快速的开源J2EE应用程序开发中的Spring Web MVC框架：案例学习

摘要

如今，开发Web应用程序是非常有挑战性的，我们需要准确的，经济的，有效率的开发应用程序

我们对增加生产率而且减少系统复杂度非常关注。这一直就是在一场改变程序员在开发Java企业版应用程序的运动中的一个潜在的主题。我们关注的焦点是怎样在没有EJB（企业版Java Bean）的情况下开发出还算满意的J2EE应用来。一个最好的选择就是Spring框架，它提供更少的服务但是比EJB有更小的侵入性。在此基础上，紧接着就是在web应用软件的开发和实现领域更高效和更少复杂的需求。在这篇文章当中，我们简短的描述一下Spring的体系架构，并展示一个使用Spring MVC框架的学习例子

关键字：MVC，Spring，XML

1介绍

如今，Web是一个非常复杂的问题。随着公司和企业的期望在不断增长，Web应用程序越来越复杂，性能越来越重要。复杂度随着通信设备的增多而增加。业务驱使应用程序要使用网络和其他各种通信设备。随着网络上的数据负载不断增加，我们不得不关注体系结构。我们来讨论一下，在快速的应用程序开发过程中如何在保持应用的模型视图体系结构的情况下使用spring web mvc框架快速的工作。

Spring框架有一系列的特性，我们来简短的讨论一下这些特性。

1 控制反转：控制反转或者说IoC是一种用来接通在一个应用程序中的各种服务和组件的技术。IoC是一个软件的设计模式和各种编程技术的集合，在这种模式下，系统的控制流被反转了，这和传统的软件中的模块的交互模式是有区别的。在IoC作用下，不是应用程序调用框架，而是框架调用程序指定的组件。IoC也可以解释为”被依赖的子资源或者说依赖在运行期间被注入到依赖方“，这也称为依赖注入。org.springframework.beans.factory.BeanFactory实际上可以代表Spring的IoC容器，它负责维护和管理beans。BeanFactory接口是Spring框架中的IoC容器中的核心接口。一个bean就是一个被Spring IoC容器实例化和管理的简单的对象。这些bean和bean之间的依赖用被容器使用的配置元数据来表示。

2

构造函数依赖注入：我们可以使用java的构造函数来转载bean的值。一个java类的定义中有单个属性的构造函数。Details.xml文件提供传给构造函数的值。现在，另一个java对象使用BeanFactory的方法来载入这个xml文件。使用xml文件和java文件中的构造函数来载入值。这被构造函数用来传值。

3

Setter依赖注入：我们定义的每一个bean都有getter和setter方法。我们也可以用set方法来设置bean中的属性值。setter方法重写了重bean中初始载入的值。

4

接口：我们可以在spring中定义一个接口类。为了做到这一点，我们要在java程序中引入接口。这样我们就可以使用接口中定义的方法来使用spring和xml。

5

继承：在java编程中，一个java类可以获得另一个java类中的属性。有三种形式。1.抽象：被声明为抽象的bean可以在spring中被继承 2.父子：我们可以定义像父子那样的层次关系。3.父-子-孙 关系：这样我们可以定义3个或更多类的层次关系。

6

自动装配：自动装配被用来映射xml文件和java文件中的属性和值。有四种形式来集成它。根据名字，根据类型，构造函数，自动检测byName是默认的定义。

7

Bean的作用域：所有spring中定义的bean都有四种范围，分别是原型，会话，请求，单例，全局会话。这被用来控制bean的访问。

8

引用bean：在xml文件中定义的的bean可以作为值被分配到另一个bean中。这被用来从一个bean中读值和被分配到另一个bean中。

二 spring的主要组件

在spring中我们也遵守MVC原则。spring被设计用在桌面和网络应用中。Spring由三个核心的基础组件组成。1.控制器：处理导航逻辑，并且在业务逻辑上与服务层交互。2.模型：在控制器和包含渲染视图所需数据的视图间的契约。3.视图：从模型中获取数据来渲染对请求的响应。Spring MVC中的核心组件如下

1.DispatcherServlet:这是spring的前端控制器。Web.xml接收请求并且把请求交给DispatcherServlet处理，这是与请求进行交互的第一个控制器。它也是Servlet的实现，它控制应用程序的整个流程并且引导应用程序的流程。

2.Controller：这是用户创建的用来处理请求的组件。它封装了导航逻辑。控制器把服务委托给服务对象。

3.View：视图负责渲染输出。根据结果和视图设备，通信设备，对于不同类型的输出可以展示出不同的视图。

4. ModelAndView:ModelAndView是spring框架的核心部分。它实现应用程序的业务逻辑它由控制器创建。他把请求和视图联系起来。它存储业务逻辑和模型数据。控制器会调用它，它再执行。执行时，它会返回数据和视图的名称

5.ViewResolver:视图怎样被展示依赖于从ModelAndView接收到的结果。它被用来映射逻辑视图名和实际的视图实现。这部分实现输出媒介是什么，怎样展示。

6.HandlerMapping：被DispatcherServlet用来映射收到的请求和单个控制器的策略接口。它需要识别请求，调用相应的处理器来提供服务。处理器会调用控制器。

三。spring体系结构

Spring框架提供一个完全符合MVC的模块来构建web应用。spirng提供插入式的体系结构它可以被配置来使用多种视图技术比如JSP，Velocity，Tiles，iText等。Spring MVC分隔controller, model object, dispatcher Servlet 和 handler object.对象和控制器的清晰分割可以使他们更容易的定制。图一展示了执行流程。

下图02显示了Spring模型的顺序图。 调度器Servlet是应用程序的入口。。 Dispatch Servlet一收到服务的请求，它将决定handler。

所有处理程序都会对Servlet进行映射。 处理者将会起作用，并将调用相应的控制器并

将请求参数传递给它。

现在控制器开始起作用，它包含业务逻辑和一个与控制器相关联的ModelAndView。执行后它将返回ModelAndView给Dispatch Servlet。 此ModelAndView包含数据和视图

名称。

Dispatcher Servlet从控制器获取ModelAndView。 它包含数据和视图名称。 Servlet会调用

视图解析器。 视图解析器将识别要显示数据的视图的名称。 最后它

将把数据以适当的格式呈现给用户。

四 spring和xml

Xml广泛应用于spring框架。 它简化了开发过程，节省了时间。 xml用于

存储在执行应用程序期间使用的数据。

web.xml是应用程序中的入口点。 它会告诉你进一步的导航路径。 它加载应用程序

上下文类并声明调度器Servlet的xml文件的名称。

web.xml:- <?xml version="1.0" encoding="UTF-8"?>

<web-app version="1.0" xmlns="http//java.sun.com/xml/ns/javaee"

xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"

xsi:schemalLocation="http://java.sun.com/xml/ns/javaee http://java.sun.com/xml/ns/javaee/web-app-2\_5.xsd">

<listener><listener-Class>org.springframework.web.context.ContextLoaderListener</listener-Class></listener>

<servlet>

<servlet-name>dispatcher</servlet-name><servlet-

class>org.springframework.web.servlet.DispatcherServlet</servlet-class>

<load-on-startup>1</load-on-startup>

</servlet>

<servlet-mapping>

<servlet-name>dispatcher</servlet-name>

<url-pattern>/send/\*</url-pattern>

</servlet-mapping>

<welcome-file-list>

<welcome-file>index.jsp</welcome-file>

</welcome-file-list>

</web-app>

上述web.xml .xml将在服务器上与传入请求进行交互。 该文件定义了作为调度器的Servlet的名字，ApplicationContext和index.jsp作为欢迎页面。 定义为\*.\*的url模式表示

所有类型的传入请求。

ApplicationContext.xml： - ApplicationContext构建在BeanFactory之上。 它能很容易的

与Springs AOP特性，消息资源处理，事件传播集成。 BeanFactory提供

配置框架和基本功能。 ApplicationContext增加了应用程序的功能。

当在J2EE环境中构建应用程序时，必须使用ApplicationContext。

<?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:aop="http://www.springframework.org/schema/aop"

xmlns:tx="http://www.springframework.org/schema/tx"

xsi:schemaLocation="http://www.springframework.org/schema/beans

http://www.springframework.org/schema/beans/spring-beans-2.5.xsd

http://www.springframework.org/schema/aop

http://www.springframework.org/schema/aop/spring-beans-2.5.xsd

http://www.springframework.org/schema/tx

http://www.springframework.org/schema/tx/spring-tx-2.5.xsd">

<bean id="superClass" class="packagename.SuperClass" />

<bean id ="subClass" class=" packagename.SubClass">

</bean>

<property name="superClass" ref="superClass"/>

</beans>

上面的文件加载SuperClass.java和SubClass.java的bean。也定义了引用类

Dispatcher-servlet.xml：-

Spring的Web MVC框架是一个请求驱动的Web MVC框架，它是围绕一个servlet设计的

向控制器发送请求，并提供处理应用程序的许多功能。 DispatcherServlet

与Spring ApplicationContext完全集成，并允许您使用spring的特性。

Dispatcher Servlet是应用程序的中央控制单元。它用于定义视图

解析器，bean，handler及其应用程序的映射。

<?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:aop="http://www.springframework.org/schema/aop"

xmlns:tx="http://www.springframework.org/schema/tx"

xsi:schemaLocation="http://www.springframework.org/schema/beans

http://www.springframework.org/schema/beans/spring-beans-2.5.xsd

http://www.springframework.org/schema/aop

http://www.springframework.org/schema/aop/spring-beans-2.5.xsd

http://www.springframework.org/schema/tx

http://www.springframework.org/schema/tx/spring-tx-2.5.xsd">

<bean id="viewResolver" class="org.springframework.web.servlet.view.InternalResourceViewResolver">

<property name="prefix">

<value>/WEB-INF/views/</value></property>

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

</bean>

<bean id="urlMapping" class="org.springframework.web.servlet.handler.SimpleUrlHandlerMapping">

<property name="mappings">

<props><prop key ="/\*">dispatchController</prop>

</props>

</property>

</bean>

<bean id="dispatchController" class=" packagename.DispatchController"></bean>

</beans>

五，它是怎样工作的 很久也来，工业级的系统都要求快速的开发。有许多工具可以加速开发。但是，随着技术和需求一直在增长，这就需要工具和一些能能够处理日益增长的应用系统的体系架构。工具和体系架构是不同的。Spring是能够支持大型应用系统的MVC架构。在这种技术和系统架构下，一旦搭建好，就能在不更改已有代码的情况下非常容易的扩张系统的功能。它使用xml文件来给应用系统增加新的映射，请求，java bean等

六

架构的优点

让我们来看一看spring web MVC框架能给一个项目带来的好处。

Spring有效地组织了您的中间层对象，EJB不影响它。配置管理服务

可用于任何架构层和任何运行时环境。

Spring Web MVC框架使用MVC设计模式，对于快速开发Web应用程序是一个强大，灵活和设计良好的框架。

Spring避免了大量单例模式的使用。这是一个降低程序可测试性和对象方向的主要问题。

明确分离角色：Spring MVC很好地分离了组成应用程序的不同组件。所有组件，如控制器，命令对象和评估者的每个组件扮演

不同的角色。

适配器控制器：如果您的应用程序不需要HTML表单，您可以编写一个更简单的版本的不需要组成一个控制器的所有组件的Spring控制器。 Spring提供几个控制器，每一个都有不同的作用

Spring通过在应用程序中使用一个一致的方式处理配置来避免使用各种自定义属性文件格式的需要

Spring通过面向接口编程，而不是面向实现编程提供了良好的编程实践。

使用它构建的应用程序依赖其中的少量API。 Spring应用程序中的大多数业务对象都没有

依赖Spring。

使用Spring构建的应用程序非常容易进行单元测试。

Spring可以把EJB作为一个实现选项，而不是由应用程序架构决定。

您可以选择将业务接口实现为POJO或本地EJB，而不会影响调用代码。

Spring提供了适用于许多应用程序的替代EJB。 它可以使用AOP来提供

声明式事务管理，而不使用EJB容器。

Spring为数据访问提供了一致的框架，无论是使用JDBC还是使用O / R映射，Hibernate。 它

在JDBC，JMS，JavaMail，JNDI和许多API等领域提供了一致和简单的编程模型

这使它成为理想的架构。

这是使用POJO构建应用程序的框架。 它也降低了开发人员的复杂性。

在使用JDBC时，它解决了连接泄漏的问题，我们只需要编写必要的SQL，也可以解决

从数据库返回的错误问题。

七。结论

Spring WEB mvc框架是为RAD中的应用程序提供环境的框架

环境。 在这个框架下，我们可以依靠应用程序的一致性，性能和可靠性。

由于这是一个开源环境，所以建议开发人员在开发大型Web应用时继续使用这项技术

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退出

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修改密码

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查询自己的考勤信息

管理员模块

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学生模块

大学生考勤管理系统

学生模块

教师模块

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修改密码

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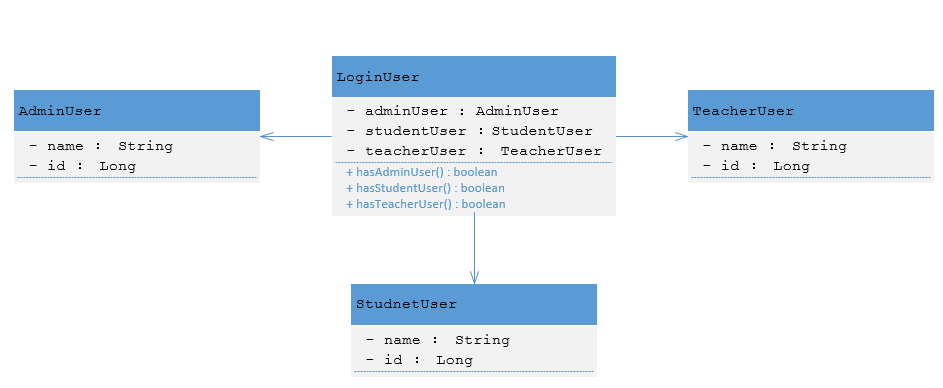
修改密码

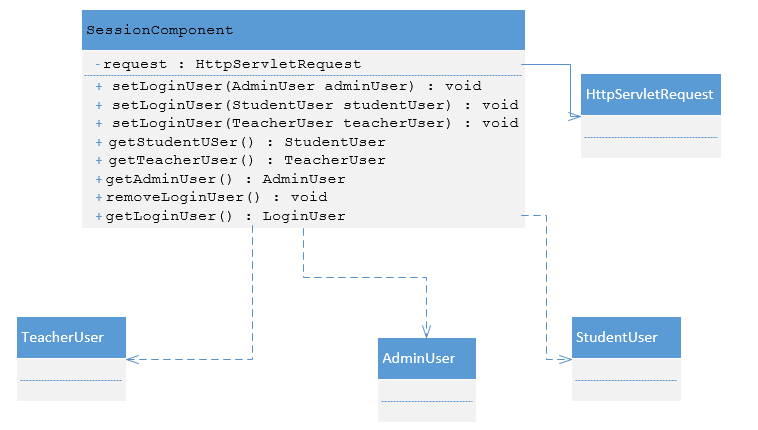
找回密码

多维度统计考勤

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附录

ASP.NET2.0 中对于处理数据缓存的定制技术

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摘要：在开发 ASP.NET 的 web 应用程序时，考虑所有可用的内置的或自定义的技术是十分重要的，

这种技术将会对生成的应用程序的性能产生影响。这篇

Spring Web MVC Framework for rapid open

source J2EE application development: a case

study

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**Abstract**— Today it is the highly competitive for the development of Web application, it is the need of the time

to develop the application accurately, economically, and efficiently. We are interested to increase productivity

and decrease complexity. This has been an underlying theme in a movement to change the way programmers

approach developing Java 2 Platform, Enterprise Edition (J2EE) Web applications. Our focus is how to

create J2EE-compliant software without using Enterprise Java Beans (EJB). The one of the best alternative is

the Spring framework, which provides less services but it is much less intrusive than EJB. The driving force

behind this shift is the need for greater productivity and reduced complexity in the area of Web application

software development and implementation. In this paper, we briefly describe spring underlying architecture

and present a case study using Spring web MVC Framework.

Index Terma: MVC, Spring, XML

I. I NTRODUCTION

Web is the very complex issues these days. Since the desire of the companies and organizations are increasing so the

complexity and the performance of the web programming matters. Complexity with the different types of

communication devices is increasing. The business is demanding applications using the web and many

communication devices. So with the increase load of the data on the internet we have to take care of the architecture

issue. Let us discuss how it works fast using spring web mvc framework the rapid application development while

maintaining the Model View Architecture of the application.

Spring frameworks comes with rich set of features, let us discuss these features in brief.

1 Inversion Of Control: Inversion of Control or IoC is one of the techniques used to wire services or components to

an

application program. The IoC is “A software design pattern and set of associated programming techniques in which

the flow of control of a system is inverted in comparison to the traditional interaction mode.” In IoC instead of an

application calling the framework, it is the framework that calls the components specified by the application. The

IoC can be explained as "Injection of required resources or dependency at run-time into the dependent resource"

which is also known as Dependency Injection. The org.springframework.beans.factory.BeanFactory is the actual

representation of the Spring IoC container which is responsible for containing and managing the beans. The

BeanFactory interface is the central IoC container interface in Spring. A bean is simply an object that is instantiated

and managed by a Spring IoC container. These beans and the dependencies between them are reflected in the

configuration metadata used by a container.

2. Constructor Dependency Injection: we can use the java class constructor to load the bean values. A java Class is

defined with a constructor of single field. Details.xml file provides the value to be passes to the constructor. Now

another java loads the xml file using the BeanFactory Method. This uses the xml file to load values in the

constructor of the java file. This is used to pass values to the constructor.

3. Setter Dependency Injection: With every bean we defined the getters and setters. We can also use setters method

to set the values in the beans. setters method overrides the values loaded from the beans.

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4. Interface: we can define the interface class in spring. To implement this we will import interface to the java

program. Now we can use methods defined in interface using spring and xml.

5. Inheritance: One java class can acquired the properties of another class just like a java program. There are three

sub types of it. 1. Abstract: Beans declared abstract cannot be inherited in the springs. 2. Parent Child: we can

define hierarchy like parent child. 3. Parent - Child - Sub Child Relationship: in this we can define hierarchy for 3

or more classes.

6. Autowiring: Autowiring is used to map the property name, values in xml file with java file. There are four types

to integrate it. byName, byType, constructor, autodetect. If nothing is defined about it then byName is the default.

7. Scope of Beans: All beans defined in spring are having scope of four values prototype, session, request, singleton,

global-session. This is used to control the access of the beans.

8. Reference Beans: One bean in the xml file can be assigned values from the other bean. This is used to read values

from one bean and assign to another bean.

II. MAJOR SPRING COMPONENTS

In the spring we also follow the principals of the MVC. It has been designed more for the desktop and internet based

applications. Spring consist of three core collaborating components. 1. Controller: Handles navigation logic and

interacts with the Service tier for business logic

2. Model: The contract between the Controller and the View Contains the data needed to render the View

Populated by the Controller 3. View: Renders the response to the request Pulls data from the model. Core

components in the spring MVC are as follows.

1. DispatcherServlet: this is the spring’s front controller implementation. Web.xml receives the request and transfer

it to the DispatchServlet. This is the first controller which interacts to the requests. It is also known as

implementation of the Servlet. It controls the complete flow of the application and navigates the flow of application.

2. Controller: this is the user created component for handling requests. It encapsulates the navigation logic with it.

Controller delegates the services for the service object.

3. View: view is responsible for rendering output. Different views can be selected for the different types of output

bases on the results and the viewing device, communication devices.

4. ModelAndView: ModelAndView is the core part of the spring framework. It implements the business logic of the

application. It is created by the controller. It associates the view to the request. It stores the business logic and

Model data. A controller calls it and it will execute. On execution it will return the data and name of view.

5. ViewResolver: How the output is to be displayed depends on the result received from ModelAndView. It is used

to map logical view names to actual view implementations. This part identifies and implement what is the output

media and how to display it.

6. HandlerMapping: Strategy interface used by DispatcherServlet for mapping incoming requests to individual

Controllers. It identifies the request and calls the respective handler to provide the services. Handler will call to

controller.

III. SPRING ARCHITECTURE

The Spring framework provides a full-featured MVC module for building Web applications. with spring’s pluggable

MVC architecture. It is configurable with multiple view technologies Ex Java Server Pages, Velocity, Tiles, iText

etc. Spring MVC separates the roles of the controller, model object, dispatcher Servlet and the handler object. Clear

separation of objects and controllers makes them easier to customize. The figure 01 shows the view of the execution

flow.

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The following figure 02 shows the sequence diagram of the spring model. In this the dispatcher Servlet is the entry

point for the application. As soon the Dispatch Servlet get the request for the services and it will decides the handler.

All handlers are mapped with the Servlet. Handler will come in action and will call the respective controller and the

pass the request parameters to it.

Now controller comes in action, it contains business logic and a ModelAndView is associated with the controller. on

execution it will return the ModelAndView to the Dispatch Servlet. This ModelAndView contains the data and view

name.

Dispatcher Servlet gets the ModelAndView from the controller. It contains the data and view name. Servlet will call

the view resolver. View resolver will identify the name of the view through which data is to be presented. Finally it

will present the data to the respective and appropriate format to the user.

Figure 2: Sequence flow of application in the spring framework.

IV. SPRING AND XML

Xml is widely used in the spring framework. It simplify the development process and saves time. xml is used to

store the data, which is used during the execution of application.

Contr

oller

Front

controller

View template

Return

response

Render

response

Return

control

Delegate

request

Delegate

rendering

of response

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model

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getHandler

Controller

handleRequest()

ModelAndView

resolveViewName

View

render()

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web.xml is the entry point in the application. It will tell you the further path of navigation. It loads the application

context class and the tells the name of the dispatcher Servlet xml file.

web.xml:- <?xml version="1.0" encoding="UTF-8"?>

<web-app version="1.0" xmlns="http//java.sun.com/xml/ns/javaee"

xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"

xsi:schemalLocation="http://java.sun.com/xml/ns/javaee http://java.sun.com/xml/ns/javaee/web-app-2\_5.xsd">

<listener><listener-Class>org.springframework.web.context.ContextLoaderListener</listener-Class></listener>

<servlet>

<servlet-name>dispatcher</servlet-name><servlet-

class>org.springframework.web.servlet.DispatcherServlet</servlet-class>

<load-on-startup>1</load-on-startup>

</servlet>

<servlet-mapping>

<servlet-name>dispatcher</servlet-name>

<url-pattern>/send/\*</url-pattern>

</servlet-mapping>

<welcome-file-list>

<welcome-file>index.jsp</welcome-file>

</welcome-file-list>

</web-app>

The above web.xml .xml will interact with the incoming request on the server. This file defines the name of the

Servlet which is dispatcher, ApplicationContext and the index.jsp as welcome page. url pattern defined as \*.\* means

it will all types of incoming request.

ApplicationContext.xml:- The ApplicationContext is build on top of the BeanFactory. It provides an easy

integration with Springs AOP features, message resource handling, event propagation. The BeanFactory provides

the configuration framework and basic functionality. ApplicationContext adds enhanced capabilities to application.

While building applications in a J2EE-environment ApplicationContext must be used.

<?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:aop="http://www.springframework.org/schema/aop"

xmlns:tx="http://www.springframework.org/schema/tx"

xsi:schemaLocation="http://www.springframework.org/schema/beans

http://www.springframework.org/schema/beans/spring-beans-2.5.xsd

http://www.springframework.org/schema/aop

http://www.springframework.org/schema/aop/spring-beans-2.5.xsd

http://www.springframework.org/schema/tx

http://www.springframework.org/schema/tx/spring-tx-2.5.xsd">

<bean id="superClass" class="packagename.SuperClass" />

<bean id ="subClass" class=" packagename.SubClass">

</bean>

<property name="superClass" ref="superClass"/>

</beans> The above file loads the bean of the SuperClass.java and SubClass.java. It also defines the reference class.

Dispatcher-servlet.xml:-

Spring's web MVC framework is a request driven web MVC framework, it is designed around a servlet that

dispatches requests to controllers and provides much functionality for handling the applications. DispatcherServlet is

completely integrated with the Spring ApplicationContext and allows you to use feature of springs.

Dispatcher Servlet is the central controlling unit for the working of the application. It is used to define the view

resolver, beans, handlers and their mapping of the application.

<?xml version="1.0" encoding="UTF-8"?>

<beans xmlns="http://www.springframework.org/schema/beans"

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xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"

xmlns:p="http://www.springframework.org/schema/p"

xmlns:aop="http://www.springframework.org/schema/aop"

xmlns:tx="http://www.springframework.org/schema/tx"

xsi:schemaLocation="http://www.springframework.org/schema/beans

http://www.springframework.org/schema/beans/spring-beans-2.5.xsd

http://www.springframework.org/schema/aop

http://www.springframework.org/schema/aop/spring-beans-2.5.xsd

http://www.springframework.org/schema/tx

http://www.springframework.org/schema/tx/spring-tx-2.5.xsd">

<bean id="viewResolver" class="org.springframework.web.servlet.view.InternalResourceViewResolver">

<property name="prefix">

<value>/WEB-INF/views/</value></property>

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

</bean>

<bean id="urlMapping" class="org.springframework.web.servlet.handler.SimpleUrlHandlerMapping">

<property name="mappings">

<props><prop key ="/\*">dispatchController</prop>

</props>

</property>

</bean>

<bean id="dispatchController" class=" packagename.DispatchController"></bean>

</beans>

V. HOW IT WORKS RAD

Rapid Application Development is the requirement of the industry since a long time. There are many development

tools which have helped it. But gradually technology and the requirements goes on increasing so e need the tools

and the in fact architecture which can handle the growing size of the application. Tools are different from the

architecture. Spring is the architecture in MVC which can support the large applications. In this technology and

architecture once implemented it is easy to inheritance the application without touching the existing code. It’s use of

the xml files helps us to add the new mappings, requests, java beans etc to the application.

VI. ARCHITECTURAL BENEFIT

let's look at some of the Architectural benefits spring web MVC Framework can bring to a project.

 Spring effectively organize your middle tier objects, EJB doesn't affect it. The configuration management services

can be used in any architectural layer and in any runtime environment.

 The Spring Web MVC Framework is a robust, flexible, and well-designed framework for rapidly developing web

applications using the MVC design pattern.

 Spring eliminate the proliferation of Singletons. This is a major problem, reducing testability and object

orientation.

 Clear separation of roles: Spring MVC nicely separates the roles played by the various components that make up

this web framework. All components like controllers, command objects, and valuators’ each component plays a

distinct role.

 Adaptable controllers: If your application does not require an HTML form, you can write a simpler version of a

Spring controller that does need all the extra components required for form controllers. Spring provides several

types of controllers, each serving a different purpose.

 Spring eliminate the need to use a variety of custom properties file formats, by handling configuration in a

consistent way throughout applications and projects.

 Spring provides good programming practice by reducing the cost of programming to interfaces, rather than classes.

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 Applications built with it depend on as few of its APIs. Most business objects in spring applications have no

dependency on spring.

 Applications built using spring are very easy to unit test.

 Spring can make the use of EJB an implementation choice, rather than the determinant of application architecture.

 You can choose to implement business interfaces as POJOs or local EJBs without affecting calling code.

 Spring provide an alternative to EJB that's appropriate for many applications. It can use AOP to deliver

declarative transaction management without using an EJB container.

 Spring provides a consistent framework for data access, whether using JDBC or an O/R mapping, Hibernate. It

provides a consistent and simple programming model in areas like JDBC, JMS, JavaMail, JNDI and many APIs

which makes it an ideal architectural.

 This is the framework which builds applications using POJOs. It also conceals complexity from the developer.

 While using JDBC it solve the problem of connection leak, we need to write only necessary SQL, it also solves

the problems of error returned from database.

VII. CONCLUSION

Spring WEB mvc framework is an framework which provides the environment for the application in the RAD

environment. In this framework we can rely for the consistency, performance and reliability of the application.

Since this is an open source environment so it’s recommended for the developers to go ahead with this technology

for the large size of web application environment.

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