

SDXML

Assignment 5

GROUP 9

XSLT

Group members.

Achyth Jagini

Ashan Lakshith Thotawatta

Kalana Sachith Mahaarachchi

Summary:

Use DB : Books.XML

Software : Chrome Browser, BaseX

Question 01

Show all the books by genre! The result shall be an HTML page with each genre as a heading followed by a list of books where the title and the earliest edition's year are shown. Books with no genre may be included or not, depending on your preference and whether the default value is loaded from the DTD or not.

SOLUTION IN XSLT 1.0

```
<?xml version="1.0" encoding="UTF-8"?>
<xsl:transform version="1.0" xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
  <xsl:output method="html"/>
  <xsl:template match="/">
    <xsl:variable name="doc" select="document('../books.xml')"/>
    <html>
      <head><title>Books by genre</title></head>
      <body>
        <h2>All the books by genre</h2>
        <xsl:for-each select="$doc//Book[not(@Genre=following::Book/@Genre)]/@Genre">
          <h2>
            <xsl:value-of select="."/>
          </h2>

          <ul>
            <xsl:apply-templates select="$doc//Book[@Genre=current()]">
              </xsl:apply-templates>
            </ul>
          </xsl:for-each>
        </body>
      </html>
    </xsl:template>

    <xsl:template match="Book">
      <li>
        <xsl:value-of select="@Title"/>
        <xsl:apply-templates select="//Edition">
          <xsl:sort select="@Year"/>
        </xsl:apply-templates>
      </li>
    </xsl:template>

    <xsl:template match="Edition">
      <xsl:if test="position()=1">
        (<xsl:value-of select="@Year"/>)
      </xsl:if>
    </xsl:template>
  </xsl:transform>
```

All the books by genre

Science Fiction

- Contact (1988)
- The Fourth Star (2001)

Thriller

- Misty Nights (1987)
- Dödliga Data (1993)

Novel

- The Fifth Star (2003)
- Våren vid sjön (1982)
- Midsommar i Lund (1988)
- The Beach House (2002)

N/A

- Encore une fois (1997)
- Le chateau de mon pere (1964)

Educational

- Archeology in Egypt (1992)
- Database Systems in Practice (2000)
- Music Now and Before (1997)
- European History (1998)
- Musical Instruments (1991)
- Oceans on Earth (1996)
- Oceanography for Dummies (2004)

Question 02

Translations of which books has each publisher published? The result must comply with the following DTD:

```
<!ELEMENT Result (Publisher*)>
<!ELEMENT Publisher (Book*)>
<!ATTLIST Publisher Name CDATA #REQUIRED
Country CDATA #REQUIRED>
<!ELEMENT Book EMPTY>
<!ATTLIST Book Title CDATA #REQUIRED
Genre CDATA #IMPLIED>
```

SOLUTION IN XSLT 1.0

```
<?xml version="1.0" encoding="UTF-8"?>
<xsl:transform version="1.0" xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
  <xsl:output method="xml"/>
  <xsl:template match="/">
    <Result>
      <xsl:apply-templates select="document('../publishers.xml')//Publisher">
      </xsl:apply-templates>
    </Result>
  </xsl:template>

  <xsl:template match="Publisher">
    <Publisher>
      <xsl:attribute name="Name">
        <xsl:value-of select="@Name"/>
      </xsl:attribute>

      <xsl:attribute name="Country">
        <xsl:value-of select="//Country"/>
      </xsl:attribute>

      <xsl:apply-templates
select="document('../books.xml')//Book[Edition[Translation[@Publisher=current()/@Name]]]">
      </xsl:apply-templates>
    </Publisher>
  </xsl:template>

  <xsl:template match="Book">
    <Book>
      <xsl:attribute name="Title">
        <xsl:value-of select="@Title"/>
      </xsl:attribute>
      <xsl:attribute name="Genre">
        <xsl:value-of select="@Genre"/>
      </xsl:attribute>
    </Book>
  </xsl:template>
</xsl:transform>
```

RESULT

```
<Result>
  <Publisher Name="ABC International" Country="Germany">
    <Book Title="Music Now and Before" Genre="Educational"/>
    <Book Title="Musical Instruments" Genre="Educational"/>
    <Book Title="Oceans on Earth" Genre="Educational"/>
    <Book Title="Oceanography for Dummies" Genre="Educational"/>
  </Publisher>
  <Publisher Name="Deutsche Ferlage" Country="Germany"/>
  <Publisher Name="Addison" Country="France">
    <Book Title="Misty Nights" Genre="Thriller"/>
  </Publisher>
  <Publisher Name="Aurora Publ." Country="Italy">
    <Book Title="Le chateau de mon pere" Genre="N/A"/>
  </Publisher>
  <Publisher Name="Benton Inc" Country="England">
    <Book Title="Le chateau de mon pere" Genre="N/A"/>
  </Publisher>
  <Publisher Name="McManus Publishing" Country="England"/>
  <Publisher Name="Bästa Bok" Country="Sweden">
    <Book Title="The Fourth Star" Genre="Science Fiction"/>
    <Book Title="The Fifth Star" Genre="Novel"/>
  </Publisher>
  <Publisher Name="EU Publishing" Country="Belgium">
    <Book Title="European History" Genre="Educational"/>
  </Publisher>
  <Publisher Name="KLC" Country="Sweden">
    <Book Title="Archeology in Egypt" Genre="Educational"/>
    <Book Title="Music Now and Before" Genre="Educational"/>
  </Publisher>
  <Publisher Name="Kingsly" Country="Austria">
```

Question 03

Show all the books grouped by original language! The result shall be an HTML page with a table where every language has one or more rows, equal to the number of books. The languages shall be sorted and the books shall be sorted by title! The result shall look like this

(depending on whether default values are retrieved from the DTD):

Books by original language Books by original language

Language	Title	Genre
English	Archeology in Egypt	Educational
	Contact	Science Fiction
	Database Systems in Practice	Educational
	European History	Educational
	Misty Nights	Thriller
	Music Now and Before	Educational
	Musical Instruments	Educational
	Oceanography for Dummies	Educational
	Oceans on Earth	Educational
	The Beach House	Novel
	The Fifth Star	Novel
	The Fourth Star	Science Fiction
French	Encore une fois	
	Le chateau de mon pere	
Swedish	Dödliga Data	Thriller
	Midsommar i Lund	Novel
	Våren vid sjön	Novel

Language	Title	Genre
English	Archeology in Egypt	Educational
	Contact	Science Fiction
	Database Systems in Practice	Educational
	European History	Educational
	Misty Nights	Thriller
	Music Now and Before	Educational
	Musical Instruments	Educational
	Oceanography for Dummies	Educational
	Oceans on Earth	Educational
	The Beach House	Novel
	The Fifth Star	Novel
	The Fourth Star	Science Fiction
French	Encore une fois	N/A
	Le chateau de mon pere	N/A
Swedish	Dödliga Data	Thriller
	Midsommar i Lund	Novel
	Våren vid sjön	Novel


```

<?xml version="1.0" encoding="UTF-8"?>
<xsl:transform version="1.0" xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
  <xsl:output method="html"/>
  <xsl:variable name="bookdb" select="document('../books.xml')"/>
  <xsl:template match="/">
    <h1>Books by original language</h1>
    <table border="1">
      <tr>
        <th>Language</th>
        <th>Title</th>
        <th>Genre</th>
      </tr>
      <xsl:for-each
select="$bookdb//Book[not(@OriginalLanguage=following::Book/@OriginalLanguage)]/@
OriginalLanguage">
        <xsl:sort select="."/>
        <xsl:variable name="books"
select="$bookdb//Book[@OriginalLanguage=current()]" />
        <xsl:for-each select="$books">
          <xsl:sort select="@Title"/>
          <tr>
            <xsl:if test="position()=1">
              <td>
                <xsl:attribute name="rowspan">
                  <xsl:value-of
select="count($books)" />
                </xsl:attribute>
                <xsl:value-of
select="@OriginalLanguage" />
              </td>
            </xsl:if>
            <td>
              <xsl:value-of select="@Title" />
            </td>
            <td>
              <xsl:value-of select="@Genre" />
            </td>
          </tr>
        </xsl:for-each>
      </xsl:for-each>
    </table>
  </xsl:template>
</xsl:transform>

```

RESULT

Books by original language

Language	Title	Genre
English	Archeology in Egypt	Educational
	Contact	Science Fiction
	Database Systems in Practice	Educational
	European History	Educational
	Misty Nights	Thriller
	Music Now and Before	Educational
	Musical Instruments	Educational
	Oceanography for Dummies	Educational
	Oceans on Earth	Educational
	The Beach House	Novel
	The Fifth Star	Novel
	The Fourth Star	Science Fiction
French	Encore une fois	N/A
	Le chateau de mon pere	N/A
Swedish	Dödliga Data	Thriller
	Midsommar i Lund	Novel
	Våren vid sjön	Novel