

JavaServer Faces

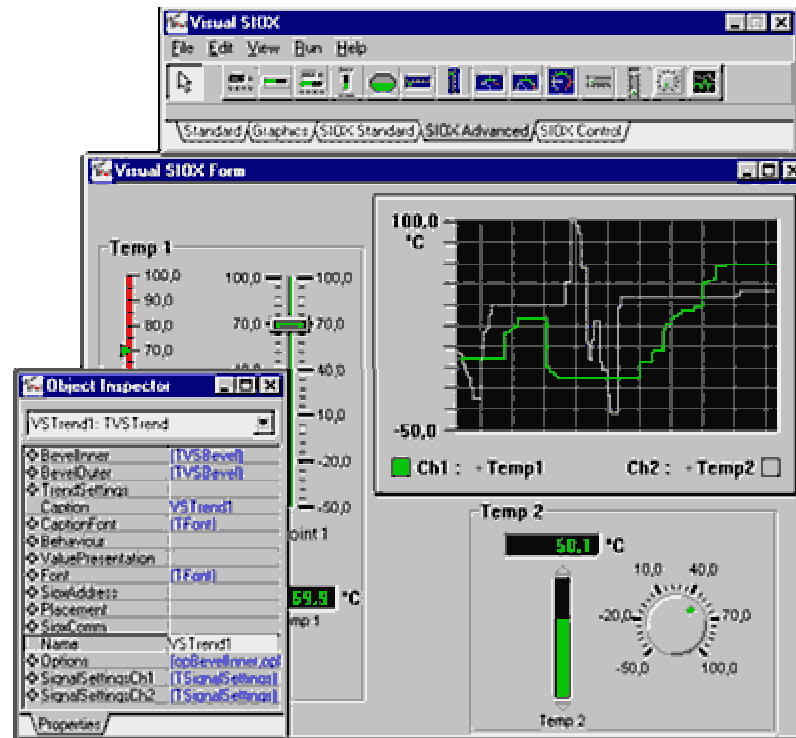
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Rapid Application Development

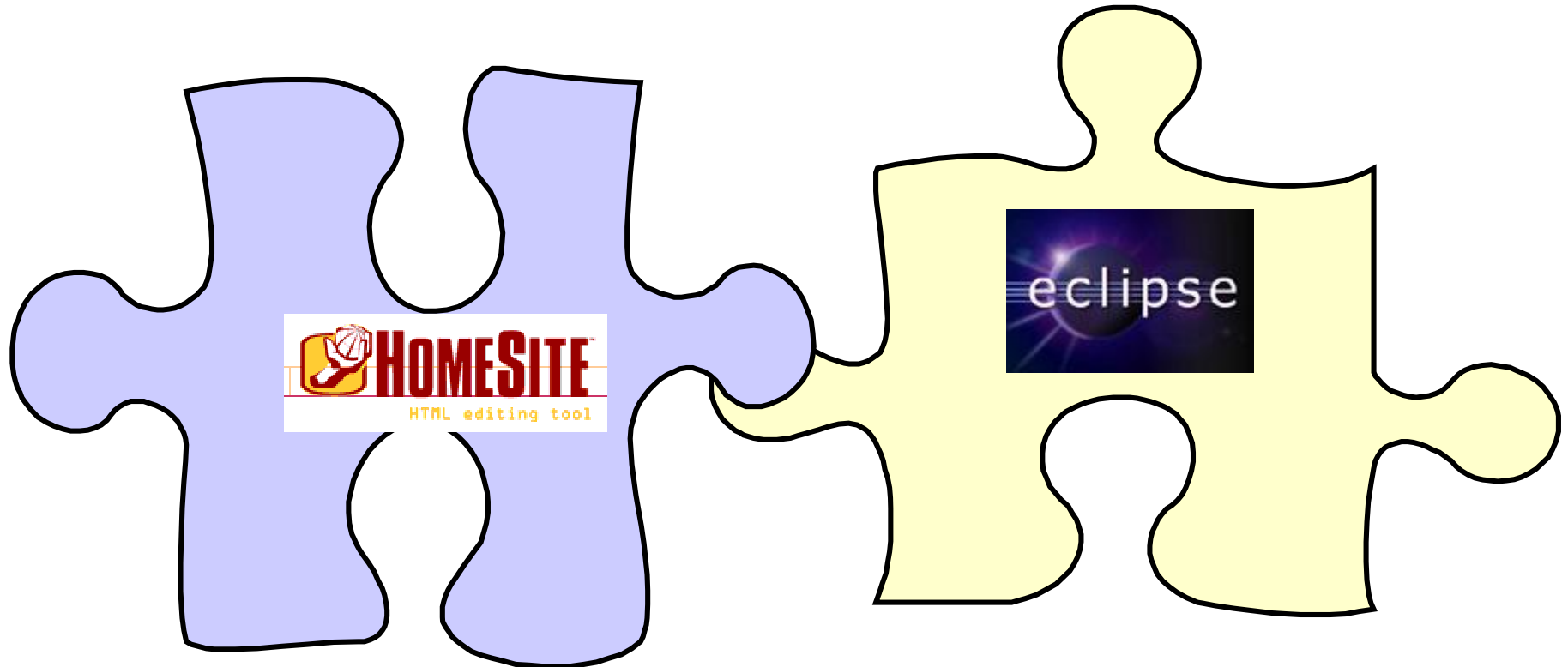


Problem Statement



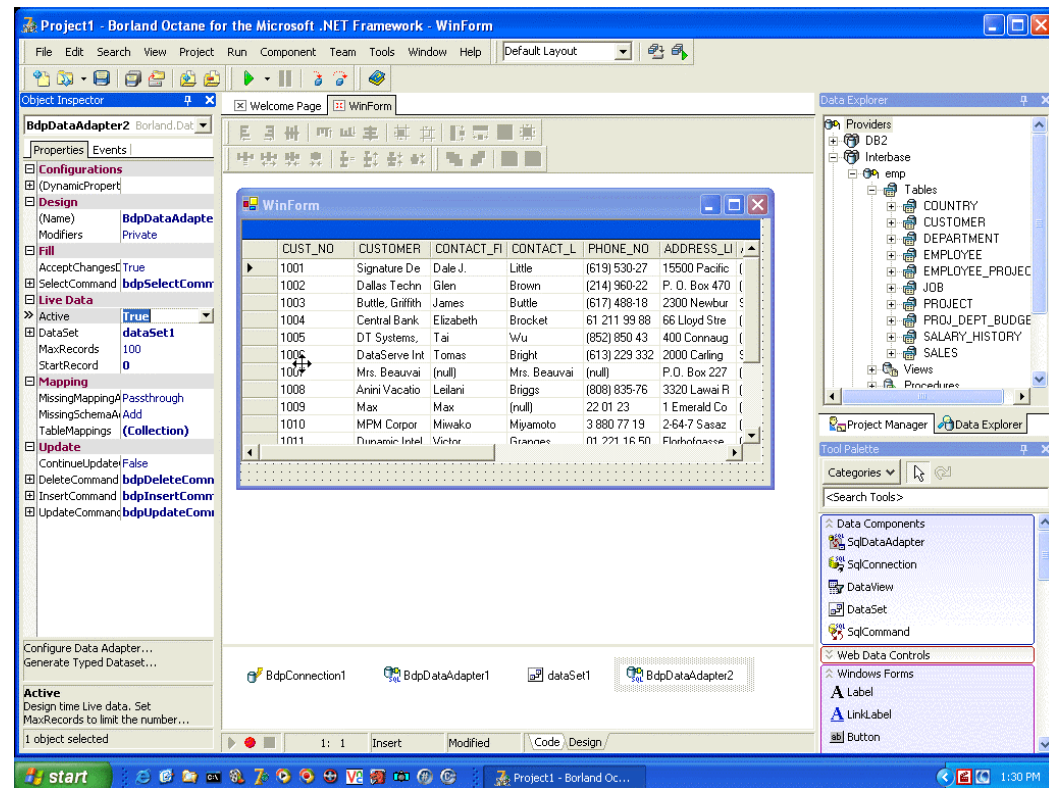
Java Web Development is NOT RAD!!!!

Design



Property(Method) Binding

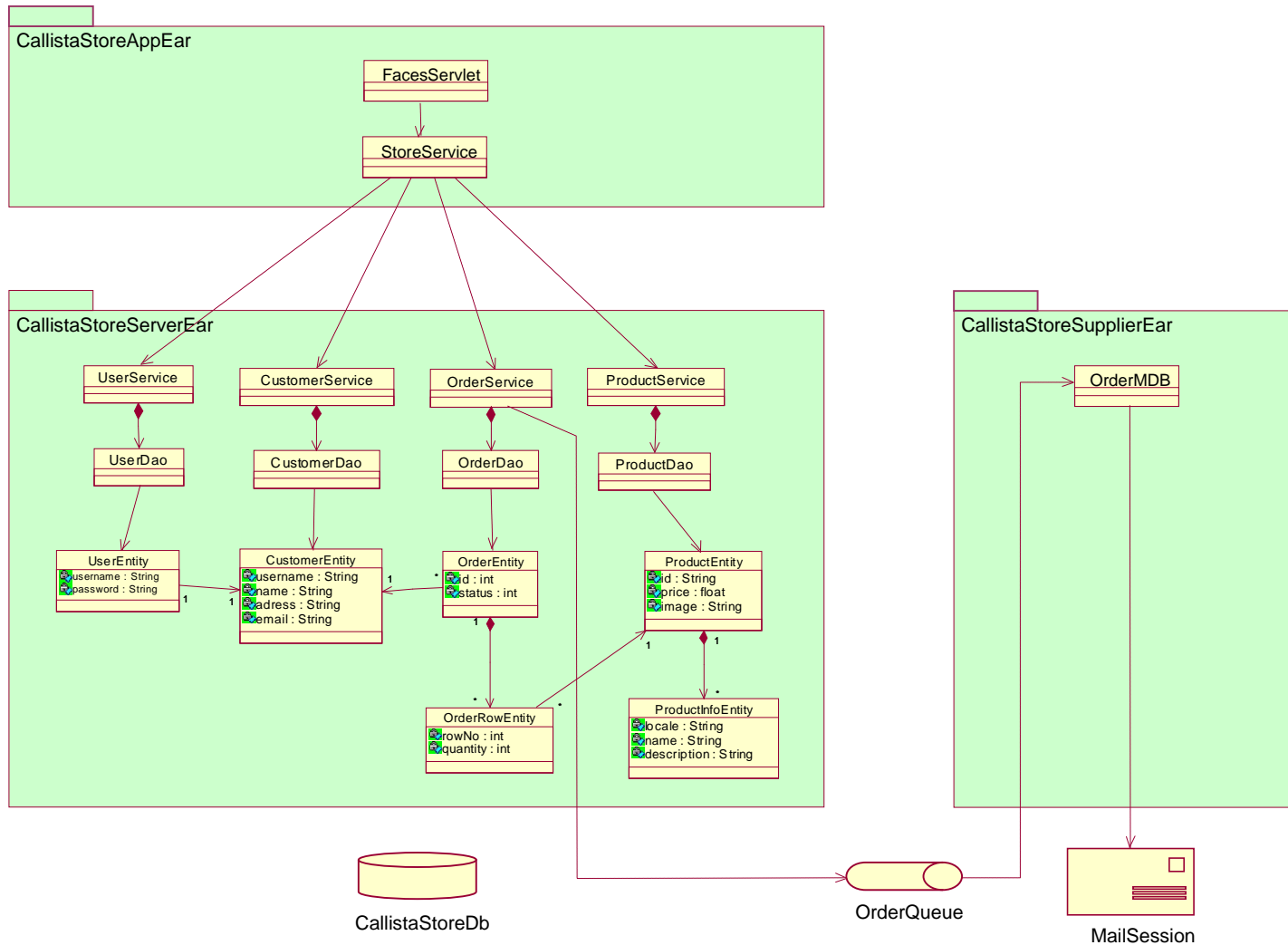
- View - Model
- "Live" data
 - Result Set
 - Model Values



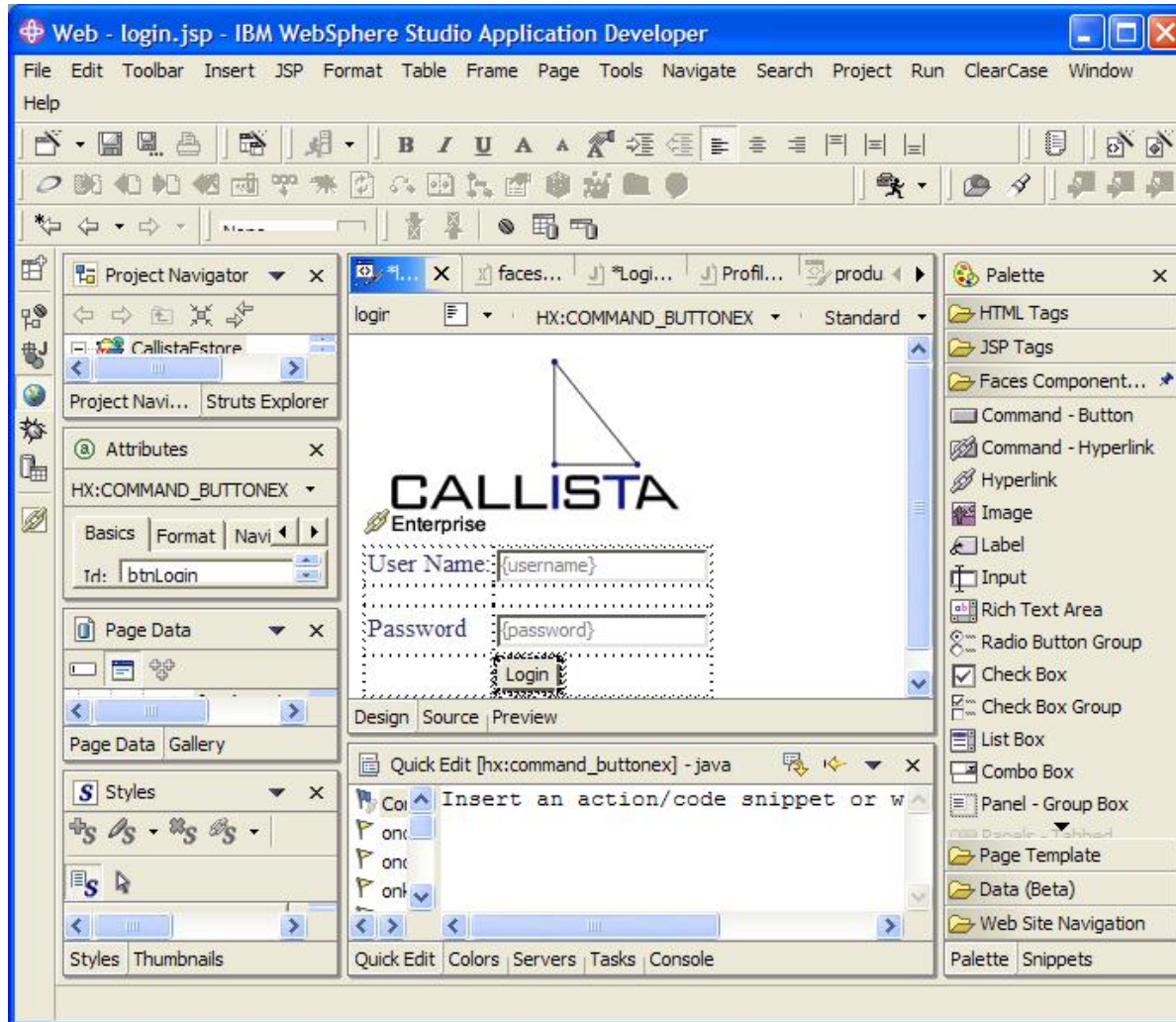
Event handling

- Client <-> Server - custom event handlers
- Validation
- Navigation

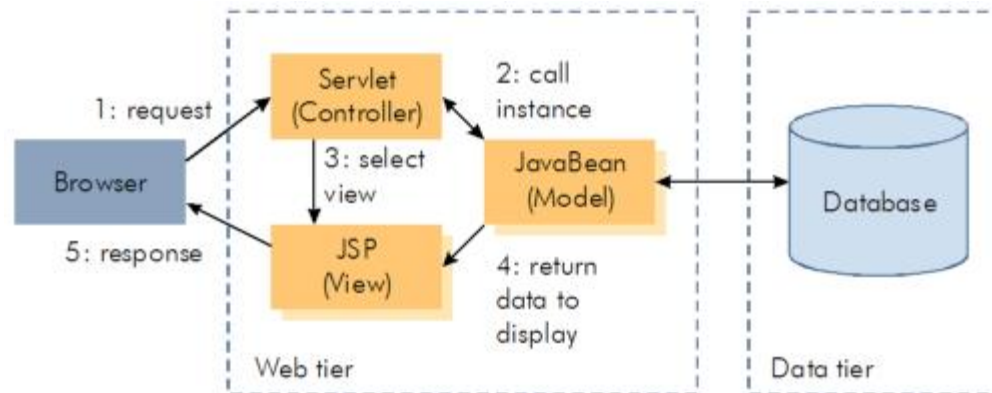
CallistaStore - Demo



JavaServer Faces

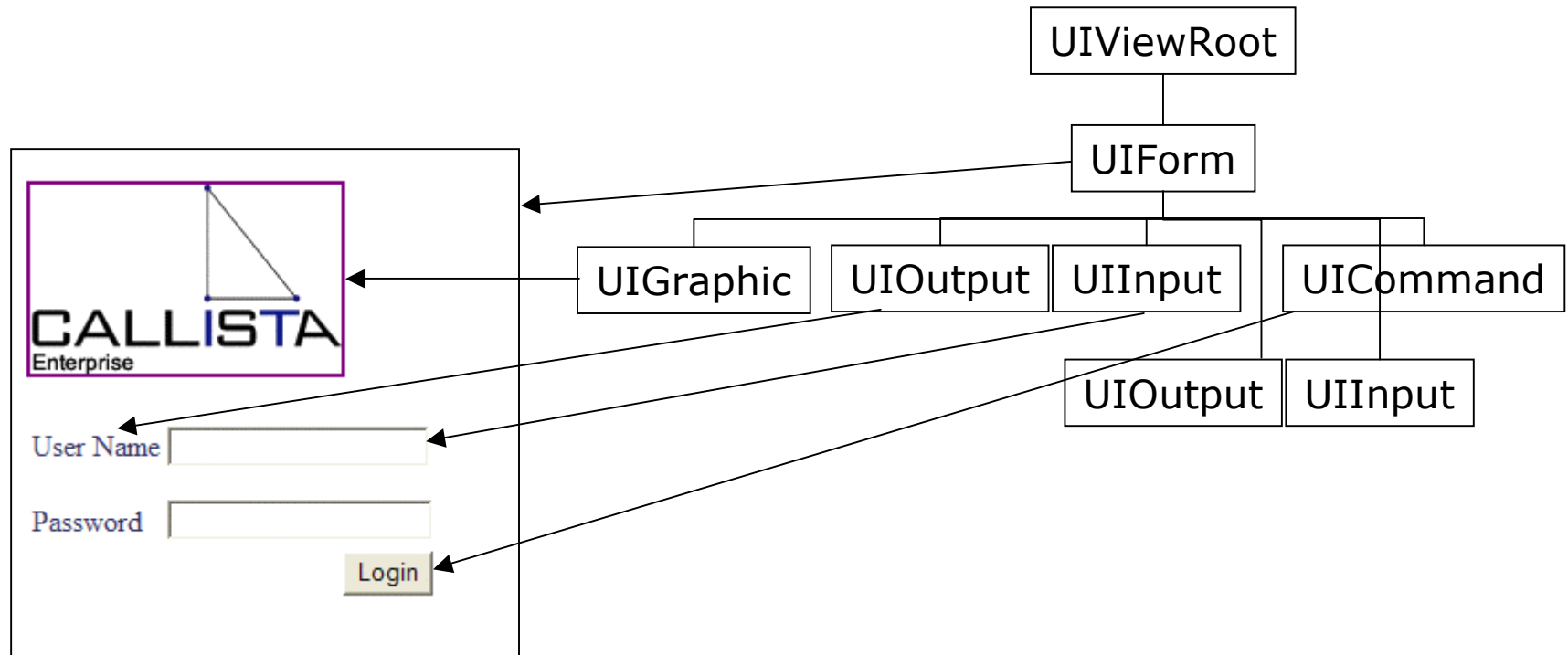


Model View Controller



- Model 2
- View
- Control
- Model

View



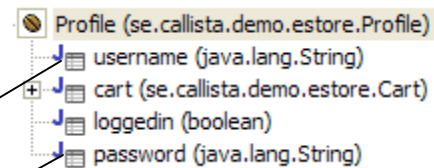
View

HTML	JSP/JSTL	JSF
<input type="submit"...>	<h:command_button>	UICommand
<FORM>	<h:form>	UIForm
<input type="text" >	<h:input_text>	UIInput
...	...	UIOutput
		UIPanel
		UIParameter

Model – Property Binding



Managed/Backing Bean



User Name

Password

Login

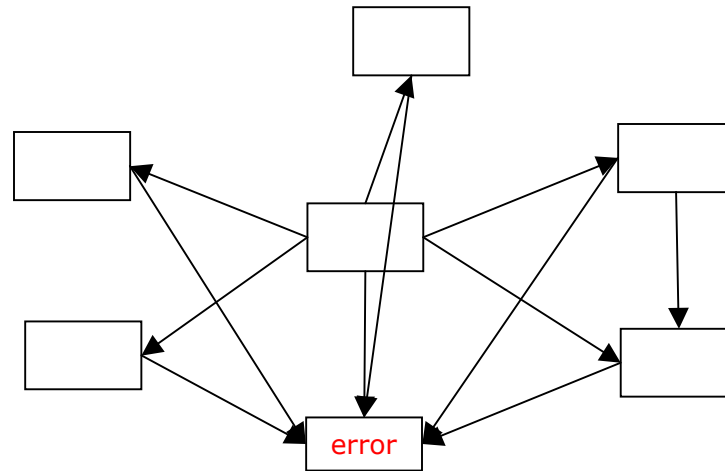
Resource bundle

se.callista.demo.estore.Resources.userNameLabel
se.callista.demo.estore.Resources.passwordLabel

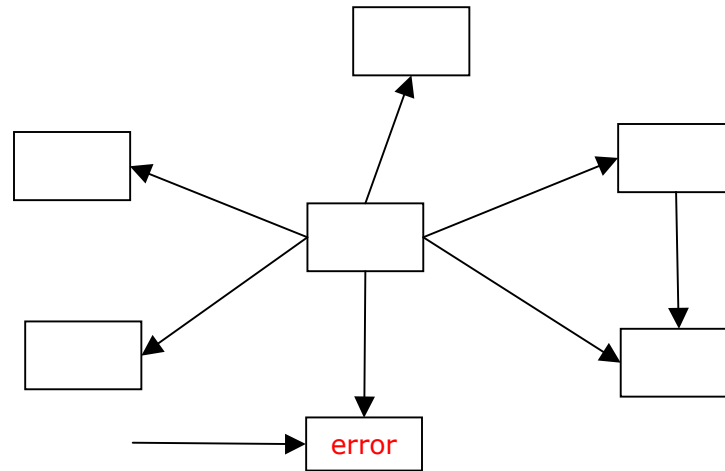
Implicit Objects

requestScope, sessionScope, applicationScope
cookie
header/headerValues
param/paramValues
view
facesContext

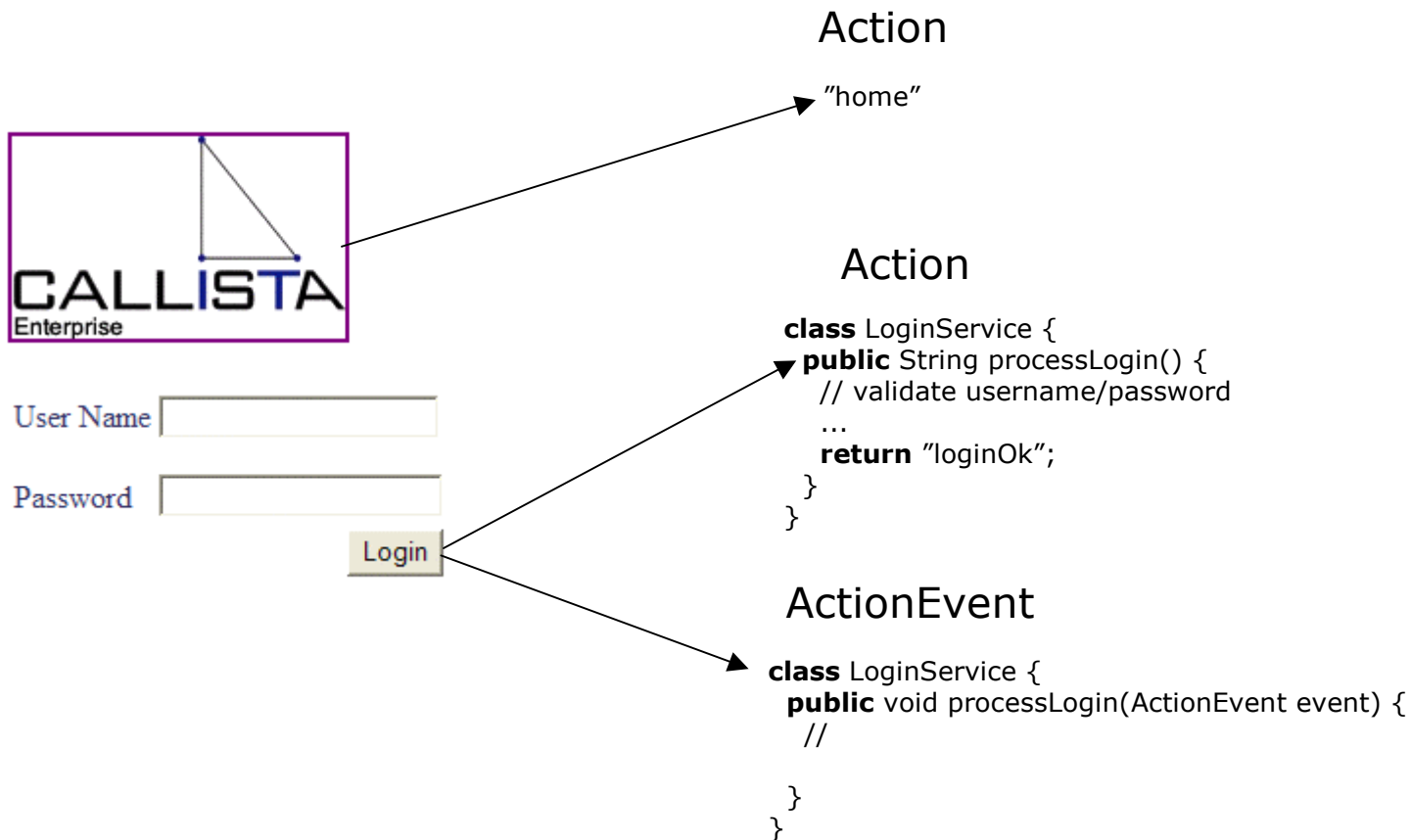
Navigation



Navigation



Code Behind Events



Validation

- Validation of user input during the Process Validation phase
- Standard Validator
 - DoubleRangeValidator (Double min/max)
 - LengthValidator (# of characters)
 - LongRangeValidator (Long min/max)
 - RequiredValidator (non-null)
 - StringRangeValidator (String min/max)

```
<h:input_secret id="password" value="#{LogonBean.password}">  
  <f:validate_length maximum="16" minimum="6" />  
</h:input_secret>
```


Validation

Validator

```
<h:input_secret id="password" value="#{LogonBean.password}">  
    <f:validate_length maximum="16" minimum="6" />  
</h:input_secret>
```



User Name

Password

A screenshot of the "Attributes" dialog box for the component "H:INPUT_SECRET". The dialog has tabs for "Basics", "Access", "Validation", and "All". The "Validation" tab is selected. Under "On the client (browser)", there are checkboxes for "Control is disabled" and "Control is read-only", both of which are unchecked. Below these is a "Maximum length" field set to "16" characters. Under "On the server (when submitted)", the "Value is required" checkbox is checked. Below it are "Minimum length" and "Maximum length" fields, both set to "6" and "16" characters respectively. At the bottom, there is a checkbox for "Add Display Error control" which is checked, and a "Set Custom Message" button. An arrow points from the "Password" input field in the form to the "Validation" tab in the dialog box.

Validation

```
<h:input_text id="email" value="#{SubscriberBean.email}"  
    validator="emailValidator.validate">  
</h:input_text>
```

```
class EmailValidator {  
    public void validate(FacesContext context, UIInput component) {  
    }  
}
```

ValueChangeEvent



User Name

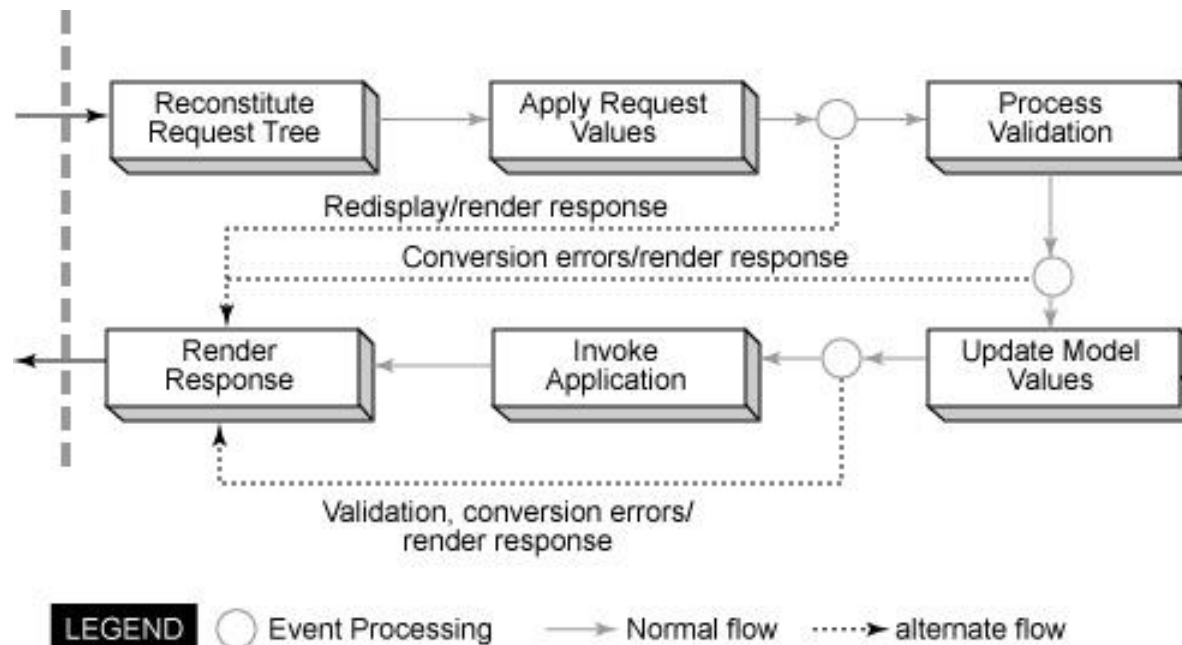
Password

ValueChanged

```
class ProfileService implements ValueChangeListener{  
    public void processValueChange(ValueChangeEvent event)  
    {  
        // property has changed  
    }  
}
```

WSAD - demo

Extending JSF - The life cycle



Framework / Component Writers

- Renderer, RenderKit, RenderKitFactory
 - Swing
- ViewHandler
 - Oracle ADF UIX – XML not JSP
 - XuViewHandlerImpl.java (see “Non-Jsp” example)
- NavigationHandler & ActionListener
 - Struts
- StateManager

Validation

- Component Writers
 - `javax.faces.validator.Validator`
 - `Javax.faces.webapp.ValidatorTag`

```
<h:input_text id="email"
  value="#{subscriberBean.email}">
  <foo:email_address_validator />
</h:input_text>
```

Miscellaneous

- Localization
- (Error) Messages
- ExternalContext
 - ServletContext, Portlets, ...
- Conversion Model
 - `javax.faces.convert.Converter` for each `UIComponent`

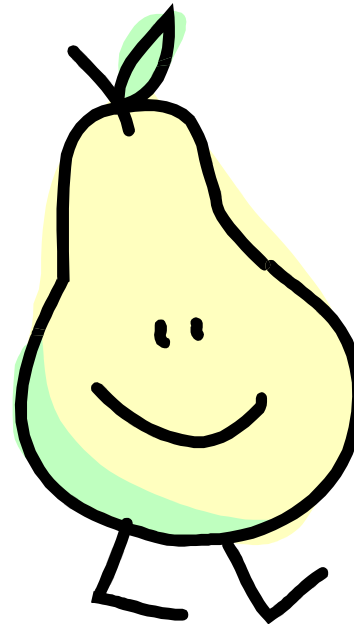
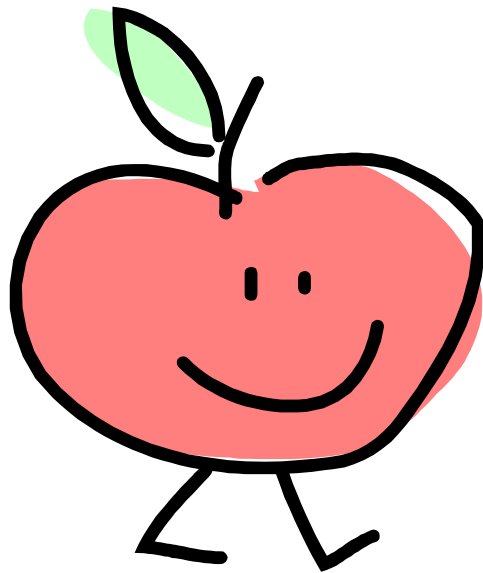
Tools

- Programming JSF by hand is like using WIN32 SDK
- The tool is everything
 - IBM WebSphere Studio Application Developer (JSP)
 - Sun Java Studio Creator (JSP?)
 - Oracle JDeveloper (XML)
 - Borland JBuilder (JSP?)
 - Eclipse?
 - ...

JSF vs ASP.Net

JSF	JSF & ASP.Net	ASP.Net
Render/RenderKit	UI Components	Mature
1-Many Code Behind	Client-Server Event Model	Rich set of components
Navigation	Validation	
Managed Beans	Multiple Client-targets	
	MVC	

JSF vs Struts



Resources

<http://java.sun.com/j2ee/javaserverfaces>

- Specification, Reference impl., Forum

<http://www.jsfcentral.org>

- Articles, Links

[http://www.theserverside.com/talks/videos/KitoMannText/
interview.jsp](http://www.theserverside.com/talks/videos/KitoMannText/interview.jsp)

Summary

- ❑ The tool is everything
- ❑ Components, components, components, ...

Questions!