
Lab 7

Entity Relationship (ER) Data Model II

CSE 4308
DATABASE MANAGEMENT SYSTEMS LAB

OCTOBER 20, 2022

1 Lab Task

National ID (NID) is an integrated collection of citizens' information such as Name, Date of Birth, Occupation, Blood Group. Each citizen has his/her own NID. In order to investigate the population density, the country has been divided into divisions. Each division has its name, size (in square KM), and a brief description. Again, each division has a number of districts with similar attributes. Citizen information must be connected to its corresponding division and district.

Each citizen may have exactly one driving license where information such as type of license, issue date, expiration date are maintained. Whenever any accident occurs, it is logged in the central system. The system stores relevant information such as date and time of accident, location of accident, number of deaths (if any), etc.

There are a number of hospitals in the country having name and contact information. Each hospital may have more than one contact number. Citizens may avail treatment in any hospitals they prefer. Whenever any patient (i.e., citizen) is admitted, the system keeps the record of his/her date of admission, a brief description, and release date.

Now, your task is to:

1. Draw an ER Diagram, without any data redundancy, specifying the cardinality explicitly. You may add additional attributes only if it is needed.
2. Convert the ER Diagram into DDL using standard SQL denoting the appropriate constraints.
3. Write SQL statements for the following queries:
 - (a) Find the list of divisions along with its total number of districts.
 - (b) Find the list of districts having at least 20,000 people living there.
 - (c) Find the number of accidents that involved a citizen whose NID is 210.
 - (d) Find the list of top 5 hospitals based on the number of patients admitted so far.