JSP

JSP is outdated.

Servlets = business logic* + presentation logic

JSPs = presentation logic* + business logic

JSP is translated into servlet while execution.

① JSP syntax (other than markup)

ⓐ <%@ ... %> → directives
↳ page, include, taglib

ⓑ <%! ... %> → declaration
↳ jspInit(), jspDestroy(), fields, ...

ⓒ <% ... %> → scriptlet
↳ java statements - [redacted]

ⓓ <%= ... %> → expression
↳ java expression - req handling
↳ output added to resp directly.

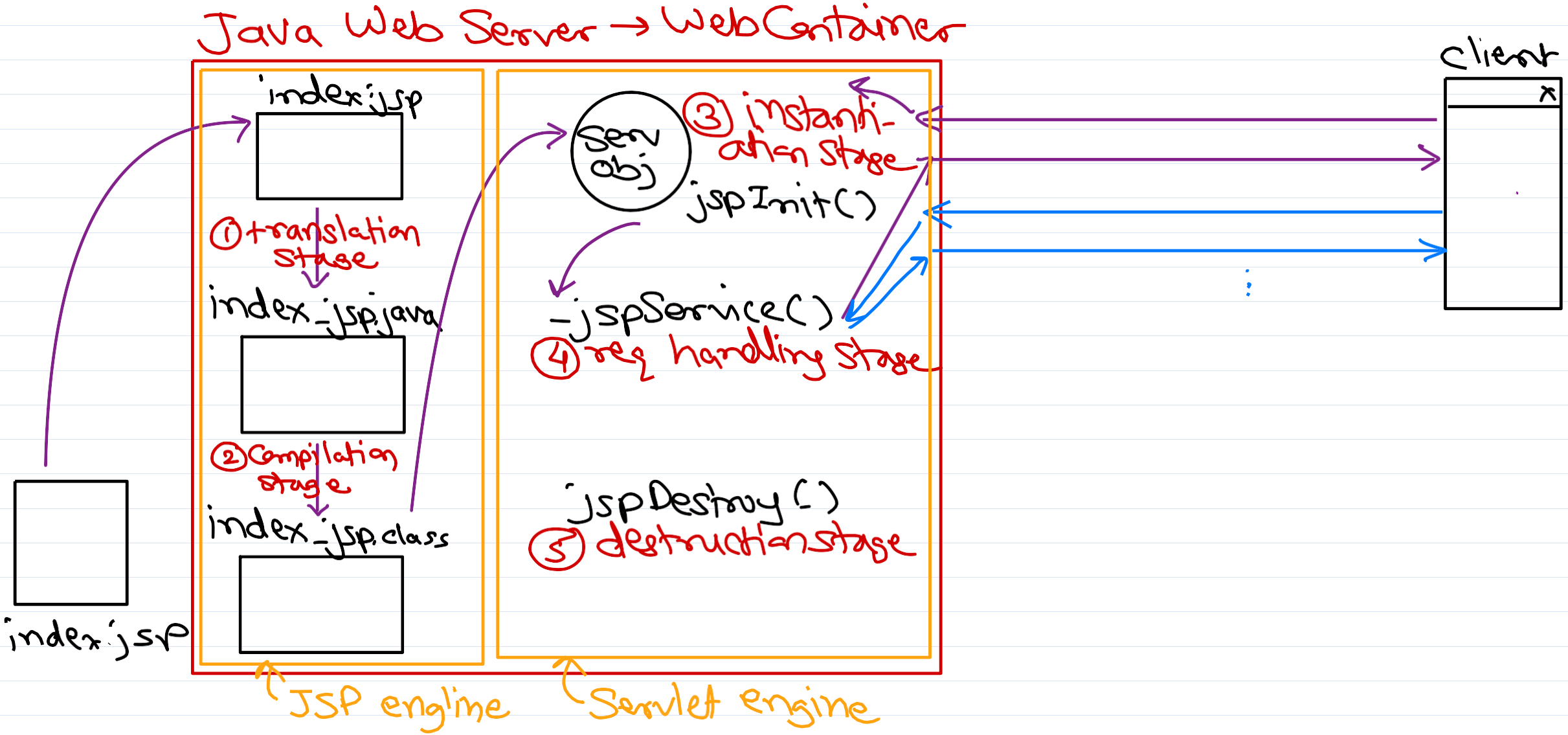
ⓔ <%-- ... --%> → server side comment

② JSP implicit objects

Variables available in req handling page.
internally - local vars of _jspService() method.

ⓐ request: HttpServletRequest
ⓑ response: HttpServletResponse
ⓒ config: ServletConfig
ⓓ session: HttpSession
ⓔ application: ServletContext
ⓕ page: Object (this pointer)
ⓖ pageContext: PageContext
ⓗ out: JspWriter
ⓘ exception: Throwables
avail only in err pages.

JSP Life Cycle



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

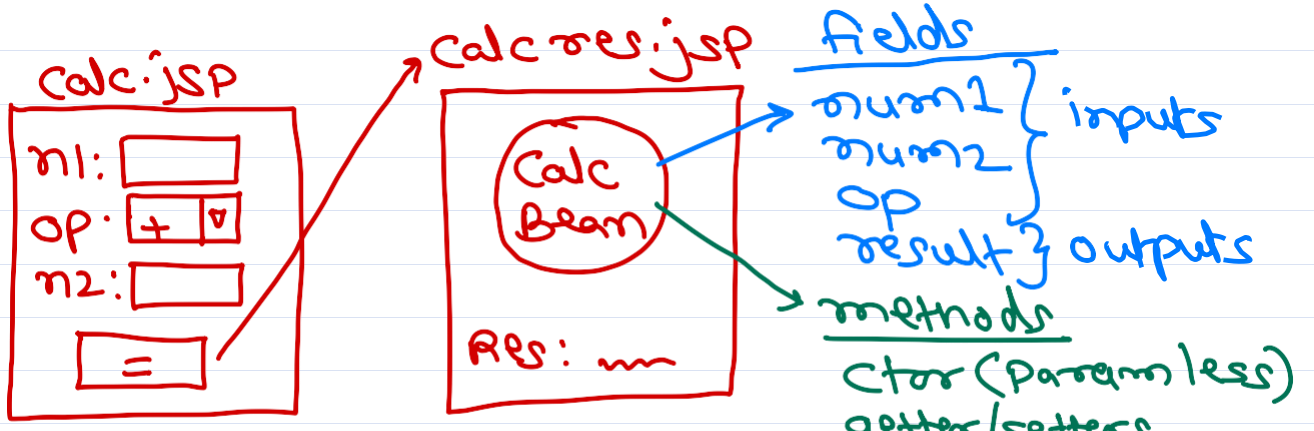
Ideal JSP do not have any java code in it (i.e. scriptlets or expression).

To reduce scriptlets from JSP pages:

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

Java Beans

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



Use bean in Java Psuedo code

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

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" />
```

property = "op" : field name

param = "op" : req param name

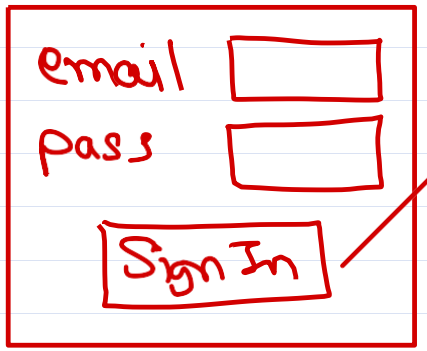
```
<% cb.calculate(); %>

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

Java Beans

fields: email, password, user
method:
authenticate() {
//jdbc code
& call dao
}

Login Bean

demo6.jsp



login bean.jsp

```
<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="passwd"/>
    // lb.setPassword(request.getParameter("passwd"));
<% lb.authenticate(); %>
<% if(lb.getUser() != null) { %>
    Welcome, <jsp:getProperty name="lb" property="email"/>
                // lb.getEmail() -> o/p in resp.
<% } else { %>
    Failed
<% } %>
```

Java Bean Scopes

Scope	attribute of
① page (lowest) ← default scope	→ PageContext → accessible in cur req to cur page only.
② request	→ HttpServletRequest → accessible on all pages where cur req is fwd or 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.getAttr("lb");
if(lb == null){
  lb = new LoginBean();
  session.setAttr("lb", lb);
}
```

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

Election Management