SQL Assignment

Installation link: https://www.youtube.com/watch?v=Sfvpgu9ID2Q

Link to learn SQL: https://www.youtube.com/watch?v=hlGoQC332VM

SQL

SQL, or Structured Query Language, is a standard programming language designed for managing and manipulating relational databases. It is widely used for tasks such as querying data, updating and deleting records, and managing the structure of a database. Here's a general overview for a fresher:

SQL (Structured Query Language):

SQL is a domain-specific language used for managing and manipulating relational databases. It provides a set of commands to interact with databases, allowing users to perform operations like retrieving data, modifying data, and managing the structure of the database.

SQL Commands:

SQL commands are like instructions to a table. It is used to interact with the database with some operations. It is also used to perform specific tasks, functions, and queries of data. SQL can perform various tasks like creating a table, adding data to tables, dropping the table, modifying the table, set permission for users.

These SQL commands are mainly categorized into five categories:

DDL – Data Definition Language

DQL – Data Query Language

DML – Data Manipulation Language

DCL – Data Control Language

TCL – Transaction Control Language

DDL (Data Definition Language):

DDL or Data Definition Language consists of the SQL commands that can be used to define the database schema. It simply deals with descriptions of the database schema and is used to create and modify the structure of database objects in the database. DDL is a set of SQL commands used to create, modify, and delete database structures but not data. These commands are normally not used by a general user, who should be accessing the database via an application.

List of DDL commands:

CREATE: This command is used to create the database or its objects (like table, index, function, views, store procedure, and triggers).

Syntax: CREATE TABLE table_name (

column1 datatype,

column2 datatype,

...

);

Ex: CREATE TABLE employees (

employee_id INT PRIMARY KEY,

first_name VARCHAR(50),

last_name VARCHAR(50),

hire_date DATE

);

DROP: This command is used to delete objects from the database

Syntax: DROP TABLE table_name;

Ex: DROP TABLE table_name;

ALTER: This is used to alter the structure of the database.

Syntax: ALTER TABLE table_name

ADD column_name datatype;

Ex: ALTER TABLE employees

ADD email VARCHAR(100);

TRUNCATE: This is used to remove all records from a table, including all spaces allocated for the records are removed.

Syntax: TRUNCATE TABLE table_name;

Ex: TRUNCATE TABLE employees;

DML (Data Manipulation Language):

The SQL commands that deal with the manipulation of data present in the database belong to DML or Data Manipulation Language and this includes most of the SQL statements. It is the component of the SQL statement that controls access to data and to the database. Basically, DCL statements are grouped with DML statements.

List of DML commands:

INSERT: It is used to insert data into a table.

Syntax: INSERT INTO table_name (column1, column2, ...)

VALUES (value1, value2, ...);

Ex: INSERT INTO employees (employee_id, first_name, last_name, hire_date)

VALUES (1, 'John', 'Doe', '2022-01-01');

UPDATE: It is used to update existing data within a table.

Syntax: UPDATE table_name

SET column1 = value1, column2 = value2, ...

WHERE condition;

Ex: UPDATE employees

SET first_name = 'Jane'

WHERE employee_id = 1;

DELETE: It is used to delete records from a database table.

Syntax: DELETE FROM table_name

WHERE condition;

Ex: DELETE FROM employees

WHERE employee_id = 1;

Other Commands:

SHOW DATABASES:

Purpose: Displays a list of all available databases on the database server.

Syntax: SHOW DATABASES;

Ex: SHOW DATABASES;

USE:

Purpose: Selects a specific database to work with among the available databases.

Syntax: USE database_name;

Ex: USE sample_database;

SHOW TABLES:

Purpose: Lists all tables in the currently selected database.

Syntax: SHOW TABLES;

Ex: SHOW TABLES;

DESC (or DESCRIBE):

Purpose: Provides information about the structure of a table, including column names, data types, and constraints.

Syntax: DESCRIBE table_name; or DESC table_name;

Ex: DESCRIBE employees;

ASSIGNMENT QUESTIONS:

Install Mysql and perform the following:

1. Execute the following instructions:
    i. show databases;
    ii. create database _____
    iii. use _____
    iv. show tables;
    v. create table_____
    vi. desc _____

2. for the table that you have created, do the following
    i. Insert a column
    ii. delete a column
    iii. rename a column
    iv. change the data type of a column
    v. make a column primary key / remove primary key