**PROJECT REPORT**

**Abstract:**

This report contains all the data we have used while developing our Project, which is ‘Train-Reservation System’. The features it contains are described below:

1. Getting booking Details
2. Update the booking details
3. Cancel the booking
4. Schedule of Trains
5. Discount According to Age

**Implementation And Design:**

The code, we made is based on features described above. It consists of Python’s Built-in standard library ‘tkinter’. In this project, we have used many modules including ‘datetime’, ’os’ and ‘os.path’ to perform certain tasks i.e., Getting preferred time from the user on which he wants to depart, his ‘Date-of-Birth’ from which we calculated his ‘Age’, which played a significant role in the Fare-Calculation for the user. Also opening of the ‘text-file’ in which we have stored all of our data using ‘File-Handling’. We have successfully managed to make our code healthier as much we can. Below, a little demonstration is given.

Our code contains a main window, which contains Main-Menu, in which there are four buttons, one for Booking a ride, one for update the booking details, one for cancelling Booking and one for Schedule.

**Booking Criteria:**

There are user-Inputs of the name, CNIC No., Date of Birth, Departure-City, Arrival-City, Departure-Date, Departure-Time, No. of seats he wants to book, and Ride-Zone he wants to travel. For each input from the user, the program analyzes the input according to the format. If the user inputs values in wrong pattern i.e., Departure-Date and incorrect information i.e., CNIC No., the program shows an appropriate message named “ERROR”, containing the details of the error. And in case of Correct information according to the pattern, it shows a message named “Success” with a suitable message.

A picture containing text, tree, sign

Description automatically generated

Graphical user interface

Description automatically generated

After taking all the details from the user, the program has a confirmation button named “Confirm-Booking”. After pressing this button, the program shows the Train, having departure time closest to the entered time. It then displays a ‘window’ with all Available Trains

Between those two cities entered by the user. The user will make sure the timing, he wants to depart. He can change his departing time as well. He can choose any available time (if any) from the displayed times. A fare-cost, after discount according to his age, and according to the seat-Zone he wants to travel, is also displayed.

The discount criteria obey the following criteria.

If age < 2years old; travel for free; 100% Discount  
If age is 2 ≤ age < 18; travel with a discount of 20% of original cost  
if age is (seniors age > 60years); travel with a discount of 40% of original cost

The age has been found out in accordance with the date of birth being entered by the user.

**For update Booking Details:**

There is an input of CNIC as a pass code for the user to update the Booking. If the user enters his CNIC No. correctly and he had booked a seat earlier, then the options of updating are displayed, and he can update his booking. A user can update his Departure-City, Arrival-City, Departure-Date, Departure-Time, No. of seats, and his Ride-Zone. After updating his data, there a button named “update”. By clicking that button a message named “Success” will be displayed with an appropriate message of update being done. A new fare cost with discount according to his age will be displayed.

Graphical user interface

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While updating, the program again shows multiple train-timings (if available). It first suggests the train with departure time nearest to the updated time. The user than decides the time from the time displayed. The update function ends here.

**Cancel the Booking:**

As in the case of update Booking here is also an input of CNIC as a pass code for the user for Canceling the booking. The entered CNIC No. should have a record as Booked. If user enters CNIC No. correctly then there is ’window’, opened in front of him, having a button of Cancel-Booking. By clicking that button, the user ‘s booking will be cancelled with a refund of 50%.

**Schedule of Trains:**

In the window of Main-Menu, there is an option of “Train-Schedules”. This option contains all the trains available from different cities at different times. User can find the schedule of Train’s timing, according to the Departure and Destination Cities, he is interested in to travel.

Table

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Above mentioned, are the details have been covered by our group. In addition to this, we have made use of ‘tkinter’, in which there are windows, Labels, buttons, List-boxes, and message-boxes being used.

Graphical user interface, text

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There has been an extensive use of File-Handling. As a user confirms his booking, all of his data is being stored in a file named “trainrecord.txt”, which played an important role in updating and Canceling the Booking of the user.

In Booking, we append the user’s data in the “trainrecord.txt” file. In case of Update the Booking, we overwrite the user’s data by replacing the some of the old data and appending the new data with the old one in the “trainrecord.txt” file as shown below:

Text

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And in case of Cancel Booking, we remove the whole user’s data from the “trainrecord.txt” file as shown below:

Text

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