

Homework 2 for CSC 513: E-Commerce Technologies

Collaborative Work

You may form teams of 1–4 members (of students in this class) to cooperate on this problem set. After discussing the problem, please write up your answers individually. Indicate the names of the other members in your team, if any.

1 XSLT

Consider the XML document in Listing 1.

Listing 1: XML input

```
<?xml version="1.0"?>
<!-- Sgr, lg, and ti abbreviate Singer, -->
<!-- language, and title, respectively. -->
<!-- The standard (ISO 639) codes for -->
<!-- English and Punjabi are en and pa, -->
<!-- respectively. -->
<Songs>
  <Sgr name='Eagles' genre='rock'>
    <Song lg='en' ti='Hotel_California'/>
    <Song lg='en' ti='Seven_Bridges_Road'/>
  </Sgr>
  <Sgr name='H_Belafonte' genre='reggae'>
    <Song lg='cpe' ti='Day_O'/>
    <Song lg='en' ti='Jamaica_Farewell'/>
  </Sgr>
  <Sgr name='J_Prasad' genre='classical'>
    <Song lg='him' ti='Ajahoon_Na_Bhejiho'/>
    <Song lg='pa' ti='Mera_Dil_Darda'/>
    <Song lg='en' ti='Never_a_Result'/>
  </Sgr>
</Songs>
```

Listing 2: XML output for Problem 1.1

```
<?xml version="1.0"?>
<SongList>
  <Song lg='en'>
    Hotel California
    <Sgr name='Eagles' genre='rock'/>
  </Song>
  <Song lg='en'>
    Seven Bridges Road
    <Sgr name='Eagles' genre='rock'/>
  </Song>
  <Song lg='cpe'>
    Day O
    <Sgr name='H_Belafonte' genre='reggae'/>
  </Song>
  <Song lg='en'>
    Jamaica Farewell
    <Sgr name='H_Belafonte' genre='reggae'/>
  </Song>
  <Song lg='him'>
    Ajahoon Na Bhejiho
    <Sgr name='J_Prasad' genre='classical'/>
  </Song>
  <Song lg='pa'>
    Mera Dil Darda
    <Sgr name='J_Prasad' genre='classical'/>
  </Song>
  <Song lg='en'>
    Never a Result
    <Sgr name='J_Prasad' genre='classical'/>
  </Song>
</SongList>
```

1.1. (25 points) Write an XSLT stylesheet that reads in Listing 1) and produces a list of songs in which Sgr is a subelement of Song and certain attributes are converted to text (see Listing 2). Document your answer.

Don't over-do the use of fancy constructs. You should be able to get a lot done with just `xsl:template`, `xsl:apply-templates`, `xsl:copy`, `xsl:value-of`, and `xsl:copy-of`.

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Independent Work

You must solve this problem set individually without any assistance from anyone.

2 XPath

- 2.1. (15 points) Write an XPath expression to find *just the names* of singers who sang at least two English songs.
- 2.2. (15 points) Without using count, write an XPath expression to find *just the names* of singers who sang at least one Punjabi song.

3 XSLT

- 3.1. (25 points) Write an XSLT stylesheet that reads in Listing 1) and produces a list of songs in which Sgr is a subelement of Song and the genre attribute of Sgr are placed as an attribute on Song (see Listing 3). Notice the text is Document your answer.

Don't over-do the use of fancy constructs. You should be able to get a lot done with just `xsl:template`, `xsl:apply-templates`, `xsl:copy`, `xsl:value-of`, and `xsl:copy-of`.

Listing 3: XML output for Problem 3.1

```

<?xml version="1.0"?>
<SongList>
  <Song lg='en' genre='rock'>
    <Sgr name='Eagles' />
    Hotel California
  </Song>
  <Song lg='en' genre='rock'>
    <Sgr name='Eagles' />
    Seven Bridges Road
  </Song>
  <Song lg='cpe' genre='reggae'>Day O
    <Sgr name='H_Belafonte' />
  </Song>
  <Song lg='en' genre='reggae'>
    <Sgr name='H_Belafonte' />
    Jamaica Farewell
  </Song>
  <Song lg='him' genre='classical'>
    <Sgr name='J_Prasad' />
    Ajahoon Na Bhejiho
  </Song>
  <Song lg='pa' genre='classical'>
    <Sgr name='J_Prasad' />
    Mera Dil Darda
  </Song>
  <Song lg='en' genre='classical'>
    <Sgr name='J_Prasad' />
    Never a Result
  </Song>
</SongList>

```