

## **Core Ajax Fundamentals**

### **Course Summary**

#### **Description**

*Core Ajax Fundamentals* is an in-depth Ajax training course geared for software developers who need to understand what Ajax is and how to use it with today's systems and architectures. This comprehensive course provides a balanced mixture of theory and practical labs designed to take students from the fundamentals of AJAX and its underlying technologies through to the use of tools and libraries to ease the development of AJAX applications. Graduates will hit the ground running, applying AJAX to projects at both an architectural as well as a line by line coding level. Students who attend this course will leave this course armed with the required skills to design, implement, and deploy robust, flexible, and safe AJAX-based applications. Asynchronous JavaScript and XML (AJAX) is an approach to developing web applications that is enabling significant changes in the way users interact with web applications. AJAX uses a combination of technologies to deliver more responsive and usable content to browsers. Depending on the configuration, potential technologies used include HTML/XHTML, CSS, JavaScript, DOM, XML, XPath, XSLT, and the XMLHttpRequest object. Ajax is a loosely coupled group of technologies and techniques. As such, there are a wide variety of options, tools, and approaches that can be used in conjunction with the basic Ajax approach. The Dojo toolkit and JSON are two of the more commonly used options and are covered in this course as well.

#### **Objectives**

**At the end of this course, students will be able to:**

- Understand what Ajax is and how it is used within the context of web applications
- Work with the different technologies that are the foundation for Ajax.
- Understand and work with the fundamental aspects of Ajax in terms of web applications, security, tools, and frameworks
- Design and implement the transport and processing of data using the various options for data interchange and processing.
- Understand the wide variety of options, tools, and approaches that can be used in conjunction with the basic Ajax approach
- Work with the Dojo toolkit and JSON
- Examine application security, ranging from web and XML application issues to the vulnerabilities and threats that are specific to AJAX

#### **Topics**

- Introduction to Ajax
- Ajax Foundation
- Ajax Fundamentals
- JavaScript Object Notation (JSON)
- XSLT and Ajax

#### **Audience**

This is a basic level AJAX training course, designed for those needing an introduction to concepts and technologies associated with AJAX and its related recommendations.

#### **Prerequisites**

Previous experience or working knowledge of HTML and JavaScript is helpful but not essential.

#### **Duration**

Three days

Due to the nature of this material, this document refers to numerous hardware and software products by their trade names. References to other companies and their products are for informational purposes only, and all trademarks are the properties of their respective companies. It is not the intent of ProTech Professional Technical Services, Inc. to use any of these names generically

## Core Ajax Fundamentals

### Course Outline

#### **I. Introduction to Ajax**

- A. Ajax Overview
- B. What is Ajax?
- C. Ajax Technologies
- D. Ajax Architecture
- E. Ajax Flow of Control and Processing

#### **II. Ajax Foundation**

- A. XMLHttpRequest (XHR) Mechanics
- B. XMLHttpRequest Overview
- C. Working with the XHR Object
- D. XHR Operations and Properties
- E. JavaScript Mechanics
- F. JavaScript Overview
- G. JavaScript Syntax, Functions, Objects and Events
- H. JavaScript Best Practices
- I. CSS Mechanics
- J. CSS Overview
- K. Declaring CSS
- L. Controlling Display and Position
- M. Overriding Tag Behavior
- N. Working with Custom Classes
- O. DOM Mechanics
- P. DOM Overview
- Q. JavaScript Events and the DOM
- R. Accessing Information in the DOM
- S. Modifying the DOM using JavaScript
- T. InnerHTML
- U. XML Mechanics
- V. XML Overview

#### **W. XML DOM**

- X. Accessing and Modifying the XML DOM
- Y. JavaScript Applied in Ajax
- Z. Handling Requests
- AA. Object Manipulation
- BB. Refactoring JavaScript in Ajax

#### **III. Ajax Fundamentals**

- A. Ajax Applications
- B. Example Forms
- C. Data Processing
- D. Ajax Tools and Frameworks
- E. Tool and Framework Overview
- F. Dojo
- G. Prototype and Other Frameworks

#### **IV. JavaScript Object Notation (JSON)**

- A. JSON Overview
- B. Architecture and Use
- C. JSON Object Concepts
- D. JSON Syntax
- E. JSON Processing
- F. JSON Considerations

#### **V. XSLT and Ajax**

- A. XSLT Fundamentals
- B. XSLT processing
- C. XSLT constructs
- D. XSLT Applied
- E. Browsers
- F. Sarissa