

C++

Project - 2

Railway Reservation System

RED & WHITE MULTIMEDIA EDUCATION

Shaping "skills" for "scaling" higher...!!!

From the Headquarter of RNW

Surat, Gujarat, India

<https://www.rnwmultimedia.edu.in>

Project Definition: Railway Reservation System

Overview:

Design and implement a Railway Reservation System in C++ that allows users to input train details, display all train records, and search for a train by its number. The system should utilize OOP principles including classes and objects, static members, constructors, destructors, arrays of objects, getters & setters, which means overall encapsulation.

Time Allocation:

- Total Duration: 4 Hours
- Total Marks: 10

Instructions:

1. Attempt all assigned tasks.
2. Make suitable assumptions wherever necessary.
3. Upload your exam task by uploading the project to GitHub and submitting the GitHub repository link which must have screenshots of your output in a README.md file.
4. This project is individual-based; copying code from classmates is prohibited.

Remember to follow the instructions provided professionally, make suitable assumptions wherever necessary, and avoid copying code or content from any unauthorized sources. Good luck with your project work!

Project Criteria:

User Input:

- Train Number
- Train Name
- Source
- Destination
- Train Time

Display Requirements:

- Display all records.
- Display records by searching for a train number.
- Use a menu-driven approach.

Minimum Input:

At least three train records should be entered initially.



Class Design:

1. Train Class:

Private Data Members:

- int trainNumber
- char trainName[50]
- char source[50]
- char destination[50]
- char trainTime[10]

Static Member:

- static int trainCount

Constructors:

- Default Constructor for initializing train details with empty
- Parameterized Constructor for initializing train details

Destructor

- To decrement trainCount

Getters and Setters for each data member to ensure encapsulation

Methods:

- void inputTrainDetails() to input train details from the user
- void displayTrainDetails() to display train details
- static int getTrainCount() to get the count of train objects

2. RailwaySystem Class:

Private Data Members:

- Train trains[100] // Array to store multiple train objects
- int totalTrains // To keep track of the total number of trains

Public Methods:

- void addTrain() to add a new train record
- void displayAllTrains() to display all train records
- void searchTrainByNumber(int number) to search for a train by its number

Output:

--- Railway Reservation System Menu ---

1. Add New Train Record
2. Display All Train Records
3. Search Train by Number



4. Exit

Enter your choice: 1

Enter Train Number: 101

Enter Train Name: Okha Express

Enter Source: Surat

Enter Destination: Mumbai

Enter Train Time: 10 AM

--- Railway Reservation System Menu ---

1. Add New Train Record

2. Display All Train Records

3. Search Train by Number

4. Exit

Enter your choice: 2

Train 1 details:

Train Number: 101

Train Name: Okha Express

Source: Surat

Destination: Mumbai

Train Time: 10 AM

--- Railway Reservation System Menu ---

1. Add New Train Record

2. Display All Train Records

3. Search Train by Number

4. Exit

Enter your choice: 3

Enter Train Number to search: 104

Train with number 104 not found!

--- Railway Reservation System Menu ---

1. Add New Train Record

2. Display All Train Records

3. Search Train by Number

4. Exit

Enter your choice: 4

Exiting the system. Goodbye!

Marking Criteria: (Total 10 Marks)



Logic: 8 Mark
Output: 2 Mark

Railway Reservation System
C++

BRING ON YOUR CODING ATTITUDE

