



Advanced Java

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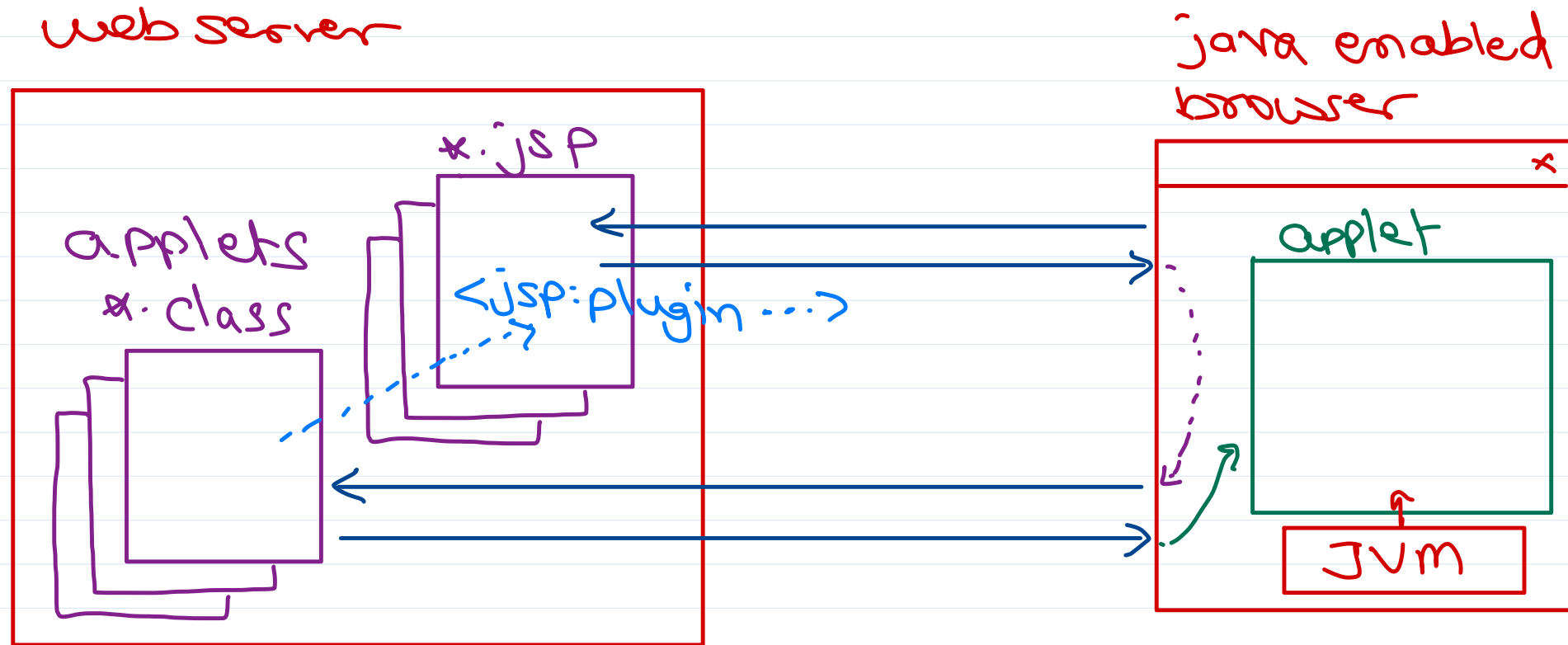
JSP file should have presentation logic
i.e. markup syntax (tags).

Ideal JSP do not have any java code
in it (i.e. scriptlets or expression).

To reduce scriptlets from JSP pages:

- ① JSP standard actions
- ② Java beans
- ③ JSP EL
- ④ JSTL tags
- ⑤ Custom tags

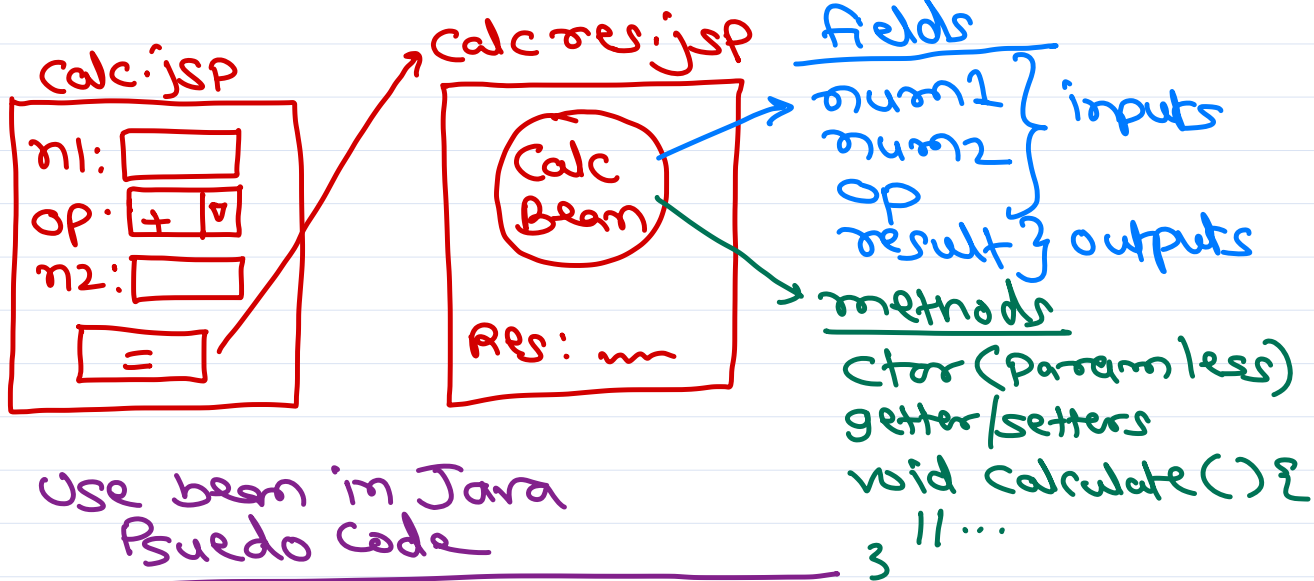




Applet is a java class that is downloaded to client side upon request and execute in browser JVM.

Java Beans

Java Bean = fields + ctor + getter/setter + business logic method(s).



Use bean in Java
Pseudo Code

```
CalcBean cb = new CalcBean();  
cb.setNum1(req.getParameter("num1"));  
cb.setNum2(req.getParameter("num2"));  
cb.setOp(req.getParameter("op"));  
cb.calculate();  
println(cb.getResult());
```

```
<jsp:useBean id="cb"  
             class="pkg.CalcBean"/>
```

```
<jsp:setProperty name="cb"  
                 property="num1" param="num1"/>
```

```
<jsp:setProperty name="cb"  
                 property="num2" param="num2"/>
```

```
<jsp:setProperty name="cb"  
                 property="op" param="op"/>
```

field name ↑ ↑ req param name

```
<% cb.calculate(); %>
```

```
<jsp:getProperty name="cb"  
                 property="result"/>
```



Java Beans

fields: email, password, user

method:

authenticate() {

// jdbc code

// call dao.

Login Bean

login bean.jsp

demo6.jsp

email	<input type="text"/>
pass	<input type="text"/>
<input type="button" value="Sign In"/>	

```
<jsp:useBean id="lb" class="pkg.LoginBean"/>
// LoginBean lb = new LoginBean();
<jsp:setProperty name="lb" property="email" param="email"/>
// lb.setEmail(request.getParameter("email"));
<jsp:setProperty name="lb" property="password" param="password"/>
// lb.setPassword(request.getParameter("password"));
<% lb.authenticate(); %>
<% if(lb.getUser() != null) { %>
    Welcome, <jsp:getProperty name="lb" property="email"/>
<% } else { %>
    Failed
<% } %>
```

// lb.getEmail() -> o/p in resp.



Java Bean Scopes

<u>Scope</u>	default Scope	<u>attribute of</u>	
① page	(lowest)	→ PageContext	→ accessible in cur req to cur page only.
② request		→ HttpServletRequest	→ accessible on all pages where cur req is fwd on incl.
③ session		→ HttpSession	→ accessible in all req to all pages for cur user.
④ application (highest)		→ ServletContext	→ accessible in all req to all pages for all users

```
<jsp:useBean id="lb"  
class="Pkg.LoginBean" scope="session"/>
```

① check if given bean is avail in given scope. if avail access it.

② if not avail, create a new bean and add it into that scope.

```
LoginBean lb  
= session.getAttribute("lb");  
if (lb == null) {  
    lb = new LoginBean();  
    session.setAttribute("lb", lb);  
}
```

To access bean obj or do setProperty/getProp in a page useBean must be done above in page?





predefined tag lib by Sun-microsystem.

JSTL 5 main components:

- ① core → redirect, vars, if, choose, forEach, ...
- ② fmt → number/currency/date formatting
- ③ functions → String ops e.g. length, ...
- ④ xml → xml generation & parsing.
- ⑤ sql → execute sql queries from JSP pages.



JSP EL \rightarrow $\{ \text{expr} \}$

applications

① arbitrary calculations.

$\{ 2 + 3 * 4 \}$

$\{ 22 \text{ div } 7 \} \dots \underline{1}$

$\{ 22 \text{ mod } 7 \} \dots \underline{1}$

② Can access obj from any scope:

$\{ \text{pageScope} . \text{objName} \}$

$\{ \text{requestScope} . \text{objName} \}$

$\{ \text{sessionScope} . \text{objName} \}$

$\{ \text{applicationScope} . \text{objName} \}$

$\{ \text{objName} \}$ \rightarrow auto search in all scopes from lowest to highest & refer the first found obj

③ Can access fields of objects (via getters).

$\{ \text{objName} . \text{fieldName} \}$

$\hookrightarrow \text{objName} . \text{get}(\text{fieldName})$

④ Can call methods of objects.

$\{ \text{objName} . \text{methodName}() \}$

⑤ EL implicit objects

$\{ \text{param} . \text{paramName} \}$

$\{ \text{paramValues} . \text{paramName} \}$

$\{ \text{cookie} . \text{cookieName} \}$

$\{ \text{initParam} . \text{initParamName} \}$

$\{ \text{header} . \text{headerName} \}$

$\{ \text{headerValues} . \text{headerName} \}$

$\{ \text{pageContext} . _ \}$





Thank you!

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