CS105.3 - Database Management Systems

Lab Sheet 5

Question 01

Consider the following scenarios & draw an Entity Relationship (ER) diagram to represent the below database, stating clearly any assumptions made.

MyDream Tours Ltd, a company engaged in organizing adventure tours wishes to develop a database to store information about its tours, customers, partner hotels, tour guides, tour organizers and tour equipment.

A customer can book several tours. Each tour is coordinated by a tour coordinator. A tour coordinator organizes several tours at a time, but a tour is organized by only one coordinator. The coordinator is also responsible for making reservations in their partner hotels for their customers to stay during their tours. A coordinator books several hotels at a time and the same hotel can be booked by many coordinators. A guide is assigned to one tour at a time and each tour has only one guide. Customers who have booked tours can also rent tour equipment such as camping gear, boots safety helmets etc. A customer can rent several equipment and one equipment can be rented by one customer at a particular time.

The database will keep track of the following data:

For each Tour:

Tour ID (unique), Tour Name, Category, Tour Date, Tour Location, Rate and Maximum No of Tour Members allowed.

For each Hotel:

Hotel Number (unique), Name, Address, Telephone No (many for each hotel), Number of Rooms, Room Rent and Facilities Available (many for each hotel).

For each Customer:

Reservation ID (unique), Customer Name, Address, Telephone Number, No. of Guests Accompanying and Tour preference.

For each Tour Guide:

Employee ID (unique), Name, Address, Telephone No, Date of Birth, Employee Start Date and Special Training Areas (a guide can have many).

For each Tour Coordinator:

Coordinator ID (unique), Name, Address, Telephone No. and Qualifications (a coordinator can have many).

For each Equipment:

Item Code (unique), Description, Rent Rate and Quantity in Hand.

Question 02

A particular bank wishes to have a database in-order to save the information relevant to its all the functions. The bank is organized into branches. Each branch is located in a particular city and is identified by a unique name.

Bank customers are identified by a unique customer identification number. The branch stores each customer's name, address and telephone number. Customers may have accounts. A customer may be associated with an employee, who may act as a loan officer or personal banker for that customer.

Employees are identified by their employee numbers. The branch stores the employee number, name, address and telephone number of each employee. The branch also keeps track of the employee's start date and the length of the employment.

Each branch offers two types of accounts: savings and current accounts. Each account is assigned a unique account number. An account can be held by more than one customer, and a customer can have more than one account.