Software Engineering of Web Applications

Assignment 4

Karan Anant Gandhi

1. (a)

<!DOCTYPE products [  
<!ELEMENT products (product\*)>  
<!ELEMENT product (name, price, description, store\*)>

<!ELEMENT name (#PCData)>  
<!ELEMENT price (#PCData)>  
<!ELEMENT description (#PCDATA)>  
<!ELEMENT store (name, phone, markup)>

<!ELEMENT name (#PCData)>  
<!ELEMENT phone (#PCData)>  
<!ELEMENT markup (#PCData)>  
]>

(b)

<Products>

{  
 for $pr in doc(’productsdb.xml’)/db/products/row

return <Product>

{  
 <PName> { $pr/name/text() } </PName>,  
 <PPrice> { $pr/price/text() } </PPrice>,  
 <Description> { $pr/description/text() } </Description>,

for $sellsr in doc(’productsdb.xml’)/db/sells/row

for $storesr in doc(’productsdb.xml’)/db/stores/row

where $storesr/sid/text() = $sellsr/sid/text() an

$pr/pid/text() = $sellsr/pid/text()

return <Store>

<SName> { $storesr/name/text() } </SName>

<SPhone> { $storesr/phones/text() } </SPhone>

<Markup> { $sellsr/markup/text() } </Markup>

</Store>

} </Product>

} </Products>

(c)

<ProdMarkup>

{

FOR $pr IN document (“products.xml”)/products/product

WHERE $st IN document (“products.xml”)/$pr/store

SATISFIES count($st)>0 and $st/markup=”25%”

RETURN <Product>

<name> { $pr/name/text() } </name>

<price> { $pr/price/text() } </price>

</Product>

}

</ ProdMarkup >

(d) Let the markup in sells table be an ‘int’ value, stored as a percentage value.

SELECT Prod.Name, Prod.Price

FROM Products Prod, Sells S

WHERE Prod.pid = S.pid and S.Markup = 25

1. (a)

<all\_title>

{

document(“broadway.xml”)//title /text()

}

</ all\_title >

(b)

<address\_theaters>

{

FOR $t IN document(“broadway.xml”)//theater

WHERE $t/price < 35 and $t/date = “11/9/2008”

RETURN < theater > {$t/address, $t/title/text()}</theater >

}

</ address\_theaters>

(c)

<title\_Concert>

{

FOR $cr IN document(“broadway.xml”)//concert

WHERE fn:lower-case ($cr/type) = “chamber orchestra” and fn:avg($cr/price) >= 50

RETURN <answer>{$cr/title} </ answer >

}

</ title\_Concert >

(d)

<groupedByDate>

{

LET $br := document(“broadway.xml”)/broadway

FOR $day in $br //date

RETURN <day>

{

$day,

FOR $show in $br/\*

WHERE $show/date = $day

RETURN <show> {$show/title, $show/price} </show>

}

</day>

}

</groupedByDate>

1. (1)

**XML code**

<?xml version="1.0" encoding="UTF-8" ?>

<?xml-stylesheet type="text/xsl" href="bib.xsl"?>

<bib>

<book>

<author>

<lastname>Lamport </lastname>

<firstname> Leslie </firstname>

</author>

<title>Latex: A Document Preparation System </title>

<year>1986</year>

<publisher>Addison-Wesley</publisher>

</book>

<article>

<author>

<lastname>Marr</lastname>

<firstname> David </firstname>

</author>

<title>Visual information processing</title>

<year>1980</year>

<volume>290</volume>

<page>

<from>199</from>

<to>218</to>

</page>

<journal>Phil. Trans. Roy. Soc. B</journal>

</article>

<article>

<author>

<lastname>R. K.</lastname>

<firstname> Clifton </firstname>

</author>

<title>Breakdown of echo suppression in the precedence effect</title>

<year>1987</year>

<volume>82</volume>

<page>

<from>1834</from>

<to>1835</to>

</page>

<journal>J. Acoust. Soc. Am. </journal>

</article>

<book>

<author>

<lastname>Marr</lastname>

<firstname>David </firstname>

</author>

<title>Vision</title>

<year>1982</year>

<address> NY </address>

<publisher>Freeman</publisher>

</book>

<article>

<author>

<lastname>Marr</lastname>

<firstname>David </firstname>

</author>

<title>Visual information processing</title>

<year>1980</year>

<volume>290</volume>

<page>

<from>199</from>

<to>218</to>

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<journal> Phil. Trans. Roy. Soc. B</journal>

</article>

</bib>

**XSL code**

<?xml version="1.0"?>

<xsl:stylesheet version="1.0" xmlns:xsl="http://www.w3.org/1999/XSL/Transform" >

<xsl:template match="/">

<html>

<head>

<title>Bibliography</title>

</head>

<body background="antiquewhite">

<center><h2>Bibliography</h2><hr width="90%"/></center>

<ul>

<xsl:for-each select="bib/book">

<p/><li>

<xsl:apply-templates select="author"/>.

<b><xsl:value-of select="title"/></b>,(

<xsl:value-of select="publisher"/>

<xsl:value-of select="address"/>,

<xsl:value-of select="year"/>).

</li>

</xsl:for-each>

<xsl:for-each select="bib/article">

<p/><li>

<xsl:apply-templates select="author"/>.

<xsl:value-of select="title"/>,

<b><em><xsl:value-of select="journal"/></em></b>,

<b><xsl:value-of select="volume"/></b>, pp.<xsl:apply-templates select="page"/>

<xsl:value-of select="year"/>.

</li>

</xsl:for-each>

</ul>

</body>

</html>

</xsl:template>

<xsl:template match="author">

<xsl:value-of select="lastname"/>,<xsl:value-of select="firstname"/>

</xsl:template>

<xsl:template match="page">

<xsl:value-of select="from"/>-<xsl:value-of select="to"/>,

</xsl:template>

</xsl:stylesheet>

(2)

**XML code**

One of the book has publisher information missing and one of article has volume missing.

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<?xml-stylesheet type="text/xsl" href="bib.xsl"?>

<bib>

<book>

<author>

<lastname>Lamport </lastname>

<firstname> Leslie </firstname>

</author>

<title>Latex: A Document Preparation System </title>

<year>1986</year>

<publisher>Addison-Wesley</publisher>

</book>

<book>

<author>

<lastname>Collins </lastname>

<firstname> Suzanne </firstname>

</author>

<title>The Hunger Games (The Hunger Games, #1) </title>

<year>2008 </year>

<publisher></publisher>

</book>

<book>

<author>

<lastname>Rowling </lastname>

<firstname> J.K. </firstname>

</author>

<title>Harry Potter and the Order of the Phoenix </title>

<year>2004 </year>

<publisher>Scholastic </publisher>

</book>

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<author>

<lastname>Marr</lastname>

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<author>

<lastname>Bly</lastname>

<firstname> Robert </firstname>

</author>

<title>The Elements of Technical

</title>

<year>1993</year>

<volume>113</volume>

<page>

<from>145</from>

<to>179</to>

</page>

<journal>Macmillan </journal>

</article>

<article>

<author>

<lastname>Bergstrom</lastname>

<firstname> Theodore </firstname>

</author>

<title>Journal of Economic Perspectives

</title>

<year>2001</year>

<volume></volume>

<page>

<from>183</from>

<to>198</to>

</page>

<journal>Free Labor for Costly Journals </journal>

</article>

<book>

<author>

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<address> NY </address>

<publisher>Freeman</publisher>

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<xsl:value-of select="publisher"/>

<xsl:value-of select="address"/>,

<xsl:value-of select="year"/>).

</li>

</xsl:for-each>

<xsl:for-each select="bib/article">

<p/><li>

<xsl:apply-templates select="author"/>.

<xsl:value-of select="title"/>,

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<b><xsl:value-of select="volume"/></b>, pp.<xsl:apply-templates select="page"/>

<xsl:value-of select="year"/>.

</li>

</xsl:for-each>

<xsl:for-each select="bib/PhdThesis">

<p/><li>

<xsl:apply-templates select="author"/>.

<b><xsl:value-of select="title"/></b>,

<xsl:value-of select="year"/>.

</li>

</xsl:for-each>

</ul>

</body>

</html>

</xsl:template>

<xsl:template match="author">

<xsl:value-of select="lastname"/>,<xsl:value-of select="firstname"/>

</xsl:template>

<xsl:template match="page">

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</xsl:stylesheet>

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<title>The Hunger Games (The Hunger Games, #1) </title>

<year>2008 </year>

<publisher></publisher>

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<author>

<lastname>Rowling </lastname>

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<page>

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<volume>290</volume>

<page>

<from>199</from>

<to>218</to>

</page>

<journal> Phil. Trans. Roy. Soc. B</journal>

</article>

<PhdThesis>

<author>

<lastname>Braithwaite</lastname>

<firstname>Jack</firstname>

</author>

<title>Oscarnomics: Evaluating the Economic Worth of the Academy Awards</title>

<year>2010</year>

</PhdThesis>

<PhdThesis>

<author>

<lastname>Keany</lastname>

<firstname>John</firstname>

</author>

<title>Understanding the Formation of Underwriting Syndicates in Emerging

Nations</title>

<year>2011</year>

</PhdThesis>

</bib>

**DTD**

<?xml version="1.0" ?>

<!ELEMENT bib ( (book | article |PhdThesis)+)>

<!ELEMENT book ( author, title, year, (address)?, publisher )>

<!ELEMENT article ( author, title, year, volume, page, journal) >

<!ELEMENT PhdThesis ( author, title, year)>

<!ELEMENT page (from, to)>

<!ELEMENT author (#PCDATA)>

<!ELEMENT title (#PCDATA)>

<!ELEMENT year (#PCDATA)>

<!ELEMENT address (#PCDATA)>

<!ELEMENT publisher (#PCDATA)>

<!ELEMENT from (#PCDATA)>

<!ELEMENT to (#PCDATA)>

<!ELEMENT journal (#PCDATA)>

<!ELEMENT volume (#PCDATA)>