CSE3002 Internet Web Programming

LAB ASSESSMENT 5

Submitted by
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Winter Semester 2021-22

Question:

Design an XML document to store information about a student in an engineering college affiliated to VIT University. The information must include Reg.No, Student Name, Name of the College, Branch, Course, Year of Joining, Email id, CGPA, No.of course registered and No.of credits earned. Makeup sample data for 10 students. Design the corresponding DTD and Schema for XML and (i)Write XSL for display the information in sorted order based on college name (ii) Write XSL for display the student details whose CGPA between 7.5 and 8.5.

college.xml

```xml
<?xml version="1.0" encoding="UTF-8"?>
<?xml-stylesheet type="text/xsl" href="college-xsl.xsl"?>
<information>
  <student>
    <regno>19BCB0059</regno>
    <name>Sanskrita Saha</name>
    <college>VIT</college>
    <branch>CSE</branch>
    <course>IWP</course>
    <year>2019</year>
    <email>sanskrita.saha2019@vitstudent.ac.in</email>
    <cgpa>9.45</cgpa>
    <coursesreg>25</coursesreg>
    <creditsearned>97</creditsearned>
  </student>
  <student>
    <regno>19BEE0059</regno>
    <name>Ekta Ray</name>
    <college>BITS</college>
    <branch>EEE</branch>
    <course>Micro</course>
    <year>2019</year>
    <email>ekta.ray2019@bitsstudent.ac.in</email>
    <cgpa>9.97</cgpa>
    <coursesreg>22</coursesreg>
    <creditsearned>96</creditsearned>
  </student>
  <student>
    <regno>19BCE0696</regno>
    <name>Parijat Niyogi</name>
```

```xml
    <college>VIT</college>
    <branch>CSE</branch>
    <course>PDC</course>
    <year>2019</year>
    <email>parijat.niyogi2019@vitstudent.ac.in</email>
    <cgpa>9.23</cgpa>
    <coursesreg>22</coursesreg>
    <creditsearned>89</creditsearned>
  </student>
  <student>
    <regno>19BCT0089</regno>
    <name>Aritri Basu</name>
    <college>MIT</college>
    <branch>CSE</branch>
    <course>IIP</course>
    <year>2019</year>
    <email>aritri.basu2019@mitstudent.ac.in</email>
    <cgpa>9.20</cgpa>
    <coursesreg>24</coursesreg>
    <creditsearned>93</creditsearned>
  </student>
  <student>
    <regno>19BCB0095</regno>
    <name>Shruti Shreya</name>
    <college>KIIT</college>
    <branch>CSE</branch>
    <course>Netcom</course>
    <year>2019</year>
    <email>shruti.shreya2019@kiitstudent.ac.in</email>
    <cgpa>8.72</cgpa>
    <coursesreg>23</coursesreg>
    <creditsearned>87</creditsearned>
  </student>
  <student>
    <regno>19BCE0056</regno>
    <name>Rishav Naskar</name>
    <college>VIT</college>
    <branch>CSE</branch>
```

```xml
    <course>IWP</course>
    <year>2019</year>
    <email>rishav.naskar2019@vitstudent.ac.in</email>
    <cgpa>9.72</cgpa>
    <coursesreg>22</coursesreg>
    <creditsearned>88</creditsearned>
</student>
<student>
    <regno>19ECE0842</regno>
    <name>Disha Sharma</name>
    <college>NIT</college>
    <branch>CSE</branch>
    <course>IWP</course>
    <year>2019</year>
    <email>disha.sharma2019@nitstudent.ac.in</email>
    <cgpa>8.42</cgpa>
    <coursesreg>26</coursesreg>
    <creditsearned>93</creditsearned>
</student>
<student>
    <regno>19BME2249</regno>
    <name>Saumya Jayanti</name>
    <college>IIIT</college>
    <branch>BME</branch>
    <course>Physics</course>
    <year>2019</year>
    <email>saumya.jayanti2019@vitstudent.ac.in</email>
    <cgpa>9.24</cgpa>
    <coursesreg>21</coursesreg>
    <creditsearned>89</creditsearned>
</student>
<student>
    <regno>19BCE0040</regno>
    <name>Kunal kulkarni</name>
    <college>SRM</college>
    <branch>CSE</branch>
    <course>IWP</course>
    <year>2019</year>
```

```xml
    <email>rakshita.badhkar2019@srmstudent.ac.in</email>
    <cgpa>8.42</cgpa>
    <coursesreg>23</coursesreg>
    <creditsearned>93</creditsearned>
  </student>
  <student>
    <regno>19BCE0037</regno>
    <name>Yati Rastogi</name>
    <college>BITS</college>
    <branch>ECE</branch>
    <course>SEMS</course>
    <year>2019</year>
    <email>yati.rastogi2019@vitstudent.ac.in</email>
    <cgpa>6.21</cgpa>
    <coursesreg>24</coursesreg>
    <creditsearned>90</creditsearned>
  </student>
</information>
```

college-dtd.dtd

```dtd
<!ELEMENT information(student)>
<!ELEMENT student(regno, name, college, branch, course, year, email, cgpa,
coursesreg, creditsearned)>
<!ELEMENT regno(#PCDATA)>
<!ELEMENT name(#PCDATA)>
<!ELEMENT college(#PCDATA)>
<!ELEMENT branch(#PCDATA)>
<!ELEMENT course(#PCDATA)>
<!ELEMENT year(#PCDATA)>
<!ELEMENT email(#PCDATA)>
<!ELEMENT cgpa(#PCDATA)>
<!ELEMENT coursesreg(#PCDATA)>
<!ELEMENT creditsearned(#PCDATA)>
```

college-xtd.xtd

```xml
<?xml version="1.0"?>
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema"
targetNamespace="https://www.w3.Schools.com" elementFormDefault="qualified">>
    <xsd:element name="information">
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element name="Student" type="xsd:string"/>
                <xsd:complexType>
                    <xsd:sequence>
                        <xsd:element name="regno" type="xsd:string"/>
                        <xsd:element name="name" type="xsd:string"/>
                        <xsd:element name="college" type="xsd:string"/>
                        <xsd:element name="branch" type="xsd:string"/>
                        <xsd:element name="course" type="xsd:string"/>
                        <xsd:element name="year" type="xsd:string"/>
                        <xsd:element name="email" type="xsd:string"/>
                        <xsd:element name="cgpa" type="xsd:string"/>
                        <xsd:element name="coursesreg" type="xsd:string"/>
                        <xsd:element name="creditsearned" type="xsd:string"/>
                    </xsd:sequence>
                </xsd:complexType>
        </xsd:sequence>
    </xsd:complexType>
    </xsd:element>
</xsd:schema>
```

i) XSL for display the information in sorted order based on college name

```xml
<?xml version="1.0" encoding="UTF-8"?>
<xsl:stylesheet version="1.0" xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
<xsl:template match="/">
<html>
<body>
  <h3 style="text-align: center">Student Information</h3>
  <table border="1">
    <tr bgcolor="#EE9480" style="color: black">
      <th style="text-align:center">Registration Number</th>
      <th style="text-align:center">Name</th>
      <th style="text-align:center">College</th>
      <th style="text-align:center">Branch</th>
      <th style="text-align:center">Course</th>
      <th style="text-align:center">Year of Joining</th>
      <th style="text-align:center">Email</th>
      <th style="text-align:center">CGPA</th>
      <th style="text-align:center">Number of courses registered</th>
      <th style="text-align:center">Number of credits earned</th>
    </tr>
    <xsl:for-each select="information/student">
    <xsl:sort select="college" order="ascending" data-type="text"/>
    <tr>
      <td><xsl:value-of select="regno"/></td>
      <td><xsl:value-of select="name"/></td>
      <td><xsl:value-of select="college"/></td>
      <td><xsl:value-of select="branch"/></td>
      <td><xsl:value-of select="course"/></td>
      <td><xsl:value-of select="year"/></td>
      <td><xsl:value-of select="email"/></td>
      <td><xsl:value-of select="cgpa"/></td>
      <td><xsl:value-of select="coursesreg"/></td>
      <td><xsl:value-of select="creditsearned"/></td>
    </tr>
    </xsl:for-each>
  </table>
</body>
</html>
</xsl:template>
```

```
</xsl:stylesheet>
```

Student Information

Registration Number	Name	College	Branch	Course	Year of Joining	Email	CGPA	Number of courses registered	Number of credits earned
19BEE0059	Ekta Ray	BITS	EEE	Micro	2019	ekta.ray2019@bitsstudent.ac.in	9.97	22	96
19BCE0037	Yati Rastogi	BITS	ECE	SEMS	2019	yati.rastogi2019@vitstudent.ac.in	6.21	24	90
19BME2249	Saumya Jayanti	IIIT	BME	Physics	2019	saumya.jayanti2019@vitstudent.ac.in	9.24	21	89
19BCB0095	Shruti Shreya	KIIT	CSE	Netcom	2019	shruti.shreya2019@kiitstudent.ac.in	8.72	23	87
19BCT0089	Aritri Basu	MIT	CSE	IIP	2019	aritri.basu2019@mitstudent.ac.in	9.20	24	93
19ECE0842	Disha Sharma	NIT	CSE	IWP	2019	disha.sharma2019@nitstudent.ac.in	8.42	26	93
19BCE0040	Kunal kulkarni	SRM	CSE	IWP	2019	rakshita.badhkar2019@srmstudent.ac.in	8.42	23	93
19BCB0059	Sanskrita Saha	VIT	CSE	IWP	2019	sanskrita.saha2019@vitstudent.ac.in	9.45	25	97
19BCE0696	Parijat Niyogi	VIT	CSE	PDC	2019	parijat.niyogi2019@vitstudent.ac.in	9.23	22	89
19BCE0056	Rishav Naskar	VIT	CSE	IWP	2019	rishav.naskar2019@vitstudent.ac.in	9.72	22	88

ii) XSL for display the student details whose CGPA between 7.5 and 8.5

```xml
<?xml version="1.0" encoding="UTF-8"?>
<xsl:stylesheet version="1.0" xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
<xsl:template match="/">
<html>
<body>
  <h3 style="text-align: center">Student Information</h3>
  <table border="1">
    <tr bgcolor="#EE9480" style="color: black">
      <th style="text-align:center">Registration Number</th>
      <th style="text-align:center">Name</th>
      <th style="text-align:center">College</th>
      <th style="text-align:center">Branch</th>
      <th style="text-align:center">Course</th>
      <th style="text-align:center">Year of Joining</th>
      <th style="text-align:center">Email</th>
      <th style="text-align:center">CGPA</th>
      <th style="text-align:center">Number of courses registered</th>
      <th style="text-align:center">Number of credits earned</th>
    </tr>
    <xsl:for-each select="information/student[cgpa &lt; 8.5] [cgpa &gt; 7.5]">
    <xsl:sort select="cgpa" order="descending" data-type="number"/>
    <tr>
      <td><xsl:value-of select="regno"/></td>
      <td><xsl:value-of select="name"/></td>
      <td><xsl:value-of select="college"/></td>
      <td><xsl:value-of select="branch"/></td>
```

```
            <td><xsl:value-of select="course"/></td>
            <td><xsl:value-of select="year"/></td>
            <td><xsl:value-of select="email"/></td>
            <td><xsl:value-of select="cgpa"/></td>
            <td><xsl:value-of select="coursesreg"/></td>
            <td><xsl:value-of select="creditsearned"/></td>
        </tr>
        </xsl:for-each>
    </table>
</body>
</html>
</xsl:template>
</xsl:stylesheet>
```

Output:

Student Information

Registration Number	Name	College	Branch	Course	Year of Joining	Email	CGPA	Number of courses registered	Number of credits earned
19ECE0842	Disha Sharma	NIT	CSE	IWP	2019	disha.sharma2019@nitstudent.ac.in	8.42	26	93
19BCE0040	Kunal kulkarni	SRM	CSE	IWP	2019	rakshita.badhkar2019@srmstudent.ac.in	8.42	23	93