

# JavaServer Faces

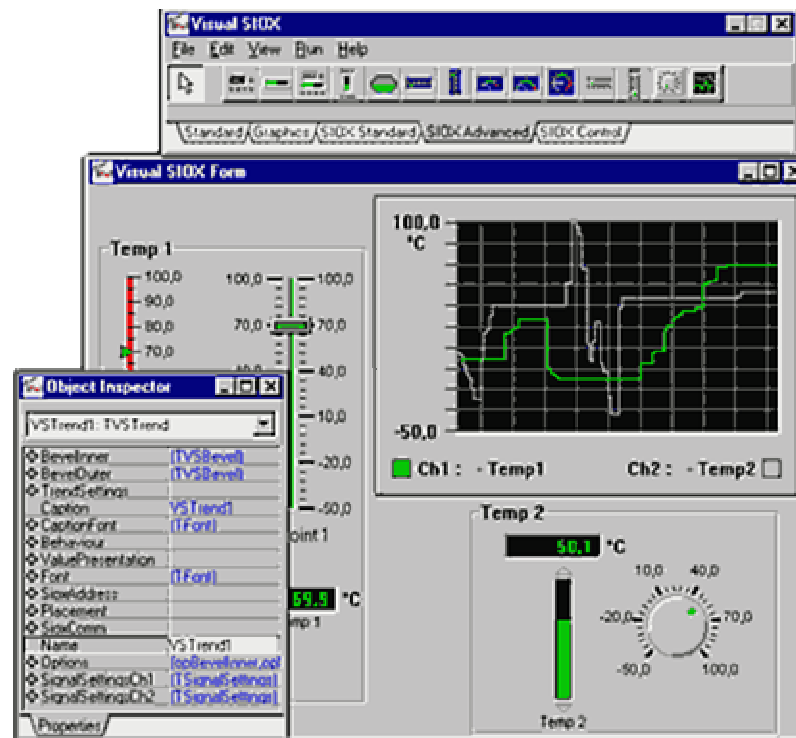
Peter Norrhall

Callista Enterprise AB

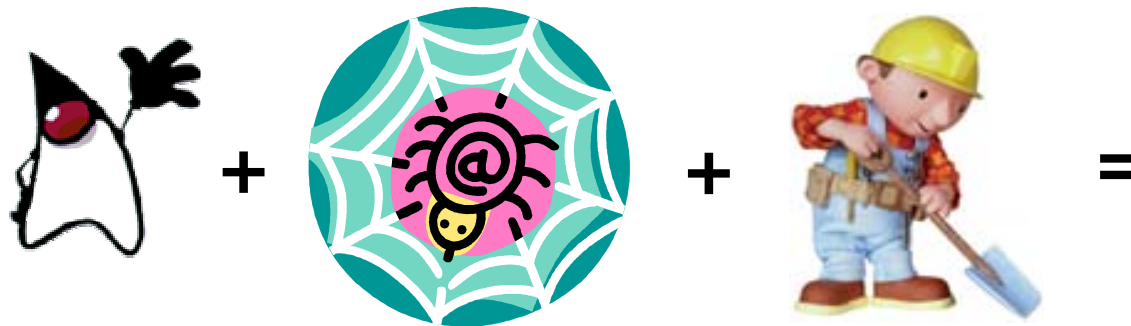
[peter.norrhall@callista.se](mailto:peter.norrhall@callista.se)

<http://www.callista.se/enterprise>

# Rapid Application Development

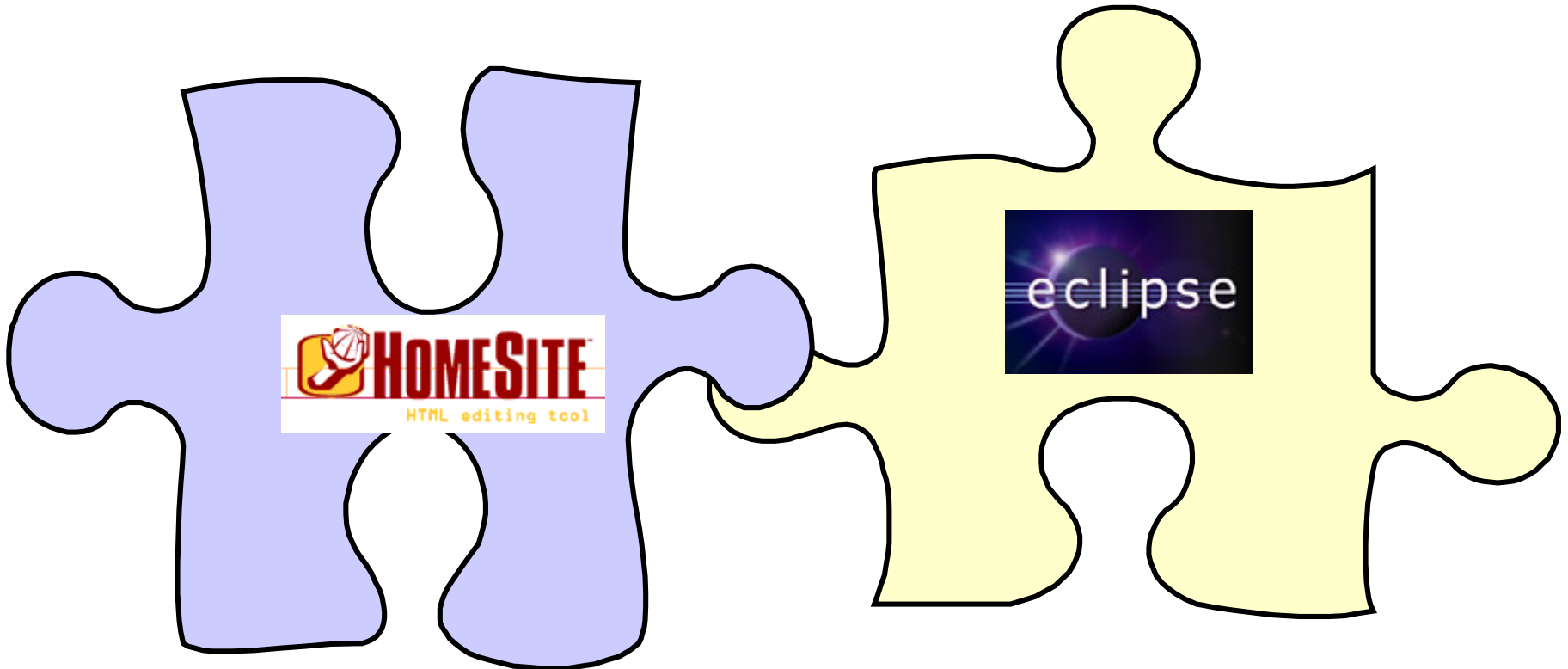


# Problem Statement



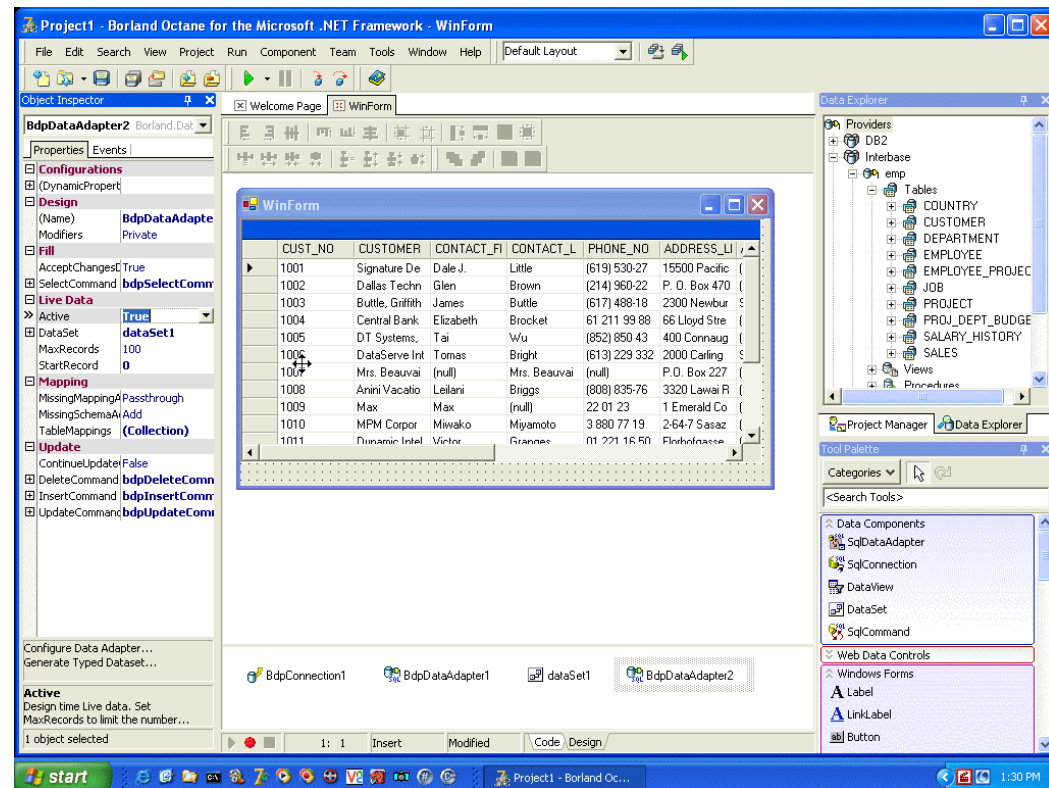
**Java Web Development is NOT RAD!!!!**

# Design



# Property(Method) Binding

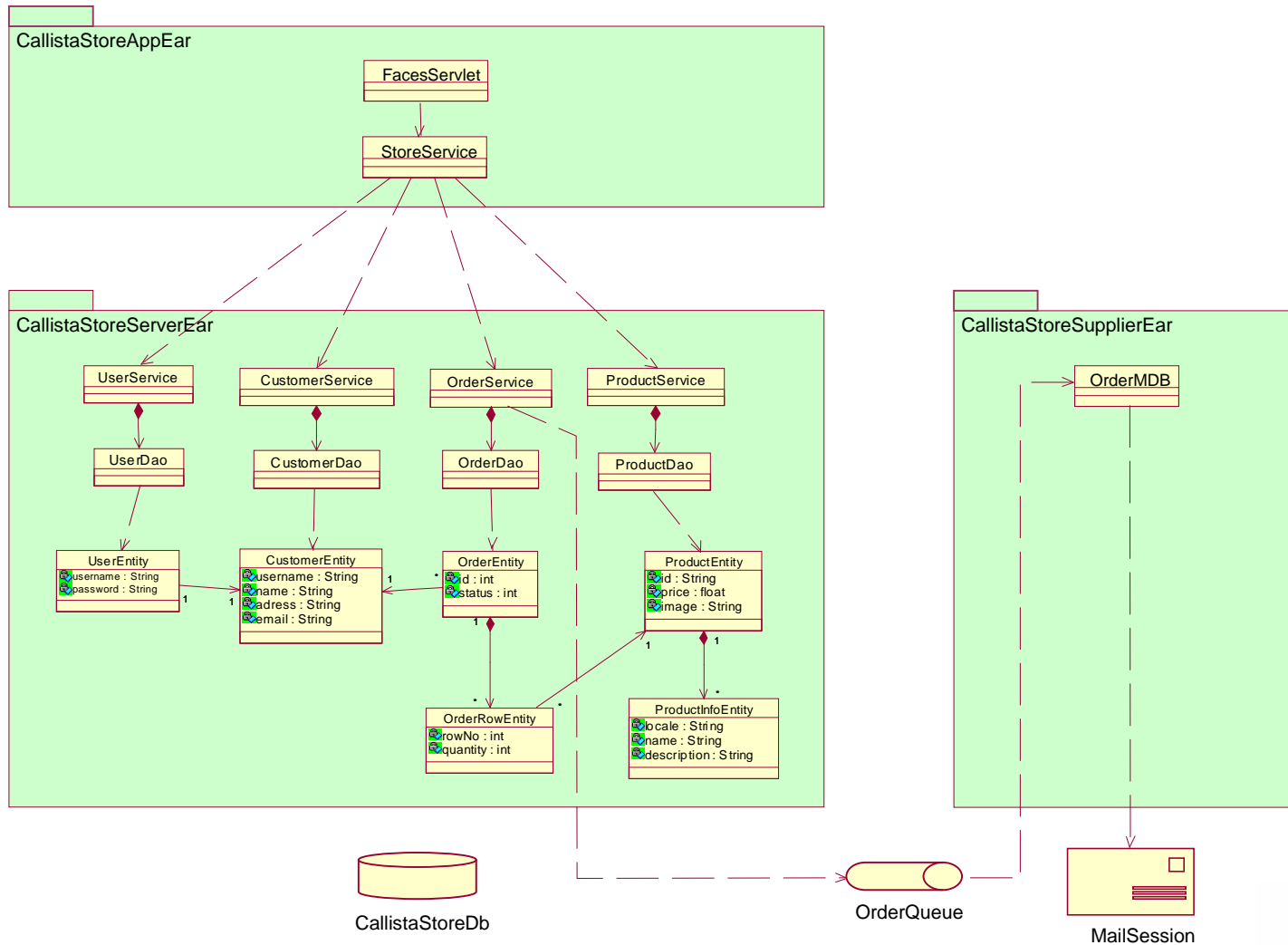
- View - Model
- "Live" data
  - Result Set
  - Model Values



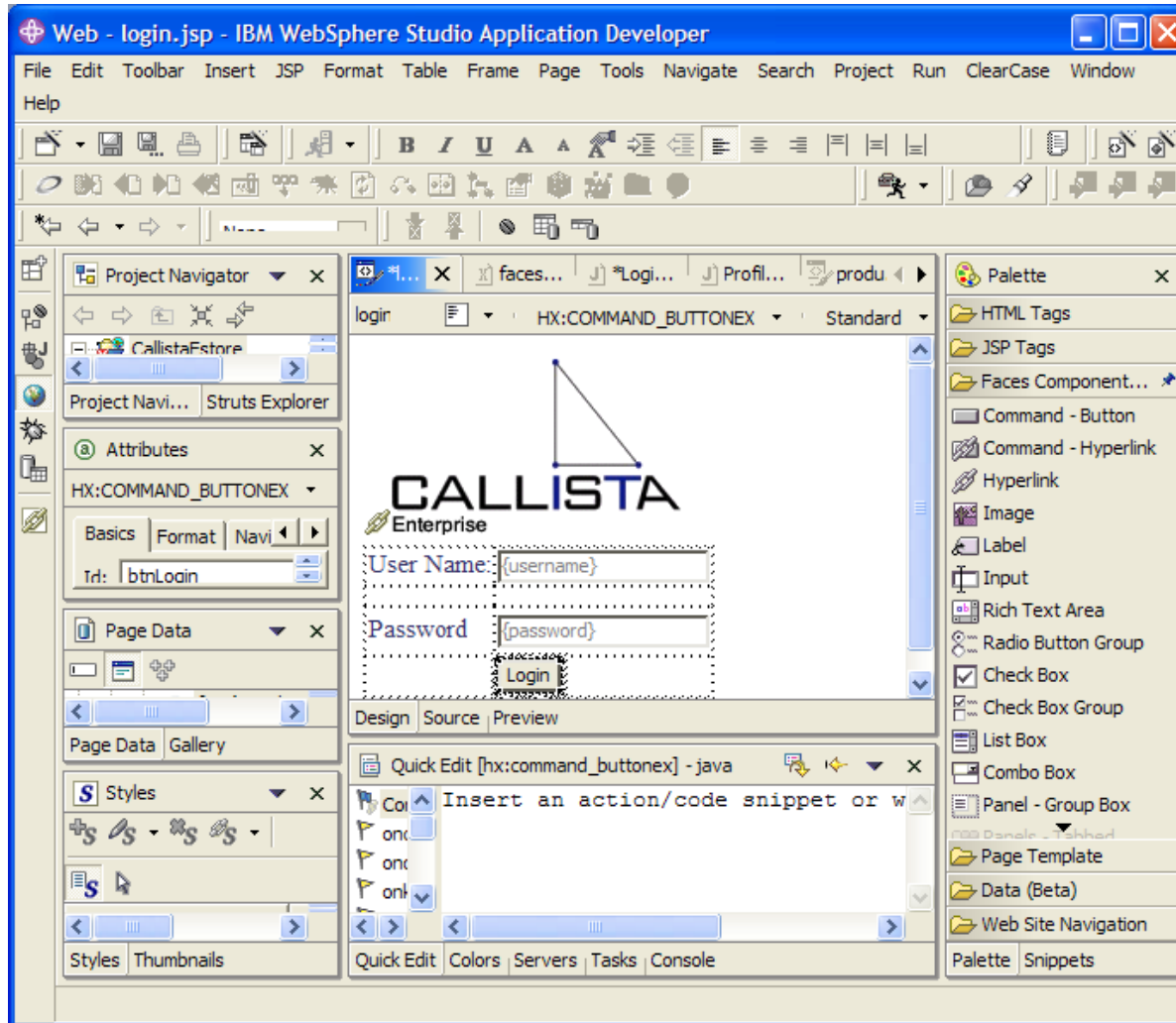
# Event handling

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

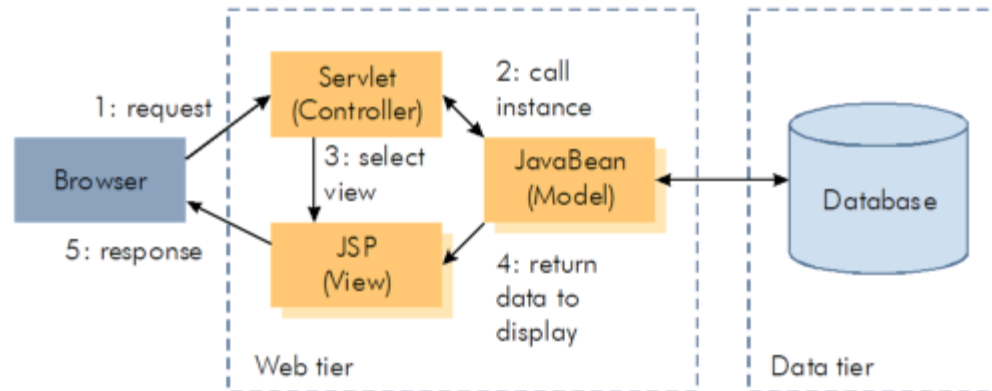
# CallistaStore - Demo



# JavaServer Faces

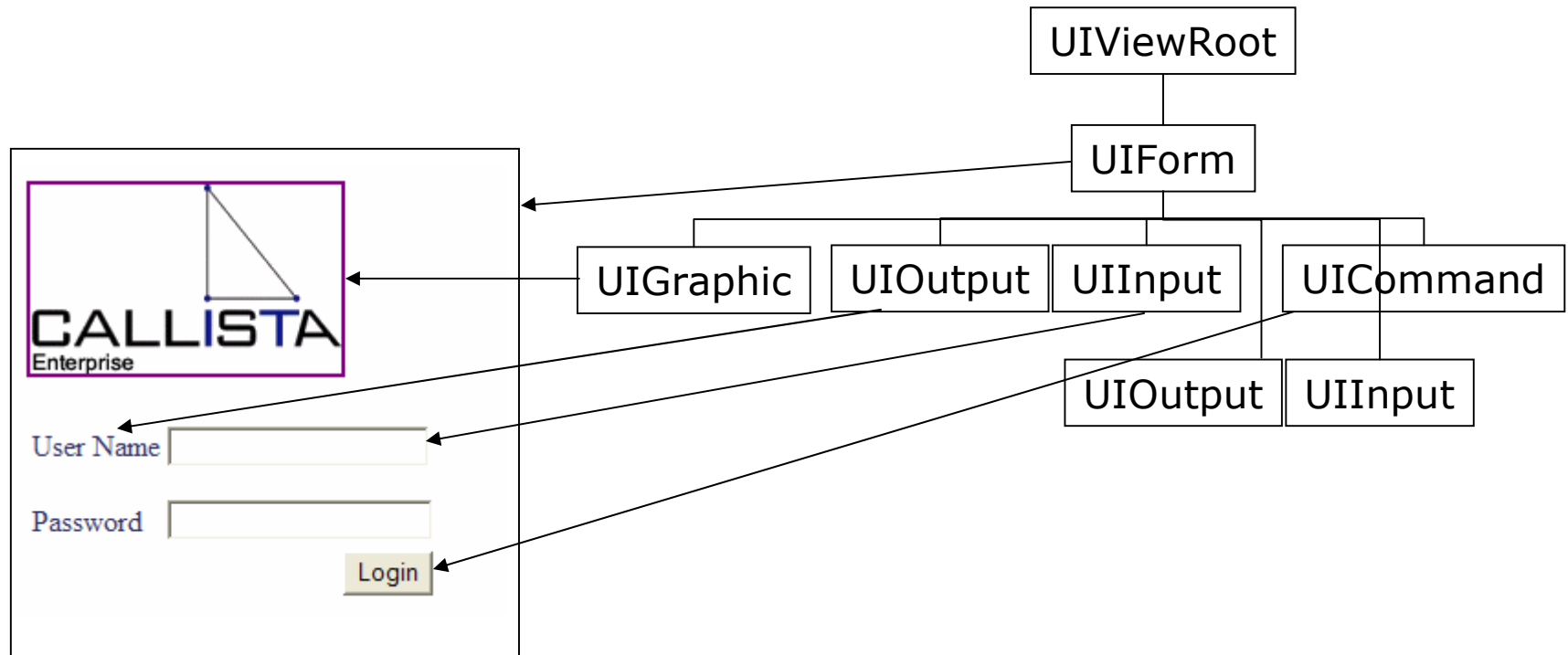


# Model View Controller



- 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



User Name

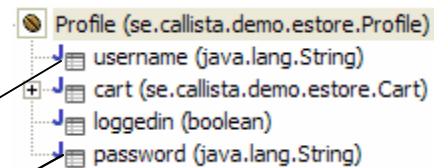
Password

Login

Resource bundle

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

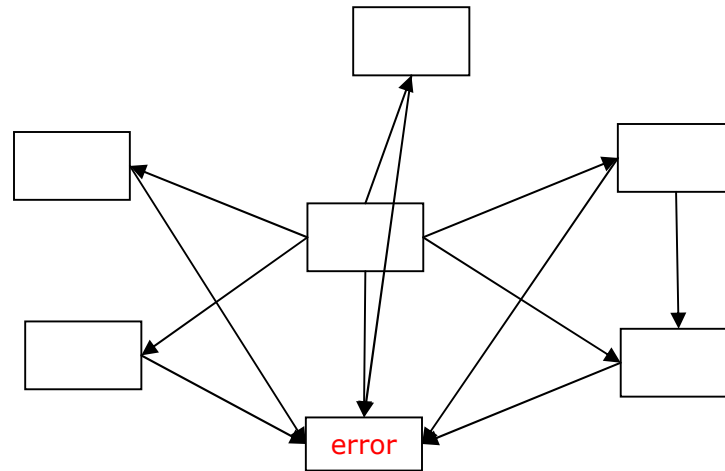
Managed/Backing Bean



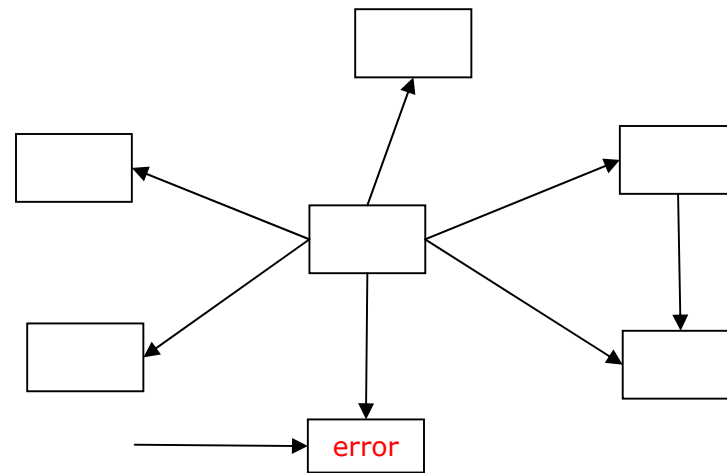
Implicit Objects

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

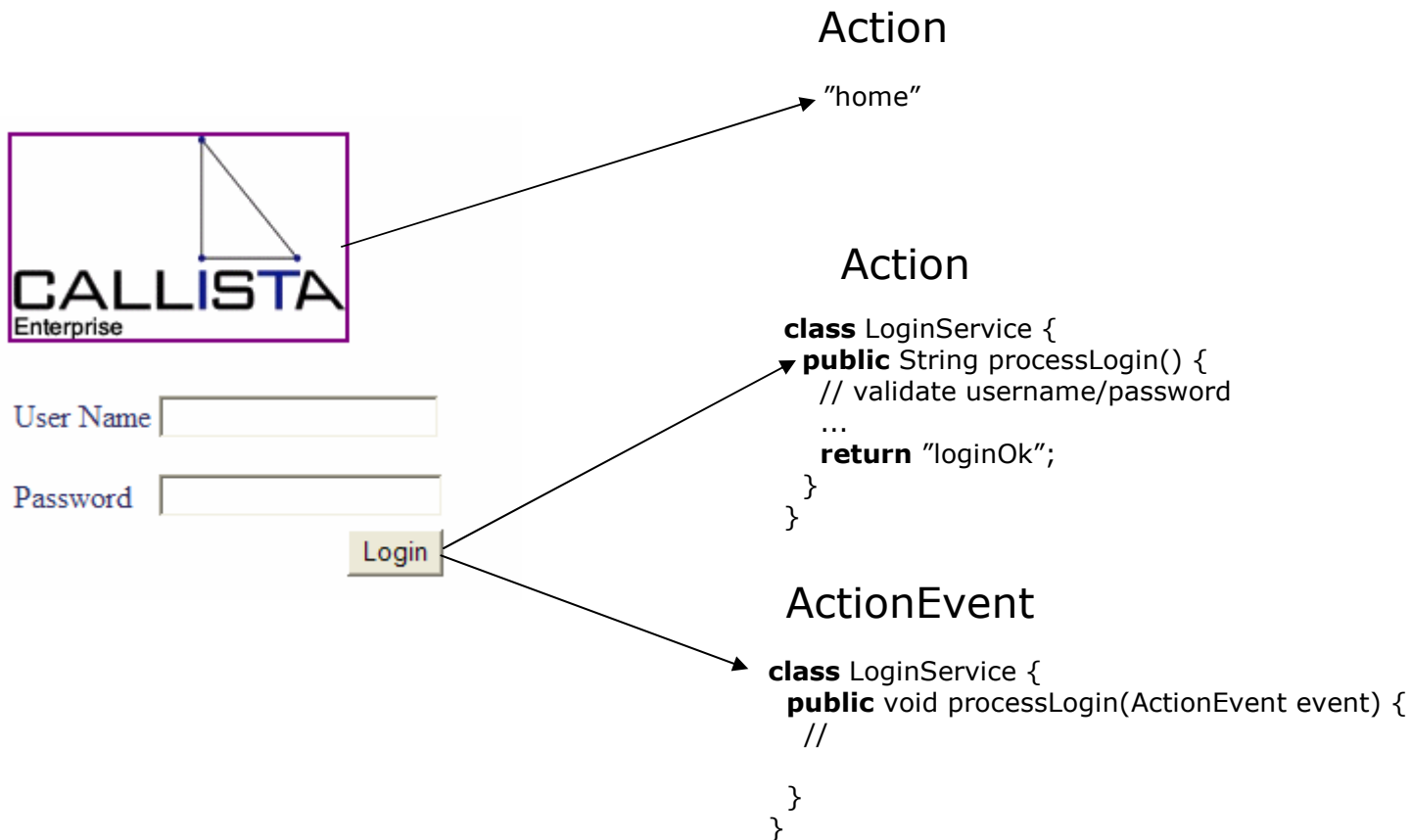
# Navigation



# 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

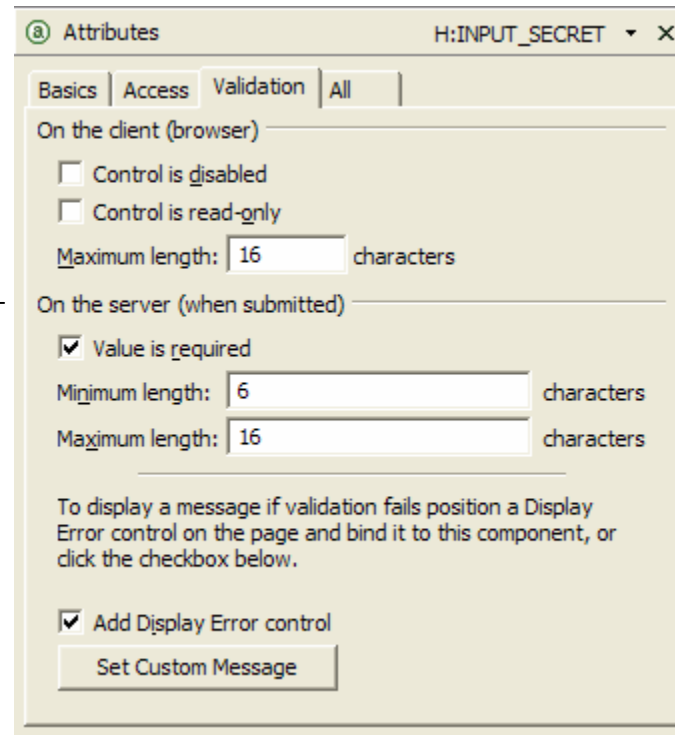
## Validator

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



User Name

Password



The image shows a dialog box titled "Attributes" for the component "H:INPUT\_SECRET". It has tabs for "Basics", "Access", "Validation", and "All", with "Validation" selected. Under "On the client (browser)", there are checkboxes for "Control is disabled" and "Control is read-only", both unchecked, and a "Maximum length" field set to "16" characters. Under "On the server (when submitted)", the "Value is required" checkbox is checked. There are "Minimum length" and "Maximum length" fields, both set to "6" and "16" characters respectively. At the bottom, there is a checked checkbox for "Add Display Error control" and a "Set Custom Message" button.

# Validation

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

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

# ValueChangeEvent



User Name

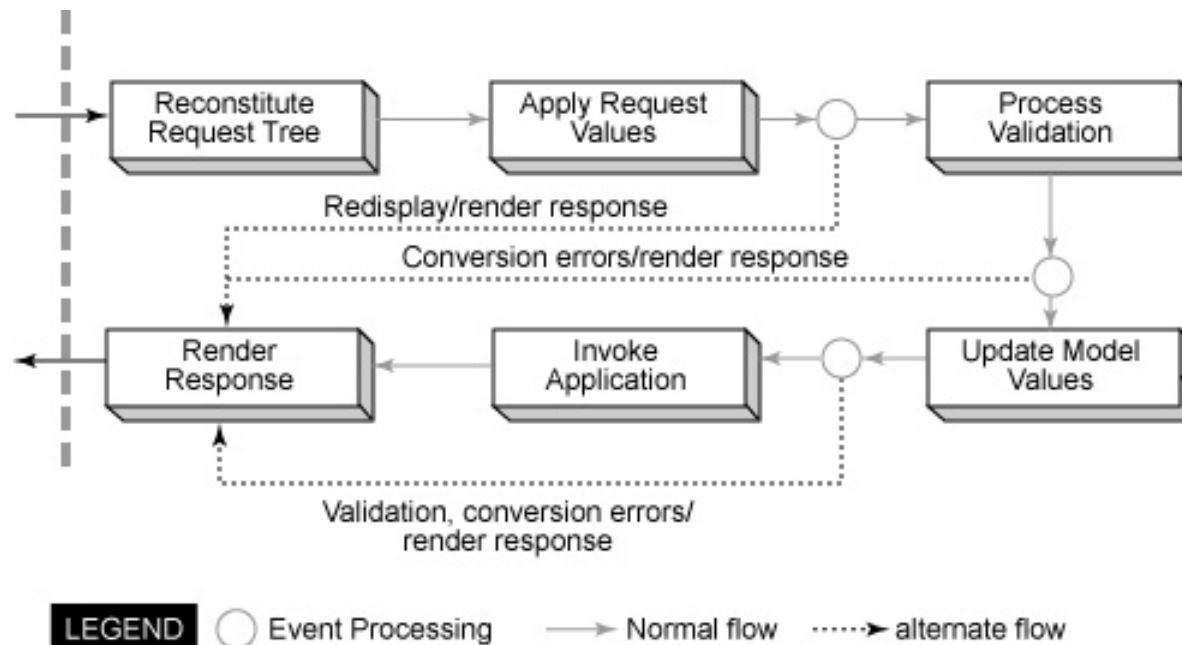
Password

## 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`

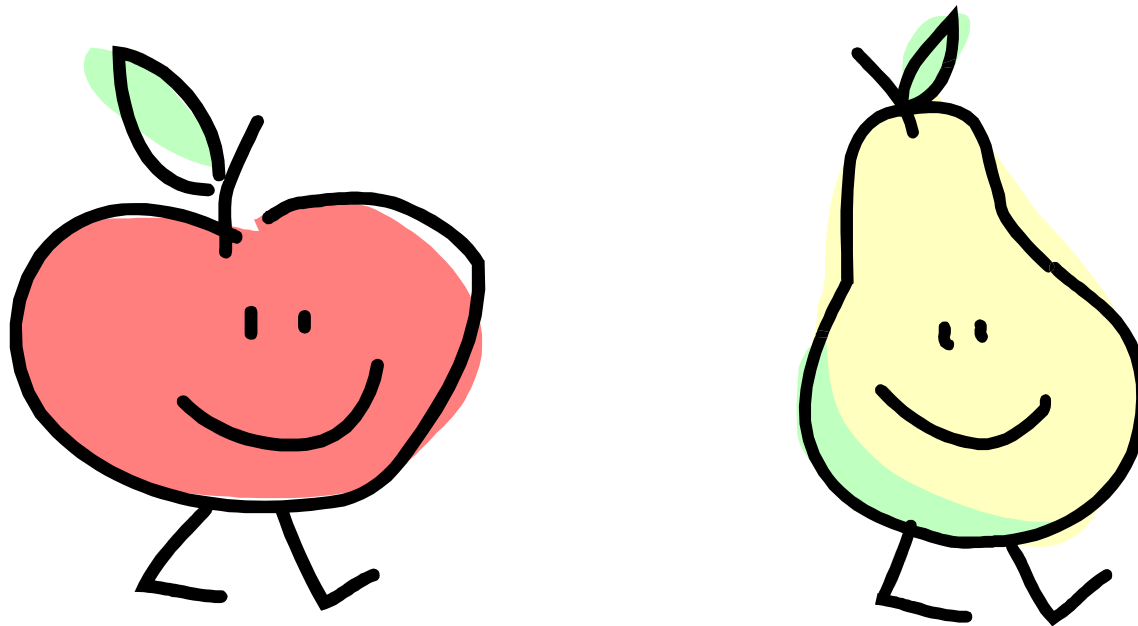
# Tools

- 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

<b>JSF</b>	<b>JSF &amp; ASP.Net</b>	<b>ASP.Net</b>
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!