## JSF Tutorial

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When user interacts with components, such as h:commandButton or h:link, the JSF fires a action events which can be handled in two ways.

| Technique | Description |
|---|---|
| Method Binding | Pass the name of the managed bean method in *actionListener* attribute of UI Component. |
| ActionListener | Implement ActionListener interface and pass the implementation class name to *actionListener* attribute of UI Component. |

## Method Binding

Define a method

```
public void updateData(ActionEvent e){
   data="Hello World";
}
```

Use above method

```
<h:commandButton id="submitButton"
   value="Submit" action="#{userData.showResult}"
   actionListener="#{userData.updateData}" />
</h:commandButton>
```

## ActionListener

Implement ActionListener

```
public class UserActionListener implements ActionListener{
   @Override
   public void processAction(ActionEvent arg0)
   throws AbortProcessingException {
      //access userData bean directly
      UserData userData = (UserData) FacesContext.getCurrentInstance().
         getExternalContext().getSessionMap().get("userData");
      userData.setData("Hello World");
   }
}
```

Use listener method

```
<h:commandButton id="submitButton1"
   value="Submit" action="#{userData.showResult}" >
   <f:actionListener type="com.tutorialspoint.test.UserActionListener" />
</h:commandButton>
```

## Example Application

Let us create a test JSF application to test the actionListener in JSF.

| Step | Description |
|---|---|

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| | |
|---|---|
| 1 | Create a project with a name *helloworld* under a package *com.tutorialspoint.test* as explained in the *JSF - First Application* chapter. |
| 2 | Modify *UserData.java* file as explained below. |
| 3 | Create *UserActionListener.java* file under a package *com.tutorialspoint.test*.Modify it as explained below |
| 4 | Modify *home.xhtml* as explained below. Keep rest of the files unchanged. |
| 5 | Modify *result.xhtml* as explained below. Keep rest of the files unchanged. |
| 6 | Compile and run the application to make sure business logic is working as per the requirements. |
| 7 | Finally, build the application in the form of war file and deploy it in Apache Tomcat Webserver. |
| 8 | Launch your web application using appropriate URL as explained below in the last step. |

### UserData.java

```
package com.tutorialspoint.test;

import java.io.Serializable;
import java.util.LinkedHashMap;
import java.util.Map;

import javax.faces.bean.ManagedBean;
import javax.faces.bean.SessionScoped;
import javax.faces.event.ValueChangeEvent;

@ManagedBean(name = "userData", eager = true)
@SessionScoped
public class UserData implements Serializable {

private static final long serialVersionUID = 1L;

   private static Map<String,String> countryMap;
   private String data = "sample data";

   public String showResult(){
      return "result";
   }

   public void updateData(ActionEvent e){
      data="Hello World";
   }

   public String getData() {
      return data;
   }

   public void setData(String data) {
      this.data = data;
   }
}
```

### UserActionListener.java

```
package com.tutorialspoint.test;

import javax.faces.context.FacesContext;
import javax.faces.event.AbortProcessingException;
import javax.faces.event.ActionEvent;
import javax.faces.event.ActionListener;

public class UserActionListener implements ActionListener{
   @Override
   public void processAction(ActionEvent arg0)
   throws AbortProcessingException {
      //access userData bean directly
      UserData userData = (UserData) FacesContext.getCurrentInstance().
         getExternalContext().getSessionMap().get("userData");
      userData.setData("Hello World");
   }
}
```

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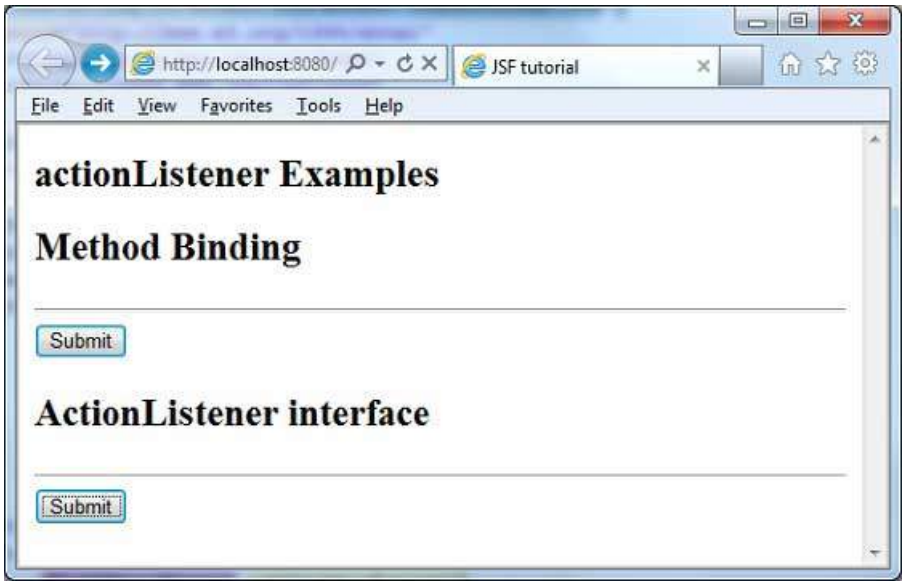
## main.xhtml

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml"
   xmlns:h="http://java.sun.com/jsf/html"
   xmlns:f="http://java.sun.com/jsf/core">
   <h:head>
      <title>JSF tutorial</title>
   </h:head>
   <h:body>
      <h2>actionListener Examples</h2>
      <h:form>
      <h2>Method Binding</h2>
      <hr/>
      <h:commandButton id="submitButton"
         value="Submit" action="#{userData.showResult}"
         actionListener="#{userData.updateData}" />
      </h:commandButton>
      <h2>ActionListener interface</h2>
      <hr/>
      <h:commandButton id="submitButton1"
         value="Submit" action="#{userData.showResult}" >
         <f:actionListener
            type="com.tutorialspoint.test.UserActionListener" />
      </h:commandButton>
      </h:form>
    </h:body>
</html>
```

## result.xhtml

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml"
   xmlns:f="http://java.sun.com/jsf/core"
   xmlns:h="http://java.sun.com/jsf/html">
   <h:head>
   <title>JSF Tutorial!</title>
   </h:head>
   <h:body>
   <h2>Result</h2>
   <hr />
   #{userData.data}
   </h:body>
</html>
```

Once you are ready with all the changes done, let us compile and run the application as we did in JSF - First Application chapter. If everything is fine with your application, this will produce following result:




Click on any submit button. You will see the following result.

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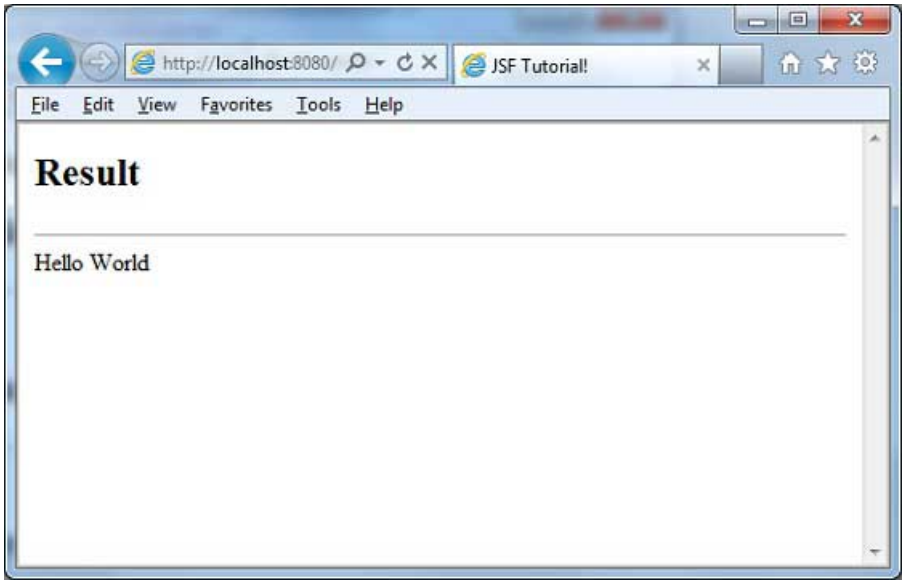


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