Spring4 MVC HelloWord 实例

Spring4 MVC 入门教程

本教程是基于以下工具写的：

- MyEclipse 10
- Spring 4.0.3.RELEASE

2- 预览应用程序执行流程

Spring MVC DispatcherServlet 读取 xml 配置文件的原则：

- {servlet-name} ==> /WEB-INF/{servlet-name}-servlet.xml

如果你不想用 SpringMVC 的使用原则，可以重新配置 SpringMVC DispatcherServlet 在 web.xml 文件中：

```
<servlet>
   <servlet-name>my-dispatcher-name</servlet-name>
   <servlet-class>org.springframework.web.servlet.DispatcherServlet</servlet-class>
   <init-param>
       <!-- override default name {servlet-name}-servlet.xml -->
       <param-name>contextConfigLocation</param-name>
       <param-value>/WEB-INF/springmvc-myconfig.xml</param-value>
   </init-param>
   <load-on-startup>1</load-on-startup>
</servlet>
```

应用程序的流程：

3 - 创建 Maven 工程

创建 Maven 项目类型。 Maven 是帮助我们管理库的最好方式。

在 Eclipse, 选择 "File/New/Other..."

选择 archetype "maven-archetype-webapp"。

输入：

- Group Id: **com.yiibai**
- Artifact Id: **HelloSpringMVC**
- Package: **com.yiibai.springmvc**

这样将创建项目，结构如下图所示：

不要担心项目在创建的时候出现错误信息。原因是，现在我们还没有声明 Servlet 库。在 Eclipse 中创建 Maven 项目结构可能是错误的。需要我们去检查出来并完善。

4- 配置 Spring

这是项目建成后的文件结构图：

配置 Maven 使用 Spring 库.

- pom.xml

```
<projectxmlns="http://maven.apache.org/POM/4.0.0"xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="http://maven.apache.org/POM/4.0.0
     http://maven.apache.org/maven-v4_0_0.xsd">

    <modelVersion>4.0.0</modelVersion>
    <groupId>com.yiibai</groupId>
    <artifactId>HelloSpringMVC</artifactId>
    <packaging>war</packaging>
    <version>0.0.1-SNAPSHOT</version>
    <name>HelloSpringMVC Maven Webapp</name>
    <url>http://maven.apache.org</url>
```

```
    <dependencies>

        <dependency>
            <groupId>junit</groupId>
            <artifactId>junit</artifactId>
            <version>3.8.1</version>
            <scope>test</scope>
        </dependency>

        <!-- Servlet Library -->
        <!-- http://mvnrepository.com/artifact/javax.servlet/javax.servlet-api -
->
        <dependency>
            <groupId>javax.servlet</groupId>
            <artifactId>javax.servlet-api</artifactId>
            <version>3.1.0</version>
            <scope>provided</scope>
        </dependency>

        <!-- Spring dependencies -->
        <!-- http://mvnrepository.com/artifact/org.springframework/spring-core -
->
        <dependency>
            <groupId>org.springframework</groupId>
            <artifactId>spring-core</artifactId>
            <version>4.1.4.RELEASE</version>
        </dependency>

        <!-- http://mvnrepository.com/artifact/org.springframework/spring-web -
->
        <dependency>
            <groupId>org.springframework</groupId>
            <artifactId>spring-web</artifactId>
            <version>4.1.4.RELEASE</version>
        </dependency>

        <!-- http://mvnrepository.com/artifact/org.springframework/spring-webmvc
-->
        <dependency>
            <groupId>org.springframework</groupId>
            <artifactId>spring-webmvc</artifactId>
            <version>4.1.4.RELEASE</version>
        </dependency>
```

```
    </dependencies>

    <build>
        <finalName>HelloSpringMVC</finalName>
        <plugins>

            <!-- Config: Maven Tomcat Plugin -->
            <!--
http://mvnrepository.com/artifact/org.apache.tomcat.maven/tomcat7-maven-plugin -
->
            <plugin>
                <groupId>org.apache.tomcat.maven</groupId>
                <artifactId>tomcat7-maven-plugin</artifactId>
                <version>2.2</version>
                <!-- Config: contextPath and Port (Default - /HelloSpringMVC :
8080) -->
                <!--
                <configuration>
                    <path>/</path>
                    <port>8899</port>
                </configuration>
                -->
            </plugin>
        </plugins>
    </build>

</project>
```

配置 **web.xml**：

```
<web-app xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
   xmlns="http://java.sun.com/xml/ns/javaee"

xsi:schemaLocation="http://java.sun.com/xml/ns/javaeehttp://java.sun.com/xml/ns/
javaee/web-app_3_0.xsd"
   id="WebApp_ID" version="3.0">

   <display-name>HelloWorldSpring</display-name>

   <servlet>
       <servlet-name>spring-mvc</servlet-name>
       <servlet-class>
           org.springframework.web.servlet.DispatcherServlet
       </servlet-class>
       <load-on-startup>1</load-on-startup>
   </servlet>
```

```
    <servlet-mapping>
        <servlet-name>spring-mvc</servlet-name>
        <url-pattern>/</url-pattern>
    </servlet-mapping>

     <!-- Other XML Configuration -->
    <!-- Load by Spring ContextLoaderListener -->
    <context-param>
        <param-name>contextConfigLocation</param-name>
        <param-value>/WEB-INF/root-context.xml</param-value>
    </context-param>


     <!-- Spring ContextLoaderListener -->
    <listener>
        <listener-
class>org.springframework.web.context.ContextLoaderListener</listener-class>
    </listener>

</web-app>
```

Spring MVC 的 DispatcherServlet 将根据原则读取 XML 配置文件：

- {servlet-name} ==> /WEB-INF/{servlet-name}-servlet.xml

- *spring-mvc-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:p="http://www.springframework.org/schema/p"
    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-4.1.xsd
      http://www.springframework.org/schema/context
      http://www.springframework.org/schema/context/spring-context-4.1.xsd
      http://www.springframework.org/schema/mvc
      http://www.springframework.org/schema/mvc/spring-mvc-4.1.xsd">

    <context:component-scan base-package="com.yiibai.tutorial.springmvc"/>

    <context:annotation-config/>
```

```
   <bean

class="org.springframework.web.servlet.view.InternalResourceViewResolver">

       <property name="prefix">
           <value>/WEB-INF/pages/</value>
       </property>

       <property name="suffix">
           <value>.jsp</value>
       </property>

   </bean>

</beans>
```

注:

在 Spring 应用程序 ContextLoaderListener 将读取其他 XML 配置文件(如下的 abc.xml 和 root-context.xml 两个文件)。 可能不需要配置 ContextLoaderListener，如果你的应用程序并不需要读取其他 XML 配置文件。

```
<!-- web.xml -->
<!-- Spring ContextLoaderListener -->
<listener>
<listener-class>org.springframework.web.context.ContextLoaderListener</listener-
class>
</listener>

<!-- Load by Spring ContextLoaderListener -->
<context-param>
<param-name>contextConfigLocation</param-name>
<param-value>
       /WEB-INF/root-context.xml,
       /WEB-INF/abc.xml
 </param-value>
</context-param>
```

- **/WEB-INF/root-context.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"
   xsi:schemaLocation="http://www.springframework.org/schema/beans
   http://www.springframework.org/schema/beans/spring-beans.xsd">

  <!-- Empty -->
```

```
</beans>
```

- HelloWorldController.java

```
package com.yiibai.springmvc;

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

@Controller
public class HelloWorldController {

    @RequestMapping("/hello")
    public String hello(Model model) {

        model.addAttribute("greeting", "Hello Spring MVC");

        return"helloworld";

    }

}
```

- *helloworld.jsp*

```
<%@ page language="java" contentType="text/html; charset=UTF-8"
pageEncoding="UTF-8"%>
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
"http://www.w3.org/TR/html4/loose.dtd">
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
<title>Spring4 MVC -HelloWorld</title>
</head>
<body>
    <h1>${greeting}</h1>
</body>
</html>
```

5- 运行 Spring 应用程序

首先，运行应用程序之前，需要构建整个项目。
右键单击该项目并选择：

- Run As/Maven install

运行配置：

输入：

- Name: Run HelloSpringMVC
- Base directory: ${workspace_loc:/HelloSpringMVC} =>${workspace_loc:/HelloSpringMVC Maven Webapp}
- Goals: tomcat7:run

点击 Run:

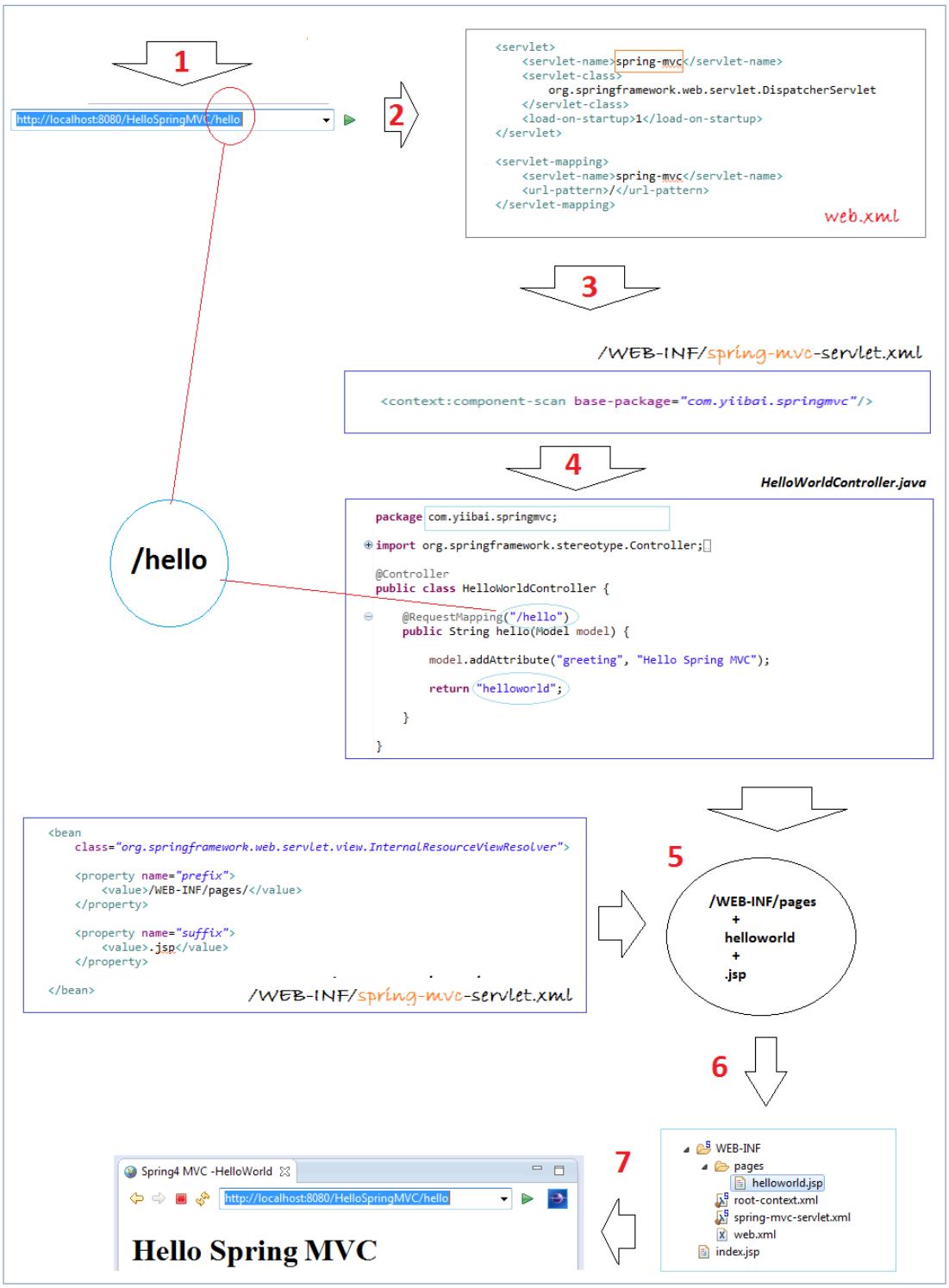
第一次运行该程序将需要几分钟(看你的网速)，它需要下载 Tomcat 插件库才能运行。
一切准备就绪：

运行 URL，如下图：

- http://localhost:8080/HelloSpringMVC/hello

6 - 应用程序的流程

完成您的项目后，并成功地在上一步中运行。现在，我们来看一看程序的运行方式。



7- 控制器和方法

7.1- HttpServletRequest & HttpServletResponse

可以使用 HttpServletRequest, HttpServletResponse 在控制器的方法中。

- OtherExampleController.java

```
package com.yiibai.springmvc;

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

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

@Controller
public class OtherExampleController {

   ......

   @RequestMapping("/somePath")
   public String requestResponseExample(HttpServletRequest request,
           HttpServletResponse reponses, Model model) {

       // Todo something here

       return "someView";
   }

   ......
}
```

7.2- 控制器中的重定向

使用前缀 "redirect:" ，该方法返回字符串，可以重定向到另一页面。参见图：

- RedirectExampleController.java

```
package com.yiibai.springmvc;

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

```
@Controller
public class RedirectExampleController {

    @RequestMapping(value = "/redirect", method = RequestMethod.GET)
    public String authorInfo(Model model) {

       // Do somethong here

        return "redirect:/hello";
    }
}
```

运行 URL:

- http://localhost:8080/HelloSpringMVC/redirect

7.3- @RequestParam 示例

使用@RequestParam 注解将请求参数绑定到你的控制器方法参数。
下面的代码片段显示了这个用法：

- RequestParamExampleController.java

```
package com.yiibai.springmvc;

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

@Controller
public class RequestParamExampleController {

    @RequestMapping("/user")
    public String userInfo(Model model,
            @RequestParam(value = "name", defaultValue = "Guest") String name) {

        model.addAttribute("name", name);

        if("admin".equals(name)) {
            model.addAttribute("email", "admin@yiibai.com");
        } else{
            model.addAttribute("email", "Not set");
```

```
        }
        return "userInfo";
    }

}
```

- /WEB-INF/pages/userInfo.jsp

```
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8">
<title>User Info</title>
</head>
<body>

   <h2>${name}</h2>

   Email: ${email}
   <br>
</body>
</html>
```

运行 URL:

- http://localhost:8080/HelloSpringMVC/user?name=admin

7.4- @PathVariable 示例

在 Spring MVC 中，可以使用@PathVariable 注释将一个方法参数绑定到一个 URI 模板变量的值：
例如，这是一个模板的 URI：

- /web/fe/{sitePrefix}/{language}/document/{id}/{naturalText}

而下面的 URI 模板匹配上面：

1. /web/fe/default/en/document/8108/spring-mvc-for-beginners
2. /web/fe/default/vi/document/8108/spring-mvc-cho-nguoi-moi-bat-dau
3. .....

下面的代码片段显示了用法：

- PathVariableExampleController.java

```
package com.yiibai.springmvc;

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

@Controller
public class PathVariableExampleController {


    /**
     * @PathVariable Example:
     *
     */

@RequestMapping("/web/fe/{sitePrefix}/{language}/document/{id}/{naturalText}")
    public String documentView(Model model,
            @PathVariable(value = "sitePrefix") String sitePrefix,
            @PathVariable(value = "language") String language,
            @PathVariable(value = "id") Long id,
            @PathVariable(value = "naturalText") String naturalText) {

        model.addAttribute("sitePrefix", sitePrefix);
        model.addAttribute("language", language);
        model.addAttribute("id", id);
        model.addAttribute("naturalText", naturalText);

        String documentName = "Java tutorial for Beginners";
        if(id == 8108) {
            documentName = "Spring MVC for Beginners";
        }

        model.addAttribute("documentName", documentName);

        return "documentView";
    }
}
```

- /WEB-INF/pages/documentView.jsp

```
<html>
<head>
```

```
<meta http-equiv="Content-Type" content="text/html; charset=utf-8">
<title>${documentName}</title>
</head>
<body>

    <h3>${documentName}</h3>

    Site Prefix: ${sitePrefix}
    <br> Language: ${language}
    <br> ID: ${id}
    <br> Natural Text: ${naturalText}
    <br>

</body>
</html>
```

运行 URL:

- http://localhost:8080/HelloSpringMVC/web/fe/default/en/document/8108/spring-mvc-for-beginners

7.5- @ResponseBody 示例

如果您使用 @ResponseBody 注释到方法， spring 将尝试转换它的返回值，并自动写入到 HTTP 响应。在这种情况下，并不需要一个特定的视图。
注：方法不一定需要返回字符串类型。

使用@ResponseBody 和方法返回字符串的简单例子。

- ResponseBodyExample1Controller.java

```
package com.yiibai.springmvc;

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

@Controller
public class ResponseBodyExample1Controller {
```

```
    // Simple example, method returns String.
    @RequestMapping(value = "/saveResult")
    @ResponseBody
    publicString authorInfo(Model model) {
        return "saved";
    }


}
```

运行示例的结果：

- http://localhost:8080/HelloSpringMVC/saveResult