

### Practice Problems:

Bangladesh Railway ticketing system, we can start by defining the main Customer table and then add three related tables: Tickets, Trains, and Bookings. Below is the table structure, followed by example SQL queries demonstrating various operations and scenarios based on the given criteria.

### Table Structures

#### 1. Customer

- **customer\_id** (INT, PK)
- **name** (VARCHAR)
- **email** (VARCHAR)
- **phone\_number** (VARCHAR)
- **address** (VARCHAR)

#### 2. Tickets

- **ticket\_id** (INT, PK)
- **train\_id** (INT, FK)
- **customer\_id** (INT, FK)
- **booking\_date** (DATE)
- **seat\_number** (VARCHAR)
- **price** (DECIMAL)

#### 3. Trains

- **train\_id** (INT, PK)
- **train\_name** (VARCHAR)
- **departure\_station** (VARCHAR)
- **arrival\_station** (VARCHAR)
- **departure\_time** (TIME)
- **arrival\_time** (TIME)

#### 4. Bookings

- **booking\_id** (INT, PK)
- **customer\_id** (INT, FK)
- **ticket\_id** (INT, FK)
- **status** (VARCHAR) -- Status could be "Confirmed," "Cancelled," etc.
- **payment\_method** (VARCHAR)
- **payment\_status** (VARCHAR)

Here are the questions based on the Bangladesh Railway ticketing database:

1. Retrieve the unique departure stations for all trains.
2. Find all customers who live in Dhaka.
3. List all trains with a ticket price greater than 500, sorted by price in descending order.
4. Calculate the total revenue generated for each train.
5. Retrieve the names and phone numbers of customers who booked tickets on a specific train.
6. Calculate the average ticket price for each train with more than 5 tickets sold.
7. List all tickets for customers whose address is in Dhaka.

8. Find the names of customers who have booked tickets on trains departing from Chattogram.
9. Retrieve a list of customers who either live in Dhaka or have booked tickets on trains departing from Chattogram.
10. Identify the train with the highest total revenue generated.