C++ PROJECT

RAILWAY RESERVATION SYSTEM

SUBMITTED BY

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RAILWAY RESERVATION SYSTEM

In the modern world, efficient transportation systems are essential for the smooth functioning of societies. Among these, railways play a significant role in facilitating the movement of people across vast distances. However, managing reservations and ticketing for a complex railway network can be a challenging task. Hence, the development of a Railway Reservation System is crucial to streamline the booking process and enhance the overall passenger experience.

OBJECTIVE:

The primary objective of our project is to design and implement a user-friendly Railway Reservation System that automates the process of booking tickets, managing reservations, and providing necessary information to passengers. This system aims to simplify the complexities involved in railway ticketing while ensuring reliability, security, and efficiency.

FEATURES:

Admin Login: Admin can login in their existing account that are given by the software in inbuilt function with securely access in the reservation system.

Train Search: Passengers can search for trains based on various criteria such as source and destination.

Seat Availability: The system displays seat availability for selected trains according to user in their desired coaches.

Ticket Booking: Users can book tickets for desired journeys, specifying the number of passengers and their details.

Ticket Cancellation: Passengers can cancel their booked tickets, and refunds are processed based on cancellation policies.

Admin Panel: An admin panel allows administrators to manage train schedules, seat availability and system configurations.

TECHNOLOGY USED:

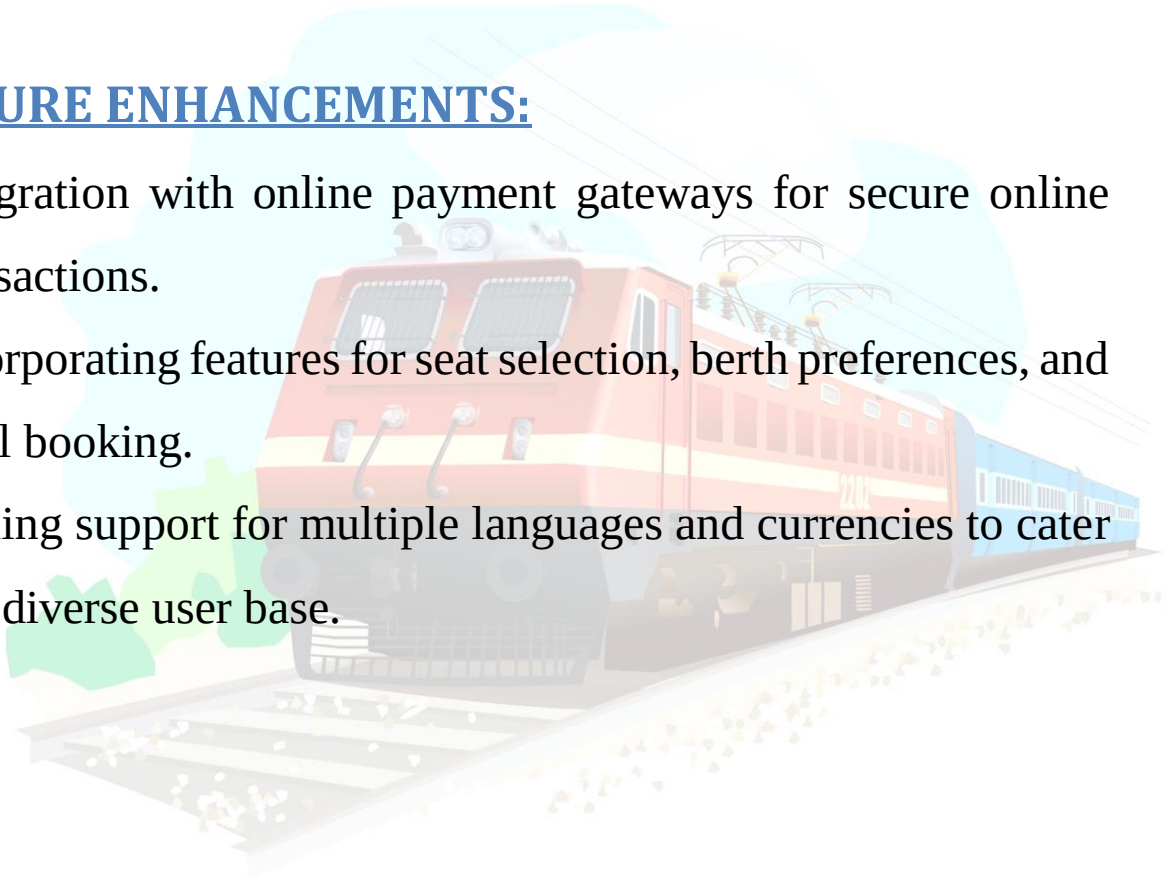
Programming Language: C++

Development Environment: Visual Studio Code

Version Control: Git for version control and collaboration among team members.

FUTURE ENHANCEMENTS:

- ✓ Integration with online payment gateways for secure online transactions.
- ✓ Incorporating features for seat selection, berth preferences, and meal booking.
- ✓ Adding support for multiple languages and currencies to cater to a diverse user base.



HEADER FILES USED

This C++ project uses several header files:

<iostream>: This header file is used for input-output operations in C++. It provides functionality for reading input from the standard input stream (keyboard) and writing output to the standard output stream (console). It is included to handle input and output operations such as displaying messages to the user and reading user input.

<fstream>: This header file is used for file input-output operations in C++. It provides functionality for reading from and writing to files. It is included in the program to handle file operations such as reading from and writing to text files like "Train_schedule.txt" and "Print_ticket.txt".

<sstream>: This header file is used for string stream operations in C++. It provides functionality for reading from and writing to string-based streams. It is included in the program to handle string stream operations, such as parsing strings obtained from file input.

<stdlib.h> and <cstdlib>: These header files are used in C and C++ programs for standard library functions, including memory allocation, random number generation, string conversion, and others. In this program, they are included for functions such as srand() and rand() for generating random numbers.

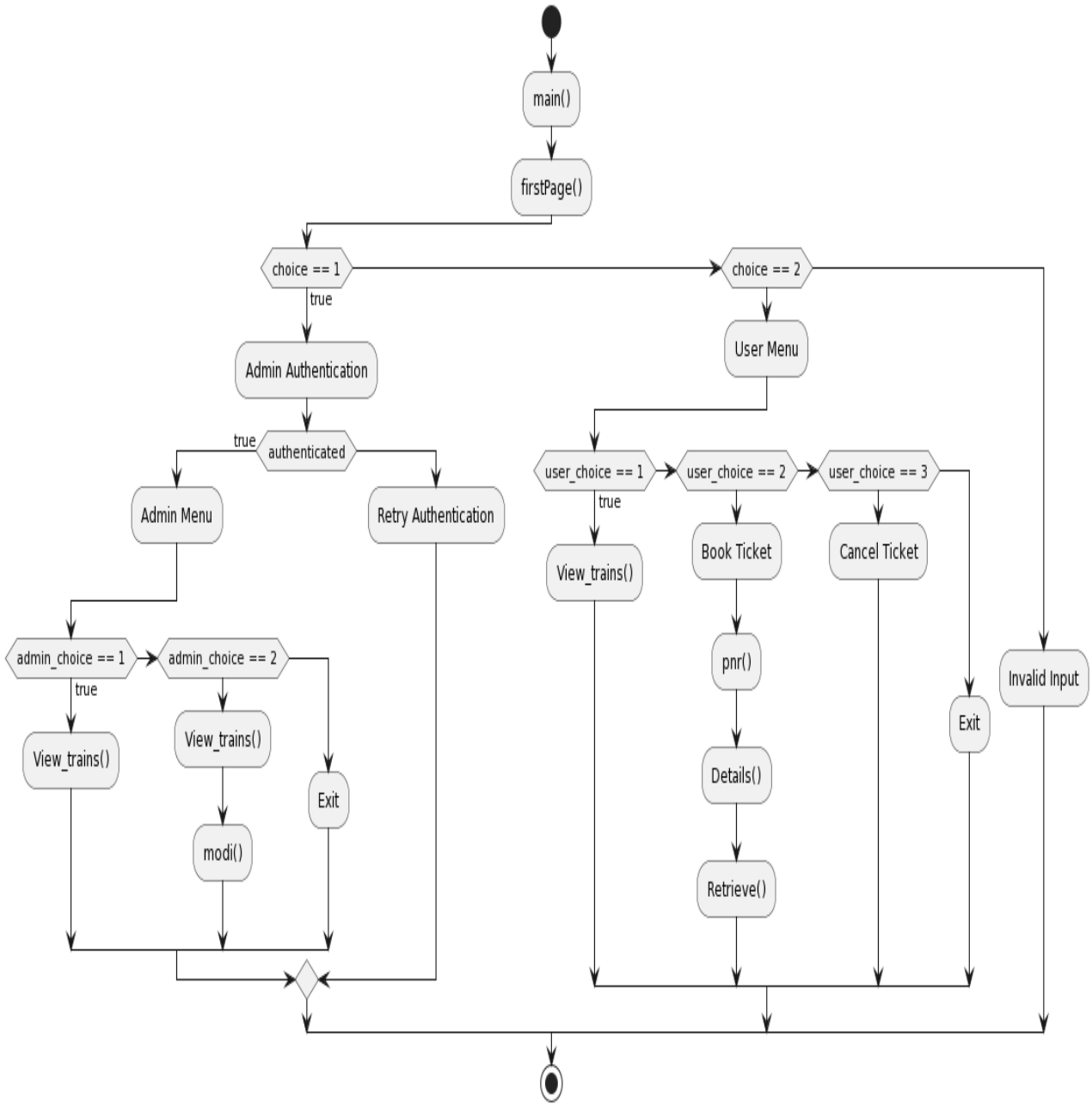
<ctime>: This header file is used for date and time functions in C++. It provides functionality for working with date and time values, including functions for obtaining the current system time. In this program, it is included for functions such as srand(time(0)) for seeding the random number generator based on the current system time.

<string.h>: This header file is used for string manipulation functions in C and C++. However, in C++, it is more common to use <string> instead. In this program, it might have been included inadvertently, as it is not used directly, and the functionality related to string manipulation is handled using the <string> header.

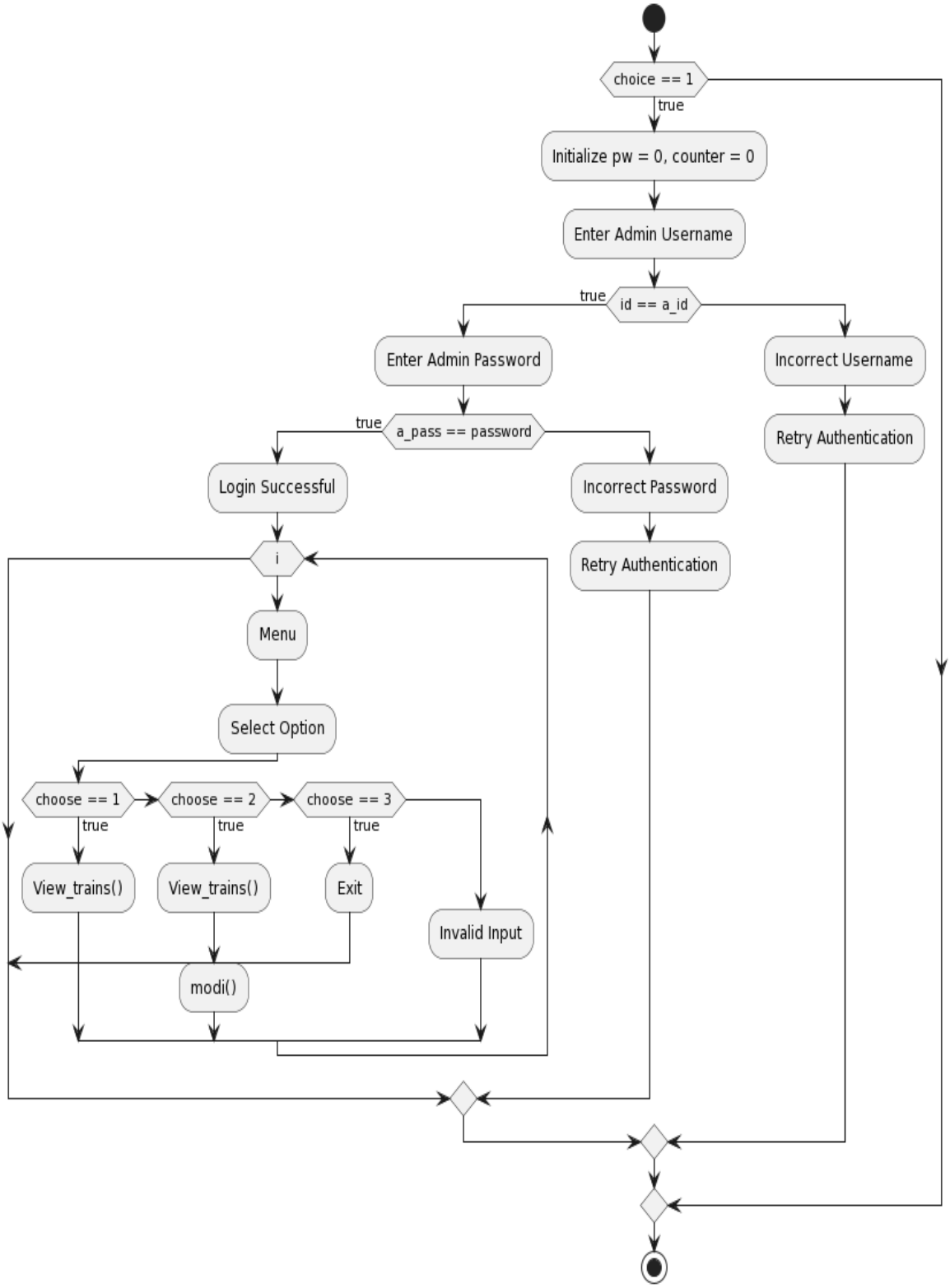
These header files are included as part of the standard C++ library and provide essential functionality required for various operations in the program, such as handling input-output, file operations, string manipulation, random number generation, and date-time operations. They are included as public because they are necessary for the proper functioning of the program and provide essential features and functionalities required by the program.

FLOW CHARTS

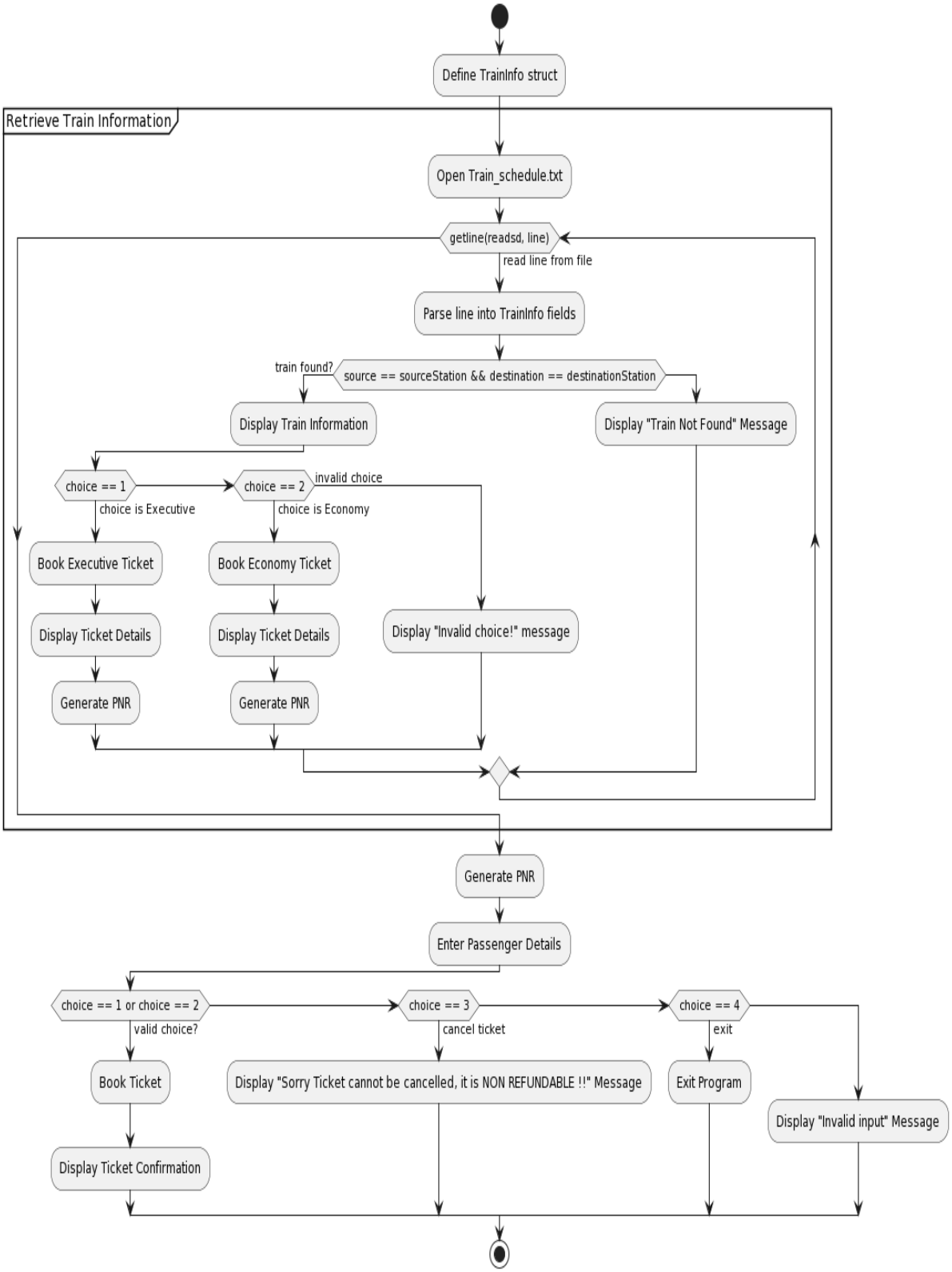
1. Deployment Diagram



2. Admin Mode


choice == 1
true
Initialize pw = 0, counter = 0
Enter Admin Username
true
id == a_id
Enter Admin Password
Incorrect Username
true
a_pass == password
Retry Authentication
Login Successful
Incorrect Password
Retry Authentication
i
Menu
Select Option
choose == 1
choose == 2
choose == 3
true
true
true
View_trains()
View_trains()
Exit
Invalid Input
modi()

3. Booking Ticket



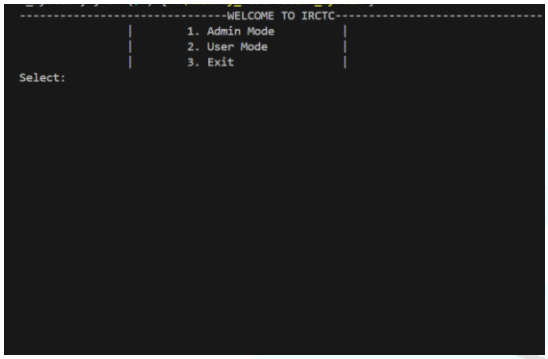
SOURCE CODE

Github Link:

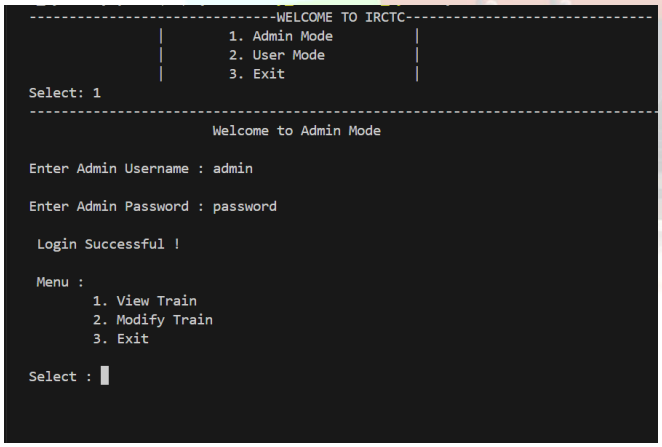
https://github.com/Shwetabhpatel/Railway-Reservation-system

OUTPUT

Welcome Page :



Admin Mode:



View Train:

```
Train No    Train name              Source      Destination     Departure Time    Arrival Time    Distance

101210      Shatabdi_Express        Surat       Mumbai          11:00_AM          11:20_PM        400
101310      Vande_Bharat_Express    Bhopal      Rewa            8:00_PM           4:30_AM         600
101410      Rajdhani_Express        Delhi       Kolkata         1:30_PM           3:00_AM         800
101511      Malwa_Express           Indore      Jammutavi       12:30_PM          9:30_AM         700
101616      Chennai_Express         Chennai     Goa             9:00_AM           10:00_Am        1200
103435      Narmada_Express         Indore      Jabalpur        5:00_PM           4:00_AM         650
```

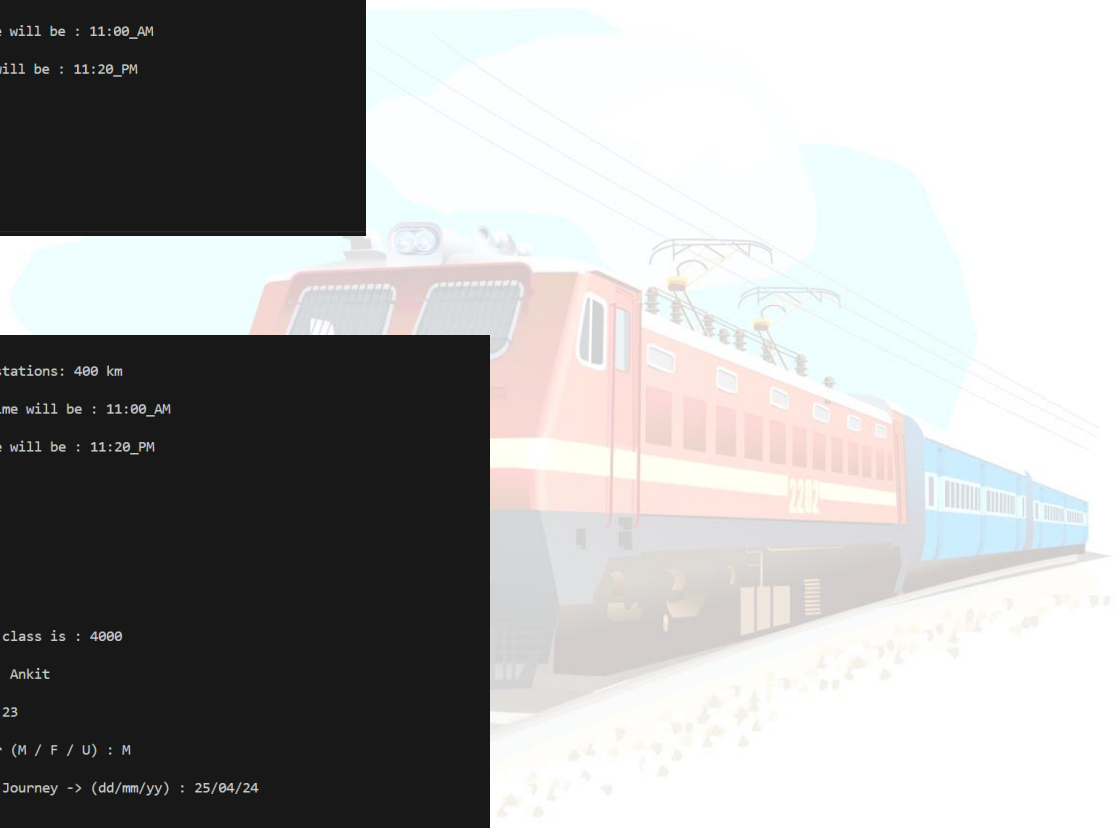
```
Distance    Executive Coach   Executive Fare    Economy Coach    Economy Fare

400         Available         4000              Available        2000
600         Available         6000              Available        3000
800         Available         8000              Available        4000
700         Available         7000              Available        3500
1200        Available         12000             Available        6000
650         Available         6500              Available        3250
```

User Mode:

```
------------------------------WELCOME TO IRCTC------------------------------
                |       1. Admin Mode          |
                |       2. User Mode           |
                |       3. Exit                |
Select: 2

--------------------------------------------------------------------------------
                    WELCOME TO USER MODE

 Menu :

        1. View Trains
        2. Book Ticket
        3. View Ticket
        4. Cancel Ticket
        5. Exit

Select:
```

Booking of a ticket :

```
 Menu :

        1. View Trains
        2. Book Ticket
        3. View Ticket
        4. Cancel Ticket
        5. Exit

Select: 2
Enter source station : Surat
Enter destination station : Mumbai

Train No : 101210

Train Name : Shatabdi_Express

Your Boarding Station is : Surat

Your Destination is : Mumbai

Distance between stations: 400 km

Train Departure Time will be : 11:00_AM

Train Arrival Time will be : 11:20_PM

Select Coach:

1. Executive

2. Economy

Select :
```



```
 Distance between stations: 400 km

 Train Departure Time will be : 11:00_AM

 Train Arrival Time will be : 11:20_PM

 Select Coach:

 1. Executive

 2. Economy

 Select : 1

 Fare of Executive class is : 4000

 Passenger's Name : Ankit

 Passenger's Age : 23

 Passenger's Gender (M / F / U) : M

 Enter the Date of Journey -> (dd/mm/yy) : 25/04/24


  Your PNR number is : 1100210294

  Your ticket has been booked. Thank you for using, Happy Journey !

  Visit again

 Do you want to book another ticket? (y/n):
```

View Booked Ticket:

```
Train No : 101210

Train Name : Shatabdi_Express

Your Boarding Station is : Surat

Your Destination is : Mumbai

Distance between stations: 400 km

Train Departure Time will be : 11:00_AM

Train Arrival Time will be : 11:20_PM

Name : Ankit Age : 23 Gender : M                Date of journey : 25/04/24 Your PNR number is : 1100210294
```

Cancel Ticket:

```
--------------------------------------------------------------------------------
                    WELCOME TO USER MODE

 Menu :

        1. View Trains
        2. Book Ticket
        3. View Ticket
        4. Cancel Ticket
        5. Exit

Select: 4

Sorry Ticket cannot be cancelled, it is NON REFUNDABLE !!

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                    WELCOME TO USER MODE

 Menu :

        1. View Trains
        2. Book Ticket
        3. View Ticket
        4. Cancel Ticket
        5. Exit

Select:
```

CONCLUSION

The Railway Reservation System will revolutionize the way passenger book tickets and travel by train. By leveraging modern technologies and design principles, we aim to create a robust and user-friendly platform that enhances the efficiency and convenience of railway ticketing. Through this project, we envision contributing to the advancement of railway transportation systems and improving the overall travel experience for passengers.