

Building Web Applications with ASP.NET and Ajax: Hands-On - 4 Days

Course 506 Overview

- You Will Learn How To**
- Create multitier Web applications using Visual Studio, ASP.NET and Ajax
 - Design for data independence with Entity Framework, LINQ and ADO.NET
 - Leverage distributed sessions, page inheritance and caching in ASP.NET
 - Program a business layer with stateful objects and distributed transactions
 - Create a more responsive User Interface (UI) using Ajax Extensions and the Ajax Control Toolkit
 - Develop fast, efficient Web pages with WCF Web services and jQuery
- Course Benefits** Modern Web sites need to be able to handle simultaneous users while providing a fast, responsive Web 2.0 interface. In this course, you create a multitier Web site using Visual Studio and .NET. You learn how to create a scalable architecture, use WCF services and MSMQ for asynchronous distributed programming, and how to enhance the UI with Ajax Extensions, the Ajax Control Toolkit and jQuery.
- Who Should Attend** Those programming robust Web applications. Programming experience at the level of Course 503, "Visual Basic Programming for .NET," or Course 419, "C# Programming," and Web development experience are assumed. ASP.NET and JavaScript experience are helpful.
- Hands-On Training** You gain experience building a scalable application. Exercises, presented in VB or C#, include:
- Creating custom business entities
 - Building a data access layer
 - Exploiting ASP.NET security features for Web UIs
 - Programming transactional components
 - Building a richer UI using Ajax Extensions
 - Connecting Ajax to WCF Web services
 - Building DHTML with jQuery
 - Implementing message queuing
 - Manipulating XML on the client
 - Dynamically switching ASP.NET themes and masters

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Course 506 Outline

Architecture of Scalable Applications

- N-tier applications
- Distributed objects vs. clustering
- Communication between layers
- Challenges of a Web farm environment

Building the Data Layer

Designing for data independence

- Implementing the Repository pattern
- Working with business objects
- Defining interfaces for communication between layers

Selecting a data access technology

- Maximizing efficiency with ADO.NET
- Utilizing the Entity Framework
- Simplifying data access with LINQ to SQL

Constructing the Presentation Layer

Working with ASP.NET controls

- Handling control events
- Binding business components with ObjectDataSource
- Exploiting simple and complex data binding

Implementing Web security

- Authenticating anonymous Internet users
- Achieving role-based Web security
- Integrating Microsoft security tables with an existing database

Building Web Forms

- Inheriting from a base page
- Dynamically switching themes and master pages

Managing state for Web farms

- Sticky sessions vs. dynamic load balancing
- Implementing distributed session state
- Leveraging caching for performance and scalability
- Filtering, sorting and aggregating with LINQ to Objects

Implementing the Business Layer

Programming the middle tier

- Encapsulating business logic in stateful business entity objects

- Managing concurrency
- Employing promotable .NET transactions
- Distributing transactions across multiple transaction servers

Sending Asynchronous Distributed Messages

- Utilizing Microsoft Message Queue (MSMQ)
- Reading from, and writing to queues using the System.Messaging namespace

Building More Responsive ASP.NET

Pages with Ajax

Creating a richer UI with Ajax extensions

- Integrating Ajax and existing pages
- Increasing responsiveness with the UpdatePanel
- Utilizing AsyncPostBack Triggers for conditional updates
- Using Ajax with Master Pages via ScriptManagerProxy

Leveraging the Ajax Control Toolkit

- Linking DropDownList with CascadingDropDown controls
- Writing and calling an Ajax-enabled WCF Web service
- Implementing the Ajax Accordion control

Enhancing Web Form controls with Ajax control extenders

- Creating modal dialogs with the ModalPopup control
- Simplifying dates with the CalendarExtender
- Responding to user input with the AutoComplete extender
- Guiding the user with TextBoxWatermark

Developing with jQuery

Manipulating HTML with jQuery

- Investigating jQuery syntax
- Returning wrapped sets with the jQuery function
- Responding to DOM loading with the .ready() function
- Traversing the DOM with selectors

Creating DHTML with jQuery

- Manipulating JSON and HTML

- Updating client HTML pages with jQuery
- Animating changes to HTML

Leveraging Microsoft JavaScript

- Building HTML templates
- Binding data on the client
- Improving performance with the Content Delivery Network
- Reducing script size with the Microsoft Minifier

Deploying Web Packages

- Packaging for deployment
- Transforming the Web.config for release
- Importing Web packages in IIS