

ST. ANN'S COLLEGE OF ENGINEERING & TECHNOLOGY, CHIRALA
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
LESSION PLAN

Subject: Database Management Systems

Academic Year: 2017-18

Name: CH.RAJU

Year &Sem/Section: III – I - 'C'

Unit	Topics Planned to be Covered	No. of Periods Required
I	INTRODUCTION: Database system, Characteristics (Database Vs File System), Database Users (Actors on Scene, Workers behind the scene), Advantages of Data base systems, Database applications. Brief introduction of different Data Models; Concepts of Schema, Instance and data independence; Three tier schema architecture for data independence; Database system structure, environment, Centralized and Client Server architecture for the database.	9
II	RELATIONAL MODEL : Introduction to relational model, concepts of domain, attribute, tuple, relation, importance of null values, constraints (Domain, Key constraints, integrity constraints) and their importance BASIC SQL: Simple Database schema, data types, table definitions (create, alter), different DML operations (insert, delete, update), basic SQL querying (select and project) using where clause, arithmetic & logical operations, SQL functions (Date and Time, Numeric, String conversion).	8
III	Entity Relationship Model: Introduction, Representation of entities, attributes, entity set, relationship, relationship set, constraints, sub classes, super class, inheritance, specialization, generalization using ER Diagrams. SQL : Creating tables with relationship, implementation of key and integrity constraints, nested queries, sub queries, grouping, aggregation, ordering, implementation of different types of joins, view, relational set operations.	11
IV	SCHEMA REFINEMENT(NORMALIZATION): Purpose of Normalization or schema refinement, concept of functional dependency, normal forms based on functional dependency(1NF, 2NF and 3 NF), concept of surrogate key, Boyce-code normal form(BCNF), Lossless join and dependency preserving decomposition, Fourth normal form(4NF).	6
V	TRANSACTION MANAGEMENT AND CONCURRENCY CONTROL: Transaction, properties of transactions, transaction log, and transaction management with SQL using commit rollback and save point. Concurrency control for lost updates, uncommitted data, inconsistent retrievals and the Scheduler. Concurrency control with locking methods :lock granularity, lock types, two phase locking for ensuring serializability, deadlocks, Concurrency control with time stamp ordering : Wait/Die and Wound/Wait Schemes, Database Recovery management: Transaction recovery. SQL constructs that grant access or revoke access from user or user groups. Basic PL/SQL procedures, functions and triggers.	12
VI	STORAGE AND INDEXING: Database file organization, file organization on disk, heap files and sorted files, hashing, single and multi-level indexes, dynamic multilevel indexing using B-Tree and B+ tree, index on multiple keys.	7
Total No.of Class		53

Text Books :

1. Database Management Systems, 3/e Raghuram Krishnan, Johannes Gehrke, TMH
2. Database Management System, 6/e Ramez Elmasri, Shamkant B. Navathe, PEA
3. Database Principles Fundamentals of Design Implementation and Management, Corlos Coronel, Steven Morris, Peter Robb, Cengage Learning.

Reference Books :

1. Database System Concepts. 5/e Silberschatz, Korth, TMH
2. Introduction to Database Systems, 8/e C J Date, PEA
3. The Database book principles & practice using Oracle/MySql Narain Gehani, University Press.

Signature of the Faculty

Signature of the HOD