

14 Lecture - CS403

Important Subjective

1. **What is a relation in the relational data model?**

Answer: A relation is a table in the relational data model that contains a collection of related records.

What is a primary key, and why is it important?

Answer: A primary key is a unique identifier for a record in a table. It is important because it ensures data integrity and helps to establish relationships between tables.

What is normalization in the context of the relational data model?

Answer: Normalization is the process of organizing data in a database to reduce redundancy and improve data consistency.

What is a foreign key, and how is it used in the relational data model?

Answer: A foreign key is a field in a table that references the primary key of another table. It is used to establish relationships between tables.

What is a join, and how is it used in the relational data model?

Answer: A join is an operation in the relational data model that combines records from two or more tables based on a common field.

What is the difference between a one-to-many relationship and a many-to-many relationship in the relational data model?

Answer: In a one-to-many relationship, a record in one table can have many related records in another table, but a record in the second table can have only one related record in the first table. In a many-to-many relationship, a record in one table can have many related records in another table, and a record in the second table can have many related records in the first table.

What is denormalization, and why is it used in the relational data model?

Answer: Denormalization is the process of intentionally adding redundancy to a database to improve query performance. It is used when a database is heavily queried and needs to respond quickly.

What is a view in the relational data model?

Answer: A view is a virtual table in the relational data model that does not store data but is based on one or more tables. It is used to simplify queries and ensure data security.

What is the difference between a clustered index and a non-clustered index in the relational data model?

Answer: A clustered index determines the physical order of data in a table and can be created for only one field in a table. A non-clustered index is a separate data structure that can be created for multiple fields in a table.

What is a transaction in the relational data model, and why is it important?

Answer: A transaction is a sequence of database operations that are treated as a single unit of

work. It is important because it ensures data consistency and integrity in a multi-user database environment.