REVIEW LESSON

MTA Course: Software Development Fundamentals
Lesson name: Software Development Fundamentals 4.2
Topic: Understand Microsoft ASP.NET Web application development (One 50-minute class period)
File name: SoftDevFund_RL_4.2

Lesson Objective:

4.2: Understand Microsoft® ASP.NET Web application development. *This objective may include but is not limited to:* page life cycle; event model; state management; client-side vs. server-side programming

Preparation Details

Prerequisite student experiences and knowledge

This lesson reviews the Web page life cycle, event model, state management, and client-side vs. server-side programming, but it does not cover ASP.NET Web application implementation and coding (which are not assessed on the exam). 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_4.2
- SoftDevFund_SA_4.2

Teaching Guide

Essential Vocabulary:

client-side program—a program that is run on a client rather than on a server.

event model—allows the developer to create Web pages using an event-based model that is similar to this model in client applications. As a simple example, the designer can add a button to an ASP.NET Web page and then write an event handler for the button's click event. Although this is common in Web pages that work exclusively with client script (by handling the button's on-click event in dynamic HTML), ASP.NET brings this model to server-based processing.

page life cycle—when an ASP.NET page runs, the page performs a series of processing steps. These include initialization, instantiating controls, restoring and maintaining state, running event handler code, and rendering.

server-side program—a program that runs on a server rather than on a client.

state management—the process by which you maintain the page information over multiple requests for the same or different pages.

Web application—software on a set of clients and servers that cooperate to provide the solution to a problem.

Lesson Sequence

Activating prior knowledge/lesson staging (5 minutes)

1. Show the Activator slide in the PowerPoint® presentation.
    a. *Ask:* What is a Web application, and what role does ASP.NET play in making Web applications?
    b. *Answer:* A Web application is a computer program that is accessed via a Web browser over a network such as the Internet. ASP.NET is a framework that allows people to build Web applications.

Lesson activity (35 minutes)

1. Review the concepts using the presentation.
    a. Review the vocabulary definitions.
    b. Describe the ASP.NET page life cycle and detail the stages of the life cycle.

c. Describe the ASP.NET event model and relate it to the event model used on client-based applications.

d. Explain Web page state management and the various options available for managing state on the client side or server side using ASP.NET.

e. Explain the difference between client-side and server-side programming.

Assessment/lesson reflection (10 minutes)

1. Show the Lesson Review slide in the presentation.
   a. Students will use the information from the slideshow and their own prior knowledge to answer the following questions:
      i. What is the page life cycle? List some of the steps.
      ii. What is the event model for a Web page?
      iii. What does Web page state management refer to? List some techniques for maintaining state.
      iv. Give an example of client-side and server-side programming.

Microsoft resources and Web links

ASP.NET State Management Overview (MSDN)
http://msdn.microsoft.com/en-us/library/75x4ha6s.aspx

ASP.NET Page Life Cycle Overview (MSDN)
http://msdn.microsoft.com/en-us/library/ms178472.aspx

Additional notes to the instructor:

- Student Activity 4.2 reinforces the stages of the page life cycle and is included as an example of a project that could be assigned if there is time or if you are introducing the concepts for the first time. While the information found in this lesson can be reviewed in much more detail (such as implementation of code), an understanding of these concepts is what is assessed, not the actual use of code.