# Spring MVC form handling annotation example

By mkyong (http://www.mkyong.com/author/mkyong/) | August 20, 2010 | Updated : August 29, 2012 | Viewed : 328,964 times +572 pv/w

In this tutorial, we show you how to do form handling by using annotation in Spring MVC web application.

#### Note

This annotation-based example is converted from the last Spring MVC form handling XML-based example (http://www.mkyong.com/spring-mvc/spring-mvc-form-handling-example/). So, please compare and spots the different.

## 1. SimpleFormController vs @Controller

In XML-based Spring MVC web application, you create a form controller by extending the SimpleFormController class.

In annotation-based, you can use @Controller instead.

SimpleFormController

```
public class CustomerController extends SimpleFormController{
    //...
}
```

#### Annotation

# 2. formBackingObject() vs RequestMethod.GET

In SimpleFormController, you can initialize the command object for binding in the **formBackingObject()** method. In annotation-based, you can do the same by annotated the method name with @RequestMapping(method = RequestMethod.GET).

SimpleFormController

```
@Override
protected Object formBackingObject(HttpServletRequest request)
    throws Exception {

    Customer cust = new Customer();
    //Make "Spring MVC" as default checked value
    cust.setFavFramework(new String []{"Spring MVC"});

    return cust;
}
```

Annotation

```
@RequestMapping(method = RequestMethod.GET)
public String initForm(ModelMap model){

   Customer cust = new Customer();
   //Make "Spring MVC" as default checked value
   cust.setFavFramework(new String []{"Spring MVC"});

   //command object
   model.addAttribute("customer", cust);

   //return form view
   return "CustomerForm";
}
```

# 3. onSubmit() vs RequestMethod.POST

In SimpleFormController, the form submission is handle by the **onSubmit()** method. In annotation-based, you can do the same by annotated the method name with @RequestMapping(method = RequestMethod.POST).

SimpleFormController

```
@Override
protected ModelAndView onSubmit(HttpServletRequest request,
   HttpServletResponse response, Object command, BindException errors)
   throws Exception {
    Customer customer = (Customer)command;
    return new ModelAndView("CustomerSuccess");
}
```

#### Annotation

```
@RequestMapping(method = RequestMethod.POST)
public String processSubmit(
    @ModelAttribute("customer") Customer customer,
    BindingResult result, SessionStatus status) {

    //clear the command object from the session
    status.setComplete();

    //return form success view
    return "CustomerSuccess";
}
```

# 4. referenceData() vs @ModelAttribute

In SimpleFormController, usually you put the reference data in model via referenceData() method, so that the form view can access it. In annotation-based, you can do the same by annotated the method name with @ModelAttribute.

SimpleFormController

```
@Override
protected Map referenceData(HttpServletRequest request) throws Exception {

Map referenceData = new HashMap();

//Data referencing for web framework checkboxes
List<String> webFrameworkList = new ArrayList<String>();
webFrameworkList.add("Spring MVC");
webFrameworkList.add("Struts 1");
webFrameworkList.add("Struts 2");
webFrameworkList.add("Struts 2");
webFrameworkList.add("JSF");
webFrameworkList.add("Apache Wicket");
referenceData.put("webFrameworkList", webFrameworkList);

return referenceData;
}
```

#### Spring's form

```
<form:checkboxes items="${webFrameworkList}" path="favFramework" />
```

#### Annotation

```
@ModelAttribute("webFrameworkList")
public List<String> populateWebFrameworkList() {

    //Data referencing for web framework checkboxes
    List<String> webFrameworkList = new ArrayList<String>();
    webFrameworkList.add("Spring MVC");
    webFrameworkList.add("Struts 1");
    webFrameworkList.add("Struts 2");
    webFrameworkList.add("JSF");
    webFrameworkList.add("Apache Wicket");

    return webFrameworkList;
}
```

### Spring's form

```
<form:checkboxes items="${webFrameworkList}" path="favFramework" />
```

# 5. initBinder() vs @InitBinder

In SimpleFormController, you define the binding or register the custom property editor via **initBinder()** method. In annotation-based, you can do the same by annotated the method name with @InitBinder.

SimpleFormController

```
protected void initBinder(HttpServletRequest request,
ServletRequestDataBinder binder) throws Exception {
SimpleDateFormat dateFormat = new SimpleDateFormat("yyyy-MM-dd");
binder.registerCustomEditor(Date.class, new CustomDateEditor(dateFormat, true));
}
```

### Annotation

```
@InitBinder
public void initBinder(WebDataBinder binder) {
    SimpleDateFormat dateFormat = new SimpleDateFormat("yyyy-MM-dd");
    binder.registerCustomEditor(Date.class, new CustomDateEditor(dateFormat, true));
}
```

### From Validation

In SimpleFormController, you have to register and map the validator class to the controller class via XML bean configuration file, and the validation checking and work flows will be executed automatically.

In annotation-based, you have to explicitly execute the validator and define the validation flow in the @Controller class manually. See the different:

SimpleFormController

### Annotation

```
@Controller
@RequestMapping("/customer.htm")
public class CustomerController{
    CustomerValidator customerValidator;
    @Autowired
    public CustomerController(CustomerValidator customerValidator){
        this.customerValidator = customerValidator;
    @RequestMapping(method = RequestMethod.POST)
    public String processSubmit(
        @ModelAttribute("customer") Customer customer,
        BindingResult result, SessionStatus status) {
        customerValidator.validate(customer, result);
        if (result.hasErrors()) {
            //if validator failed
            return "CustomerForm";
       } else {
            status.setComplete();
            //form success
            return "CustomerSuccess";
        }
    }
    //...
```

### Full Example

See a complete @Controller example.

```
package com.mkyong.customer.controller;
import java.sql.Date;
import java.text.SimpleDateFormat;
import java.util.ArrayList;
import java.util.LinkedHashMap;
import java.util.List;
import java.util.Map;
import org.springframework.beans.factory.annotation.Autowired;
import\ org.spring framework.beans.property editors. Custom Date Editor;
import org.springframework.stereotype.Controller;
import org.springframework.ui.ModelMap;
import org.springframework.validation.BindingResult;
import org.springframework.web.bind.WebDataBinder;
import org.springframework.web.bind.annotation.InitBinder;
import org.springframework.web.bind.annotation.ModelAttribute;
import org.springframework.web.bind.annotation.RequestMapping;
import org.springframework.web.bind.annotation.RequestMethod;
import org.springframework.web.bind.support.SessionStatus;
import com.mkyong.customer.model.Customer;
import com.mkyong.customer.validator.CustomerValidator;
@RequestMapping("/customer.htm")
public class CustomerController{
    CustomerValidator customerValidator:
    @Autowired
    public CustomerController(CustomerValidator customerValidator){
        this.customerValidator = customerValidator;
    @RequestMapping(method = RequestMethod.POST)
    public String processSubmit(
        @ModelAttribute("customer") Customer customer,
        BindingResult result, SessionStatus status) {
        customerValidator.validate(customer, result);
        if (result.hasErrors()) {
            //if validator failed
            return "CustomerForm";
        } else {
            status.setComplete();
            //form success
            return "CustomerSuccess";
        }
    }
    @RequestMapping(method = RequestMethod.GET)
    public String initForm(ModelMap model){
        Customer cust = new Customer();
        //Make "Spring MVC" as default checked value
        cust.setFavFramework(new String []{"Spring MVC"});
        //Make "Make" as default radio button selected value
        cust.setSex("M");
        //make "Hibernate" as the default java skills selection
        cust.setJavaSkills("Hibernate");
        //initilize a hidden value
        cust.setSecretValue("I'm hidden value");
        //command object
        model.addAttribute("customer", cust);
        //return form view
        return "CustomerForm";
    }
```

```
@ModelAttribute("webFrameworkList")
   public List<String> populateWebFrameworkList() {
        //Data referencing for web framework checkboxes
       List<String> webFrameworkList = new ArrayList<String>();
       webFrameworkList.add("Spring MVC");
       webFrameworkList.add("Struts 1");
       webFrameworkList.add("Struts 2");
       webFrameworkList.add("JSF");
       webFrameworkList.add("Apache Wicket");
       return webFrameworkList;
   }
   @InitBinder
   public void initBinder(WebDataBinder binder) {
       SimpleDateFormat dateFormat = new SimpleDateFormat("yyyy-MM-dd");
       binder.registerCustomEditor(Date.class, new CustomDateEditor(dateFormat, true));
   }
   @ModelAttribute("numberList")
   public List<String> populateNumberList() {
       //Data referencing for number radiobuttons
       List<String> numberList = new ArrayList<String>();
       numberList.add("Number 1");
       numberList.add("Number 2");
       numberList.add("Number 3");
       numberList.add("Number 4");
       numberList.add("Number 5");
        return numberList;
   }
   @ModelAttribute("javaSkillsList")
   public Map<String,String> populateJavaSkillList() {
       //Data referencing for java skills list box
       Map<String,String> javaSkill = new LinkedHashMap<String,String>();
       javaSkill.put("Hibernate", "Hibernate");
        javaSkill.put("Spring", "Spring");
        javaSkill.put("Apache Wicket", "Apache Wicket");
       javaSkill.put("Struts", "Struts");
        return javaSkill;
   }
   @ModelAttribute("countryList")
   public Map<String,String> populateCountryList() {
        //Data referencing for java skills list box
       Map<String,String> country = new LinkedHashMap<String,String>();
       country.put("US", "United Stated");
       country.put("CHINA", "China");
       country.put("SG", "Singapore");
       country.put("MY", "Malaysia");
        return country;
   }
}
```

To make annotation work, you have to enable the component auto scanning feature in Spring.

```
<beans xmlns="http://www.springframework.org/schema/beans"</pre>
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xmlns:context="http://www.springframework.org/schema/context"
    xsi:schemaLocation="http://www.springframework.org/schema/beans
    http://www.springframework.org/schema/beans/spring-beans-2.5.xsd
    http://www.springframework.org/schema/context
    http://www.springframework.org/schema/context/spring-context-2.5.xsd">
    <context:component-scan base-package="com.mkyong.customer.controller" />
    <bean class="com.mkyong.customer.validator.CustomerValidator" />
    <!-- Register the Customer.properties -->
    <bean id="messageSource"</pre>
        class="org.springframework.context.support.ResourceBundleMessageSource">
        <property name="basename" value="com/mkyong/customer/properties/Customer" />
    </bean>
    <bean id="viewResolver"</pre>
          class="org.springframework.web.servlet.view.InternalResourceViewResolver" >
              cproperty name="prefix">
                 <value>/WEB-INF/pages/</value>
              </property>
              operty name="suffix">
                 <value>.jsp</value>
              </property>
        </bean>
</beans>
```

### Download Source Code

Download it – SpringMVC-Form-Handling-Annotation-Example.zip (http://www.mkyong.com/wp-content/uploads/2010/08/SpringMVC-Form-Handling-Annotation-Example.zip) (12KB)

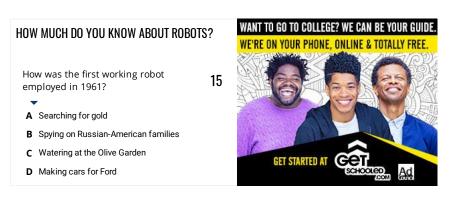
### Reference

- 1. Annotated web mvc controllers in spring 2.5 (http://blog.springsource.com/2007/11/14/annotated-web-mvc-controllers-in-spring-25/)
- 2. Spring MVC form handling example XML version (http://www.mkyong.com/spring-mvc/spring-mvc/form-handling-example/)
- 3. Spring MVC hello world annotation example (http://www.mkyong.com/spring-mvc/spring-mvc-hello-world-annotation-example/)
- 4. Spring MVC MultiActionController annotation example (http://www.mkyong.com/spring-mvc/spring-mvc-multiactioncontroller-annotation-example/)

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### About the Author



# mkyong

Founder of Mkyong.com (http://mkyong.com), love Java and open source stuff. Follow him on Twitter (https://twitter.com/mkyong), or befriend him on Facebook (http://www.facebook.com/java.tutorial) or Google Plus (https://plus.google.com/110948163568945735692? rel=author). If you like my tutorials, consider make a donation to these charities (http://www.mkyong.com/blog/donate-to-charity/).

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### Thomas Sangjoon Kim

Hi mkyong, you suggest @RequestMapping(method = RequestMethod.GET) for formBackingObject. But I found formBackingObject is called by GET and POST(if that command not is in session). So @RequestMapping might not enough to replace formbackingObject. in that case we can use @ModelAttribute . @ModelAttribute("numberList") public Customer bindCustomer(HttpServletRequest request ... ) { Customer cust = new Customer(); cust.setFavFramework(new String []{"Spring MVC"}); return cust; } @RequestMapping(method = RequestMethod.GET) public String initForm(ModelMap model, @ModelAttribute(customer) Cust cust){ //command object model.addAttribute("customer", cust); //return form view return "CustomerForm"; }



① 1 year 8 months ago



### mqsj

What if in the submission form, you collect information about two entities (information about a shop(name,country,city,address and phone number) and information about the shop's manager (id,name,surname,address, phone number and date of birth)).

Is it possible to cast the command object in two beans? I guess it's possible, but how is it internally done?



② 2 years 4 months ago



### Yogesh Bhosale

java.lang.lllegalStateException: Neither BindingResult nor plain target object for bean name 'userEditCommand' available as request attribute



② 2 years 11 months ago



### Sanjay Patil

Hi Mkyong, thanks for the article. it was really useful.

Guest

I had issue replacing formbackingobject method in my case so I created a modelAttributemethod annotating that with my command name and it worked for me.

Do you see any issues here ?

Cheers,

Sanjay Patil



2 years 11 months ago



### neha agrawal

Hi Mkyong,

Guest Thanks for your tutorials!! It has helped me a lot to learn Spring. Though I have one doubt in this tutorial. Why are you using custom validator in this example and not jsr-303 validator? Is there any limitation with JSR-303 validator?

Also I don't understand the use of @InitBinder in this example as you haven't used date field in your model/jsp. I also read somewhere that you register your custom Validator in the Controller using @InitBinder. But I don't see that you are registering it. Can you please clear by doubts. I would really appreciate it. Thanks!!

Regards, Neha ② 3 years 6 months ago 🔥 REPLY Victor That was for elaboration purpose, u can skip that part. Guest **1** 0 **1** ■ 2 years 2 months ago REPLY safe Hello, Guest I asked almost the same question just one week ago (see below) but it seems to be a site left abandoned. No reaction. It's not cool! Sorry. ② 3 years 6 months ago REPLY safeghost Guest Good job, thank you. However, i didn't understand the role of @InitBinder in this example since you never invoked a random date issue in all your tutorials. Can you explain what is the roler of your @InitBinder with date issue and its role in a general manner since i google it and it's not yet clear for me. Regards. REPLY That was for elaboration purpose, u can skip that part. Guest **1** 0 REPLY O 2 years 2 months ago abhishek hello in apring annotation based form handling how do i identify that the value from the form will be mapped to CUstomer pojo Guest REPLY ② 3 years 8 months ago ▲ **1** 0 Victor See the constructor of the controller. Guest **1** 0 REPLY ② 2 years 2 months ago kumar thank u Guest i'm facing problem with including .js and .css file in jsp please help on this ② 3 years 10 months ago 🔥 

### Spring MVC form handling annotation example



VP

Place your resources (static files ) folder inside webapp ( but not inside WEB-INFO).

For example, if you want to include js/\*

Go to your dispatcher servlet xml, add the following code after the line where you've declared the base-package.



9

### Fateme

You show differences very good, thanks for this good article.

Guest good luck



② 3 years 10 months ago



### rajesh

Dear sir,

Guest i

i got it with the knowledge given by you with the previous tutorials i rectified that error. thanks for your posts.



② 3 years 10 months ago



# rajesh

Yhanks mkyong. Your tutorials are helped me a lot. For this tutorial(annotation based form validation) i did as you said above but i am getting error as:-

org.springframework.web.util.NestedServletException: Request processing failed; nested exception is java.lang.lllegalStateException: Neither BindingResult nor plain target object for bean name 'customerForm' available as request attribute

root cause

java.lang.lllegalStateException: Neither BindingResult nor plain target object for bean name 'customerForm' available as request attribute

note The full stack traces of the exception and its root causes are available in the GlassFish Server Open Source Edition 3.1.2 logs.



② 3 years 10 months ago



### Shoaib Chikate

When i am using the Validator

it is wroking for blank space

but not for int value....as i want the value int value min 4 and max 12

And i m using @Min and @Max annotation as

public class Student{

@ld

@GeneratedValue(strategy=GenerationType.Identity)

private int studentId

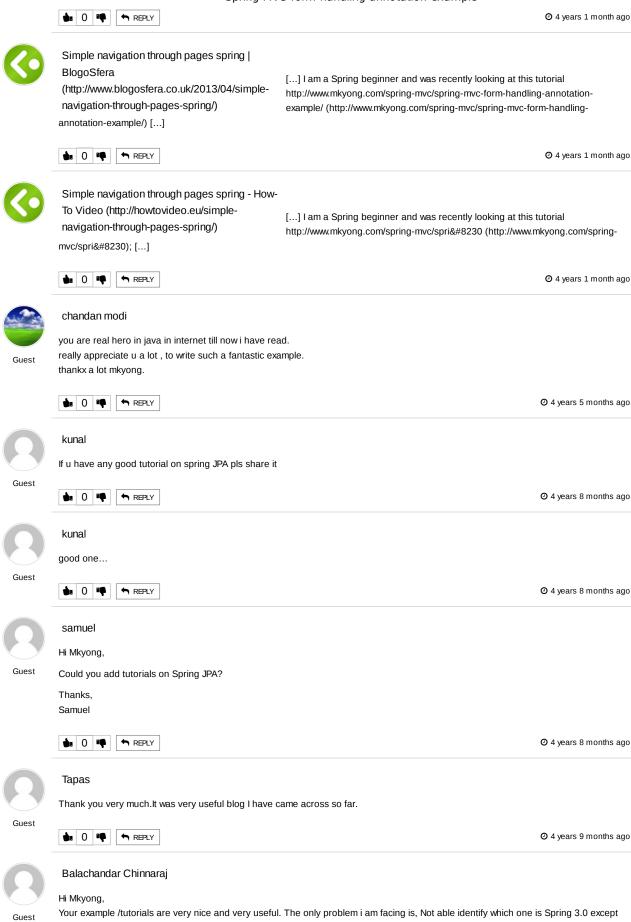
@NotBlank(message="Please enter your name")

private String studentName;

@Min(value="18",message="Age cannot be less 18") @Max(value="99",message="Age cannot be greater than 99") private int age; //setters and getters Validation on studentName is working but not on age Any specific reason?? Reply your answer I will be waiting **1** 0 REPLY ② 3 years 11 months ago Good Learner This validattion will work only for String elements. Not for int. Guest **♣** 0 **•** REPLY 2 years 8 months ago replica hermes new (http://www.luxurydreamhermes.com/hermes-Hello, your articles here Spring MVC form handling annotation example to write new-bags-c-10\_28.html) well, thanks for sharing! Guest O 4 years 26 days ago REPLY Thiru Hi Mkyong, Guest I copied the same code, but i'm unable to access the MVCForm using this following URL. Please help me out to resolve this issue. http://localhost:8080/SpringMVCForm/customer.htm (http://localhost:8080/SpringMVCForm/customer.htm) Thanks 'n' Regards, Thirunavukkarasu **1** 0 REPLY O 4 years 1 month ago Docaohuynh U can see SpringMVC in file pom.xml and used this link Guest http://localhost:8080/SpringMVC/customer.htm (http://localhost:8080/SpringMVC/customer.htm) If you want to used this link http://localhost:8080/SpringMVCForm/customer.htm (http://localhost:8080/SpringMVCForm/customer.htm) You must change value in SpringMVC to SpringMVCForm REPLY Victor Adding some information: just use your war File name in URL as Guest localhost:8080//customer.htm REPLY 2 years 2 months ago at work (http://weekdayworker.blogspot.co.uk/)



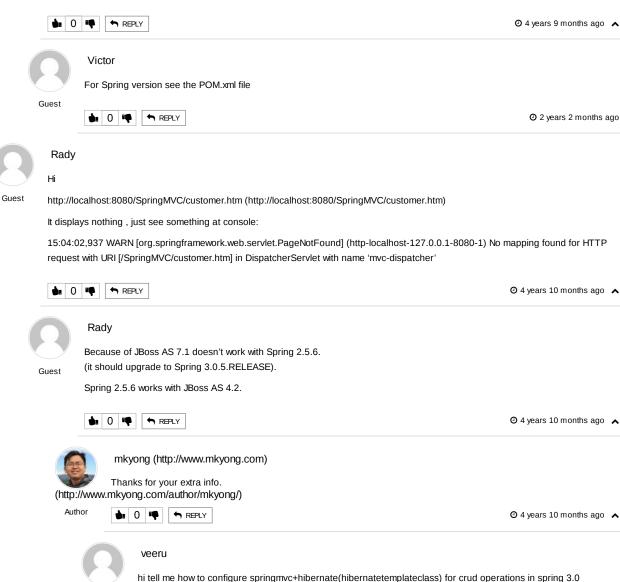
An intriguing discussion is worth comment. I believe that you ought to publish more about this issue, it may not be a taboo subject but usually people do not discuss these issues. To the next! All the best!!



Your example /tutorials are very nice and very useful. The only problem i am facing is, Not able identify which one is Spring 3.0 except one /two examples( Top).

If possible kindly mention the spring version in each and every example, So that it will be more helpful for me and others also. If you don't mind, Can you kindly send me Professional (Wrox publication) pdf for spring3.0 version. Look forward your positive reply.

Thanks & Regards, Balachandar.C 651 315 2180





Guest



O 4 years 4 days ago



### Spring Guy

http://static.springsource.org/spring/docs/3.0.0.RC3/reference/html/ch05s07.html

(http://static.springsource.org/spring/docs/3.0.0.RC3/reference/html/ch05s07.html) describes configuring annotation based autoexecuting validators. It also emphasizes the fact that Spring 3 is JSR-303 compliant in and of itself without the need for Hibernate validators. This is relatively cutting edge so it's understandable that the information is not covered here, but it's important knowledge. You no longer have to manually execute validators to do annotation based config if you use the proper mechanisms covered in that spring article.





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(http://samjdev.wordpress.com/2012/04/07/javaregistration-form-with-spring/)

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REPLY

O 5 years 1 month ago

