Bangladesh Airlines

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CHAPTER 1

INTRODUCTION

1.1 Introduction

In the modern era, airplanes have emerged as the epitome of safe and swift travel. Their popularity has surged, becoming the preferred mode of transportation for millions around the globe. Just as birds navigate the skies effortlessly, these mechanical marvels have revolutionized human mobility, connecting distant lands and cultures in unprecedented ways. In this section, we embark on a journey to explore 'Bangladesh Airlines,' a testament to the progress and possibilities that aviation technology has ushered into our lives. Like a well-coordinated ballet in the sky, this project aims to mirror the seamless operation of an airline, bringing forth a digital experience that echoes the efficiency and elegance of real-world air travel.

1.2 Motivation

We harbor a profound fascination for aircraft, those majestic beings that grace the boundless canvas of the sky. While we may not possess the wings of pilots, our hearts beat in sync with the rhythmic pulse of engines soaring above. It's this love, this affinity for the vessels that traverse the heavens, that propels us forward. In our quest to contribute, to be a part of this awe-inspiring world of aviation, we sought to create something that not only pays homage to these flying marvels but also offers tangible support. Thus, 'Bangladesh Airlines' emerged as our beacon, our solution. It stands not only as a testament to our admiration for aviation but as a means to enhance and streamline the operations of these soaring giants.

1.3 Objectives

'Bangladesh Airlines' is envisioned as a ticket booking system that transcends complexities. Its primary goal is to provide a seamless experience for individuals from all walks of life. This platform is designed to be exceptionally user-friendly, ensuring that booking a flight is an intuitive process for everyone. Whether you're a seasoned traveler or taking your first steps into the world of aviation, 'Bangladesh Airlines' aims to be your reliable companion. With its streamlined interface and easy navigation, it aspires to be the go-to website for anyone seeking to explore the boundless opportunities of air travel.

1.4 Expected Outcome

The anticipated result of 'Bangladesh Airlines' is a platform that exudes accessibility and user-friendliness at every turn. It is meticulously crafted to be a haven for individuals of all backgrounds, ensuring that the process of purchasing tickets online is a joyous, hassle-free experience. From tech-savvy travelers to those just beginning their journey in the world of online bookings, 'Bangladesh Airlines' promises a seamless encounter for all. Safety is paramount, and this platform is engineered to provide a secure and reliable means for individuals to embark on their travel adventures with confidence.

1.5 Report Layout

This project contains two chapters so far. In the first chapter named Introduction, we will talk about Introduction, Motivation, Objectives, Expected Outcome, and Report Layout. Also, the final chapter named Conclusion and Future scope of our project. In this chapter, we will talk about Discussion and Conclusion and Scope for Further Development. In this report, we talk about our application and its various problem, solution, and use of the project.

CHAPTER 2

BACKGROUND

2.1 Introduction

People who travel by plane in Bangladesh sometimes faces problems for ticket booking because most of the people of our country are below average so they sometimes don't believe the online system also the natural online booking system is not so easy. But out website is very handful and any people who has a minimum knowledge can use it.

2.2 Related Works

Some related services are available. We believe that, the available services are serving users properly and so that this type of solutions can be effective in our country also. Some of those services are given below.

1. Biman Bangladesh Airlines Official Website

The official website of Biman Bangladesh Airlines serves as the primary online platform for booking domestic and international flights. It provides a user-friendly interface, allowing travelers to easily search for flights, manage bookings, and access essential travel information. The website also offers various services including online check-in, flight status updates, and special offers.

2. Go Zayaan - Online Travel Agency in Bangladesh

Go Zayaan is a popular online travel agency in Bangladesh, offering a wide range of travel services including flight bookings, hotel reservations, tour packages, and transportation solutions. The platform aims to simplify travel planning for both domestic and international travelers by providing a one-stop solution for all their needs.

3. Novoair - Online Booking Portal

Novoair, a private airline based in Bangladesh, offers an intuitive online booking portal for its customers. The portal allows users to effortlessly book flights, manage reservations, and access important travel information. Novoair's website is designed with user-friendliness in mind, ensuring a seamless booking experience for travelers.

4. Bangladesh Railway Official Website

The official website of Bangladesh Railway provides a platform for booking train tickets, checking schedules, and accessing vital information related to train travel within the country. It caters to a wide range of users, from regular commuters to tourists, offering a convenient way to plan and manage train journeys.

2.3 Comparative Studies

"Bangladesh Airlines" is an academic project designed to streamline flight ticket booking in Bangladesh. Unlike established platforms like Biman Bangladesh Airlines' official website and Go Zayaan, which offer a wide range of travel services, "Bangladesh Airlines" focuses primarily on flight reservations. It stands out for its user-friendly approach, making it accessible to people from all walks of life. While Novoair's online portal caters to a specific private airline, and Bangladesh Railway serves train travel, "Bangladesh Airlines" fills a niche in the air travel sector, providing a seamless digital experience for booking flights in the country.

2.4 Challenges

The challenges in developing "Bangladesh Airlines" include ensuring a seamless user experience for a diverse user base, ranging from tech-savvy travelers to those with limited digital literacy. Addressing potential connectivity issues in certain regions of Bangladesh is crucial to make the platform accessible to all. Balancing comprehensive features with a user-friendly interface and optimizing for mobile devices can be a challenge. Additionally, implementing robust security measures to protect user data and transactions is essential for building trust and confidence in the platform. Finally, incorporating real-time flight information and updates may require integration with external systems, presenting a technical challenge for seamless functionality.

CHAPTER 3

METHODOLOGY

3.1 Business Process Modeling

The "Bangladesh Airlines" system is designed to cater to the needs of users seeking to book flight tickets and stay updated with flight schedules in real-time. To ensure smooth operation, the system requires pre-loaded data, which will be set up by the administrator for user access.

This system comprises three distinct applications:

User App: This app is designed for end-users to seamlessly book tickets and receive the latest information regarding flight schedules.

Admin App: This application empowers the administrator to manage essential data, including flight details, user information, schedule updates, and blog posts.

Employee App: Employees (e.g., customer service representatives) will use this app to assist users with any queries or issues they may encounter during the booking process.

The process commences with user registration and login. Once registered, users gain access to the home page where they can effortlessly book their desired flights. Additionally, users have the option to reach out to us for any assistance or inquiries.

Admins have comprehensive control over the system. They can add, edit, or remove flight details, manage user accounts, update schedules, and post blogs or news for users' benefit.

For users, once logged in, they will be presented with a user-friendly interface to book flights. They can filter options based on preferences such as destination, departure time, and airline. With just a few clicks, users can book their preferred flight. Additionally, they can reach out to us through the contact page for further assistance.

Upon completion of a successful booking, users will receive confirmation details via email. This marks the conclusion of the ticket booking process, ensuring users have a seamless and hassle-free experience.

3.2 Requirement Analysis and Collection

3.2.1 Software Requirements:

- HTML, CSS, JavaScript for web development.
- Python for backend development.
- Django framework for building the web application.
- SQLite for database management.
- Text editors like Visual Studio Code or Sublime Text for coding.

3.2.2 Hardware Requirements:

- A computer or laptop with at least 4GB RAM.
- Sufficient storage space for the development environment and database.
- A stable internet connection for testing and deployment.

3.3 Use Case Modeling and Description

A use case model is a graphical representation of how different components of the system interact. Use cases help identify, describe, and manage system requirements. They represent various ways users interact with the system to achieve specific goals.

Use case details:

Use Case Name: User Registration and Login

Use Case Details: Users can register and log in to the system to access booking functionalities.

Pre-condition: None

Actor: User

Post-condition: User gains access to booking features.

Use Case Name: Ticket Booking

Use Case Details: Users can select flights, enter passenger details, and make bookings.

Pre-condition: User is logged in.

Actor: User

Post-condition: Booking is confirmed, and user receives a confirmation email.

Use Case Name: Contact Us

Use Case Details: Users can navigate to the contact page to seek assistance or make inquiries.

Pre-condition: User is logged in.

Actor: User

Post-condition: User sends a message to the support team.

3.4 Waterfall Model

The development process follows a sequential approach similar to the Waterfall Model. Each phase, including requirements gathering, design, implementation, testing, deployment, and maintenance, is carried out in a linear fashion

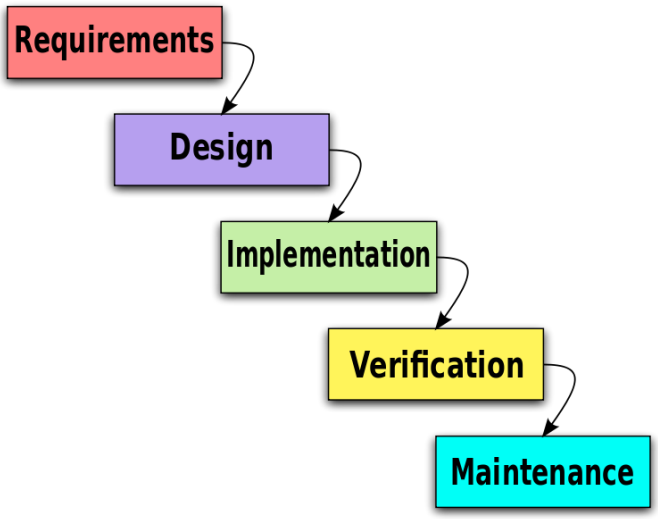


Figure 3.3: Waterfall Model Diagram

CHAPTER 4

DESIGN SPECIFICATION

4.1 Front-end Design

In the "Bangladesh Airlines" project, the application consists of two integral components: the Frontend and Backend. The Frontend is constructed utilizing XML, whereas the Backend is crafted with Python. The Frontend encompasses the visual interface of the mobile application, which users directly interact with. It is primarily coded in XML. The system is divided into three distinct applications:

a. **Admin App**: This app is dedicated to administrative functions, allowing the management of flight details, user accounts, schedule updates, and blog postings.

b. **Driver App**: Tailored for drivers, this app facilitates the initiation and conclusion of flight schedules, along with the real-time sharing of flight locations.

c. **User App**: Designed for end-users, this application provides an intuitive platform for booking flights and staying updated with the latest schedule information.

This setup ensures that each user category experiences a tailored interface, optimizing their interaction with the "Bangladesh Airlines" system.

4.1.1 Admin App: Splash Screen

Admin page review

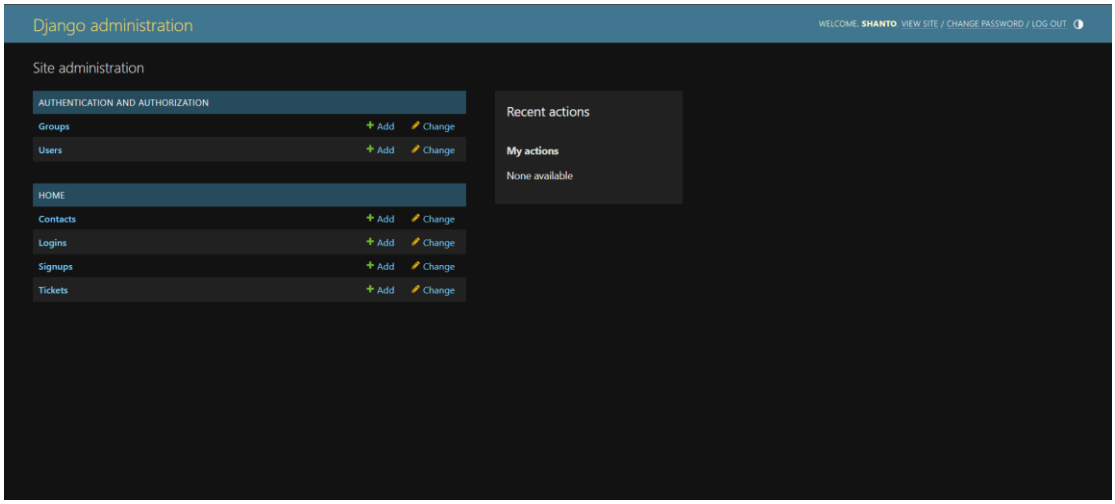


Figure 4.1: Admin App: Splash Screen

4.1.2 Admin App: Log In

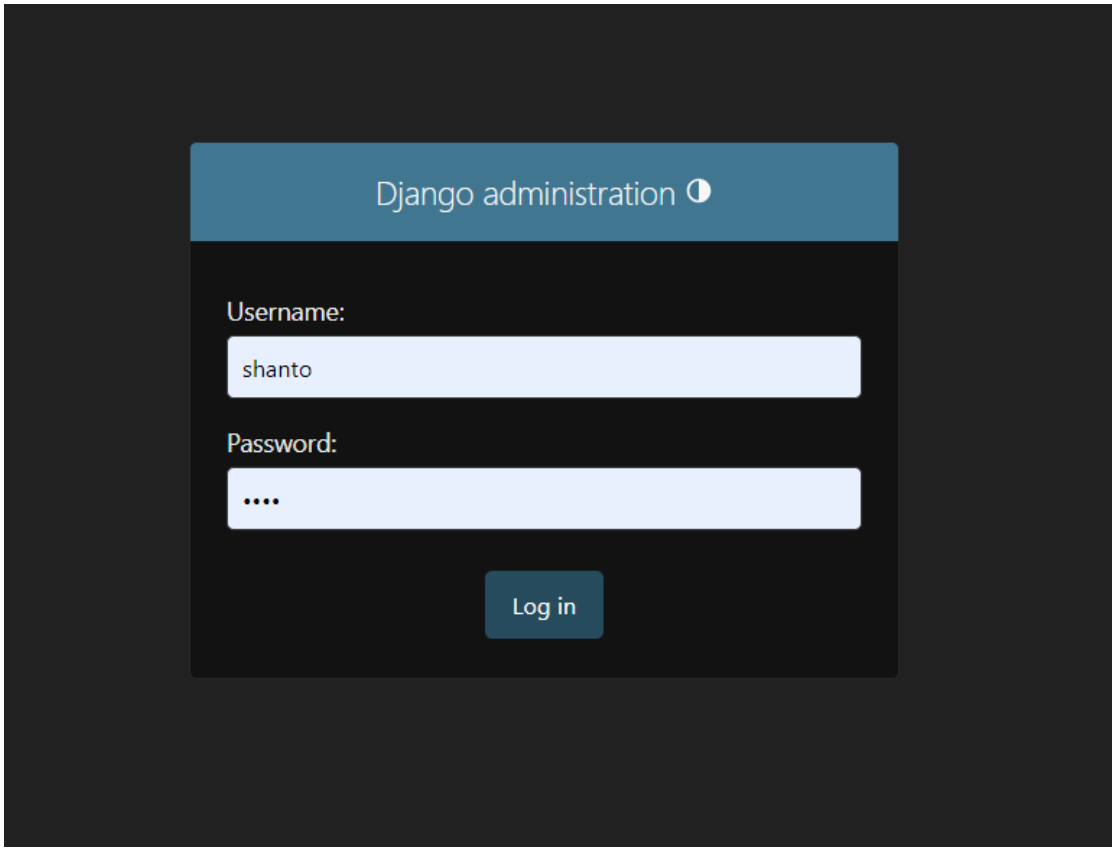


Figure 4.2: Admin App: Log In

4.1.3 Admin App: Home Page

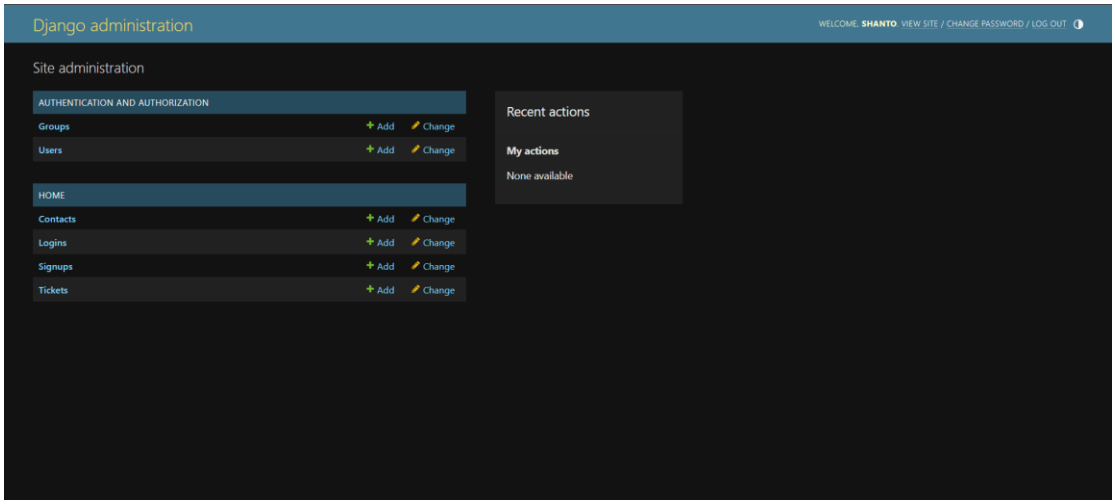


Figure 4.3: Admin App: Home Page

4.1.4 Admin App: Contact Message

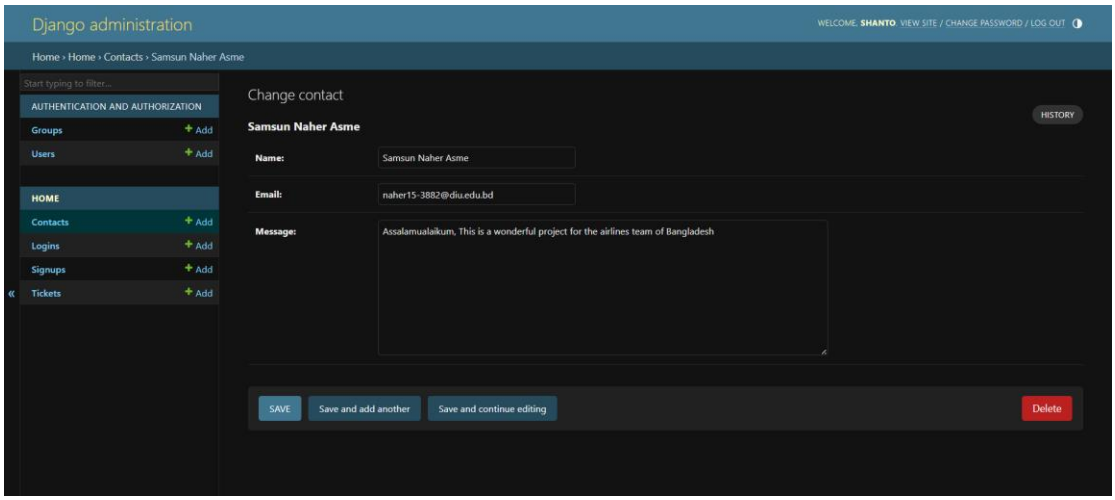


Figure 4.3: Admin App: Contact Message

4.1.5 Admin App: Log in Management

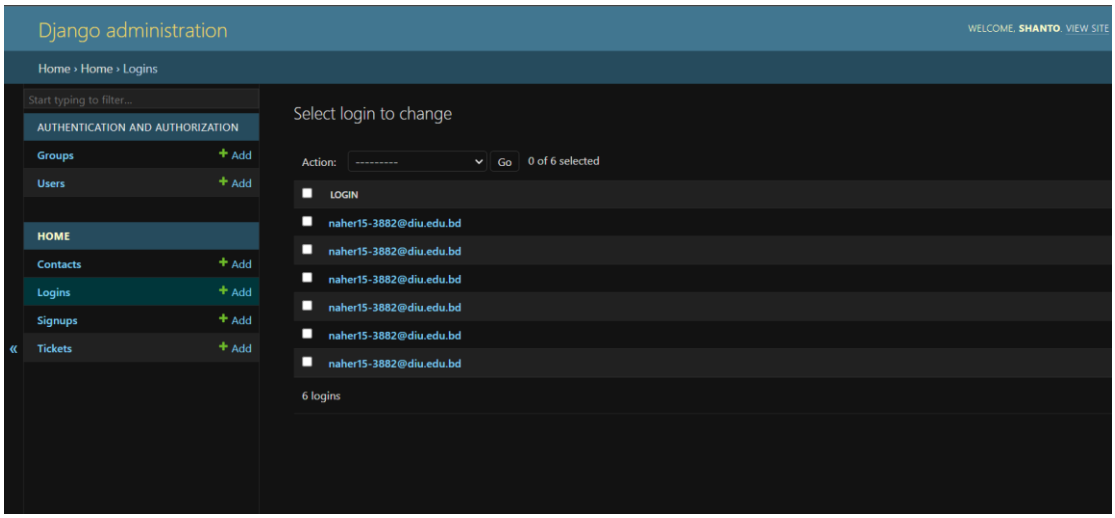


Figure 4.3: Admin App: Log in Management

4.1.5 Admin App: Sign up Management

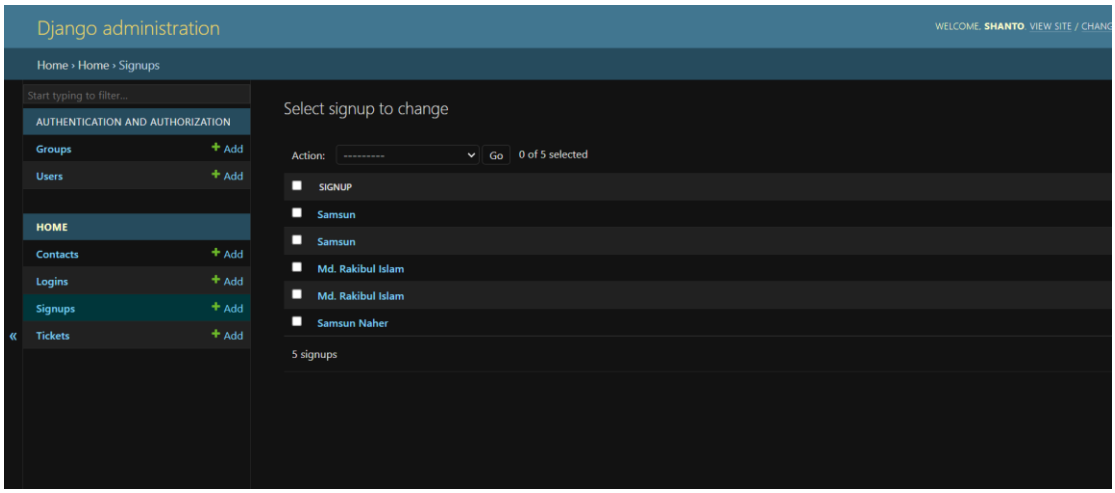


Figure 4.3: Admin App: Sign up management

4.1.5 Admin App: Ticket Management

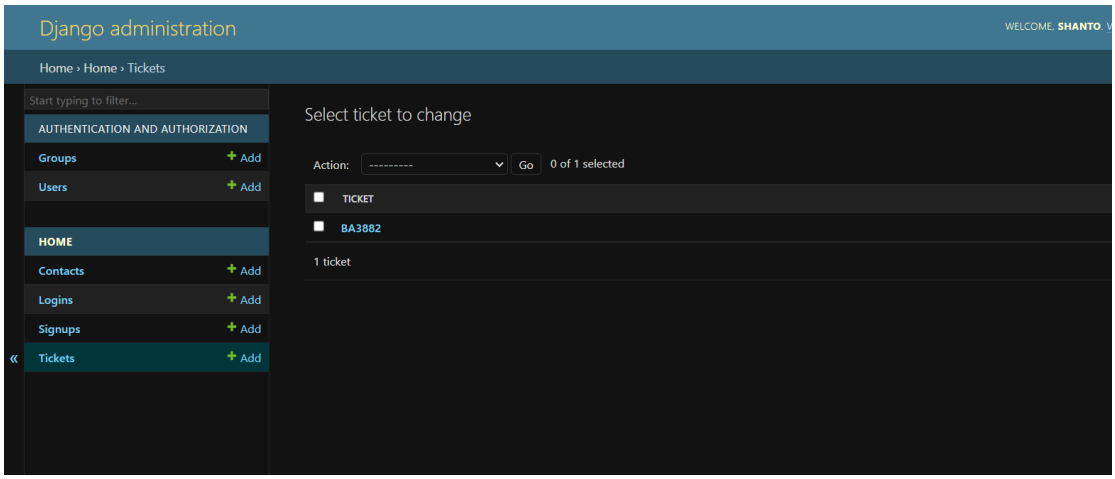


Figure 4.3: Admin App: Ticket Management

4.1.8 User Site: Splash Screen

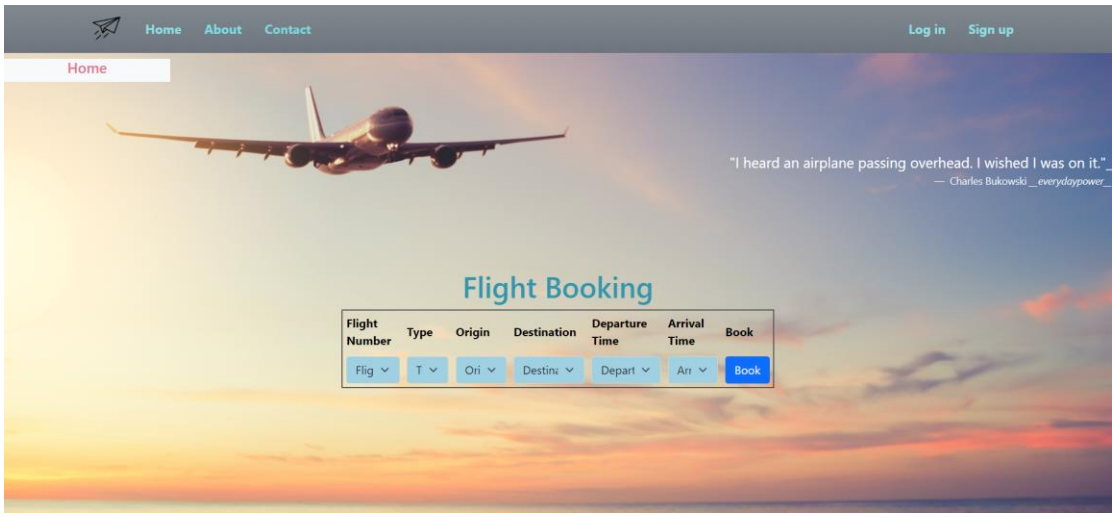


Figure 4.8: User Site: Splash Screen

4.1.9 User Site: Log In

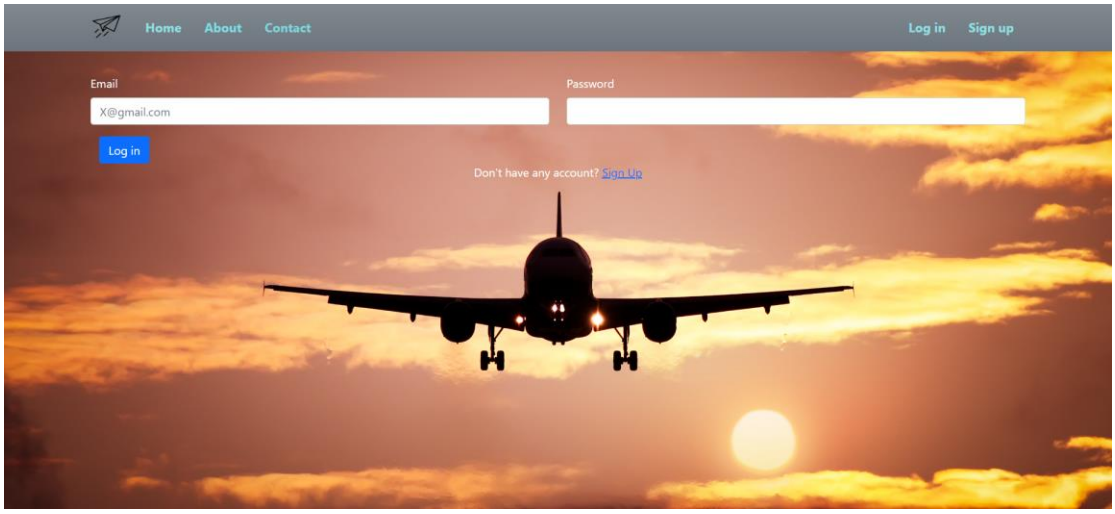


Figure 4.9: User Site: Log In

4.1.10 User Site: Home Page

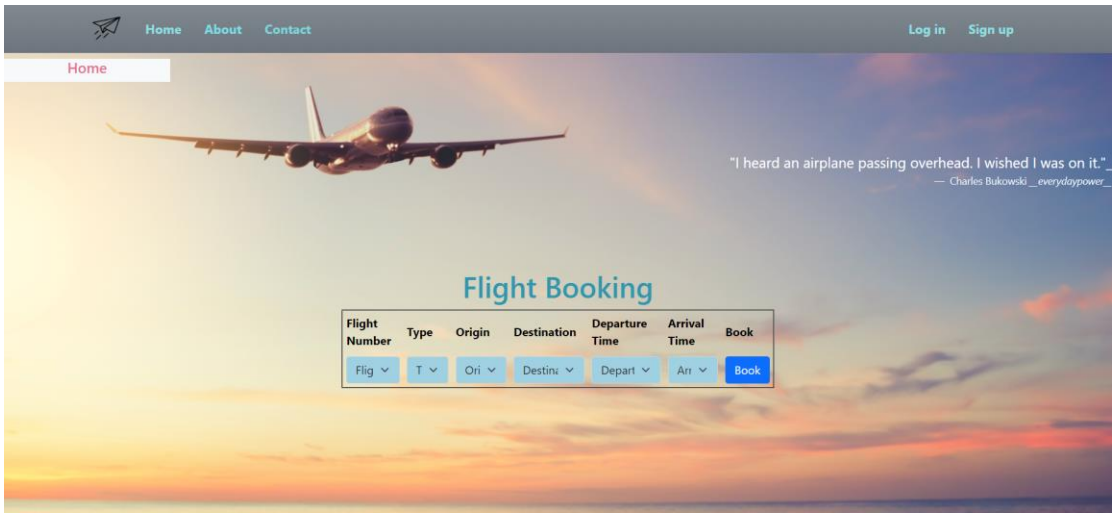


Figure 4.10: User Site: Home Page

4.1.11 User Site: Schedule

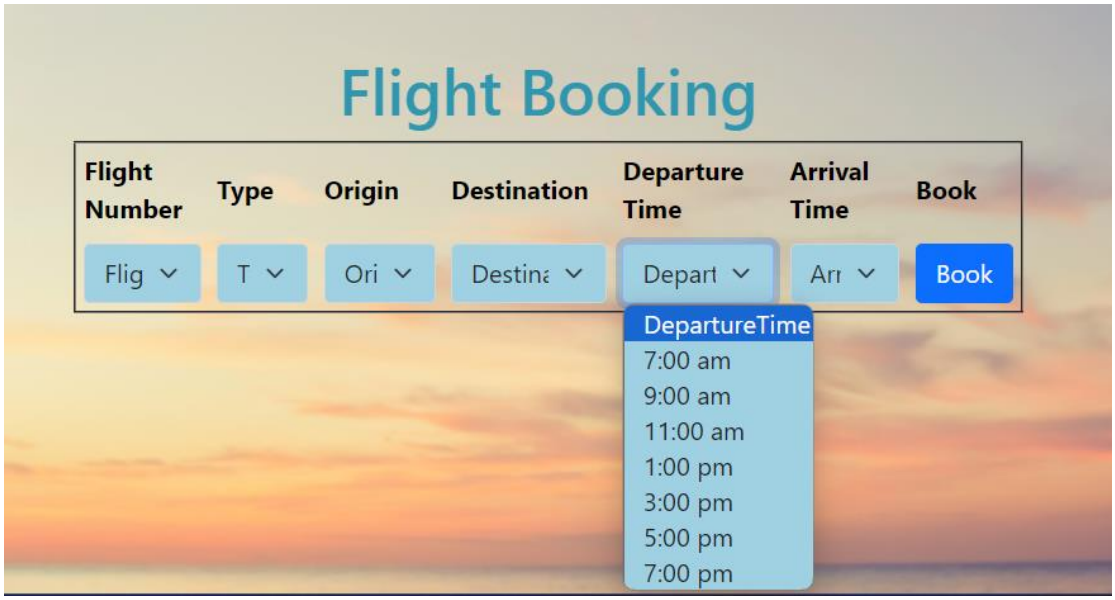


Figure 4.11: User Site: Start Schedule

4.1.12 User Site: Flight select

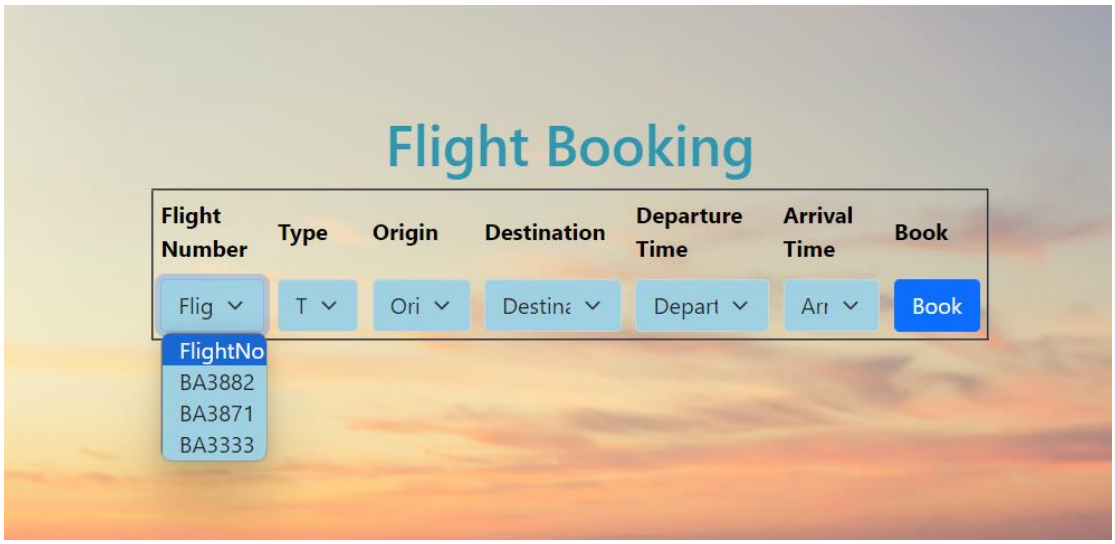


Figure 4.12: User Site: Flight select

4.1.13 Driver Site: End Schedule

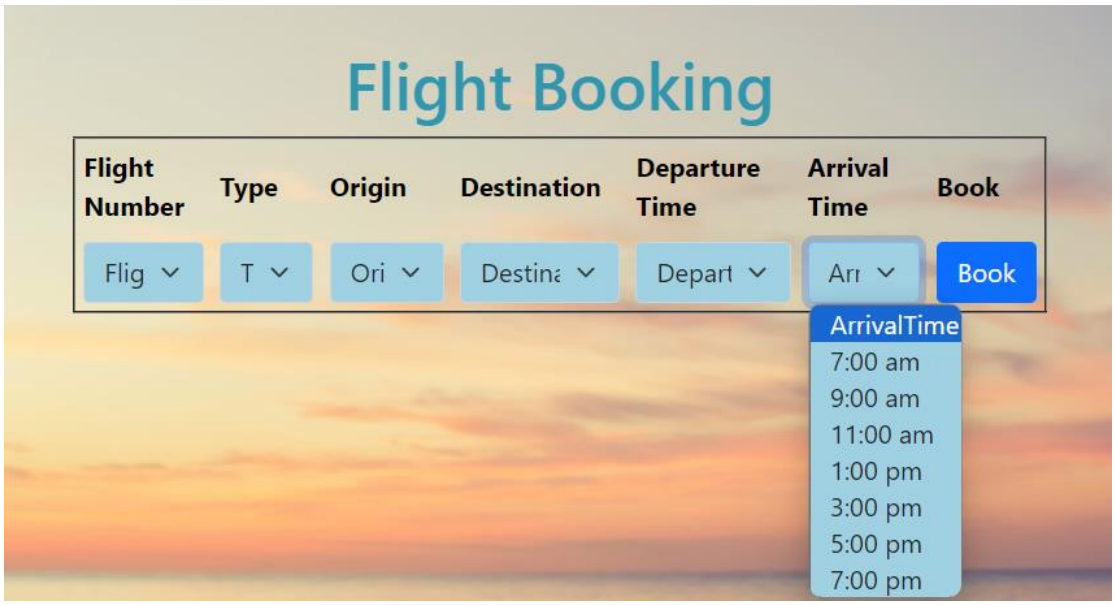


Figure 4.11: User Site: End Schedule

4.1.14 User Site: Origin Select

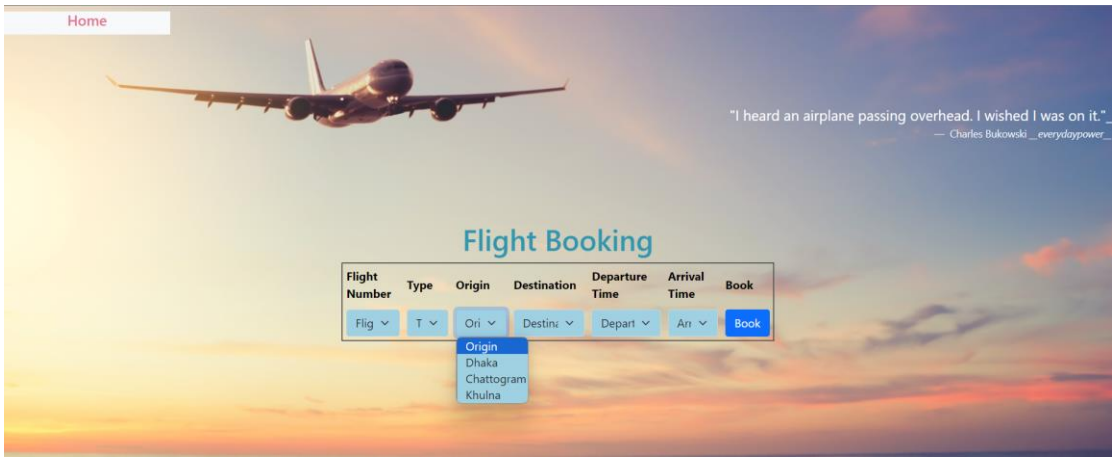


Figure 4.14: User Site: Splash Screen

4.1.15 User Site: Register User

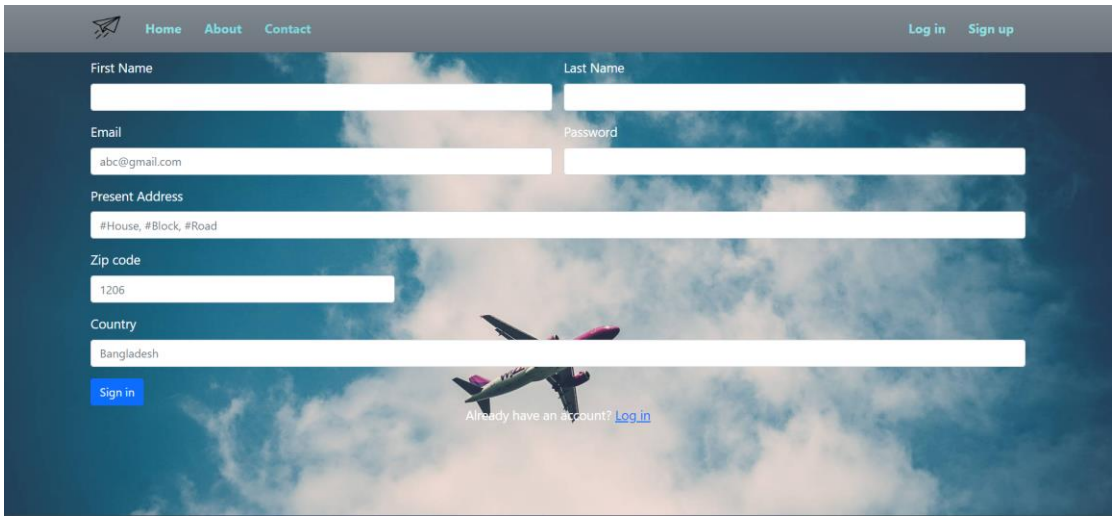


Figure 4.15: User Site: Register User

4.1.16 User Site: Contact Page

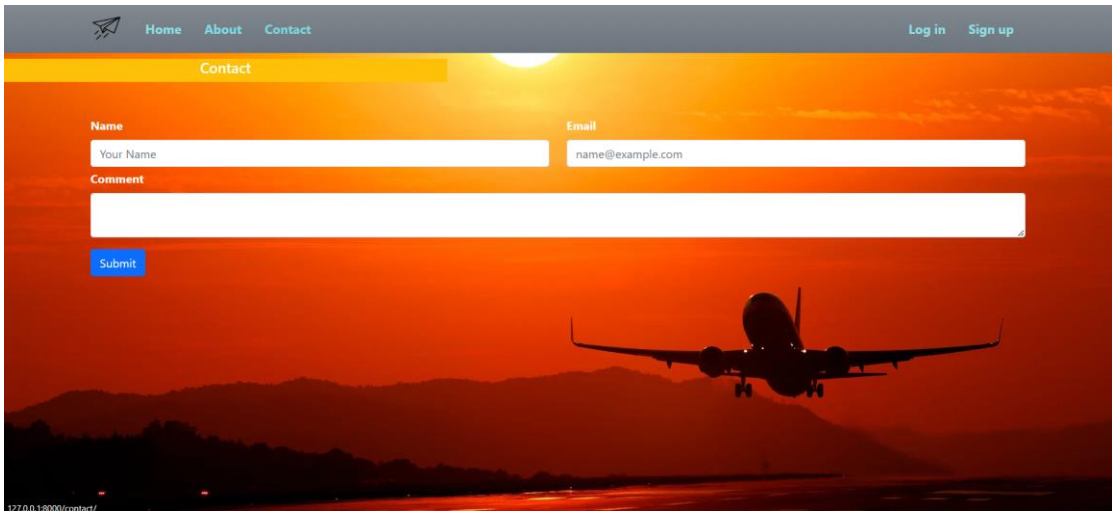


Figure 4.16: User Site: Contact Page

4.1.17 User Site: About page

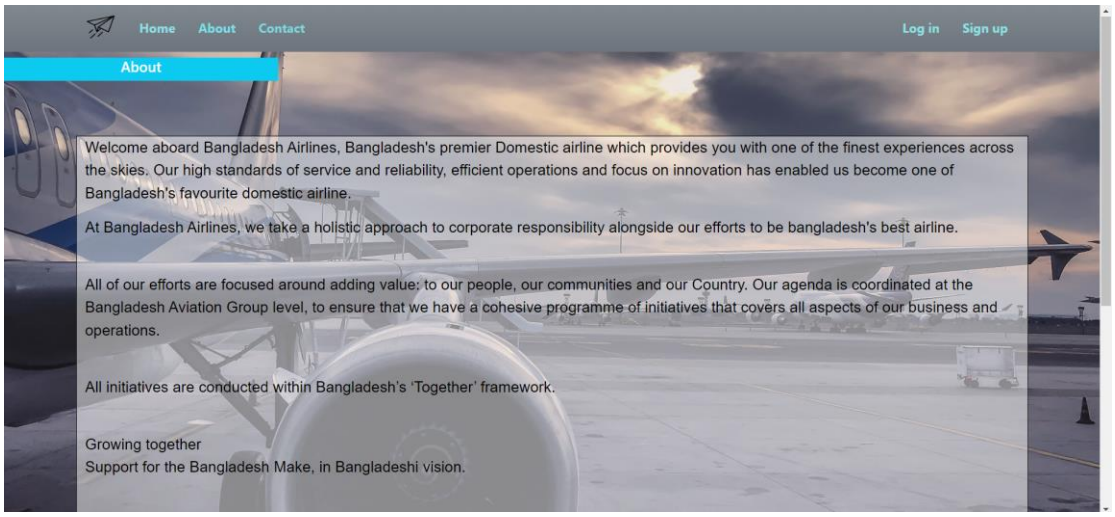


Figure 4.17: User Site: Search Schedule

4.2 Back-end Design

The backend of the 'Bangladesh Airlines' website is a meticulously crafted engine powered by Django, a robust web framework. It orchestrates the seamless flow of data and operations, ensuring every interaction is swift and secure. Embracing the efficiency of a dbsqlite database, it stores and retrieves information with precision, providing a foundation that's both reliable and agile. With Django's versatility, the backend effortlessly handles user authentication, ticket booking, and communication, all while

maintaining airtight security protocols. It's the invisible force that propels the user experience to new heights, making 'Bangladesh Airlines' a trusted companion in modern travel.

```python
from django.shortcuts import render
from .models import *
from django.http import HttpResponseRedirect

# Create your views here.

def home (request):
    if request.method == 'POST':
        FlightNo = request.POST.get('FlightNo', None)
        Type = request.POST.get('Type', None)
        Origin = request.POST.get('Origin', None)
        Destination = request.POST.get('Destination', None)
        DepartureTime = request.POST.get('DepartureTime', None)
        ArrivalTime = request.POST.get('ArrivalTime', None)

        home = Ticket()
        home.FlightNo = FlightNo
        home.Type = Type
        home.Origin = Origin
        home.Destination = Destination
        home.DepartureTime = DepartureTime
        home.ArrivalTime = ArrivalTime
        home.save()
    return render(request, "home.html")

def about (request):
    return render(request, "about.html")

```

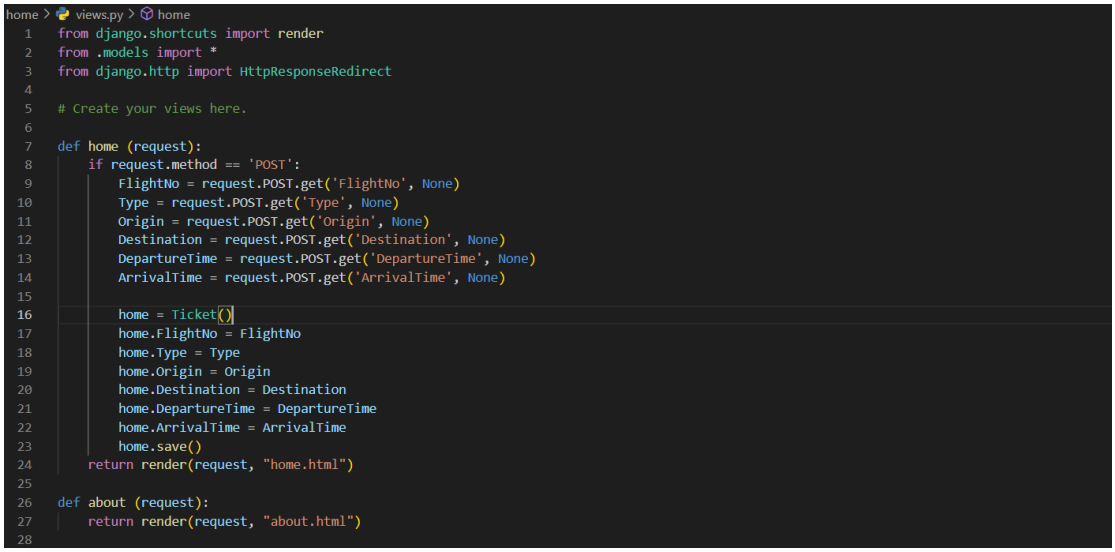
Figure 4.26: Backend

```python
    return render(request, "about.html")

def contact (request):
    if request.method == 'POST':
        name = request.POST.get('name')
        email = request.POST.get('email')
        message = request.POST.get('message')

        contact = Contact()
        contact.name = name
        contact.email = email
        contact.message = message
        contact.save()
        # return HttpResponse('<h1> Thanks for Contact with us</h1>')
    return render(request, "contact.html")

def login (request):
    if request.method == 'POST':
        email = request.POST.get('email')
        password = request.POST.get('password')
        # confirm = request.POST.get('confirm')

        login = Login()
        login.email = email
        login.password = password
        # login.confirm = confirm
        login.save()
```

Figure 4.27: Backend

Figure 4.28: Backend

Figure 4.29: Backend



```
home > views.py > home
from django.shortcuts import render
from .models import *
from django.http import HttpResponseRedirect

# Create your views here.

def home (request):
    if request.method == 'POST':
        FlightNo = request.POST.get('FlightNo', None)
        Type = request.POST.get('Type', None)
        Origin = request.POST.get('Origin', None)
        Destination = request.POST.get('Destination', None)
        DepartureTime = request.POST.get('DepartureTime', None)
        ArrivalTime = request.POST.get('ArrivalTime', None)

        home = Ticket()
        home.FlightNo = FlightNo
        home.Type = Type
        home.Origin = Origin
        home.Destination = Destination
        home.DepartureTime = DepartureTime
        home.ArrivalTime = ArrivalTime
        home.save()
    return render(request, "home.html")

def about (request):
    return render(request, "about.html")

```

Figure 4.30: Backend

4.3 Implementation Requirements

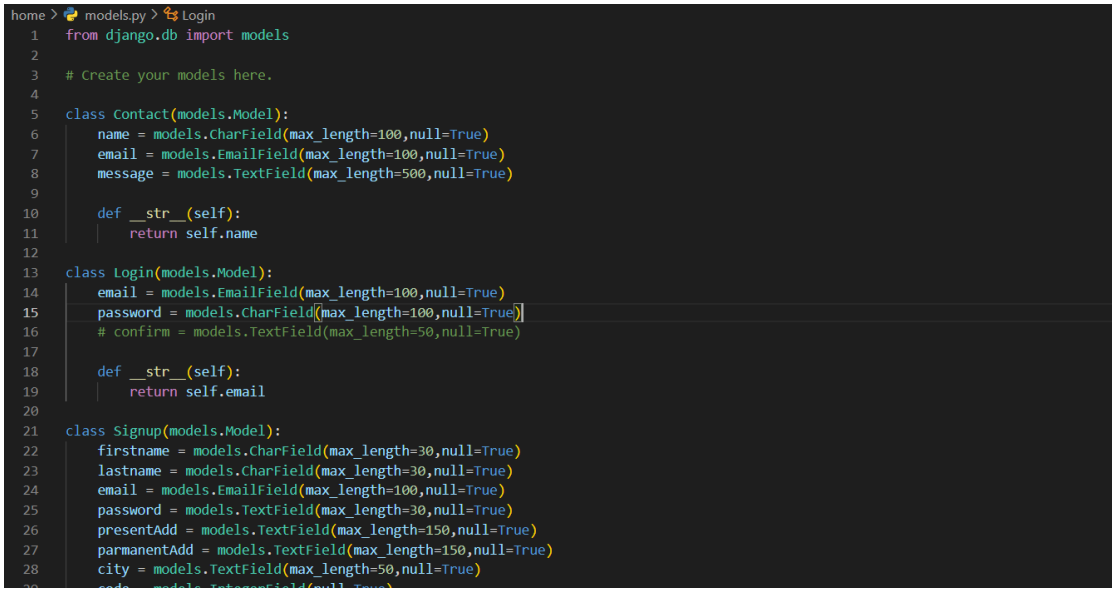
The development process employs fundamental yet highly effective web development tools, employing Django as the backend framework and utilizing dbsqlite for seamless database management. Django, renowned for its versatility and scalability, forms the backbone of the project. It ensures a robust and secure foundation for seamless user interactions. In contrast, dbsqlite, a powerful and efficient database system, efficiently handles data storage and retrieval. This combination of technologies guarantees a smooth and responsive user experience, making 'Bangladesh Airlines' a standout in modern travel solutions.

CHAPTER 5

IMPLEMENTATION AND TESTING

5.1 Implementation of Database

I use the DBsqlite database that is a default database for the Django.



```
home > models.py > Login
from django.db import models

# Create your models here.

class Contact(models.Model):
    name = models.CharField(max_length=100,null=True)
    email = models.EmailField(max_length=100,null=True)
    message = models.TextField(max_length=500,null=True)

    def __str__(self):
        return self.name

class Login(models.Model):
    email = models.EmailField(max_length=100,null=True)
    password = models.CharField(max_length=100,null=True)
    # confirm = models.TextField(max_length=50,null=True)

    def __str__(self):
        return self.email

class Signup(models.Model):
    firstname = models.CharField(max_length=30,null=True)
    lastname = models.CharField(max_length=30,null=True)
    email = models.EmailField(max_length=100,null=True)
    password = models.TextField(max_length=30,null=True)
    presentAdd = models.TextField(max_length=150,null=True)
    parmanentAdd = models.TextField(max_length=150,null=True)
    city = models.TextField(max_length=50,null=True)
```

Figure 5.1: Collection of Database

```
home > models.py > Login

class Signup(models.Model):
    firstname = models.CharField(max_length=30,null=True)
    lastname = models.CharField(max_length=30,null=True)
    email = models.EmailField(max_length=100,null=True)
    password = models.TextField(max_length=30,null=True)
    presentAdd = models.TextField(max_length=150,null=True)
    parmanentAdd = models.TextField(max_length=150,null=True)
    city = models.TextField(max_length=50,null=True)
    code = models.IntegerField(null=True)
    # district = models.TextChoices

    def __str__(self):
        return self.firstname

class Ticket(models.Model):
    FlightNo = models.CharField(max_length=15, blank=True, null=True)
    Type = models.CharField(max_length=15, blank=True, null=True)
    Origin = models.CharField(max_length=15, blank=True, null=True)
    Destination = models.CharField(max_length=15, blank=True, null=True)
    DepartureTime = models.CharField(max_length=15, blank=True, null=True)
    ArrivalTime = models.CharField(max_length=15, blank=True, null=True)

    def __str__(self):
        return self.FlightNo
```

Figure 5.2: Collection of Database

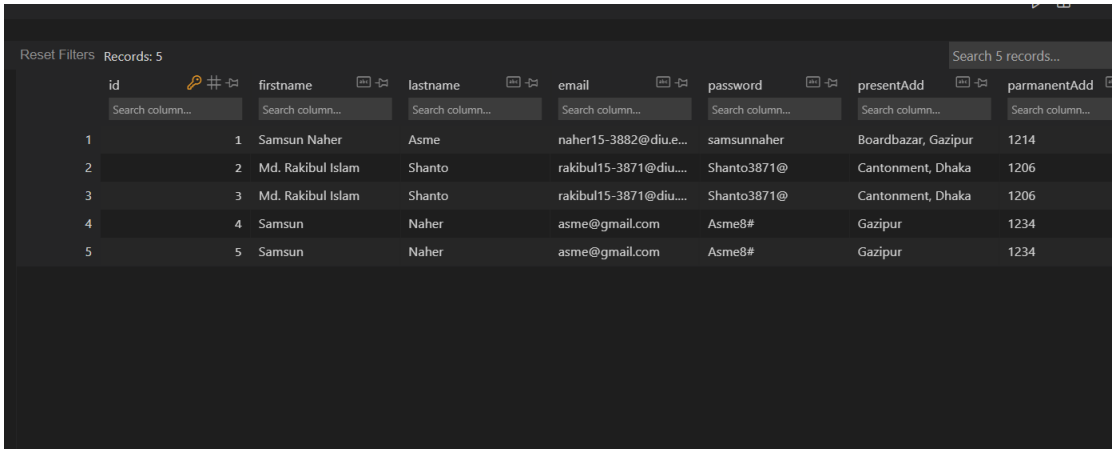


Figure 5.3: Collection of Database

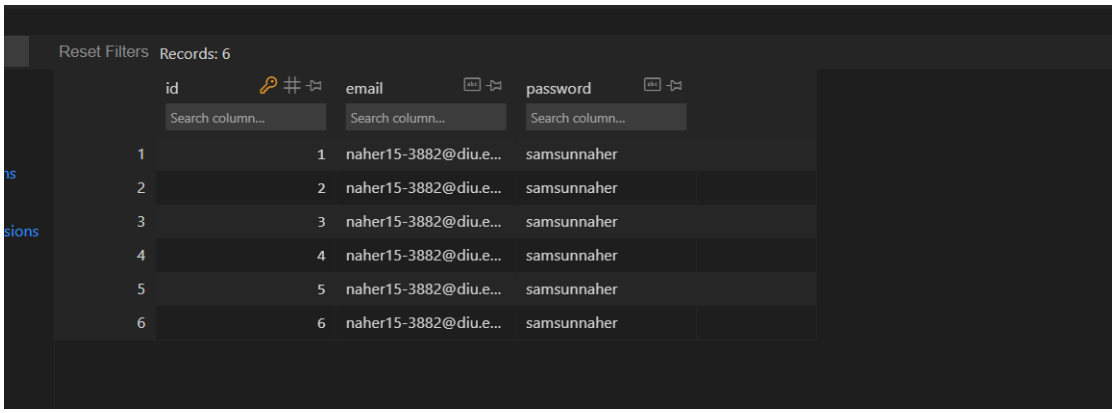


Figure 5.4: Collection of Database

5.2 Testing

Checking the information through the website

Figure 5.2.1: Checking

Log In Data

Id	Email	Password
1	naher15-3882@diu.edu.bd	samsunnaher
2	naher15-3882@diu.edu.bd	samsunnaher
3	naher15-3882@diu.edu.bd	samsunnaher
4	naher15-3882@diu.edu.bd	samsunnaher
5	naher15-3882@diu.edu.bd	samsunnaher
6	naher15-3882@diu.edu.bd	samsunnaher

Figure 5.2.2: Checking

Sign Up Data

Id	FirstName	LastName	Email	Password	PresentAdd	Zip Code	Country
1	Samsun Naher	Asme	naher15-3882@diu.edu.bd	samsunnaher	Boardbazar, Gazipur	1214	Bangladesh
2	Md. Rakibul Islam	Shanto	rakibul15-3871@diu.edu.bd	Shanto3871@	Cantonment, Dhaka	1206	Bangladesh
3	Md. Rakibul Islam	Shanto	rakibul15-3871@diu.edu.bd	Shanto3871@	Cantonment, Dhaka	1206	Bangladesh
4	Samsun	Naher	asme@gmail.com	Asme8#	Gazipur	1234	Bangladesh
5	Samsun	Naher	asme@gmail.com	Asme8#	Gazipur	1234	Bangladesh

Figure 5.2.3: Checking

CHAPTER 6

IMPACT ON SOCIETY, ENVIRONMENT AND SUSTAINABILITY

6.1 Impact on Society

A substantial portion of the population in Bangladesh relies on air travel for their transportation needs. For long-distance journeys, airplanes have become the preferred mode of transport. However, due to the unpredictability of flight schedules, individuals often spend considerable time waiting at airports. Our developed system seeks to revolutionize air travel by providing real-time information about flight locations. This will empower travelers to plan their journeys more efficiently, optimizing their time and enhancing their overall travel experience.

6.2 Impact on Environment

Currently, obtaining the latest updates on flight statuses is a manual process, requiring individuals to visit airports or consult official sources. By implementing our system, users can access real-time flight data from the comfort of their homes. This not only reduces the need for unnecessary trips to the airport but also contributes to a reduction in carbon emissions and a decrease in fossil fuel consumption, thereby positively impacting the environment.

6.3 Ethical Aspect

The system's operations will be closely monitored and regulated by authorized personnel. The data accessed pertains solely to the location of flights, which poses no harm. Authorities will share this information based on their discretion, ensuring there are no ethical concerns associated with the system.

6.4 Sustainability Plan

Air travel stands as one of the most widely utilized and enduring modes of transportation. Given the critical need for real-time flight information, our system's relevance is significant. Additionally, the adaptable nature of this system means it can

be seamlessly integrated into other modes of transportation, such as buses and boats. This versatility positions the system as a sustainable and invaluable tool in the realm of modern travel.

CHAPTER 7

CONCLUSION AND FUTURE SCOPE

7.1 Discussion and Conclusion

This project has been successfully executed using Django, Python, and a dbsqlite database, ensuring accessibility to users via their preferred web browsers. The system has been crafted with the primary objective of providing a streamlined ticket booking experience. Users can easily sign up, log in, and seamlessly book tickets for their preferred flights. Furthermore, the system incorporates a user-friendly interface, making it accessible to individuals from all walks of life.

7.2 Scope for Further Developments

While the current application boasts user-friendliness, there is always room for enhancement. In the future, we envision incorporating additional features to elevate the user experience. Addressing certain limitations, such as optimizing the driver's functionalities, is one area we aim to improve. Additionally, the installation of a tracking system in each aircraft for automatic location updates upon takeoff and landing is an exciting prospect for future development. This advancement could potentially revolutionize the way we approach flight tracking.

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