

# Klausurzusammenfassung Webengineering

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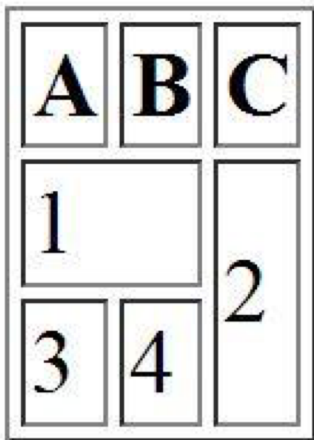
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# 1 HTML

## 1.1 Standard HTML Aufbau

```
1 <!DOCTYPE html>
2 <html>
3   <head>
4     <title>Titel der Webseite</title>
5   </head>
6   <body>
7     Hello World!
8   </body>
9 </html>
```

## 1.2 Tabellen



A	B	C
1		2
3	4	

```
1 <table border="1">
2   <tr>
3     <th>A</th>
4     <th>B</th>
5     <th>C</th>
6   </tr>
7   <tr>
8     <td colspan="2">1</td>
9     <td rowspan="2">2</td>
10  </tr>
11  <tr>
12    <td>3</td>
13    <td>4</td>
14  </tr>
15 </table>
```

## 1.3 Listings

Es gibt folgende Listen-Style:

- `<ol type="1">` → numerische Aufzählung
- `<ol type="A">` → Alphabetische Aufzählung, große Buchstaben
- `<ol type="a">` → Alphabetische Aufzählung, kleine Buchstaben
- `<ol type="I">` → große Romanische Ziffern
- `<ol type="i">` → kleine Romanische Ziffern

Mit der `start`-Property kann festgelegt werden, mit welchem Zeichen begonnen wird.  
Mit der `reverse`-Property kann die Aufzählung rückwärts gestaltet werden.

## 2 JSP

### 2.1 Java-Bean

Eine Bean ist eine Java-Klasse die nur Variablen, getter und setter sowie einen leeren Konstruktor besitzt.

### 2.2 Variablen im JSP-Umfeld

- request → Gültigkeitsbereich
- response
- session → Gültigkeitsbereich
- pageContext → Gültigkeitsbereich
- application → Gültigkeitsbereich
- config
- out

### 2.3 Gültigkeitsbereiche

Name	Bedeutung
application	Mit dem Starten der Applikation (bspw. durch Hochfahren des Tomcat) steht dieser Gültigkeitsbereich bis zum Beenden der Applikation zur Verfügung. Dieser ist der umfassendste Gültigkeitsbereich und sollte nur für Attribute genutzt werden, die wirklich für die gesamte Applikation von Bedeutung sind.
session	Eine Session umfasst eine Nutzersitzung und umfasst mehrere Anfragen. So kann der Status einer Benutzersitzung während der Nutzung gespeichert werden (bspw. ein Warenkorb). Ein ausführliches Kapitel zum Umgang mit Session und dabei zu Beachtendes folgt im weiteren Verlauf des Tutorials.
request	Dieser Gültigkeitsbereich umfasst genau eine Anfrage eines Nutzers. Aufgrund eines möglichen Forwardings der Anfrage an weitere Servlets bzw. JSPs kann ein Request sich über mehrere JSPs oder Servlets erstrecken.
page	Dieser Gültigkeitsbereich existiert nur in JSPs und ist nur innerhalb genau einer JSP gültig. Bei einem Forwarding gehen Attribute dieses Gültigkeitsbereichs verloren.

### 2.4 JSP-Snippets

Oberste Zeile einer JSP-Seite:

```
1 | <%@ page language="java" contentType="text/html; charset=UTF-8"
   | pageEncoding="UTF-8"%>
```

Einfache Ausgaben

```
1 | <%= 4+5 %>
2 | <%= request.getHeader("User-Agent") %>
```

Java-Umfeld erschaffen

```
1 | <% JAVA-CODE, bsp. for, if, usw. %>
```

Instanz-Variablen, Methoden deklarieren

```
1 | <%!  
2 |     private int counter = 0;  
3 |     public synchronized int next () {  
4 |         counter++;  
5 |         return counter;  
6 |     }  
7 | %>
```

Kommentare

```
1 | <%-- Kommentar --%>
```

Bean laden

```
1 | <jsp:useBean id="Objektvariable" class="Klassenname"/>
```

Setter einer Bean aufrufen

```
1 | <jsp:setParameter name="Objektvariable" property="Variable" param="Wert"  
   | >/>
```















Getter einer Bean aufrufen

















```
1 | <jsp:getParameter name="Objektvariable" property="Variable"/>
```

## 2.5 JSTL

Import-Tag

```
1 | <%@ taglib prefix = "c" uri = "http://java.sun.com/jsp/jstl/core" %>
```

1	<b>&lt;c:out&gt;</b>  Like <%= ... >, but for expressions.
2	<b>&lt;c:set &gt;</b>  Sets the result of an expression evaluation in a ' <b>scope</b> '.
3	<b>&lt;c:remove &gt;</b>  Removes a <b>scoped variable</b> (from a particular scope, if specified).
4	<b>&lt;c:catch&gt;</b>  Catches any <b>Throwable</b> that occurs in its body and optionally exposes it.
5	<b>&lt;c:if&gt;</b>  Simple conditional tag which evalutes its body if the supplied condition is true.
6	<b>&lt;c:choose&gt;</b>  Simple conditional tag that establishes a context for mutually exclusive conditional operations, marked by <b>&lt;when&gt;</b> and <b>&lt;otherwise&gt;</b> .
7	<b>&lt;c:when&gt;</b>  Subtag of <b>&lt;choose&gt;</b> that includes its body if its condition evalutes to ' <b>true</b> '.
8	<b>&lt;c:otherwise &gt;</b>  Subtag of <b>&lt;choose&gt;</b> that follows the <b>&lt;when&gt;</b> tags and runs only if all of the prior conditions evaluated to ' <b>false</b> '.
9	<b>&lt;c:import&gt;</b>  Retrieves an absolute or relative URL and exposes its contents to either the page, a String in ' <b>var</b> ', or a Reader in ' <b>varReader</b> '.
10	<b>&lt;c:forEach &gt;</b>  The basic iteration tag, accepting many different collection types and supporting subsetting and other functionality .
11	<b>&lt;c:forTokens&gt;</b>  Iterates over tokens, separated by the supplied delimiters.
12	<b>&lt;c:param&gt;</b>  Adds a parameter to a containing ' <b>import</b> ' tag's URL.
13	<b>&lt;c:redirect &gt;</b>  Redirects to a new URL.
14	<b>&lt;c:url&gt;</b>  Creates a URL with optional query parameters

S.No.	Function & Description
1	<b>fn:contains()</b>  Tests if an input string contains the specified substring.
2	<b>fn:containsIgnoreCase()</b>  Tests if an input string contains the specified substring in a case insensitive way.
3	<b>fn:endsWith()</b>  Tests if an input string ends with the specified suffix.
4	<b>fn:escapeXml()</b>  Escapes characters that can be interpreted as XML markup.
5	<b>fn:indexOf()</b>  Returns the index withing a string of the first occurrence of a specified substring.
6	<b>fn:join()</b>  Joins all elements of an array into a string.
7	<b>fn:length()</b>  Returns the number of items in a collection, or the number of characters in a string.
8	<b>fn:replace()</b>  Returns a string resulting from replacing in an input string all occurrences with a given string.
9	<b>fn:split()</b>  Splits a string into an array of substrings.
10	<b>fn:startsWith()</b>  Tests if an input string starts with the specified prefix.
11	<b>fn:substring()</b>  Returns a subset of a string.
12	<b>fn:substringAfter()</b>  Returns a subset of a string following a specific substring.
13	<b>fn:substringBefore()</b>  Returns a subset of a string before a specific substring.
14	<b>fn:toLowerCase()</b>  Converts all of the characters of a string to lower case.
15	<b>fn:toUpperCase()</b>  Converts all of the characters of a string to upper case.
16	<b>fn:trim()</b> 

## 3 CSS

### 3.1 CSS Selectors

Selector	Example	Example description
.class	.intro	Selects all elements with class="intro"
#id	#firstname	Selects the element with id="firstname"
*	*	Selects all elements
element	p	Selects all <p> elements
element,element	div, p	Selects all <div> elements and all <p> elements
element element	div p	Selects all <p> elements inside <div> elements
element>element	div > p	Selects all <p> elements where the parent is a <div> element
element+element	div + p	Selects all <p> elements that are placed immediately after <div> elements
element~element	p ~ ul	Selects every <ul> element that are preceded by a <p> element
[attribute]	[target]	Selects all elements with a target attribute
[attribute=value]	[target=_blank]	Selects all elements with a target="_blank"
[attribute~=value]	[title~=flower]	Selects all elements with a title attribute containing the word "flower"
[attribute =value]	[lang =en]	Selects all elements with a lang attribute value starting with "en"
[attribute^=value]	a[href^="https"]	Selects every <a> element whose href attribute value begins with "https"
[attribute\$=value]	a[href\$=".pdf"]	Selects every <a> element whose href attribute value ends with ".pdf"
[attribute*=value]	a[href*="w3schools"]	Selects every <a> element whose href attribute value contains the substring "schools"
:active	a:active	Selects the active link
::after	p::after	Insert something after the content of each <p> element
::before	p::before	Insert something before the content of each <p> element
:checked	input:checked	Selects every checked <input> element
:disabled	input:disabled	Selects every disabled <input> element
:empty	p:empty	Selects every <p> element that has no children (including text nodes)
:enabled	input:enabled	Selects every enabled <input> element
:first-child	p:first-child	Selects every <p> element that is the first child of its parent

::first-letter	p::first-letter	Selects the first letter of every <p> element
::first-line	p::first-line	Selects the first line of every <p> element
:first-of-type	p:first-of-type	Selects every <p> element that is the first <p> element of its parent
:focus	input:focus	Selects the input element which has focus
:hover	a:hover	Selects links on mouse over
:in-range	input:in-range	Selects input elements with a value within a specified range
:invalid	input:invalid	Selects all input elements with an invalid value
:lang(language)	p:lang(it)	Selects every <p> element with a lang attribute equal to it"(Italian)
:last-child	p:last-child	Selects every <p> element that is the last child of its parent
:last-of-type	p:last-of-type	Selects every <p> element that is the last <p> element of its parent
:link	a:link	Selects all unvisited links
:not(selector)	:not(p)	Selects every element that is not a <p> element
:nth-child(n)	p:nth-child()	Selects every <p> element that is the second child of its parent
:nth-last-child(n)	p:nth-last-child()	Selects every <p> element that is the second child of its parent, counting from the last child
:nth-last-of-type(n)	p:nth-last-of-type()	Selects every <p> element that is the second <p> element of its parent, counting from the last child
:nth-of-type(n)	p:nth-of-type()	Selects every <p> element that is the second <p> element of its parent
:only-of-type	p:only-of-type	Selects every <p> element that is the only <p> element of its parent
:only-child	p:only-child	Selects every <p> element that is the only child of its parent
:optional	input:optional	Selects input elements with no "required" attribute
:out-of-range	input:out-of-range	Selects input elements with a value outside a specified range
:read-only	input:read-only	Selects input elements with the "readonly" attribute specified
:read-write	input:read-write	Selects input elements with the "readonly" attribute NOT specified
:required	input:required	Selects input elements with the "required" attribute specified



:root	:root	Selects the document's root element
::selection	::selection	Selects the portion of an element that is selected by a user
:target	#news:target	Selects the current active #news element (clicked on a URL containing that anchor name)
:valid	input:valid	Selects all input elements with a valid value
:visited	a:visited	Selects all visited links