

CS320 Web and Internet Programming Expression Language (EL)

Chengyu Sun
California State University, Los Angeles

What is EL?

- ◆ Expression Language (EL)
 - Since the JSP 2.0 Specification
 - A more concise way to access bean properties and write JSP expressions
 - ◆ vs. `<jsp:getProperty>`
 - ◆ vs. `<%= expression %>`
 - Java's answer to scripting languages
- ◆ Syntax: `${ expression }`

Example: BGColor.jsp Revisited

- ◆ Use EL to access the bean properties

```
${ bean_name.property_name }
```

More Property Access Examples

- | | |
|--|---|
| <ul style="list-style-type: none">◆ Bean BeanA<ul style="list-style-type: none">■ <code>int property id</code>■ <code>String property name</code>■ <code>String[] property weekdays</code>■ <code>List<Integer> property numbers</code> | <ul style="list-style-type: none">◆ Bean BeanB<ul style="list-style-type: none">■ <code>BeanA property bean0</code>■ <code>List<BeanA> property beans</code> |
|--|---|

Expression

- ◆ Literals
- ◆ Operators
- ◆ Variables

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 null}</code>	
<code>#{2+3/2}</code>		<code>#{empty "null"}</code>	
<code>#{2+3 div 2}</code>		<code>#{"abc" lt "b"}</code>	
<code>#{a + 3 div 2}</code>		<code>#{"cs320" > "cs203"}</code>	
<code>#{null == 'test'}</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 (i.e. the objects saved in application/session/request/page scopes by `setAttribute()`)

Implicit Objects in EL

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

Example: RequestInfo.jsp

- ◆ Display some information about the request
 - Client address ...
 - Cookies and parameters
- ◆ Use of implicit objects
 - Find the Java class type for the object
 - Look for *getters* in the API
 - E.g. `#{pageContext.request.remoteAddr}`
 - Access elements in a collection
 - `cookie` and `param`

Limitation of EL

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



JSTL