Programming in HTML5 with Java Script and CSS3

Duración del curso

4 días (32 hrs)

Descripción del curso

Este curso ofrece una introducción a HTML5, CSS3 y JavaScript. Prepara a los alumnos a adquirir conocimientos básicos de programación HTML5/CSS3/JavaScript. Este curso es un punto de entrada Web application y Windows store apps training paths. El curso se centra en el uso de HTML5/CSS3/Javascript para implementar la lógica de programación, definir y utilizar variables, realizar la operación de bucle y de ramificación, el desarrollo de interfaces de usuario, la captura y validación de la entrada del usuario, almacenar datos, y crear aplicaciones bien estructuradas.
Los escenarios de laboratorio de este curso están seleccionados para apoyar y demostrar la estructura de diversos escenarios de aplicación. Están diseñados para centrarse en los principios y componentes de codificación/estructuras que se utilizan para establecer una aplicación de software HTML5.

Perfil de público

Este curso está dirigido para aquellos perfiles profesionales de la programación interesados en el desarrollo de aplicaciones de telefonía móvil. También será de utilidad a diseñadores de soluciones de comunicación móvil y desarrolladores de web interesados en migrar el código existente a este tipo de dispositivos.
Para un máximo aprovechamiento del curso, es recomendable que los asistentes dispongan de conocimientos previos acerca de HTML, CSS y Javascript a niveles básicos.

Objetivos

A través de los contenidos presentados en el curso, el asistente entenderá la arquitectura y diseño básico en el que se pueden basar este tipo de desarrollos, conocerá las características de los navegadores móviles más importantes y llegará a dominar tecnologías relacionadas con la creación de pantallas como HTML5, CSS3 y Javascript. Además de todo lo anterior, se presentará a los alumno como superar las barreras propias del navegador y acceder a todo el hardware del teléfono, así como a los servicios del sistema operativo: agenda, código nativo.

Prerrequisitos:

- 1 a 3 meses de experiencia en la creación de aplicaciones web, incluida la escritura de código JavaScript simple.
- 1 mes de experiencia en la creación de aplicaciones cliente de Windows.
- 1 mes de experiencia en el uso de Visual Studio 2010 o 2012

Course outline

Module 1: Overview of HTML and CSS.

This module provides an overview of HTML and CSS, and describes how to use Visual Studio 2012 to build a Web application.

- Overview of HTML
- Overview of CSS
- Creating a Web Application by Using Visual Studio 2012

Lab: Exploring the Contoso Conference Application After completing this module, students will be able to:

- Describe basic HTML elements and attributes.
- Explain the structure of CSS.
- Describe the tools available in Visual Studio 2012 for building Web applications.

Module 2: Creating and Styling HTML5 Pages.

This module describes the new features of HTML5, and explains how to create and style HTML5 pages.

- Creating an HTML5 Page
- Styling an HTML5 Page

Lab: Creating and Styling HTML5 Pages After completing this module, students will be able to:

- Create static pages using the new features available in HTML5.
- Use CSS3 to apply basic styling to the elements in an HTML5 page.

Module 3: Introduction to JavaScript.

This module provides an introduction to the JavaScript language, and shows how to use JavaScript to add interactivity to HTML5 pages.

- Overview of JavaScript Syntax
- Programming the HTML DOM with JavaScript
- Introduction to jQuery

Lab: Displaying Data and Handling Events by Using JavaScript After completing this module, students will be able to:

- Explain the syntax of JavaScript and describe how to use JavaScript with HTML5.
- Write JavaScript code that manipulates the HTML DOM and handles events.
- Describe how to use jQuery to simplify code that uses many common JavaScript APIs.

Module 4: Creating Forms to Collect Data and Validate User Input.

This module describes the new input types available with HTML5, and explains how to create forms to collect and validate user input by using the new HTML5 attributes and JavaScript code.

- Overview of Forms and Input Types
- Validating User Input by Using HTML5 Attributes
- Validating User Input by Using JavaScript

Lab: Creating a Form and Validating User Input After completing this module, students will be able to:

- Create forms that use the new HTML5 input types.
- Validate user input and provide feedback by using the new HTML5 attributes.
- Write JavaScript code to validate user input and provide feedback in cases where it is not suitable to use HTML5 attributes

Module 5: Communicating with a Remote Data Source.

This module describes how to send and receive data to and from a remote data source by using an XMLHTTPRequest object and by performing jQuery AJAX operations.

- Sending and Receiving Data by Using XMLHTTPRequest
- Sending and Receiving Data by Using jQuery AJAX operations

Lab: Communicating with a Remote Data Source After completing this module, students will be able to:

- Serialize, deserialize, send, and receive data by using XMLHTTPRequest objects.
- Simplify code that serializes, deserializes, sends, and receives data by using the jQuery ajax method

Module 6: Styling HTML5 by Using CSS3.

This module describes how to style HTML5 pages and elements by using the new features available in CSS3.

- Styling Text
- Styling Block Elements
- CSS3 Selectors
- Enhancing Graphical Effects by Using CSS3

Lab: Styling Text and Block Elements using CSS3 After completing this module, students will be able to:

- Style text elements on an HTML5 page by using CSS3.
- Apply styling to block elements by using CSS3.
- Use CSS3 selectors to specify the elements to be styled in a Web application.
- Implement graphical effects and transformations by using the new CSS3 properties.

Module 7: Creating Objects and Methods by Using JavaScript.

This module explains how to write well-structured and easily-maintainable JavaScript code, and how to apply object-oriented principles to JavaScript code in a Web application.

- Writing Well-Structured JavaScript
- Creating Custom Objects
- Extending Objects

Lab: Refining Code for Maintainability and Extensibility After completing this module, students will be able to:

- Describe the benefits of structuring JavaScript code carefully to aid maintainability and extensibility.
- Explain best practices for creating custom objects in JavaScript.
- Describe how to extend custom and native objects to add functionality.

Module 8: Creating Interactive Pages using HTML5 APIs.

This module describes how to use some common HTML5 APIs to add interactive features to a Web application. This module also explains how to debug and profile a Web application.

- Interacting with Files
- Incorporating Multimedia
- Reacting to Browser Location and Context
- Debugging and Profiling a Web Application

Lab: Creating Interactive Pages by Using HTML5 APIs After completing this module, students will be able to:

- Use the Drag and Drop, and the File APIs to interact with files in a Web application.
- Incorporate audio and video into a Web application.
- Detect the location of the user running a Web application by using the Geolocation API.
- Explain how to debug and profile a Web application by using the Web Timing API and the Internet Explorer Developer Tools.

Module 9: Adding Offline Support to Web Applications.

This module describes how to add offline support to a Web application, to enable the application to continue functioning in a user's browser even if the browser is disconnected from the network.

- Reading and Writing Data Locally
- Adding Offline Support by Using the Application Cache

Lab: Adding Offline Support to a Web Application After completing this module, students will be able to:

- Save and retrieve data locally on the user's computer by using the Local Storage API.
- Provide offline support for a Web application by using the Application Cache API.

Module 10: Implementing an Adaptive User Interface. This module describes how to create HTML5 pages that can dynamically detect and adapt to different devices and form factors.

- Supporting Multiple Form Factors
- Creating an Adaptive User Interface

Lab: Implementing an Adaptive User Interface After completing this module, students will be able to:

- Describe the need to detect device capabilities and react to different form factors in a Web application.
- Create a Web page that can dynamically adapt its layout to match different form factors.

Module 11: Creating Advanced Graphics.

This module describes how to create advanced graphics for an HTML5 Web application by using a Canvas element, and by using Scalable Vector Graphics.

- Creating Interactive Graphics by Using Scalable Vector Graphics
- Programmatically Drawing Graphics by Using a Canvas

Lab: Creating Advanced Graphics After completing this module, students will be able to:

- Use Scalable Vector Graphics to add interactive graphics to an application.
- Draw complex graphics on an HTML5 Canvas element by using JavaScript code.

Module 12: Animating the User Interface.

This module describes how to enhance the user experience in an HTML5 Web application by adding animations.

- Applying CSS Transitions
- Transforming Elements

- Applying CSS Key-frame Animations

Lab: Animating User Interface Elements After completing this module, students will be able to:

- Apply CSS transitions to elements on an HTML5 page, and write JavaScript code to detect when a transition has occurred.
- Describe the diverse types of 2D and 3D transitions available with CSS3
- Implement complex animations by using CSS key-frames and JavaScript code.

Module 13: Implementing Real-Time Communications by Using Web Sockets.

This module explains how to use Web Sockets to transmit and receive data between an HTML5 Web application and a server.

- Introduction to Web Sockets
- Sending and Receiving Data by Using Web Sockets

Lab: Implementing Real-Time Communications by Using Web Sockets After completing this module, students will be able to:

- Explain how Web Sockets work and describe how to send and receive data through a Web Socket. Use the Web Socket API with JavaScript to connect to a Web Socket server, send and receive data, and handle the different events that can occur when a message is sent or received.

Module 14: Creating a Web Worker Process.

This module describes how to use Web Worker Processes to perform long-running operations asynchronously and improve the responsiveness of an HTML5 Web application.

- Introduction to Web Workers
- Performing Asynchronous Processing by Using a Web Worker

Lab: Creating a Web Worker Process After completing this module, students will be able to:

- Describe the purpose of a Web Worker process, and how it can be used to perform asynchronous processing as well as provide isolation for sensitive operations.
- Use the Web Worker APIs from JavaScript code to create, run, and monito