

# Assignment 7

Web Technology

**Name** - Harshit Gupta

**Roll No-** 2019UCO1580

## XML bookstore

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### Objective

To create an XML file with information about books. The file represents a bookstore in the form of XML and is validated against a Document Type Definition(DTD) and an XML schema.

The data present in the document is finally displayed in a table format with the help of XSL and formatted according to the constraints given in the assignment.

Definition of the individual elements - >

Book elements consist of **title, author, ISBN, publisher, edition and price.**

All elements except the price element are of the type **string(in schema)** and price is of the type **decimal(in schema).**

# SCREENSHOTS

## - Validation for DTD

Please copy your XML document in here:

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE bookstore SYSTEM "bookstore.dtd">
<book>
  <title>Da Vinci Code</title>
  <author>Dan Brown</author>
  <ISBN>123-456-789</ISBN>
  <publisher>Penguin books</publisher>
  <edition>Original</edition>
  <price>400</price>
</book>
```

Or upload it:

No file chosen

The validation check is performed against any XML schema or DTD declared inside the XML document.

If neither an XML schema nor a DTD is declared, only a syntax check is performed.

To validate the XML document against an external XML schema, click below.

☐ Validate against external XML schema

The file bookstore.dtd is being referenced. Please copy it in here, so that the validation can continue:

```
<!ELEMENT bookstore (book+)>
<!ELEMENT book (title,author,ISBN,publisher,edition,price)>
<!ELEMENT title (#PCDATA)>
<!ELEMENT author (#PCDATA)>
<!ELEMENT ISBN (#PCDATA)>
<!ELEMENT publisher (#PCDATA)>
<!ELEMENT edition (#PCDATA)>
<!ELEMENT price (#PCDATA)>
```

Or upload it:

No file chosen

The following files have been uploaded so far:

[XML document:](#)

**Validate an XML file**

Read [here how to validate your XML files](#) (including referenced DTDs) online with just a few mouse clicks.

**No errors were found**

**The following files have been uploaded so far:**

[XML document:](#)

[bookstore.dtd](#)

Click on any file name if you want to edit the file.

# - Validation for Schema

The XML document is valid.

### XML Input

**Option 1:** Copy-paste your XML document here

```
<?xml version="1.0" encoding="UTF-8"?>
<bookstore xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:noNamespaceSchemaLocation="bookstore.xsd">
  <book>
    <title>Da Vinci Code</title>
    <author>Dan Brown</author>
```

**Option 2:** Or upload your XML document

No file chosen UTF-8

### XSD Input (Optional if XSD referred in XML using schemaLocation)

**Option 1:** Copy-paste your XSD document here

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema elementFormDefault="qualified" attributeFormDefault="unqualified"
  xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:element name="bookstore">
    <xs:complexType>
      <xs:sequence>
```

**Option 2:** Or upload your XSD document

No file chosen UTF-8

# CODE

## - XML DTD

```
<!ELEMENT bookstore (book+)>
<!ELEMENT book (title,author,ISBN,publisher,edition,price)>
<!ELEMENT title (#PCDATA)>
<!ELEMENT author (#PCDATA)>
<!ELEMENT ISBN (#PCDATA)>
<!ELEMENT publisher (#PCDATA)>
<!ELEMENT edition (#PCDATA)>
<!ELEMENT price (#PCDATA)>
```

## - XML Schema

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema elementFormDefault="qualified" attributeFormDefault="unqualified"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:element name="bookstore">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="book" maxOccurs="unbounded">
          <xs:complexType>
            <xs:sequence>
              <xs:element name="title" type="xs:string"></xs:element>
              <xs:element name="author" type="xs:string"></xs:element>
              <xs:element name="ISBN" type="xs:string"></xs:element>
              <xs:element name="publisher" type="xs:string"></xs:element>
              <xs:element name="edition" type="xs:string"></xs:element>
              <xs:element name="price" type="xs:decimal"></xs:element>
            </xs:sequence>
          </xs:complexType>
        </xs:element>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

## - XML

Note that the lines that are colored red correspond to including DTD only whereas the lines colored as blue correspond to the inclusion of Schema only. The black lines are included in both.

```
<?xml version="1.0" encoding="UTF-8"?>
<bookstore xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:noNamespaceSchemaLocation="bookstore.xsd">
  <!DOCTYPE bookstore SYSTEM "bookstore.dtd">
  <book>
    <title>Da Vinci Code</title>
    <author>Dan Brown</author>
    <ISBN>123-456-789</ISBN>
    <publisher>Penguin books</publisher>
    <edition>Original</edition>
    <price>400</price>
  </book>
  <book>
    <title>Computer Architecture and Design</title>
    <author>Morris M. Mano</author>
    <ISBN>143-256-879</ISBN>
    <publisher>Pearson</publisher>
    <edition>Ninth</edition>
    <price>350</price>
  </book>
  <book>
    <title>Database Systems</title>
    <author>Korth</author>
    <ISBN>987-223-456</ISBN>
    <publisher>Arihant</publisher>
    <edition>Fifth</edition>
    <price>300</price>
```

</book>

<book>

<title>Introduction to Algorithms</title>

<author>Cormen</author>

<ISBN>435-987-112</ISBN>

<publisher>Pearson</publisher>

<edition>Eleventh</edition>

<price>600</price>

</book>

<book>

<title>Digital Logic Design</title>

<author>Morris M. Mano</author>

<ISBN>112-345-674</ISBN>

<publisher>Pearson</publisher>

<edition>Fourth</edition>

<price>350</price>

</book>

<book>

<title>Elements of Discrete Mathematics</title>

<author>C.L. Liu</author>

<ISBN>342-998-675</ISBN>

<publisher>McGraw Hill Education</publisher>

<edition>Fourth</edition>

<price>400</price>

</book>

<book>

<title>Let Us C</title>

<author>yashvant Kanetkar</author>

<ISBN>321-887-652</ISBN>

<publisher>Arihant</publisher>

<edition>Fifteenth</edition>

<price>300</price>

</book>

```

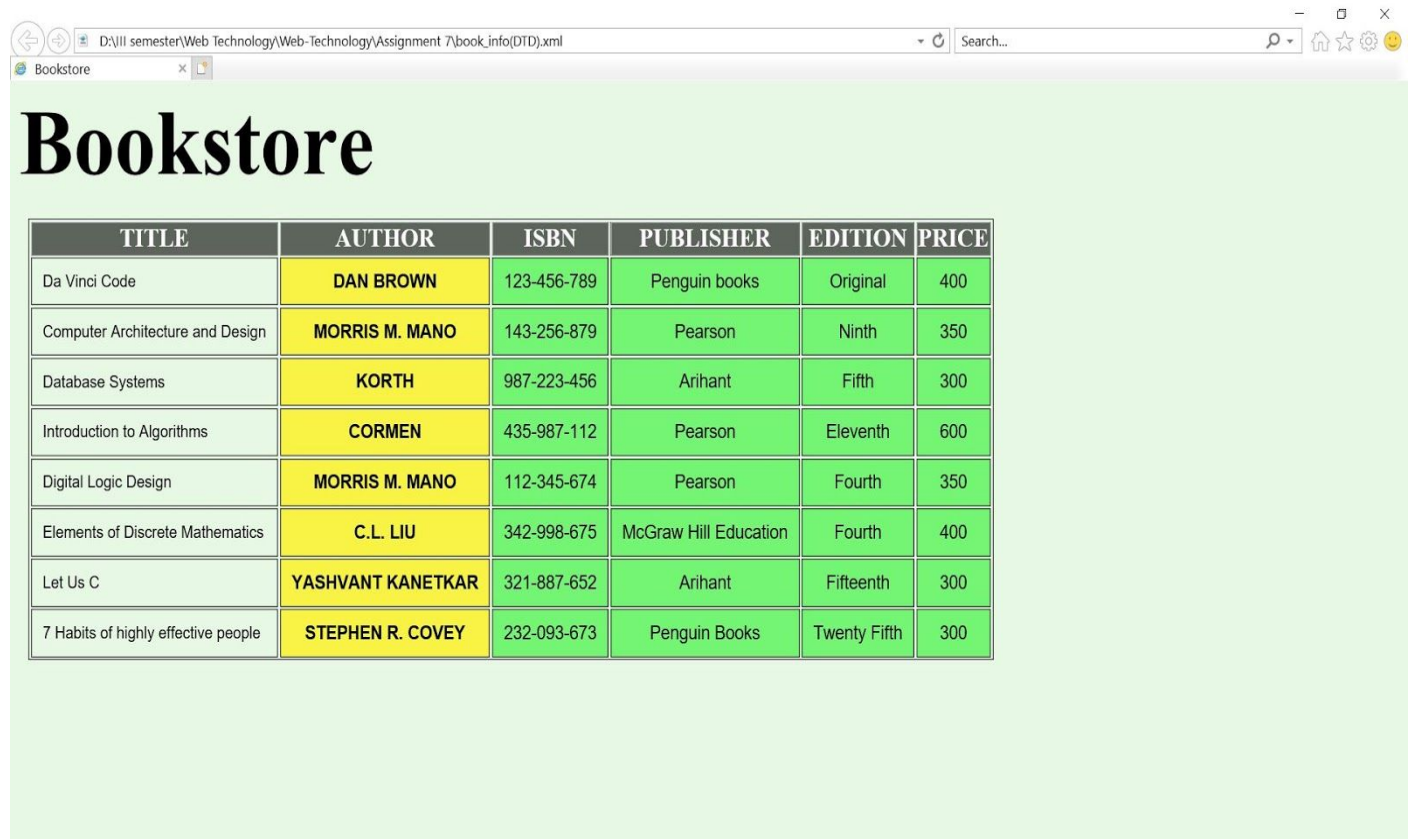
<book>
  <title>7 Habits of highly effective people</title>
  <author>Stephen R. Covey</author>
  <ISBN>232-093-673</ISBN>
  <publisher>Penguin Books</publisher>
  <edition>Twenty Fifth</edition>
  <price>300</price>
</book>
</bookstore>

```

## DISPLAYING XML

- Line to be added -

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



TITLE	AUTHOR	ISBN	PUBLISHER	EDITION	PRICE
Da Vinci Code	DAN BROWN	123-456-789	Penguin books	Original	400
Computer Architecture and Design	MORRIS M. MANO	143-256-879	Pearson	Ninth	350
Database Systems	KORTH	987-223-456	Arihant	Fifth	300
Introduction to Algorithms	CORMEN	435-987-112	Pearson	Eleventh	600
Digital Logic Design	MORRIS M. MANO	112-345-674	Pearson	Fourth	350
Elements of Discrete Mathematics	C.L. LIU	342-998-675	McGraw Hill Education	Fourth	400
Let Us C	YASHVANT KANETKAR	321-887-652	Arihant	Fifteenth	300
7 Habits of highly effective people	STEPHEN R. COVEY	232-093-673	Penguin Books	Twenty Fifth	300

# CODE- Stylesheet(.css)

```
*{
    margin : 0px;
    box-sizing: border-box;
}
body{
    background-color: rgba(200,20,0,0.1);
}
table{
    margin: 20px;
}
h1{
    font-size: 90px;
    font-family: times;
    margin : 10px;
}
td{
    padding: 12px;
    font-family: sans-serif;
}
#header{
    background-color: rgba(0, 0, 0, 0.6);
    color: white;
    font-size: 27px;
    text-align:center;
    font-weight: bolder;
}
#author{
    font-weight: bolder;
```



```

text-transform: uppercase;
font-size: 18px;
text-align: center;
background-color: rgba(255,240,0,0.7);
}
#non-author{
font-weight: lighter;
font-size: 19px;
text-align: center;
background-color: rgba(0,240,0,0.5);
}

```

## CODE - Stylesheet (.xsl)

```

<?xml version="1.0"?>
<xsl:stylesheet version="1.0"
xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
  <xsl:template match="/">
    <html xmlns = "http://www.w3.org/1999/xhtml">
      <head>
        <meta charset="utf-8"/>
        <link rel="stylesheet" type="text/css" href ="books.css"/>
        <title>Bookstore</title>
      </head>
      <body>
        <h1> Bookstore </h1>
        <table border="1">
          <tr id="header">
            <th> TITLE</th>
            <th> AUTHOR</th>
            <th> ISBN </th>
            <th> PUBLISHER</th>
            <th> EDITION </th>
            <th> PRICE </th>

```

```
</tr>
<xsl:for-each select="bookstore/book">
  <tr>
    <td><xsl:value-of select="title"/></td>
    <td id="author"><xsl:value-of select="author"/></td>
    <td id="non-author"><xsl:value-of select="ISBN"/></td>
    <td id="non-author"><xsl:value-of select="publisher"/></td>
    <td id="non-author"><xsl:value-of select="edition"/></td>
    <td id="non-author"><xsl:value-of select="price"/></td>
  </tr>
</xsl:for-each>
</table>
</body>
</html>
</xsl:template>
</xsl:stylesheet>
```