

HTML, CSS, JavaScript

Encoding Information: There's more!

- Bits and bytes encode the information, but that's not all
- **Tags** encode format and some structure in word processors
- **Tags** encode format and some structure in HTML
- **Tags** are one form of meta-data
- **Meta-data** is information about information



Windows Codepage 1251

	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
00	NUL	STX	SOT	ETX	EOT	ENQ	ACK	BEL	BS	HT	LF	VT	FF	CR	SO	SI
01	000	001	002	003	004	005	006	007	008	009	010	011	012	013	014	015
10	DLE	DC1	DC2	DC3	DC4	NAK	SYN	ETB	CAN	EM	SUB	ESC	FS	GS	RS	US
11	016	017	018	019	020	021	022	023	024	025	026	027	028	029	030	031
20	SP	!	#	\$	%	&	'	()	*	+	,	-	.	/	
21	032	033	034	035	036	037	038	039	040	041	042	043	044	045	046	047
22	0	1	2	3	4	5	6	7	8	9	:	<	>	?'		
30	048	049	050	051	052	053	054	055	056	057	058	059	060	061	062	063
31	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
40	064	065	066	067	068	069	070	071	072	073	074	075	076	077	078	079
41	P	Q	R	S	T	U	V	W	X	Y	Z	[]	^	_	
50	080	081	082	083	084	085	086	087	088	089	090	091	092	093	094	095
51	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
60	096	097	098	099	100	101	102	103	104	105	106	107	108	109	110	111
61	p	q	r	s	t	u	v	w	x	y	z	{	}	~		
70	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
71	Ж	Г	,	г	...	†	Y	X	У	Ъ	←	Н	К	Т	И	
80	128	129	8218	402	8222	8230	8224	8225	710	8240	352	8249	338	141	142	143
81	ж	г	,"	г	...	†	Y	X	У	Ъ	←	Н	К	Т	И	
90	144	8216	8217	8220	8221	8226	8211	8212	732	8482	353	8250	339	157	158	376
91	Ш	Ъ	Ъ	Ъ	Ъ	Ъ	Ъ	Ъ	Ъ	Ъ	Ъ	Ъ	Ъ	Ъ	Ъ	Ъ
A0	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
A1	°	±	І	І	г	о	¶	·	ѐ	№	а	»	ј	ѕ	Ҁ	
B0	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
B1	А	Б	В	Г	Д	Е	Ж	З	И	Й	К	Л	М	Н	О	П
C0	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
C1	Р	С	Т	У	Ф	Х	Ц	Ч	Ш	Щ	Ъ	Ы	Ь	Э	Ю	Я
D0	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
D1	а	б	в	г	д	е	ж	з	и	й	к	л	м	н	о	п
E0	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
E1	р	с	т	у	ф	х	ц	ч	ш	щ	ъ	ы	ь	э	ю	я
F0	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255

HTML and the Web

- The Web uses **http://** protocol
- Its asking for a Web page, which usually means a page expressed in **hyper-text markup language**, or HTML
 - *Hyper-text* refers to text containing LINKS that allow you to leave the linear stream of text, see something else, and return to the place you left
 - *Markup language* is a notation to describe how a published document is supposed to look: what kinds of fonts, text color, headings, images, etc.



Basics of HTML #1

- Rule 1: Content is given directly; anything that is not content is given inside of tags
- Rule 2: Tags made of < and > and used this way:

Attribute&Value

```
<p style="color:red">This is paragraph.</p>
```

Start

Content

End

Tag

Tag

It produces: **This is paragraph.**

- Rule 3: Tags must be paired or “self terminated”

There are great resources out there

HTML Basic

HTML HOME

- HTML Introduction
- HTML Get Started
- HTML Basic
- HTML Elements
- HTML Attributes
- HTML Headings
- HTML Paragraphs
- HTML Formatting
- HTML Fonts
- HTML Styles
- HTML Links
- HTML Images
- HTML Tables
- HTML Lists
- HTML Forms
- HTML Frames
- HTML Iframes
- HTML Colors
- HTML Colornames
- HTML Colorvalues
- HTML Quick List

HTML Advanced

- HTML Layout
- HTML Doctypes
- HTML CSS
- HTML Head
- HTML Meta
- HTML Scripts
- HTML Entities
- HTML URLs
- HTML URL Encode
- HTML Webserver
- HTML Summary

HTML Media

- HTML Media
- HTML Audio
- HTML Object
- HTML Video
- HTML YouTube
- HTML Media Tags

<http://www.w3schools.com/html/default.asp>

HTML Tutorial

[« W3Schools Home](#)

[Next Chapter »](#)



With HTML you can create your own Web site.

This tutorial teaches you everything about HTML.

HTML is easy to learn - You will enjoy it.

Examples in Each Chapter

This HTML tutorial contains hundreds of HTML examples.

With our online HTML editor, you can edit the HTML, and click on a button to view the result.

Example

```
<html>
<body>

<h1>My First Heading</h1>

<p>My first paragraph.</p>

</body>
</html>
```

[Try it yourself »](#)

Click on the "Try it yourself" button to see how it works

[Start learning HTML now!](#)

There are great resources out there

- http://www.w3schools.com/html/tryit.asp?filename=tryhtml_intro
- Let's do it.

Edit and Click Me >>

```
<html>
<body>
<h1>My First Heading</h1>
<p>My first paragraph.</p>
</body>
</html>
```

Your Result:

My First Heading

My first paragraph.

Edit the code above and click to see the result.

[W3Schools.com](http://www.w3schools.com) - Try it yourself

Example

- Write HTML in text editor: notepad++ or TextWrangler
- The file extension is `.html`; show it in Firefox or your browser

Making a Bake



When do we get to eat it?!

Example: myfirst.html

```
<html>
<head>
<title> Fun in the Kitchen </title>
</head>
<body>
<h1> Making a Bake </h1>

<p> When do we get to eat it?! </p>
</body>
</html>
```

Making a Bake



When do we get to eat it?!

Basics of HTML #2

- Rule 4: An HTML file has this structure:

```
<html>
```

```
  <head><title>Name of Page</title></head>
```

```
  <body>
```

Actual HTML page description goes here

```
  </body>
```

```
</html>
```

- Rule 5: Tags must be properly nested
- Rule 6: White space is mostly ignored
- Rule 7: Attributes (`style="color:red"`) preceded by space, name not quoted, value quoted

Basics of HTML #3

- To put in an image (.gif, .jpg, .png), use 1 tag

```

```

Tag	Image Source	Alt Description	End
-----	--------------	-----------------	-----

- To put in a link, use 2 tags

```
<a href=http://users.soe.ucsc.edu/~charlie>Charlie's page</a>
```

Hyper-text reference – the link	Anchor	End
---------------------------------	--------	-----

- More on HTML (including good tutorials) at
- <http://www.w3schools.com/html/default.asp>

HTML Cheat Sheet:

<http://www.simplehtmlguide.com/cheatsheet.php>

Basic Tags

`<html></html>` Creates an HTML document

`<head></head>` Sets off the title and other information that isn't displayed on the web page its

`<body></body>` Sets off the visible portion of the document

Body Attributes

`<body style="background-color:pink">` Sets the background color, using name or hex value

`<body style="color:black">` Sets the text color, using name or hex value

Text Tags

`<h1></h1>` Creates the largest headline

`<h6></h6>` Creates the smallest headline

`` Creates bold text

`<i></i>` Creates italic text

`<tt></tt>` Creates teletype, or typewriter-style text

`` Emphasizes a word (with italic or bold)

`` Emphasizes a word (with italic or bold)

Links

`` Creates a hyperlink; anchor between tags

` ` Creates hyperlink with image anchor

Formatting

`<p></p>` Creates a new paragraph

`<p style="text-align:left"></p>` Aligns a paragraph to the left (default), right, or center.

`
` Inserts a line break

`<blockquote></blockquote>` Indents text from both sides

`<hr />` Inserts a horizontal rule

`<hr size="3" />` Sets size (height) of rule

`<hr width="80%" />` Sets width of rule, in percentage or absolute value

Lists

`<ul style="list-style-type: none;">`

Which does not apply to HTML?

- A. It is the language used for the web browser and the web server to communicate over the Internet.
- B. It is the language used to express how a document should be displayed.
- C. It is a language that allows for “documents” to be created that are not linear. (A book with chapters is linear – you normally read from start to end in order.)
- D. All of A-C apply to HTML.

CSS – separating style from content

Content vs Style

- `<h1>This is a heading</h1>`
- `emphasize this`
- `Make this bold face`
- `<p style="color:red">This is paragraph is red.</p>`

CSS Syntax

A CSS rule has two main parts: a selector, and one or more declarations:

Selector

h1

Declaration

```
{ color:blue; font-size:12px; }
```

Declaration

Property

Value

Property

Value

The selector is normally the HTML element you want to style.

Each declaration consists of a property and a value.

The property is the style attribute you want to change. Each property has a value.

From http://www.w3schools.com/css/css_syntax.asp

Adding CSS to your html file

```
<!DOCTYPE html>
```

```
<html><head>
```

```
<style>
```

```
p {color:red;text-align:center;}
```

```
body {background-image:url("images/ComputerSlug.gif");}
```

```
</style>
```

```
</head>
```

```
<body>
```

```
<p>Hello World!</p>
```

```
<p>This paragraph is styled with CSS.</p>
```

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


Using an external CSS

```
<!DOCTYPE html>
```

```
<html><head>
```

```
<link rel="stylesheet" type="text/css"  
href="mystyle.css">
```

```
</head>
```

```
<body>
```

```
<p>Hello World!</p>
```

```
<p>This paragraph is styled with CSS.</p>
```

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

mystyle.css

```
p {color:red;text-align:center;}
```

```
body {background-image:url("images/ComputerSlug.gif");}
```

Using inline style annotations

```
<!DOCTYPE html>
```

```
<html><head>
```

```
</head>
```

```
<body>
```

```
<p>Hello World!</p>
```

```
<p style="color:red;text-align:center;">This paragraph is  
styled with CSS.</p>
```

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

- A. css allows you to separate the specific formatting information from the main body of the document.
- B. css allows you to change how many html documents will be displayed by changing just a single file
- C. A & B
- D. neither A nor B

JavaScript

Puts code right in the web page

- Syntax similar to Java
- Has its own set of predefined functions you need to discover (like Processing's drawing functions).
- How do we put it in the web page?

```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```
<script>
```

```
function myFunction() {
```

```
  document.getElementById("demo").innerHTML="Goodbye";
```

```
}
```

```
</script>
```

```
</head>
```

```
<body>
```

```
<h1>My Web Page</h1>
```

```
<p id="demo">Hello!</p>
```

```
<button type="button" onclick="myFunction()">Click Me!</button>
```

```
</body>
```

```
</html>
```

```
<!DOCTYPE html>
```

```
<html>
```

```
<body>
```

```
<h1>My Web Page</h1>
```

```
<p id="demo">Hello!</p>
```

```
<button type="button" onclick="myFunction()">Click Me!</button>
```

```
<p><strong>Note:</strong> myFunction is stored in an external file called  
"goodbye.js".</p>
```

```
<script src="goodbye.js"></script>
```

```
</body>
```

```
</html>
```


goodbye.js

```
function myFunction()  
{  
  document.getElementById("demo").innerHTML="Goodbye!";  
}
```

```
<!DOCTYPE html><html><body>
<!-- From http://www.w3schools.com/js/tryit.asp?filename=tryjs_ifthenelse -->
<p>Click the button to get a time-based greeting.</p>
<button onclick="myFunction()">Try it</button>
<p id="demo"></p>
<script>
function myFunction() {
  var x="";
  var time=new Date().getHours();
  if (time<20) {
    x="Good day";
  } else {
    x="Good evening";
  }
  document.getElementById("demo").innerHTML=x;
}
</script>

</body></html>
```

What are you supposed to learn?

- HTML let's you programmatically indicate how a particular content should be displayed.
- It can be served up by any HTTP server anywhere in the world.
- CSS lets you partially separate content from presentation
- JavaScript puts full power of computing in a web page