

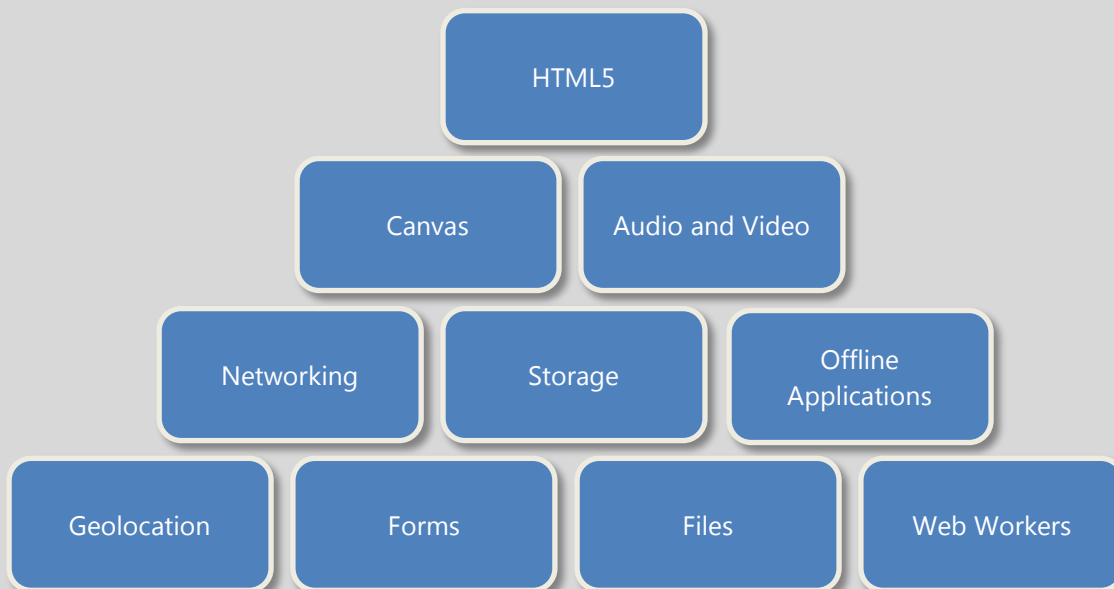
Mastering HTML5 with Jeff Prosize

HTML5 is the newest version of HTML, and it is taking the programming world by storm. It combines new markup elements with a host of new JavaScript APIs to bring HTML into the 21st century and to enable developers to build rich, feature-filled Web applications without relying on browser plug-ins such as Silverlight and Flash.

In addition, HTML5 can be used to build applications for mobile platforms such as iPhone, iPad, Android, and Windows Phone 7. The mobile market is highly fractured, meaning that if you wish to write an application for iPhone and Android using native APIs, you have to write the app twice. Write the app with HTML5 instead and it can be deployed to multiple platforms, often without having to resort to native APIs.

Mastering HTML5 provides developers with the knowledge and skills they need to leverage HTML5 to its fullest, whether the goal is to write richer browser-based applications or write-once, run-anywhere mobile applications. It includes in-depth coverage of the new markup elements and JavaScript APIs, and goes deep into features of HTML5 that are already supported in a wide range of browsers, including the new canvas API, audio and video APIs, geolocation, and Web storage.

The time to learn about HTML5 is now. **Mastering HTML5** will get you up to speed quickly and efficiently and prepare you to blaze new trails in the fast-evolving worlds of Web and mobile development.



Course Number
W1047

Duration
2 days

Formats
Virtual

Languages
JavaScript

Schedule
October 22nd-23rd
11 am – 6 pm ET

Pricing
\$499 per person, per
computer

Prerequisites
Persons who attend
Mastering HTML5
should have previous
experience working with
HTML and JavaScript to
build browser-based
applications.

Introduction to HTML5

What is HTML5, exactly? Believe it or not, there's not a simple answer to that question. In this introductory session, we'll analyze HTML5 and take a first look at its numerous features. We'll also lay the groundwork for the sessions that follow and come away with a knowledge of what comprises HTML5, who's driving it, and why every developer in the world today should care about it.

- What is HTML5?
- New markup elements
- New markup, old browsers (shims)
- New JavaScript APIs
- Browser support for HTML5
- New APIs, old browsers (polyfills)
- HTML5 tools and resources

Geolocation

One of the most exciting new features of HTML5 is the geolocation API, which allows you to write location-aware apps that run in the browser. Integrating geolocation data with mapping platforms such as Bing Maps enables developers to build a whole new genre of applications that simply weren't possible before without plugins. This session examines the geolocation API and introduces developers to the brave new world of location awareness.

- navigator.geolocation
- Getting the current location
- Tracking the current location
- Combining geolocation with Bing Maps

Audio and Video

HTML5 adds native support to HTML and JavaScript for rich media in the form of audio and video. In addition to introducing new `<audio>` and `<video>` elements, HTML5 builds a whole API around them for presenting media content in browsers and mobile devices the way *you* want to present it. Learn about these new elements and APIs and how to encode media for compatibility with a wide range of devices.

- The `<video>` element
- Video codecs and multiple sourcing
- The `<audio>` element
- Audio codecs and multiple sourcing
- The audio and video API

The Canvas API

The canvas API is arguably the most important new feature of HTML5. For the first time, developers can draw into the browser window using a pixel-addressable API, opening the door to kinds of applications that were never before possible without browser plug-ins. This session takes a deep dive into the canvas API and provides numerous examples of its uses, capabilities, and limitations.

- The <canvas> element
- CanvasRenderingContext2d
- Shapes, strokes, and fills
- Paths and clipping
- Text, shadows and images
- Pixel manipulation
- Canvas transforms
- Canvas animations
- Canvas state
- Layering with multiple canvases
- Composite operations

Web Storage

Web storage comes in two forms: local storage and session storage. Local storage permits browser-based applications to persist data permanently on the client, not unlike isolated storage in Silverlight. Session storage enables applications to store data transiently for the length of a browser session. While local storage and session storage only support unstructured data, indexed DB provides for the storage of structured data in a client-side database. This session introduces all three types of storage and presents the strengths and weaknesses of each.

- Local storage
- Session storage
- Storage events
- Indexed DB

Offline Applications

HTML5's offline applications specification describes how to write apps that can run when there's no Internet connection available. It's a key element in building applications that behave less like Web applications and more like native applications. Learn how to take apps offline and about the quirks of this new and important feature.

- What are offline applications?
- The cache manifest
- Taking an application offline
- The cache API

Networking

XMLHttpRequest Level 2 introduces several improvements to the JavaScript networking stack, including the ability to perform cross-domain calls. WebSockets connect clients and servers via duplex TCP connections and enable Web clients to send and receive data asynchronously. Learn about these features and others related to them, and how you can use them to build richer networking applications with HTML5.

- XMLHttpRequest Level 2
- Cross-origin resource sharing (CORS)
- Sending data with XMLHttpRequest
- Fetching data with XMLHttpRequest
- WebSockets
- The WebSockets protocol
- Sending data through WebSockets
- Receiving data from WebSockets
- Server-sent events (SSE)

Web Workers

Web workers bring multithreading to JavaScript. In this session, you'll learn about the ins and outs of Web workers and learn how to use them both to improve the responsiveness of your UI and to leverage multicore processors.

- Multithreading, JavaScript-style
- Dedicated workers vs. shared workers
- Sending messages to workers
- Receiving messages from workers
- Handling errors from workers
- PostMessage and data types
- Putting it all together

Files

HTML5 includes several new APIs allowing applications to read and write files, enumerate and manipulate files, and more. See the new file APIs in action and learn how to leverage them to build richer, more functional, and more compelling browser-based applications.

- File API
- FileReader API
- FileWriter API
- Blob and BlobBuilder API
- FileSystem API

Drag-and-Drop

HTML5's provides the infrastructure you need to build rich drag-and-drop UIs. Learn how to implement drag-and-drop in HTML5 browsers and also how to build applications that accept dropped files.

- Making elements draggable
- Drag events
- Attaching data to drag sources
- Converting elements into drop targets
- Drop events
- Consuming data from drag sources
- Accepting files through drag-and-drop

HTML5 Forms

HTML5 significantly richens the capabilities of HTML forms by introducing new `<input>` types, new `<input>` attributes, and built-in support for client-side validation of user input. See these features in action and learn how you can leverage them to build richer, more functional, and more compelling forms-based applications.

- New `<input>` types
- New `<input>` attributes
- Input validation

Cross-Platform Mobile Applications

HTML5 provides the foundation for writing cross-platform mobile applications – applications that run on Windows phones, iPhones, tablets of various types, and other devices. Combined with popular frameworks such as PhoneGap, it can be used to write rich apps that leverage native features of the platform such as cameras and accelerometers. This session teaches developers how to use HTML5 and PhoneGap to write great cross-platform mobile applications.

- Mobile support for HTML5
- Writing HTML5 applications for Windows phones
- Writing cross-platform mobile applications with PhoneGap
- PhoneGap APIs
- PhoneGap Build

Setup Requirements

Application Requirements

Tool	Version
Operating System	Windows 7 or higher
Development Environment	Visual Studio 2010 Ultimate or Visual Studio 2010 Premium
Development Installation	Must be a default/typical installation (i.e., do not remove any tools) or a full installation

System Requirements

Hardware that can run Visual Studio 2010. Additionally, lab computers must be connected to the Internet.

Additional Requirements

A projection system capable of projecting a 1024x768 screen.

Instructor(s)

Mastering HTML5 is taught by **Jeff Prosise**, who is a cofounder of Wintellect. He has written nine books and hundreds of magazine articles on computer programming, and today focuses most of his energy on Web technologies such as HTML5 and Silverlight, as well as on writing applications for Windows phones. A reformed engineer who discovered after college that there's more to life than computing loads on mounting brackets, Jeff is known to go out of his way to get wet in some of the world's best dive spots and to spend way too much time building and flying R/C aircraft.