

TRAINER PREPARATION GUIDE 4.2: UPDATE THE UI BY USING JAVASCRIPT

Lesson Objective 4.2:

Update the UI by using JavaScript.

Required materials to teach this lesson:

1. Microsoft® Expression® Studio 4 (preferred)
2. 98-375-ENU-4.2-LP
3. 98-375-ENU-4.2-IC
4. 98-375-ENU-4.2-ICKey
5. 98-375-ENU-4.2-PC

Preparation tasks

Technical preparation activities:

1. The demonstration shows the students how to use JavaScript to review the HTML to dynamically add elements to a web page.
2. Copy the code below into an empty HTML page (this code works in Internet Explorer® 9, but not Firefox):

```
<!DOCTYPE html>
<html>
<head>
<meta charset=utf-8>
<title>JavaScript Demonstration</title>
<Script>
function createRadioButton()
{
    // Create radio button object with value="First Choice" and then
insert
    // this element into the document hierarchy.
    var newRadioButton = document.createElement("<INPUT TYPE='RADIO'
NAME='RADIOTEST' VALUE='First Choice'>")
    document.body.insertBefore(newRadioButton);
    // Create radio button object with value="Second Choice" and then
insert
    // this element into the document hierarchy.
    newRadioButton = document.createElement("<INPUT TYPE='RADIO'
NAME='RADIOTEST' VALUE='Second Choice'>")
    document.body.insertBefore(newRadioButton);
}
</Script>
</head>
<body>
<INPUT TYPE="BUTTON" ONCLICK="createRadioButton()" VALUE="Create two Radio
Buttons"><BR>
<INPUT TYPE="BUTTON" ONCLICK="alert ( document.body.outerHTML )"
VALUE="Click here to see HTML">
</body>
</html>
```

3. When you preview the page in a browser, click the Create two Radio Buttons button. Two radio buttons are added. Click the second button to see the HTML with the new code added.

4. **Vocabulary:**

element: the combination of a set of tags, any content contained between the tags, and any attributes the tags may have. Elements can be nested, one within the other.

event: an actions or occurrence, often generated by the user, to which a program might respond—for example, a key press, button click, or mouse movement.

5. **Additional readings and resources:**

MSDN®:

JavaScript Fundamentals: [http://msdn.microsoft.com/en-us/library/d1et7k7c\(v=VS.94\).aspx](http://msdn.microsoft.com/en-us/library/d1et7k7c(v=VS.94).aspx)

JavaScript Reference: [http://msdn.microsoft.com/en-us/library/yek4tbz0\(v=VS.94\).aspx](http://msdn.microsoft.com/en-us/library/yek4tbz0(v=VS.94).aspx)

Other resources (books, e-reference):

JavaScript Kit: <http://www.javascriptkit.com/javatutors/>

W3Schools JS & DOM Reference: http://www.w3schools.com/jsref/dom_obj_event.asp

Textbook: JavaScript & jQuery: McFarland, D. S. (2012). JavaScript & JQuery. Sebasopol: O'Reilly Media, Inc.

Note: Support for HTML5 and CSS3 is changing and developing quickly. The list of resources is current as of January 2012. Check resources for current and up-to-date information at the time of classroom use.

Instructor computer setup:

1. A workstation with Expression Web 4 (with Service Pack 2) or Notepad (preferably Notepad ++).

Instructional preparation activities:

1. Review the instructor suggestions in the notes view of Microsoft PowerPoint® presentation 98-375-ENU-4.2-LP.
2. Make copies of student documents available as needed.
3. Complete the instructions for the demonstration before class.

Lesson sequence (50 minutes)

Activating prior knowledge/lesson staging (5 minutes):

Instruct students to answer each question in the “Guiding questions” section of the In-class Activity document or in their personal class notes.

Guiding questions:

1. **How can JavaScript be used to change the appearance of a web page?** Developers can use JavaScript to change the properties of an element, hide an element, add an element, or delete elements from a page. JavaScript locates the content using the id of the tag, the class name, or the tag name.
2. **What events can be used to trigger a JavaScript function?** There are many events that occur from the moment the web page is loaded until the time the user closes the browser window. They include page load, pressing buttons, mouse events (mouse over, mouse out, mouse click), selecting an input field in an HTML form, submitting a form, and even keystrokes.

Lesson activity (35 minutes):

1. Teacher instruction
 - a. Use the PowerPoint presentation 98-375-ENU-4.2-LP to review the process of updating the UI by using JavaScript.
 - b. An In-class Activity document is available for use as needed.

Lesson review (10 minutes):

1. Lead students in a discussion of the guiding questions.
2. During and after the discussion, have students list any questions they have or any topics with which they would like more assistance.
3. Have students work in pairs to answer the additional questions written by students. Answer any questions that cannot be answered by students, or collect them for follow-up later.
4. Provide the Post-class Activity document for additional review.