

Struts Basics



Concepts and Testing



Overview

- Request from Browser
- Handled by ActionServlet
 - Reads stuts-config.xml
 - Loads data into LogonForm.java
 - Runs LogonAction.java
 - ✓ Which talks to the domain layer to do it's business.
 - Forward to a Logon.jsp to render the html.



Parts

- Struts-config.xml -configuration
- JSP pages - presentation
- Form - java class for JSP data with simple validation
- Action – java class for web behavior
- Mapping elements
 - `<global-forwards>` list of `<forward>`
 - `<forward>` - logical name for a hyperlink to a resource
 - `<form-beans>` list of `<form-bean>`
 - `<form-bean>` - logical name for a java data class
 - `<action-mappings>` list of `<action>`
 - `<action>` - puts all the parts together to handle a request
- Domain (aka Buisness layer) – Does the non-Web, non-DB logic.



Welcome



```
<H3>Welcome World!</H3>
<UL>
<LI>
<html:link forward="logon">Sign
in</html:link>
</LI>
```



Config Forwards

```
<!-- === Global Forward Definitions ===== -->
<global-forwards>
    <forward name="welcome" path="/Welcome.do" />
    <forward name="logon"    path="/Logon.do" />
    <forward name="logout"   path="/Logout.do" />
</global-forwards>
```

From the Welcome JSP:

```
<html:link forward="logon">Sign in</html:link>
```

The Action Mapping to which to Forward.



Config Login.do

```
<!-- ===== Action Mapping Definitions ===== -->
<action-mappings>
  <action
    forward="/pages/Logon.jsp"
    path="/Logon"/>
```



Logon JSP

Sign in, Please! - Microsoft Int...

File Edit View Favorites Tools Ht >>

Back Forward Stop Home Search >>

Address 080/StrutsExLogin/Logon.do Go

Links G 80 cactus news >>

Google Sea >>

Username:

Password:

Submit Reset

Done Local intranet

```
<html:form action="/LogonSubmit" focus="username">
<TABLE border="0" width="100%">
<TR>
<TH align="right">Username:</TH>
<TD align="left"><html:text property="username"/></TD>
</TR>
<TR>
<TH align="right">Password:</TH>
<TD align="left"><html:password property="password"/></TD>
</TR>
<TR>
<TD align="right"><html:submit/></TD>
<TD align="left"><html:reset/></TD>
</TR>
</TABLE>
```



Config: Logon Submit

```
<!-- ===== Action Mapping Definitions ===== -->
```

```
<action
```

```
  path="/LogonSubmit"
```

```
  type="app.LogonAction"
```

```
  name="logonForm"
```

```
  scope="request"
```

```
  validate="true"
```

```
  input="/pages/Logon.jsp">
```

```
    <forward
```

```
      name="success"
```

```
      path="/pages/Welcome.jsp"/>
```

```
</action>
```

path name embedded in the JSP

Java class to use for **behavior**

Logical name to use for the **data** (next slide)

How long to keep
the data around

Should it call
LoginForm.validate()

Go here if validate()
returns false

Where to go
if all is well



Config Form-Beans

```
<struts-config>
```

```
<!-- ===== Form Bean Definitions ===== -->
```

```
<form-beans>
```

```
<form-bean
```

```
    name="logonForm"
```

```
    type="app.LogonForm"/>
```

```
</form-beans>
```

Name

Class app.LogonForm.java
That has getters and setters for
Form data



LogonForm.java

```
public final class LogonForm extends ActionForm {

    public LogonForm() { reset(); }
    private NonEmptyString password;
    private NonEmptyString username;
    private JspProperty properties;

    public String getPassword() {
        return (this.password.get());
    }
    public void setPassword(String password) {
        this.password.set(password);
    }
    // ...
}
```



Validation Errors

Sign in, Please! - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Media

Address <http://localhost:8080/StrutsExLogin/LogonSubmit.do> Go

Links G 80 cactus news NOVA admin

Google Search Web PageRai

Validation Error

You must correct the following error(s) before proceeding:

- Username is required
- Password is required

Username:

Password:

Submit Reset

Done Local intranet

```
<BODY>
```

```
<html:errors/>
```

```
<html:form action="/LogonSubmit"
focus="username">
```

```
<TABLE border="0" width="100%">
```

```
<TR>
```

```
<TH align="right">Username:</TH>
```

```
<TD align="left"><html:text
property="username"/></TD>
```

```
</TR>
```

```
...
```



Form Validation 1

```
public final class LogonForm extends ActionForm {

    public LogonForm() { reset(); }
    private NonEmptyString password;
    private NonEmptyString username;
    private JspProperty properties;

    public String getPassword() {
        return (this.password.get());
    }
    public void setPassword(String password) {
        this.password.set(password);
    }
}
```



Form Validation 2

```
// called by Struts
public void reset(ActionMapping mapping, HttpServletRequest request)
{ reset(); }

void reset() {
    properties = new JspProperty();
    username = new NonEmptyString("username", "error.username.required");
    properties.add(username);
    password = new NonEmptyString("password", "error.password.required");
    properties.add(password);
}

// called by Struts
public ActionErrors validate( ActionMapping mapping, HttpServletRequest request)
{
    ActionErrors errors = new ActionErrors();
    properties.validate(errors); // collection parameter (aka. pass the hat)
    return errors;
}

12-Sep-05
} // end of class
```



LoginAction

```
public final class LogonAction extends Action {
    public ActionForward execute( ActionMapping mapping, ActionForm form,
        HttpServletRequest request, HttpServletResponse response) throws Exception {

        boolean validated = false;
        try {
            validated = isUserLogon((LogonForm) form);
        } catch (UserDirectoryException ude) {
            return errorActionForward("error.logon.connect", request, mapping);
        }

        if (!validated) {
            return errorActionForward("error.logon.invalid", request, mapping);
        }

        HttpSession session = saveUserIntoSession(form, request);
        logMessages(form, session);

        return successActionForward(mapping);
    } // ...
}
```

12-Sep-05

objectwind.com



Testing Struts

[Code Demo]
Project StrutsLogin

In the Download section of : www.objectwind.com