HTML5 in Web Development: A New Approach

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Abstract - *HTML5 is everywhere these days. HTML5 is the new and elegant standard for HTML that provides web users and developers enhanced functionality. The older versions of HTML, HTML 4.01, which came in 1999, and the web development have changed notably 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 proprietary technologies. The new power of HTML5 supplies the 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 standard initiates the development of real-time collaborations in web browsers, which leads to less work for web developers.*

***Key Words*: Web, users, HTML, HTML5 features, accessibility**

INTRODUCTION

Web is the fastest growing resource that is rapidly and constantly used across almost every platforms. To provide more functionality than the web standards, many software vendors created their own proprietary technique. For e.g. Adobe System Flesh, Microsoft silver light, Oracle JAVAFX, Google Gears, Apple's Quick Time etc. web applications run under these proprietary format.

For handling all the jobs that are currently being performed by the proprietary technique W3C is creating a standard on it's latest research on HTML. HTML5 is created by the W3C with Web Hypertext Application Technology Working Group (WHATWG)as a standard that is facilitating the developers and the users without the need of too much additional plug-ins having intensified functionality to increase the platform independence and web openness.

HTML5

As HTML5 is the newer version of HTML, it helps us creating interactive and rich webpages. HTML has grown drastically from simply emphasizing on production of audio, video and animations to providing offline functionality, local storage and geo location on any client side database.

The development of HTML5 gives rise to a wide variety of multimedia applications. Without any help of proprietary techniques from the browser it support animations and can play audio and video. For web developer and web designer the new features provided by the HTML5 would add up new values.

(Figure-1)

HTML5 provides cross platform, which is designed to display webpages on Smart TV, Tablet, PC, Smartphone etc. So many websites as well as browser designers are adopting HTML5 elements. The main temptation for the web developers and browsers is that someone can create rich web pages, web based applications and enhanced forms without mastering or licensing multiple proprietary techniques.

HTML FEATURES

The new features provided by HTML5 includes

- Audio & Video
- Working Offline
- Drag & Drop
- New Elements
- Canvas-2D/3D Graphics
- Location Based Services
- Web Workers
- New Input Types
- Form Elements

CANVAS

To combine video and animations on webpages HTML5 uses <canvas> element for drawing graphics using java script. To present 2D/3D graphics script is used and graphics is contained in the canvas. To make graphics-heavy pages render fast, various types of methods for boxes, texts, drawing paths, images.

Figure 2

SVG(Scalar Vector Graphics)

Vector based graphics is defined by the SVG. Even after the compression and enlargement of image the quality of the image will not be lost. The images of SVG can be scalable as well as searched, scripted, indexed and compressed.

Figure-3. SVG image before zoom

Figure-4 SVG image after zoom

AUDIO & VIDEO

HTML5 provides standards for multimedia files on webpage, where requirement of plug-in for different multimedia files exist. Now nonproprietary formats are fed by the HTML5 in the webpage, which gives a classic way for embedding multimedia files.

The related information is to be controlled as an HTML5 well matched streams and the browser is notified by the <audio>,<source>and<video>tags. These enable users to access the multimedia files without any help of certain players.

<audio controls>

　　　<source src="guitar.mp3"

　　　　　type="audio/mpeg">

Audio element is not supported by the browser.

</audio>

Figure 5. Output Audio Tag

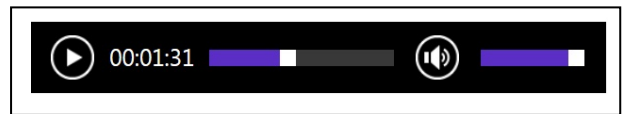<video width="480" height="480"controls>

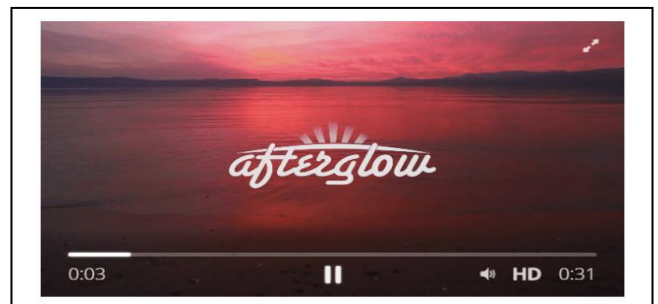　<source src="afterglow.mp4"

　　　type="video/mp4">

</video>

Figure-6 Output Of Video Tag

LOCATION-BASED SERVICES

User's locations are allotted by the Geo Location Application programming Interface (API). The portable device's geographic location is made obtainable to the web application. By providing assessment with GPS and JS extensions it helps mobile browsers and Location-based applications. The location of user browsing any website can be identified by the HTML5's API, if the user allows to do so.

WORKING OFFLINE

A brand new procedures for permitting a website or web application which works without network connection are proposed by HTML5.By using cache interface for offline browsing , reducing server load , more speed are great advantages of HTML5.The web applications can be acted as desktop application by Application Cache (AppCache)

which allows applications for storing data and programming code.

WEB STORAGE

Data within user's browser can be stored by a new feature called Web Storage which is provided by HTML5 and it is better than older version of cookies . Client-side SQL database and offline application are supported by this HTML5. Web Storage is more safe and rapid. Without influencing the website's performance high size of data can be stored. Stored data can be accessed through webpage and it sores in pairs of value/name.

NEW INPUT TYPES

A new input types for unraveling the web page designing with inbuilt support for CSS and JS is established by HTML5 which favors superior input control and validations. The new input types established are given below through their HTML syntax.

Table 1. New Input Types of HTML5

Input Types	Descriptions	Syntax
color	To show the color pallets	<input type="color" Name="nwcolor">
date	To show 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 display time picker	<input type="time" name="usr_time">

Specific Elements are outdated and unused in HTML 4.01. So HTML5 removes these elements and re-writes again. The condemned elements in HTML5 are as below:

- <big>
- <center>
- <font>
- <isindex>
- <frame>
- <applet>
- <acronym>
- <basefont>

- <noframes>
- <frameset>
- <tt>
- <u>
- <s>
- <strike>
- <dir>

New elements for drawing graphics, specific new APIs for drag and drop, for searching your geological location, showing media content and for better page structure and better form handling and much more things are established by HTML5 for stronger requirements. HTML5 provides new elements which are given below.

Table 2. New Elements in HTML5

Tag	Description
<canvas>	Defines graphic drawing using JavaScript
<audio>	To play audio formats like MP3,Ogg and Wav
<video>	To play with video formats like MP4,WebM and 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.)

The features which are indicated before established feasibility for users and developers in developing web applications without any help of plug-ins.

More validation scripts to be written with the help of scripting language are normally required by HTML. HTML5 is the optimal way to use for minimizing the code size.

CONCLUSIONS

Latest elements and features are established by HTML5 which permit developers to enhance interoperability, conducting elements in an exact way to save time and costs. HTML5 is an amazing technology, which makes the web even more supreme and substantial , HTML5 has more possibilities i.e. from desktop computers to mobile devices and in domestic appliances.HTML5 has smoothened the line desktop and online applications. Malware Writers that leads to common hacks will be suffered by HTML5 which is available after coming days.

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BIOGRAPHIES

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