

CS320 Web and Internet Programming Expression Language (EL)

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What is EL?

- ◆ Expression Language (EL)
 - A JSP 2.0 standard feature
 - A more concise way to write JSP expressions
 - vs. `<%= expression %>`
 - Java's answer to scripting languages
 - e.g. associative array

◆ EL Syntax

`#{ expression }`

EL Example 1: BGColor4.jsp

- ◆ Access bean property
 - `getProperty`
 - JSP Expression
 - EL

EL Example 2: ShowCookie.jsp

- ◆ Display the value of cookie "JSESSIONID"
 - JSP Scriptlet ??
 - EL
 - PHP: `echo $HTTP_COOKIE_VARS[JSESSIONID]`

Expression

- ◆ Literals
- ◆ Operators
- ◆ Variables
- ◆ Functions
 - see Custom Tag Libraries

EL Literals

- ◆ `true, false`
- ◆ `23, 0x10, ...`
- ◆ `7.5, 1.1e13, ...`
- ◆ `"double-quoted", 'single-quoted'`
- ◆ `null`

- ◆ No char type

EL Operators

- ◆ Arithmetic
 - +, -, *, /, %
 - div, mod
- ◆ Logical
 - &&, ||, !
 - and, or, not
- ◆ Relational
 - ==, !=, <, >, <=, >=
 - eq, ne, lt, gt, le, ge
- ◆ Conditional
 - ? :
- ◆ empty
 - check whether a value is null or empty
- ◆ Other
 - [], ., ()

EL Evaluation and Auto Type Conversion

<code>#{2+4/2}</code>		<code>#{empty ""}</code>	
<code>#{2+3/2}</code>		<code>#{empty param.a}</code>	
<code>#{^2"+3/2}</code>		<code>#{empty null}</code>	
<code>#{^2"+3 div 2}</code>		<code>#{empty "null"}</code>	
<code>#{^"a" + 3 div 2}</code>		<code>#{^"abc" lt 'b'}</code>	
<code>#{null == 'test'}</code>		<code>#{^"cs320" > "cs203"}</code>	
<code>#{null eq 'null'}</code>			

EL Variables

- ◆ You cannot declare new variables using EL (after all, it's called "*expression*" language).
- ◆ However, you can access beans, implicit objects, and previously defined scoped variables.

Access Bean Property

- ◆ Cart.jsp
 - Simple property
 - Collection property
 - array
 - map

Implicit Objects

- ◆ pageContext
 - servletContext
 - session
 - request
 - response
- ◆ param, paramValues
- ◆ header, headerValues
- ◆ cookie
- ◆ initParam
- ◆ pageScope
- ◆ requestScope
- ◆ sessionScope
- ◆ applicationScope

Ignore EL Directive

```
<%-- JSP 2.0 default --%>
<%@ page isELIgnored="false" %>

<%-- JSP 1.2 default --%>
<%@ page isELIgnored="true" %>
```

web.xml for JSP 1.2 Applications

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<!DOCTYPE web-app
  PUBLIC "-//Sun Microsystems, Inc.//DTD Web Application 2.3//EN"
  "http://java.sun.com/dtd/web-app_2_3.dtd">
<web-app>
...
</web-app>
```

Servlet 2.3 → JSP 1.2

web.xml for JSP 2.0 Applications

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<web-app xmlns="http://java.sun.com/xml/ns/j2ee"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://java.sun.com/xml/ns/j2ee http://java.sun.com/xml/
ns/j2ee/web-app_2_4.xsd"
  version="2.4">
...
</web-app>
```

Servlet 2.4 → JSP 2.0

Limitations of EL

- ◆ Only expressions, no statements, especially *no control-flow statements*



JSTL