Lesson Plan(2024-25)

Class BCA 3rd Semester

Subject: Database Technologies

3rd Week, July 2024 Basic Concepts – Data, Information, Records, Files, Schema and Instance etc. Limitations of File Based Approach

4th Week, July 2024 Characteristics of Database Approach, Database Management System (DBMS), Components of DBMS Environment

1st Week, Aug,2024 Functions and Components, Database Interfaces, Advantages and Disadvantages of DBMS. Database Users: Data and Database Administrator, Role and Responsibilities of Database Administrator, Database Designers, Application Developers

2nd Week, Aug,2024 Database System Architecture – 1-Tier, 2-Tier & Three Levels of Architecture, External, Conceptual and Internal Levels

3rd Week, Aug,2024 Schemas, Mappings and Instances, Data Independence – Logical and Physical Data Independence

4th Week, Aug,2024 Data Models: Hierarchical, Network and Relational Data Models

1st Week, Sept 2024 Entity-Relationship Model: Entity, Entity Sets, Entity Type, Attributes: Type of Attributes, Keys

2nd Week, Sept 2024 , Integrity Constraints, Designing of ER Diagram, Symbolic Notations for Designing ER Diagram

3rd Week, Sept 2024 SQL: Meaning, Purpose and Need of SQL, Data Types, SQL Components: DDL, DML, DCL and DQL, Basic Queries, Join Operations and Sub-queries

4th Week, Sept 2024 Views, Specifying Indexes. Constraints and its Implementation in SQL

1st Week, Oct 2024 Relational Algebra: Basic Operations: Select, Project, Join, Union, Intersection, Difference, and Cartesian Product

2nd Week, Oct 2024 Relational Calculus: Tuple Relational and Domain Relational Calculus. Relational Algebra Vs. Relational Calculus
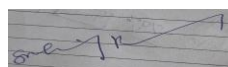
3rd Week, Oct 2024(upto 26/10) Relational Model: Functional Dependency, Characteristics, Inference Rules for Functional Dependency, Types of Functional Dependency

27/10 to 3/11 Diwali Vacations

4-7Nov, 2024 Normalization: Benefits and Need of Normalization, Normal Forms Based on Primary Keys- (1NF, 2NF, 3NF, BCNF)

2nd Week, Nov 2024 Multi-valued Dependencies, 4 NF, Join dependencies, 5 NF, Domain Key Normal Form

3rd Week, Nov 2024 Revision

Sushil Kumar Sharma
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