RAILWAY RESERVATION SYSTEM

GROUP MEMBERS:

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PROJECT DESCRIPTION

- We will be implementing the ability to reserve and modify railway tickets.

We will use

- Linked List Operations
- Searching Algorithm
- Sorting Algorithms

To modify and print the data according to user's needs. This project is simple to use and very user-friendly. It has minimal hardware and software requirements, and no training is needed for using it.

Project Scope

The scope of this project is to help a user reserve and modify their tickets without any hassle. This program will allow a user to reserve a ticket, edit their personal details, ask for a refund or cancel booking and view the reserved ticket. An Admin Panel will allow admins to View all the booked tickets, Add or Remove scheduled trains and Modify/Cancel a Ticket on User Request.

We have 2 modules in this scenario, where a user or the passenger, has their own options while admin has to login separately before having their own options. It works from the entering of user details, to payment, to printing of tickets and other operations are available as well.

Modules in Project

This program has 2 Modules:

User Module: This module is for user or the passenger to book their ticket, make payments for ticket directly, modify their ticket, ask for a refund, and print/generate their ticket.

Admin Module: This module allows admins to View all the booked tickets, Add or Remove Trains and Modify a ticket or remove it on a passenger's request.

DATA STRUCTURES USED

- Linked List Operations are used as they have no fixed size and values can be added constantly and data can be collected or called without affecting earlier or later values.We have mainly used linked list as insertion(reserving a ticket) and deletion (cancelling a tickets) are more is efficient.

- Searching algorithm is used to search a train and its corresponding values

- Sorting Algorithm to used to sort the data about train and tickets

METHODS USED:

- Admin() – for accessing and using Admin Portal
- Payment()-Regarding payment of tickets
- Trainsort()-Sorting Train According to time
- SeatChoose()-Choosing of seat while reserving
- iniTrain()-Available Trains
- trainFill()-For adding new train
- trainPrice()-For creating different class type tickets(economy, first class, business class)
- Reserveticket()-For reservation of ticket
- Viewticket()-For viewing Booked tickets
- Display()-For displaying all info
- Editdetails()-Editing info
- addTrains()-Adding new trains in admin portal

Project Features:

User Module:

Reserve a Ticket: Allows user to Reserve Tickets for available trains on desirable dates. We will be using linked list operations to insert ticket details. –

Choose Payment Methods & Pay: Allows user to pay for the ticket using Credit Card Details. We will use simply hard-coded Input/output for this feature as there is no other way to check Credit Card details i.e. No Databases used.

Cancel/Refund Booked Tickets: Allows user to Cancel and Refund your tickets. - We will be using linked list to delete ticket details. We will use searching algorithms to search and delete.

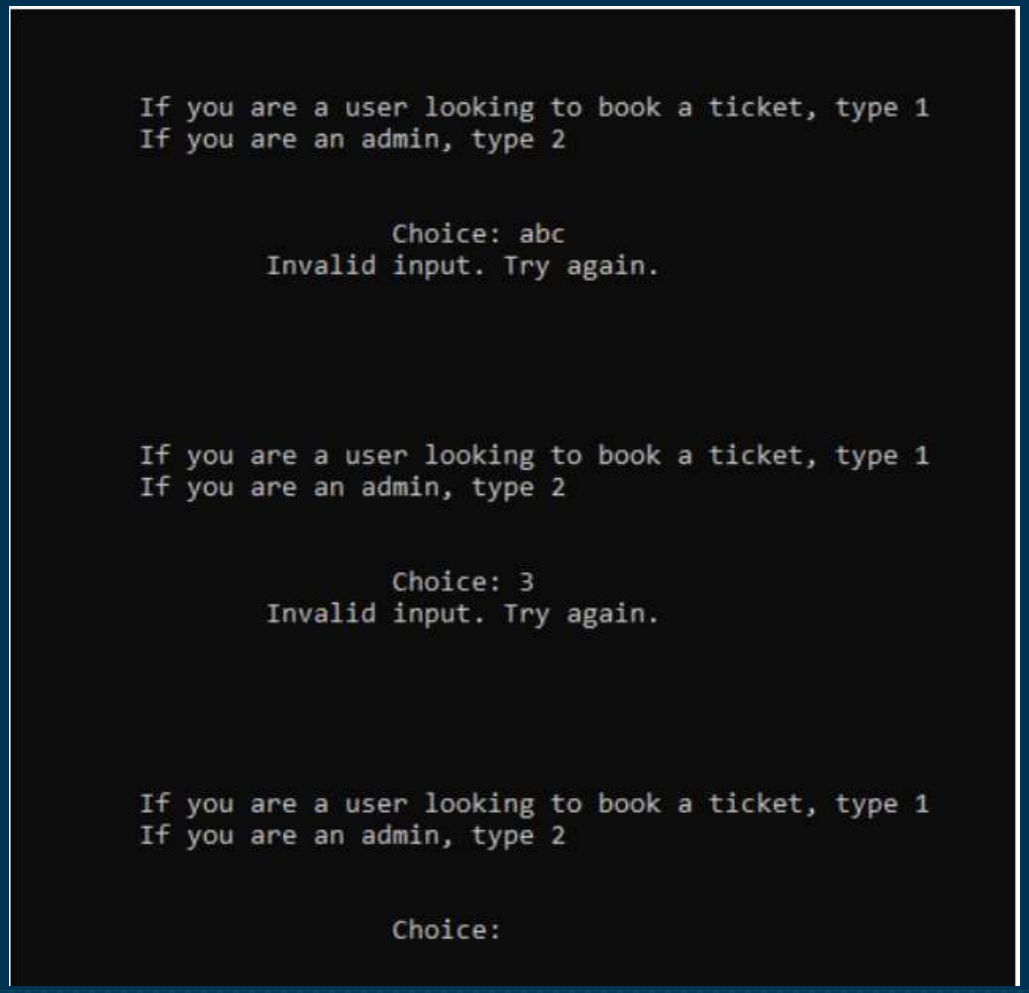
Edit Booked Tickets Personal Details: Allows user to Edit Personal Details from your Booked Ticket. We will use searching algorithms to search and edit. We will be using linked list operations to edit ticket details.

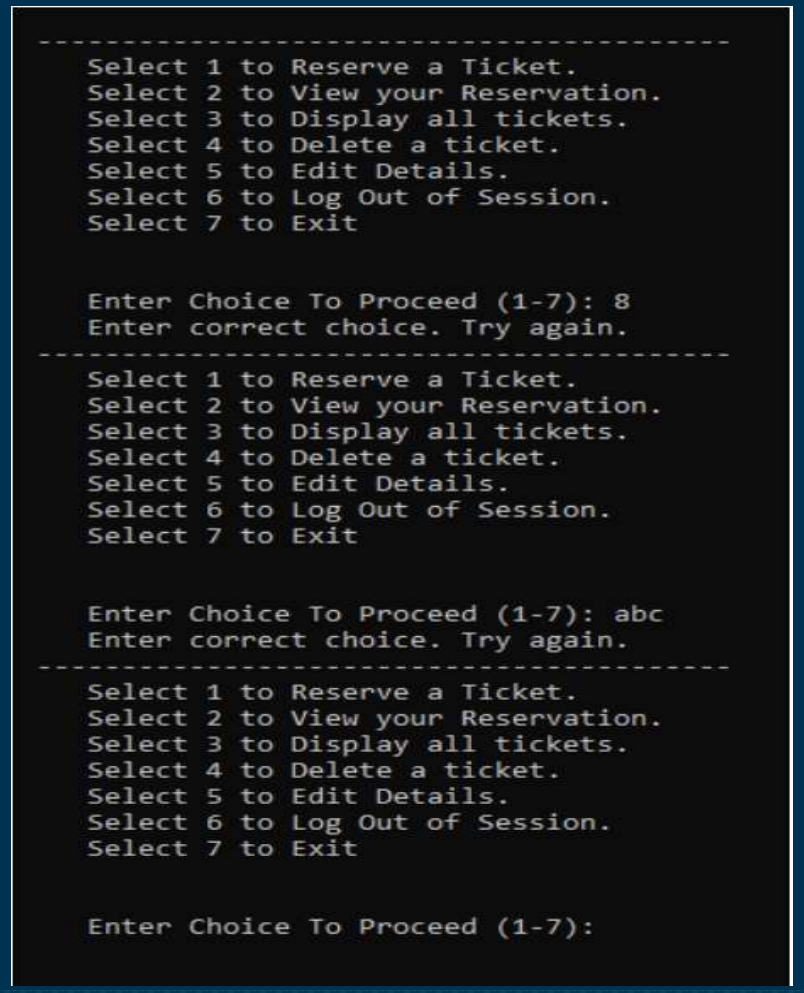
Print the Tickets: Prints on screen your ticket details for viewing and printing. - We will be using linked list operations to display ticket details. We will use searching algorithms to search and print

Admin Module:

- **View All Booked Tickets**: Allows Admin to View All Booked Tickets saved. We will be using linked list operations to display all tickets details.
- **Add or Remove Trains**: Add or Remove Available Trains from Database. We will be using linked list operations to display all trains details.
- **Modify Booked Tickets (based on User Requests)**: Tickets booked can be modified. We will be using linked list operations to edit ticket details.

SCREENSHOT FOR INVALID INPUT CHECKING:





SCREENSHOT FOR INPUT CHECKING:

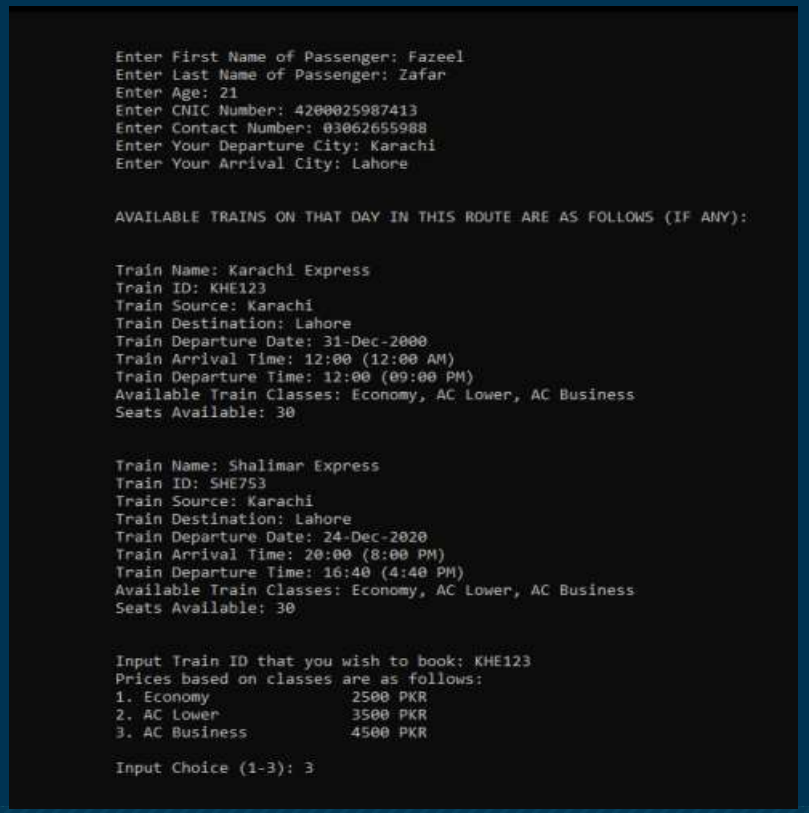
```
Enter Your Departure City: Karachi
Enter Your Arrival City: Lahore


AVAILABLE TRAINS ON THAT DAY IN THIS ROUTE ARE AS FOLLOWS (IF ANY):


Train Name: Karachi Express
Train ID: KHE123
Train Source: Karachi
Train Destination: Lahore
Train Departure Date: 31-Dec-2000
Train Arrival Time: 12:00 (12:00 AM)
Train Departure Time: 12:00 (09:00 PM)
Available Train Classes: Economy, AC Lower, AC Business
Seats Available: 30


Train Name: Shalimar Express
Train ID: SHE753
Train Source: Karachi
Train Destination: Lahore
Train Departure Date: 24-Dec-2020
Train Arrival Time: 20:00 (8:00 PM)
Train Departure Time: 16:40 (4:40 PM)
Available Train Classes: Economy, AC Lower, AC Business
Seats Available: 30


Input Train ID that you wish to book: ABC123
Input correct train ID!
Input Train ID that you wish to book: SHE753
Prices based on classes are as follows:
1. Economy              2500 PKR
2. AC Lower             3500 PKR
3. AC Business          4500 PKR

Input Choice (1-3):
```

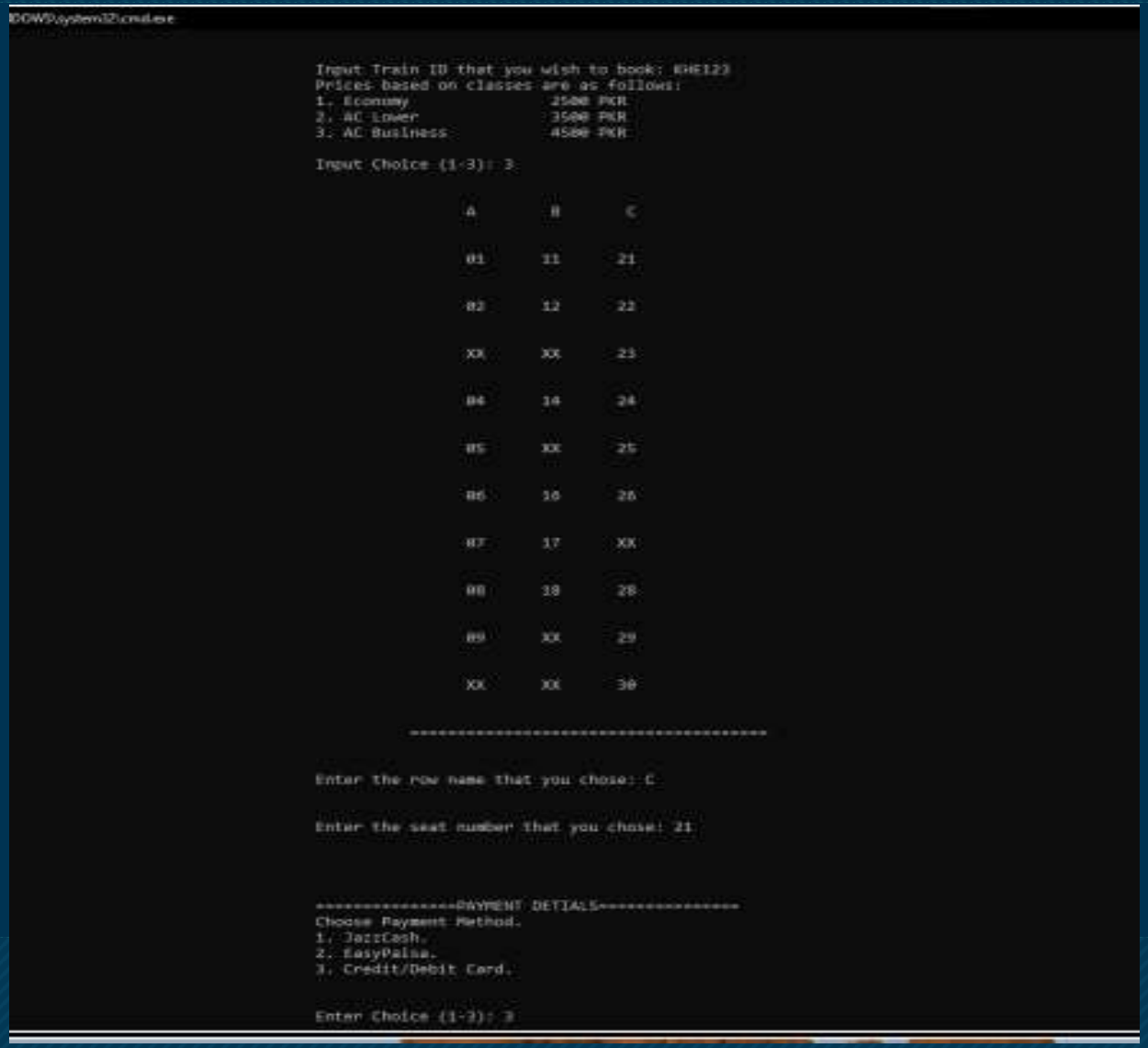
```
Input Choice (1-3): 3

                A       B       C

                XX      XX      21

                XX      XX      22

                XX      XX      23

                XX      XX      24

                XX      15      25

                XX      16      26

                XX      17      27

                XX      18      28

                XX      19      XX

                XX      20      30

        ------------------------------------

Enter the row name that you chose: D

Invalid row, please try again.
Enter the row name that you chose: A

Enter the seat number that you chose: 31

Seat number not found, please try again.
```

SAMPLE SCREEN SHOTS OF SYSTEM:

USER PANEL:

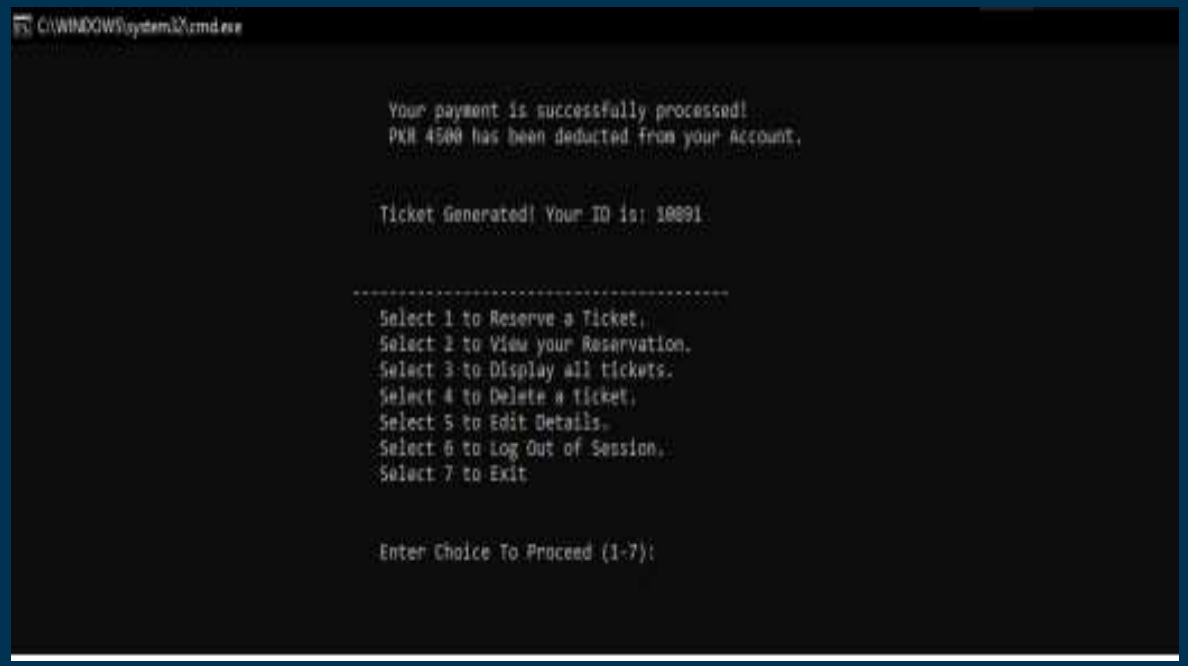
RESERVE TICKET:



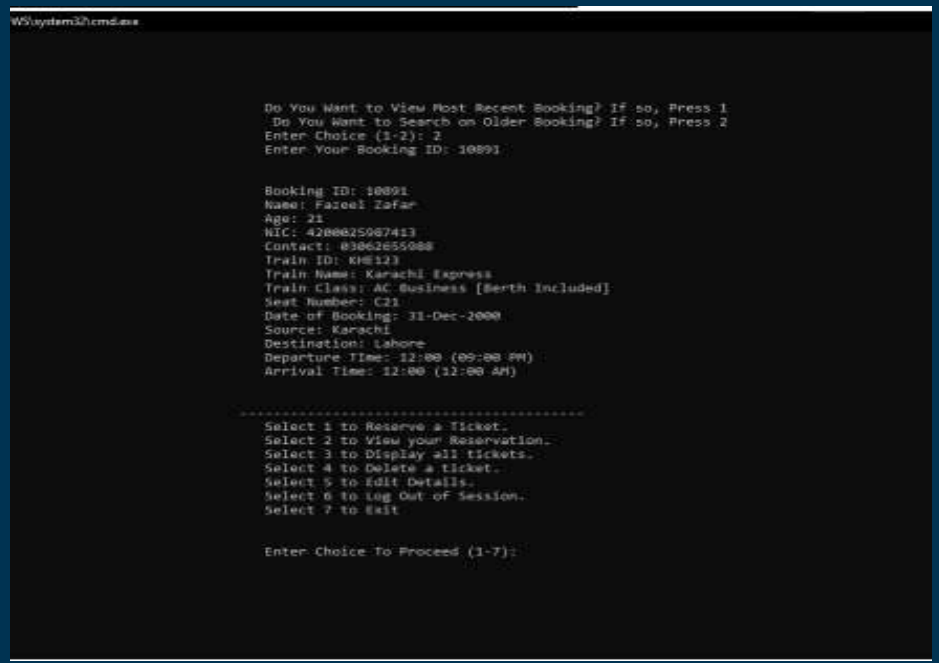



```
----------------------------------------
   Select 1 to Reserve a Ticket.
   Select 2 to View your Reservation.
   Select 3 to Display all tickets.
   Select 4 to Delete a ticket.
   Select 5 to Edit Details.
   Select 6 to Log Out of Session.
   Select 7 to Exit


   Enter Choice To Proceed (1-7): 8
   Enter correct choice. Try again.
----------------------------------------
   Select 1 to Reserve a Ticket.
   Select 2 to View your Reservation.
   Select 3 to Display all tickets.
   Select 4 to Delete a ticket.
   Select 5 to Edit Details.
   Select 6 to Log Out of Session.
   Select 7 to Exit


   Enter Choice To Proceed (1-7): abc
   Enter correct choice. Try again.
----------------------------------------
   Select 1 to Reserve a Ticket.
   Select 2 to View your Reservation.
   Select 3 to Display all tickets.
   Select 4 to Delete a ticket.
   Select 5 to Edit Details.
   Select 6 to Log Out of Session.
   Select 7 to Exit


   Enter Choice To Proceed (1-7):
```

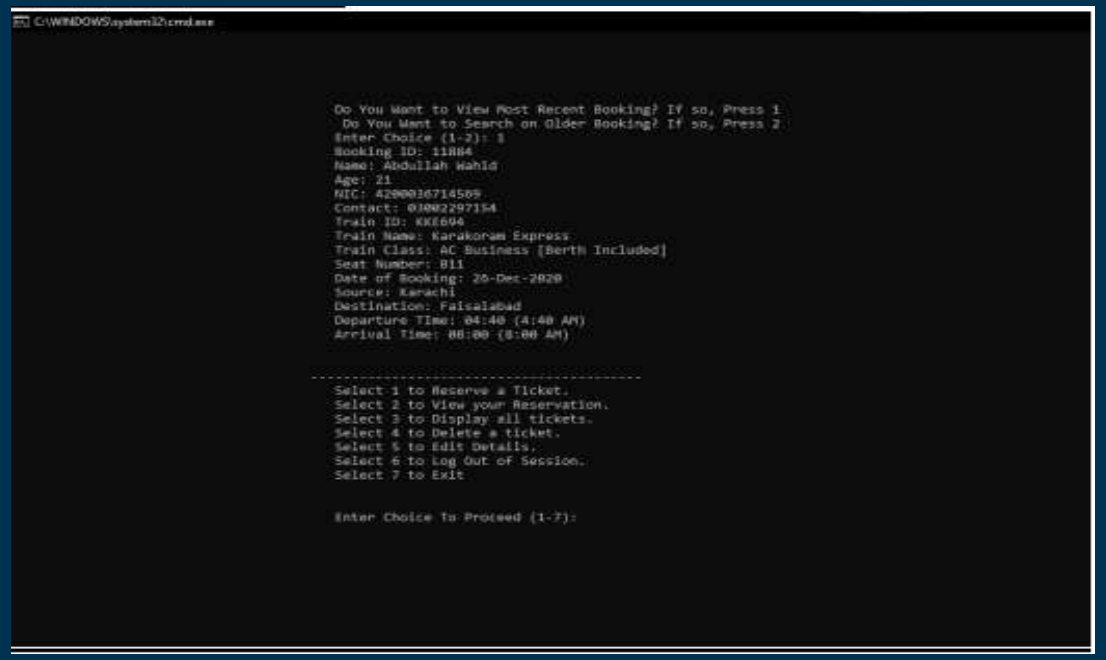
TICKET GENERATED



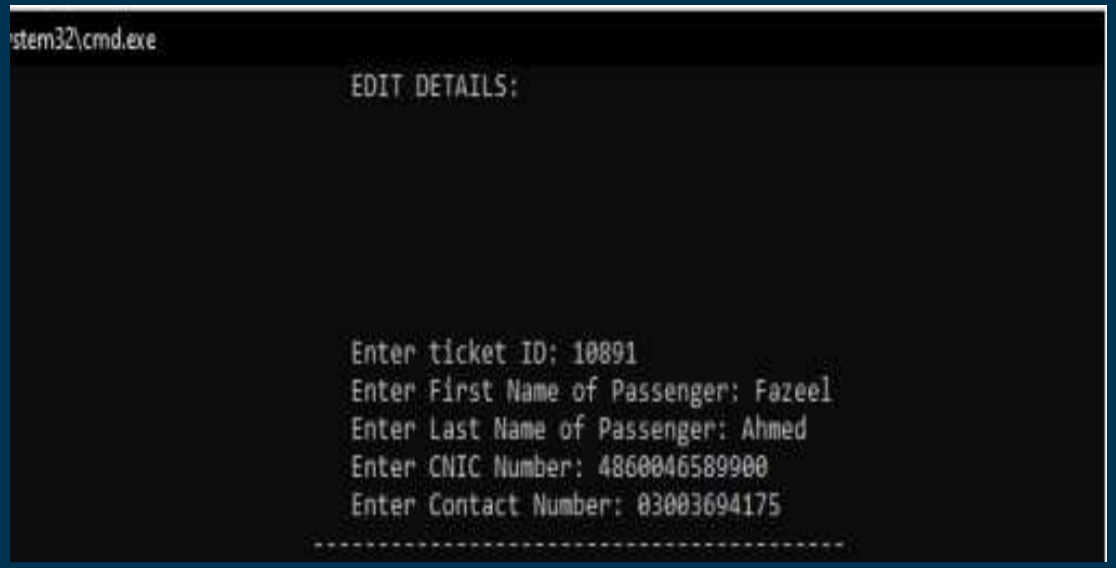
VIEW TICKET THROUGH SEARCHING



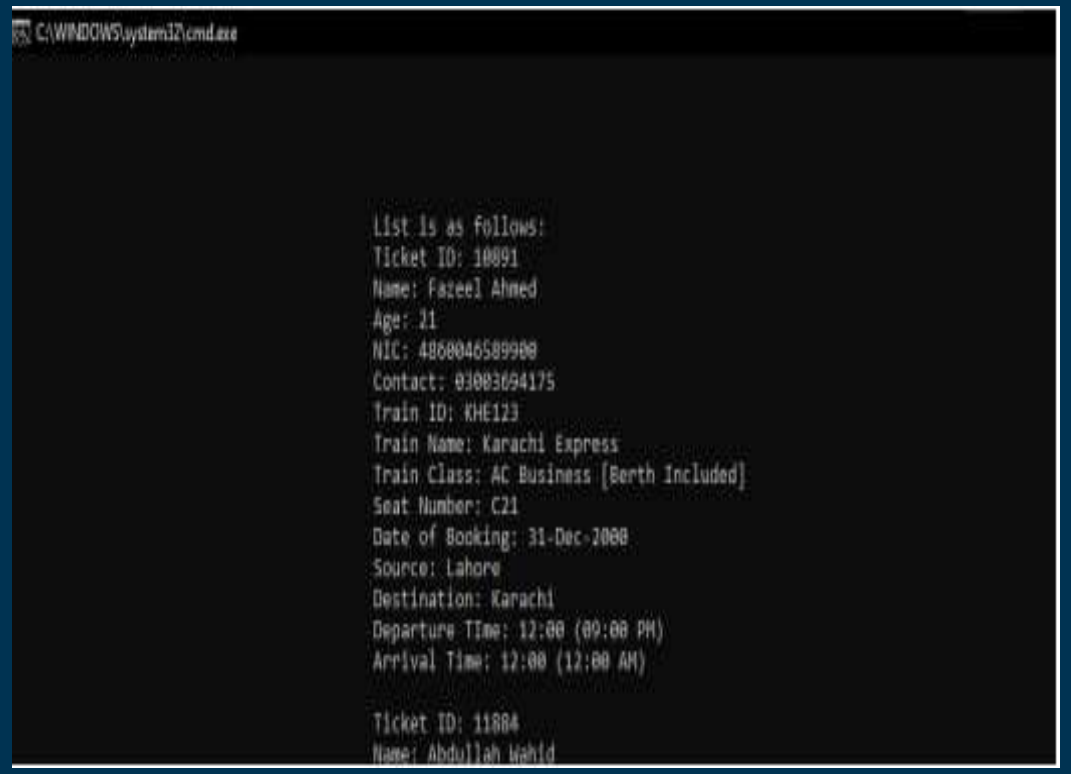
VIEW RECENT TICKET



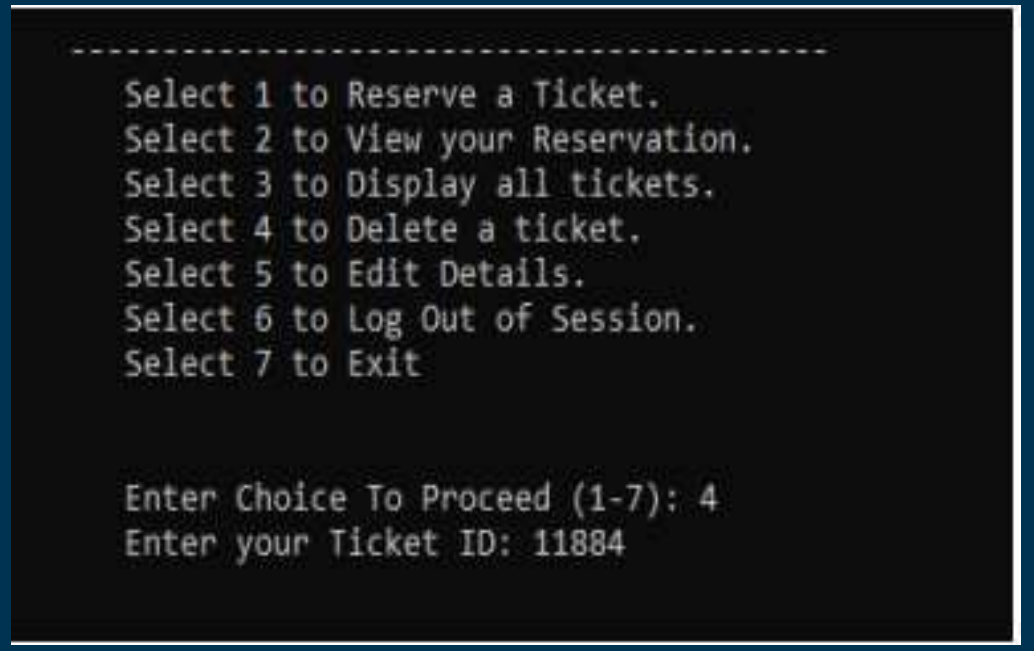
EDIT DETAILS



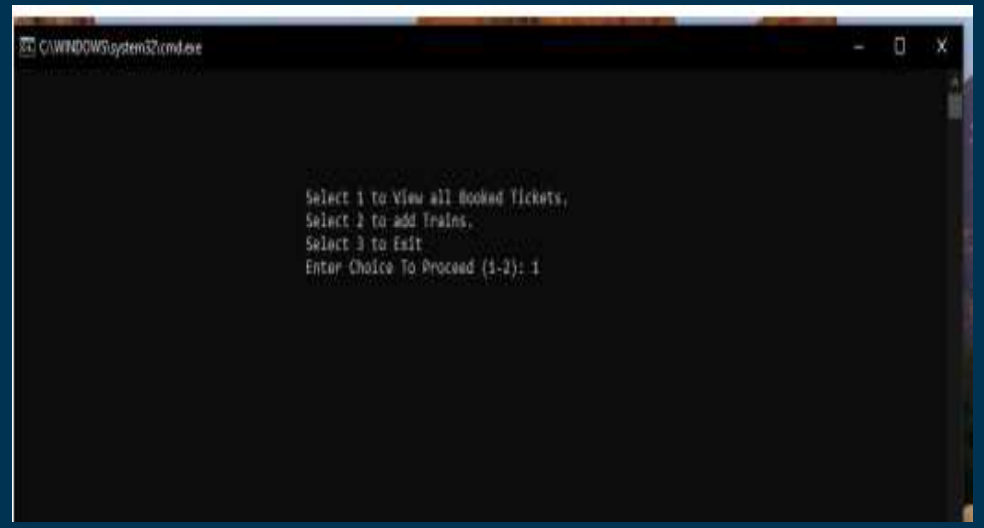
SEARCH AFTER EDITING

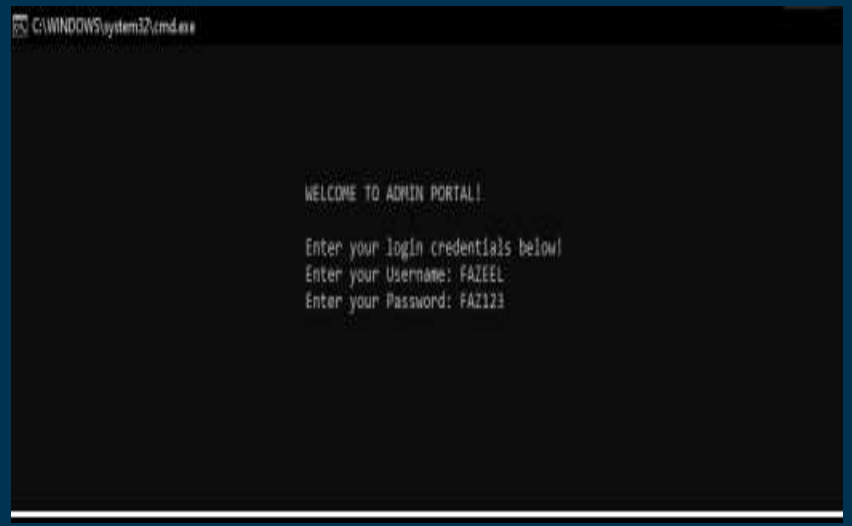


DELETION

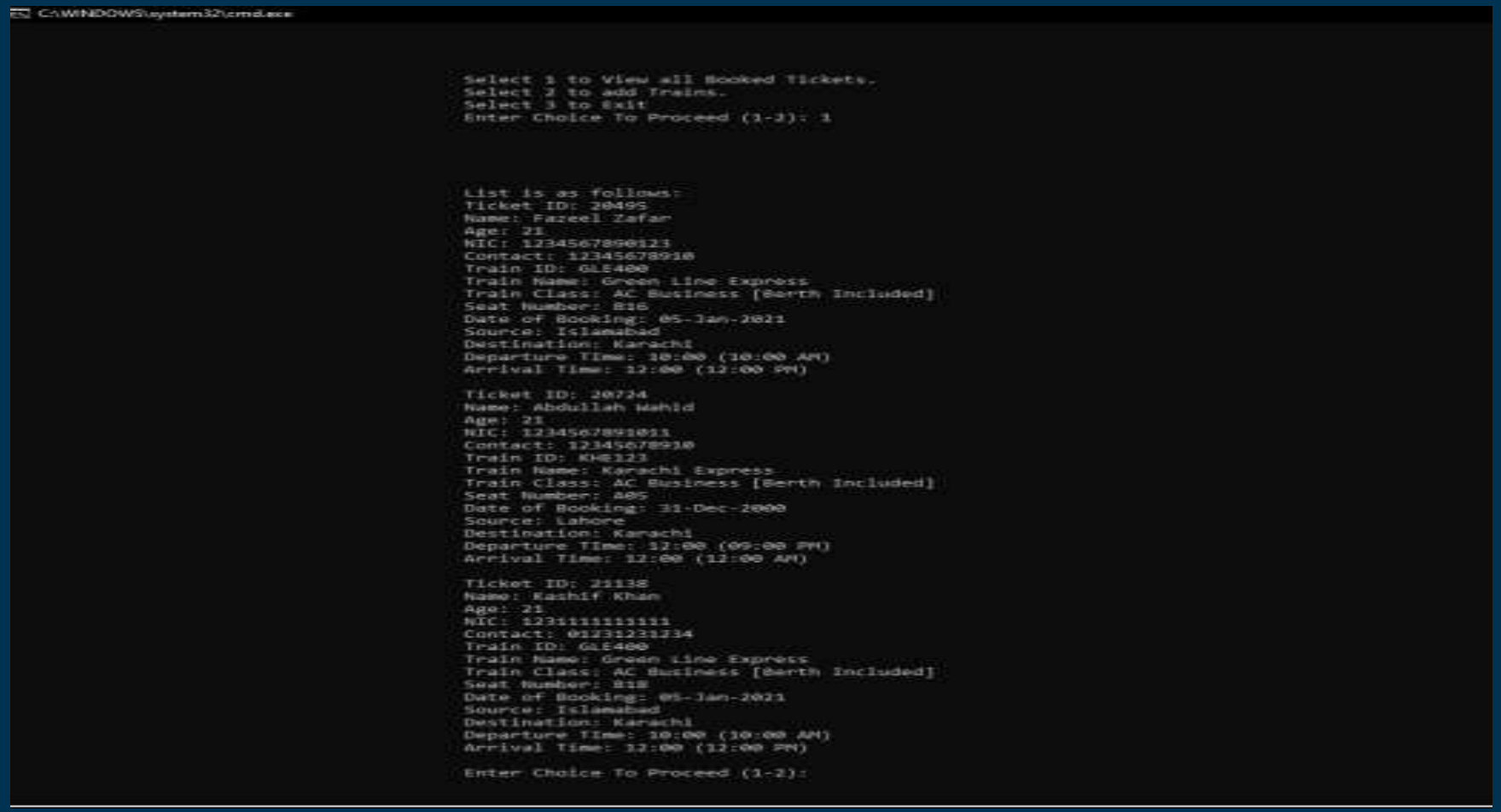


ADMIN:


C:\WINDOWS\system32\cmd.exe
Select 1 to View all Booked Tickets.
Select 2 to add Trains.
Select 3 to Exit
Enter Choice To Proceed (1-2): 1


C:\WINDOWS\system32\cmd.exe
WELCOME TO ADMIN PORTAL!
Enter your login credentials below!
Enter your Username: FAZEEL
Enter your Password: FAZ123

VIEWING TICKETS AS ADMIN



AFTER ADDING THAT TRAIN:

```
Train Departure Time: 16:40 (4:40 PM)
Available Train Classes: Economy, AC Lower, AC Business
Seats Available: 30


Train Name: Sindhi Express
Train ID: SND773
Train Source: Karachi
Train Destination: Lahore
Train Departure Date: 12-Jan-2021
Train Arrival Time: 22:00 (10:00 PM)
Train Departure Time: 12:00 (12:00 AM)
Available Train Classes: Economy, AC Lower, AC Business
Seats Available: 30


Input Train ID that you wish to book:
```

CONTRIBUTION AND SOURCES

- UTKARSH-Cancelling and editing ticket details
- PAVAN TEJ-Admin modules and implementation of methods
- PRASHANTH- Admin module and errors ,PPT Presentation
- AARUSH-Payment Methods (Implementation of Methods),PPT Presentation
- KANISHK-Compilation Errors and Ticket Reservation

SOURCES-

- STACK OVERFLOW
- GEEKSForGEEKS
- Coursera
- Youtube Videos