

## Web Development in Different Between HTML and HTML5

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**Abstract** -Using predefined sets of classes, objects, methods and properties accessible in a markup language, style sheet language or programming language, Web technology is a standard that facilitates the creation of web applications. It also offers an interface that enables information to be exchanged between a Web server and its clients. The primary markup language for web pages is the Hyper Text Markup Language (HTML). The basic building-blocks of webpages are HTML elements. The World Wide Web consortium founded and created the HTML originally proposed by Opera Software. The fifth revision to the HTML standard is it. There are lots of variations that are offered in HTML 5. With the aid of a few examples, this paper presents some of the key differences.

**Keywords:** HTML, HTML5, WWW, Web Pages, Web Application.

### INTRODUCTION

Web technology is a standard that enables Web applications to be built in a markup language, style sheet language, or programming language using predefined sets of classes, objects, methods and properties accessible. It also offers an interface that allows information to be shared between a Web server and its clients. A web server is a device that stores and hosts a website with a particular URL connection to make it accessible to its clients.

It is possible to create professional-looking websites using various web technologies. It is also possible to create interactive Web pages that allow users, without the aid of a Web Designer, to update, edit and format the text and upload or replace pictures, photographs or videos. HTML, JavaScript, CSS, XML, XHTML, AJAX, ASP.NET, PHP are several popular Web technologies to build websites.

While at CERN, HTML was originally created by Tim Berners-Lee. He was annoyed at having to log in to different machines to find different information while working at CERN and felt that there must be a better way. He noticed that there had to be a way to jump from one collection of data to another on various computers.

This idea of a hypertext system (linked to the networking technologies and protocols required to communicate information between computers) would form the basis for

HTML, the fundamental language of the worldwide web. HTML is a markup language used for Web page creation. A markup language provides a way for text and graphics constructs to be represented on a web page. The World Wide Web consortium founded and created the HTML standard (W3C). It is derived from a more general markup language called Standard Generalized Markup Language (SGML), which is a technology that describes markup languages by the International Organization for Standardization (ISO).

HTML5 is markup language for structuring and presenting content for the World Wide Web, and is a core technology of the Internet originally proposed by Opera Software. It is the fifth revision of the HTML standard (created in 1990 and standardized as HTML4 as of 1997) and, as of August 2012, is still under development. The main goal was to upgrade the language with support for the new multimedia while keeping it understandable and consistently understood by people on computers and smartphones (web browsers, parsers, etc.). HTML5 is a partnership between the World Wide Web Consortium (W3C) and the World Wide Web Consortium Web Hypertext Working Group for Application Technology (WHATWG). WHATWG worked with web forms and applications, and XHTML 2.0.0.0 worked with W3C. They agreed to collaborate in 2006 and to build a new HTML version.

Some rules for HTML5 were established:

- New features should be based on HTML, CSS, DOM, and JavaScript.
- Reduce the need for external plugins (like Flash).
- Better error handling.
- More markup to replace scripting.
- HTML5 should be device independent.
- The development process should be visible to the public.

### HTML5 - New Features

Some of the most interesting new features in HTML5:

- The element for 2D drawing
- The and elements for media playback
- Support for local storage
- New content-specific elements, like, , ,
- New form controls, like calendar, date, time, email, url, search

**Difference between Html and Html5**

| Feature               | Html   | Html5  |
|-----------------------|--|--|
| definitions           | A hypertext markup language (HTML) is the primary language for developing web pages.   | HTML5 is a new version of HTML with new functionalities with markup language with Internet technologies.   |
| Multimedia support    | Language in HTML does not have support for video and audio.  | HTML5 supports both video and audio.   |
| Storage               | The HTML browser uses cache memory as temporary storage.   | HTML5 has the storage options like: application cache, SQL database, and web storage.  |
| Browser compatibility | HTML is compatible with almost all browsers because it has been present for a long time, and the browser made modifications to support all the features. | In HTML5, we have many new tags, elements, and some tags that have been removed/modified, so only some browsers are fully compatible with HTML5. |
| Graphics support      | In HTML, vector graphics are possible with tools Like Silver light, Adobe Flash, VML, etc.   | In HTML5, vector graphics are supported by default.  |
| Threading             | In HTML, the browser interface and JavaScript running in the same thread.  | The HTML5 has the JavaScript Web Worker API, which allows the browser interface to run in multiple threads.                                      |

|                     |  |   |
|---------------------|--|---|
| Storage             | Uses cookies to store data.  | Uses local storage instead of cookies   |
| Vector and Graphics | Vector graphics are possible with the help of technologies like VML, Silverlight, Flash, etc.  | Vector graphics is an integral part of HTML5, SVG and canvas.   |
| Shapes              | It is not possible to create shapes like circles, rectangles, triangles.   | We can draw shapes like circles, rectangles, triangles.   |
| Doc type            | Doctype declaration in html is too long<br><code>&lt;!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01//EN" "http://www.w3.org/TR/html4/strict.dtd"&gt;</code> | The DOCTYPE declaration in html5 is very simple " <code>&lt;!DOCTYPE html&gt;</code> "                        |
| Character Encoding  | Character encoding in HTML is too long.<br><code>&lt;!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.0 Transitional//EN"&gt;</code>                             | Character encoding declaration is simple <code>&lt;meta charset = "UTF-8"&gt;</code>                          |
| Multimedia support  | Audio and video are not the part of HTML4.   | Audio and video are essential parts of HTML5, like: <code>&lt;Audio&gt;</code> , <code>&lt;Video&gt;</code> . |
| Vector Graphics     | In HTML4, vector graphics are possible with the help of techniques like VML, Silver light and Flash.   | Vector graphics are an integral part of HTML5, SVG, and canvas.   |

|                 |  |   |
|-----------------|--|---|
|                 | Html5 uses cookies.  | It supplies local storage in place of cookies.                        |
| Shapes          | It is not possible to draw shapes like circles, rectangles, triangles. | Using html5, you can draw shapes like circles, rectangles, triangles. |
| Browser Support | Works with all older browsers  | A new browser supports this.  |

Difference between Tags.

- `<!DOCTYPE html>`: In HTML 4.01, there are three `<!DOCTYPE>` statements, but there is only one in HTML 5.
- `<a>`: In HTML 4.01, either a hyperlink or an anchor may be the `<a>` tag. In HTML5, the `<a>` tag is always a hyperlink, but if it does not have the href attribute, it is just a hyperlink placeholder.
- `<acronym>`: Inside HTML5, the `<acronym>` tag is not allowed. Instead, use the `<abbr>` tag. To describe acronyms in HTML 4.01, the `<acronym>` tag was used.
- `<applet>`: Inside HTML5, the `<applet>` tag is not supported. Instead, use the `<object>` tag.
- `<strong>`: The `<strong>` tag defines strong, emphasized text in HTML 4.01, but it defines essential text in HTML5.
- `<body>`: In HTML5, all unique `<body>` attributes are omitted, although they have been deprecated in HTML 4.01.
- `<hr>`: The `<hr>` tag in HTML 4.01 reflects a horizontal norm. The `<hr>` tag in HTML5 describes a thematic split. The `<hr>` element is used to separate an HTML page's content (or to define a change).
- `<map>`: In HTML5, it must have the same meaning as the name attribute if the id attribute of the `<map>` tag is also specified.
- `<meta>`: The attribute scheme is not provided by HTML5.

HTML5 has a new attribute, charset, which makes it easier to define charset:

HTML 4.01: `<Meta http-equiv = "content-type" content="text/html; charset=UTF-8">`

HTML5: `<meta charset= "UTF8">`

- `<script>`: The "type" attribute is required in HTML4, but optional in HTML5.
- `<small >`: In HTML 4.01 the small element is displayed as smaller text. In HTML5 the small element defines small text and other side comments, and is displayed as smaller text.
- `<table>`: Only the "border" attribute is supported in HTML5, and it only allows the values " 0" or "1".

New Semantic/ Structural Elements

| Tag                             | Description   |
|---------------------------------|---|
| <code>&lt;article&gt;</code>    | Defines an article in a document  |
| <code>&lt;aside&gt;</code>      | Defines content aside from the page content                               |
| <code>&lt;bdi&gt;</code>        | Isolates a part of text that might be formatted in a different direction  |
| <code>&lt;details&gt;</code>    | Defines additional details that the user can view or hide                 |
| <code>&lt;dialog&gt;</code>     | Defines a dialog box or window  |
| <code>&lt;figcaption&gt;</code> | Defines a caption for a <code>&lt;figure&gt;</code> element               |
| <code>&lt;figure&gt;</code>     | Defines self-contained content  |
| <code>&lt;footer&gt;</code>     | Defines a footer for a document or section                                |
| <code>&lt;header&gt;</code>     | Defines a header for a document or section                                |
| <code>&lt;main&gt;</code>       | Defines the main content of a document                                    |
| <code>&lt;mark&gt;</code>       | Defines marked/highlighted text   |
| <code>&lt;meter&gt;</code>      | Defines a scalar measurement within a known range (a gauge)               |
| <code>&lt;nav&gt;</code>        | Defines navigation links  |
| <code>&lt;progress&gt;</code>   | Represents the progress of a task   |
| <code>&lt;rp&gt;</code>         | Defines what to show in browsers that do not support ruby annotation      |
| <code>&lt;rt&gt;</code>         | Defines an explanation/ pronunciation of characters (for East Asian type) |
| <code>&lt;ruby&gt;</code>       | Defines a ruby annotation (for East Asian typography)                     |
| <code>&lt;section&gt;</code>    | Defines a section in a document   |
| <code>&lt;summary&gt;</code>    | Defines a visible heading for a <code>&lt;details&gt;</code> element      |
| <code>&lt;time&gt;</code>       | Defines a date/time   |
| <code>&lt;wbr&gt;</code>        | Defines a possible line-break   |

### New Media Elements

HTML5 offers new elements for media content:

| Tag      | Description  |
|----------|--|
| <audio>  | Defines sound content  |
| <video>  | Defines a video or movie   |
| <source> | Defines multiple media resources for media elements <audio> and <video>            |
| <embed>  | Defines a container for an external application or interactive content (a plug-in) |
| <track>  | Defines text tracks for media elements <audio> and <video>                         |

#### Audio:

```
<audio controls="controls">
  <source src="love-me-like-you-do.ogg"
  type="audio/ogg"/>
  <source src="love-me-like-you-do.mp3"
  type="audio/mpeg"/>
</audio>
```

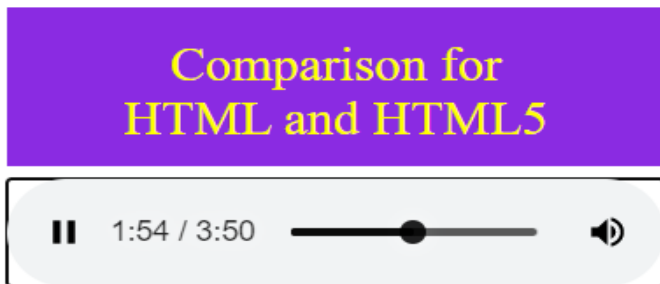


Figure 1: Output Audio Tag

#### Video:

```
<VIDEO src="Raising Cute Pandas It's
Complicated National Geographic.mp4"
width="320" height="240"controls autoplay>
</VIDEO>
```



Figure 2: Output video tag

### SVG (Scalable Vector Graphics)

```
<svg height="210" width="400">
<polygon points="100,10 40,198 190,78 10,78 160,198"
style="fill: salmon; stroke: maroon; stroke-width:5;
fill-rule: evenodd;"/>
</svg>
```

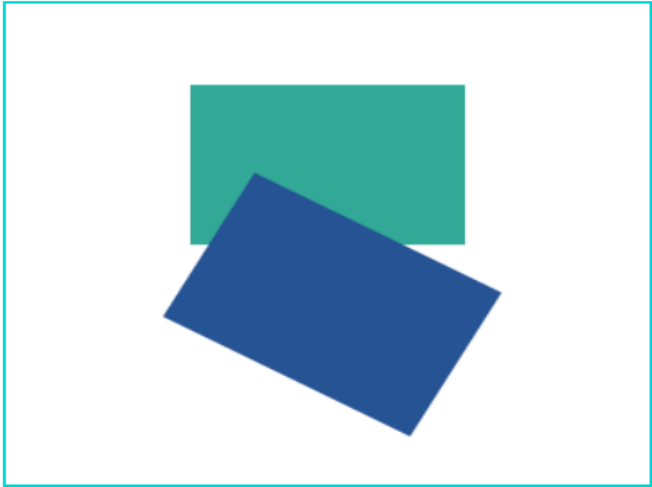


Figure 3: HTML5 SVG image

### The new <canvas> Element

| Tag       | Description  |
|-----------|--|
| <canvas>  | Used to draw graphics, on the fly, via scripting (usually JavaScript)  |
| <script>  | <pre>varc= document.getElementById("myCanvas1"); var ctx= c. getContext("2d"); ctx.fillStyle="#32a897"; ctx.fillRect(100,50,150,100) ctx.setTransform(0.9,0.5,-0.5,0.9,7 0,10); ctx.fillStyle="#255394"; ctx.fillRect(100,50,150,100);</pre> |
| </script> |  |

## Comparison for HTML and HTML5



**Figure 4:** HTML5 Canvas image

### New Form Elements

HTML5 offers new form elements, for more functionality:

| Tag        | Description  |
|------------|--|
| <datalist> | Specifies a list of pre-defined options for input controls |
| <keygen>   | Defines a key-pair generator field (for forms)             |
| <output>   | Defines the result of a calculation                        |

### New Input Types

| New Input types | New Input attribute |
|-----------------|---------------------|
| • Color         | • autocomplete      |
| • Date          | • autofocus         |
| • Datetime      | • form              |
| • Datetimelocal | • formaction        |
| • Email         | • formenctype       |
| • Month         | • formmethod        |
| • Number        | • formnovalidate    |
| • Range         | • formtarget        |
| • Search        | • height and width  |
| • Tel           | • list              |
| • Time          | • min and max       |
| • url           | • multiple          |
| • week          | • pattern (regexp)  |
|                 | • placeholder       |
|                 | • required          |
|                 | • step              |

### Removed Elements

The following HTML elements are removed from HTML5:

- <dir>
- <font>
- <frame>
- <frameset>
- <noframes>
- <strike>
- <tt>
- <acronym>
- <applet>
- <basefont>
- <big>
- <center>

### CONCLUSIONS

As one of the important tools for web page design, HTML5 is proven. With HTML5, audio and video streaming is possible without the need for a third-party plug-in like flash. It is possible to build player controls that are entirely JavaScript programmable. We have new structural elements in HTML5 instead of traditional div tags to build page template, a cleaner and more structured code would result in the final result. HTML5 facilitates.

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