

HTML5

What is it?

- HTML 5 is “the 5th major revision of the core language of the World Wide Web: the Hypertext Markup Language (HTML).”
- Considered to be a step forward from the previous version, HTML 4.01.
- Is being created to fix some problems and improve “interoperability” between different “user agents”.

What will it do/allow?

- Reduce need for proprietary plugin based technologies.
- Allow for better cross browser compatibility between mobile, desktop, netbook, pda, Ereader and whatever else can display a web page.
- Give developers new functionality to make for a more dynamic, improved user experience.
- Allow for some performance improvements in page load (as code is thinned down)

What's new?

- New semantic replacements for common uses of generic block `<div>` and `` elements (e.g. `<nav>`, `<footer>`)
- Built in media functionality via the `<audio>` and `<video>` elements
- New form related functionality
- APIs for some cool stuff (Drag and Drop, Canvas element for 2D drawing, Offline storage database)
- Some elements have been deprecated: `acronym`, `applet`, `basefont`, `big`, `center`, `dir`, `font`, `frame`, `frameset`, `isindex`, `noframes`, `s`, `strike`, `tt`, `u`

Anatomy of an HTML5 page

```
<!doctype html>
<html>
  <head>
    <meta charset="UTF-8">
    <style> body { bgcolor: #000; color: #fff;} <style>
    <title>Example document</title>
  </head>
  <body>
    <script src = "js/jquery.js"></script>
    <header><h1>Welcome to this website</h1></header>
    <p>Example paragraph</p>
    <footer>www.mywebpage.com</footer>
  </body>
</html>
```

Sweet Form Related Changes

Autofocus (Without the need for JavaScript):

```
<input name="myfield" id="myfield" type="text" autofocus>
```

Autocomplete

```
<input name="myfield" id="myfield" type="text" autocomplete="off">
```

List

```
<input name="website" id="website" type="url" list="url_list">
```

```
<datalist id="url_list">
```

```
  <option value="http://www.google.com" label="Google">
```

```
  <option value="http://www.umkc.edu" label="UMKC">
```

```
</datalist>
```

Placeholder

```
<input name="name" id="name" type="text" placeholder="Enter your name here">
```

Sweet Form Related Changes

Required (Without the need for JavaScript):

```
<input name="myfield" id="myfield" type="text" required>
```

Ranges

```
<input name="myfield" id="myfield" type="range" min="1" max="10" step=".5">
```

Numeric Types

```
<input name="num1" id="num1" type="number" >
```

```
<input name="num1" type="number"> + <input name="num2" type="number"> =  
<output onforminput="value = num1.valueAsNumber + num2.valueAsNumber"></output>
```

Dates and Times

```
<input name="pdate" id="pdate" type="date">  
<input name="ptime" id="ptime" type="time">
```

URLs and Emails

```
<input name="myurl" id=" myurl " type="url" >  
<input name="email" id="email" type="email">
```

Video

Is very simple to implement in HTML 5:

```
<video src="/video/video.ogv" controls ></video>
```

```
<video controls width="500">
```

```
  <!-- if Firefox -->
```

```
  <source src="video.ogv" type="video/ogv" />
```

```
  <!-- if Safari/Chrome-->
```

```
  <source src="video.mp4" type="video/mp4" />
```

```
  <!-- If the browser does not recognize the video tag, serve up a flash file -->
```

```
  <embed src="video" type="application/x-shockwave-flash" width="1024"  
  height="798" allowscriptaccess="always" allowfullscreen="true"></embed>
```

```
</video>
```


Video

Video attributes:

- src - The source URL of the video
- poster - This is the URL of a placeholder image
- preload - A boolean type attribute controlling whether the resource is automatically fetched - can be *none*, *metadata* or *auto*.
- autoplay - A boolean attribute that determines whether the video starts playing automatically or not
- loop - A boolean attribute that determines whether the video loops or not
- controls - A boolean attribute that determines whether the video controls are shown or not
- width - The width in pixels of the element
- height - The height in pixels of the element
- Example: <http://tinyvid.tv/>

Audio

Also very simple to implement in HTML5

```
<audio src="audio.mp3" controls ></audio>
```

Audio

Has the following attributes:

- `src` - The source of the audio file
- `autoplay` - Whether to start playing the file automatically
- `controls` - Whether to show the controls or not
- `preload` - Whether to start loading the resource along with the page
- `loop` - Whether to keep playing the audio file

CANVAS

- Rendering of 2D shapes
- Is a drawable region defined in HTML code with height and width attributes
- JavaScript code can access the area through a full set of drawing functions

CANVAS

```
<canvas id="myCanvasTag" width="100"  
  height="100" style="border: 1px gray  
  dashed">
```

[Content that is shown to users using browsers
that don't support the canvas tag]

```
</canvas>
```

CANVAS Examples

- [Canvas Clock](#)
- [3D](#)
- [3D Walker](#)
- [Bespin](#)

Other interesting stuff

- GeoLocation API : Allows for scripted access to geographical location information associated with the hosting device”.
- GeoLocation Demo:
<http://html5demos.com/geo>

Other interesting stuff

- Drag and Drop Demo:

<http://html5demos.com/drag>

Resources

- http://en.wikipedia.org/wiki/Comparison_of_layout_engines_%28HTML5%29 (Browser Support)
- https://developer.mozilla.org/en/canvas_tutorial (HTML5 Canvas Tutorial)
- <http://www.rgraph.net/> (Graphs using HTML5)