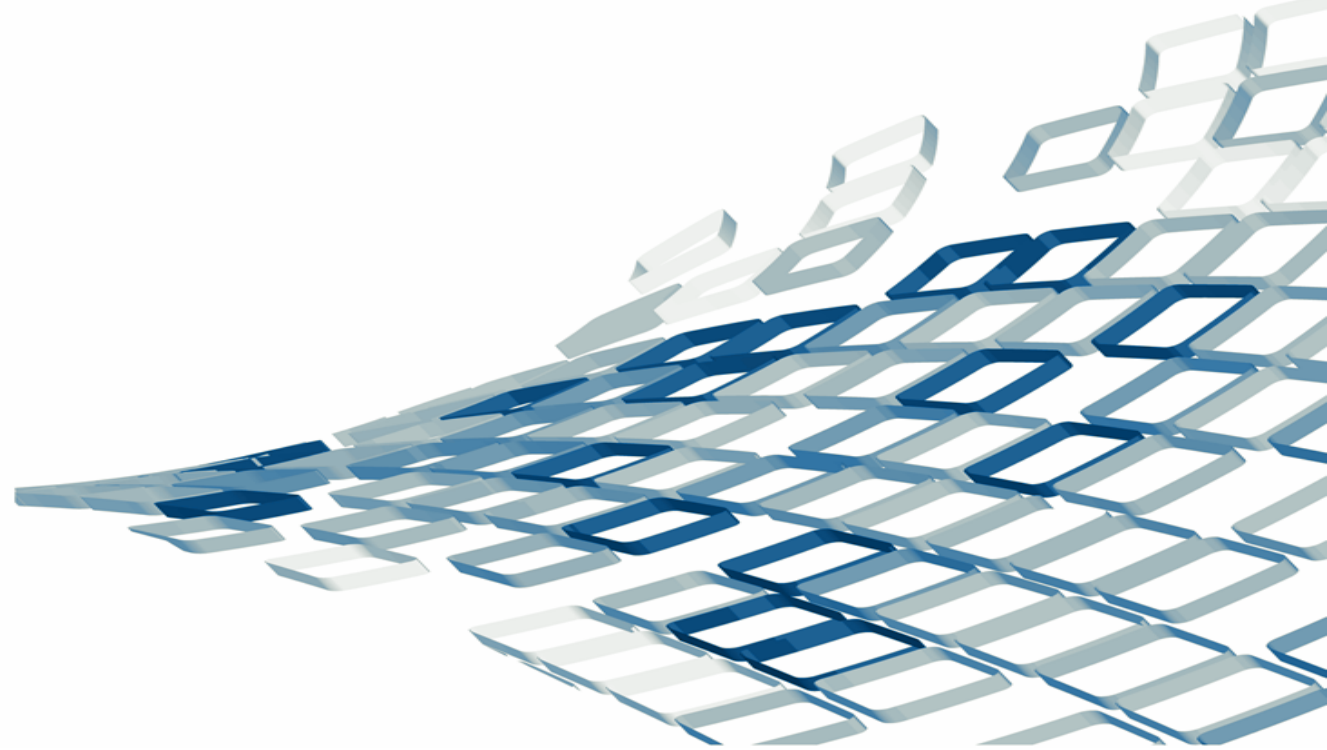




Certified Internet
Web Professional

Lesson 12: JavaScript and AJAX



Objectives

- Define fundamental AJAX elements and procedures
- Diagram common interactions among JavaScript, XML and XHTML
- Identify key XML structures and restrictions in relation to JavaScript
- Explain how the *XMLHttpRequest* object interacts with XML
- Use the *XMLHttpRequest* object to retrieve data
- Describe typical AJAX-based requests
- Identify key server response issues related to AJAX-based requests
- Use JavaScript to communicate with databases
- Identify alternatives to XML-based AJAX

Introduction to AJAX

- AJAX (Asynchronous JavaScript and XML)
 - A technology that combines functionality from JavaScript and XML to allow a Web page to reload only a specified portion, rather than the entire page, in response to a request
- The *XMLHttpRequest* object
 - A JavaScript object that is used to request either XML data or plaintext data from a Web server

Introduction to XML

- XML (Extensible Markup Language)
 - A meta-language that enables the developer to create unique tags for structuring Web documents based on context rather than appearance
- Valid XML
 - Is well-formed and references a DTD
- Well-formed XML
 - Conforms to strict, specific syntax rules

Interactions Among JavaScript, XML and XHTML

- Common interactions in AJAX
- Relating XML structures and restrictions to JavaScript
 - Key structures
 - Restrictions
- How *XMLHttpRequest* interacts with XML

Using AJAX Scripts

- There are three basic JavaScript functions in a typical AJAX request:
 - A function that creates an HTTP request
 - A function that calls and submits the HTTP request
 - A function that handles the data returned to the page

AJAX and Servers

- Typical AJAX-based requests
 - Returning server variables from the server to the client
 - Parsing XML and data
 - Sending entire pages of information in a native language to the server for interpretation and retrieval
- Server response issues with AJAX
 - Partial responses
 - Unfinished responses

AJAX and Databases

- Relational databases
 - Relationships in databases
- Using AJAX with a database
- Security issues with AJAX and databases

Usability Issues with AJAX

- Bookmarking
- Search engines
- Back button
- Script blocking
- ActiveX blocking

Combining AJAX with Libraries

- AJAX
 - Works well with data and server-side applications
 - Works well with JavaScript libraries

Alternatives to XML-based AJAX

- Java applets
- Adobe Flash
- Microsoft Silverlight

Summary

- ✓ Define fundamental AJAX elements and procedures
- ✓ Diagram common interactions among JavaScript, XML and XHTML
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- ✓ Use the *XMLHttpRequest* object to retrieve data
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- ✓ Use JavaScript to communicate with databases
- ✓ Identify alternatives to XML-based AJAX

Lesson 12 Quiz

1. AJAX refreshes the Web page by:
 - a. using Microsoft APIs and function calls from the DOM.
 - b. re-requesting the page from the database using SQL commands.
 - c. making server requests via XMLHttpRequest to refresh the entire page.
 - d. making server requests via XMLHttpRequest to refresh the requested portion of the page.

Lesson 12 Quiz

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 - d. making server requests via XMLHttpRequest to refresh the requested portion of the page.**

Lesson 12 Quiz

2. To be considered well-formed, XML code must conform to strict syntax rules. In order to be considered valid, an XML document must:

- a. reference the DOM.
- b. be well-formed and reference a DTD.
- c. be used in an AJAX implementation.
- d. use tags specified by XHTML Transitional.

Lesson 12 Quiz

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Lesson 12 Quiz

3. Consider the following script:

```
if(navigator.appName == "Microsoft Internet Explorer") {  
    http = new ActiveXObject("Microsoft.XMLHTTP");  
} else {  
    http = new XMLHttpRequest();  
}
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This code will:

- a. check to see if the script uses AJAX.
- b. ensure the script exits gracefully if XMLHttpRequest is invalid.
- c. check for browser compatibility.
- d. check for ActiveX objects running.

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Lesson 12 Quiz

4. Which choice demonstrates the proper syntax for linking an external AJAX/JavaScript file?

- a. `<script href="jquery-1.4.4.min.js" />`
- b. `<script href="jquery-1.4.4.min.js"></script>`
- c. `<script src="jquery-1.4.4.min.js" />`
- d. `<script src="jquery-1.4.4.min.js"></script>`

Lesson 12 Quiz

4. Which choice demonstrates the proper syntax for linking an external AJAX/JavaScript file?

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- b. `<script href="jquery-1.4.4.min.js"></script>`
- c. `<script src="jquery-1.4.4.min.js" />`
- d. **`<script src="jquery-1.4.4.min.js"></script>`**

Lesson 12 Quiz

5. Which of the following is an alternative to XML-based AJAX?
- a. Flash
 - b. Structured Query Language (SQL)
 - c. The *HTMLHttpRequest* object
 - d. JavaScript

Lesson 12 Quiz

5. Which of the following is an alternative to XML-based AJAX?
- a. Flash**
 - b. Structured Query Language (SQL)
 - c. The *HTMLHttpRequest* object
 - d. JavaScript