Aim:

To develop a railway reservation system to computerize the process of ticket booking in the railways using C programming and data structures.

Problem Statement:

Problem:

- Railway Reservation System is not efficient.
- Train Database can't be managed properly.
- The Railway Reservation System is not accessible everywhere.

Solution:

- To computerize the railway reservation system.
- To computerize the database of the train.
- To program the railway reservation system using programming languages.

Key Functions of the project with explanation:

Admin Functions:

- add_trains();
  To add the details of the train to the program so that the user can select a train from the list of trains from which the ticket needs to be booked.

- delete_trains();
  To remove the details of the train from the program so that the user can avoid booking tickets in trains which is not available.

- disp_trains();
  To display all the details of the train available in the program so that the admin can know all the trains available in the program.

- backup_trains();
  To backup all the details of the train available in the program to the files so that the user can access the trains for booking.

- retrieve_trains();
  To retrieve all the details of the train available in the file to the program so that the details the train can be manipulated by the administrator.

User Functions:

- train_enquiry();

To know the details of the train available from a particular starting point to a particular ending point by the user so that user can know the train number of which the ticket needs to be booked .

- seat_available();
  To know the details of the number of seats available in a particular train at a particular date by the user so that user can know whether tickets can be booked in that particular date in a particular train.

- book_tickets();
  To reserve the tickets in a particular train on a particular date if the user wishes to travel on that particular instance.

- cancel_tickets();
  To cancel the reserved tickets in a particular train to a particular place by the user if the user has changed his/her plan to travel on that day.

- view_tickets();
  To view all the reserved tickets by a particular user to know the PNR number of the ticket if user wishes to cancel the tickets and to make user aware of the booked tickets.

Login Functions:

- admin_login();
  To login into the program as administrator to access all the functions which are available for the administrator which is mentioned above.

- user_login();
  To login into the program as end user so that the end user can access all the user functions which are available for the end user which is mentioned above.

- user_signup();
  To create an user account for the new end user by which the new user can login into the program as end user and access all the user functions which are available for the end user which is mentioned above.

Data Structures and their use in the project:

Data Structures used: Linked List.

Use in the project:

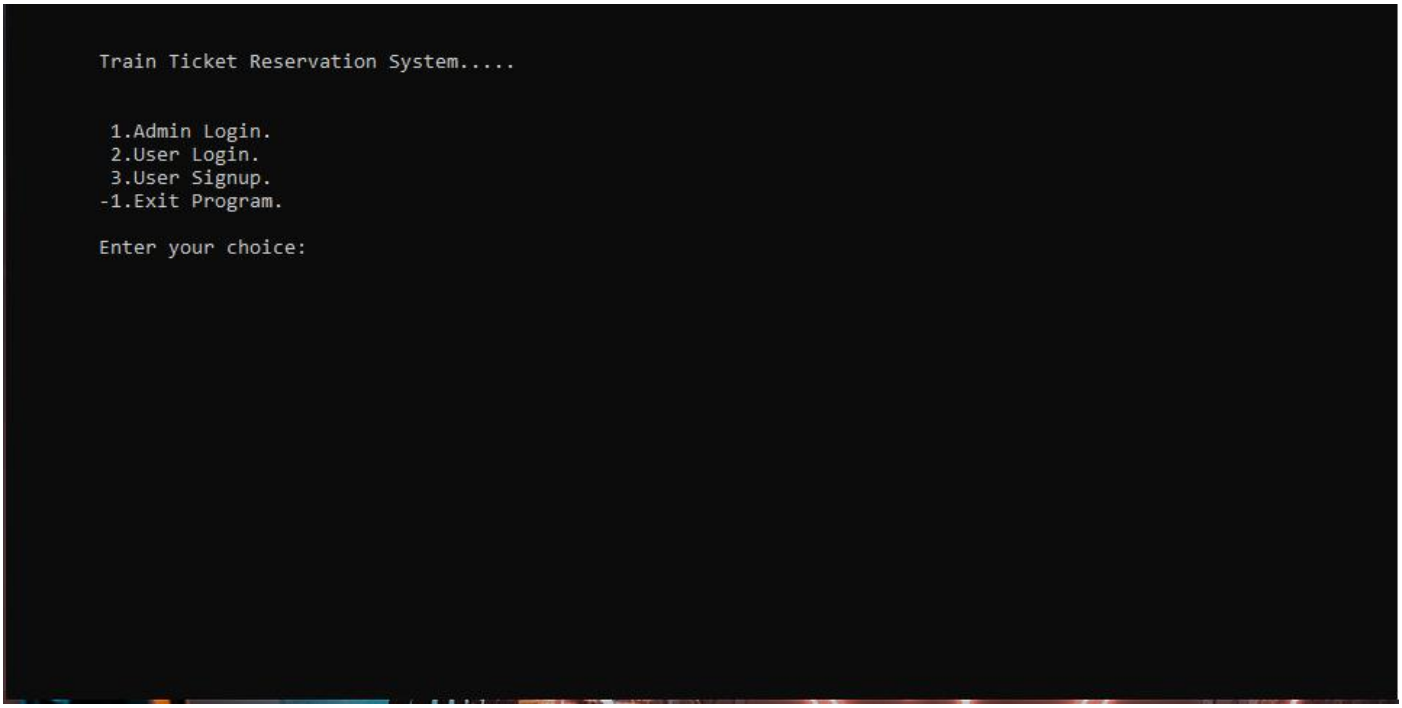
Linked list is used to store all the details of the trains as a linked list of structures which can be written and read from files using file handling. For all the operations performed in both the admin side and the user side, the details of the train is accessed and manipulated in a linked list.

Another linked list is used to store the train no and travel date to store all the tickets booked for a particular train on a particular date. All the user function access this linked list for smooth operations.

Another linked list which is also a nested linked list to the above linked list which stores the details of the passengers travelling in a train on a particular date along with the PNR number.

Output Screenshots:

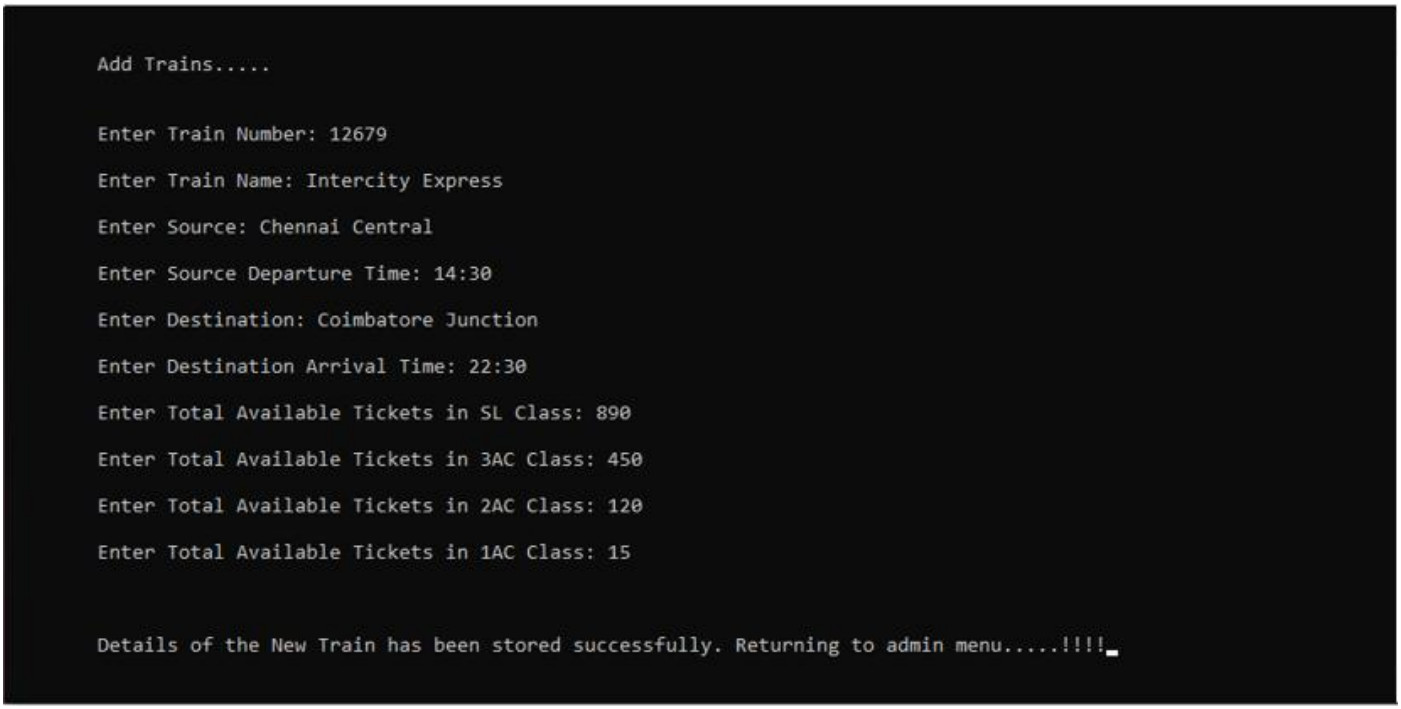
Home Page



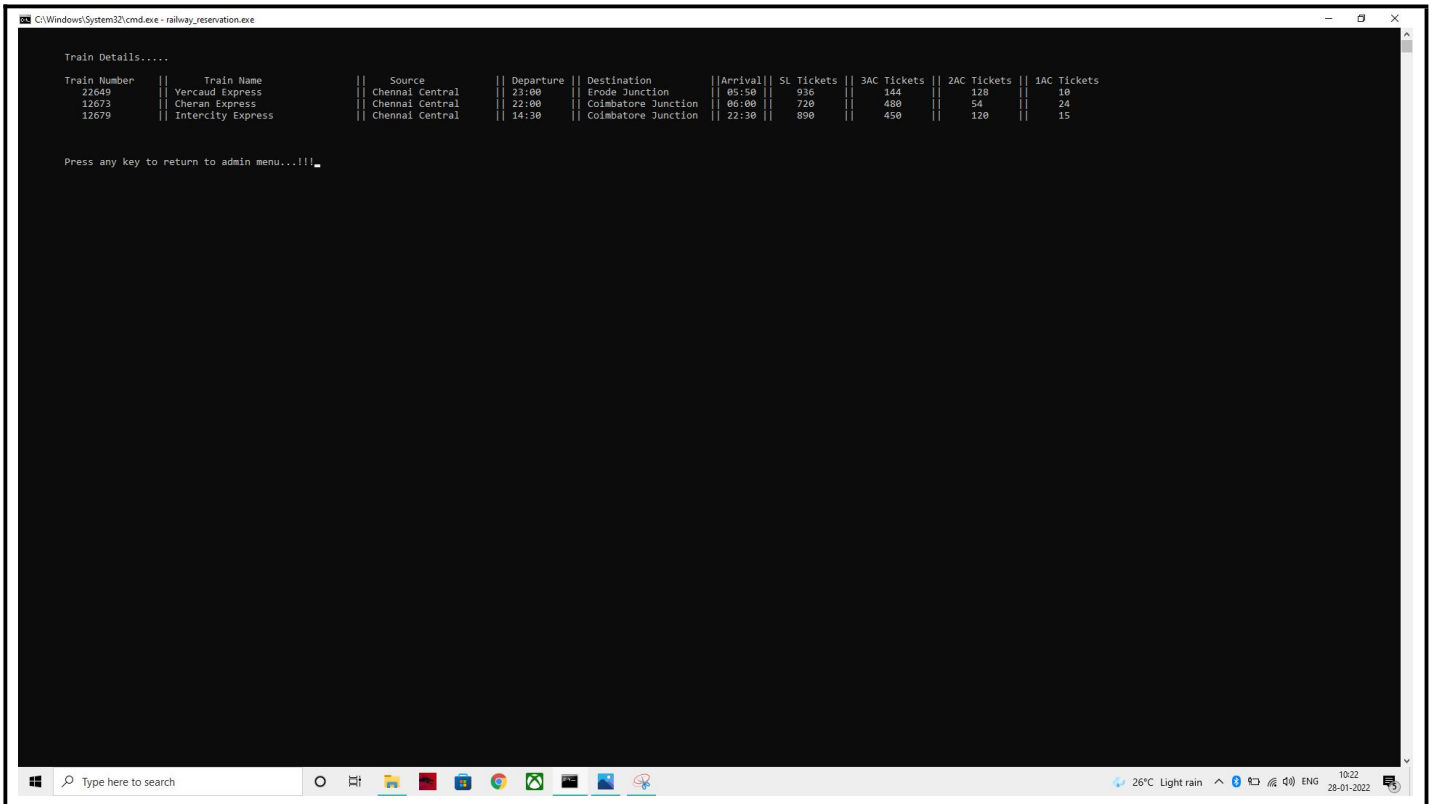
Admin Login

Admin Menu

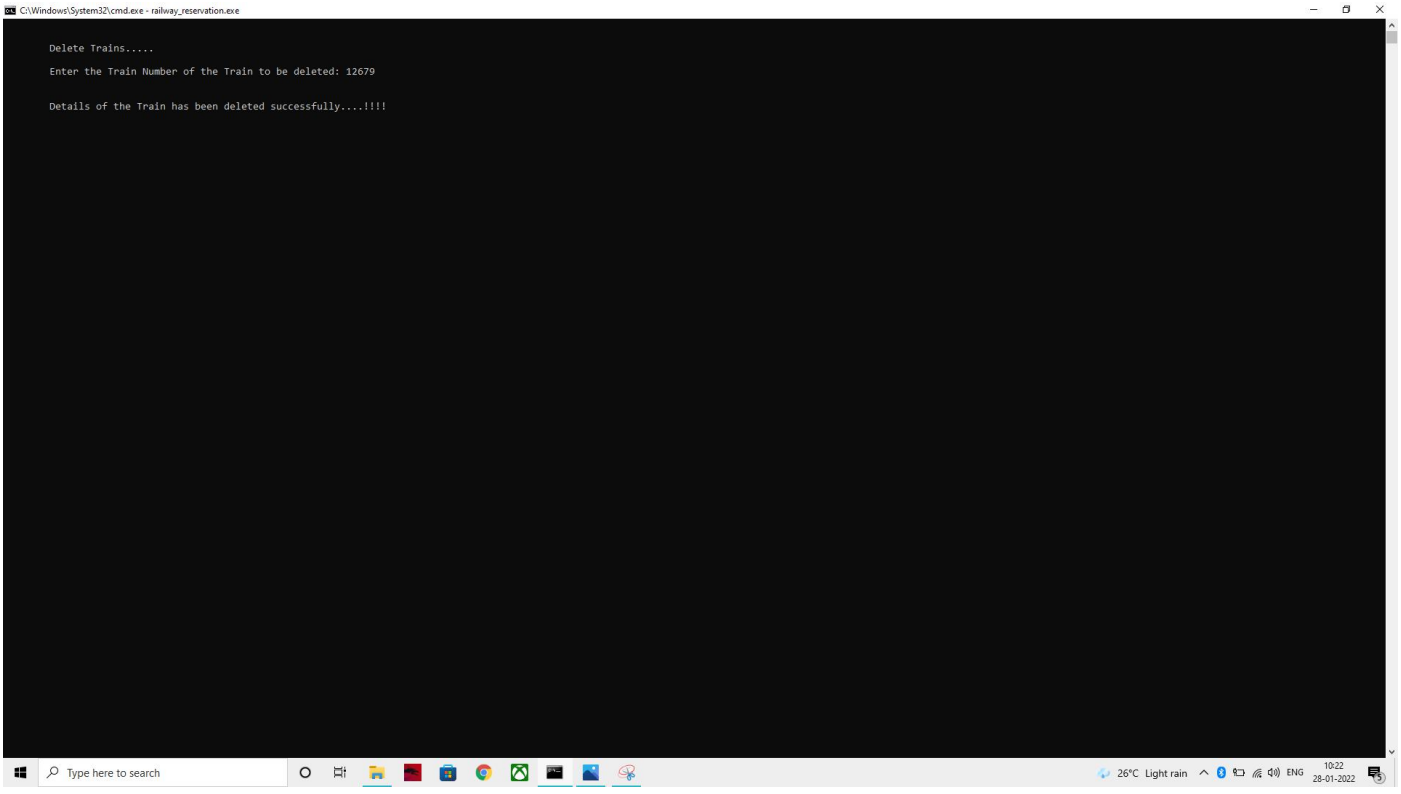
Add Trains



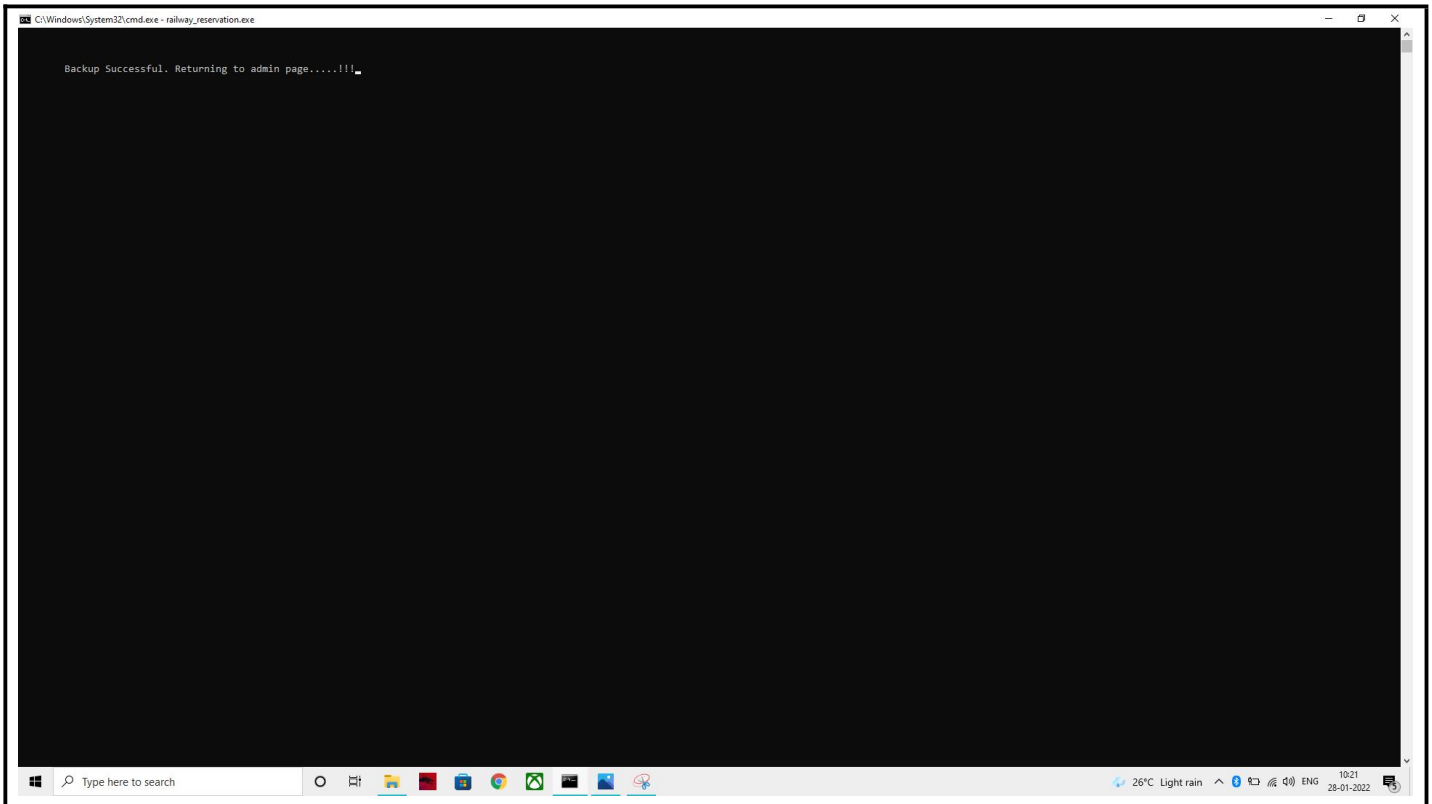
View Trains



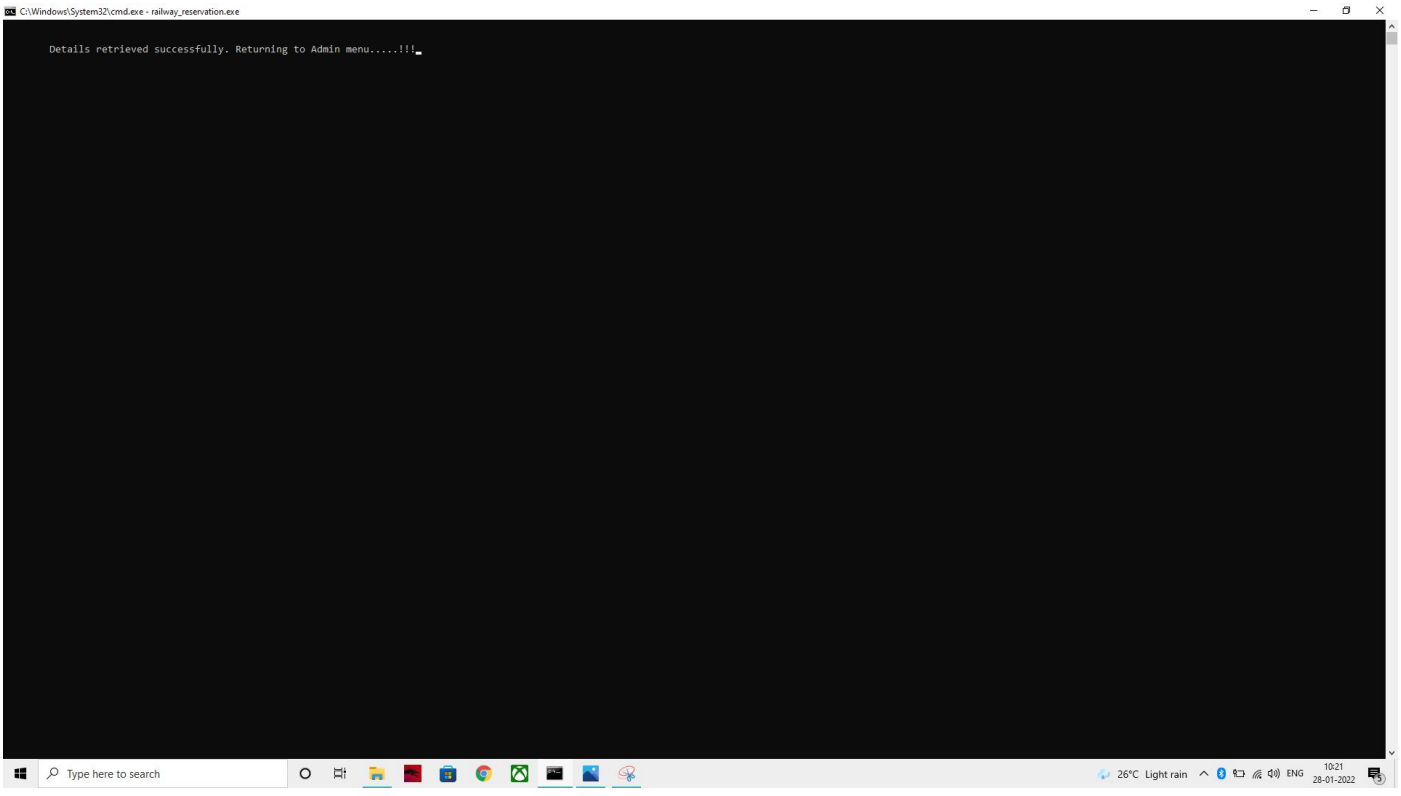
Delete Trains



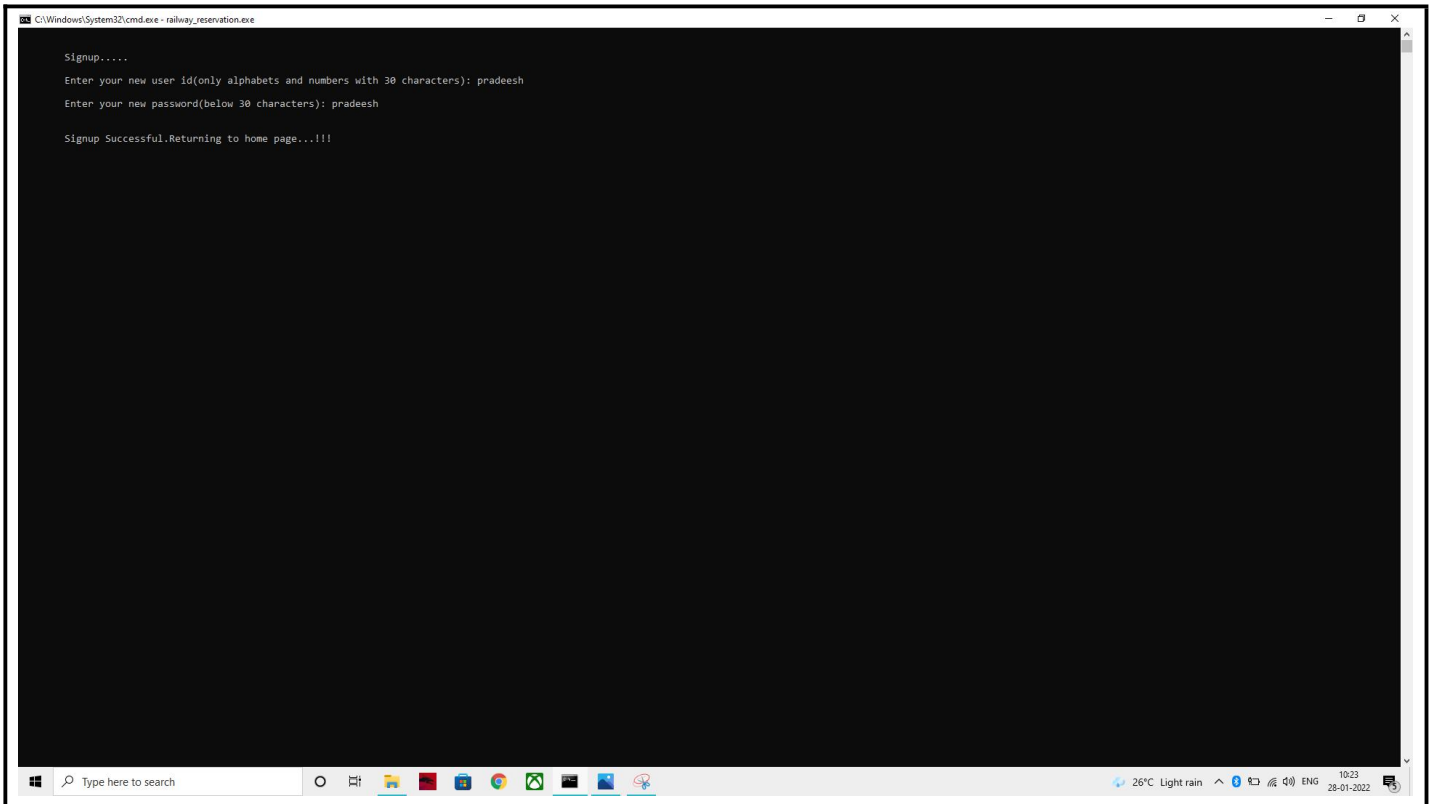
Backup Trains



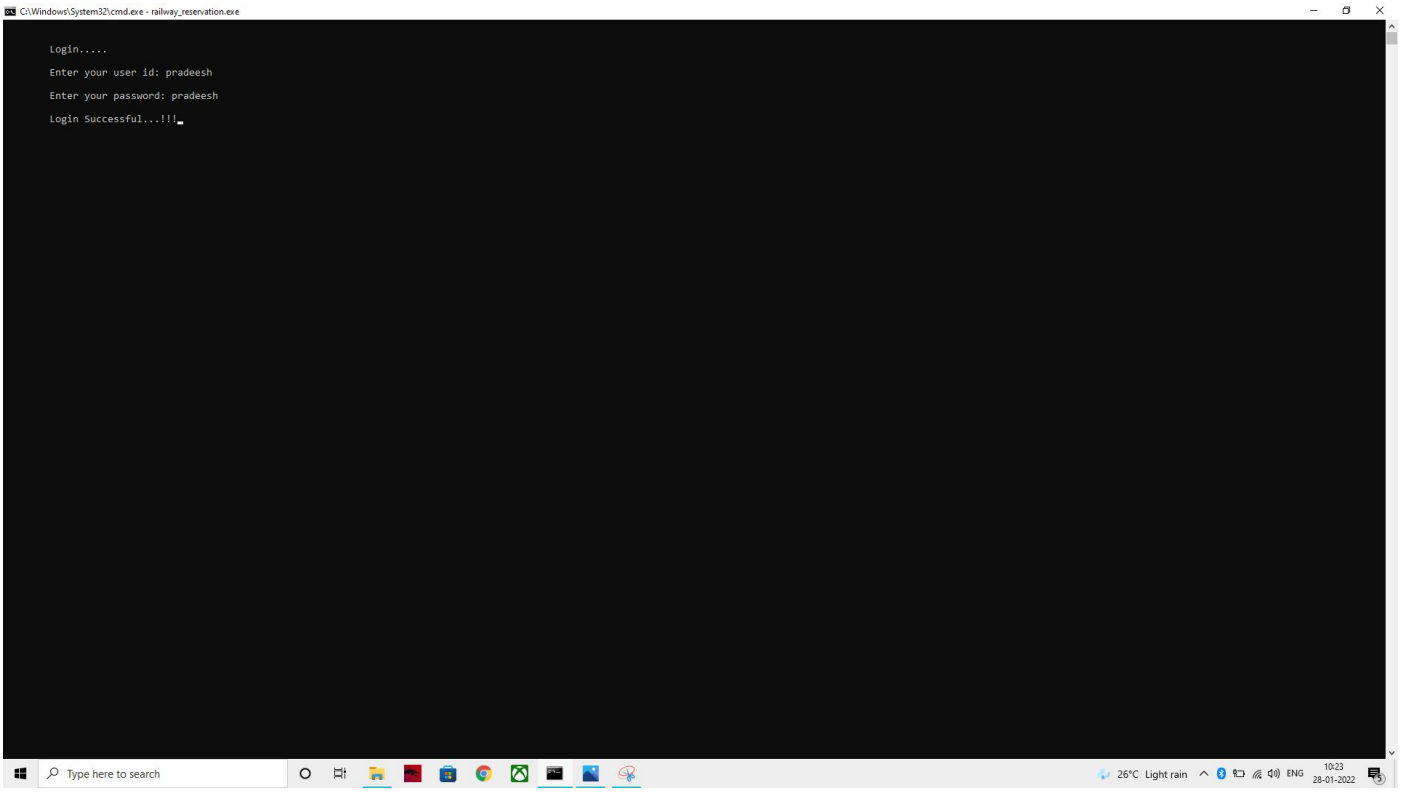
Retrieve Trains



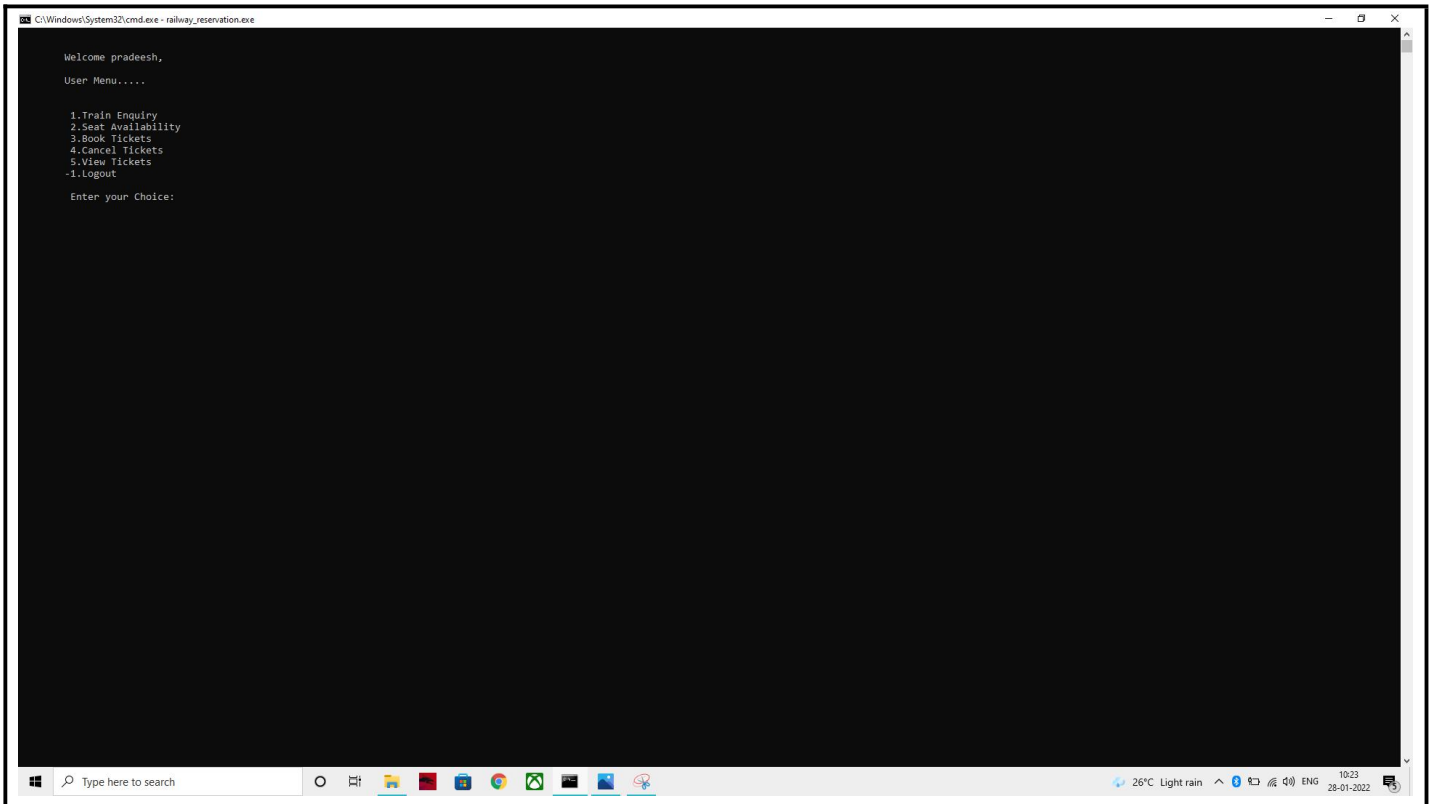
User Sign up



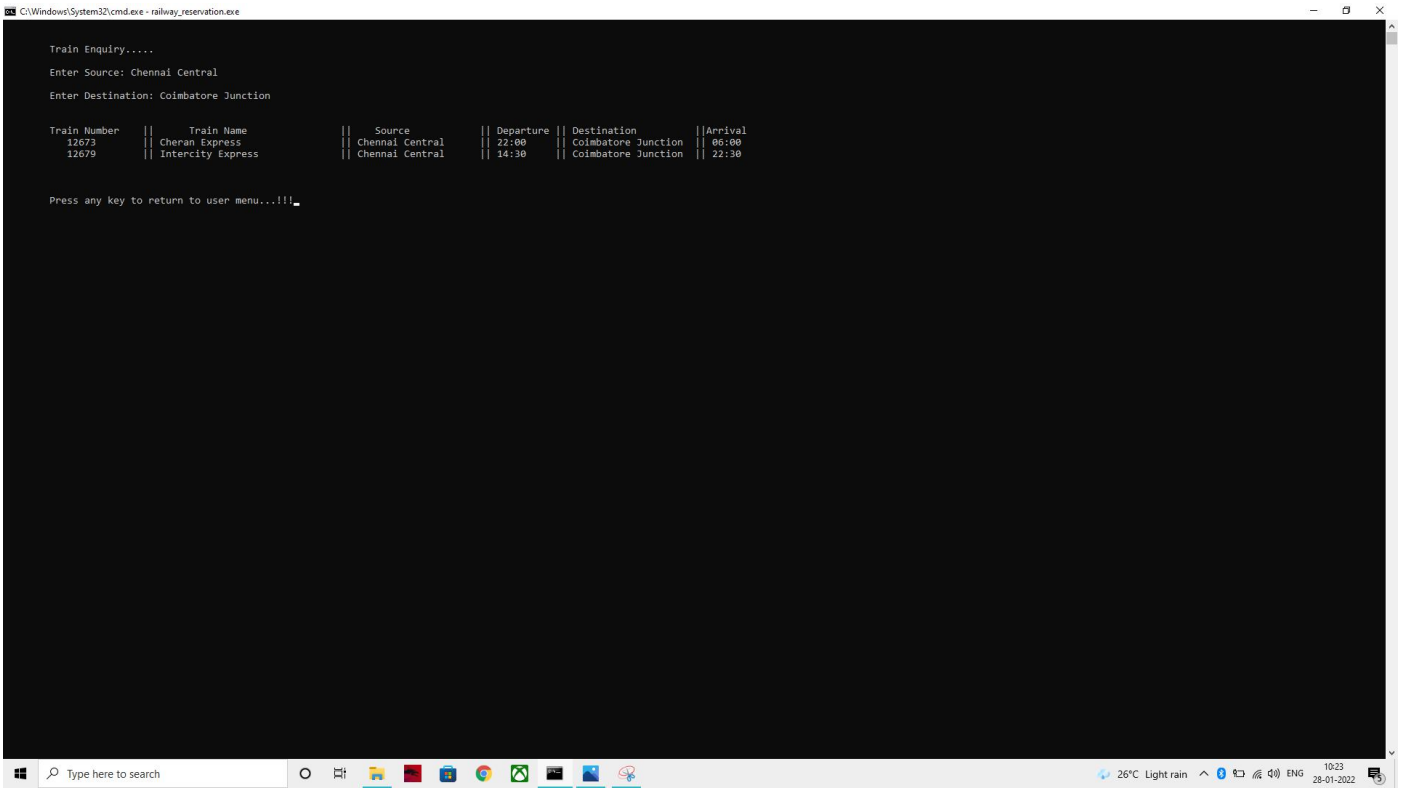
User Login



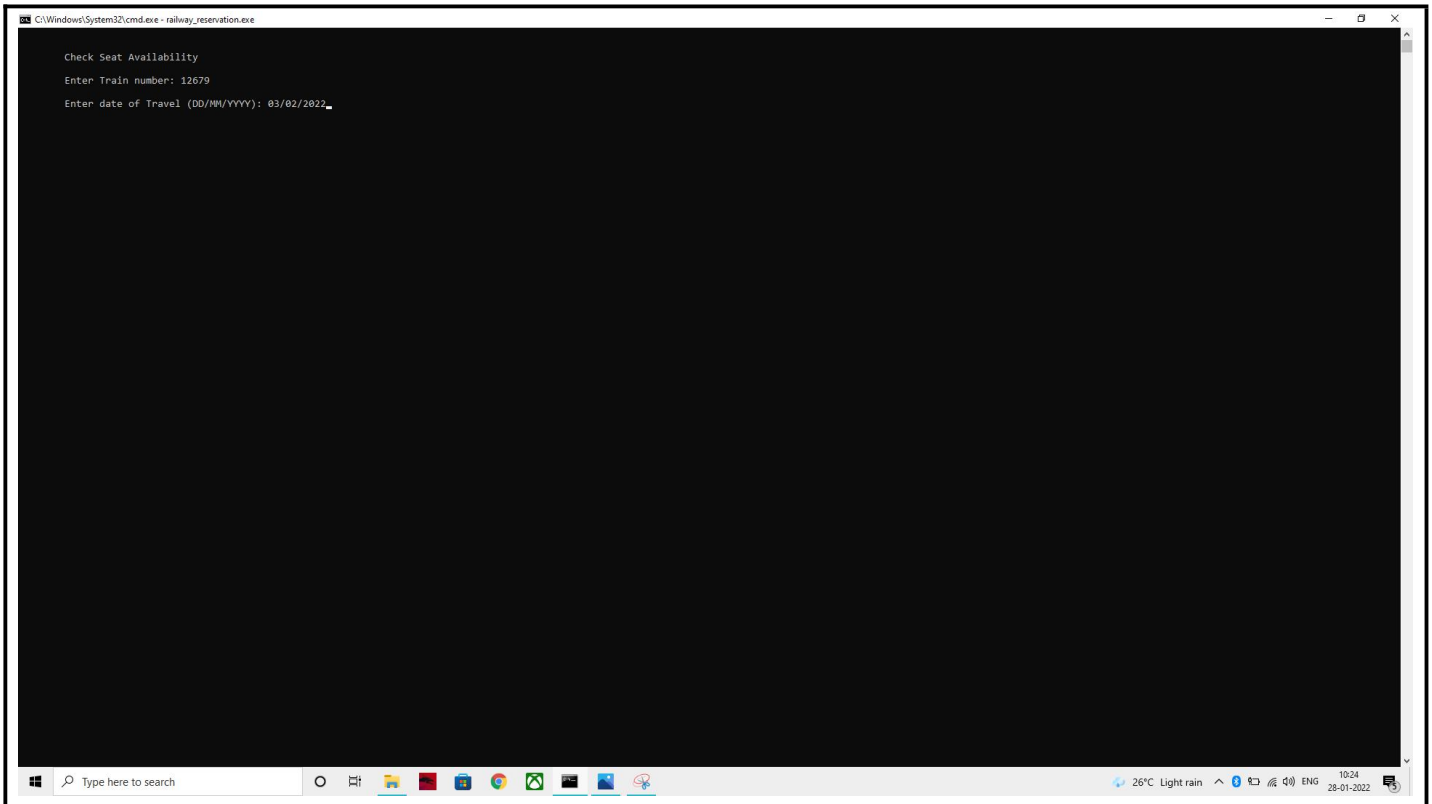
User Menu

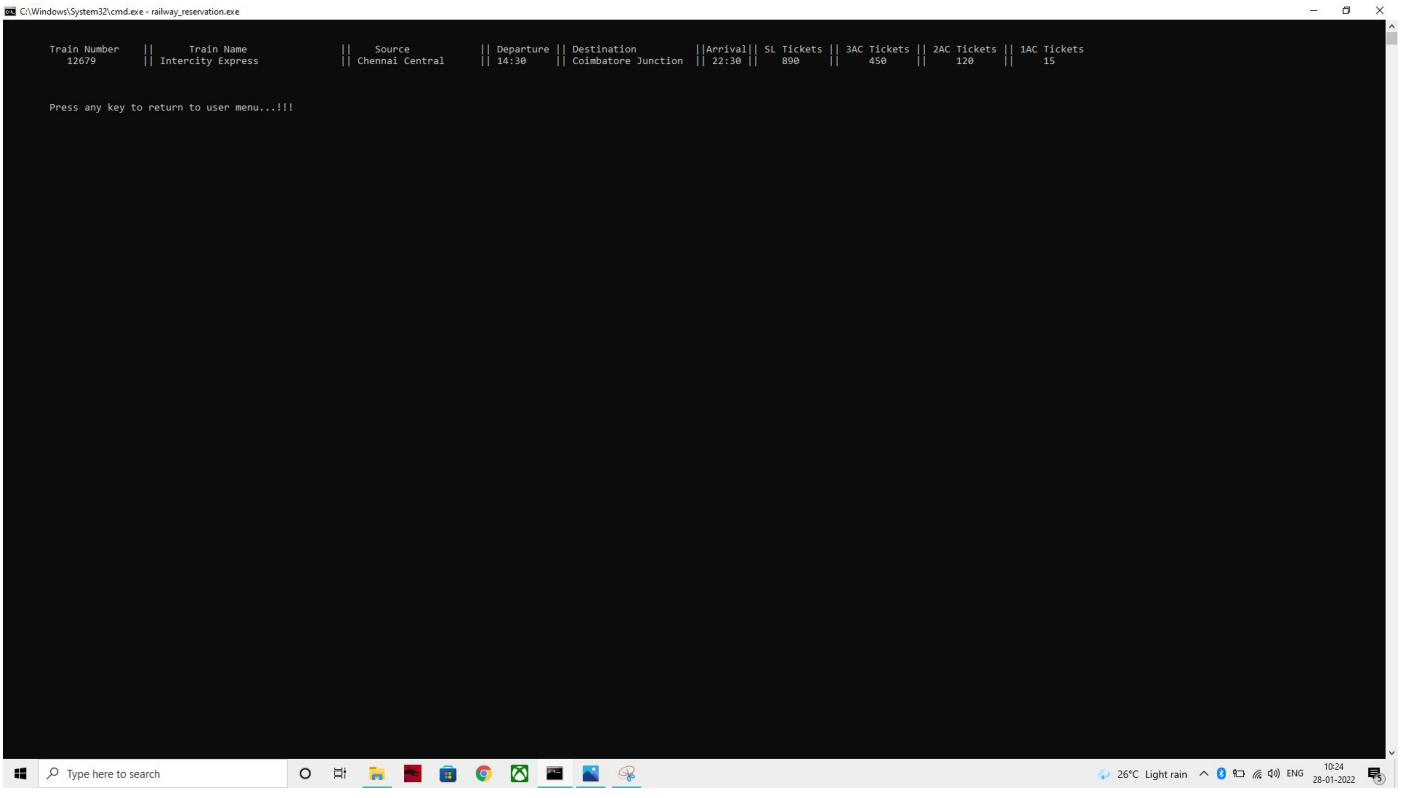


Train Enquiry

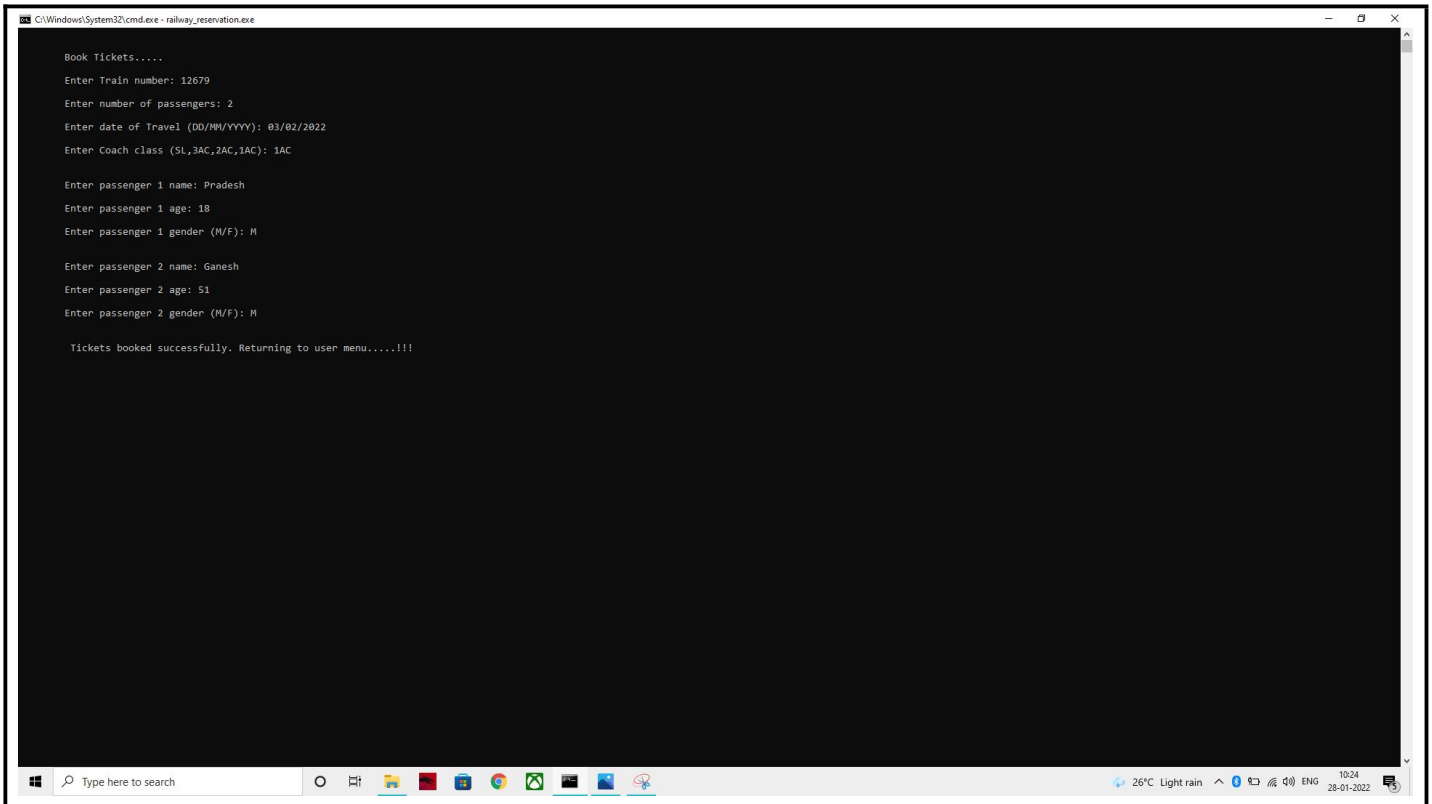


Seat Availability

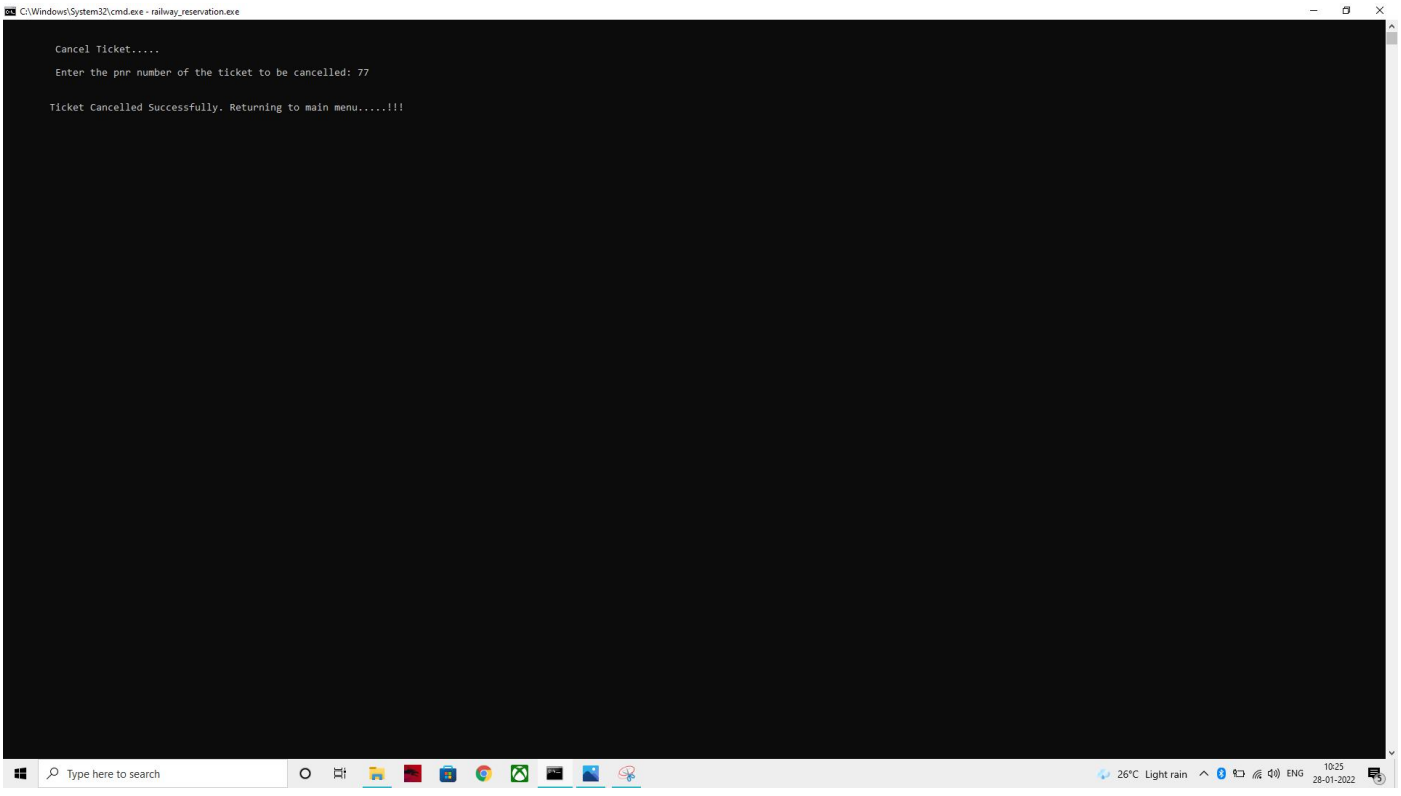




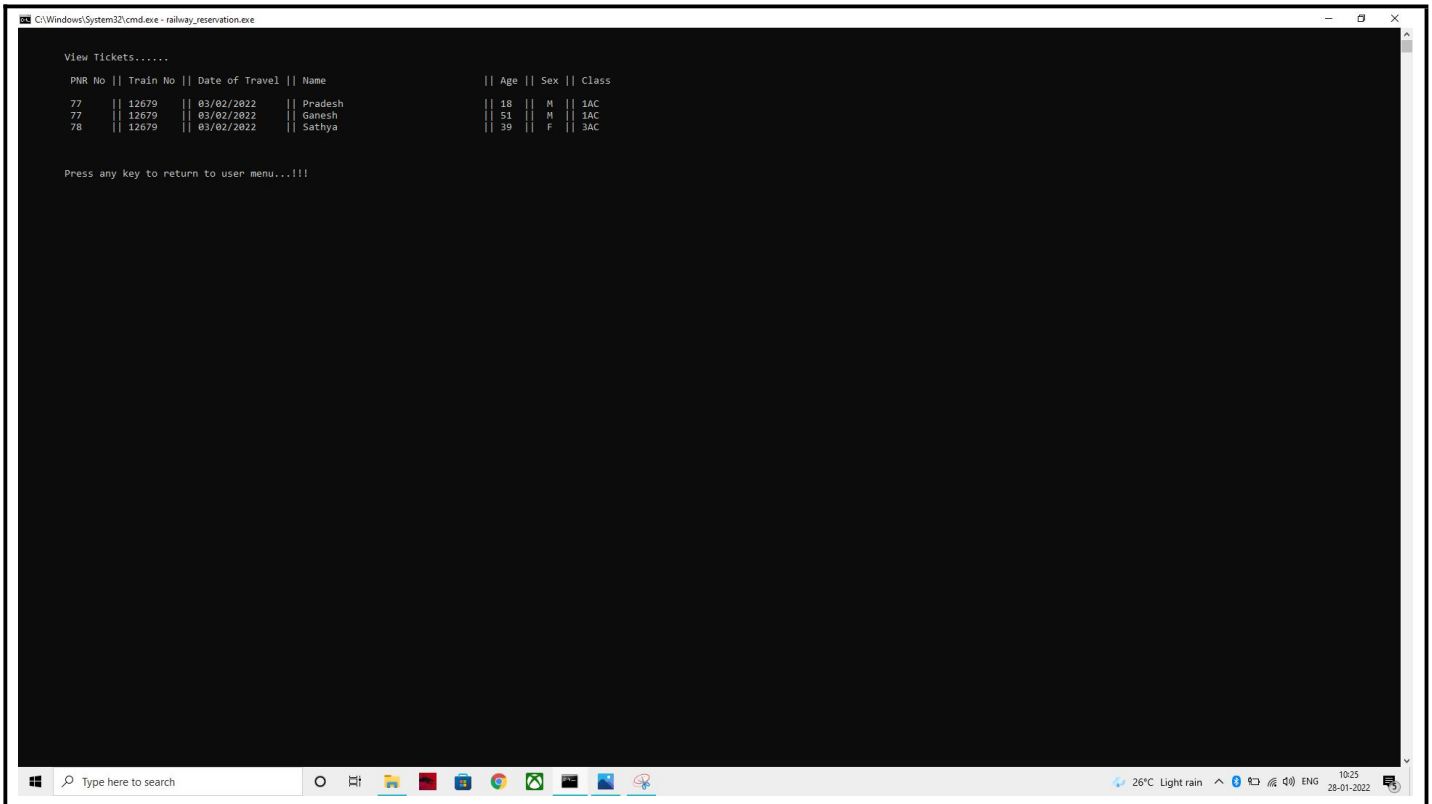
Book Tickets



Cancel Tickets



View Tickets


C:\Windows\System32\cmd.exe - railway_reservation.exe
View Tickets.....
PNR No || Train No || Date of Travel || Name || Age || Sex || Class
77 || 12679 || 03/02/2022 || Pradesh || 18 || M || 1AC
77 || 12679 || 03/02/2022 || Ganesh || 51 || M || 1AC
78 || 12679 || 03/02/2022 || Sathya || 39 || F || 3AC
Press any key to return to user menu...!!!
Type here to search
26°C Light rain
ENG
10:25
28-01-2022