

REVIEW XML & Web Services

3. XML Rules

1 - Entity References:

This will generate an XML error:

- <message>if salary < 1000 then</message>

Because the parser interprets "<" as the start of a new element. To avoid:

- <message>if salary < 1000 then</message>

Three predefined entity references in XML:

- Less Than: <
- Greater Than: >
- Ampersand(&): &

2 - An XML document has a single root node.

3 - Tree Structure.

The tree is a general ordered tree:

- A parent node may have any number of children.
- Child nodes are ordered, and may have siblings.

Types of E-Commerce

- B2B - between businesses
- B2C - between business and consumer
- C2C - between two or more individuals

Definitions of E-Commerce

- > Buying and selling online
- > Selling through the Internet
- > Customer service using the Internet
- > Marketing and advertising through the Internet

Access Control and Security in E-Commerce

E-commerce processes must establish mutual trust, and secure transactions, by:

- ☐ Authenticating users.
- ☐ Authorizing access.

1. About XML

XML stands for Extensible Markup Language.

XML was designed to **store** and **transport data**.

Designed for structured **data representation**.

A **well-formed document** has a **tree structure** and obeys all the XML rules.

XML
Is a "use everywhere" data
specification



4. XML started with DTDs and transitioned into XML Schemas

2. Comparison and Differences Between HTML and XML Tags

HTML

- Tags have a fixed meaning, and browsers know the tags.
- Tags used to **display**.

XML

- Tags for different applications, and users know the tags.
- Tags used to **describe** documents and data.

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DTDs (Document Type Definitions)

DTD describes the tree structure of a document, and something about its data.

DTD determines how many times a node may appear, and the child nodes order.

DTD approach example:

```
<ELEMENT address (name, email, phone, birthday)>
<ELEMENT name (first, last)>
<ELEMENT first (PCDATA)>
<ELEMENT last (PCDATA)>
<ELEMENT email (PCDATA)>
<ELEMENT phone (PCDATA)>
<ELEMENT birthday (year, month, day)>
<ELEMENT year (PCDATA)>
<ELEMENT month (PCDATA)>
<ELEMENT day (PCDATA)>
```

Schemas

Schemas are themselves XML documents.

They also determine the tree structure and how many children a node may have.

Schemas approach example:

```
<?xml version="1.0"?>
<address>
  <name>Alice Lee</name>
  <email>alee@aol.com</email>
  <phone>212-346-1234</phone>
  <birthday>1985-03-22</birthday>
</address>
```



Web Services Architecture

1. Service Provider - creates the web service, and makes it available to client application.

2. Service Requestor - the client application that needs to contact and interact with the web service.

3. Service Registry - a logically centralized directory of services. The registry provides a central place where developers can publish new services or find existing ones.

Web Services

A software module, designed to perform a set of tasks

About Web Services

- ☐ Provides a common platform, that allows multiple applications to have the ability to communicate with each other.
- ☐ Standardized medium to propagate communication between client and server on the WWW.
- ☐ Can be searched over the network and can also be invoked.
- ☐ Main component of a web services is data, which is transferred between the client and the server, using XML.

Why Do We Need a Web Host?

The host will store your website's files on a server, and deliver them to your readers and customers' browsers.

Web hosting services offer varying amounts of monthly data transfers, storage, email, and other features.

Important Features to Look for in a Web Host

- ☐ Amount of **Storage**: Amount of data you can store.
- ☐ Amount of **Bandwidth**: Amount of data upload and download the host will let you and visitors (cumulatively) in a given month.
- ☐ Number of **Domains and Subdomains**: Amount of domains you can host.
- ☐ Email Accounts: Amount of emails they'll let you set up.
- ☐ **Database Support**: Type of database you used.
- ☐ **Language Support**: The languages you want to use.

Domain Name

A domain name is an address that visitors use to view your website on the web.

Launching a Website

Three main components to launch a website

Web Host

After you have a domain name, the next step is to get a web host from a web hosting company

Website

Languages like PHP, Ruby, Python, Perl and ASPnet (C#) can be used to create dynamic websites



E-Commerce

Allows businesses to be more effective and efficient in responds to customers' needs