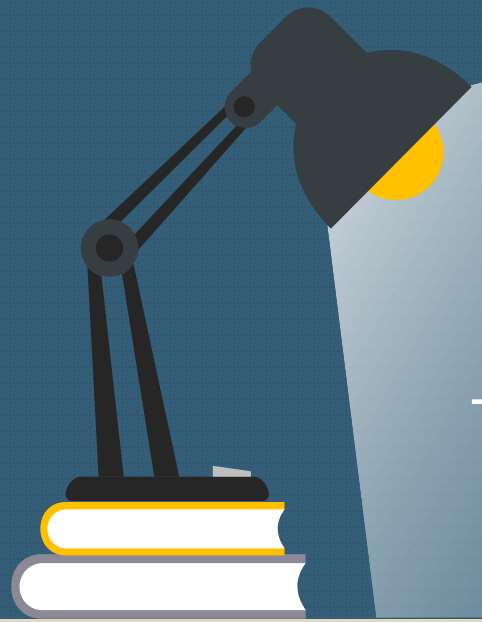

EPPS6354 Information Management

Assignment 5

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Assignment 5

Q1

- An E-R diagram can be viewed as a graph. What do the following mean in terms of the structure of an enterprise schema?

a) The graph is disconnected:

In an E-R diagram, if the graph is disconnected, it means that there are separate groups of entities and relationships that are not connected to each other. This could imply that there are isolated parts of the schema that do not interact or relate to each other in any way. In terms of the enterprise schema, this might suggest that there are distinct parts of the organization or business process that are not interlinked or dependent on each other.

b) The graph has a cycle:

If there is a cycle, it means that there is a circular relationship among entities. For instance, Entity A is related to Entity B, which is related to Entity C, and Entity C is related back to Entity A, forming a loop. In terms of the enterprise schema, this could imply that there is a circular dependency among different aspects of the business process or data model. This might lead to issues such as data redundancy or inconsistency if not properly managed.

Assignment 5

Q2

- Construct an E-R diagram for a hospital with a set of patients and a set of medical doctors.Associate with each patient a log of the various tests and examinations conducted (Hint: use miro.com to draw the diagram with relationship sets).

Strong Entity Set:

Independent: Exists independently of other entities and can be identified uniquely without relying on them.

Primary key: Has its own primary key that uniquely identifies each instance within the set.

Participation: May or may not participate in relationships with other entities.

Representation: Shown as a single rectangle in an E-R diagram.

Assignment 5

Q3

- We can convert any weak entity set to a strong entity set by simply adding appropriate attributes. Why, then, do we have weak entity sets?

- Dependency on Another Entity: Weak entity sets represent entities that cannot be uniquely identified by their own attributes but depend on some other entity. For example, consider a "Dependent" entity in an employee database. A dependent's existence is dependent on the employee they are associated with. Adding attributes alone wouldn't make the dependent a strong entity because it still relies on the employee.
- In summary, weak entity sets play a crucial role in accurately modeling real-world scenarios, maintaining data integrity, and ensuring conceptual clarity in database design. They represent entities that have a dependency on another entity and cannot stand alone based on their own attributes.

Assignment 5

Q4

- An E-R diagram can be viewed as a graph. What do the following mean in terms of the structure of an enterprise schema?

Strong Entity Set:

Independent: Exists independently of other entities and can be identified uniquely without relying on them.

Primary key: Has its own primary key that uniquely identifies each instance within the set.

Participation: May or may not participate in relationships with other entities.

Representation: Shown as a single rectangle in an E-R diagram.


Thank
you!