

REVIEW LESSON

MTA Course: Software Development Fundamentals

Lesson name: Software Development Fundamentals 4.4

Topic: Understand Web services (One 50-minute class period)

File name: SoftDevFund_RL_4.4

Lesson Objective:

4.4: Understand Web services. *This objective may include but is not limited to:* Web services that will be consumed by client applications; accessing Web services from a client application; SOAP and Web Service Definition Language (WSDL).

Preparation Details

Prerequisite student experiences and knowledge

Students should know what the World Wide Web is and how computers communicate using Hypertext Transfer Protocol (HTTP). Students should also know how a browser fetches and displays a Web page. This MTA Certification Exam Review lesson is written for students who have learned about Web development. 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.

Instructor preparation activities

None

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

- SoftDevFund_PPT_4.4

Teaching Guide

Essential Vocabulary:

SOAP—acronym for Simple Object Access Protocol, a simple, XML-based protocol for exchanging structured and type information on the Web.

WSDL—acronym for Web Services Description Language, an Extensible Markup Language (XML) format developed to allow for better interoperability among Web services and development tools.

Lesson Sequence

Activating prior knowledge/lesson staging (5 minutes)

1. Show the Activator slide in the PowerPoint® presentation.
 - a. *Ask:* How would you communicate with someone who did not speak your language?
 - i. (Answers will vary, but should resemble the following.) Find a common method and meaning of communication. You may have your own languages, but you can agree on using certain signs and gestures and their meaning.
 - b. *Ask:* How is this similar to how applications interact with Web services?
 - i. To interact with a Web service, you have to figure out how and what you will communicate (WSDL), and then communicate it using these tools (SOAP).

Lesson activity (30 minutes)

1. Show the PowerPoint presentation.
 - a. Review the definitions.
 - b. Describe a Web service. Differentiate between the function and implementation of a Web service. As an example, explain the role that Web services play in many of the websites students use.
 - c. Explain what Web services offer and how they work. Use the description of how they work to segue into the topics of WSDL and SOAP.
 - d. Explain WSDL as the means by which a Web service describes what it can do and how to communicate with it. It is like an instruction manual for a Web service.

- e. Explain SOAP. It is like a letter being passed from one application to another, and both applications can understand the contents of the letter even though they do not speak the same language.

Assessment/lesson reflection (15 minutes)

1. Show the Lesson Review slide in the presentation. Use this prompt:
 - a. A company wants to provide a Web service that allows outside applications to access sports statistics. Draw a diagram showing the interaction of WSDL and SOAP in the context of this Web service. Include labels for the requester and the provider. Use arrows to illustrate the flow of information.

Microsoft resources and Web links**Understanding SOAP (MSDN)**

<http://msdn.microsoft.com/en-us/library/ms995800.aspx>

Understanding WSDL (MSDN)

<http://msdn.microsoft.com/en-us/library/ms996486.aspx>

Web Services (MSDN)

<http://msdn.microsoft.com/en-us/library/ms950421.aspx>

Suggested best practices:

- Give examples and make analogies throughout the lesson to clarify the concepts presented. Show a Web service to enhance student understanding.