MIS 320 Database Management Systems: Assignment 1

1. This is a **group assignment**. Your group may discuss this assignment with your classmates, but your answers should be your own. There will be a severe penalty for submitting copied answers. Make sure that you review the slides, book chapter and in-class solutions.

2. This assignment is due at 11:59 PM on **Tuesday, February 6ᵗʰ, 2024**. Please submit your assignment on Canvas as a file upload. You can use Lucidchart or other open access tools to draw. You can also use electronic pens to draw on your computer and then convert.

3. Please indicate your **roster name** in your homework submission. **10 points will be deducted from your grade for missing your name.**

4. It is important that your answers are **clear** and **understandable**. No matter which tool(s) you use, submit your assignment in one pdf file. DO NOT use a google document. Upload a pdf and make sure that it is posted by 11:59 PM on Tuesday, February 6ᵗʰ.

5. It is important that you **indicate all the attributes on the E/R diagram** and identify the **primary key/identifier** explicitly by **underlining** it with a **solid line**.

6. It is important that you **list your assumptions** explicitly. If the problem description does not provide you with attributes, make explicit assumptions. If cardinalities are not clear, explicitly state your assumptions (**how entities are related and why you think an entity instance from one entity should be related to zero, one or many instances of the other entity**).

7. Be careful to separate out unary, binary and ternary relationships.

8. Stay true to the problem description even if it doesn't describe the current business reality. The goal of the assignment is to depict multiple technical situations to you so you learn the tools well.

9. Make sure to familiarize yourself with the **grading rubric** at the end of this assignment. I will be using it to grade your assignment.

I pledge on my honor that I have not given or received any unauthorized assistance on this assignment.

Your Roster Names:

Sign: Giselle Echeverria   Date: 02/06/2024

Sign: Janida Magallanes   Date: 02/06/2024

A patient may or may not have a primary care provider (PCP). PCPs can have a number of patients. PCPs refer patients to specialists. Patients have a primary pharmacy. Primary pharmacies can have a number of patients. PCPs send in prescriptions to pharmacies. A patient can have one or more prescriptions and a prescription can be for only one patient. Create the E/R diagram for the business situation described above. Make your assumptions explicit. The attributes are below.

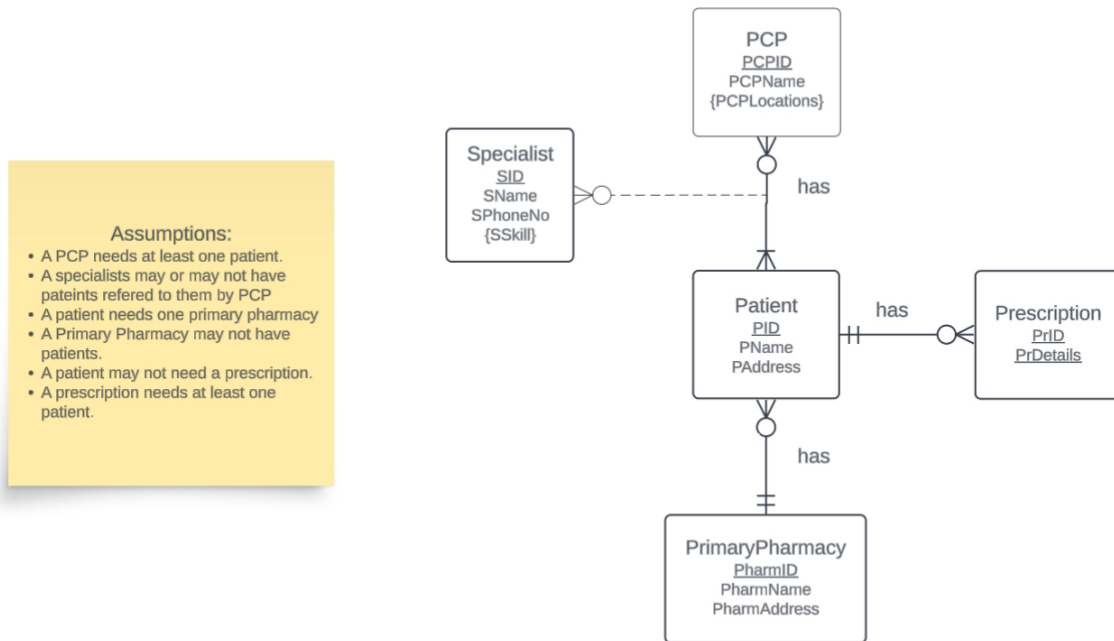Patient: PID, PName, PDOB, PAddress [PName is a composite attribute]
PCP: PCPID, PCPName, PCPlocations [PCPlocations is a multi-valued attribute]
Specialist: SID, SName, SPhoneNo, SSkill [SSkill is a multi-valued attribute]
PrimaryPharmacy: PharmID, PharmName, PharmAddress
Prescription: PrID, PrDetails   **[25 points]**

Assumptions:
- A PCP needs at least one patient.
- A specialists may or may not have pateints refered to them by PCP
- A patient needs one primary pharmacy
- A Primary Pharmacy may not have patients.
- A patient may not need a prescription.
- A prescription needs at least one patient.

PCP
PCPID
PCPName
{PCPLocations}

Specialist
SID
SName
SPhoneNo
{SSkill}

has

Patient
PID
PName
PAddress

has

Prescription
PrID
PrDetails

has

PrimaryPharmacy
PharmID
PharmName
PharmAddress

2. College students often obsess about their future placement. A student may be interested in up to five different industries and an industry may find interest from any number of students including zero. An industry can have many employers, but an employer can be in only one industry. Industries tend to congregate in certain geographical locations. A location can support one or many different industries and an industry can be supported by one or many locations. A student may find one or more locations attractive to live in and a location may be found attractive by many students. References are often influential in the job seeking process. An employer can ask students for information on up to three references. A reference does not have to provide the reference. An employer may not ask for references. If a reference is asked for information by an employer, it is about a student. In the job search process, a student can mentor any number of other students, including zero and a student can be mentored at most by one student. Create the E/R diagram for the business situation described above. Make your assumptions explicit. The attributes are below:

Student: SID, SName, SDOB, SMajor (multivalued attribute), SCourses (multivalued attribute)
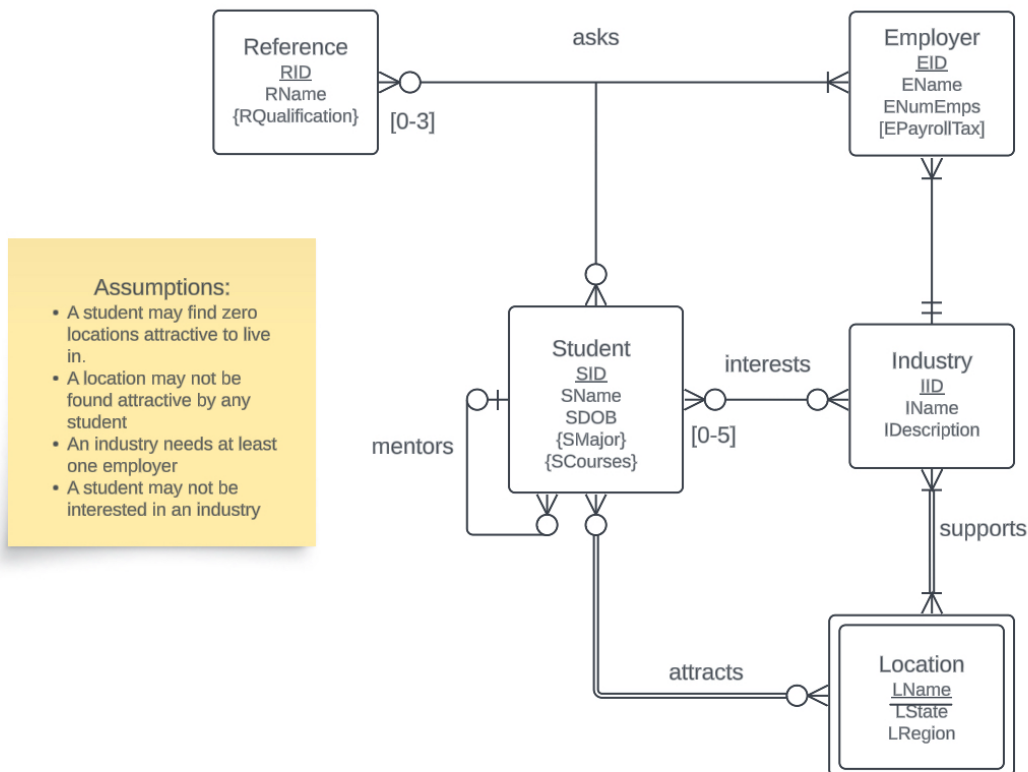Industry: IID, IName, IDescription
Employer: EID, EName, ENumEmps, EPayrollTax (derived attribute)
Location: LName, LState, LRegion
Reference: RID, RName, RQualification (multivalued attribute)   **[25 points]**

Concerts, festivals and fairs are among things that people adore about summer. These events are usually put together by promoters. A promoter can organize many events and an event can be organized by many promoters. An event can be held in only one arena and an arena can hold a maximum of one event at a time. An event can highlight many attractions and an attraction can be highlighted in many events. A funder can finance many events but an event can be financed by at most one funder. Funders and promoters make agreements around commission for different events. Both funders and promoters need to agree to make this work, but they may fail to agree on commission on an event. The commission percentage and the due date are important details to maintain. Create the E/R diagram for the business situation described above. Make your assumptions explicit. The attributes are below:

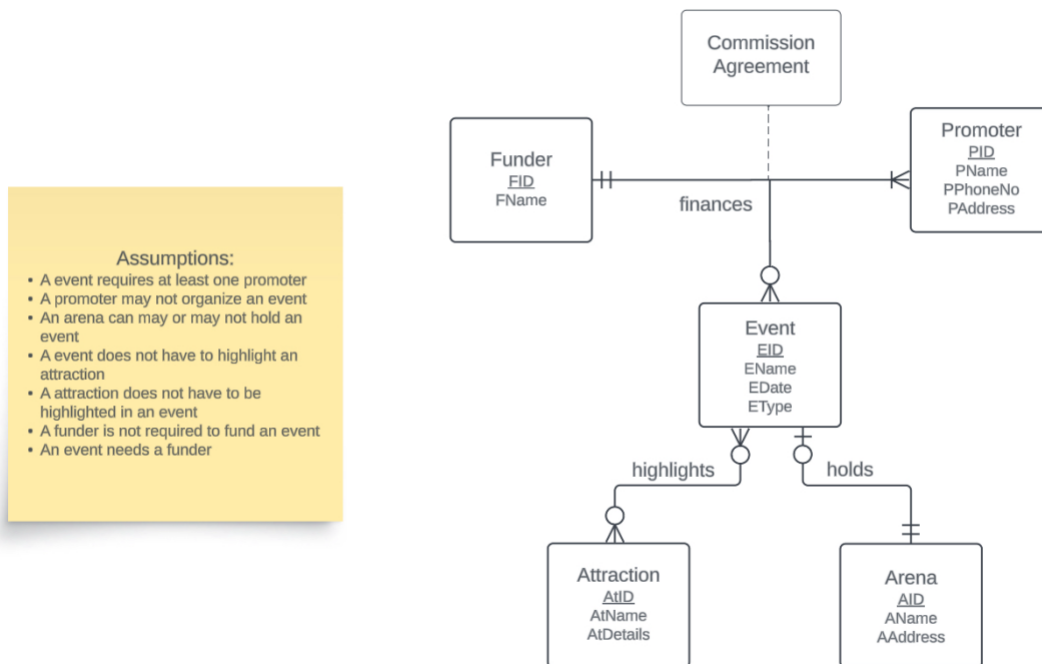Event: EID, EName, EDate, EType

Promoter: PID, PName, PPhoneNo, PAddress [PAddress is a composite attribute]

Arena: AID, AName, AAddress

Attraction: AtID, AtName, AtDetails

Funder: FID, FName   [**25 points**]

Assumptions:
- A event requires at least one promoter
- A promoter may not organize an event
- An arena can may or may not hold an event
- A event does not have to highlight an attraction
- A attraction does not have to be highlighted in an event
- A funder is not required to fund an event
- An event needs a funder

Grading Rubric for Assignment 1

Errors in the E/R Diagram	
Error	**Penalty**
Entities not included in the E/R diagram	-1 for each, up to -2
Entities not correctly identified in the E/R diagram	-1 for each, up to -2
Attributes not included in the E/R diagram	-1 for each, up to -2
Attributes not correctly identified in the E/R diagram	-1 for each, up to -2
Relationships not included in the E/R diagram	-1 for each, up to -2
Incorrect cardinality for relationships (i.e., one-to-one; one-to-many; many-to-many; optional/mandatory). **NOTE:** This penalty is for cases where I have told you that things are one way and you model them another way.	-1 for each, up to -2
Primary key not indicated in the E/R diagram	-1 for each, up to -2
Additional entities or attributes or relationships (**NOTE:** However, in many-to-many relationships, you may need to add attributes to the relationship)	-1 for each, up to -2
Assumptions not indicated clearly (mention why you think certain things are related in a certain manner; explain why some relationships are one-to-one or one-to-many or many-to-many or mandatory/optional)	-1 for each, up to -2
Overall Document	
Is the document clear, readable and understandable?	-5 if not

The penalties are for each question.