

# 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.