

Name:- ARYAN KOHLI

Section:- T16

Email no:- 04296203121

Branch:- I.T.

Database Modelling

Assignment-2

UNIT-2

Q1 Explain the logical data Modelling & integrity constraints.

Ans Logical data modelling involves transforming the conceptual data model into a more detailed representation that can be implemented in a specific DBMS. This typically involves the following steps:-

1. Entity-Relationship (ER) Model Transformation.

2. Normalization

3. Data Types and Constraints

4. Indexing

5. Views and Stored Procedures.

Integrity constraints ensure the accuracy and consistency of data within a database.

1. Primary Key Constraint.

2. Foreign Key Constraint

3. Unique Constraints

4. Check Constraint

5. ~~Entity~~ Entity Integrity Constraint.

Q2 Explain the ER Model and EER Model to map with logical schema.

Ans The process of mapping an Entity-Relationship (ER) model and an Enhanced Entity-Relationship (EER) model to a logical schema involves transforming the

Conceptual representations into a more concrete and structured form suitable for implementation in a database management system.

1. ER Model Mapping to Logical Schema:-

- Entities become tables, attributes become columns, and relationships ~~between~~ become foreign key constraints.
- Primary keys are identified and mapped to ensure uniqueness within tables.
- Cardinality constraints determine how relationships are represented in the logical schema.
- Attributes are mapped to appropriate data type in the DBMS, considering factors like size, precision and data constraints.

2. BBA Model Mapping to Logical Schema:-

- Specialization hierarchies are mapped to tables using Superclass/Subclass relationships, where attributes specific to subclasses are added to their respective tables.
- Generalization relationships may result in a single table with a discriminator column to differentiate between instances of different subclass.
- Aggregation relationships are mapped similarly to regular relationships but may involve creating separate table to represent aggregated entities.
- Attribute inheritance is implemented by ensuring that attributes defined in superclass tables are inherited by subclass tables.

explain the mapping complex in construction of ER Model

Mapping complex in the construction of an ER (Entity-Relationship) model refers to the process of representing real world scenarios and relationships between entities in a simplified and structured manner within the model. It involves identifying entities, attributes and ~~relationships~~ relationships, determining cardinality and participation constraints, and ensuring clarity and accuracy in the representation of complex scenarios within the model.

Q4 Explain the normalization in detail with its type along with suitable example.

Ans Normalization is the process of organizing data in a database to eliminate redundancy and dependency, ensuring data integrity and minimizing anomalies during data modification.

1. First Normal form (1NF): Each attribute value in a table must be atomic, meaning it cannot be divided further. ~~See example 5~~

2. Second Normal form (2NF): Every non prime attribute must be fully functionally dependent on the entire primary key.

3. Third Normal form (3NF): All attributes must be functionally dependent only on the primary key and not on any other non prime attributes.