

# SQLITE SYLLABUS

## Module 1: Introduction to SQLite

- What is SQLite
- Features and advantages
- SQLite vs MySQL
- Use cases (mobile apps, embedded systems)
- Installing SQLite & tools

## Module 2: Database Basics

- Creating and deleting databases
- Tables, rows, columns
- Data types in SQLite
- Constraints (PRIMARY KEY, NOT NULL, UNIQUE)

## Module 3: SQL Fundamentals

- Introduction to SQL
- DDL (CREATE, ALTER, DROP)
- DML (INSERT, UPDATE, DELETE)
- DQL (SELECT)
- WHERE clause and conditions

## Module 4: Sorting & Filtering

- ORDER BY
- LIMIT and OFFSET
- Filtering data
- LIKE operator

## Module 5: Functions & Aggregates

- Aggregate functions (COUNT, SUM, AVG, MAX, MIN)
- Grouping data (GROUP BY)
- HAVING clause

## Module 6: Joins

- INNER JOIN
- LEFT JOIN
- CROSS JOIN
- Working with multiple tables

## Module 7: Indexes

- What are indexes
- Creating and dropping indexes
- Performance benefits

## Module 8: Views

- Creating views
- Updating views
- Advantages of views

## Module 9: Transactions

- ACID properties
- BEGIN, COMMIT, ROLLBACK
- Managing transactions

## Module 10: SQLite with Programming

- Using SQLite with Python
- Using SQLite with Android

- CRUD operations in applications
- Handling database connections

## Module 11: Data Modeling

- Designing database schema
- Normalization basics
- Relationships

## Module 12: Backup & Recovery

- Exporting data
- Importing data
- Backup strategies

## Module 13: Performance Optimization

- Query optimization
- Efficient indexing
- Best practices

## Module 14: Security

- Data protection
- Access control basics
- Secure database usage

## Module 15: Real-World Projects

- Mobile app database
- Notes application database
- Inventory system
- Offline data storage system