Lab 7
Entity Relationship (ER) Data Model II

CSE 4308
DATABASE MANAGEMENT SYSTEMS LAB

OCTOBER 16, 2023

1   Lab Task

Consider the following high-level description of a sales company:

ABC is a large company that sells different electronic items such as laptops, smartphones, smart-watches, etc. Each item has its name, a short description, and unit price. The country has a number of divisions. Each division has a number of districts. The company has branches in different districts of the country. Employees have basic information such as name, DOB (date of birth), contact no, and current branch location (i.e. division and district). The company has a number of departments such as sales, accounts, admin, etc. Each employee must be attached to a specific department. Only Customers who are pre-registered with basic information such as name, contact no and address can buy items. The company also provides rental service for items such as laptops/smartphones for its employees for a specific time duration. After the duration items must be returned.

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 the total number of districts.
   (b) Find the list of districts having at least 200 customers living there.
   (c) Find the number of items bought by customer named "Alfred".
   (d) Find the list of employees based on the number of items they have rented so far.
   (e) Find the employee who had rented items for the longest period of time.