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CA/DB/M51 DATABASE MANAGEMENT SYSTEMS

Unit I

Overview of Database Systems: Managing data; history; file systems versus DBMS; advantages of a DBMS; describing and storing data in a DBMS; queries in a DBMS; transaction management; structure of a DBMS.

Unit II

Introduction to Database Design: database design and ER diagrams; entities, attributes and entity sets; relationship and relationship sets; additional features of ER model; conceptual design with the ER model.

Unit III

Relational Model: Introduction to the relational model; integrity constraints over relations; enforcing integrity constraints; Querying relational data; logical database design: ER to relational; introduction to views; destroying/altering tables and views. Relational Algebra and Calculus: relational algebra; relational calculus.

Unit IV

SQL Queries, Constraints, Triggers: Form of a basic SQL query; UNION, INTERSECT, and EXCEPT; nested queries; aggregate operators; null values; complex integrity constraints in SQL; triggers and active databases.

Unit V

Schema Refinement and Normal Forms: Normal forms – Boyce Codd normal form, third normal form; other kind of dependencies – fourth normal form, fifth normal form.

Reference books

1. Ramakrishnan, Raghu and Gehrke, Johannes, Database Management Systems, Third edition, McGraw-Hill 2003

2. Abraham Silberchatz, Henry F. Korth, S. Sudarshan, Database System Concepts, Fourth edition , McGraw-Hill, 2002

3. Date, C.J., An Introduction to Database Systems, Seventh edition, AddisonWesley, 2000.