
LTW
Disciplina: Linguagens e Tecnologias Web
Data: Segunda-feira, 23 de Janeiro de 2012
Hora: 09h00m
Duração: 120 minutos (+ 30 minutos de tolerância)
Sala: B.338, B.334 e B.333
Nota: Com consulta de apontamentos em papel
Época: Normal
Docentes: Isidro Vila Verde
André Restivo

A. (HTML – 10%)
   1. Show the result of this HTML code segment

```
<table border="1">
    <tr><td colspan="2" rowspan="2">A</td><td>B</td></tr>
    <tr><td>C</td><td>D</td></tr>
    <tr><td>E</td><td>F</td><td>G</td></tr>
</table>
```

B. (CSS – 20%)
   1. Given the XML and CSS code below draw a draft of the resulting visualization in a web browser

```
<?xml-stylesheet href="a.css" type="text/css"?>
<r>
    <a>
        <aa>aa</aa>
        <ab>ab</ab>
    </a>
    <b>b</b>
    <c x="5">
        <cc>cc</cc>
    </c>
</r>
--------a.css--------
r{
    width:300px;
    border:1px solid blue;
    margin:2px auto;
    padding:2px;
    display:block;
}
r>*{ /* Second rule set */
    width:25%;
    margin:2px auto;
    border:2px dashed blue;
}
r>a{
    width:50%;
}

r *{
    display: inherit;
    border:inherit;
    margin:inherit;
    width:50%;
}
```

   2. Solve the previous problem but now with the second CSS rule set moved to the end of CSS file

C. (HTTP – 5%)

1. Suppose you already have established a TCP connection to the web server www.site.pt and you also have permission to delete resources. Write a HTTP 1.1 Request Message to delete the resource http://www.site.pt/files/file.txt

D. (Regular Expressions – 10%)

1. For this string "ab123ab234" say if the following regular expressions match or not.
   Note: the / is the delimiter character, it is not part of RE
   a) /^(?=[^0-9])[a-z0-9]+/
   b) /^a(?![^b])[a-z]+/
   c) /(ab.+){2,}$/
   d) /(b1*){2,}/
   e) /(b.2[3-4]+)+/

E. (jQuery – 10%)

1. Consider the following HTML snippet that represents a login form:

```
<form class="login">
    <label>Login</label><input type="text" name="login" class="login" /><br />
    <label>Password</label><input type="password" name="password"
class="password" /><br />
</form>
```

Implement a small jQuery method that raises an alert if the user tries to submit the form when the login and password fields are empty. You can assume your code is already inside the document.ready() event.

F. (DTD's – 10%)

1. Present a valid XML according to this DTD

```
<!ELEMENT z (#PCDATA)>
<!ELEMENT y EMPTY>
<!ATTLIST y r IDREF #REQUIRED>
<!ELEMENT R (x,y,z)>
<!ATTLIST R k CDATA #REQUIRED>
<!ELEMENT x ANY>
<!ATTLIST x n ID #IMPLIED>
<!ATTLIST x type (R|x|y|z) #REQUIRED>
```

G. (XSD – 20%)

1. With the following information stored in a web server:

| Url | Tags | User | type |
|---|---|---|---|
| my.family.eu | Family | User1 | private |
| www.xml.org | Xml | | public |
| | Xsl | | |
| | Xml | User2 | |
| tutorials.org | Tutorial | User3 | |
| | Xml | User2 | |

Show the output of a PHP script with the self descriptive name getLinksWithTag.php when invoked for the tag xml. The output result of this script must be a valid XML document, according to this XSD:

```
<?xml version="1.0" encoding="UTF-8"?>
<s:schema
targetNamespace="http://exame.ltw/2012"
elementFormDefault="qualified"
attributeFormDefault="qualified"
xmlns:s="http://www.w3.org/2001/XMLSchema"
xmlns="http://exame.ltw/2012">
  <s:element name="Links">
    <s:complexType>
      <s:sequence>
        <s:element name="Tag" type="s:string" maxOccurs="unbounded"/>
        <s:sequence maxOccurs="unbounded">
          <s:element name="Link" type="linkType"/>
          <s:element name="Stats" type="linkRefType"/>
        </s:sequence>
      </s:sequence>
    </s:complexType>
  </s:element>
  <s:complexType name="linkType" abstract="true" mixed="true">
    <s:attribute name="private"/>
    <s:attribute name="public"/>
    <s:attribute name="cod" type="s:ID" use="required"/>
  </s:complexType>
  <s:complexType name="linkTypePublic" mixed="true">
    <s:complexContent>
      <s:restriction base="linkType">
        <s:attribute name="public" fixed="1" use="required"/>
        <s:attribute name="private" use="prohibited"/>
      </s:restriction>
    </s:complexContent>
  </s:complexType>
  <s:complexType name="linkTypePrivate" mixed="true">
    <s:complexContent>
      <s:restriction base="linkType">
        <s:attribute name="private" fixed="1" use="required"/>
        <s:attribute name="public" use="prohibited"/>
      </s:restriction>
    </s:complexContent>
  </s:complexType>
  <s:complexType name="linkRefType">
    <s:attribute name="link" type="s:IDREF" use="required"/>
    <s:attribute name="nTags" use="required" type="s:positiveInteger" form="unqualified"/>
    <s:attribute name="nUsers" use="required" type="s:positiveInteger" form="unqualified"/>
  </s:complexType>
</s:schema>
```

H. (xPath + XSL – 20%)

1. Show the result of transforming the XML bellow:

```
<r xmlns="urn:feup.ltw2012">
    <a>aaa:
      <a>111</a>
    </a>
    <a code="c1">bbb:
      <b>222</b>
    </a>
    <a ref="r1">ccc:
      <c>333</c>
    </a>
</r>
```

With the following XSL:

```
<?xml version="1.0" encoding="UTF-8"?>
<xsl:stylesheet version="1.0"
xmlns:xsl="http://www.w3.org/1999/XSL/Transform"
xmlns:t="urn:feup.ltw2012">
    <xsl:template match="text()[count(ancestor::*) = 3]" priority="2">
        <T value="{.}">
            <xsl:element name="x:element-{local-name(..)}" xmlns:x="urn:feup.xpto">
                <xsl:attribute name="y:parent-name" namespace="urn:feup.other">
                    <xsl:value-of select="name(../..)"/>
                </xsl:attribute>
            </xsl:element>
        </T>
    </xsl:template>
    <xsl:template match="a[@ref]" priority="5">
        <t:T>
            <xsl:copy-of select=".."/>
        </t:T>
    </xsl:template>
    <xsl:template match="@*|node()">
        <xsl:copy>
            <xsl:apply-templates select="node()|@*|*"/>
        </xsl:copy>
    </xsl:template>
</xsl:stylesheet>
```