

ASSIGNMENT

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Introduction of DAO

The **Data Access Object (DAO)** pattern is a structural pattern that allows for the separation of low-level data accessing API or operations from high-level business services. It abstracts and encapsulates all access to the data source, providing a clean separation between data and business logic.

Benefits

- 1. Separation of Concerns**
- 2. Easier Unit Testing**
- 3. Flexibility and Scalability**

Task 1

Create a registration module with database connectivity to store data in a database.

```
package javaapplication10;
import java.sql.*;

/**
 *
 * @author hp
 */
public class JavaApplication10 {

    private static final String URL = "jdbc:mysql://localhost:3306/user";
    private static final String USER = "root";
    private static final String PASSWORD = "";

    //create

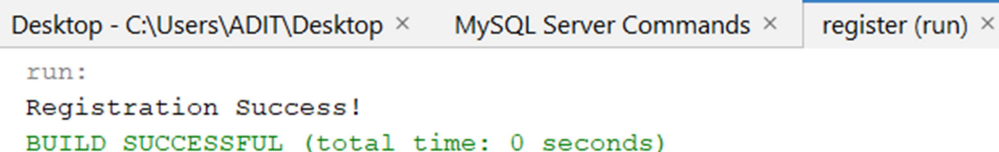
    public static void register(String username, String password, String email){
        String query = "insert into users(username,password,email) values(?,?,?)";
        try(Connection conn = DriverManager.getConnection(URL, USER, PASSWORD);
            PreparedStatement ps = conn.prepareStatement(query)) {
            ps.setString(1,username);
            ps.setString(2,password);
            ps.setString(3,email);
            ps.executeUpdate();
            System.out.println("Registration Success!");
        }

        public static void main(String[] args) {

            register("Ahalya", "ahalya@123","ahalya@gmail.com");

        }
    }
}
```

Output



```
Desktop - C:\Users\ADIT\Desktop × MySQL Server Commands × register (run) ×
run:
Registration Success!
BUILD SUCCESSFUL (total time: 0 seconds)
```

Result : Program successfully completed.

Task 2

Create a login module with database connectivity to check authentication of user.

```
public static void login(String username, String password){
    String query = "SELECT * FROM users WHERE username=? AND password=?";

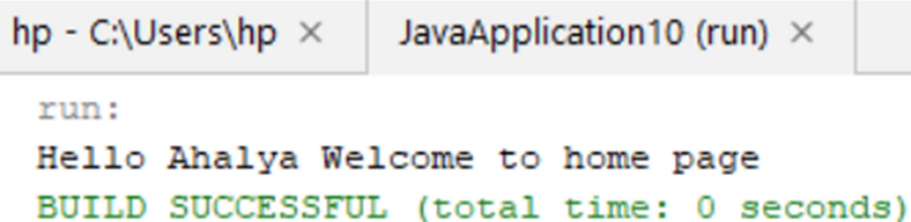
    try (Connection conn = DriverManager.getConnection(URL, USER, PASSWORD);
        PreparedStatement ps = conn.prepareStatement(query)) {
        ps.setString(1, username);
        ps.setString(2, password);
        ResultSet rs = ps.executeQuery();

        if(rs.next()) {
            // Valid credentials, create a session
            String uname = rs.getString("username");
            System.out.println("Hello "+uname+" Welcome to home page");
        } else {
            // Invalid credentials
            System.out.println("Invalid username or password.");
        }
    } catch (SQLException e) {
        System.out.println(e);
    }
}

public static void main(String[] args) {
    login("Ahalya", "ahalya@123");
}

}
```

Output



```
hp - C:\Users\hp x JavaApplication10 (run) x
run:
Hello Ahalya Welcome to home page
BUILD SUCCESSFUL (total time: 0 seconds)
```

Result : Program successfully completed.