



UNIT III ER DIAGRAM MODELS AND NORMAL FORMS

DATABASE DESIGN: Database Design Process, ER Diagrams - Entities, Attributes, Relationships, Constraints, keys, extended ER features, Generalization, Specialization, Aggregation, Conceptual design with the E-R model. E-R Issues- weak entity set, code rules, Dependencies and Normal forms - Functional Dependencies, Normalizations: 1NF,2NF,3NF,BCNF,4NF,5NF.



Database Design Process

a model for identifying entities to be represented in the database and representation of how those entities are related.



Database Design Process

- Design Phases - Requirement Analysis:
 - to understand what data need to be stored in the database, what applications must be built, what are all those operations that are frequently used by the system.
 - requires proper communication with user groups.



Database Design Process

- Design Phases – Conceptual database design:
 - E-R Model is built.
 - a high level model used in database design.
 - to create a simple description of data that matches with the requirements of users.



Database Design Process

- Design Phases – Logical database design:
 - ER model is converted to relational database schema.

- Design Phases – Schema refinement:
 - to identify the potential problems and to refine it.
 - normalizing and restructuring the relations.



Database Design Process

- Design Phases – Physical database design:
 - building indexes on tables and clustering tables, redesigning some parts of schema obtained from earlier design steps.



Database Design Process

- Design Phases – Application and Security Design:
 - UML – design of the database can be accomplished.
 - the role of each entity in every process must be reflected in the application task.
 - some access rules must be enforced on the application to protect the security features.



Database Design Process

- provides a means for representing relationships between entities.
- It is an aid for database design.
- It is easy to visualize and understand.



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Thank You.....