



RAILWAY MANAGEMENT SYSTEM

OOP

End Semester Project

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The End
Thank You!!



RAILWAY MANAGEMENT SYSTEM

Basic Functionality of the Program:



- Passenger can reserve a seat
- Seat can be canceled on Passenger's demand
- Record of all the reserved seats can be viewed
- Passenger can retrieve his/her seat using the unique customer ID provided at the time of booking
- Operator can view the total cost at end of the day

Unsolved Problems



Since composition was causing us few problems so we used inheritance instead (violating some of its rules).

Functions Used

- To ease readability, easiest approach of member functions is used
- `setdata()` and `getdata()` are used in each class

Classes

5 Classes:

- Person
- Route
- Train
- Traveler
- Ticket

Person Class:

Member Functions:

- Name
- Gender
- Age
- Nationality
- NIC



Route Class

Member Functions:

- Home
- Destination
(Intra City/ Country to Country)
- Distance
- Date for reservation



Train Class

Member Functions:

- Section (AC/Luxury/Economical)
- Rate Per Kilometer
- Cost ($\text{Distance} \times \text{RPK}$)
- Trains
- Seat Number



Traveler Class

Member Functions:

- Status (Student / Armed force etc)
- Luggage type (Machinery / Eatables etc)
- Luggage weight
- Age discount
- Luggage Cost



Ticket Class

Member Functions:

- Final Cost
- Ticket Status (Reserved / Canceled)
- The Final Cost Is Evaluated On the Basis Of Discounts provided (status discount , age discount etc)

Concepts Used

1. Inheritance
2. Friend Function
3. Operator Overloading
4. File Linking (For Better Code Readability)
5. Random File Access
6. Exception

Efficient File Handling

- Read Write Functions
- Write: Writing object by object into the file.
- Read: Reading object by object from the file.
- Seekg & Seekp
- Seekg : For retrieving Specific ticket Reciept from all data using a unique customer id.
- Seekp: For canceling a Reservation using concept of overwriting
- Total 4 Files used

Improvement



Composition could have been used instead of Inheritance.

Account management could have been done more efficiently.

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Member Functions:

- Name
- Gender
- Age
- Nationality
- NIC

Member Functions:

- Home
- Destination
- (Intra)
- Distance
- Date for

Member Functions:

- Section (AC/L)
- Rate Per Kilometer
- Cost (Distance*Rate)
- Trains
- Seat Number

Efficient File Handling

Functions

- Saving object by object into the file.
- Loading object by object from the file.

Seekp
For
a us
canceling a reservation using concept of

PREZI



The End

Thank You!!