

CS 4400

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Constraints:

1. All fields must be filled, and username/password have composition requirements (character limit, must include one capital, lowercase, number, symbol)
2. A single customer cannot purchase two tickets on different trains running at the same time [See assumption 5]
3. The number of tickets sold to a particular train cannot exceed 50 (or another arbitrary limit) [See assumption 6]
4. “Passenger Name” must be composed of “Firstname” and “Lastname” [See assumption 7]
5. A card’s number and CVV must be valid, all fields must be filled, and expiration date greater than today.
6. Reservations can only be altered up until 24 hours prior to the departure time. Only departure date can be altered and only one ticket may be altered at a time. [See assumptions 10, 11]
7. Reservations cannot be canceled within 24 hours of departure time. [See assumptions 10, 11]
8. Reservations cannot be partially canceled (cannot cancel less tickets than are on the reservation). [See assumption 11]
9. A canceled reservation cannot be updated or canceled again.
10. A review’s train number and rating fields must be filled.[See assumption 12]

Assumptions

1. A User cannot be both a Customer and a Manager.
 - A person who is a customer can be the manager but he must have separate accounts for admin and customer.
2. A student does not have to register with their school email.
 - School email is entered later, if they want a discount
3. So long as the user input ends in “.edu” it will be treated as a valid school email for discount purposes. The entry does not have to match the email registered to the user’s account.
 - Project notes said school emails did not have to be stored or verified
4. The train schedule displays the schedule for the next 24 hours, and is the same every day.
 - Project notes said train schedules are repeated daily
5. A single train can travel between only two stations at a time, but the two can both change. (latter half given in project slides)
 - Trains have a fixed route that they follow, which includes multiple stations
6. There is an (arbitrary) limit of 10 first-class and 40 second-class tickets per train. First-class tickets will always be \geq to second-class ones.
 - There are 50 seats on the train in total (10 first-class and 40 second-class)
7. “Passenger name” is a valid name referring to a legitimate customer

- The name entered must correspond to a customer, or the luggage will be lost
8. No taxes are applied to the price.
- Taxes aren't part of this model
9. The card's account has sufficient balance to cover the purchase cost
- If the card doesn't have enough funds then the registration will not be made and the customer will not be charged.
10. The student discount does not apply to reservation-change fees.
- Reservation-change fees are the same for everyone, regardless of whether or not they're a student
11. Refunds are calculated out of original price paid, then fees are deducted from that. There are no negative refunds, lowest is 0.
- A refund by definition gives money; it would not charge more.
12. Customers will give reviews after having ridden the train.
- Reviews are only meaningful if they are legitimate
13. There are no taxes, expenditures, etc deducted from revenue. (Revenue is gross, not net)
- Calculating net revenue is beyond the scope of this project
14. If there is a tie in popularity, display both routes.
- Both routes would be equally popular