

## Introduction to SQL and Advanced Tableau-Sem 4

### UNIT – I: Introduction to SQL

\*What is SQL? Explain its role in data management.

\*Differentiate between DDL, DML, DCL, and TCL with examples.

\*Write SQL queries using the following commands:

CREATE TABLE, INSERT INTO, SELECT, UPDATE, DELETE

\*Explain constraints in SQL (PRIMARY KEY, FOREIGN KEY, UNIQUE, CHECK, NOT NULL).

\*Write a SQL query to fetch:

All records

Specific columns

Records with conditions using WHERE, AND, OR, BETWEEN, IN

### UNIT – II: SQL Joins and Aggregations

\*Explain the different types of JOINS: INNER, LEFT, RIGHT, FULL OUTER

\*Write SQL queries using GROUP BY, HAVING, and ORDER BY clauses.

\*What are aggregate functions in SQL? (COUNT, SUM, AVG, MAX, MIN)

\*Write a query to

Count number of students in each department

Find highest salary in each department

\*Explain subqueries and aliases with examples.

### UNIT – III: Advanced Tableau Features

\*What are Level of Detail (LOD) Expressions? Types: FIXED, INCLUDE, EXCLUDE

\*Explain Table Calculations in Tableau with examples (RANK, RUNNING\_SUM, etc.)

\*What is a parameter in Tableau? How does it enhance interactivity?

\*Explain how to create dynamic charts using parameters.

\*Define Set Actions and how they differ from filters.

### UNIT – IV: Data Modeling and Relationships

\*Explain data modeling in Tableau. What are Relationships and Joins?

\*Differentiate between data blending and joins.

\*What is a star schema and snowflake schema in data modeling?

\*When to use custom SQL queries in Tableau?

\*Write a custom SQL query to retrieve data and use it in Tableau.

#### UNIT – V: Dashboards and Publishing

\*List the best practices for building Tableau dashboards.

\*How to create interactive dashboards with actions (Filter, Highlight, URL)?

\*Explain how to publish a dashboard to Tableau Public or Tableau Server.

\*Describe the difference between extracts and live connections.

\*Create a project combining SQL + Tableau to show sales data with filters and KPIs.