

What is MVC Pattern-?

MVC Pattern

- Model-View-Controller (MVC) is a pattern used in software engineering to separate the application logic from the user interface. As the name implies, the MVC pattern has three layers.
- The Model defines the business layer of the application, the Controller manages the flow of the application, and the View defines the presentation layer of the application.

First – setup the database

Open mysql workbench and create a table inside employee database

create database employees;

use employees;

create table employee(first_name varchar(20) default null,

last_name varchar(20) default null, username varchar(20) default null,

password varchar(20) default null, address varchar(50) default null,

contact varchar(20) default null);

select * from employee;

--Output--

Second- Create the web app- Project name RegistrationExample

1. Create a new dynamic web project

Goto> file>new>dynamic web project and give the project name.

New Dynamic Web Project

Dynamic Web Project

Create a standalone Java-based Web Application or add it to a new or existing Enterprise Application.

Project name: RegistrationExample ✓

Project location

☒ Use default location

Location: C:\Users\shahi\eclipse-workspace\RegistrationExample Browse...

Target runtime

Apache Tomcat v8.5 ✓ New Runtime...

Dynamic web module version

3.1 ✓

Configuration

Default Configuration for Apache Tomcat v8.5 ✓ Modify...

A good starting point for working with Apache Tomcat v8.5 runtime. Additional facets can later be installed to add new functionality to the project.

EAR membership

☐ Add project to an EAR

EAR project name: EAR New Project...

Working sets

☐ Add project to working sets New...

Working sets: Select...

< Back Next > Finish Cancel

And Select web.xml file while creating the application

New Dynamic Web Project

Web Module

Configure web module settings.

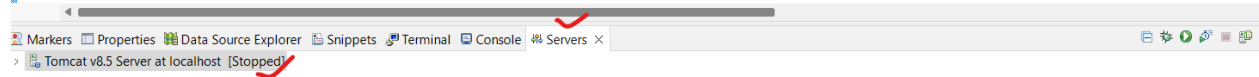
Context root: RegistrationExample

Content directory: src/main/webapp

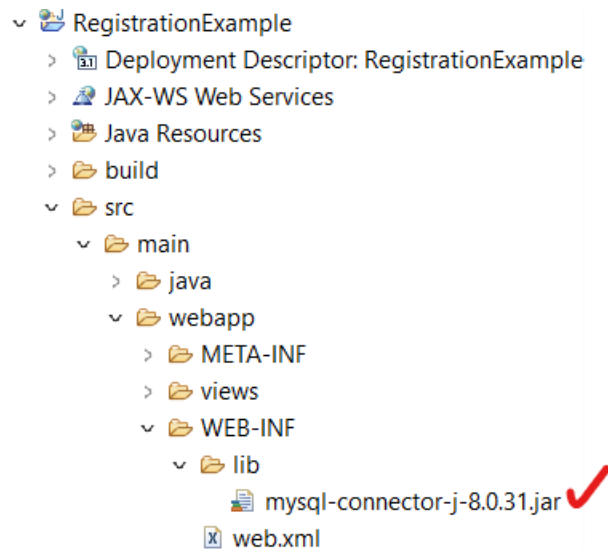
☒ Generate web.xml deployment descriptor ✓

configure Apache server
goto server and add tomcat server

```
36         employee.setContact(contact);  
37         employee.setAddress(address);  
38     }
```



2. Put mysql java connector jar file inside lib folder in Web-Inf folder (drag and drop)



3. Create a package inside src folder

Name of the package- com.upes.registration

Now, create three sub-packages inside com.upes.registration package

Name of the packages- com.upes.registration.model, com.upes.registration.dao,

com.upes.registration.controller

4. Create a folder inside web-app folder

Name of the folder- views

a) Create a **jsp** file named *employeeeeregister.jsp* file inside views folder

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"  
    pageEncoding="ISO-8859-1"%>  
<!DOCTYPE html>  
<html>  
<head>  
<meta charset="ISO-8859-1">  
<title>Insert title here</title>  
</head>
```

```

<body>
<div align="center">
<h1>Employee Register Form</h1>
<form action="<%= request.getContextPath() %>/register" method="post">
<table style="width: 80%">
<tr>
<td>First Name</td>
<td><input type="text" name="firstName" /></td>
</tr>
<tr>
<td>Last Name</td>
<td><input type="text" name="lastName" /></td>
</tr>
<tr>
<td>UserName</td>
<td><input type="text" name="username" /></td>
</tr>
<tr>
<td>Password</td>
<td><input type="password" name="password" /></td>
</tr>
<tr>
<td>Address</td>
<td><input type="text" name="address" /></td>
</tr>
<tr>
<td>Contact No</td>
<td><input type="text" name="contact" /></td>
</tr>
</table>
<input type="submit" value="Submit" />
</form>
</div>
</body>
</html>

```

5. Create a **servlet** named EmployeeServlet inside com.upes.registration.controller package

```

package com.upes.registration.controller;
import java.io.IOException;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

import com.upes.registration.dao.EmployeeDao;
import com.upes.registration.model.Employee;

@WebServlet("/register")

public class EmployeeServlet extends HttpServlet {
    private static final long serialVersionUID = 1L;

    private EmployeeDao employeeDao = new EmployeeDao();

    protected void doPost(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {

```

```
String firstName = request.getParameter("firstName");
String lastName = request.getParameter("lastName");
String username = request.getParameter("username");
String password = request.getParameter("password");
String address = request.getParameter("address");
String contact = request.getParameter("contact");
```

```
Employee employee = new Employee();
employee.setFirstName(firstName);
employee.setLastName(lastName);
employee.setUsername(username);
employee.setPassword(password);
employee.setContact(contact);
employee.setAddress(address);
```

```
try {
    employeeDao.registerEmployee(employee);
} catch (Exception e) {
    // TODO Auto-generated catch block
    e.printStackTrace();
}

PrintWriter out= response.getWriter();
out.print("details entered successfully!!");
}
}
```

6. Create a **class** named EmployeeDao.java inside com.upes.registration.dao package

```
package com.upes.registration.dao;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.PreparedStatement;
import java.sql.SQLException;
```

```
import com.upes.registration.model.Employee;
public class EmployeeDao {
```

```
    public int registerEmployee(Employee employee) throws ClassNotFoundException {
        String INSERT_USERS_SQL = "INSERT INTO employee " +
            " (first_name, last_name, username, password, address, contact) VALUES " +
            " (?, ?, ?, ?, ?, ?);";
```

```
int result = 0;
Class.forName("com.mysql.cj.jdbc.Driver");
```

```
try (Connection connection = DriverManager
    .getConnection("jdbc:mysql://localhost:3306/employees?useSSL=false", "root", "root");

    // Step 2: Create a statement using connection object
    PreparedStatement preparedStatement = connection.prepareStatement(INSERT_USERS_SQL)) {

    preparedStatement.setString(1, employee.getFirstName());
    preparedStatement.setString(2, employee.getLastName());
    preparedStatement.setString(3, employee.getUsername());
    preparedStatement.setString(4, employee.getPassword());
    preparedStatement.setString(5, employee.getAddress());
    preparedStatement.setString(6, employee.getContact());
```

```

        System.out.println(preparedStatement);
        // Step 3: Execute the query or update query to return no. of records inserted
        result = preparedStatement.executeUpdate();

    } catch (SQLException e) {
        // process sql exception
        printSQLException(e);
    }
    return result;
}

private void printSQLException(SQLException ex) {
    for (Throwable e: ex) {
        if (e instanceof SQLException) {
            e.printStackTrace(System.err);
            System.err.println("SQLState: " + ((SQLException) e).getSQLState());
            System.err.println("Error Code: " + ((SQLException) e).getErrorCode());
            System.err.println("Message: " + e.getMessage());
            Throwable t = ex.getCause();
            while (t != null) {
                System.out.println("Cause: " + t);
                t = t.getCause();
            }
        }
    }
}
}

```

7. Create a **class** named Employee.java inside com.upes.registration.model package

```
package com.upes.registration.model;
```

```

public class Employee {
    private String firstName;
    private String lastName;
    private String username;
    private String password;
    private String address;
    private String contact;

    public String getFirstName() {
        return firstName;
    }
    public void setFirstName(String firstName) {
        this.firstName = firstName;
    }
    public String getLastName() {
        return lastName;
    }
    public void setLastName(String lastName) {
        this.lastName = lastName;
    }
    public String getUsername() {
        return username;
    }
    public void setUsername(String username) {
        this.username = username;
    }
}

```

```

    }
    public String getPassword() {
        return password;
    }
    public void setPassword(String password) {
        this.password = password;
    }
    public String getAddress() {
        return address;
    }
    public void setAddress(String address) {
        this.address = address;
    }
    public String getContact() {
        return contact;
    }
    public void setContact(String contact) {
        this.contact = contact;
    }
}

```

Last- Run the application

Right click on the application and run as -> run on server-> check for errors in console.

<https://www.youtube.com/watch?v=DzYyzmP4m5c>