CSE 370– Database Systems

Assignment 1

Spring 2024

Submission Instructions:

1. Write your name, id, section on top of the first page
2. Your answer should be handwritten, take pictures and create a single pdf.
3. **Submit the pdf in the following form**: https://forms.gle/xiu3mEC4kGxZqwq27
4. **Submission Deadline**: 22nd February (Thursday), 2024 11:59 pm (midnight)
5. **NO LATE SUBMISSION WILL BE ACCEPTED**

Question 1   [10 Marks]

a) Represent the following information using ER Diagram symbols and identify the different type of attributes used:

STUDENT

ID	NAME	CGPA	EMAIL
S230	Arif	3.55	a@bracu.com, a@g.com
S231	Sifat	4.0	s@bracu.com, s@y.com
S232	Tasneem	3.99	t@bracu.com
S233	Sifat	3.55	s2@bracu.com, s2@g.com, s2@y.com

Question 2   [10 Marks]

Given the scenario below, construct an EER diagram for the library management system at ABC University:

a. Members have a unique ID, name, joining date, phone number and an email address.
b. Members have to be either a faculty member or student or they can be both. Students have a CGPA attribute, faculty members have a courses taught attribute. Faculty members may have taught several courses and a course is composed of course code and title.

c. Books have a unique ISBN, title, multiple authors, publisher, publication date, edition. A book can be a sequel to another book.

d. Each book has several Book Copies. The copy number, date purchased and shelf number is stored. Note that for each book the copy numbers are 1, 2 and so on. Shelf number and date purchased can be the same for different books.

e. Members can borrow book copies. The borrowed date, return date, due date and late fees are recorded. The late fees can be calculated using the return date and due date, so it should not be stored, but shown using an appropriate symbol.

Question 3 [10 Marks]

You are to design a Hospital database. So before creating the database, your task is to design the ER diagram based on the following data requirements:

a. The hospital has departments. Each department has a name, department ID, location. Location consists of floor number and wing number (which will contain the values North, South, East or West).

b. Doctors work for the department. Doctors have license number, name, title, multiple specializations. Some doctors supervise other doctors.

c. A patient will have a name, unique ID, may have more than one phone number, age, height, weight and symptoms.

d. Patients take appointments from doctors. Appointment date and time is recorded.

e. A patient may have an attendant. An attendant will have his/her name and relationship with the patient as a record in the database. The hospital allows 1 attendant with each patient.

Write down any assumptions you may have made.