

Review Questions

1. Explain the database design process.

Database design consist of the following steps:

1. Data requirement.

This step identifies the requirements of the database including type of data, his relationship and the operations done with it.

2. Conceptual design.

Creation of conceptual data model using E-R modeling to identify entities, attributes and key relations.

3. Logical design.

Transformation a concept design in a logic data model defining tables, fields and relations. At this step we eliminate the redundancy of data.

4. Physical design.

This step defines the storage of the data in the DBMS of our choice including index and constraints detail.

5. Implementation and load of data.

When the database is created in DBMS and the first data is loaded.

6. Optimization and maintenance.

After implementation the maintenance and the optimization is doed day by day to grant an optimal performance.

2. Define the following terms:

-Entity: Represents specific things or objects in the mini-world that are represented in the DB.

-Attribute: Are properties used to describe an entity.

-Attribute value: Specific value for an entity attribute.

-Relationship: Define relations between entities with a specific meaning.

-Instance: Individual record of an entity within a database.

-Composite attribute: Attribute composed of several components.

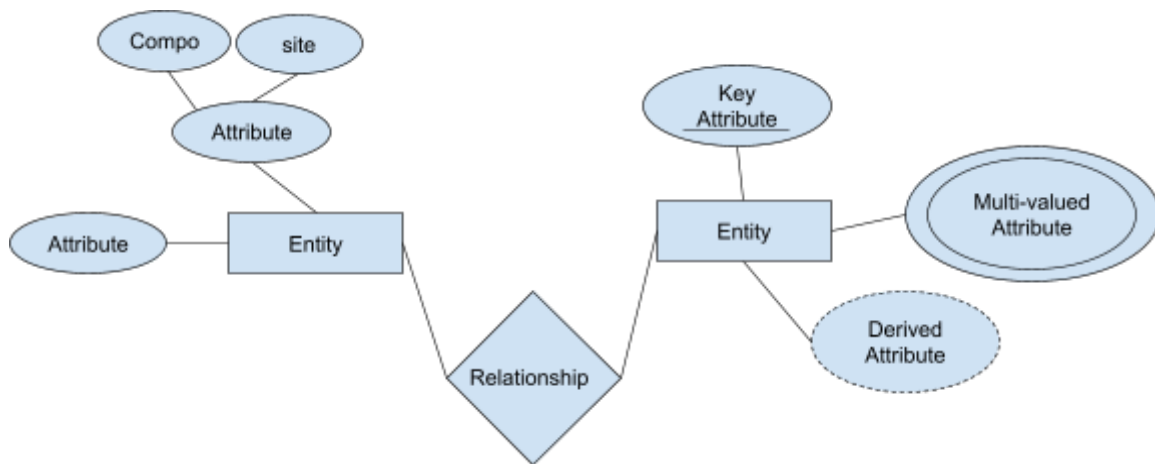
-Multivaluated attribute: An attribute in a database that can have multiple values for a single entity or instance.

-Derived attribute: Attribute whose value is derived or calculated from other attributes.

-Key attribute: Attribute who identifies an entity with a unique value.

-Value set (domain): Defines set or range of permissible values for an attribute.

3. Can you draw the notation in ER model for entity, relationship and attribute. Please, take into account the types of attributes.



4. What is a weak entity?

Is an entity that cannot be uniquely identified by its attributes alone. It depends on another entity called “parent entity” for its identification.

5. Explain the difference between an attribute and a value set?

The attribute is the property that describes an entity in the DB and the value set are the permit values that an attribute can have.