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Information Technology & Training

Course 50564A:

Introduction to HTML5

Course Length: 2 days

Overview

This two-day instructor-led course provides students with the knowledge and skills to work with HTML5.

Target Student

This course is intended for students who have experience with HTML 4, basic CSS, and basic Java Script. Students will start by getting their hands dirty and jumping right into HTML5 code. They will learn about the new HTML5 structural, semantic, and form tags, how to use Canvas to create drawings natively in the browser, how to work with HTML5 audio and video, the new methods for storing variables client-side, and how to build applications that work offline. Along the way, they will learn about the current state of browser support for HTML5 and the theory behind all the changes that have been made.

Objectives

After completing this course, students will be able to:

- Start building HTML5 pages.
- Understand the major benefits of HTML5.
- Understand the difference between HTML5 and HTML 4.
- Be familiar with HTML5's new elements and attributes.
- Work with audio and video in HTML5.
- Work with HTML5's new Canvas element to create code-based drawings.
- Use Web Storage for offline applications.
- Use all the cool new HTML5 form elements.
- Understand the current state of browser support for HTML5 and how to make HTML5 sites degrade gracefully.

Prerequisites

Before attending this course, students must have:

- HTML 4
- Basic CSS
- Basic Java Script
- Experience in the following areas is beneficial:
 - JSON
 - DOM
 - Ajax

Course Content

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Module 1: Laying out a Page with HTML5

This lesson begins with a quick review of a basic HTML 4 page and then dives right in to HTML5 code. We are not going to spend time reviewing history or discussing the hows and whys here, but we will come back to that later (see Lesson 2). First, we want to get you looking at some code.

Lessons

Page Structure

New HTML5 Structural Tags

Page Simplification

Lab : Converting an HTML 4 Page to an HTML5 Page

In this exercise, you will convert a basic HTML 4 page to an HTML5 page. The CSS documents have already been created for you, such that, when you're finished, your HTML5 page should render exactly like the HTML 4 page.

After completing this module, students will be able to:

Lay out a page with HTML 4 (the "old" way).

Lay out a page with HTML5.

Understand the differences between the HTML5 and HTML 4 structures.

Understand the new HTML5 Doctype.

Understand the simpler script and style tags used in HTML5.

Module 2: HTML5 - How We Got Here

In this lesson, we will discuss the differences between HTML 4 and HTML5 (aside from the space and the number).

Lessons

The Problems HTML 4 Addresses

The Problems XHTML Addresses

The New, More Flexible Approach of HTML5 - Paving the Cowpaths

New Features of HTML5

The HTML5 Spec(s)

Current State of Browser Support

After completing this module, students will:

Understand what problems HTML 4 addresses.

Understand what problems XHTML addresses.

Understand how HTML5 addresses these problems.

Understand the new features of HTML5.

Know what is in the HTML5 Spec.

Understand browser support for HTML5.

Module 3: Sections and Articles

In HTML 4, we use the DIV tag to separate HTML pages into parts. Sometimes those parts were structurally meaningful. For example, a page describing a course might include an overview, goals, prerequisites, and an outline. Each of those parts might be enclosed in a DIV tag with meaningful ids to provide meaningful structure to the page. However, DIV tags are also used to separate parts of a page for styling purposes, for example, to create a column layout. In this case, the areas encompassed in DIV tags might not be structurally different.

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Browsers cannot distinguish between structurally meaningful and meaningless divs, so they do not attribute any special significance to either kind.

This lesson explains the purpose of and difference between SECTION and ARTICLE tags, how they differ from DIV tags, and how they affect a page's "outline."

Lessons

The section Tag

The article Tag

Outlining

Lab : Using section and article Elements

In this exercise, you will modify an HTML page we worked on earlier in the course to replace meaningless div elements with meaningful section and article elements.

Lab : Determining the Outline

In this exercise, you will try to determine the outline of an HTML page.

After completing this module, students will be able to:

Understand how to use SECTION and ARTICLE tags to eliminate inherent HTML 4 structure problems.

Understand what outlining is and how it is determined.

Understand how heading tags (H1, H2, etc.) affect a document's structure/outline.

Module 4: HTML5 Audio and Video

In this lesson, you will learn how to use the new HTML5 audio and video elements. As different browsers currently support different types of media, you will learn how to provide the necessary options to make your media work across browsers. You will also learn how to gracefully degrade your audio and video code.

Lessons

Supported Media Types

The audio Element

The video Element

Accessibility

Scripting Media Elements

Dealing with Non-Supporting Browsers

Lab : Video - Multiple Sources

In this exercise, you will create an HTML5 file from scratch that plays video files.

Lab : Media API

In this exercise, you will add a feature to the preceding demo that allows the user to jump to the beginning of a stanza.

After completing this module, students will be able to:

Use the AUDIO tag.

Use the VIDEO tag.

Detect audio and video failure.

Code for browsers that do not support the AUDIO and VIDEO tags.

Module 5: HTML5 Forms

The promise of HTML5 forms is great - richer, more meaningful, and backward-compatible forms that are consistent across browsers and include built-in client-side validation (read, no

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need for JavaScript for form validation). The current reality is far from great - only Opera does a half-way decent job of implementing most of the new form fields. That said there are some things you can do now to take advantage of Opera's implementation and be ready for other browsers without causing any harm in the non-supporting browsers.

So let's dig in and learn how to use the new HTML5 form features.

Lessons

Modernizr

New Input Types

HTML5 New Form Attributes

Some Other New Form Field Attributes

New Form Elements

Lab : An HTML5 Quiz

In this exercise, you will create an HTML5 quiz that validates form entries and reports the percentage of both the valid (but not necessarily correct) answers and the percentage of correct answers.

After completing this module, students will be able to:

Understand Modernizr, the JavaScript library for testing for HTML5 support.

Understand HTML5's new form fields and attributes.

Understand new types of inputs in HTML5.

Understand built-in HTML5 form validation.

Understand the new HTML5 output, progress, and meter elements.

Module 6: HTML5 Web Storage

In this unit, you will learn about local storage and session storage and the use cases for each.

You will also learn about some other client-side storage methods, one defunct and one up and coming.

Lessons

Overview of HTML5 Web Storage

Web Storage

Other Storage Methods

Lab : Creating a Quiz Application

In this exercise, you will create a quiz application that allows the user to save and resume later. It also protects the user from losing data if he/she accidentally refreshes.

After completing this module, students will be able to:

How to use the two client-side storage methods in the W3C's Web storage specification.

About the past and future of client-side storage.

Module 7: HTML5 Canvas

Canvas is one of the more talked-about new features of HTML5. It makes it possible to create drawings (e.g., for graphs or games) natively in the browser. If you know JavaScript, it is relatively easy to start using Canvas, which allows you to build intricate visual applications without the need of a plugin like Flash or Silverlight.

Lessons

Getting Started with Canvas

Drawing Lines

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Color and Transparency

Rectangles

Circles and Arcs

Quadratic and Bzier Curves

Images

Text

Lab : Drawing a Sailboat

In this exercise, you will use HTML5 canvas to draw a simple sailboat.

Lab : Drawing a Snowman

In this exercise, you will use circles and squares to create a snowman.

Lab : Images and Text

In this exercise, you will create a drawing of a map of South America using image files of a map and country flag graphics supplied.

After completing this module, students will be able to:

Get started with canvas.

Draw lines.

Draw rectangles and circles.

Reposition and rotate the canvas.

Create animations.

Module 8: Integrated APIs

HTML5 includes a bunch of integrated and associated (e.g., not specifically part of HTML5) APIs. In this lesson, we'll look at the Offline Application API and the Drag and Drop API.

Lessons

Offline Application API

Drag and Drop API

After completing this module, students will be able to:

Understand the new HTML5 APIs.