

Q1. Implement AbstractController in StudentController. create a mapping index.html for it and render index.jsp view from it which displays messages "Hello from index.gsp"

Web.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<web-app version="2.5"
    xmlns="http://java.sun.com/xml/ns/j2ee"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="http://java.sun.com/xml/ns/j2ee
http://java.sun.com/xml/ns/j2ee/web-app_2_5.xsd">

    <servlet>
        <servlet-name>dispatcherServlet</servlet-name>
        <servlet-class>
            org.springframework.web.servlet.DispatcherServlet
        </servlet-class>
        <init-param>
            <param-name>contextConfigLocation</param-name>
            <param-value>/WEB-INF/spring-dispatcher-servlet.xml</param-value>
        </init-param>
    </servlet>
    <servlet-mapping>
        <servlet-name>dispatcherServlet</servlet-name>
        <url-pattern>/</url-pattern>
    </servlet-mapping>

</web-app>
```

Spring-dispatcher-servlet.xml

```
<bean name="/index.html" class="demo.question1.StudentController"/>
```

StudentController.java

```
package demo.question1;

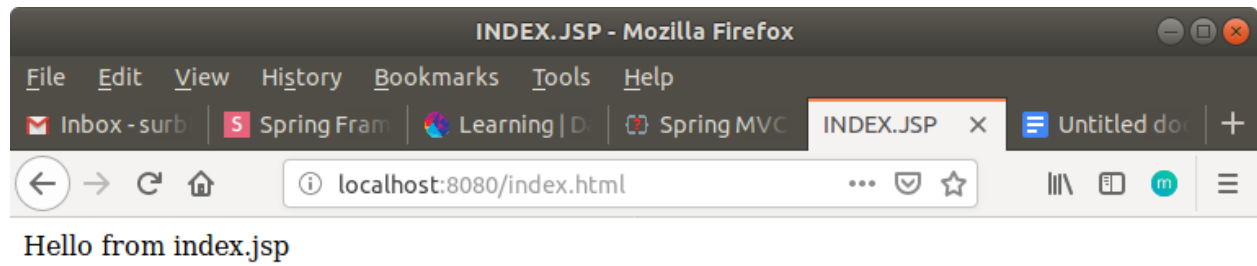
import org.springframework.web.servlet.ModelAndView;
import org.springframework.web.servlet.mvc.AbstractController;

import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

public class StudentController extends AbstractController {

    @Override
    protected ModelAndView handleRequestInternal(HttpServletRequest request,
                                                HttpServletResponse response) throws Exception {
        ModelAndView modelAndView = new ModelAndView("index");
        return modelAndView;
    }
}
```

## Output



**Q2. Now remove AbstractController and use MultiActionController for StudentController which contains 2 actions one action renders a jsp view and another action uses HttpServletResponse to show the output on the Web browser.**

**Spring-dispatcher-servlet.xml**

```
<!--Question2-->
```

```
<bean class="demo.question2.StudentController"/>
```

**StudentController.java**

```
package demo.question2;
```

```
import org.springframework.http.HttpServletRequest;
```

```
import org.springframework.web.servlet.ModelAndView;
```

```
import org.springframework.web.servlet.mvc.multiaction.MultiActionController;
```

```
import javax.servlet.http.HttpServlet;
```

```
import javax.servlet.http.HttpServletRequest;
```

```
import javax.servlet.http.HttpServletResponse;
```

```
import java.io.IOException;
```

```
public class StudentController extends MultiActionController {
```

```
    public ModelAndView form(HttpServletRequest request, HttpServletResponse response)
```

```
    {
```

```
        ModelAndView modelAndView=new ModelAndView("form");
```

```
        return modelAndView;
```

```
    }
```

```
    public void writer(HttpServletRequest request, HttpServletResponse response) throws IOException {
```

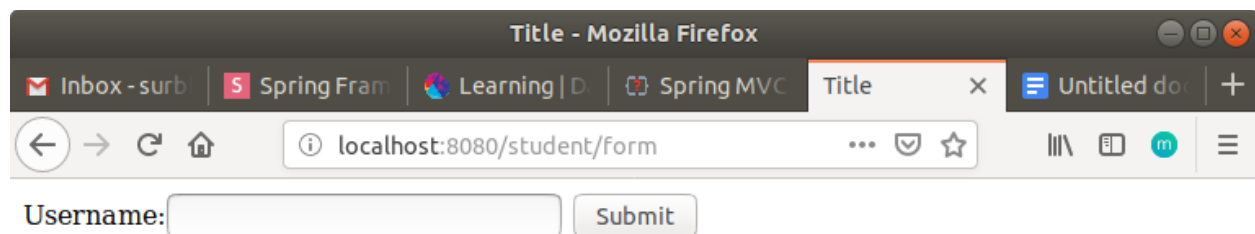
```
        response.setContentType("text/html");
```

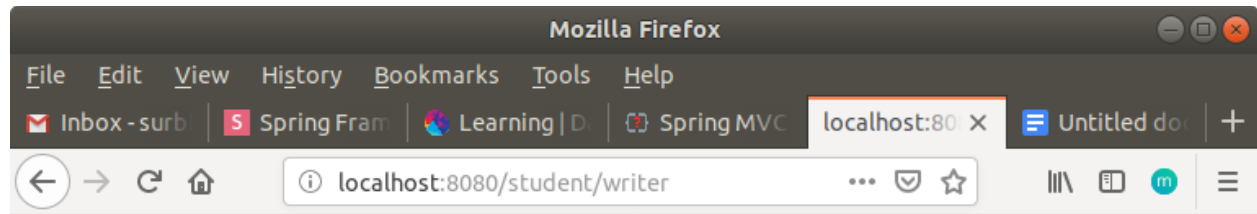
```
        response.getWriter().print("<b>Response from HttpServletResponse Writer</b>");
```

```
    }
```

```
}
```

**Output**





**Response from HttpServletResponse Writer**

**Q3. Use annotation in StudentController to define a default action index which renders a jsp page.**

**Spring-dispatcher-servlet.xml**

```
<context:component-scan base-package="demo.annotationdriven"/>
<context:annotation-config/>
```

**StudentController2.java**

```
package demo.annotationdriven.question3to8n10;
```

```
import org.springframework.stereotype.Controller;
```

```
import org.springframework.web.bind.annotation.RequestMapping;
```

```
@Controller
```

```
public class StudentController2 {
```

```
    @RequestMapping("/")
```

```
    String index()
```

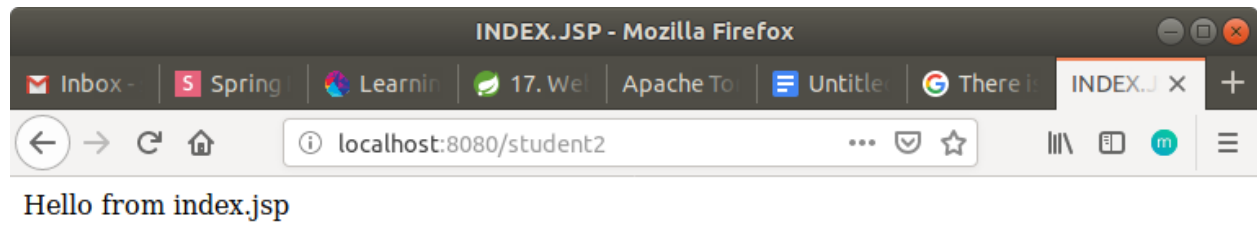
```
    {
```

```
        return "index";
```

```
    }
```

```
}
```

## Output



**Q4. Create one more annotation based action hello inside the StudentController which and use @ResponseBody annotation from it to display Hello world.**

**StudentController2.java**

```
package demo.annotationdriven.question3to8n10;
```

```
import org.springframework.stereotype.Controller;
```

```
import org.springframework.web.bind.annotation.RequestMapping;
```

```
import org.springframework.web.bind.annotation.ResponseBody;
```

```
@Controller
```

```
//for Question4
```

```
@RequestMapping("/student2")
```

```
public class StudentController2 {
```

```
    //question4
```

```
    @ResponseBody
```

```
    @RequestMapping("/hello")
```

```
    String helloWorld()
```

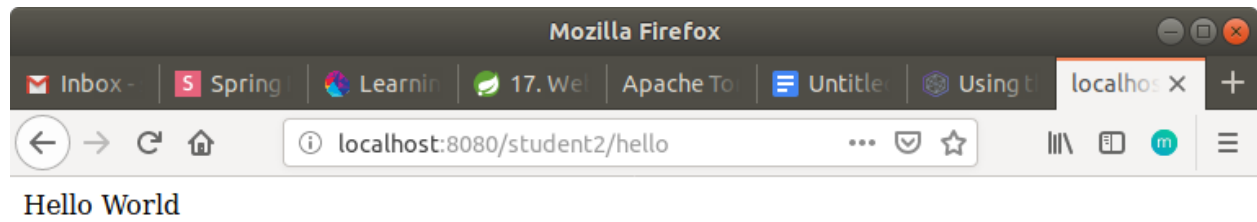
```
    {
```

```
        return "Hello World";
```

```
    }
```

```
}
```

## Output





**Q5. Create one more action which sends Model HelloWorld to the jsp file.**

**Solution**

**StudentController.java**

```
package demo.annotationdriven.question3to8n10;
```

```
import org.springframework.stereotype.Controller;
import org.springframework.web.bind.annotation.RequestMapping;
import org.springframework.web.bind.annotation.ResponseBody;
import org.springframework.web.servlet.ModelAndView;
```

```
@Controller
```

```
//for Question4
```

```
@RequestMapping("/student2")
```

```
public class StudentController2 {
```

```
    //question5
```

```
    @RequestMapping("/sendModel")
```

```
    ModelAndView sendDummModel()
```

```
    {
```

```
        ModelAndView modelAndView=new ModelAndView("dummy");
```

```
        modelAndView.addObject("message","Hello world");
```

```
        return modelAndView;
```

```
    }
```

```
}
```

**Dummy.jsp**

```
<%@ page contentType="text/html;charset=UTF-8" language="java" %>
```

```
<html>
```

```
<head>
```

```
    <title>Dummy</title>
```

```
</head>
```

```
<body>
```

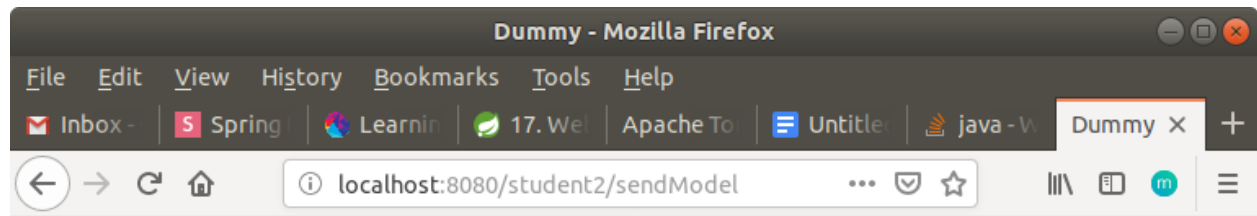
```
<p>I will display message received from model</p>
```

```
    ${message}
```

```
</body>
```

```
</html>
```

## Output



I will display message received from model

Hello world

**Q6. Use @PathVariable annotation to access firstname and lastname in an action inside StudentController place both the parameters in different arguments and access them.**

**Solution**

**StudentController2.java**

```
package demo.annotationdriven.question3to8n10;
```

```
import org.springframework.stereotype.Controller;  
import org.springframework.web.bind.annotation.PathVariable;  
import org.springframework.web.bind.annotation.RequestMapping;  
import org.springframework.web.bind.annotation.ResponseBody;  
import org.springframework.web.servlet.ModelAndView;
```

```
@Controller
```

```
//for Question4
```

```
@RequestMapping("/student2")
```

```
public class StudentController2 {
```

```
    //question6
```

```
    @ResponseBody
```

```
    @RequestMapping("/displayMyName/{firstName}/{lastName}")
```

```
    String fullName(@PathVariable("firstName")String firstName,@PathVariable("lastName")String lastName)
```

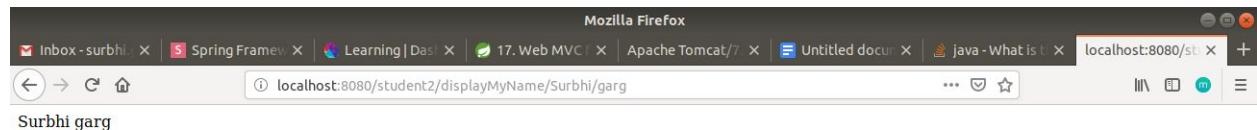
```
    {
```

```
        return firstName+" "+lastName;
```

```
    }
```

```
}
```

**Output**



**Q7. Now place both the arguments inside a Map and access the Map instead.(Hint : check the slide for @PathVariable action returnCountryAndState shows how to do it with map)**

**Solution**

**StudentController2.java**

```
package demo.annotationdriven.question3to8n10;

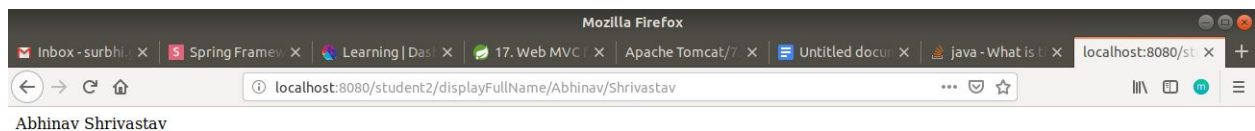
import org.springframework.stereotype.Controller;
import org.springframework.web.bind.annotation.PathVariable;
import org.springframework.web.bind.annotation.RequestMapping;
import org.springframework.web.bind.annotation.ResponseBody;
import org.springframework.web.servlet.ModelAndView;

import java.util.Map;

@Controller

//for Question4
@RequestMapping("/student2")
public class StudentController2 {
    //question7
    @ResponseBody
    @RequestMapping("/displayFullName/{firstName}/{lastName}")
    String firstNameAndLastName(@PathVariable Map<String,String> inputMap)
    {
        return inputMap.get("firstName")+" "+inputMap.get("lastName");
    }
}
```

**Output**



**Q8. Use @RequestParam annotation to access the firstname and lastname in formData action of StudentController.**

**Solution**

**StudentController2.java**

```
package demo.annotationdriven.question3to8n10;
```

```
import org.springframework.stereotype.Controller;
import org.springframework.web.bind.annotation.*;
import org.springframework.web.servlet.ModelAndView;
```

```
import java.util.Map;
```

```
@Controller
```

```
//for Question4
```

```
@RequestMapping("/student2")
```

```
public class StudentController2 {
```

```
    //Question8
```

```
    @RequestMapping("/form")
```

```
    ModelAndView studentForm()
```

```
    {
        return new ModelAndView("studentform");
    }
```

```
    @ResponseBody
```

```
    @RequestMapping(value = "/submitForm",method = RequestMethod.POST)
```

```
    String formData(@RequestParam("fname")String firstName,@RequestParam("lname")String lastName)
```

```
    {
        return firstName+" "+lastName;
    }
```

```
}
```

**Studentform.jsp**

```
<%@ page contentType="text/html; charset=UTF-8" language="java" %>
```

```
<html>
```

```
<head>
```

```
    <title>StudentForm</title>
```

```
</head>
```

```
<body>
```

```
<form method="post" action="/student2/submitForm">
```

```
    <label for="fname">First Name:</label>
```

```
    <input type="text" name="fname" id="fname"/><br/>
```

```
    <label for="lname">Last Name:</label>
```

```
    <input type="text" name="lname" id="lname"/><br/>
```

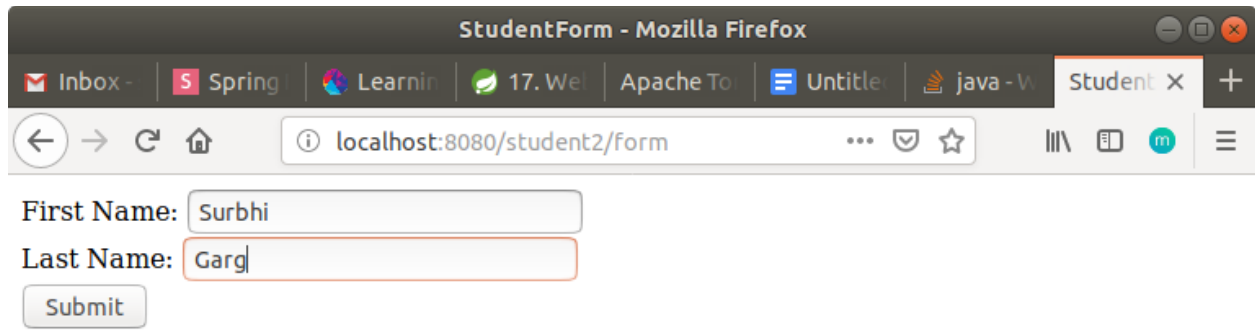
```
    <input type="submit" value="Submit"/>
```

```
</form>
```

```
</body>
```

```
</html>
```

## Output



A screenshot of a Mozilla Firefox browser window titled "StudentForm - Mozilla Firefox". The address bar shows "localhost:8080/student2/form". The page contains a form with two text input fields: "First Name:" with the value "Surbhi" and "Last Name:" with the value "Garg". Below the fields is a "Submit" button.

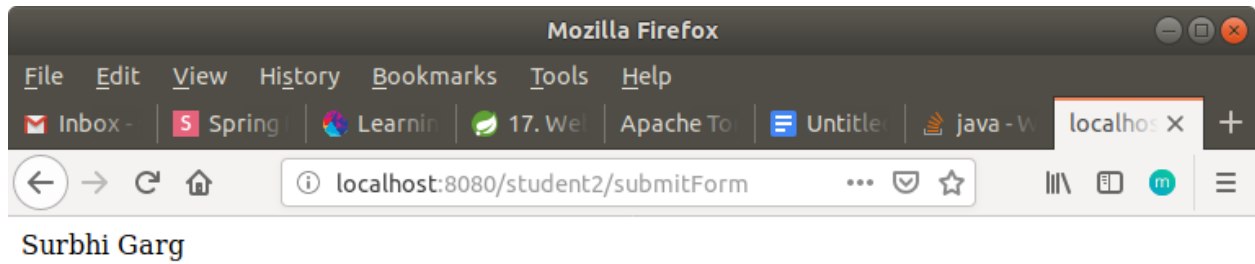
StudentForm - Mozilla Firefox

localhost:8080/student2/form

First Name: Surbhi

Last Name: Garg

Submit



A screenshot of a Mozilla Firefox browser window titled "Mozilla Firefox". The address bar shows "localhost:8080/student2/submitForm". The page displays the text "Surbhi Garg".

Mozilla Firefox

localhost:8080/student2/submitForm

Surbhi Garg

**Q9. Create a StudentCO and bind firstname and lastname with instance variable of StudentCO.**

**Solution**

**Studentform2.jsp**

```
<%@ page contentType="text/html; charset=UTF-8" language="java" %>
<html>
<head>
    <title>StudentForm</title>
</head>
<body>
<form method="post" action="/student3/submitFormData">
    <label for="fname">First Name:</label>
    <input type="text" name="firstName" id="fname"/><br/>
    <label for="lname">Last Name:</label>
    <input type="text" name="lastName" id="lname"/><br/>
    <input type="submit" value="Submit"/>
</form>
</body>
</html>
```

**StudentController3.java**

```
package demo.annotationdriven.question9;
```

```
import org.springframework.stereotype.Controller;
import org.springframework.web.bind.annotation.RequestMapping;
import org.springframework.web.bind.annotation.ResponseBody;
```

```
@Controller
@RequestMapping("/student3")
public class StudentController3 {
    @RequestMapping("/")
    String form()
    {
        return "studentform2";
    }
    @RequestMapping("/submitFormData")
    @ResponseBody
    String getStudentDetails(StudentCO studentCO)
    {
        return studentCO.getFirstName()+" "+studentCO.getLastName();
    }
}
```

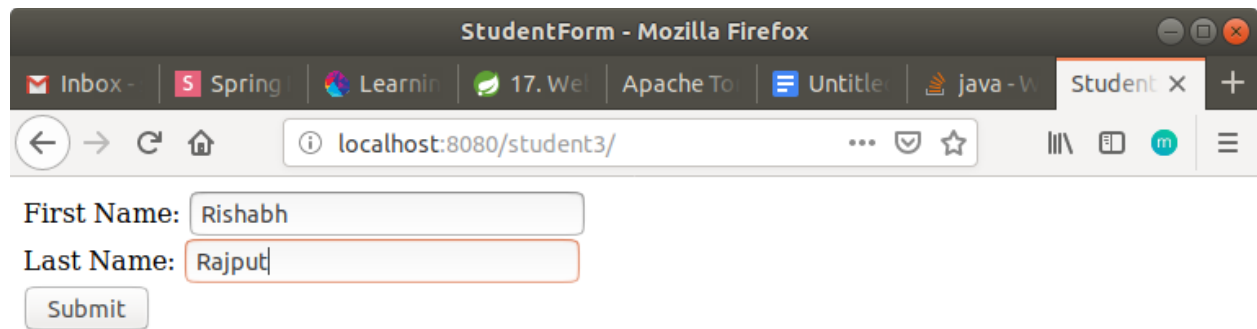
**StudentCO.java**

```
package demo.annotationdriven.question9;
```

```
public class StudentCO {
    private String firstName;
    private String lastName;
```

```
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;  
}  
}
```

## Output



The screenshot shows a Mozilla Firefox browser window titled "StudentForm - Mozilla Firefox". The address bar displays "localhost:8080/student3/". The browser tabs include "Inbox -", "Spring", "Learnin", "17. Wel", "Apache To", "Untitled", "java - W", and "Student x". The form contains two text input fields: "First Name:" with the value "Rishabh" and "Last Name:" with the value "Rajput". A "Submit" button is located below the input fields.

StudentForm - Mozilla Firefox

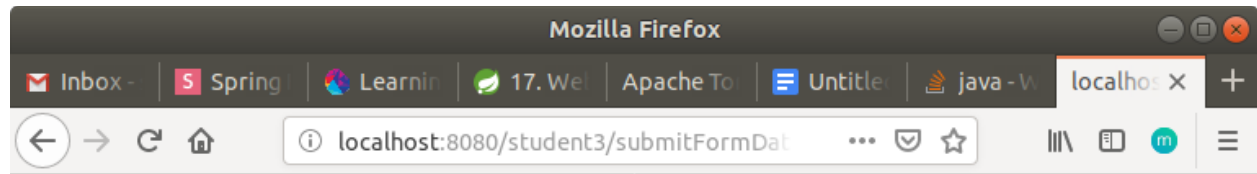
localhost:8080/student3/

First Name: Rishabh

Last Name: Rajput

Submit





Rishabh Rajput

**Q10. Use @ModelAttribute annotation to add Heading "Spring MVC Demo" in every model.**

### **StudentController2.java**

```
package demo.annotationdriven.question3to8n10;

import org.springframework.stereotype.Controller;
import org.springframework.ui.Model;
import org.springframework.web.bind.annotation.*;
import org.springframework.web.servlet.ModelAndView;

import java.util.Map;
```

**@Controller**

```
//for Question4
@RequestMapping("/student2")
public class StudentController2 {
    //Question10
    @ModelAttribute
    void addObject(Model model)
    {
        model.addAttribute("heading","Spring MVC Demo");
    }
}
```

### **Dummy.jsp**

```
<%@ page contentType="text/html;charset=UTF-8" language="java" %>
<html>
<head>
    <title>Dummy</title>
</head>
<body>
<p>I will display message received from model</p>
```

**\${message}**

**<!--question10-->**

```
${heading}
</body>
</html>
```

### **Studentform.jsp**

```
<%@ page contentType="text/html;charset=UTF-8" language="java" %>
<html>
<head>
    <title>StudentForm</title>
</head>
<body>
<!--Question10-->
```

**\${heading}**

```
<form method="post" action="/student2/submitForm">
  <label for="fname">First Name:</label>
  <input type="text" name="fname" id="fname"/><br/>
  <label for="lname">Last Name:</label>
  <input type="text" name="lname" id="lname"/><br/>
  <input type="submit" value="Submit"/>
</form>
```

```
</body>
```

```
</html>
```

## Output

