

Research on HTML5 in Web Development

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Abstract: *HTML5 is everywhere these days. HTML5 is the unique and elegant standard for HTML that provides web end users and developer or designers enhanced functionality. The old version of HTML, HTML 4.01 came in 1999, and the web development has changed a lot since then. HTML 4, XHTML, CSS and the HTML DOM Level 2 are now replaced with HTML5. It was brought to deliver rich content without the need for additional plug-ins and exclusive technologies. The unique power of HTML5 supplies the end user everything from animation to graphics, music to movies, and can also be used to build complicated web applications and also supports cross-platform. HTML5 standards have initiated the development of real-time collaborations in web browsers, which has led to less work for web developer or designers.*

Keywords: Web, end users, HTML, HTML5 features, accessibility

I. INTRODUCTION

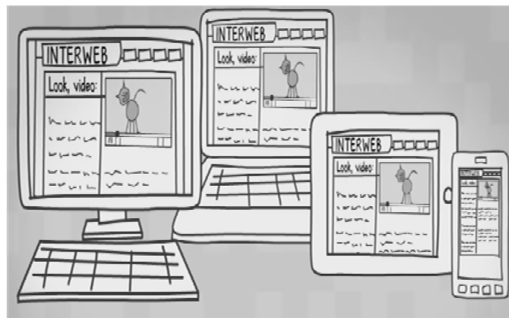
Web is a resource that is widely and steadily usable across many platforms. Some vendor have developed the *in exclusive technologies* that provide more functionality than web standards such as the ability to build rich internet applications. For eg :Apple's Quick Time, Adobe Systems Flash, Microsoft Silver Light, Google Gears, Oracle JAVAFX etc. provide the exclusive formats for running a web application.

The latest research on HTML by W3C is to create a standard that handles all the jobs that the exclusive technologies performing currently. **W3C** to increase web openness and platform independence is developing **HTML5** with cooperation of **Web Hypertext Application Technology Working Group (WHATWG)** as a standard that facilitates the end users and developer or designers with intensified functionality without much using the additional plug-ins.

1.1 HTML5

HTML5 is a unique standard for HTML which allows us to build rich and interactive web pages which bring HTML into the world of application development started in the year **2004**. HTML moves from simply describing the basics of a text based web for presenting audio, video and animations to enabling offline functionality, geolocation and local storage in client side data bases.

With the development of HTML5 it has wide range of applications in multimedia direction. It can play audio and video and supports animations from the browser without the need of the exclusive technologies. The features of HTML5 would add up value for web designer and developer or designers.



HTML5 supports cross platform, designed to display webpages on a PC, or a Tablet, a Smartphone, or a Smart TV. HTML5 has been a working draft and some browser designers since a very long time. The websites are already adopting HTML5 elements. HTML5 also support location based services open formats such as Scalable Vector Graphics (SVG), open



XML file format and high quality graphics. The basic advantage for the developer or designers and browsers is that they would be able to do more without the need of mastering or licensing multiple exclusive technologies that can develop rich webpages, enhanced forms and web based applications.

1.2 HTML5 Features

HTML5 provides unique features that include

- Canvas-2D/3DGraphics
• Audio & Video
• Location based Services
• Working Offline
• Web Workers
• Drag & Drop
• Unique Input Types
• Unique Elements
• Form Element

A. Audio & Video

Before HTML5 there is no standard for playing audio and video files on a web page which generally requires a plug - in for different formats of audio and video . HTML5 now provides a standard way to embed audio files and video files which includes nonexclusive formats in the webpage.

The tags <audio>, <video> and <source> tell the browser the associated information is to be handled as an HTML5 compatible streams. These would let end users view and listen the audio and video embedded on the page without the use of specific players.

<audio controls>
<source src="guitar.mp3" type="audio/mpeg">
This browser does not support the audio element.
</audio>



<video width="480" height="480" controls>
<source src="clouds.mp4" type="video/mp4">
</video>



B. Location- Based Services

Geo Location API is designed to provide end user's location. It provides the information of mobile device's geographic location to a Web application. It offers support for mobile browsers and Location-based applications by enabling interaction with GPS and JavaScript extensions. This API in HTML5 identifies the location of end user browsing any website provided end user allows it.



C. Working Offline

HTML5 as a standard also introduces unique methods for enabling a website or web application to function even without a network connection. It help you to use the cache interface, HTML5 gives your application advantages of using cache.

Offline browsing, higher speed, reducing server load etc. App Cache (Application Cache) allows applications to store data and programming code locally so that the web application scan work as desktop applications.

D. Web Storage

HTML5 provides Web Storage feature that can store data within the end user’s browser which is better than cookies used in older version. These help the client-side SQL database and offline application. Web Storage is more secure and faster. It also helps to store large sums of data, without affecting the website's performance offline. The data is stored in pairs of (name/value). A web page can only access data stored by it.

E. Web Workers

In a HTML page while performing scripts, the page becomes unresponsive until the script execution is completed. Web Workers are basically an API specification that lets end users create background Java Script threads to process CPU intensive tasks. These can’t be interrupted by other scripts or end user interactions. Usually, in browsers to handle all the Java Script code a single thread is made and all of them are run on that single thread. Whether you are doing some calculation or updating page elements, it helps to speed up the background tasks.

F. Drag and Drop

HTML5 provides a Drag and Drop API that brings native drag and drop support to the browser, making it quite easier to support on devices such as mobile phones. It includes dragging of content and files from outside the browser, for e.g. drag and drop to upload files or photos/videos. In HTML5, drag and drop is part of the standard, and any element is draggable. This feature is supported by many web applications.

G. Unique Input Types

HTML5 introduced unique input types for simplifying the webpage designing, even they have inbuilt support for CS Sand JS. So, these unique input types provide better input control and validations. The unique input types provided are given below along with their HTML syntax.

1.3 Unique Input Types in HTML5

Input Types	Description	Syntax
color	To display the color palette	<input type="color" name="nwcolor">
date	To display the date picker	<input type="date" name="dob">
email	To validate email address	<input type="email" name="Email">
number	To accept only numbers	<input type="number" name="hrs" min="1" max="12">
range	To display a slider control for selecting a number	<input type="range" name="grade" min="1" max="10">
tel	To validate mobile / phone number	<input type="tel" name="usrtel">
time	To displaytimepicker	<input type="time" name="usr_time">

Tag	Description
<canvas>	Defines graphic drawing using JavaScript
<audio>	To play audio for mats like Mp3,OggandWav
<video>	To play video formats like MP4, Web Mand Ogg
<source>	Sub tag for both audio and video to specify the source file
<track>	Sub tag for both audio and video to specify text track, for example subtitles.
<embed>	Defines container for external applications (like plug-ins, flash etc.)



1.4 Unique Elements in HTML5

In HTML 4.01 many elements are never used, outdated, or not used the way they were planned earlier. All these below mentioned elements are now abolished or re-written in HTML5. The below mentioned elements which are deprecated in HTML5:

- <acronym>
<applet>
<base font>
<big>
<center>
<dir>

<frame>
<frameset>
<is index>
<no frames>
<s>
<strike>
<tt>
<u>

To better serve today's web requirements, HTML5 has also introduced unique elements for drawing graphics, displaying media content, for better page structure and better form handling, and several unique APIs for drag and drop, to find your geographical location, for local data storage, and more. The unique elements of HTML5 and their description are given below in the following fig.

Student Registration form with sections: Student Personal Information, Details for Correspondence, Course Details, Academic Details, and Other Details.



All the above mentioned HTML5 features, provides an easy interface for the end users and developer or designers in developing web applications without the use of plug-ins. An HTML form of 40 fields Fig may generally require a lot of validation scripts to be written using scripting language. HTML5 is the best option to use, to reduce the code size for such kind of forms.

II. CONCLUSION

HTML5 helps us to introduce to the unique elements and features that allow developer or designers to improve interoperation, handling elements in a good way that also saves time and costs. HTML5 is a wonderful technology and has a high probability to make the web, even more important and extensive as it is today from desktop computers to mobile devices and in the future maybe even domestics appliances. The HTML5 may soften the line between desktop and online applications. The problem HTML5 may suffer in the future days is that a chance will be available for the malware writers, which may make today's common hacks.

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