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 ×   JavaApplication10 (run) ×

run:
Hello Ahalya Welcome to home page
BUILD SUCCESSFUL (total time: 0 seconds)
```

Result : Program successfully completed.