REVIEW LESSON

MTA Course: Web Development Fundamentals
Lesson name: Web Development Fundamentals 1.4
Topic: Understand events and control page flow (One 50 minute class period)
File name: WebDevFund_RL_1.4

Lesson Objective:

1.4: Understand events and control page flow. *This objective may include but is not limited to:* application and page life cycle events; page events; control events; application events; session events; cross-page posting; Response.Redirect; Server.Transfer; IsPostBack; setting AutoEventWireup.

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 the review lesson.

Students should have experience with developing dynamic Web pages that use various Web controls that are wired to events. Students should be able to describe an application/page life cycle using an existing website as a model.

Instructor preparation activities

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

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

- WebDevFund_PPT_1.4
- WebDevFund_SA_1.4
- WebDevFund_SA_1.4_Key
- A Windows-based PC with installed Web development software..
  Examples include:
  - Visual Studio 2008
  - 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*)
- Index cards or paper for the warm-up activity.

Teaching Guide

Essential Vocabulary:

application life cycle—a series of processing steps executed within an ASP.NET application in a specific order when a request is made by a browser.

application life cycle events—events that occur during the application life cycle. To handle application life cycle events or methods, you can create a file named Global.asax in the root directory of your application, which ASP.NET compiles into a class derived from the HttpApplication class, and then uses the derived class to represent the application. These events can then be handled as application events.

page life cycle events—a series of events that occur when an ASP.NET page is requested by a browser, such as: PreInit, Load, and Render. These events always occur in the same order, which is referred to as the *page event life cycle.*

control events—events which are initiated by actions performed on specific controls, such as a Button control's Click event or a TextBox control's TextChanged event.

application events—key events that are invoked by the HttpApplication object (e.g., BeginRequest, EndRequest, and Error)) during the lifetime of an application. ASP.NET automatically binds application events to handlers in the Global.asax file using the naming convention **Application**_*event*, such as: Application_Start, Application_End, and Application_Error.

session events—events that occur during a user's session. ASP.NET provides two events that help you manage user sessions: Session_Start and Session_End.

cross-page posting—the process of posting one page to another page. For example, creating a multi-page form that collects different information on each page. This process can be detected using the IsCrossPagePostBack method of the page or user control object being loaded.

Response.Redirect – the Redirect method causes the browser to redirect the client to a different Uniform Resource Locator (URL). All processing on the original page ceases, and the new page begins to load instead. The browser's address bar reflects this change by displaying the new URL.

Server.Transfer—the Transfer method requests that the server begin executing a different page instead of the currently loading page. The server sends all the information that has been assembled for processing by the original .aspx file to the second .aspx file. Because this transfer occurs on the server, rather than the client, the client's browser is unaware of the new page and will still display the original URL in its address bar as the new page is rendered in the browser.

IsPostBack—A Boolean value indicating whether a page or user control is being loaded in response to a client postback (*posting a page back to itself*), or if it is being loaded and accessed for the first time.

AutoEventWireup—Boolean attribute that indicate whether events of a Web Forms page are autowired (or whether the connection between an object's event and the event procedure that responds to the event is *automatically* created). If AutoEventWireup is set to false, you may name the objects' events in any way you wish, but if it is set to true, then the event names must match specific expected event names.

Lesson Sequence

Activating prior knowledge/lesson staging (10 minutes)
Warm-up Activity—"Last Word"

1. Students write three examples of a Web application event and a brief description of each one's function.
2. The activity starts with one student. That student states the event written on his or her paper.
3. That same student asks another student to define it.
4. The student who defined the term will then ask another student a question about that term.
5. Finally, the original student who began the activity is given an opportunity to add/clarify the definition (giving him or her the "last word").
6. Repeat the process beginning with other students until the key events in this lesson are adequately defined.

Lesson activity (30 minutes)

1. Use the PowerPoint presentation WebDevFund_PPT_1.4 to review the concepts for this lesson.
2. Distribute Student Activity Worksheet WebDevFund_SA_1.4. Refer to the WebDevFund_SA_1.4_Key file for solutions.
3. Discuss the key objectives of the review assignment.
4. Students complete the assignment and report back to class.

Assessment/lesson reflection (10 minutes)

1. Ask students to discuss their solution to the review assignment.
2. Ask some students to display their solution to the class using the LCD projector.
3. Wrap up the lesson and provide homework/enrichment opportunities.

Microsoft resources and Web links

Page Lifecycle Events:
http://www.asp.net/learn/videos/video-6558.aspx
http://msdn.microsoft.com/en-us/library/ms178472.aspx

Microsoft ASP.NET:
http://www.asp.net

Suggested best practices:

- It may be beneficial to display code examples using the LCD projector for each of the major concepts, particularly when the vocabulary is being reviewed. Randomly choose students to come up in front of the class to demonstrate the concepts. It may be effective for students to complete this activity in small groups.