

HTML5 Application Development Fundamentals

Microsoft
Technology
Associate

Courseware 8375-1

Exam 98-375

Course Description

HTML5 Application Development Fundamentals is aimed at High School and College students interested in pursuing a career developing HTML5 client applications capable of running on touch-enabled devices. The MTA 98-375 focuses on HTML5, CSS and JavaScript as the core skills required to develop client-side applications. Students who complete this course will have reviewed all of the exam objectives and be on their way to preparing for Microsoft Technology Associate Exam #98-375. It can also serve as a stepping stone to the Microsoft Certified Solutions Associate (MCSA) or Microsoft Certified Solutions Developer (MCSD) certifications.

Course Series

This *HTML5 Application Development Fundamentals* courseware is one in the Microsoft Technology Associate Series. Other courses available in the series include:

- Software Development Fundamentals
- Database Administration Fundamentals
- Networking Fundamentals
- Windows Operating System Fundamentals
- Windows Development Fundamentals
- Web Development Fundamentals
- Security Fundamentals
- Windows Server Administration Fundamentals
- .NET Fundamentals
- Gaming Development Fundamentals
- Mobile Development Fundamentals
- Software Testing Fundamentals

The Microsoft Technology Associate Series contains exercises that students can use to learn each of the features discussed. The exercises in this course will create a hands on experience using HTML5, CSS3, and JavaScript that will help in preparing for the Microsoft MTA HTML5 Application Development Fundamentals exam.

Course Prerequisites

Pre-requisite knowledge includes a familiarity and comfort level using the Windows operating system and a basic understanding of directories, file locations, use of a web browser, URL's, and basic networking concepts such as the difference between a client and a server.



Course Outline

Lesson 1: Understanding Core Concepts

Lesson Objectives
Introduction to HTML5 Application Development

- HTML and W3C
- CSS and CSS3
- JavaScript Versus Java

HTML Tags and Elements

- Basic Tag Syntax
- HTML Elements and Nesting
- Deprecated Elements

Modifying an HTML Element Using Attributes

- Attributes and Attribute Syntax

Required Tags for All Pages

- The DOCTYPE
- Character Encoding and Entities
- Creating a Page with Required Tags

Developer Tools and HTML Editors

- Notepad and Notepad++
- Microsoft Visual Studio and DreamSpark
- Adobe Dreamweaver

Lesson Summary
Review Questions

Lesson 2: Displaying Text and Organizing Content

Lesson Objectives
Working with Text Elements

- Headings and Paragraphs
- Anchors and Hyperlinks
- HTML Text Elements with New Meaning
- New HTML5 Text Elements

Organizing Content

- Creating Lists
- Creating Tables

Semantic Elements

- What is Semantic HTML?

Forms and Validation

- Introducing Forms and Input
- Input Types and Form Elements
- Select Lists, Data Lists, and Text Areas

Lesson Summary
Review Questions

Lesson 3: Displaying Graphics and Media

Lesson Objectives
Using Tags to Display Graphics

- Images and Figures

Introducing HTML5 Graphics

Creating SVG Graphics
Using HTML5 Tags to Play Media

- HTML5 Video
- HTML5 Audio

Lesson Summary
Review Questions

Lesson 4: Understanding Core Concepts of CSS

Lesson Objectives
Introducing CSS

- CSS Internal, External, and Inline
- Understanding CSS Syntax
- CSS ID's and Classes
- CSS and the DIV Element
- CSS Dimension Properties
- CSS Text Properties
- CSS Font Properties
- CSS Link States and Pseudo-Classes
- CSS Pseudo-Classes
- CSS Nesting Selectors
- CSS Table Borders and Grouping

CSS Managing Content Flow

- Block and Inline Elements

CSS Positioning and Alignment

- Margins and Center Alignment

CSS Manage Content Overflow

- Content Overflow
- Scrolling Overflow
- Visible Overflow
- Hidden Overflow

Lesson Summary
Review Questions

Lesson 5: Arranging the User Interface using CSS Layouts

Lesson Objectives
The Box Model

CSS Flexible Box Layout

- Changing the Parent Flex Container

The Grid Layout Model

Lesson Summary
Review Questions

Lesson 6: Managing the Flow of Text Content Using CSS3

Lesson Objectives
Manage Content Flow

- Creating CSS Regions
- CSS Region Overflow

Multi-Column Layout and Hyphenation

- CSS3 Hyphenation

CSS Exclusions

- Adobe and CSS Exclusions

Lesson Summary

Lesson 7: Managing the Graphical Interface using CSS3

Lesson Objectives
Graphic Effects

- Rounded Corners
- Text and Box Shadows
- Background Gradients
- Radial Gradients
- Transparency

Text Effects

- Typography and Web Open Font Format

2D and 3D Transformations

- 2D Translate
- 2D Scale
- 2D Rotate
- 2D Skew
- Compound Transformations

Transitions and Animations

- Animations

SVG Filter Effects

Lesson Summary
Review Questions

Lesson 8: JavaScript Coding Essentials

Lesson Objectives
Introduction to JavaScript

- Client-side versus Server-side Processing
- JavaScript in HTML
- Browser Settings

Variables, Data Types, and Operators

- Variables and Data Types
- Operators

Changing Elements and Listening To Events

- Finding HTML Elements
- Manipulating Elements
- Finding CSS Selectors
- Listening to and Handling Events
- Event Listeners and Functions

JavaScript Conditions and Loops

- Loops

Using JavaScript Libraries

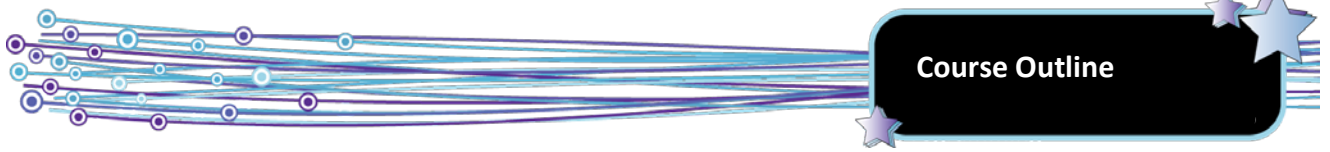
- jQuery
- jQuery Plugins

Lesson Summary
Review Questions

Lesson 9: JavaScript Graphics and Animations

Lesson Objectives
JavaScript and the HTML5 Canvas

- The Canvas Basics
- Drawing Rectangles and Boxes
- Drawing Lines



Course Outline

Using Scalable Vector Graphics

- Drawing Text on the Canvas
- Drawing an Image on the Canvas
- Create Animations using JavaScript
- JavaScript Animation using the Canvas
- JavaScript Libraries for the Canvas
- Lesson Summary
- Review Questions

Lesson 10: Access Data and Operating System Resources

- Lesson Objectives
- Access Data Using JavaScript
 - Accessing Data
 - IndexedDB
 - Web Storage
 - App Cache
- Lesson Summary
- Review Questions

Review Questions

Lesson 11: The Touch Interface and Accessing Devices

- Lesson Objectives
- Respond to the Touch Interface
 - Introduction to Touch Screens
 - Capture and Respond to Gestures
- Coding HTML5 APIs
 - Introduction to APIs
 - Geolocation API
 - Web Worker API
 - WebSocket API
 - File API
- Accessing Devices
 - Accessing the Camera Device
 - Accessing the Accelerometer
 - Accessing the GPS
- Lesson Summary
- Review Questions

- Drawing Circles and Arcs
- Gradients on the Canvas

Lesson 12: Managing the Application Life Cycle

- Lesson Objectives
- Understanding Platform Fundamentals
 - The Application Life Cycle
 - Packaging and the Runtime Environment
 - The Host Process
 - App Package and App Container
 - Credentials and Permission Sets
- Manage the State of an Application
 - States of an Application
 - Local and Session Storage
- Debug and test HTML5-based touch-enabled Applications
 - Validate Your Code
 - Validate Your Package
- Publish an Application to a Store
 - The Process of Publishing
 - Publish to the Windows Store
 - Third-Party Stores
- Lesson Summary
- Review Questions