**Homework 4 Report**

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**Q1**

Please check the Q1 folder for all the files

**(a)**

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

<!ELEMENT products (product\*)>

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

<!ELEMENT store (name, phones, markup)>

<!ELEMENT name (#PCDATA)>

<!ELEMENT price (#PCDATA)>

<!ELEMENT description (#PCDATA)>

<!ELEMENT phones (#PCDATA)>

<!ELEMENT markup (#PCDATA)>

<!ATTLIST product pid CDATA #REQUIRED>

<!ATTLIST store sid CDATA #REQUIRED>

**(b)**

<products>

{

for $product in fn:doc("q1b.xml")/db/products/row

return

<product pid="{$product/pid}">

{$product/name}{$product/price}{$product/description}

{

for $store in fn:doc("q1b.xml")/db/stores/row

for $sell in fn:doc("q1b.xml")/db/sells/row

where $product/pid = $sell/pid and $store/sid = $sell/sid

return

<store sid="{$store/sid}">

{$store/name}{$store/phones}{$sell/markup}

</store>

}

</product>

}

</products>

**(c)**

<products>

{

for $product in doc("q1a.xml")/products/product

where $product/store/markup = "25%"

return

<product>

{$product/name} {$product/price}

</product>

}

</products>

**(d)**

SELECT P.name, P.price

FROM product P, sell S

WHERE P.pid = S.pid

AND S.markup = "25%"

GROUP BY P.name

**Q2**

Please check the Q2 folder for the files

**(a)**

for $x in doc("q2.xml")/broadway//title

return

<result>

{$x}

</result>

**(b)**

for $x in doc("q2.xml")/broadway/theater[data = "11/9/2008"]

where some $b in $x/price satisfies data($b) < 35

return

<theater>

{$x/title}{$x/address}

</theater>

**(c)**

for $x in doc("q2.xml")/broadway/concert[type = "chamber orchestra"]

where avg(data($x/price))>=50

return

<result>

{$x/title}

</result>

**(d)**

for $d in distinct-values(doc("q2.xml")//date)

for $x in //theater[date = $d] | //concert[date = $d] | //opera[date=$d]

return

<groupByData>

<day>

{$d}

<show>

{$x/title}

{$x/price}

</show>

</day>

</groupByData>

**Q3**

Please check the Q2 folder for the files

**1)**

**Modified XSL:**

<!--

Change the sentence below both in bib/book and bib/article

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

-->

<xsl:value-of select="author/last\_name"/>,

<xsl:value-of select="author/first\_name"/>.

<!--

Under bib/book, change the things of publisher, address and year like this

-->

<!-- add brackets and spaces -->

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

<xsl:text> </xsl:text>

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

<xsl:text> </xsl:text>

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

<!--

Under bib/article, change the things of journal, volume and page like this

-->

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

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

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

**Modified XML:**

<!--

Change all the <author> labels from <author></author> to

<author>

<first\_name></first\_name>

<last\_name></last\_name>

</author>

For example,

-->

<author>

<first\_name>Leslie</first\_name>

<last\_name>Lamport</last\_name>

</author>

**Modified DTD:**

<!ELEMENT author (first\_name, last\_name)>

<!ELEMENT first\_name (#PCDATA) >

<!ELEMENT last\_name (#PCDATA) >

**2)**

<book>

<author>

<first\_name>Robert</first\_name>

<last\_name>Kuhn</last\_name>

</author>

<title>The Man Who Changed China: The Life and Legacy of Jiang Zemin</title>

<year>2005</year>

<address>China</address>

<publisher>New York: Crown Publishers</publisher>

</book>

<book>

<author>

<first\_name>Cixin</first\_name>

<last\_name>Liu</last\_name>

</author>

<title>The Three-Body Problem</title>

<year>2008</year>

<publisher></publisher>

</book>

<article>

<author>

<first\_name>Khaled</first\_name>

<last\_name>Almakadmeh</last\_name>

</author>

<title>Towards a Reference Model of Software Resources Quality</title>

<year>2018</year>

<volume>14</volume>

<page>

<from>182</from>

<to>198</to>

</page>

<journal>Journal of Computer Science</journal>

</article>

<article>

<author>

<first\_name>Tao</first\_name>

<last\_name>Xie</last\_name>

</author>

<title>Preface</title>

<year>2017</year>

<volume></volume>

<page>

<from>1057</from>

<to>1059</to>

</page>

<journal>Journal of Computer Science and Technology</journal>

</article>

**3)**

**Modified XSL:**

<!--

before

</ul>

</body>

-->

<xsl:for-each select="bib/phd\_theses"> <p/>

<li>

<xsl:value-of select="author/last\_name"/>,

<xsl:value-of select="author/first\_name"/>.

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

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

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

</li>

</xsl:for-each>

**Modified XML:**

<phd\_theses>

<author>

<first\_name>Thomas</first\_name>

<last\_name>Dimiduk</last\_name>

</author>

<title>Holographic Microscopy for Soft Matter and Biophysics</title>

<year>2017</year>

<university>Harvard University</university>

</phd\_theses>

<phd\_theses>

<author>

<first\_name>Tim Allan</first\_name>

<last\_name>Wheeler</last\_name>

</author>

<title>Automotive safety validation in simulation</title>

<year>2018</year>

<university>Stanford University</university>

</phd\_theses>

**Modifies DTD:**

<!ELEMENT bib ( (book | article | phd\_theses)+)>

<!ELEMENT phd\_theses (author, title, year, university) >

<!ELEMENT university (#PCDATA)>