

What is XML?

- XML is a markup language much like HTML .XML stands for eXtensible Markup Language. XML was designed to be both human- and machine-readable.

SYNTAX RULES OF XML :

The syntax rules of XML are very simple and logical. The rules are easy to learn, and easy to use.

XML documents must contain one **root** element that is the **parent** of all other elements:

```
<root>
  <child>
    <subchild>.....</subchild>
  </child>
</root>
```

In this example <note> is the root element:

```
<?xml version="1.0" encoding="UTF-8"?>
<note>
  <to>Tove</to>
  <from>Jani</from>
  <heading>Reminder</heading>
  <body>Don't forget me this weekend!</body>
</note>
```

What is an XML Element?

An XML element is everything from (including) the element's start tag to (including) the element's end tag.

```
<price>29.99</price>
```

An element can contain:

- text
- attributes
- other elements
- or a mix of the above

```
<bookstore>
  <book category="children">
    <title>Harry Potter</title>
    <author>J K. Rowling</author>
    <year>2005</year>
    <price>29.99</price>
  </book>
  <book category="web">
```

```
<title>Learning XML</title>
<author>Erik T. Ray</author>
<year>2003</year>
<price>39.95</price>
</book>
</bookstore>
```

In the example above:

<title>, <author>, <year>, and <price> have **text content** because they contain text (like 29.99).

<bookstore> and <book> have **element contents**, because they contain elements.

<book> has an **attribute** (category="children").

XML Naming Rules

XML elements must follow these naming rules:

- Element names are case-sensitive
- Element names must start with a letter or underscore
- Element names cannot start with the letters xml (or XML, or Xml, etc)
- Element names can contain letters, digits, hyphens, underscores.
- Element names cannot contain spaces

XML Attributes Must be Quoted

Attribute values must always be quoted. Either single or double quotes can be used. For a person's gender, the <person> element can be written like this:

```
<person gender="female">  
or like this:  
<person gender='female'>
```

XML Elements vs. Attributes

Take a look at these two examples:

```
<person gender="female">  
  <firstname>Anna</firstname>  
  <lastname>Smith</lastname>  
</person>
```

```
<person>  
  <gender>female</gender>  
  <firstname>Anna</firstname>  
  <lastname>Smith</lastname>  
</person>
```

In the first example, gender is an attribute. In the last example, gender is an element. Both examples provide the same information.

Characteristics of XML :

1. **XML is extensible**- XML allows you to create own self-descriptive tags or language that suits your application.
2. **XML carries data ,does not present it-**
XML allows you to store the data irrespective of how it will be presented.
3. **XML is a public standard**- XML was developed by an organization called the W3C and is available as an open standard.

Q1.

Create an **xml** document with the elements 'itemdetails' and 'item' as the root and parent elements respectively. The parent element will have the child elements- 'itemID', 'name', 'quantity' and 'price'. Use descriptive element names. Add details of two items and display the populated structure tree .

Q2.

Create the xml documents to display information of five different books with book name, author, publisher, price, year of publication.