Task 1:

Gain foundational knowledge of SQL by exploring its key elements—Literals, Data types, Nulls, and Comments. Develop an understanding of SQL syntax and its role in database management and manipulation.

Responsibilities Breakdown:

1. Introduction to Databases:

• What is a Database?

• A database is an organized collection of data stored electronically, designed for efficient storage, retrieval, and management.

• Examples: MySQL, PostgreSQL, Oracle, MongoDB.

• Importance of Databases:

• Centralized data storage.

• Quick data retrieval and management.

• Secure and consistent data operations.

• Examples of Usage:

• E-commerce (Customer and Order details).

• Social Media (User profiles, posts, interactions).

2. SQL Basics:

• What is SQL?

• SQL (Structured Query Language) is a standard language for accessing, updating, and managing data in databases.

• SQL Syntax:

• SQL commands typically follow this structure:

COMMAND <optional-clauses>;

• Example:

SELECT \* FROM customers WHERE city = 'New York';

• SQL Components:

• Literals: Fixed values in queries like 42, 'John', or NULL.

• Data Types: Categories of data stored in columns, e.g., VARCHAR, INT, DATE.

• Nulls: Represent missing or undefined data.

• Comments: Notes in SQL scripts for explanation.

• Single-line comment: -- This is a comment

• Multi-line comment: /\* This is a block comment \*/

3. Data Definition Language (DDL):

• Commands used to define and modify database structure:

a. CREATE:

• Creates a new database or table.

• Syntax:

CREATE TABLE table\_name (

    column1 datatype,

    column2 datatype,

    ...

);

• Example:

CREATE TABLE employees (

    id INT PRIMARY KEY,

    name VARCHAR(50),

    hire\_date DATE

);

b. ALTER:

• Modifies an existing table’s structure.

• Syntax:

ALTER TABLE table\_name

ADD column\_name datatype;

• Example:

ALTER TABLE employees

ADD salary DECIMAL(10, 2);

c. DROP:

• Deletes a table or database.

• Syntax:

DROP TABLE table\_name;

• Example:

DROP TABLE employees;

Deliverables for TASK-1:

1. A basic report or document outlining:

• Key takeaways from database introduction.

• List of SQL DDL commands with examples.

2. Practical demonstration:

• Create a sample database and table.

• Perform basic operations like adding columns and dropping tables.

Would you like example scripts for any of these commands? 😊