

DATABASE SYSTEMS LAB SYLLABUS

Module 1: Data Definition and Data Manipulation Language

- Introduction to DDL (Data Definition Language) and DML (Data Manipulation Language)
- Creating, altering, and deleting database objects
- Inserting, updating, and deleting data

Module 2: Constraints

- Types of constraints: Primary Key, Foreign Key, Unique, Not Null, Check
- Defining and enforcing constraints
- Role of constraints in maintaining data integrity

Module 3: Single Row Functions

- Working with character, number, and date functions
- Conversion functions
- Null handling with functions

Module 4: Operators and Group Functions

- Arithmetic, comparison, logical, and set operators
- Using aggregate functions: COUNT, SUM, AVG, MAX, MIN
- Grouping data with **GROUP BY** and **HAVING** clauses

Module 5: Subqueries, Views, and Joins

- Writing single and multi-level subqueries
- Working with views: Creating, modifying, and deleting views
- Different types of joins: INNER, OUTER, SELF, and CROSS joins

Module 6: High-Level Language Extensions

- Procedures: Creating and using stored procedures
- Functions: User-defined functions
- Cursors: Implicit and explicit cursors
- Triggers: Creating triggers for automatic execution based on data manipulation events

