PROGRAMMING LANGUAGE PROJECT

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FLIGHT RESERVATION SYSTEM

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FLIGHT RESERVATION SYSTEM

A Project Report

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Place: Mumbai

Date: 05th April, 2021

CERTIFICATE

This is to certify that the project entitled “Flight Reservation System” is the bonafide work carried out by Divya Sharma, Sumedha Mahendra, and Viraj Rajendra Sanap of MBA Tech, MPSTME (NMIMS), Mumbai, during the IV semester of the academic year 2020-21, in partial fulfillment of the requirements for the Course Programming Language.

_____

Prof. Ameyaa Biwalkar

Internal Mentor

_____ _____

Examiner 1 Examiner 2

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We would like to thank our professors, Prof. Ameyaa Biwalkar and Prof. Sabina Tandon for providing us with the opportunity to work on this project and her guidance. Her support in helping us develop this program and clearing our doubts has ensured that it could be prepared to the best of our abilities on time. This would have been nearly impossible without their assistance and guidance.

We are also grateful for the assistance we received from our peers to help us formulate, plan and execute the ideas for this project. Their support, in whatever form it may have been, has helped us push through and make this idea into reality.

Table of Contents

Chapter 1: Introduction

The Flight Reservation System Project is a user-friendly desktop application that allows the user to create a personal account on the application, and book tickets to various airlines, keep records of flight schedules and fare tariffs, passenger personal information like name, phone number and their ticket booking records.

The system's inventory contains all airlines with their available seats, time of arrival and departure and date of arrival and departure.

The application helps the user to book a flight in an efficient and easy manner at any time possible without going to the airports or booking centers.

Problem Statement

The Airline Reservation System provides an interface to schedule flights and reservations. Its responsibility is to keep track of the system: users, customers, airline information, client information and cancellation. The functionality of the airline reservation system is broken into various primary groups.

Customer reservation information and user were added, deleted and updated in the implementation phase of the account for the way we decide to implement security. The user keeps track of the username and password information.

Customers also keep track of different Flights Schedule, Flight Status of their upcoming flights and their own bookings. Customers can also easily book a flight for n number of passengers at any time according to the availability of the seats and flights.

It also provides customers with an FAQ page for their query's and also provided with a 24hr customer service helpline number to contact to.

Chapter 2: Software Used with Description

Software details:

Database (DB Browser): Sqlite3 is used as database as it easy to maintain and retrieve records by simple functions.
Development tools and Programming language: Python is used to write the whole code and develop GUI using Tkinter, sqlite3 as the backend, for database.

Windows OS:

Windows is a graphical operating system developed by Microsoft. It allows users to view and store files, run the software, play games, watch videos, and provides a way to connect to the internet. It was released for both home computing and professional works.

Db Browser:

DB Browser is a visual tool used to organize commands sent to SQLite. With databases, it's easy to lose track of commands that have been run. DB Browser lets you see exactly the sequence of commands you are executing before you run them. We have used this software to create and store data in tables.

Pycharm:

It is developed by the Czech company JetBrains. It provides code analysis, a graphical debugger, an integrated unit tester, integration with version control systems (VCSes), and supports web development with Django as well as data science with Anaconda. PyCharm is cross-platform, with Windows, macOS and Linux versions.
It is an integrated development environment used in computer programming, specifically for the Python language.
We have used this software for the coding and designing for the app. This is an easier to use software, and far superior to IDLE. This software allows us to make a better GUI.

- Tkinter: Tkinter is a Python binding to the Tk GUI toolkit. It is the standard Python interface to the Tk GUI toolkit, and is Python's standard GUI.

- Sqlite3: This is the Python module used to integrate SQLite into the code. It serves the function of allowing the creation, deletion and entry of data into tables.

Python shell:

Python provides a Python Shell, which is used to execute a single Python command and display the result. It is also known as REPL (Read, Evaluate, Print, Loop), where it reads the command, evaluates the command, prints the result, and loop it back to read the command again.

IDLE

IDLE (Integrated Development and Learning Environment) is an integrated development environment (IDE) for **Python**.

Hardware details:

Processor:	11th Gen Intel(R) Core(TM) i7-1165G7 @ 2.80GHz 2.80 GHz
Installed memory (RAM):	16.0 GB (15.6 GB usable)
System type:	64-bit Operating System, x64-based processor
Pen and Touch:	Pen Support

- Intel core i7 11th generation was used as a processor because it is faster than others and is reliable and stable.
- In general, we recommend at least 4GB of RAM and think that most users will do well with 8GB. 16GB RAM will help the application work and process faster.

Chapter 3: Methods Implemented

Throughout the project, we have applied Object Oriented Programming and used Classes and Objects to call the next page in the application. The following is a run through of what each class does and how it calls the upcoming functions and the next part of the program.

Initial Stage:
In the beginning of the code, we have connected the file to a database called flight_reservation_system.db and created a cursor. Next, using tkinter applications, we have made a Tk window and created an object to call class Main.

1. class Main:
This displays the main screen. From here, you can toggle between the Login Page and the SignUp page to create a new account.

2. class SignUp:
You can create a new account here. This information gets stored in the backend in the User Table and the User PhoneNo table as we have considered phone number as a multi-valued attribute.

3. class Login:
This page compares if the email id and the password match and directs the user to the Home page by creating an object. It also sends the email entry as it will be used by all the other classes.

4. class Home:
The Home page welcomes the user and introduces the side menu which are all buttons. The buttons have been allotted commands that call a function that created an object to direct the user to the required page. This side menu is now accessible on all the other pages.

5. class Book:

Here, the user selects the origin, destination and the date of departure that the user wants to check flights for. The tree displays the available flights, and the user enters the information accordingly.

6. class passengerdetails:

This class is used to input the Passenger Details for the booking in process. It runs the number of times the number of Passengers is selected while booking. The user can also cancel the booking midway.

7. class confirmbooking:

Here, the page shows all the details and only when the user selects Confirm Bookings, the data is entered in the backend. This page then takes you back to the Home Page.

8. class MyBookings

This class displays all previous booking information in a tree. The user can check the PNR from this list and can access individual booking and passenger details on this class.

9. class Status

The user can check flight status here by taking the Flight Number, and the page displays all information of the particular flight.

10. class Search

This class allows the user to search flights according to origin, destination and date of departure.

11. class Profile

The user can see their profile information on this class. It allows the user to go to edit profile page or delete their profile.

12. class EditProfile

Allows the user to edit the profile details.

13. class Contact

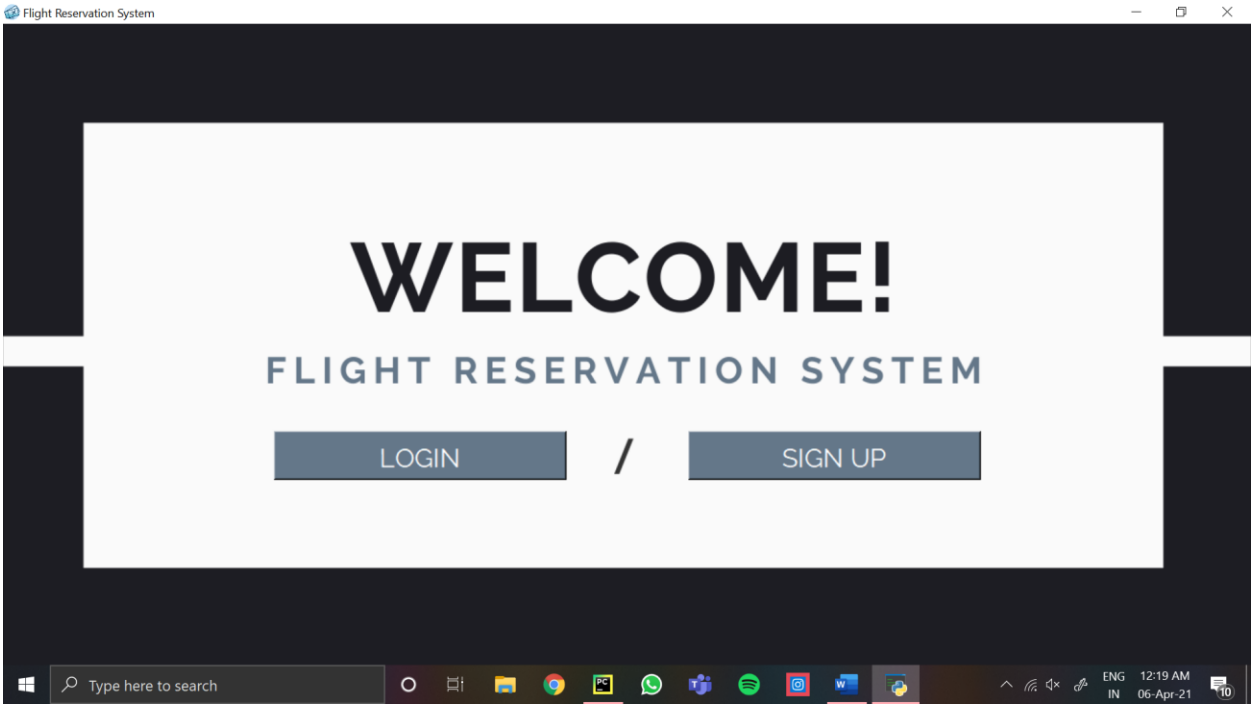
Displays contact information in case of a query.

14. class FAQs

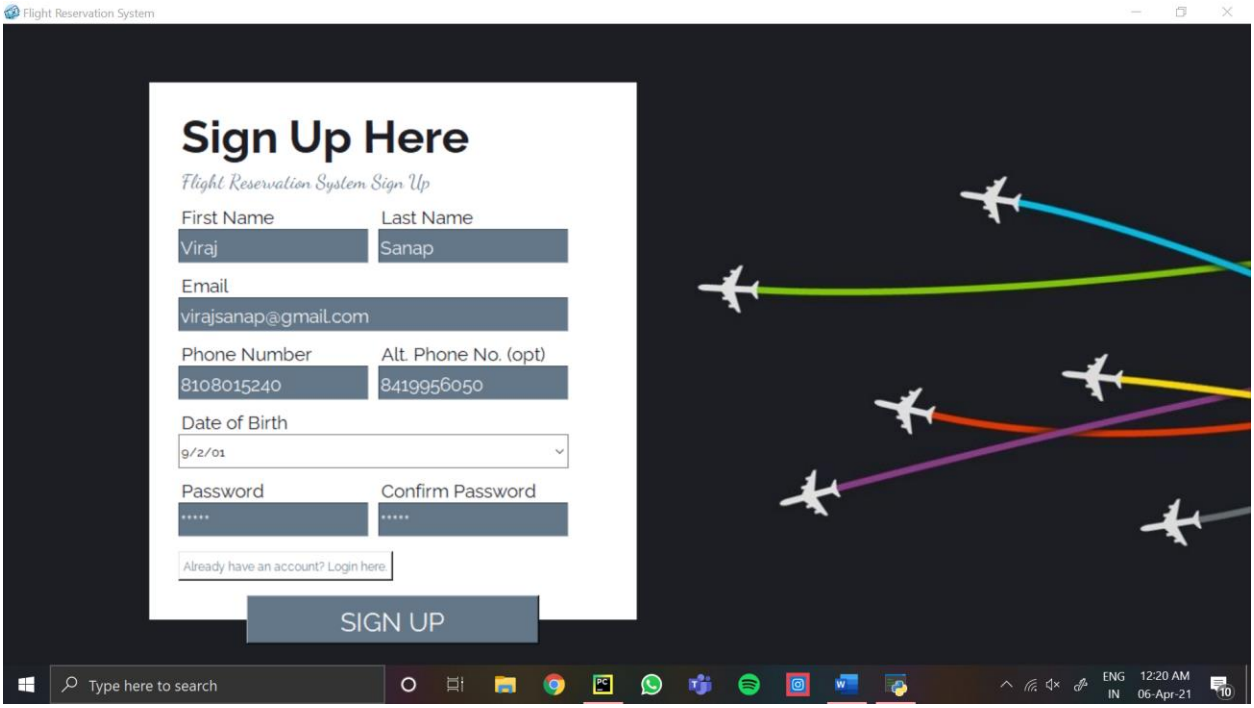
The FAQs page allows the user to select a query and it is answered by a message box.

Chapter 4: Screenshots

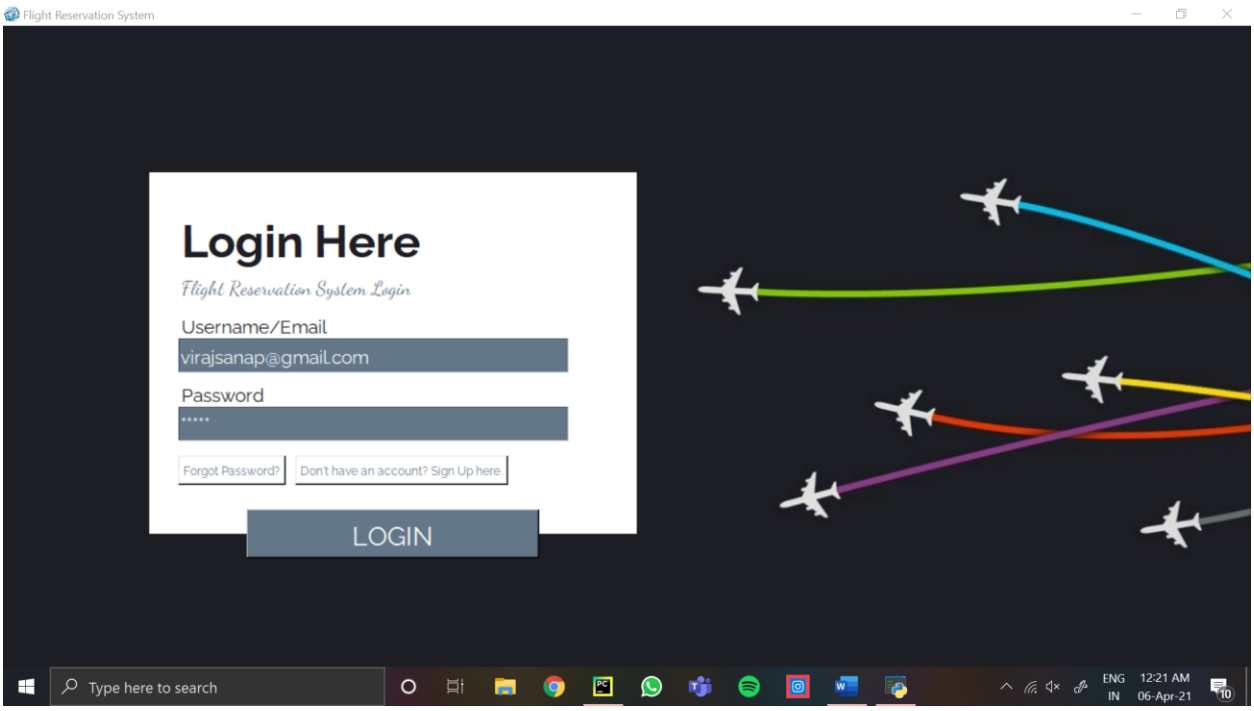
1. Welcome Page



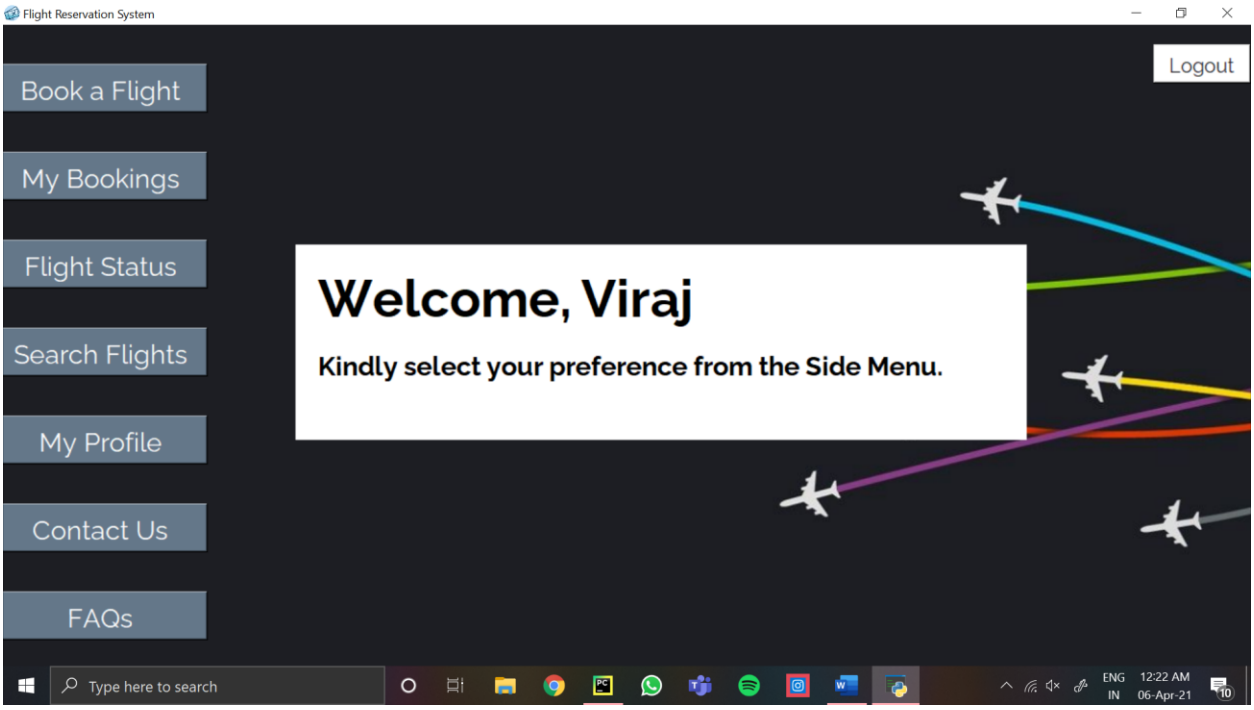
2. Sign Up Page



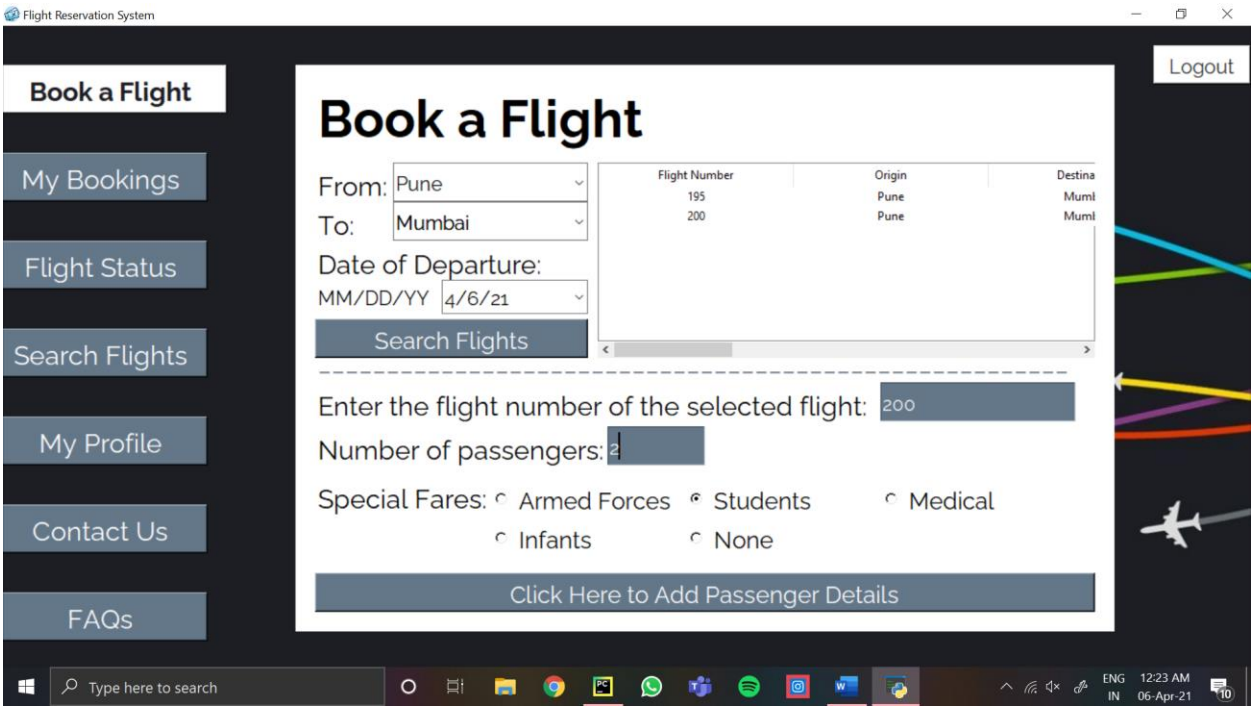
3. Login Page



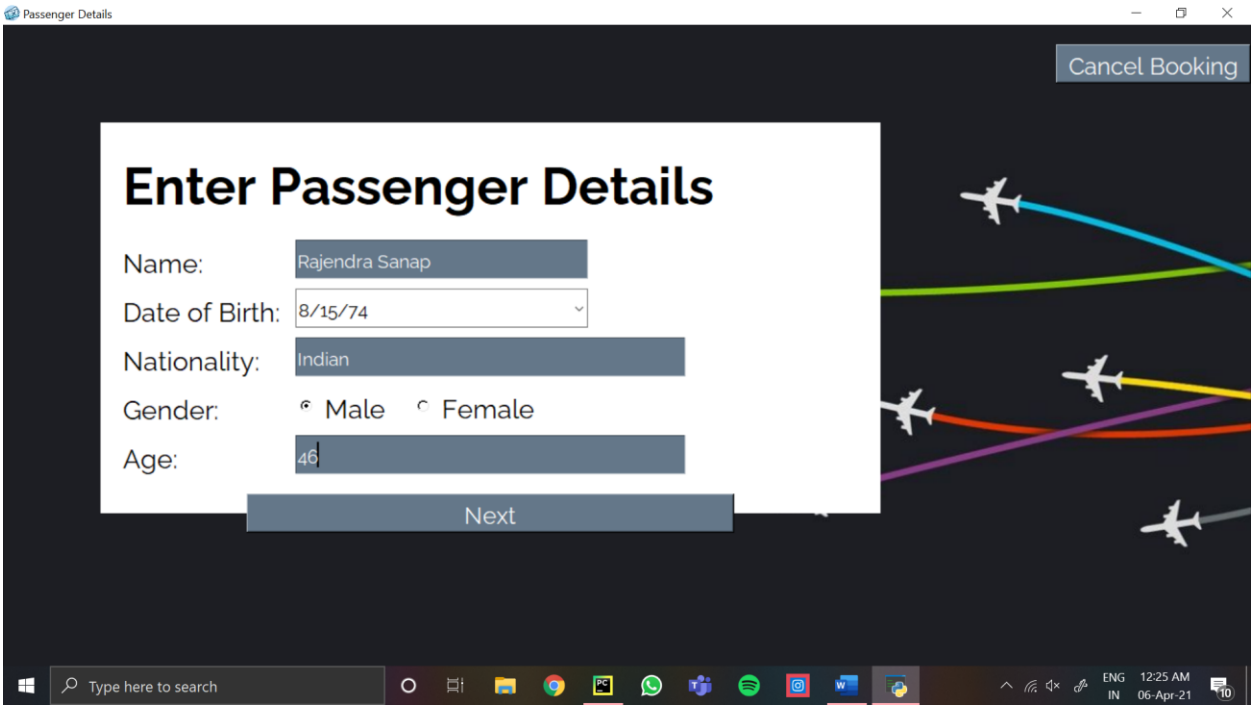
4. Home Page



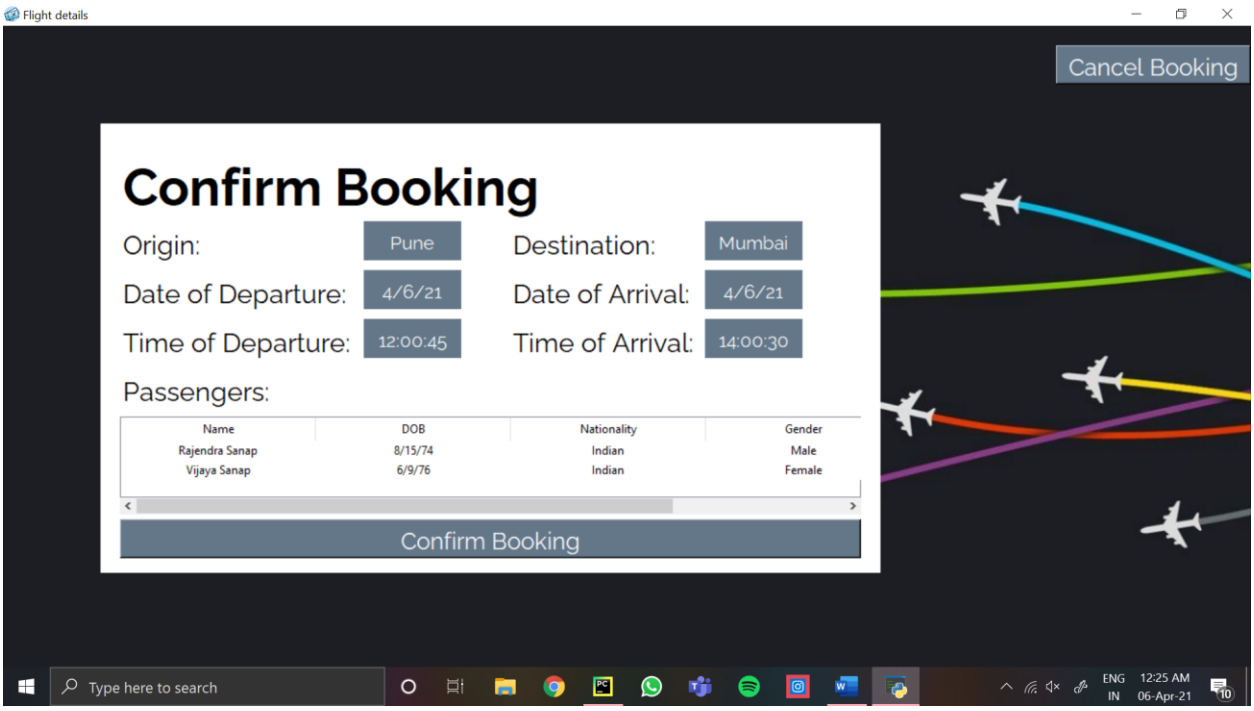
5. Book a Flight Page



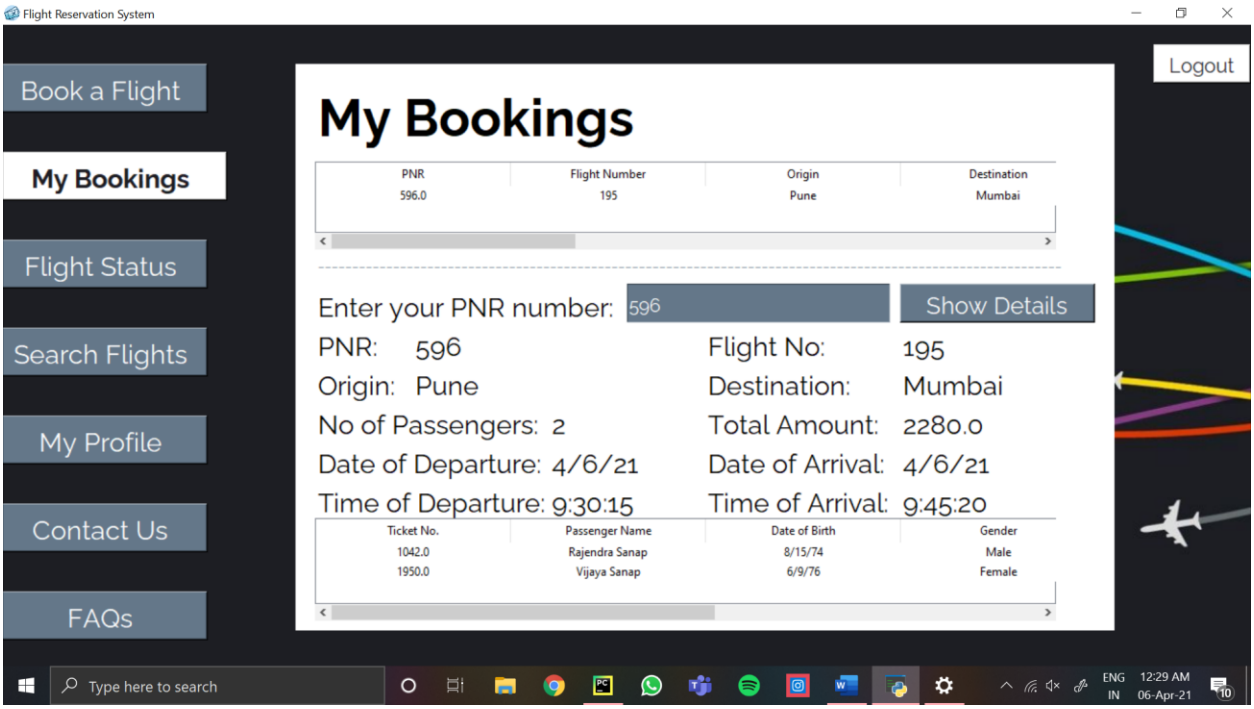
6. Enter Passenger Details Page



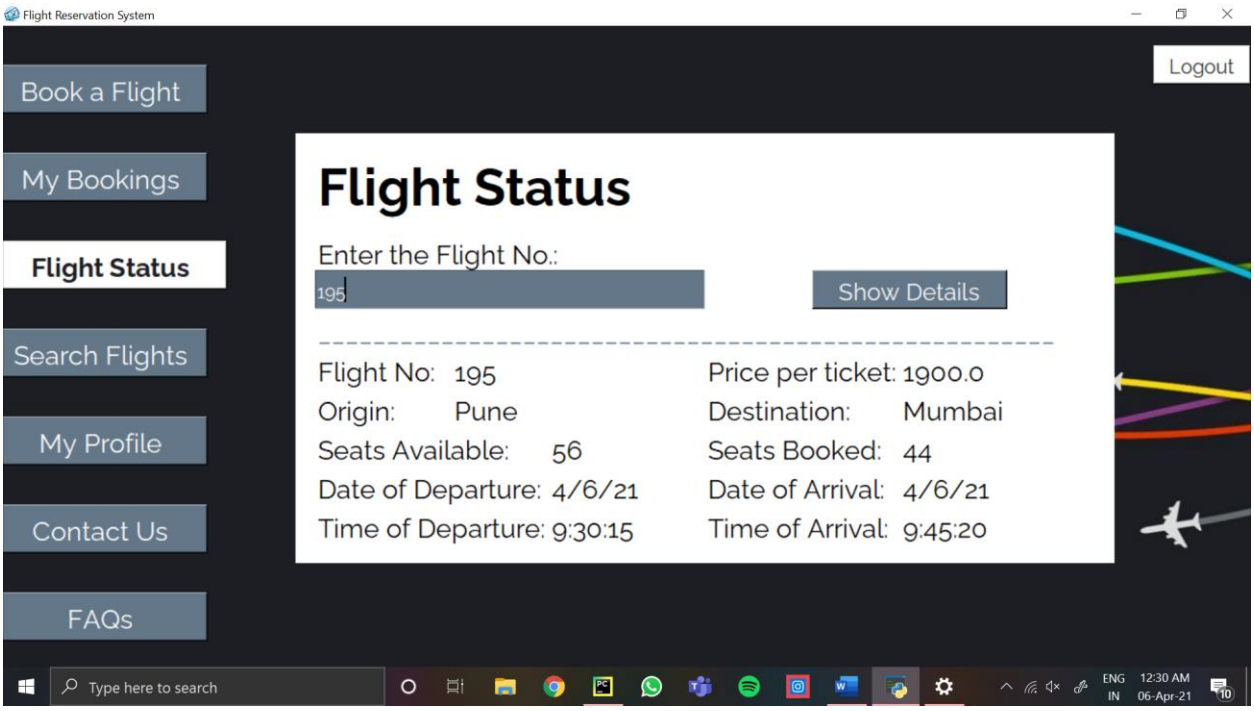
7. Confirm Booking Page



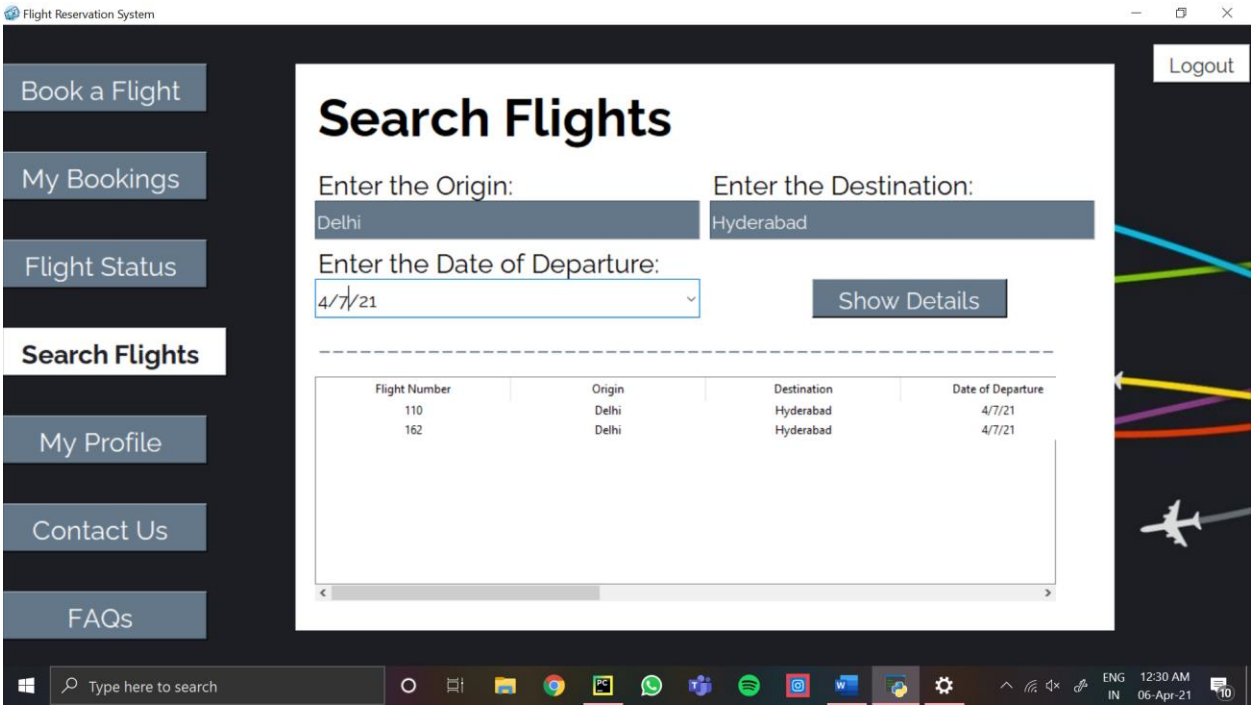
8. My Bookings Page



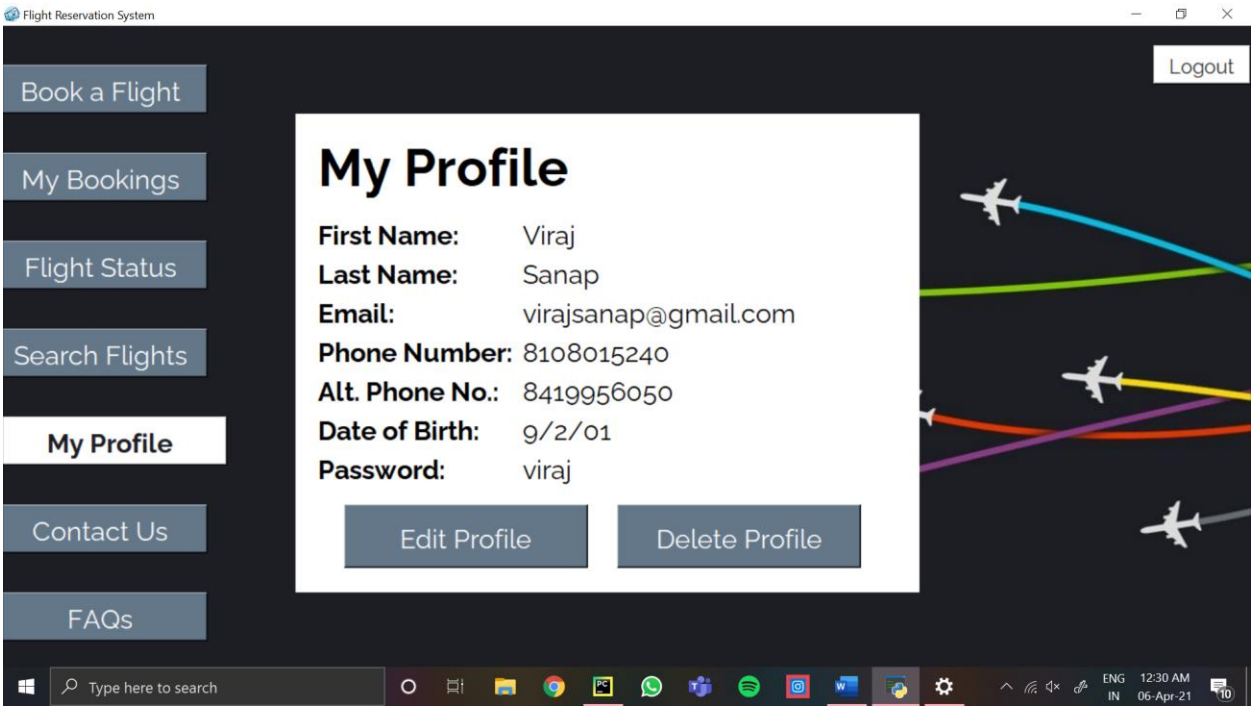
9. Flight Status Page



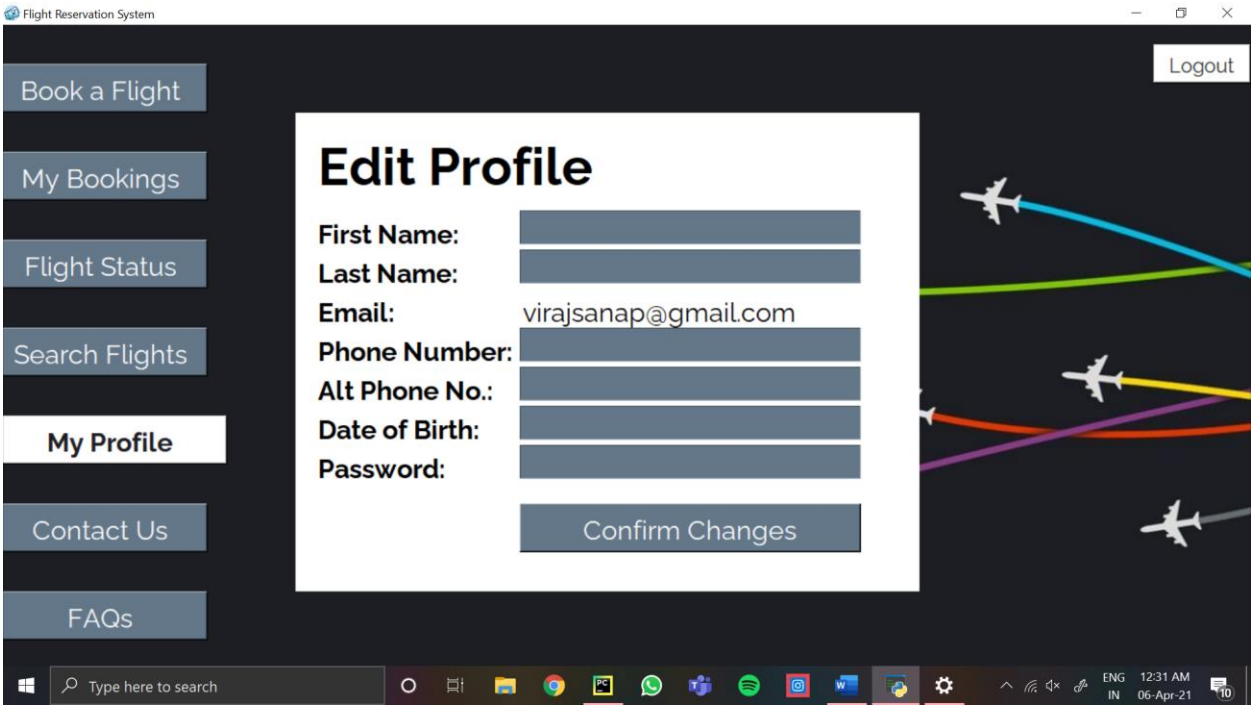
10. Search Flights Page



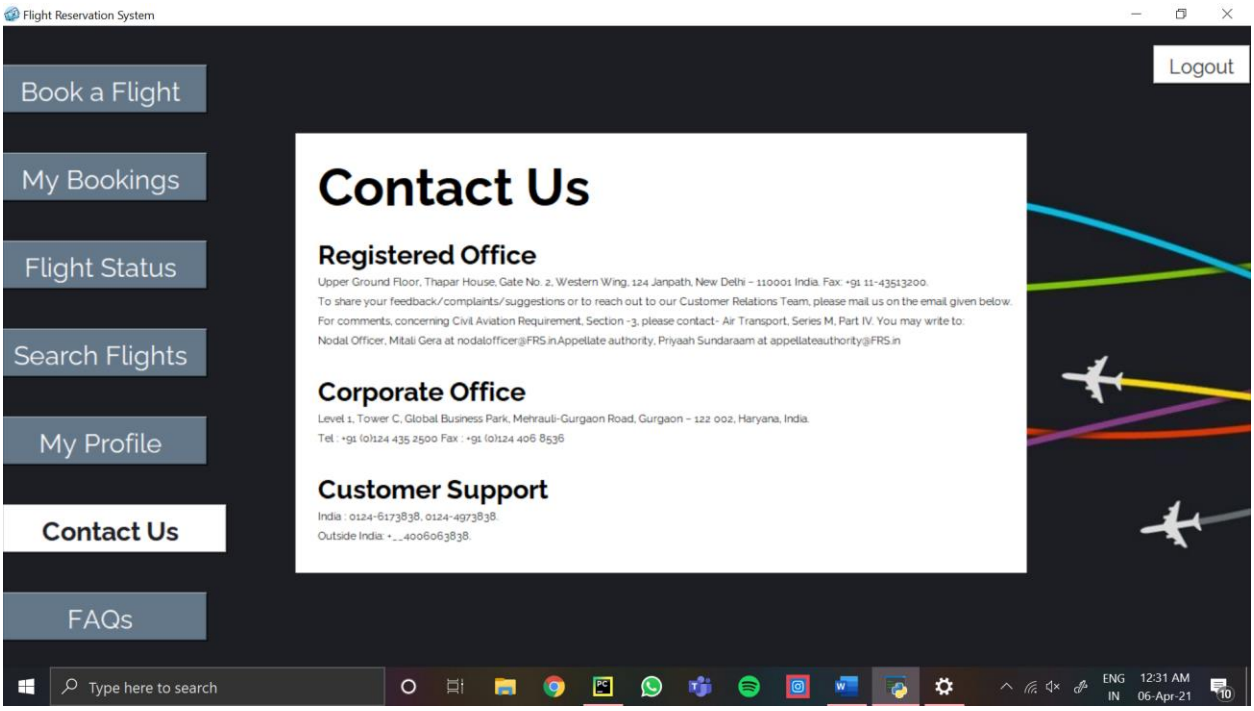
11. My Profile Page



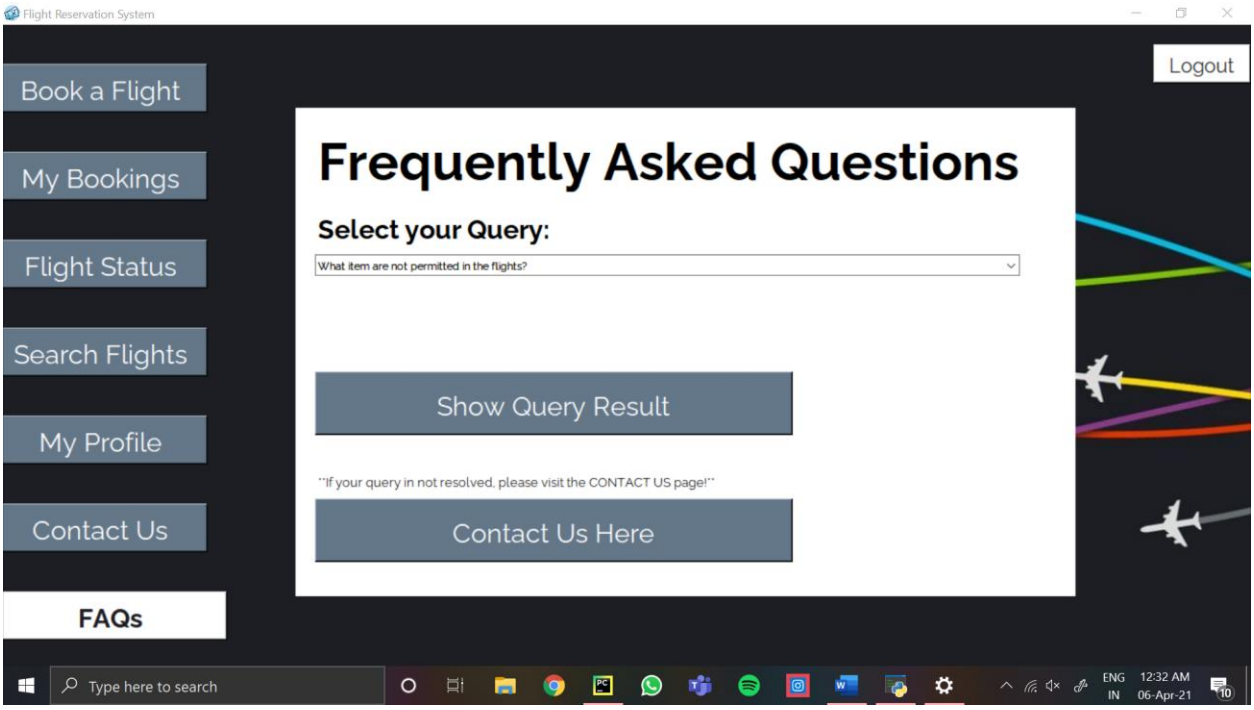
12. Edit Profile Page



13. Contact Us Page



14. FAQs Page



Chapter 5: Conclusion and Future Scope

Conclusion

This has been a great pleasure for us to work on this exciting and challenging Project. This project proved good for us as it provided us with practical knowledge of programming.
With working employees travelling 24/7 this software speed up your reservation process and makes it convenient for the customers to book flights whenever and wherever!
It reduces the scope of manual error and conveniently maintains any modifications, cancellations in the reservations. It not only provides flight details but also creates a platform to book tickets, cancels or modifies ticket timings or dates and even informs about the number of people on board.

Future Scope

This Project designs and implements Air reservation system. This supports a well-designed database with all available air flights information which can be accessed easily through a single point.
It provides a friendly user interface with various combinations of searching a flight, finding the flight status and schedule, booking a flight etc. that can be fetched by the user and generates corresponding database search statements.

Chapter 6: Societal Application

This project provides the best interface between the passengers and the airline workers and supports frequent user registrations and personal information.

The application can be used by various different airlines and airports for booking systems for better user interaction.

This project can also be used as a bas prototype/template for making other reservation systems like railways, buses, etc.

It makes bookings for both the airlines and the passengers easier and time-saving.