CSC343 Worksheet 11 Solution

June 30, 2020

1. a)

```
1    <? xml version = "1.0" encoding = "utf-8"?>
2    <xsl:stylesheet xmlns:xsl = "http://www.w3.org/1999/ISL/Transform
     ">
3        <xsl:template match = "/">
4            <html>
5                <BODY>
6                    <H1>Manufacturerers</h1>
7                    <OL>
8                        <xsl:for-each select="Products/Maker">
9                            <Li><xsl:value-of select="@name"/></li>
10                       </xsl:for-each>
11                   </ol>
12               </body>
13           </html>
14       </xsl:template>
15   </xsl:stylesheet>
16
```

Notes:

- XLST
  - Also means **Extensible Stylesheet Language for Transformation**
  - Allows to transform XML documentes into HTML
  - Is another language
- XLST Basics

Syntax:

<? xml version = "1.0" encoding = "utf-8"?>
<xsl:stylesheet xmlns:xsl = "http://www.w3.org/1999/ISL/Transform">
  ...
</xsl:stylesheet>

- Templates

Example:

1

```
1    <? xml version = "1.0" encoding = "utf-8"?>
2    <xsl:stylesheet xmlns:xsl = "http://www.w3.org/1999/ISL/
     Transform">
3        <xsl:template match = "/">
4            <HTML>
5                <BODY>
6                    <B>This is text</b>
7                </body>
8            </html>
9        </xsl:template>
10   </xsl:stylesheet>
11
```

- Obtaining values from XML Data
  - value-of
    * Is used to extract the value of a selected node.
    * **Syntax:** <xsl value-of select = "*expression*" />

      Example:

```
1    <? xml version = "1.0" encoding = "utf-8"?>
2    <xsl:stylesheet xmlns:xsl = "http://www.w3.org/1999/ISL/
     Transform">
3        <xsl:template match="/Movies/Movie">
4            <xsl:value-of select = "@title"/>
5        </xsl:template>
6    </xsl:stylesheet>
7
```

  - Apply-templates
    * applies a <xls:template> to the current element or to the current element's child nodes.
      · select='.' means choose the current value

  - For-loop in XSLT
    * **Syntax:** <xsl:for-each select = "*expression*" > ... </xsl:for-each>

* Is easier to maintain and read than apply templates [1]

```
1)     <? xml version = "1.0" encoding = "utf-8" ?>
2)     <xsl:stylesheet xmlns:xsl =
3)           "http://www.w3.org/1999/XSL/Transform">
4)       <xsl:template match = "/">
5)         <OL>
6)         <xsl:for-each select = "Stars/Star" />
7)             <LI>
8)             <xsl:value-of select = "Name">
9)             </li>
10)        </xsl:for-each>
11)        </ol><P/><OL>
12)        <xsl:for-each select = "Stars/Star/Address" />
13)            <LI>
14)            <xsl:value-of select = "City">
15)            </li>
16)        </xsl:for-each>
17)        </ol>
18)      </xsl:template>
19)    </xsl:stylesheet>
```

Selected Value

References:

1) StackOverflow, differences between for-each and templates in xsl?, link

- If condition in XSLT
  - **Syntax:** <xsl:if test = "*boolean expression*">

```
1)     <? xml version = "1.0" encoding = "utf-8" ?>
2)     <xsl:stylesheet xmlns:xsl =
3)           "http://www.w3.org/1999/XSL/Transform">
4)       <xsl:template match = "/">
5)         <TABLE border = "5"><TR><TH>Stars</th></tr>
6)         <xsl:for-each select = "Stars/Star" />
7)            <xsl:if test = "Address/City = 'Hollywood'">
8)                <TR><TD>
9)                <xsl:value-of select = "Name" />
10)               </td></tr>
11)            </xsl:if>
12)        </xsl:for-each>
13)        </table>
14)      </xsl:template>
15)    </xsl:stylesheet>
```
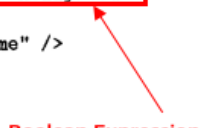
Boolean Expression

b)
```xml
<? xml version = "1.0" encoding = "utf-8"?>
<xsl:stylesheet xmlns:xsl = "http://www.w3.org/1999/ISL/Transform">
    <xsl:template match = "/">
        <html>
            <BODY>
                <TABLE>
                    <TH>
                        <TD>Model</td>
                        <TD>Price</td>
                    </th>
                    <xsl:for-each select="Products/Maker">
                        <TR>
                            <TD>
                                <xsl:value-of select="@model"/>
                            </td>
```

```
16                                        <TD>
17                                                <xsl:value-of select="@price"/>
18                                        </td>
19                                  </tr>
20                            </xsl:for-each>
21                      </table>
22                  </body>
23              </html>
24          </xsl:template>
25      </xsl:stylesheet>
26
```

c)
```
1      <? xml version = "1.0" encoding = "utf-8"?>
2      <xsl:stylesheet xmlns:xsl = "http://www.w3.org/1999/ISL/Transform
       ">
3          <xsl:template match = "/">
4              <html>
5                  <BODY>
6                      <TABLE>
7                          <TH>
8                                  <TD>Model</td>
9                                  <TD>Price</td>
10                                 <TD>Speed</td>
11                                 <TD>RAM</td>
12                          </th>
13                          <xsl:for-each select="Products/Maker/Laptop">
14                          <TR>
15                                 <TD><xsl:value-of select="@model"/></td>
16                                 <TD><xsl:value-of select="@price"/></td>
17                                 <TD><xsl:value-of select="Speed"/></td>
18                                 <TD><xsl:value-of select="RAM"/></td>
19                          </tr>
20                          </xsl:for-each>
21                      </table>
22
23
24                      <TABLE>
25                          <TH>
26                                 <TD>Model</td>
27                                 <TD>Price</td>
28                                 <TD>Speed</td>
29                                 <TD>RAM</td>
30                          </th>
31                          <xsl:for-each select="Products/Maker/PC">
32                          <TR>
33                                 <TD><xsl:value-of select="@model"/></td>
34                                 <TD><xsl:value-of select="@price"/></td>
35                                 <TD><xsl:value-of select="Speed"/></td>
36                                 <TD><xsl:value-of select="RAM"/></td>
37                          </tr>
38                          </xsl:for-each>
39                      </table>
40                  </body>
41              </html>
```

4

```
42            </xsl:template>
43        </xsl:stylesheet>
44
```

d)
```
     <? xml version = "1.0" encoding = "utf-8"?>
 2   <xsl:stylesheet xmlns:xsl = "http://www.w3.org/1999/ISL/Transform
     ">
 3       <xsl:template match = "/">
 4           <html>
 5               <BODY>
 6                   <FORM method="POST" action="...">
 7                   <xsl:for-each select="PCs/PC">
 8                       <DIV style="margin-bottom:1em">
 9                           <DIV>
10                               <LABEL>Model</label>
11                               <INPUT type="text">
12                                   <xsl:attribute name="value">
13                                       <xsl:value-of select="@model"
     />
14                                   </xsl:attribute>
15                               </input>
16                           </div>
17
18                           <DIV>
19                               <LABEL>Price</label>
20                               <INPUT type="text">
21                                   <xsl:attribute name="value">
22                                       <xsl:value-of select="Price"
     />
23                                   </xsl:attribute>
24                               </input>
25                           </div>
26
27                           <DIV>
28                               <LABEL>Speed</label>
29                               <INPUT type="text">
30                                   <xsl:attribute name="value">
31                                       <xsl:value-of select="Speed"
     />
32                                   </xsl:attribute>
33                               </input>
34                           </div>
35
36                           <DIV>
37                               <LABEL>RAM</label>
38                               <INPUT type="text">
39                                   <xsl:attribute name="value">
40                                       <xsl:value-of select="RAM" />
41                                   </xsl:attribute>
42                               </input>
43                           </div>
44                       </div>
45                   </xsl:for-each>
46
```

```
47                            <input type="submit" value="Submit" />
48                            </form>
49                    </body>
50                </html>
51            </xsl:template>
52      </xsl:stylesheet>
53
```

2. a)
```
     <? xml version = "1.0" encoding = "utf-8"?>
2    <xsl:stylesheet xmlns:xsl = "http://www.w3.org/1999/ISL/Transform
     ">
3        <xsl:template match = "/">
4            <html>
5                <BODY>
6                    <TABLE>
7                        <TH>
8                            <TD>Name</td>
9                            <TD>Launched</td>
10                       </th>
11                       <xsl:for-each select="Ships/Class/Ship">
12                       <TR>
13                           <TD>
14                               <xsl:value-of select="@name"/>
15                           </td>
16                           <TD>
17                               <xsl:value-of select="@launched"/>
18                           </td>
19                       </tr>
20                       </xsl:for-each>
21                   </table>
22               </body>
23           </html>
24       </xsl:template>
25   </xsl:stylesheet>
26
```

b)
```
     <? xml version = "1.0" encoding = "utf-8"?>
2    <xsl:stylesheet xmlns:xsl = "http://www.w3.org/1999/ISL/Transform
     ">
3        <xsl:template match = "/">
4            <html>
5                <BODY>
6                    <Losers>
7                        <xsl:for-each select="Ships/Class/Ship">
8                            <xsl:if test="Battle/@outcome = 'sunk'">
9                            <Ship>
10                               <xsl:value-of select="@name"/>
11                           </ship>
12                           </xsl:if>
13                       </xsl:for-each>
14                   </Losers>
15               </body>
16           </html>
```

```
17          </xsl:template>
18      </xsl:stylesheet>
19
```

c)
```
1   <? xml version = "1.0" encoding = "utf-8"?>
2   <xsl:stylesheet xmlns:xsl = "http://www.w3.org/1999/ISL/Transform
    ">
3       <xsl:template match = "/">
4           <Ships>
5               <xsl:for-each select="Ships/Class">
6                   <Ship
7                       name="
8                       <xsl:value-of select="Ship/@name"/>
9                       "
10
11                      class="
12                      <xsl:value-of select="Ship/@class"/>
13                      "
14
15                      country="
16                      <xsl:value-of select="@country">
17                      "
18
19                      numGuns="
20                      <xsl:value-of select="@numGuns">
21                      "
22                  />
23              </xsl:for-each>
24          </Ships>
25      </xsl:template>
26  </xsl:stylesheet>
27
```

d)
```
1   <? xml version = "1.0" encoding = "utf-8"?>
2   <xsl:stylesheet xmlns:xsl = "http://www.w3.org/1999/ISL/Transform
    ">
3       <xsl:template match = "/">
4           <Ships>
5               <xsl:for-each select="Ships/Class">
6                   <xsl: if test="count(Ship/Battle) > 0">
7                       <Ship
8                           name="
9                           <xsl:value-of select="Ship/@name"/>
10                          "
11
12                          class="
13                          <xsl:value-of select="Ship/@class"/>
14                          "
15
16                          country="
17                          <xsl:value-of select="@country">
18                          "
19
20                          numGuns="
```

```
21                              <xsl:value-of select="@numGuns">
22                                  "
23                          />
24                      </xsl:if>
25                  </xsl:for-each>
26          </Ships>
27      </xsl:template>
28  </xsl:stylesheet>
29
```

e)
```
1  <? xml version = "1.0" encoding = "utf-8"?>
2  <xsl:stylesheet xmlns:xsl = "http://www.w3.org/1999/ISL/Transform
   ">
3      <xsl:template match = "/Ships/Class/Ship/Battle">
4          <Battle name="<xsl:value-of select='.'/>" outcome="<
   xsl:value-of select='@outcome'/>" />
5      </xsl:template>
6  </xsl:stylesheet>
7
```