

Create a Bus booking application, ZOBUS, which satisfies the following conditions.

Task 1: Initialization

Initialize the data as per the details given below to be loaded when the program starts.

Note:

- It can be loaded and kept in the memory. No need to maintain a File or DB.
- Assume that this bus is available for only a single route (Chennai to Bengaluru).
- And that all the passengers want to travel on the same day.
- One customer can book only 1 ticket

2 Sleeper buses - 1 AC and 1 Non-AC

2 Seater buses - 1 AC and 1 Non-AC

Seater Bus has 12 seats

	A	B	C
1	<input type="text"/>	<input type="text"/>	<input type="text"/>
2	<input type="text"/>	<input type="text"/>	<input type="text"/>
3	<input type="text"/>	<input type="text"/>	<input type="text"/>
4	<input type="text"/>	<input type="text"/>	<input type="text"/>

Sleeper Bus has 12 seats in 2 Decks (6 each)

Lower Deck		
	A	B
1	<input type="text"/>	<input type="text"/>
2	<input type="text"/>	<input type="text"/>
3	<input type="text"/>	<input type="text"/>
Upper Deck		
	A	B
4	<input type="text"/>	<input type="text"/>
5	<input type="text"/>	<input type="text"/>
6	<input type="text"/>	<input type="text"/>

Initial Customers:

Id	Name	Password	Age	Gender
1	aaa	111	25	F
2	bbb	222	61	M
3	ccc	333	22	M
4	ddd	444	36	F

Task 2: Customer Sign-up

The customer should have an option to sign-up using a new account by providing all the basic details.

Task 3: Customer Login

The customer should be able to login using their existing account credentials (Username and Password)

Task 4: Booking a Ticket

4.1: Bus Options

The customer should be asked for the number of passengers.
We should display all the buses with remaining capacity

Sample Output:

- 1 - AC Sleeper - 12 seats
- 2 - AC Seater - 9 seats
- 3 - Non-AC Sleeper - 4 seats
- 4 - Non-AC Seater - 10 seats










4.2: Seat Selection

Once the required bus is chosen by the customer, he should be shown the current status of the bus, ie, which seats are occupied and which ones are vacant.

And the customer can choose his seats based on the following rules:

1. He/She should input the number of travelers. (obviously not greater than remaining seats). Should get the name and gender of co-travellers.
2. He/She can choose the seats such that only a lady can occupy the seat beside a lady from different ticket.
3. A lady and gent may occupy adjacent seats if they are from the same ticket.

Sample Output:

	A	B	C
1			
2		F	
3			M
4			M

If B2 is a lady, then the seat B1 can be occupied only by another lady.
Similarly for Sleeper.

Whereas if 2 people are travelling, 1 Male and 1 Female.
They can take the seats A1 and A2.

Task 5: Fare calculation

The fare should be calculated and intimated to the customer based as follows:

AC + Sleeper - Rs.700 / seat

AC + Seater - Rs. 550 / seat

Non-AC + Sleeper - Rs. 600 / seat

Non-AC + Seater - Rs. 450 / seat

Task 6: Ticket confirmation

Once fare is estimated, the customer must be prompted for confirmation of the booking.
Only if he confirms, the ticket should be booked.

Task 7: Ticket Cancellation

The customer should be given an option to cancel their ticket based on the following workflow:

1. He should be shown the list of seats booked by him.
2. He can have the option to completely cancel (all seats) or partially cancel (selected seats)
3. Cancellation Fee of 50% for AC and 25% for Non-AC buses

Task 8: Bus Filtering

The customer can filter and view the buses based on his preference among the following:

1. AC or Non-AC or Both
2. Seater or Sleeper or Both

Only applicable bus(es) which are not filled should be shown.

1. In the descending order of remaining capacity.
2. If the same capacity AC should come first.
3. If the same capacity Sleeper should come first.

Sample Output:

- 1 - AC Seater - 12 seats
- 2 - AC Sleeper - 11 seats
- 3 - Non-AC Sleeper - 11 seats
- 4 - Non-AC Seater -11 seats

Task 9: Bus summary

The admin should be able to see the summary of all the buses as follows:

Bus Type, Number of seats filled, Total Fare Collected and Details of each filled seat.

Sample Output:

AC Sleeper

Number of seats filled: 4

Total Fare Collected: 3150 (4 tickets + 1 cancellation)

Seat Details:

Seat	Name	Gender
A3	ccc	M
B6	aaa	F
A4	ddd	F
A5	daa	F