

Hotwax Training

Assignments Day 2

Task 1: What is a connection pool? How can we establish it in a database?

Connection pool is a cache of database connections that is created so that there is no need to create a new connection each time, which actually takes more time, slows down the speed and we have to create multiple connections at all. Thus, we create a pool of connections, so that, whenever any application needs a connection, it can directly take from that pool and after using it, can return back.

How to establish?

The method to establish a pool vary from language to language. Here's the pool established using JDBC:

```
import com.zaxxer.hikari.HikariConfig;
import com.zaxxer.hikari.HikariDataSource;
import java.sql.Connection;

public class DBPool {
    private static HikariDataSource dataSource;

    static {
        HikariConfig config = new HikariConfig();
        config.setJdbcUrl("jdbc:mysql://localhost:3306/yourdb");
        config.setUsername("root");
        config.setPassword("password");
        config.setMaximumPoolSize(10); // Max connections
        dataSource = new HikariDataSource(config);
    }

    public static Connection getConnection() throws Exception {
        return dataSource.getConnection();
    }
}
```

Task 2: Boolean Data type values.

```
CREATE TABLE users (
    id INT,
    name VARCHAR(50),
    is_active BOOLEAN
);
```

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In MySQL, BOOLEAN is treated as **TINYINT(1)**, where:

- 1 = true
- 0 = false

How to insert boolean values?

```
INSERT INTO users (id, name, is_active) VALUES (1, 'Payal', true);
```

```
INSERT INTO users (id, name, is_active) VALUES (2, 'Anjali', false);
```

Task 3: Difference between Drop, Delete and Truncate internally, who works faster?

Drop - Drop is a DDL command. It deletes the whole database or table (schema) along with data.

Delete - Delete is a DML command. It only deletes the specified row from the table.

Truncate - It is a DDL command which removes the entire table data but table schema or structure remains the same.

Task 4: Write 3 queries for each keyword for DDL commands.

DDL is a Data Definition Language, which has four keywords used to make changes in the entire schema or database structure. The keywords and their example usage is given below:

CREATE

1. CREATE TABLE STUDENTS(
S_id INT PRIMARY KEY NOT NULL,
S_name VARCHAR(50),

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S_age INT

);

2. CREATE DATABASE College;
3. CREATE VIEW student_view AS SELECT name, age FROM students;

ALTER

1. ALTER TABLE STUDENTS ADD COLUMN Address VARCHAR(200);
2. ALTER TABLE STUDENTS DROP COLUMN S_age;
3. ALTER TABLE STUDENTS MODIFY COLUMN S_name VARCHAR(100);

DROP

1. DROP TABLE STUDENTS;
2. DROP DATABASE College;
3. DROP VIEW student_view;

TRUNCATE

1. TRUNCATE TABLE <table name>;

Note: Since TRUNCATE is used to delete all the rows from a table at once, I've given only syntax here.

RENAME

1. RENAME TABLE <old table name> TO <new table name>;
2. RENAME TABLE STUDENTS TO learners;
3. ALTER TABLE STUDENTS RENAME COLUMN S_id TO S_Rollno;