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Spring MVC Model Interface

In Spring MVC, the model works a container that contains the data of the application. Here, a data can be in any form such as objects, strings, information from the database, etc.

It is required to place the **Model** interface in the controller part of the application. The object of **HttpServletRequest** reads the information provided by the user and pass it to the **Model** interface. Now, a view page easily accesses the data from the model part

Methods of Model Interface

Method	Description
Model addAllAttributes(Collection<?> arg)	It adds all the attributes in the provided Collection into this Map.
Model addAllAttributes(Map<String,?> arg)	It adds all the attributes in the provided Map into this Map.
Model addAllAttribute(Object arg)	It adds the provided attribute to this Map using a generated name.
Model addAllAttribute(String arg0, Object arg1)	It binds the attribute with the provided name.
Map<String, Object> asMap()	It return the current set of model attributes as a Map.
Model mergeAttributes(Map< String,?> arg)	It adds all attributes in the provided Map into this Map, with existing objects of the same name taking precedence.
boolean containsAttribute(String arg)	It indicates whether this model contains an attribute of the given name

Steps To Devlop SpringMvc Based Applications:

step 1: Create A Project add The maven dependecies

```
<!--
https://mvnrepository.com/artifact/org.springframework/spring-webmvc -->
<dependency>
<groupId>org.springframework</groupId>
<artifactId>spring-webmvc</artifactId>
    <version>4.3.9.RELEASE</version>
</dependency>
  <!--
https://mvnrepository.com/artifact/jstl/jstl -->
<dependency>
    <groupId>jstl</groupId>
    <artifactId>jstl</artifactId>
```

<version>1.1.2</version>
</dependency>

Step 2: Configure Dispatcher Servlet In Web.xml

< servlet >
< servlet-name > ds </ servlet-name >
< servlet-class >
org.springframework.web.servlet.DispatcherServlet
</ servlet-class >
< load-on-startup > 1 </ load-on-startup >
</ servlet >
< servlet-mapping >
< servlet-name > ds </ servlet-name >
< url-pattern > / </ url-pattern >
</ servlet-mapping >
Note: SpringConfiguration File Naming convention followed by
<servletname-servlet>.xml

Step 3: Create Spring Configuration File based Servlet Logical Name

DispatcherServlet, the framework will try to load the applicationcontext from a file named
[servlet-name]-servlet.xml located in the application's WebContent/WEB-INF directory. In this case, our file will be ds-servlet.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<beans xmlns="http://www.springframework.org/schema/beans"
	xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
	xmlns:context="http://www.springframework.org/schema/context"
	xmlns:mvc="http://www.springframework.org/schema/mvc"
	xsi:schemaLocation="http://www.springframework.org/schema/beans
http://www.springframework.org/schema/beans/spring-beans.xsd
		http://www.springframework.org/schema/context
http://www.springframework.org/schema/context/spring-context-4.3.xsd
		http://www.springframework.org/schema/mvc
http://www.springframework.org/schema/mvc/spring-mvc-4.3.xsd">
   <!-- Provide support for component scanning -->
<context:component-scan base-package = "com.shiva.controller" />
   <!--Provide support for conversion, formatting and validation -->
<mvc:annotation-driven></mvc:annotation-driven>
</beans>
```

Note :

Following are some important points about HelloWeb-servlet.xml file −

- **The [servlet-name]-servlet.xml file will be used to create the beans defined, overriding the definitions of any beans defined with the same name in the global scope.**
- **The <context:component-scan...> tag will be used to activate the Spring MVC annotation scanning capability, which allows to make use of annotations like @Controller and @RequestMapping, etc.**

  Note: If not Configured InternalResourceViewResolver it goes to rootDirectly to find out the view component.

Step:4 Create A view Component in side the webapp folder.(root directory)

<html>

<body>

<h2>Student Form</h2>

```
<form action="student">

Sno    <input type="text" name="sno" /><br>

Sname  <input type="text" name="sname"></br>

Sadd  <input type="text" name="sadd"></br>


<input type="submit" value="Go">

</form>

</body>

</html>
```

Step :5 Create A Controller Class It Act as Helper Class/HandlerClass/ControllerClas

To create the controller class, we are using two annotations @Controller and @RequestMapping.

The @Controller annotation marks this class as Controller.

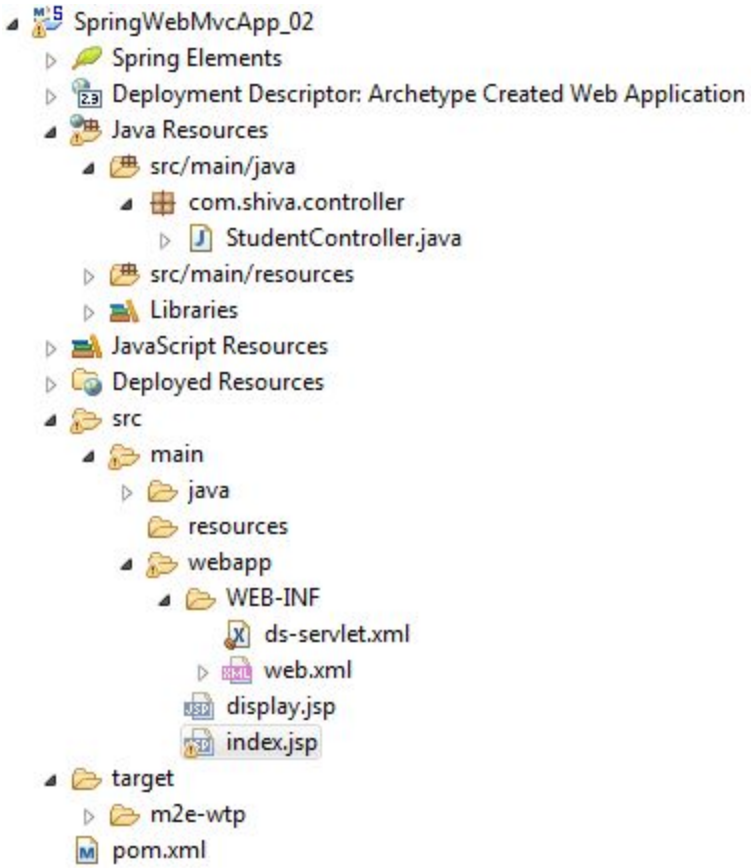
The @Requestmapping annotation is used to map the class with the specified URL name

In controller class:

- **The HttpServletRequest is used to read the HTML form data provided by the user.**
- **The Model contains the request data and provides it to view page**

```
package com.shiva.controller;


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

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

@Controller
public class StudentController {

	/*
	 The HttpServletRequest is used to read the HTML form data provided by the user.
    The Model contains the request data and provides it to view page
	 */
	@RequestMapping("student")
	public String welcomeController(HttpServletRequest request,Model model)
	{
		String sno=request.getParameter("sno");
		String sname=request.getParameter("sname");
		String sadd=request.getParameter("sadd");
		model.addAttribute("sno",sno);
		model.addAttribute("sname",sname);
		model.addAttribute("sadd",sadd);

		return "display.jsp";
	}
}
```



Note: Controller class giving response back view or model Object to DispatcherServlet

DispatcherServlet receives Model or view some time it can receive ModelAndView(view and object also)it gives ViewResolver
ViewResolver takes the request from dispatcher Servlet it gives appropriate view component
If ViewResolver not configuredThen it gives to root Directory