**An Overview on Markup Language**

**(Case study: HTML5)**

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***ABSTRACT***

Markup language is a computer language that uses tags to define elements within a document. The term ‘markup’ gets it root from editors making revisions to writer’s manuscripts It is human readable, meaning markup files contain standard words, rather than typical programming syntax Markup languages are not programming languages. While several markup languages exist, the two most popular are HTML and XML.

Keywords—Users, Web, HTML, HTML5 features, accessibility

***INTRODUCTION***

The latest research on HTML by W3C is to create a standard that handles all the jobs that the proprietary 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 users and developers with intensified functionality without much using the additional plug-ins. HTML is a markup language used for creating webpages. The contents of each webpage are defined by HTML tags. Basic page tags, such as <head>, <body>, and <div> define sections of the page, while tags such as <table>, <form>, <image>, and <a> define elements within the page. Most elements require a beginning and end tag, with the content placed between the tags.

***HTML5***

HTML5 is the latest and most enhanced version of HTML. Technically, HTML is not a programming language, but rather a markup language. HTML5 is a standard for structuring and presenting content on the World Wide Web. HTML5 is a cooperation between the World Wide Web Consortium (W3C) and the Web Hypertext Application Technology Working Group (WHATWG).The new standard incorporates features like video playback and drag-and-drop that have been previously dependent on third-party browser plug-ins such as Adobe Flash, Microsoft Silverlight, and Google Gears. The basic advantage for the developers and browsers is that they would be able to do more without the need of mastering or licensing multiple proprietary technologies that can develop rich web pages, enhanced forms and web based applications.

## *HTML5 New Features*

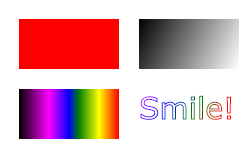
HTML5 introduces a number of new elements and attributes that can help you in building modern websites. Here is a set of some of the most prominent features introduced in HTML5.

* **New Semantic Elements** −These are like <header>, <footer>, and <section>.
* **Forms 2.0** − Improvements to HTML web forms where new attributes have been introduced for <input> tag.
* **Persistent Local Storage** −Use to achieve without resorting to third-party plugins.
* **WebSocket** – A next-generation bidirectional communication technology for web applications.
* **Server-Sent Events** − HTML5 introduces events which flow from web server to the web browsers and they are called Server-Sent Events (SSE).
* **Canvas** −This supports a two-dimensional drawing surface that you can program with JavaScript.
* **Audio & Video** −This can embed audio or video on your webpages without resorting to third-party plugins.
* **Geolocation** –This allow visitors can choose to share their physical location with your web application.
* **Microdata** −This lets you create your own vocabularies beyond HTML5 and extend your web pages with custom semantics.
* **Drag and drop** − Drag and drop the items from one location to another location on the same webpage.

***Canvas***

The HTML <canvas> element is used to draw graphics on a web page.

The graphic to the left is created with <canvas>. It shows four elements: a red rectangle, a gradient rectangle, a multicolor rectangle, and a multicolor text.



***Drag and Drop***

Drag and Drop is powerful User Interface concept which makes it easy to copy, reorder and deletion of items with the help of mouse clicks. This allows the user to click and hold the mouse button down over an element, drag it to another location, and release the mouse button to drop the element there.

To achieve drag and drop functionality with traditional HTML4, developers would either have to either have to use complex JavaScript programming or other JavaScript frameworks like jQuery etc.

***Geolocation***

HTML5 Geolocation API lets you share your location with your favorite web sites. A JavaScript can capture your latitude and longitude and can be sent to backend web server and do fancy location-aware things like finding local businesses or showing your location on a map.

Today most of the browsers and mobile devices support Geolocation API. The geolocation APIs work with a new property of the global navigator object ie. Geolocation object which can be created as follows

var geolocation = navigator.geolocation;

***Microdata***

Microdata is a standardized way to provide additional semantics in your web pages.Microdata lets you define your own customized elements and start embedding custom properties in your web pages. At a high level, microdata consists of a group of name-value pairs.

The groups are called **items**, and each name-value pair is a **property**. Items and properties are represented by regular elements.

### **Example**

* To create an item, the **itemscope** attribute is used.
* To add a property to an item, the **itemprop** attribute is used on one of the item's descendants.

Here there are two items, each of which has the property "name"

<html>

<body>

<div itemscope>

<p>My name is <span itemprop = "name">Zara</span>.</p>

</div>

<div itemscope>

<p>My name is <span itemprop = "name">Nuha</span>.</p>

</div>

</body>

</html>

***WebSockets***

WebSockets is a next-generation bidirectional communication technology for web applications which operates over a single socket and is exposed via a JavaScript interface in HTML 5 compliant browsers.

Once you get a Web Socket connection with the web server, you can send data from browser to server by calling a **send()** method, and receive data from server to browser by an **onmessage** event handler.

***CONCLUSION***

Basically HTML5 introduces innovative elements and features that allow developers to advance interoperability, management of elements in a detailed way saving time and costs. HTML5 is an amazing technology and has the likelihood to make the web even more predominant and broad as it is today from desktop computers to mobile devices and in the future maybe even domestics appliances. The prospective and advancement of HTML5 in future will resolve to soften the line between desktop and online applications. The impending problem HTML5 may suffer in the coming days is that an opportunity will be available for the malware writers which may make today's common hacks.

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