Programming in HTML5 with JavaScript and CSS3 (MS-20480)

Modality: Virtual Classroom

Duration: 5 Days

SATV Value: 5

The exam associated with this course will retire on 31st January 2021. However, the course is still valid as training material for learning purposes.

About this course:

In search of in-depth app development training to kick start your career? This is the course you should be enrolling in!

This online app development training program is specifically constructed to ensure maximum learning opportunity for individuals in the IT industry. We have certified professionals giving valuable classes on app development starting at programming basics to creating fully equipped applications. This course is especially for those wanting to enter the world of Web applications and Windows applications. there is extensive information and training available for programming in HTML5, programming with CSS3, and programming with JavaScript. You must make use of Visual Studio 2012 version on Windows 8 to complete this program. After taking this course, you will be able to store data, develop user interfaces, use variables, and much more. You will also learn the various components of HTML5.

If you are successful in completing this app development training program, you will be earning an average of **$88,680** annually as a web developer.

Course Objective:

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.

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

This course is not intended for developers with three or more months of HTML5 coding experience.

Training prerequisites are essential for students who are not developers. This is meant only to ensure that you are able to learn properly from the program. if you have more than five years of experience in the field, this course might seem an important part of app development training process in syntax related programming activities.

Prerequisites:

You require a minimum of three months professional app development experience to enroll in this course.

Apart from having the aforementioned experience, students' part of this program must have adequate HTML5 programming knowledge, both conceptual and practical. This includes the following prerequisites:

- Understand the basic HTML document structure:
- How to use HTML tags to display text content.
- How to use HTML tags to display graphics.
- How to use HTML APIs.
- Understand how to style common HTML elements using CSS, including:
- How to separate presentation from content
- How to manage content flow.
- How to control the position of individual elements.
- How to implement basic CSS styling.
- Understand how to write JavaScript code to add functionality to a web page:
- How o create and use variables
- How to use:
- arithmetic operators to perform arithmetic calculations involving one or more variables

- relational operators to test the relationship between two variables or expressions
- logical operators to combine expressions that contain relational operators
- How to control the program flow by using if … else statements.
- How to implement iterations by using loops.
- How to write simple functions.

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.
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

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.
Lessons

- Creating an HTML5 Page
- Styling an HTML5 Page

Lab : Creating and Styling HTML5 Pages

- Creating HTML5 Pages
- 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.
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

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.
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

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.
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
- Serializing and Transmitting Data
- Refactoring the Code by Using jQuery ajax method

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.
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

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.
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

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.
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

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.
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

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.
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

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.
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

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.
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

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 different types of 2D and 3D transitions available with CSS3
- Implement complex animations by using CSS key-frames and JavaScript code