HTML and HTML 5

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Website Creation

- My take on a good website:
- *“A website with no traffic is worthless”*
- *“A website should be designed with good search engine optimization”*
- *“Along with end users there are search bots and web crawlers too that visit your website”*

What is HTML?

- HTML is how two computers speak to each other over the internet.
- Web sites are what they say.
- HTML is "spoken" by two computers:

- 1. Client
- The client is used by the person surfing the net, such as the computer you are looking at right now.
- 2. Server
- A server stores and distributes websites over the net. I have a server where I store this web site.

- HTML: Hyper Text MARKUP Language

Template

- At the very top of the page you will see the doctype declaration:
- <!DOCTYPE html>

- **HTML5** has a grammar and a vocabulary.
- Grammar says it should be written at the top of the web page
- Vocabulary says this page is written in HTML5

- This declaration was messy till html4

The html tag

Tags are containers. The html tag indicates that everything between <html> and </html> is code that conforms to the standards of the type of HTML

Inside html tag, we have head and body tag

```
<html>
    <head>
    </head>
    <body>
    </body>
</html>
```

The head tag

- Inside head tag we have title tag
- Web sites that read well to spiders are most likely to appear high in search engine results.
- The single most important thing you can do for SEO is write a good **title** tag
- Ex
- <title>HTML Tutorial</title>

- **Meta tags** also go in the head tag
- <meta charset="utf-8">
- <meta name="description" content=".">.

The body tag

- The body tag contains the code that generates what is seen in a browser.
- Every tag has attributes and attribute value that specify the properties to be applied on the tag
- Ex:
- <body bgcolor="red">

The heading tags

- <h1>h1 tag</h1>
- <h2>h2 tag</h2>
- <h3>h3 tag</h3>
- <h4>h4 tag</h4>
- <h5>h5 tag</h5>
- <h6>h6 tag</h6>
- Google likes them
- But dont do spamdexing

The paragraph tag

- The tag is probably the handiest and most commonly used of all tags.
- <!DOCTYPE html>
- <html lang="en">
- <head>
- <meta charset="utf-8">
- <title>My first webpage</title>
- </head>
- <body>
- My first webpage
- </body>
- </html>

ul and ol list tags

- ul creates unordered list
- Ol creates ordered list
- Li indicates list item
- Lists can be "nested" or put inside one another.
-

  - apples - bananas 	 …… ……

The a or the anchor tag

- With a we create hyper links to other web documents or divisions within the same page

- click here

- Sometimes we see
- **target="_blank“**
- **This implies the new web document to be opened in new tab**

img tag

- Img tag is a container. It holds image
- Syntax
- <img src="sample.jpeg" alt="this is flower image" width="20" height="20">

The table tag

- <table border="1">
- <tr>
- <td>Row 1 - Col 1</td>
- <td>Row 1 - Col 2</td>
- </tr>
- <tr>
- <td>Row 2 - Col 1</td>
- <td>Row 2 - Col 2</td>
- </tr>
- </table>

- We can use properties like cellspacing, cellpadding, rowspan,colspan
- Ex
- <table cellpadding="5" cellspacing="5" border="1">
- <tr>
- <td>Row 2 - Col 1</td>
- <td colspan="2" rowspan="3">Row 2, 3 & 4 - Col 2 & 3</td>
- </tr>

div tag

- Div is a tag.
- The tag, as W3C puts it, is a "generic container for flow content that by itself does not represent anything“ unlike other tags of html
- Basically for content layout

- Ex:

```
<div class="outer-div">
  This div tag
    <div class="inner-div">
       contains this div tag.
    </div>
</div>
```

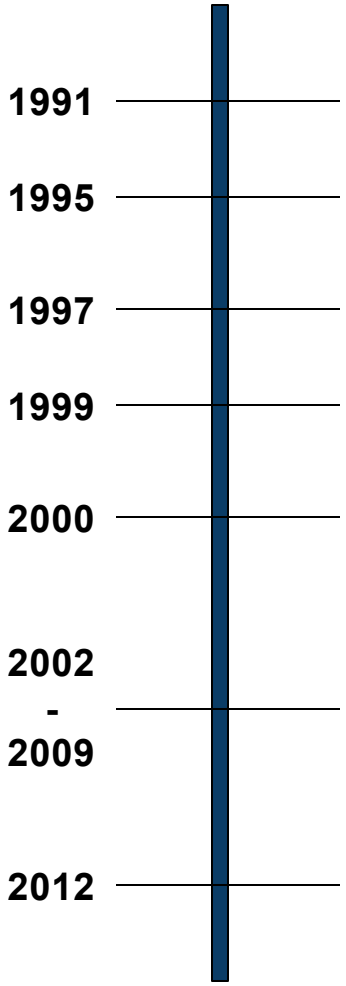
```
<style>
.outer-div
{

}
.inner-div
{

}

</style>
```

Attributes

- <body background="sample.jpeg">
- <body bgcolor=“red”>
- <p align=“center”>
- Deprecated tags moved to css
- <font>
-

Introduction to HTML5

History of HTML



After HTML 4.01 was released, focus shifted to XHTML and its stricter standards.

XHTML 2.0 had even stricter standards than 1.0, rejecting web pages that did not comply. It fell out of favor gradually and was abandoned completely in 2009.

HTML5 is much more tolerant and can handle markup from all the prior versions.

Though HTML5 was published officially in 2012, it has been in development since 2004.

What is HTML5?

- HTML5 is the newest version of HTML, only recently gaining partial support by the makers of web browsers.
- It incorporates all features from earlier versions of HTML, including the stricter XHTML.
- It adds a diverse set of new tools for the web developer to use.
- It is still a work in progress. No browsers have full HTML5 support. It will be many years –- before being fully defined and supported.

Goals of HTML5

- Support all existing web pages. With HTML5, there is no requirement to go back and revise older websites.
- Reduce the need for external plugins and scripts to show website content.
- Improve the semantic definition (i.e. meaning and purpose) of page elements.
- Make the rendering of web content universal and independent of the device being used.
- Handle web documents errors in a better and more consistent fashion.

New Elements in HTML5

<article>
<aside>
<audio>
<canvas>
<datalist>
<figure>
<figcaption>
<footer>
<header>
<hgroup>
<mark>
<nav>
<progress>
<section>
<source>
<svg>
<time>
<video>

These are just some of the new elements introduced in HTML5. We will be exploring each of these during this course.

Other New Features in HTML5

- Built-in audio and video support (without plugins)
- Enhanced form controls and attributes
- The Canvas (a way to draw directly on a web page)
- Drag and Drop functionality
- Support for CSS3 (the newer and more powerful version of CSS)
- More advanced features for web developers, such as data storage and offline applications.

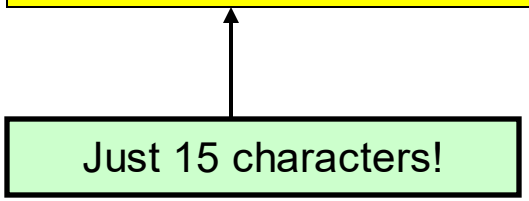
First Look at HTML5

Remember the DOCTYPE declaration from XHTML?

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
```

In HTML5, there is just one possible DOCTYPE declaration and it is simpler:

```
<!DOCTYPE html>
```



The DOCTYPE tells the browser which type and version of document to expect. This should be the last time the DOCTYPE is ever changed. From now on, all future versions of HTML will use this same simplified declaration.

The <html> Element

This is what the <html> element looked like in XHTML:

```
<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en"
   lang="en">
```

Again, HTML5 simplifies this line:

```
<html lang="en">
```

The **lang** attribute in the <html> element declares which language the page content is in. Though not strictly required, it should always be specified, as it can assist search engines and screen readers.

Each of the world's major languages has a two-character code, e.g. Spanish = "es", French = "fr", German = "de", Chinese = "zh", Arabic = "ar".

The <head> Section

Here is a typical XHTML <head> section:

```
<head>
  <meta http-equiv="Content-type" content="text/html; charset=UTF-8" />
  <title>My First XHTML Page</title>
  <link rel="stylesheet" type="text/css" href="style.css" />
</head>
```

And the HTML5 version:

```
<head>
  <meta charset="utf-8">
  <title>My First HTML5 Page</title>
  <link rel="stylesheet" href="style.css">
</head>
```

Notice the simplified character set declaration, the shorter CSS stylesheet link text, and the removal of the trailing slashes for these two lines.

Basic HTML5 Web Page

Putting the prior sections together, and now adding the <body> section and closing tags, we have our first complete web page in HTML5:

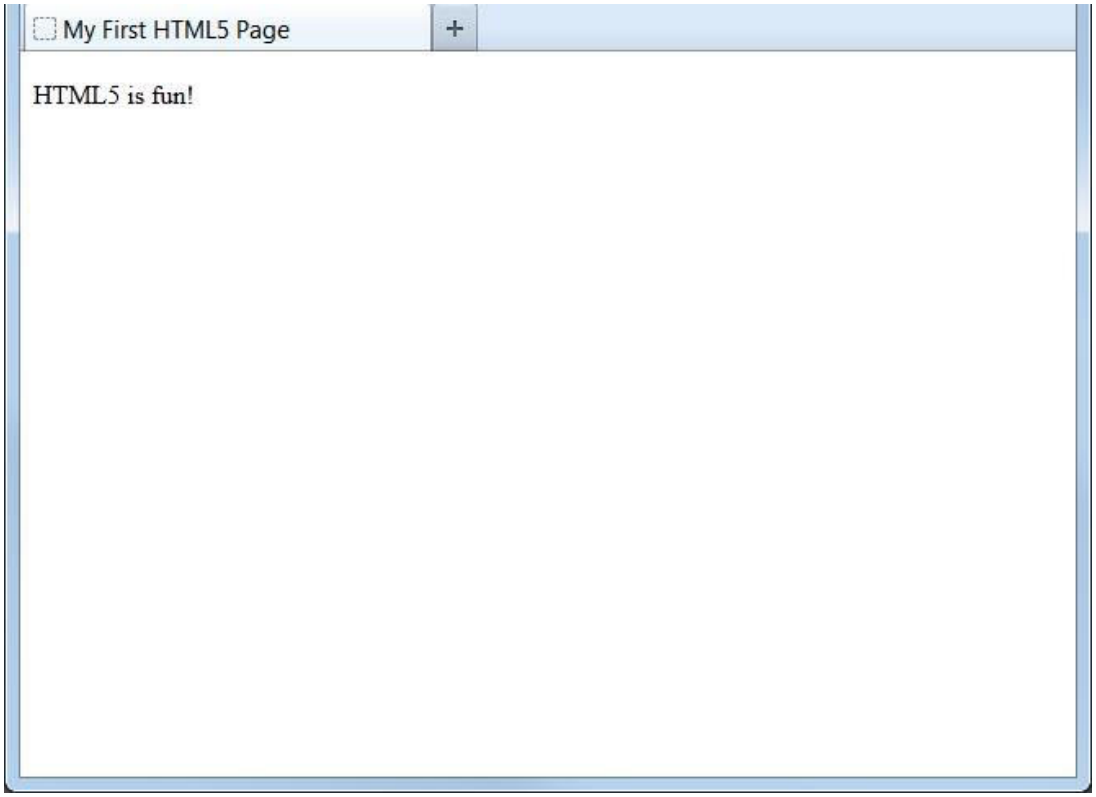
```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="utf-8">
  <title>My First HTML5 Page</title>
  <link rel="stylesheet" href="style.css">
</head>
<body>
  <p>HTML5 is fun!</p>
</body>
</html>
```

Let's open this page in a web browser to see how it looks…

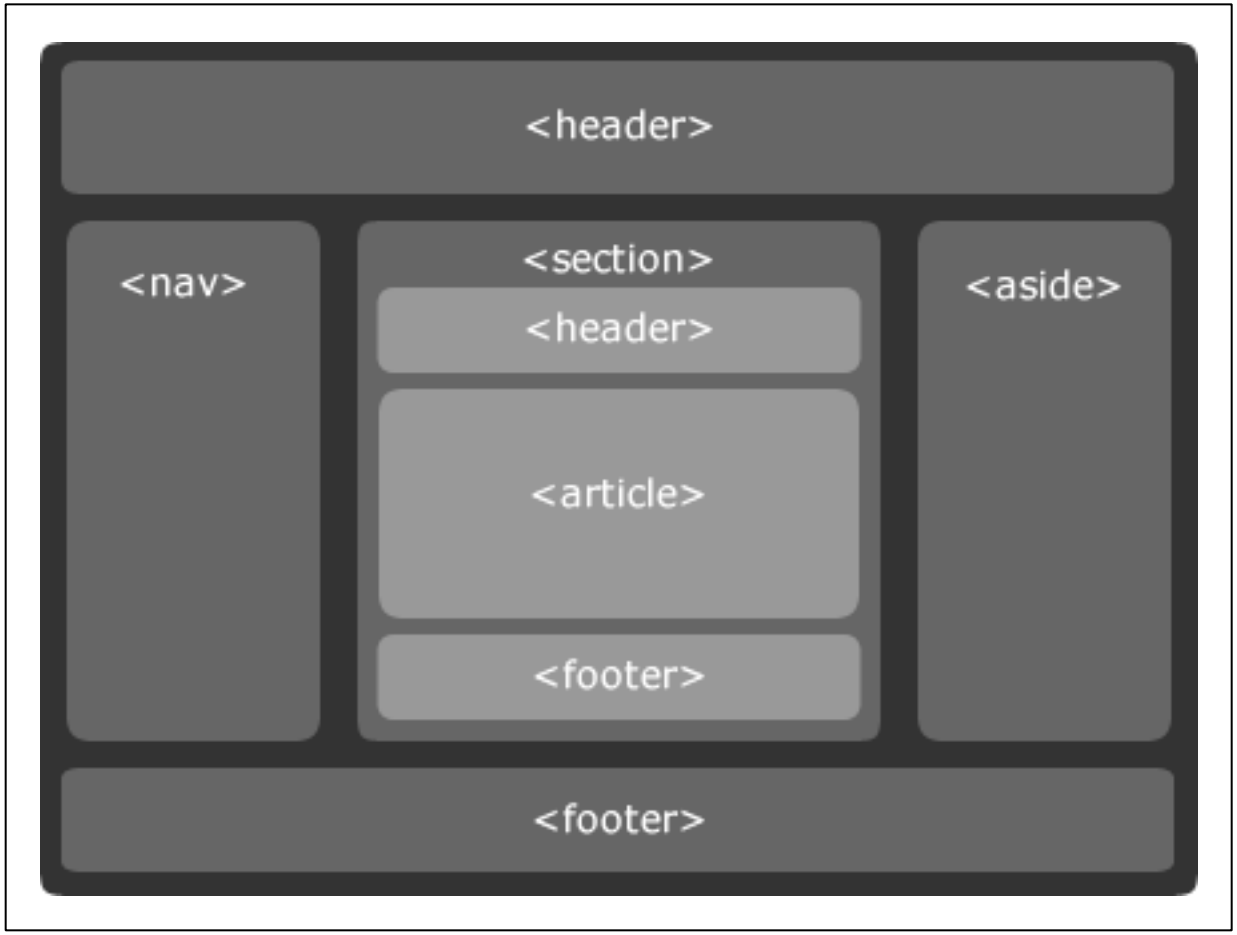
Removed Elements in HTML5

Removed Element	Use Instead
<acronym>	<abbr>
<applet>	<object>
<basefont>	CSS
<big>	CSS
	CSS
<dir>	
<font>	CSS
<frame>	
<frameset>	
<noframes>	
<strike>	CSS, <s>, or <del>
<tt>	CSS

Viewing the HTML5 Web Page



Even though we used HTML5, the page looks exactly the same in a web browser as it would in XHTML. Without looking at the source code, web visitors will not know which version of HTML the page was created with.


<header>
<nav>
<section>
<header>
<article>
<footer>
<aside>
<footer>

```
<video src="movie.ogg"  width="320" height="240" controls="controls">
</video>
```

Attribute	Value	Description
audio	muted	Defining the default state of the the audio. Currently, only "muted" is allowed
autoplay	autoplay	If present, then the video will start playing as soon as it is ready
controls	controls	If present, controls will be displayed, such as a play button
height	*pixels*	Sets the height of the video player
loop	loop	If present, the video will start over again, every time it is finished
poster	*url*	Specifies the URL of an image representing the video
preload	preload	If present, the video will be loaded at page load, and ready to run. Ignored if "autoplay" is present
src	*url*	The URL of the video to play
width	*pixels*	Sets the width of the video player

```
<audio src="song.ogg" controls="controls">
</audio>
```

Attribute	Value	Description
autoplay	autoplay	Specifies that the audio will start playing as soon as it is ready.
controls	controls	Specifies that controls will be displayed, such as a play button.
loop	loop	Specifies that the audio will start playing again (looping) when it reaches the end
preload	preload	Specifies that the audio will be loaded at page load, and ready to run. Ignored if autoplay is present.
src	*url*	Specifies the URL of the audio to play

The HTML5 canvas element uses JavaScript to draw graphics on a web page.

A canvas is a rectangular area, and you control every pixel of it.

The canvas element has several methods for drawing paths, boxes, circles, characters, and adding images.

```
<canvas id="myCanvas" width="200" height="100"></canvas>
```

The canvas element has no drawing abilities of its own. All drawing must be done inside a JavaScript:

```
<script type="text/javascript">
        var c=document.getElementById("myCanvas");
        var cxt=c.getContext("2d");
        cxt.fillStyle="#FF0000";
        cxt.fillRect(0,0,150,75);
</script>
```

HTML5 has several new input types for forms.

- email
- url
- number
- range
- date pickers (date, month, week, time, datetime, datetime-local)
- search
- color

Examples:

E-mail: <input type="email" name="user_email" />

<input type="number" name="points" min="1" max="10" />

Attribute	Value	Description
max	*number*	Specifies the maximum value allowed
min	*number*	Specifies the minimum value allowed
step	*number*	Specifies legal number intervals (if step="3", legal numbers could be -3,0,3,6, etc)
value	*number*	Specifies the default value

<input type="range" name="points" min="1" max="10" />

HTML5 has several new input types for selecting date and time:

- date - Selects date, month and year
- month - Selects month and year
- week - Selects week and year
- time - Selects time (hour and minute)
- datetime - Selects time, date, month and year
- datetime-local - Selects time, date, month and year (local time)

Color: <input type="color" name="user_color" />

HTML5 has several new elements and attributes for forms.

- datalist
- keygen
- output

The datalist element specifies a list of options for an input field. The list is created with option elements inside the datalist.

The purpose of the keygen element is to provide a secure way to authenticate users.

The output element is used for different types of output, like calculations or script output: