**6.Create an xml for the bookstore. Validate the same using both DTD and XSD.**

What is XML?

* XML stands for eXtensible Markup Language
* XML is a markup language much like HTML
* XML was designed to store and transport data
* XML was designed to be self-descriptive
* XML is a W3C Recommendation

The Difference Between XML and HTML

XML and HTML were designed with different goals:

XML was designed to carry data - with focus on what data is

HTML was designed to display data - with focus on how data looks

XML tags are not predefined like HTML tags are

XML Tree Structure

XML documents are formed as element trees.

An XML tree starts at a root element and branches from the root to child elements.

All elements can have sub elements (child elements):

<root>

<child>

<subchild>.....</subchild>

</child>

</root>

Well-Formed meaning:-

A well-formed XML document is a document that conforms to the XML syntax rules, like:

it must begin with the XML declaration

it must have one unique root element

start-tags must have matching end-tags

elements are case sensitive

all elements must be closed

all elements must be properly nested

all attribute values must be quoted

entities must be used for special characters

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What is a DTD?

DTD stands for Document Type Definition.

**The two main types of DTD are the following:**

* Internal DTD—If the DTD elements are declared within the XML file, it is called an internal DTD.
* External DTD—If the DTD elements are declared in some other file, it is called an external DTD.

A DTD defines the structure and the legal elements and attributes of an XML document.

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

<!DOCTYPE note SYSTEM "Note.dtd">

<note>

<to>Jhon</to>

<from>David</from>

<heading>Reminder</heading>

<body>Don't forget me this weekend!</body>

</note>

The DOCTYPE declaration above contains a reference to a DTD file. The content of the DTD file is shown and explained below.

XML DTD

The purpose of a DTD is to define the structure and the legal elements and attributes of an XML document:

Note.dtd:

<!DOCTYPE note

[

<!ELEMENT note (to,from,heading,body)>

<!ELEMENT to (#PCDATA)>

<!ELEMENT from (#PCDATA)>

<!ELEMENT heading (#PCDATA)>

<!ELEMENT body (#PCDATA)>

]>

What is an XML Schema?

An XML Schema describes the structure of an XML document.

The XML Schema language is also referred to as XML Schema Definition (XSD).

In the XML world, hundreds of standardized XML formats are in daily use.

Many f these XML standards are defined by XML Schemas.

XML Schema is an XML-based (and more powerful) alternative to DTD.

Week-6

**Create an xml for the bookstore. Validate the same using both DTD and XSD.**

Aim:Validate the xml book store file using DTD and XSD

DESCRIPTION: xml is used to create the bookstore

Project Structure:1. Xml file contains the book info

2. DTD is used to create the type definitions

3. XSD is used to write schema designs for xml

bookstore.xml

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

<!DOCTYPE bookstore[

<!ELEMENT bookstore (book+)>

<!ELEMENT book (title, author, price)>

<!ELEMENT title (#PCDATA)>

<!ELEMENT author (#PCDATA)>

<!ELEMENT price (#PCDATA)>

]>

<bookstore>

<book>

<title>Introduction to XML</title>

<author>John Doe</author>

<price>29.99</price>

</book>

<book>

<title>Programming with XML</title>

<author>Jane Smith</author>

<price>39.99</price>

</book>

</bookstore>

XML schema (XSD) data

bookstore.xsd

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

<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"

targetNamespace="http://example.com"

xmlns="http://example.com">

<xs:element name="root">

<xs:complexType>

<xs:sequence>

<xs:element name="bookstore" type="bookstoreType"/>

</xs:sequence>

</xs:complexType>

</xs:element>

<xs:complexType name="bookstoreType">

<xs:sequence>

<xs:element name="book" type="bookType" minOccurs="0" maxOccurs="unbounded"/>

</xs:sequence>

</xs:complexType>

<xs:complexType name="bookType">

<xs:sequence>

<xs:element name="title" type="xs:string"/>

<xs:element name="author" type="xs:string"/>

<xs:element name="price" type="xs:decimal"/>

</xs:sequence>

</xs:complexType>

</xs:schema>

To Check the Validity :

Go to the below link,

https://www.liquid-technologies.com/online-xsd-validator

Place the XML code in the XML Validate.

Place the XSD code in the XML Schema Data.

Then click the validate Button.

Then it will show the Document as Valid.

