

HTML 5: Survey and Idea

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ABSTRACT

HTML is called the Hyper Text Markup Language that is main markup language for web pages. HTML5 is an updated version of HTML standard. The purpose of this paper is to serve as a current analysis of what is HTML5 on modern web browser. The older versions HTML, HTML4, XHTML CSS are now replaced with HTML5. HTML5 contain the new features that allow user's everything like animation, graphics and tag such as audio and video that is widely used in multimedia applications. HTML5 allow the user's to build complicated web applications and also supports cross-platform and ability to provide semantic content. HTML5 is an extended layer of standardized tags and attributes for graphic and visual effects that reduces the need for special plug-ins. HTML5 standard initiates the development of real-time collaborations in web Browsers, which leads to less work for web developers. [1]

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I. INTRODUCTION

HTML5 is a W3C recommendation. The two standards groups involved with the specification are World Wide Web Consortium (W3C) HTML Working Group and the Web Hypertext Application Technology Working Group (WHATWG) these groups are working together on the specification. W3C provides web openness and platform independence for developing HTML5 with cooperation of WHATWG as a standard that allow the uses and developers to use functionality without need of any additional plug-ins.[1]

What is HTML5-?

HTML5 is a new generation of HTML standards which it started developing in 2004. It is the fifth revision of the HTML standards. The first "working draft" of HTML5 came out in January of 2008 and it already has surprisingly broad browser support. HTML5 is not some new language or development tool it is just HTML with a set of new features and has standardized tags and attributes. [1] HTML5 is a set of new features made

available for developing web applications adding to the existing capabilities in HTML. HTML5 is use in mobile cloud computing application and multimedia application. [2] HTML5 supports cross-platform; the web pages are display on a desktop, Tablet, mobile smart phone or a smart TV. HTML5 making a web developer's job much easier. HTML5 is been a working draft and some browser, web developers and websites are already adopting HTML5 features. HTML5 also support location based services, open formats such as Scalable Vector Graphics (SVG), open XML file formats and high quality graphics that are used in multimedia application. The developer's can develop interactive web pages, enhanced form and web based application without the need of mastering or licensing in proprietary technologies.[1]

II. FEATURES OF HTML5

HTML5 provides us **new features** that include:

- Audio and Video controls

- 2D/3D graphics:-Canvas and SVG
- Web storage
- Web workers
- Working offline
- Geo location
- Form elements

Audio & video

Before HTML5 there were no standards for playing audio and video files on web. The older generations requires plug-in like flash to play the media files. Audio and Video elements offering the ability to easily embed audio files and video files into HTML documents. These elements are widely used in multimedia application and use different formats. [1]

Audio

```
<audio controls>
<source src="01 - Aloo Chat (feat RDB)-
(MyMp3Singer.com).mp3" type="audio/mpeg">
Your browser does not support the audio element.
</audio>
```



Figure 1: output of audio tag.

Video

```
<video width="300" height="200" controls>
<source src="boys.mp4" type="video/mp4">
</video>
```

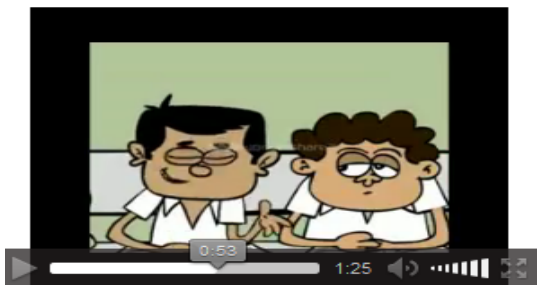


Figure 2: output of video tag.

Canvas

In HTML5 <canvas> element is used to draw graphics on a web page by the use of java script code. The <canvas> element is only a container for graphics and script is use to actually draw the graphics .Canvas provide us methods for drawing paths, boxes and circles, text like name , and adding images which makes graphics-heavy pages render fast.<canvas> elements are use in video and animations that makes web pages interactive.

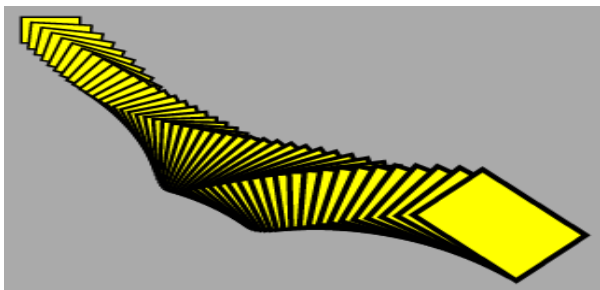


Figure 3: Canvas.

SVG

SVG is called the Scalable Vector Graphics that defines vector based graphics for web. In SVG we do not lost the quality of images if images are enlarged or compressed i.e. the clarity of SVG object do not change. SVG is a great way to present vector based line drawings and is a great complement to bitmaps. One of the most useful things about SVG is that it's resolution independent, meaning that we don't need to think about how many pixels we have on our device, the result will always scale and be optimized by the browser to look great. The advantages of using SVG are that images can be created and edited with any text editor and we can be searched, indexed, scripted, and compressed images. Printed SVG images with high quality at any resolution and images are zoom able.

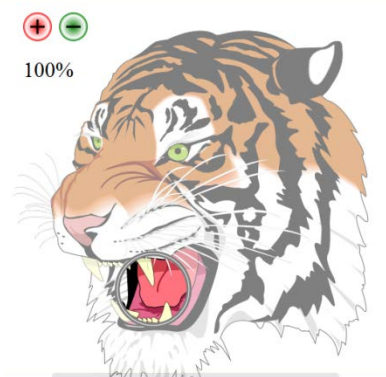


Figure 4: SVG Image before zoom

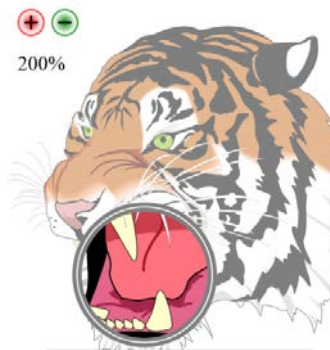


Figure 5: SVG after zoom (quality of image not be loss)

Web Storages:

Web Storage provides a way to web developers to store the data and information on their system to use or retrieve it. Every browser supports HTML5 Storage including Internet Explorer.[2] There are two types of web storage- *Session Storage, and *Local Storage. Both storages would be used for handle the different situation. [2]

*Session Storage- It store data for one session.

The data is deleted when the user close the window browser. Values are put into session Storage and only visible in the window/tab that created them .Opening page in new window or tab starts a new session. [2]

*Local Storage- It store data with no time limit.

Local Storage objects spanning multiple windows and persisting beyond the current session. The local Storage keeps the data between browser sessions, even after the browser is closed and reopened. [2]



Figure 5: web storage

Web Storage is similar to cookies...when a page is loaded a website can access it with java script and the HTML5 stays on your computer. [2]

Web Workers:

A web worker is a JavaScript, running in the background, independently without affecting the performance of the page. In a HTML page when executing scripts the page becomes unresponsive until the script is finished. [2] In HTML5 Web Workers are basically a API specification that lets developers create background JavaScript threads to process CPU intensive tasks normally in browsers to handle all the JavaScript code a single thread is created and all of them are run on a single thread. Whether we are doing some calculation or updating page elements, it speeds up background tasks. Web Workers allow you to do things like: clicking, selecting things, etc. [2]

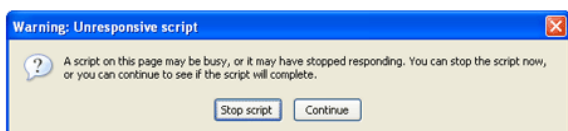


Figure 6: Common unresponsive script dialog.

In HTML5, it provides APIs like Geolocation, Web storage, index DB and so on.

Drag and Drop:

HTML5 comes with a Drag and Drop (DnD) API that brings native DnD support to the browser, making it much easier to support on devices such as mobile phones. This includes dragging of content and files from outside the browser, e.g. drag and drop to upload files or photos. [3]

Working offline:

HTML5 provides new methods to enable a website and web application to store our data offline without a network connection. [2] We are using the cache interface gives your application advantage of using cache for offline browsing. The cache interface provides

us higher speed, and reduces traffic. [2] In HTML5, it provides APIs like GeoLocation, Web storage, in dexDB and so on.

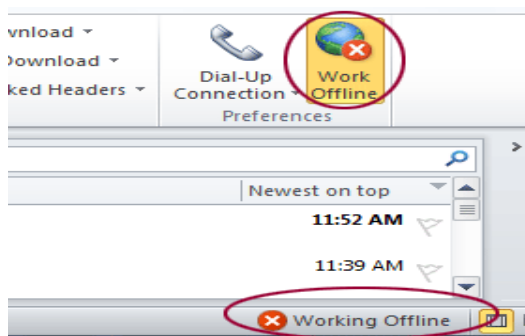


Figure 7: working offline

The developers can build their Web applications as per their requirement and make the situation that is best fit for the scenario. [2] The developers can build their Web applications as per their requirement and make the situation that is best fit for the scenario.

Geolocation:

In HTML5 the Geolocation API allows the user to share their current location with web sites. The latitude and longitude are available to JavaScript on the page, which in turn can send it back to the remote web server and provide location-aware things like finding local businesses or showing your location on a map. The Geolocation API is also support by mobile browsers. The user can use the app in our mobile. This API in HTML5 identifies the location of user browsing any website provided user allows it.



Figure 8: Geolocation

Form elements:

We are having a form:

We told the browser to put an input text field for user so user can enter data into text field. The browser rendered the text field for user then we used JavaScript to ensure that the texts users enter are actually email addresses.

```
<body>
<form id="form_-id" method="post">
<input type="email" name="email">
<input type="submit" value="submit">
</form>
</body>
```



Figure 9: Page that uses the code for the simple form validation with HTML5. [1]

The elements which are removed in HTML5 are as follows:

- <acronym>
- <applet>
- <basefont>
- <big>
- <center>
- <dir>
-
- <frame>
- <frameset>
- <isindex>
- <noframes>
- <s>
- <strike>
- <u>
- <tt>

III. Conclusion

HTML 5 provides new elements and features that allow web developers to improve the web applications that will work on any HTML5 compliant web browser. It Allow web developer's to create games for both mobile devices and pc's. HTML5 allows works directly in browser without need of any additional plug-in. HTML5 has played an increasingly important role building cross-platform apps for mobile devices. These applications can run on a mobile device or a desktop. It also supports multimedia and more complex and interactive applications. HTML5 is an exciting technology for creating new and powerful browser-based applications. HTML5 is an awesome technology and has the potential to make the web even more ubiquitous and pervasive as it is today from desktop computers to mobile devices and in the future maybe even domestics appliances. [1]

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