

CSE 370 – Database Systems

Assignment 2

Summer 2022

Question 1 [10 Marks]

a) Represent the following information using ER Diagram symbols and identify different types of attributes used: [4 Marks]

BOOK				
Book_name	Book_ID	Year	Price	Authors
Fundamentals of Database Systems	1234_A	2005	\$75	Ramez Elmasri, Shamkant B. Navathe
Data Communications and Networking	3468_A	2013	\$75	Behrouz A. Forouzan
The Talisman	5876_N	1984	\$222	Peter Straub, Stephen King
The Emergence of Modern Southeast Asia: A New History	8756_H	2004	\$22.65	David Chandler, William R. Roff, David Joel Steinberg, Jean Gelman Taylor, Robert H. Taylor, Alexander Woodside, David K. Wyatt, Norman G. Owen

b) From the above given information, determine which is an entity, an entity type and an entity set defining each of these terms in one or 2 lines. [6 Marks]

Question 2 [7 Marks]

a) Based on the given brief scenario below, draw an ER diagram: **[5 Marks]**

Your Library database consists of Student information and Book Information. A Student has a unique student id, name, phone number and date of birth. All students will have first, middle and last names, and may have one or two contact numbers. Students borrow books. A book will have a unique id, name, price and multiple author's info. The author info is composed of author name, author's last degree, author's last institution.

(Note: You should also remember the relationship constraints)

b) Suppose you also want to see an age attribute for the students in your database which can be found by calculating it from the date of birth and the current date. Show the age attribute in your above ER diagram? And name what type of attribute it is. **[2 Marks]**

Question 3 [8 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.

You have to make a PDF file containing your student id, name, section, and the solution of the problems.

The PDF filename should have your student ID, using the filename format:

StudentID_Assign2.pdf

Then you will submit the pdf using the following Google form link:

<https://forms.gle/YLUaXbooTaQWjEk1A>

You have 1 week to submit your PDF. After the deadline, the Google form will be automatically closed and no more submissions will be considered. The deadline is **Sunday, July 3, 11:59 pm**.