

DATABASE MANAGEMENT SYSTEMS

Course Outcome for Database Management Systems:

1. Understand the fundamental concepts of database management systems and explain the DBMS approach in managing data efficiently.
2. Analyze and compare different database system concepts and architectures, including the three-schema architecture, centralized architecture, and client-server architecture.
3. Apply data modeling using the Entity-Relationship model to represent real-world scenarios and relationships between entities.
4. Identify and implement structural constraints in database design, including weak entities and single level ordered indexes.
5. Design and implement multi-level indexes for efficient data retrieval and storage in a relational database model.
6. Demonstrate an understanding of relational model concepts, such as SELECT, PROJECT, JOIN, and DIVISION operations.
7. Identify and apply functional dependencies and constraints in SQL to ensure data integrity and consistency.
8. Write and execute complex queries in SQL to retrieve and manipulate data from a database effectively.
9. Implement embedded SQL to integrate SQL queries within programming languages and applications.
10. Discuss transaction processing, concurrency control techniques, such as two-phase locking, and recovery mechanisms in multi-database systems.
11. Implement database backup and recovery strategies to ensure data continuity and availability in case of system failures.