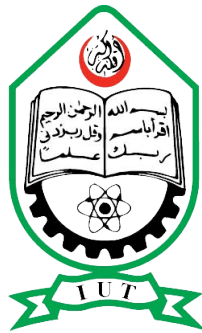# DBMS LAB 06 TASKS

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1 SCENARIO 1

You have been hired to design a database system for Bangladesh Railway. As per the requirements, there are multiple stations, each located at a different city. All the stations have their own unique name, number of platforms, ticket counter etc. For simplicity, assume that each station is connected by a single track between them. A schedule is maintained that records at what time a train passes through each station on its route. Passengers need to buy tickets to board trains. A ticket has its own unique id, journey date, starting station, destination station, customer id, seat type etc. A ticket cannot be issued by multiple stations at the same time. A customer has his own id, name, age, NID number etc.

Your tasks are as follows:

- Draw the ERD for the above system description.

- Write the DDLs to implement the ERD.

2 SCENARIO 2

'Bro-Mart' is an up and coming shopping mart that is looking for database designers to develop their own database. Turns out, you fit the bill perfectly! For now, they want to manage the Employees, Customers and Products in their database. Each employee has a unique id, name, age, phone_no etc. An employee can serve multiple customers at a time. It may also happen that an employee is not serving any customer at a given time. Customer have their own unique id, name, age etc. A customer goes to a single employee to check out their shopping cart. When it comes to products, a customer can buy multiple products. It might happen that a certain product is not purchased by any customer at all. Products have properties like product id, name, price etc.

Your tasks are as follows:

- Draw the ERD for the above system description.

- Write the DDLs to implement the ERD.

3 SCENARIO 3

Government wants to implement its Citizen Information Bank (CIB). Each citizen must have some basic information such as ID, name, date of birth and address. Additionally, many citizens should have profession information. Each profession is predefined and has a number of additional information such as name of profession, minimum educational qualification and approximate salary. Citizens may have blood group information which must be from the selected list such as A+,A-, B+, B-, AB+, AB- , O+ and O-. Address is organized in two layers such as Divisions and Districts. One division have a number of districts.

Your tasks are as follows:

- Draw the ERD for the given description.

- Write the DDLs equivalent to the ERD.

- Write standard SQL statements for the following:

  1. List total number of citizen in each blood group.

  2. List each profession code/ID, profession name, its approximate salary along with total number of people in that profession.

  3. List top 3 professions code/ID and name. (A profession is the top most profession if it has the maximum number of people involved)