

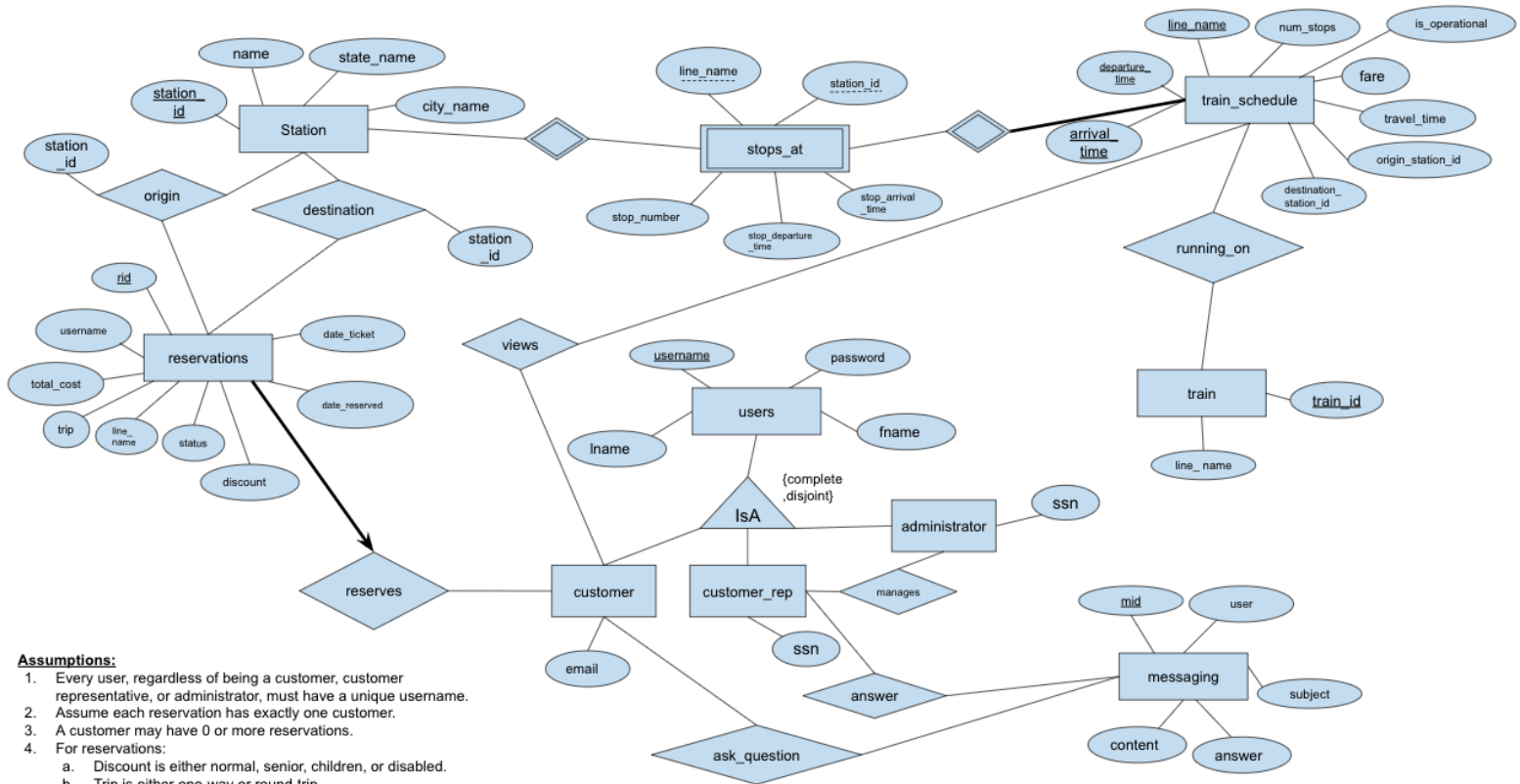
Group 45

Neha Murthy(nnm53)

Haejin Song (hs1025)

Aarti Rao (abr118)

Entity Relationship Diagram:



Assumptions:

1. Every user, regardless of being a customer, customer representative, or administrator, must have a unique username.
2. Assume each reservation has exactly one customer.
3. A customer may have 0 or more reservations.
4. For reservations:
 - a. Discount is either normal, senior, children, or disabled.
 - b. Trip is either one-way or round-trip.
 - c. Status is either confirmed or cancelled.
5. Each train schedule has 1 or more stops.
6. A question can only be asked by customers, and answered only by customer representatives. Questions can be viewed by any customer.
7. Customers cannot view other customers' reservations, only their own.

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Relational Schema:

Station

Station (station_id: int, name: varchar(50), state_name: varchar(50), city_name: varchar(50), primary key(station_id))

TrainSchedule

TrainSchedule (line_name: varchar(50), num_stops: int, fare: int, departure_time: time, arrival_time: time, travel_time: time, origin_station_id: int, destination_station_id: int, is_operational: boolean, primary key(line_name, arrival_time, departure_time), foreign key(origin_station_id) references Station(station_id), foreign key(destination_station_id) references Station(station_id))

Reservations

Reservations (rid: int, username: varchar(50), total_cost: real, origin_station_id: int, destination_station_id: int, date_ticket: date, date_reserved: date, discount: enum('Disabled', 'Senior', 'Child', 'Normal'), trip: enum('Round', 'One'), line_name: varchar(50), status: varchar(20), primary key(rid), foreign key(origin_station_id) references Station(station_id), foreign key(destination_station_id) references Station(station_id), foreign key(line_name) references TrainSchedule(line_name))

StopsAt

StopsAt (line_name: varchar(50), station_id: int, stop_arrival_time: time, stop_departure_time: time, stop_number: int, primary key(line_name, station_id), foreign key(line_name) references TrainSchedule(line_name), foreign key(station_id) references Station(station_id))

Train

Train (train_id: int, line_name: varchar(50), primary key(train_id), foreign key(line_name) references TrainSchedule(line_name))

Users

Users (username: varchar(50), password: varchar(50), email: varchar(50), ssn: varchar(15), fname: varchar(50), lname: varchar(50), role: enum('customer_service_rep', 'customer', 'administrator'), primary key(username))

Messaging

Messaging (mid: int, user: varchar(50), subject: varchar(150), content: text, answer: text, primary key(mid), foreign key(user) references Users(username) on delete cascade)