

## REVIEW LESSON

MTA Course: Web Development Fundamentals  
Lesson name: Web Development Fundamentals 2.1  
Topic: Read and write XML data  
File name: WebDevFund\_RL\_2.1

### **Lesson Objective:**

**2.1:** Read and write XML data. *This objective may include but is not limited to:* XML, XML validation. *This objective does not include:* Web Services, XPath syntax, XmlDocument, XPathNavigator, XPathNodeIterator, XPathDocument, XmlReader, XmlWriter, XmlDataDocument, XmlNamespaceManager.

### **Preparation details**

### **Prerequisite student experiences and knowledge**

This MTA Certification Exam Review lesson is written for students who have learned about Web design and Web application programming. Students who do not have the prerequisite knowledge and experiences cited in the objective will find additional learning opportunities using resources such as those listed in the Microsoft® resources and Web links at the end of this review lesson.

Students should have a basic understanding of Extensible Markup Language (XML) and its associated syntax. Students should understand the criteria of a “well-formed” XML document.

### **Instructor preparation activities**

For this lesson, you will need a computer with Microsoft Office 2007® and Microsoft Visual Studio 2008® attached to a liquid crystal display (LCD) projector to display and review the Microsoft PowerPoint® document.

### **Resources, software, and additional files needed for this lesson:**

- WebDevFund\_PPT\_2.1

- WebDevFund\_SA\_2.1
- A Windows-based PC with installed Web development software. Examples include Visual Studio 2008, or
  - Microsoft Visual Basic 2008®, Express Edition  
(<http://www.microsoft.com/express/downloads/#2008-Visual-Basic>)
  - Microsoft Visual C# 2008®, Express Edition  
(<http://www.microsoft.com/express/downloads/#2008-Visual-CS>)
  - Microsoft Visual Web Developer 2008, Express Edition  
(<http://www.microsoft.com/express/downloads/#2008-Visual-Web-Developer>)
- Note cards for warm-up activity

### **Teaching guide**

#### **Essential vocabulary:**

**XML**—acronym for eXtensible Markup Language, a condensed form of Standard Generalized Markup Language (SGML). XML lets Web developers create customized tags that offer flexibility in organizing data, as well as providing an efficient means of transport for that data. An important difference between XML and HTML is that XML is designed to store and transfer data, but not display it, while HTML is designed specifically to display data.

**well-formed XML document**—an XML document is considered to be well-formed if it meets all the syntactical requirements defined for an XML document. The XML code must be syntactically correct or the XML parser will raise an error. ,

**XML Validation**—if the XML file has an associated XML schema, the elements must appear in the defined structure and the content of the individual elements must conform to the declared data types specified in the schema. Visit the following link for more information about assigning a schema: <http://msdn.microsoft.com/en-us/library/z6dzc6ca%28VS.71%29.aspx>

**XML Schema**—one of many XML schema languages used to provide a common base for data description and validation in XML documents. Not to be confused with the similar term ‘XML schema’, which is simply a description of the structure of an XML document, XML Schema (with a capital S), was developed by the World Wide Web Consortium (W3C) and is the first schema language to be recommended by W3C to be the standard for XML document definition. XML Schema is more powerful and extensible than its predecessor, Document Type Definition (DTD), and is quickly becoming the most popular successor for DTD as an XML document structure standard.

### **Lesson Sequence**

#### **Activating prior knowledge/lesson staging (10 minutes)**

##### **Warm up Activity—“What is XML?”**

1. Teacher divides class into groups of three to four students.
2. Instruct each group to brainstorm the following topics and record answers on note cards.
  - i. What do you know about XML?
  - ii. How is it different from HTML?
  - iii. What is meant by “well-formed” XML code?
3. Each group will then briefly offer some responses to the class.

#### **Lesson activity (30 minutes)**

1. Using the PowerPoint presentation WebDevFund\_PPT\_2.1, review the concepts for this lesson.
2. Distribute Student Activity Worksheet WebDevFund\_SA\_2.1.
  - a. Students will create/modify an XML document.
3. Discuss the key objectives of the review assignment.

#### **Assessment/lesson reflection (10 minutes)**

1. Ask students to write down three facts about XML (as it relates to Web applications) on the board.
2. Ask some students to display their solution to portions of the activity to the class using the LCD projector.
3. Wrap up and provide homework/enrichment opportunities.

#### **Microsoft resources and Web links**

Students who wish to explore this lesson topic further may visit the following links:

##### **Web references on XML:**

<http://quickstarts.asp.net/QuickStartv20/howto/doc/Xml/OverviewofXML.aspx>

<http://msdn.microsoft.com/en-us/data/bb190600.aspx>

**Microsoft ASP.NET:**

*<http://www.asp.net>*

**Suggested best practices:**

- It may be beneficial to display examples using the LCD projector that show the anatomy of an XML page. It could also be useful to show W3C-compliant HTML page and contrast that with XML, highlighting the differences. Randomly choose students to come up to demonstrate the concepts to the class. It may also be advantageous to have students complete this activity in small groups.