20480 - Programming in HTML5 with JavaScript and CSS3

Duration: **5 days**

Overview:

This course provides an introduction to HTML5, CSS3, and JavaScript. This course helps students gain basic HTML5/CSS3/JavaScript programming skills. This course is an entry point into both the Web application and Windows Store apps training paths. The course focuses on using HTML5/CSS3/JavaScript to implement programming logic, define and use variables, perform looping and branching, develop user interfaces, capture and validate user input, store data, and create well-structured application.
The lab scenarios in this course are selected to support and demonstrate the structure of various application scenarios. They are intended to focus on the principles and coding components/structures that are used to establish an HTML5 software application.

Target Audience:

This course is intended for professional developers who have 6-12 months of programming experience and who are interested in developing applications using HTML5 with JavaScript and CSS3 (either Windows Store apps for Windows 8 or web applications).
This course is intended for students who have the following experience:

- 1 – 3 months experience creating Web applications, including writing simple JavaScript code
- 1 month experience creating Windows client applications
- 1 month of experience using Visual Studio 2010 or 2012

Pre-requisites:

Before attending this course, students must have at least three months of professional development experience. In addition to their professional experience, students who attend this training should have a combination of practical and

Module 1: Overview of HTML and CSS

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

Lab : Exploring the Contoso Conference Application
- Walkthrough of the Contoso Conference Application
- Examining and Modifying the Contoso Conference Application

Module 2: Creating and Styling HTML5 Pages

Lessons
- Creating an HTML5 Page
- Styling an HTML5 Page

Lab : Creating and Styling HTML5 Pages
- Creating HTML5 Pages
- Styling HTML5 Pages

Module 3: Introduction to JavaScript

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

Lab : Displaying Data and Handling Events by Using JavaScript
- Displaying Data Programmatically
- Handling Events

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

Lessons
- 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
- Creating a Form and Validating User Input by Using HTML5 Attributes
- Validating User Input by Using JavaScript

Module 5: Communicating with a Remote Data Source

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

Lab : Communicating with a Remote Data Source
- Retrieving Data
- Serialising and Transmitting Data
- Refactoring the Code by Using jQuery ajax method

Module 6: Styling HTML5 by Using CSS3

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

Lab : Styling Text and Block Elements using CSS3
- Styling the Navigation Bar
- Styling the Page Header
- Styling the About Page

Module 7: Creating Objects and Methods by Using JavaScript

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

Lab : Refining Code for Maintainability and Extensibility
- Inheriting From Objects
- Refactoring Code to Use Objects

Module 8: Creating Interactive Pages using HTML5 APIs

Lessons
- 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
- Incorporating Video
- Incorporating Images
- Using the Geolocation API

conceptual knowledge related to HTML5 programming.

At Course Completion:

After completing this course, students will be able to:

- Explain how to use Visual Studio 2012 to create and run a Web application.
- Describe the new features of HTML5, and create and style HTML5 pages.
- Add interactivity to an HTML5 page by using JavaScript.
- Create HTML5 forms by using different input types, and validate user input by using HTML5 attributes and JavaScript code.
- Send and receive data to and from a remote data source by using XMLHTTPRequest objects and jQuery AJAX operations.
- Style HTML5 pages by using CSS3.
- Create well-structured and easily-maintainable JavaScript code.
- Use common HTML5 APIs in interactive Web applications.
- Create Web applications that support offline operations.
- Create HTML5 Web pages that can adapt to different devices and form factors.
- Add advanced graphics to an HTML5 page by using Canvas elements, and by using and Scalable Vector Graphics.
- Enhance the user experience by adding animations to an HTML5 page.
- Use Web Sockets to send and receive data between a Web application and a server.
- Improve the responsiveness of a Web application that performs long-running operations by using Web Worker processes.

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Module 9: Adding Offline Support to Web Applications

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

Lab : Adding Offline Support to a Web Application
- Implementing the Application Cache
- Implementing Local Storage

Module 10: Implementing an Adaptive User Interface

Lessons
- Supporting Multiple Form Factors
- Creating an Adaptive User Interface

Lab : Implementing an Adaptive User Interface
- Creating a Print-Friendly Stylesheet
- Adapting Page Layout To Fit a Different Form Factor

Module 11: Creating Advanced Graphics

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

Lab : Creating Advanced Graphics
- Creating an Interactive Venue Map by Using Scalable Vector Graphics
- Creating a Speaker Badge by Using a Canvas Element

Module 12: Animating the User Interface

Lessons
- Applying CSS Transitions
- Transforming Elements
- Applying CSS Key-frame Animations

Lab : Animating User Interface Elements
- Applying Transitions to User Interface Elements
- Applying Key-Frame Animations

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

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

Lab : Implementing Real-Time Communications by Using Web Sockets
- Receiving Data from Web Socket
- Sending Data to a Web Socket
- Sending Multiple Types of Messages To or From a Web Socket

Module 14: Creating a Web Worker Process

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

Lab : Creating a Web Worker Process
- Improving Responsiveness by Using a Web Worker