Indira Gandhi Delhi Technical University for Women

(Established by Govt. of Delhi vide Act 09 of 2012)

(Formerly Indira Gandhi Institute of Technology)

Kashmere Gate, Delhi - 110006

LABORATORY FILE
for
Web Technologies

MCA 207

Submitted by:

Submitted to:
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MCA, 3rd Sem
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Ques 1: Create BOOK.XML and validate it using BOOK.DTD

```
<mybooks>
  <book>
    <bookname></bookname>
    <bookid></bookid>
    <bookdescription>

    </bookdescription>

  </book>
  <book>
    <bookname></bookname>
    <bookid></bookid>
    <desc>

    </desc>
  </book>

</mybooks>
```

XML Code:

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE mybooks SYSTEM "books.dtd">

<mybooks>
   <book>
      <bookname>"Web Tech"</bookname>
      <bookid>10</bookid>
      <bookdescription>Introduction to Web</bookdescription>
   </book>
   <book>
      <bookname>"Basics of HTML/CSS"</bookname>
      <bookid>123</bookid>
      <bookdescription>New Edition</bookdescription>
   </book>
</mybooks>
```

DTD Code:

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

   <!ELEMENT mybooks (book+)>
   <!ELEMENT book (bookname,bookid*, (bookdescription|desc?))>
```
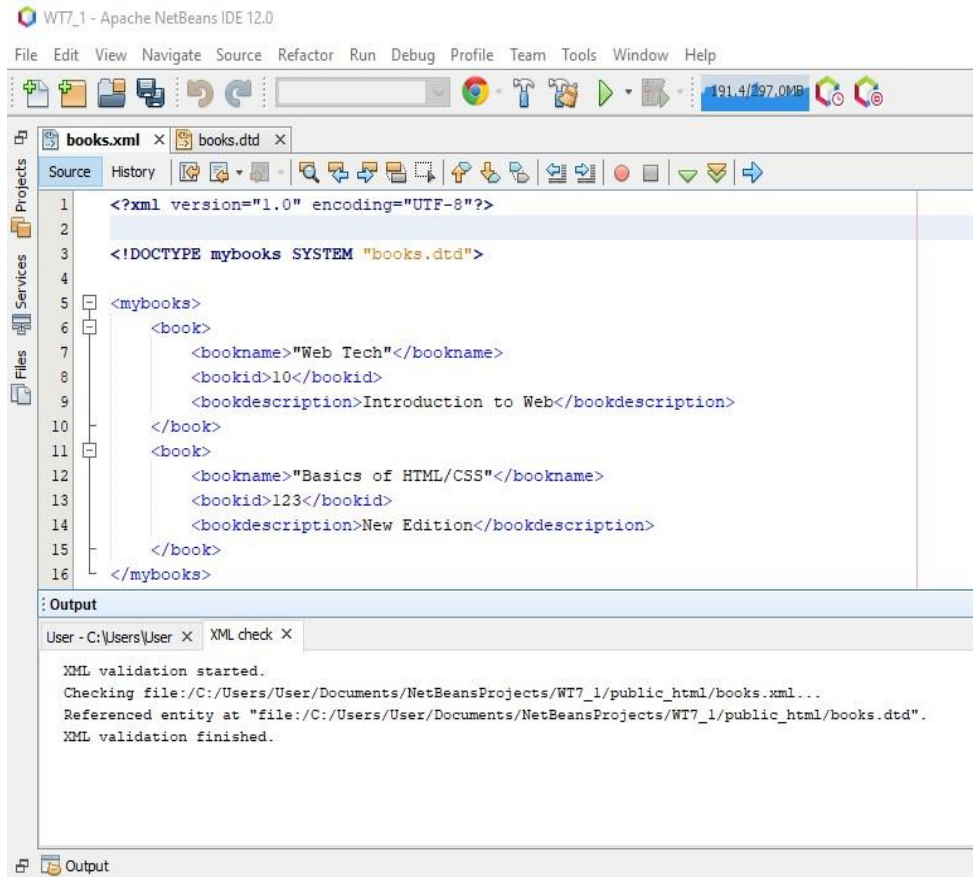
```
<!ELEMENT bookname (#PCDATA)>
<!ELEMENT bookid   (#PCDATA)>
<!ELEMENT bookdescription (#PCDATA)>
```

Output:

WT7_1 - Apache NetBeans IDE 12.0

File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help

191.4/197.0MB

books.xml ×   books.dtd ×

Source   History

```
1    <?xml version="1.0" encoding="UTF-8"?>
2
3    <!DOCTYPE mybooks SYSTEM "books.dtd">
4
5    <mybooks>
6        <book>
7            <bookname>"Web Tech"</bookname>
8            <bookid>10</bookid>
9            <bookdescription>Introduction to Web</bookdescription>
10       </book>
11       <book>
12           <bookname>"Basics of HTML/CSS"</bookname>
13           <bookid>123</bookid>
14           <bookdescription>New Edition</bookdescription>
15       </book>
16   </mybooks>
```

Output

User - C:\Users\User ×   XML check ×

```
XML validation started.
Checking file:/C:/Users/User/Documents/NetBeansProjects/WT7_1/public_html/books.xml...
Referenced entity at "file:/C:/Users/User/Documents/NetBeansProjects/WT7_1/public_html/books.dtd".
XML validation finished.
```

Output

Ques 2: Create XML of CATALOG.XML and validate using schema. Price range (10-100), all the elements should be in the same order.

XML Code:

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

<catalog xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="catalog.xsd">
  <cd>
    <title>Empire Burlesque</title>
    <artist>Bob Dylan</artist>
    <country>USA</country>
    <company>Columbia</company>
    <price>10</price>
  </cd>
  <cd>
```

```xml
      <title>Hide your Heart</title>
      <artist>Bonnie Carlson</artist>
      <country>Bulgaria</country>
      <company>London</company>
      <price>90</price>
   </cd>
   <cd>
      <title>Pikachu Hits</title>
      <artist>Arijit Singh</artist>
      <country>India</country>
      <company>Crisotta</company>
      <price>19</price>
   </cd>
</catalog>
```

SCHEMA Code:

```xml
<?xml version="1.0"?>

<xs:schema version="1.0"
      xmlns:xs="http://www.w3.org/2001/XMLSchema"
      elementFormDefault="qualified">
  <xs:element name="catalog">
    <xs:complexType>
     <xs:sequence>
        <xs:element ref="cd" minOccurs='1' maxOccurs='unbounded'/>
     </xs:sequence>
    </xs:complexType>
  </xs:element>

<xs:element name="cd">
      <xs:complexType>
            <xs:sequence>
            <xs:element name="title" minOccurs='0' maxOccurs='1'
            type='xs:string'/>
            <xs:element name="artist" minOccurs='0' maxOccurs='1'
            type='xs:string'/>
            <xs:element name="country" minOccurs='0' maxOccurs='1'
            type='xs:string'/>
            <xs:element name="company" minOccurs='0' maxOccurs='1'
            type='xs:string'/>          <xs:element name="price">
            <xs:simpleType>
            <xs:restriction base="xs:integer">
            <xs:minInclusive value="10"/>
            <xs:maxInclusive value="100"/>
            </xs:restriction>
      </xs:simpleType>
</xs:element>
```

```
        </xs:sequence>
      </xs:complexType>
   </xs:element>
</xs:schema>
```
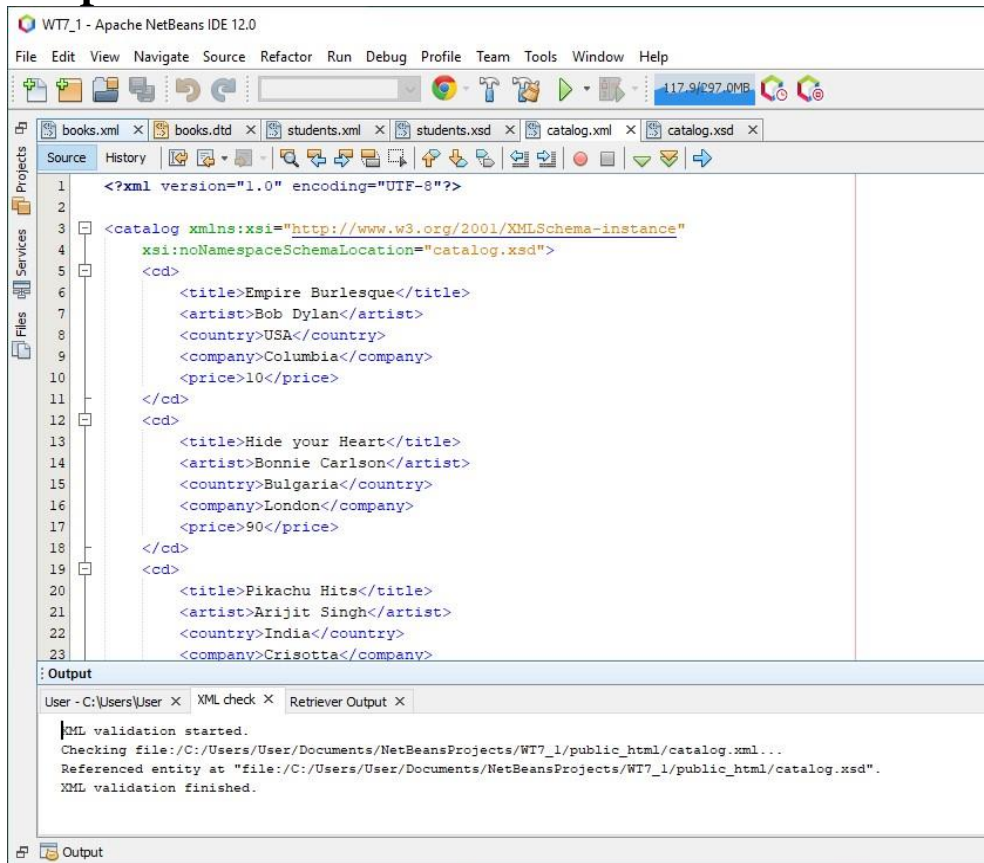
Output:

Ques 3: Create STUDENT.XML (Students (Student (Name, Age, RollNo, Course)) and validate using schema. Restriction on Age (18-25), RollNo (1-70) and numeric value allowed on RollNo and Age. Restriction on course using enumeration (MCA, BTech, MTech)

XML Code:

```
<?xml version="1.0" encoding="UTF-8"?>
<students xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="student.xsd">
  <student>
    <name>Roopal Mittal</name>
    <age>21</age>
    <rollno>020</rollno>
    <course>MCA</course>
  </student>
```

```xml
  <student>
    <name>Pratham Mittal</name>
    <age>20</age>
    <rollno>043</rollno>
    <course>BTech</course>
  </student>
  <student>
    <name>Rishabh</name>
    <age>22</age>
    <rollno>020</rollno>
    <course>Mtech</course>
  </student>
</students>
```

SCHEMA Code:

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

<xs:schema version="1.0"
      xmlns:xs="http://www.w3.org/2001/XMLSchema"
elementFormDefault="qualified">

  <xs:element name="students">
    <xs:complexType>
      <xs:sequence>
        <xs:element ref="student" minOccurs='1' maxOccurs='unbounded'/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>

  <xs:element name="student">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="name" minOccurs='0' maxOccurs='1' type='xs:string'/>
        <xs:element name="rollno">
          <xs:simpleType>
            <xs:restriction base="xs:integer">
              <xs:minInclusive value="1"/>
              <xs:maxInclusive value="70"/>
            </xs:restriction>
          </xs:simpleType>
        </xs:element>
        <xs:element name="age">
          <xs:simpleType>
            <xs:restriction base="xs:integer">
              <xs:minInclusive value="18"/>
              <xs:maxInclusive value="25"/>
            </xs:restriction>
          </xs:simpleType>
        </xs:element>
```

```xml
            <xs:element name="course">
              <xs:simpleType>
                <xs:restriction base="xs:string">
                  <xs:enumeration value="B.Tech."/>
                  <xs:enumeration value="M.Tech."/>
                  <xs:enumeration value="MCA"/>
                </xs:restriction>
              </xs:simpleType>
            </xs:element>

        </xs:sequence>
      </xs:complexType>
    </xs:element>
</xs:schema>
```

Output:

Apache NetBeans IDE 12.0

```xml
<?xml version="1.0" encoding="UTF-8"?>
<students xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:noNamespaceSchemaLocation="student.xsd">
    <student>
        <name>Roopal Mittal</name>
        <age>21</age>
        <rollno>020</rollno>
        <course>MCA</course>
    </student>
    <student>
        <name>Pratham Mittal</name>
        <age>20</age>
        <rollno>043</rollno>
        <course>BTech</course>
    </student>
    <student>
        <name>Rishabh</name>
        <age>22</age>
        <rollno>020</rollno>
        <course>Mtech</course>
    </student>
</students>
```

Output ×

Roopal - C:\Users\Roopal ×   XML check ×

```
XML validation started.
Checking file:/C:/Users/Roopal/Desktop/Web%20Tehnologies%20LAB%20WORK/LAB7/student.xml...
Referenced entity at "file:/C:/Users/Roopal/Desktop/Web%20Tehnologies%20LAB%20WORK/LAB7/student.xsd".
XML validation finished.
```