Database

Module 4 – Introduction to DBMS

Introduction to SQL:

1. What is SQL, and why is it essential in database management?

Ans:

1. Explain the difference between DBMS and RDBMS.

Ans:

1. Describe the role of SQL in managing relational databases.

Ans:

1. What are the key features of SQL?

Ans:

SQL Syntax:

1. What are the basic components of SQL syntax?

2. Write the general structure of an SQL SELECT statement.

3. Explain the role of clauses in SQL statements.

SQL Constraints:

1. What are constraints in SQL? List and explain the different types of constraints.

2. How do PRIMARY KEY and FOREIGN KEY constraints differ?

3. What is the role of NOT NULL and UNIQUE constraints?

Main SQL Commands and Sub-commands (DDL):

1. Define the SQL Data Definition Language (DDL).

2. Explain the CREATE command and its syntax.

3. What is the purpose of specifying data types and constraints during table creation?

ALTER Command:

1. What is the use of the ALTER command in SQL?

2. How can you add, modify, and drop columns from a table using ALTER?

DROP Command:

1. What is the function of the DROP command in SQL?

2. What are the implications of dropping a table from a database?

Data Manipulation Language (DML):

1. Define the INSERT, UPDATE, and DELETE commands in SQL.

2. What is the importance of the WHERE clause in UPDATE and DELETE operations?

Data Query Language (DQL):

1. What is the SELECT statement, and how is it used to query data?

2. Explain the use of the ORDER BY and WHERE clauses in SQL queries.

Data Control Language (DCL):

1. What is the purpose of GRANT and REVOKE in SQL?

2. How do you manage privileges using these commands?

Transaction Control Language (TCL):

1. What is the purpose of the COMMIT and ROLLBACK commands in SQL?

2. Explain how transactions are managed in SQL databases.

SQL Joins:

1. Explain the concept of JOIN in SQL. What is the difference between INNER JOIN, LEFT JOIN, RIGHT JOIN, and FULL OUTER JOIN?

2. How are joins used to combine data from multiple tables?

SQL Group By:

1. What is the GROUP BY clause in SQL? How is it used with aggregate functions?

2. Explain the difference between GROUP BY and ORDER BY.

SQL Stored Procedure:

1. What is a stored procedure in SQL, and how does it differ from a standard SQL query?

2. Explain the advantages of using stored procedures.

SQL View:

1. What is a view in SQL, and how is it different from a table?

2. Explain the advantages of using views in SQL databases.

SQL Triggers:

1. What is a trigger in SQL? Describe its types and when they are used.

2. Explain the difference between INSERT, UPDATE, and DELETE triggers.

Introduction to PL/SQL:

1. What is PL/SQL, and how does it extend SQL's capabilities?

2. List and explain the benefits of using PL/SQL.

PL/SQL Control Structures:

1. What are control structures in PL/SQL? Explain the IF-THEN and LOOP control structures.

2. How do control structures in PL/SQL help in writing complex queries?

SQL Cursors:

1. What is a cursor in PL/SQL? Explain the difference between implicit and explicit cursors.

2. When would you use an explicit cursor over an implicit one?

Rollback and Commit Savepoint:

1. Explain the concept of SAVEPOINT in transaction management. How do ROLLBACK and COMMIT interact with savepoints?

2. When is it useful to use savepoints in a database transaction?