Designing and Developing Web Applications by using the Microsoft .NET Framework

- Course Number: 70-547
- Length:

Certification Exam

This exam is part of a series of exams in pursuit of the MCPD certification.

Course Overview

This exam is an essential step to achieving the MCPD certification: the premier certification that highlights your job role, featuring your specific area of expertise. Now it is easy to distinguish yourself as an expert in Web development.

Prerequisites

Candidates should have a working knowledge of Visual Studio 2005, a sound knowledge of the new features of ASP.NET 2.0 and at least two years of experience developing applications by using the Microsoft .NET Framework.

Candidates should have at least three to four years of on-the-job experience dedicated to Web application development. In most cases, candidates will be full-time developers, who develop server-side ASP.NET code that creates the browser-based, client-side interface to an application.

Also, candidates should have worked in the following phases of the application life cycle:

- Technical envisioning and planning
- Design and development
- Stabilizing and releasing

In addition, candidates should be able to design and develop the Web interface of common business applications, such as:

- Web-based client applications, both intranet and Internet, that may connect to data stores or middle-tier business logic
- Data-oriented applications that provide data entry, data analysis, and reporting capabilities
- Workflow and communication applications
- Inventory and resource planning applications
- Financial and accounting applications
- Applications for the insurance and pharmaceutical industries
- Business-to-business (B2B) applications
- Business-to-customer (B2C) applications
- Company Web sites
- Web-based shopping cart applications

**Audience**

Candidates typically work on a team in a medium or large development environment that uses Microsoft Visual Studio .NET 2003 Enterprise Developer or Visual Studio 2005.

**Course Outline**

- Module 1 - Requirements and Design
  - Requirements and Design
  - Introduction
  - Gathering Requirements
  - User Requirements
  - Functional Requirements
  - Quality of Service Requirements
  - Use Cases vs. Requirements
  - Technology Recommendation
  - Data Storage
  - Logical Model
  - Application Layers
  - Demo - Requirements and Design
  - Module 1 Review
  - Module 2 - Decomposing Specifications for Developers
  - Decomposing Specifications for Developers
  - Objects & Relationships
  - Object Role Modeling (ORM)
  - Define Application Layers
  - Layers of a Windows Application
  - Application (Physical) Models for Developers
  - Demo - Decomposing Design
  - Module 2 Review
  - Module 3 - Design Evaluation
  - Design Evaluation
  - Performance Evaluation
  - Scalability Evaluation
  - Availability and Recoverability
  - Security
  - Maintainability
  - Data Integrity
  - Demo - Design Evaluation
  - Module 3 Review
  - Module 4 - User Interface
  - User Interface
  - Layout
• Cross-Page Posting & Validation
• Menus
• Common UI Layout
• Choosing Controls
• Analyzing Data
• Existing Controls
• Globalization
• Demo - User Interface
• Module 4 Review
• Module 5 - Creating and Choosing Controls
• Creating and Choosing Controls
• Choosing Controls
• Analyzing Data
• Existing Controls
• Globalization
• Demo - Creating and Choosing Controls
• Module 5 Review
• Module 6 - Data Validation and User Assistance
• Data Validation and User Assistance
• Data Validation
• Validation Control Properties
• Validation Controls Available
• User Assistance
• Wizard Control
• Reporting Exceptions
• User Assistance: Things To Avoid
• Demo - Data Validation
• Module 6 Review
• Module 7 - Multimedia in Windows Applications
• Multimedia in Windows Applications
• Overview
• Audio Formats
• Audio Compression
• Video Formats
• Video Compression
• Challenges
• Module 7 Review
• Module 8 - Component Design
• Component Design
• Database Design
• Entity Relationships
• Designing the Component
• Prototype & Guidelines
• Module 8 Review
• Module 9 - Component Development
• Component Development
- Extend, Compose, or Implement Class Hierarchies
- Stateful or Stateless
- Multithreading
- Unmanaged Resources
- Module 9 Review
- Module 10 - Reusable Software Components
- Reusable Software Components
- Consuming Reusable Components
- Extending & Restricting
- Module 10 Review
- Module 11 - Application Logic Layer
- Application Logic Layer
- Organizing Application Logic
- Data Storage
- Module 11 Review
- Module 12 - Logging and Monitoring Applications
- Logging and Monitoring Applications
- Logging & Monitoring
- Logging Data
- Logging Data Format
- Logging Location
- Monitoring the Application
- Demo - Logging and Monitoring
- Module 12 Review
- Module 13 - Application Configuration
- Application Configuration
- What to Store
- Concerns
- Location
- Updatable Data
- Persistence
- Isolated Storage
- More Places to Store Settings
- Custom Provider
- Formatting Settings
- Demo - Application Configuration
- Module 13 Review
- Module 14 - Testing Strategy
- Testing Strategy
- Testing
- Unit Testing
- Managing and Storing Unit Tests
- Unit Test Conditions
- Best Practices
- Evaluating Test Strategies
- Load Testing
Module 14 Review
Module 15 - Creating Development Tests
Creating Development Tests
Overview
Effective Unit Tests
Unit Test Framework
Create Test Cases
Evaluate Properties and Methods for Testing
Sample Use Case Scenario
Sample Use Case
Alternate Cases
Structure of Test Case
Code Review
Demo - Creating Development Tests
Module 15 Review
Module 16 - Deploying an Application
Deploying an Application
Overview
Deploying the Application
Elements of Deployment
GAC
Configuration Files
Module 16 Review
Module 17 - Supporting an Application
Supporting an Application
Overview
Application Tuning
Gathering Performance Info
Performance Monitor
Analyzing Performance Counters
CPU Performance
Performance
Module 17 Review
Course Closure