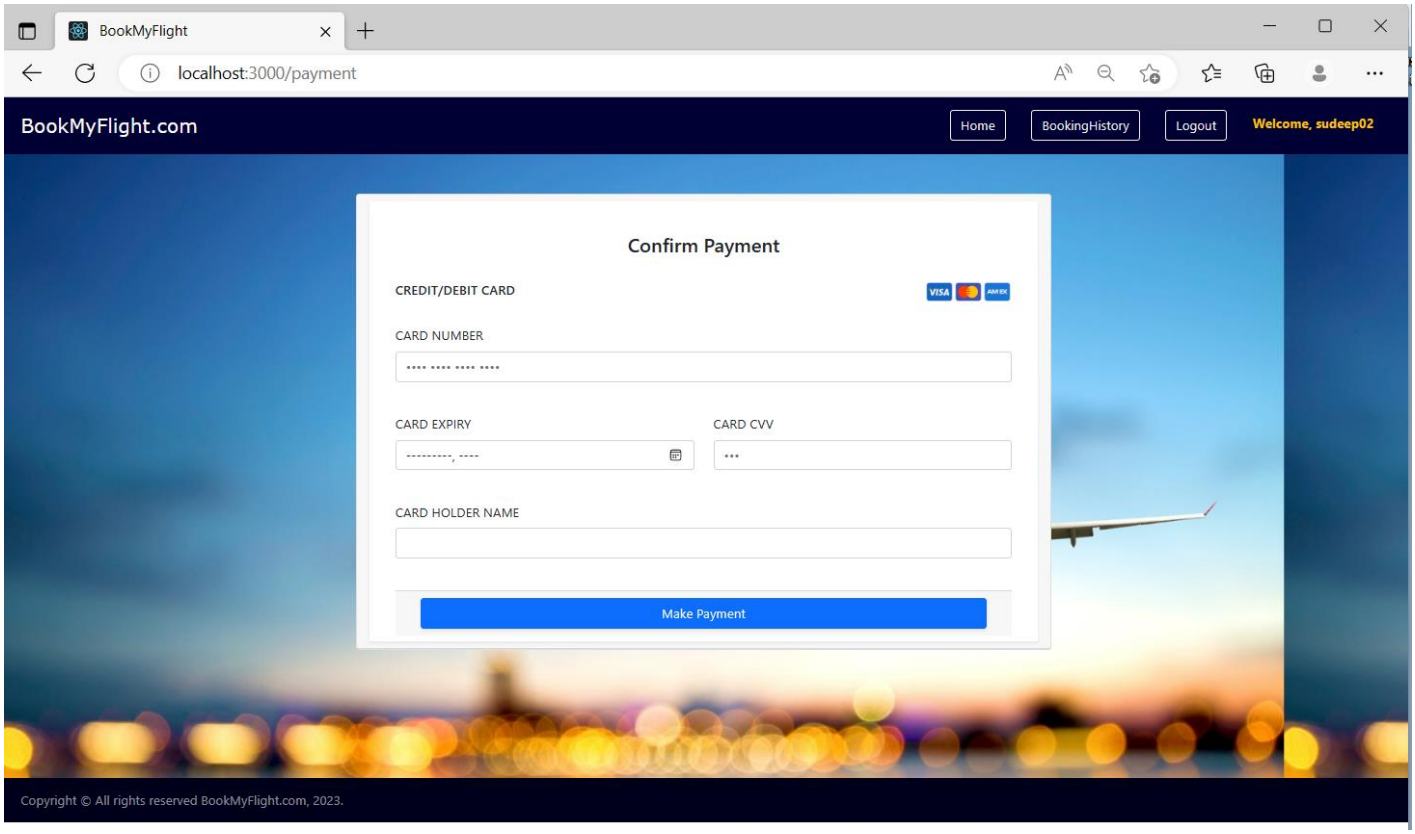
Booking_Summery Page:



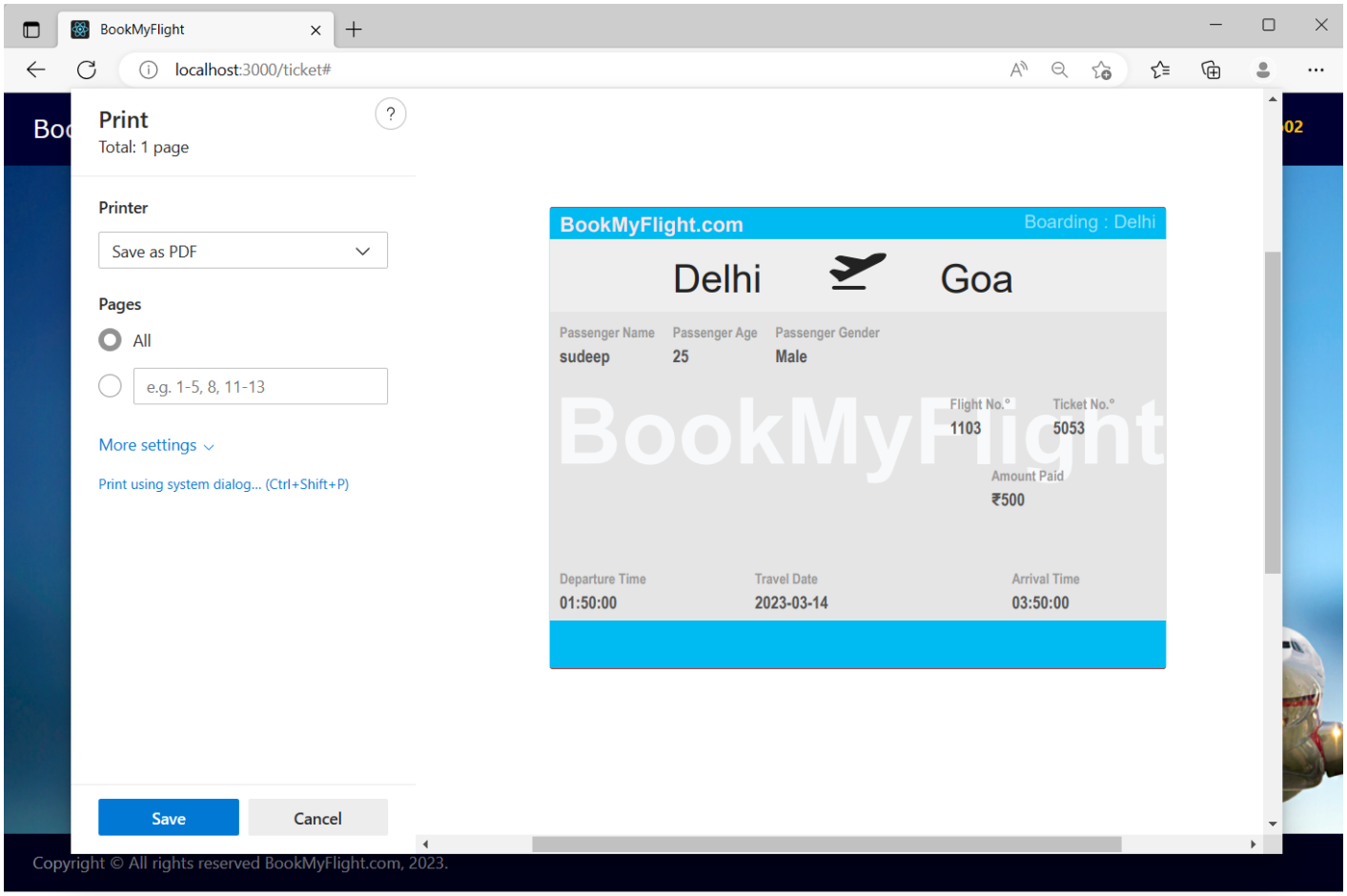
Booking History Page:



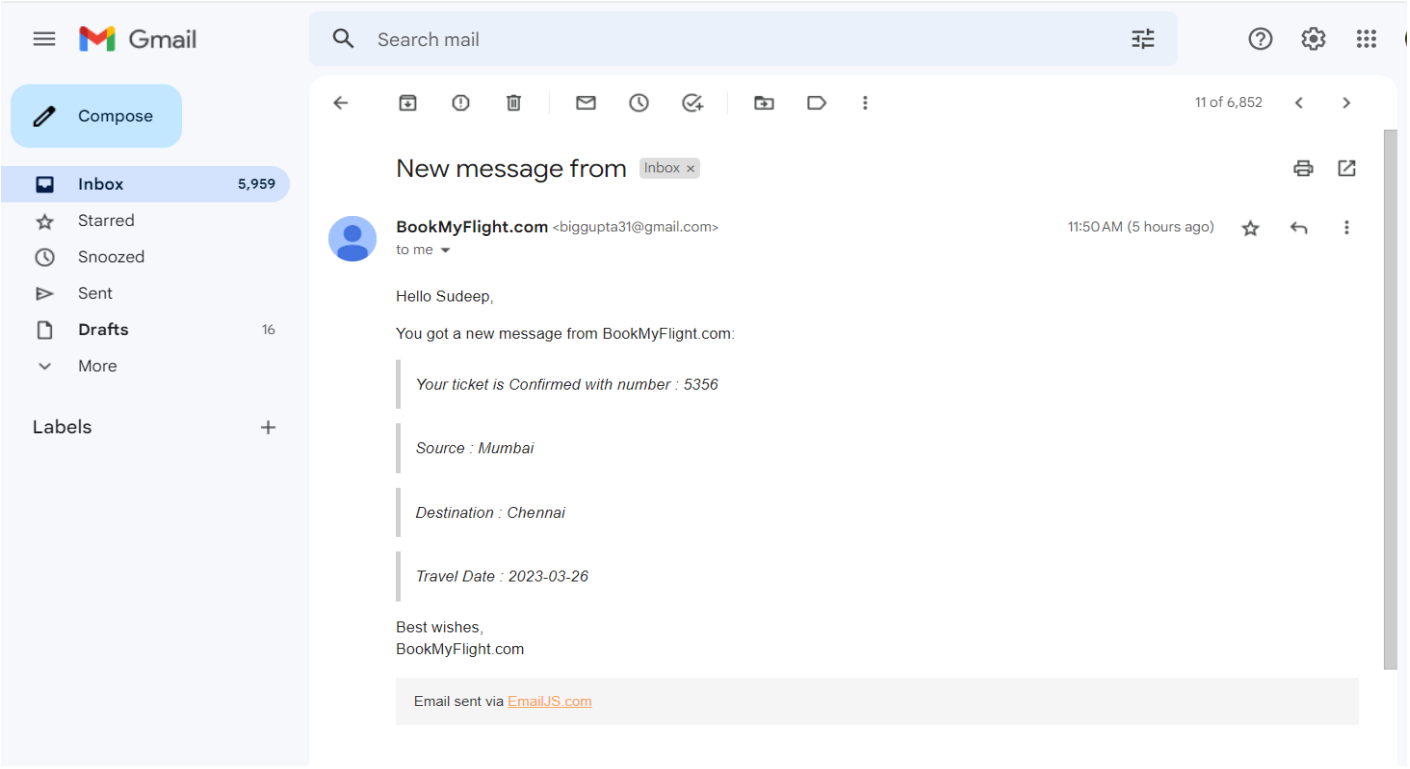
Make Payment Page:



Print Ticket Page:

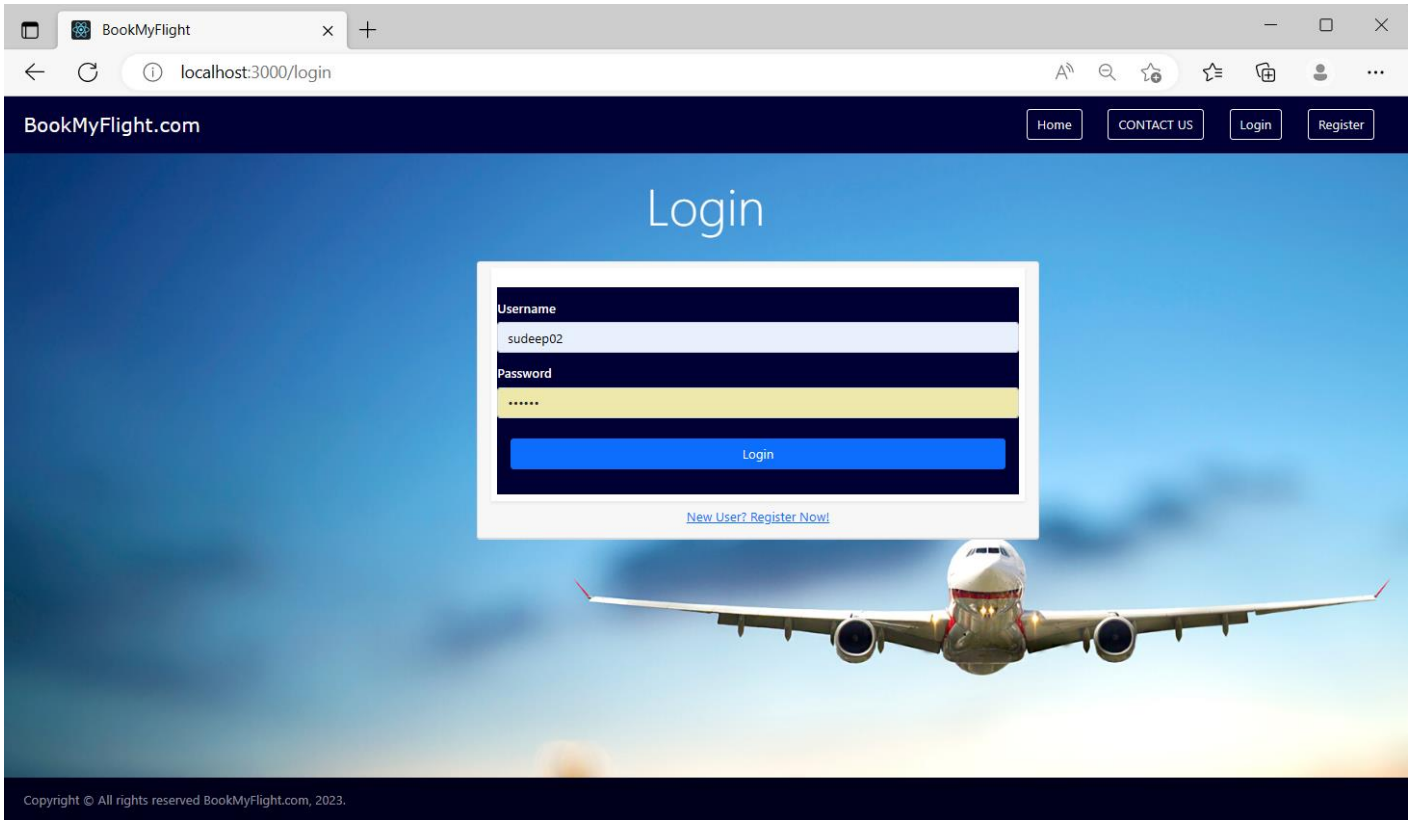


Successfully Mail Ticket:

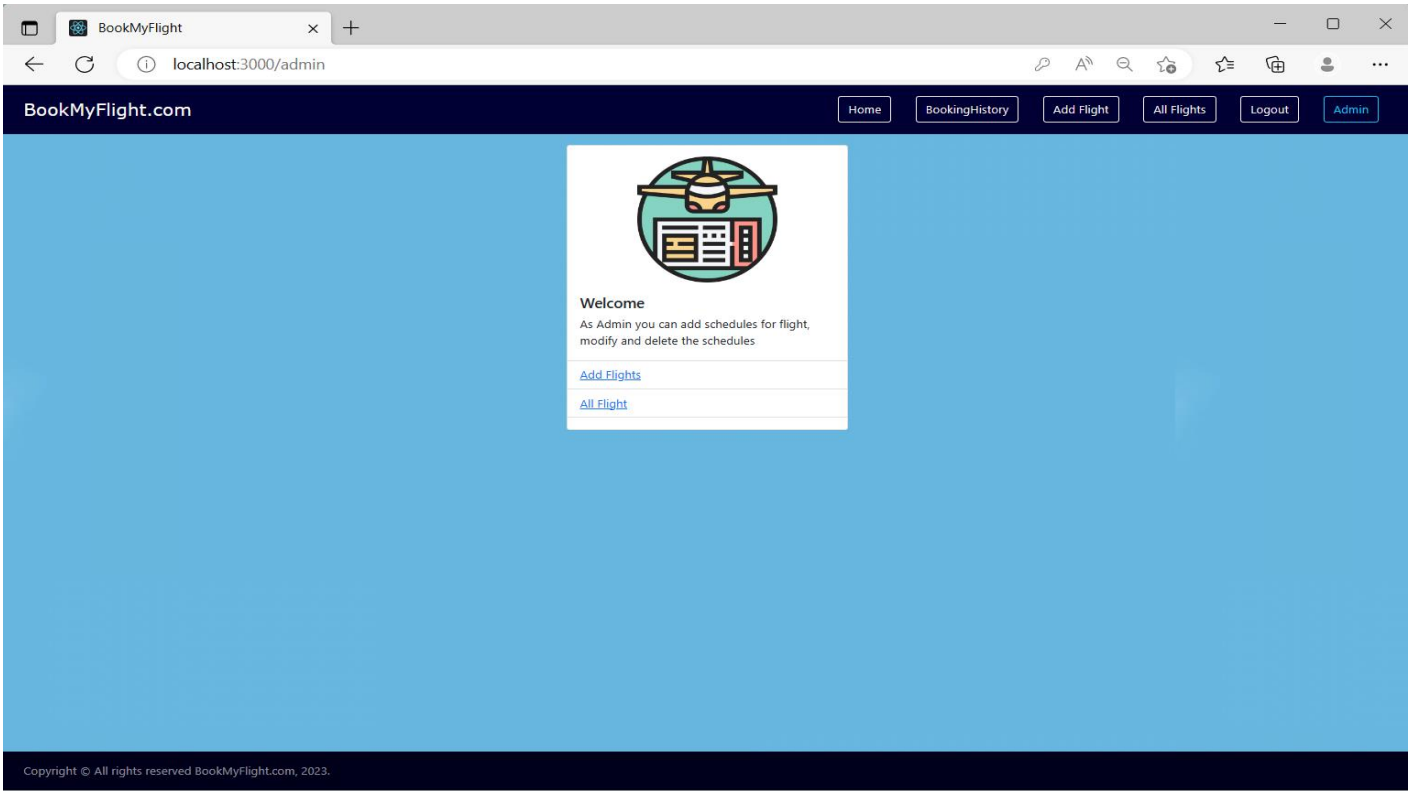


Admin:

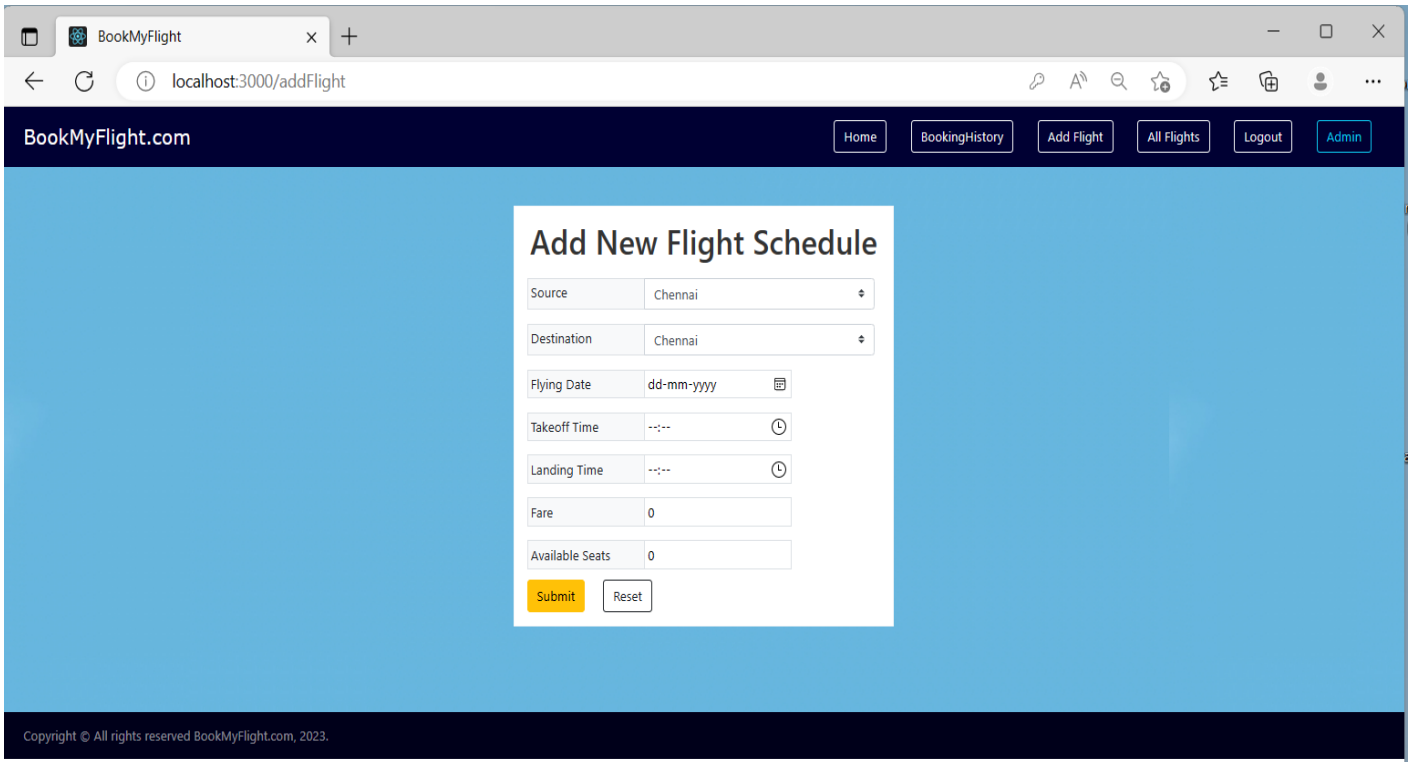
Admin Home Page:



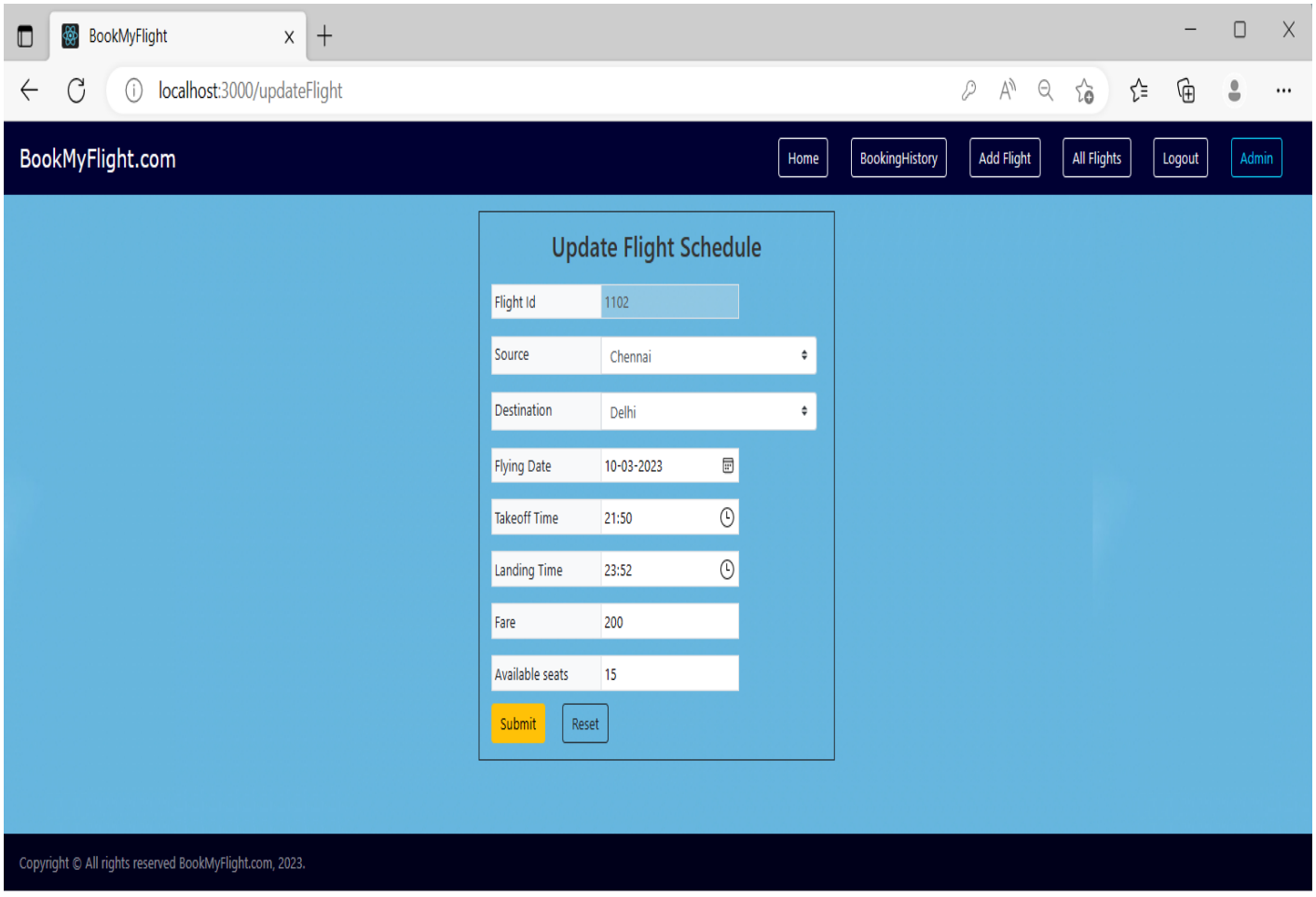
Admin Login Page:



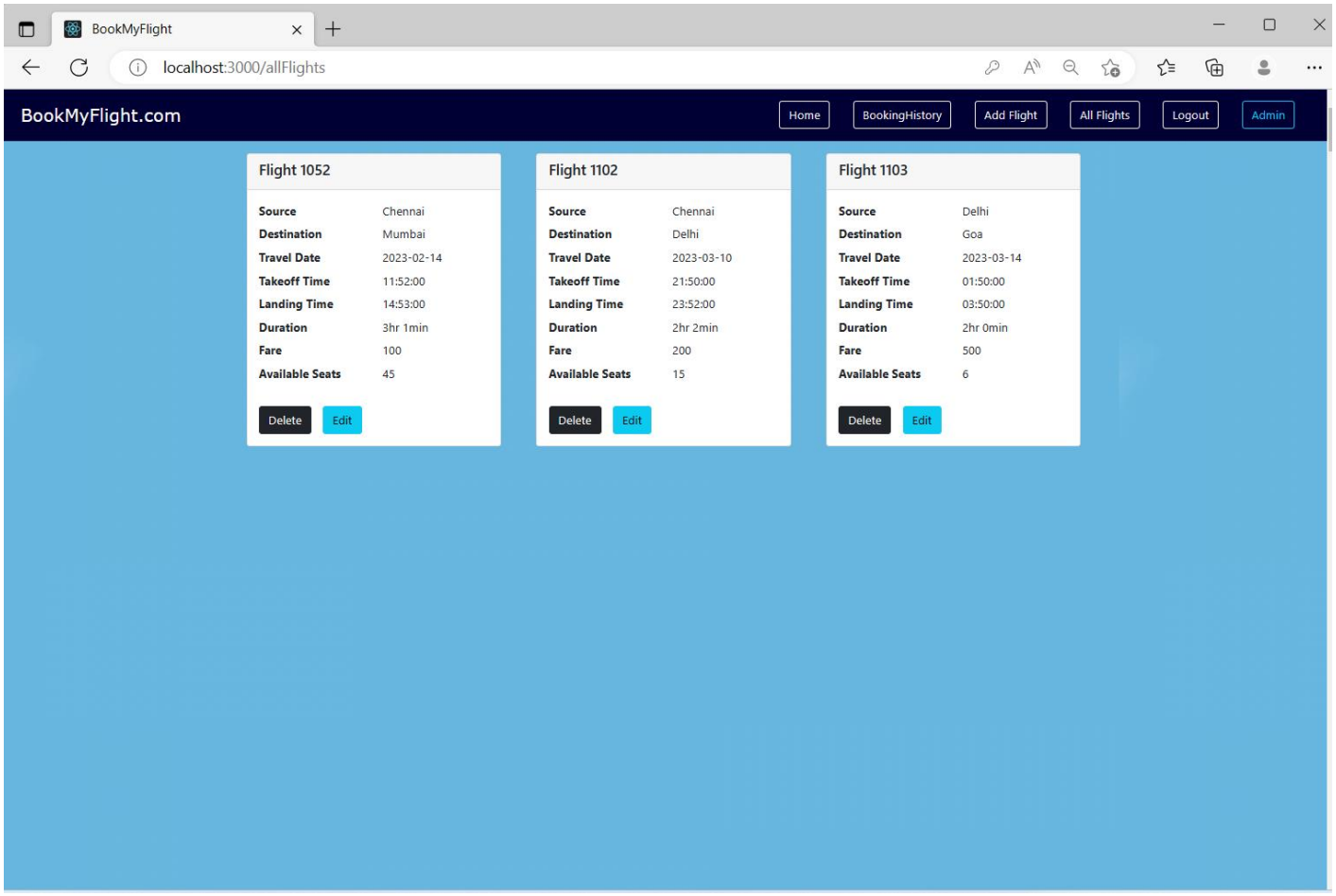
Admin can Add Flights:



Admin can Update Flights:



Available Flight List Page:



CHAPTER 6

TESTING

6.1 Test Cases:

TEST CASE ID	TEST DESCRIPTION	EXPECTED OUTPUT	ACTUAL OUTPUT	STATUS Pass/Fail
1	Verify that the user can search for available flights based on origin, destination, and date	The system displays a list of available flights matching the search criteria	The system displays a list of available flights matching the search criteria	Pass
2	Verify that the user can select a flight and enter passenger information	The system allows the user to enter passenger information and confirms the reservation	The system allows the user to enter passenger information and confirms the reservation	Pass
3	Verify that the user can modify a reservation	The system allows the user to modify the reservation and updates the information accordingly	The system allows the user to modify the reservation and updates the information accordingly	Pass
4	Verify that the user can cancel a reservation	The system cancels the reservation and updates the database accordingly	The system cancels the reservation and updates the database accordingly	Pass
5	Verify that the user can view their booking history	The system displays a list of all reservations made by the user	The system displays a list of all reservations made by the user	Pass

CHAPTER 7

Results and Discussions

An airline reservation system is a computerized platform used by airlines to manage and book flight reservations for passengers. The system allows airlines to manage their inventory, schedule flights, and seat availability, as well as process payments and issue tickets. It also provides passengers with the ability to search for and book flights, select seats, and manage their reservations. Overall, an airline reservation system helps streamline the booking process and improve the overall customer experience for air travel.

CHAPTER 8

Conclusions

An airline reservation system is an essential tool for airlines to manage bookings, flight schedules, and passenger information. It allows customers to book and manage them flights easily and efficiently, while providing airlines with valuable data to improve their services.

Key benefits of an airline reservation system include increased efficiency and accuracy in booking and managing flights, improved customer service, better revenue management, and the ability to track and analyze data to make informed decisions.

To ensure the success of an airline reservation system, it is crucial to have a user-friendly interface, secure data storage, and a reliable booking process. Additionally, it is essential to regularly update and maintain the system to keep up with industry changes and customer needs.

Appendix

- MySQL is an open-source relational database management system (RDBMS).
- Spring Boot is an open-source Java-based framework used to create a micro-Service.
- Java Persistence API. It's a specification which is part of Java EE and defines an API for objectrelational mappings and for managing persistent objects.
- Eclipse is an integrated development environment (IDE). Eclipse is written mostly in Java andits primary use is for developing Java applications.