

5 Lecture - CS403

Important Subjective

1. **What is the purpose of the requirements gathering phase in the database development process?**

Answer: The purpose of the requirements gathering phase is to collect and document the needs and expectations of the stakeholders for the database. This information is used to guide the development of the database and ensure that it meets the requirements of its users.

What is data modeling, and why is it an important part of the database development process?

Answer: Data modeling is the process of creating a conceptual representation of the data that will be stored in the database. It is an important part of the database development process because it helps to ensure that the database is designed in a way that accurately reflects the data it will be storing, and that it is optimized for performance.

What is the purpose of normalization in the database development process?

Answer: The purpose of normalization is to eliminate data redundancy and improve data integrity in the database. This is achieved by organizing the data into a series of related tables, with each table containing data related to a specific entity or concept.

What is schema design, and why is it important in the database development process?

Answer: Schema design is the process of defining the physical structure of the database, including the tables, columns, indexes, and other objects that will be used to store and access data. It is an important part of the database development process because it ensures that the database is designed in a way that is optimized for performance and scalability.

What is the purpose of testing in the database development process?

Answer: The purpose of testing is to ensure that the database is functioning as expected, and that it is meeting the needs of its users. Testing includes both functional testing, which tests the features and functionality of the database, and performance testing, which tests the speed and efficiency of the database.

What is the role of backup and recovery planning in the database development process?

Answer: The role of backup and recovery planning is to ensure that data is not lost in the event of a system failure or disaster. This includes developing a plan for backing up data regularly, as well as a plan for recovering data in the event of a failure.

What is the purpose of database maintenance in the database development process?

Answer: The purpose of database maintenance is to ensure that the database continues to function as expected over time. This includes tasks such as monitoring performance, optimizing indexes, and updating the database schema as needed.

What is the difference between a logical and physical database design?

Answer: A logical database design is a high-level representation of the database structure, focusing on the relationships between entities and concepts. A physical database design, on the other hand, focuses on the physical implementation of the database, including the choice of hardware, software, and storage.

other hand, is a detailed representation of the database structure, including the specific tables, columns, and indexes that will be used to store and access data.

What are some common challenges that arise during the database development process?

Answer: Common challenges during the database development process include managing changing requirements, optimizing performance, ensuring data integrity, and addressing security concerns.

What is the role of database administrators in the database development process?

Answer: Database administrators play a critical role in the database development process, as they are responsible for managing the database throughout its lifecycle. This includes tasks such as designing the database schema, optimizing performance, and ensuring the security and availability of the database.