

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

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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.

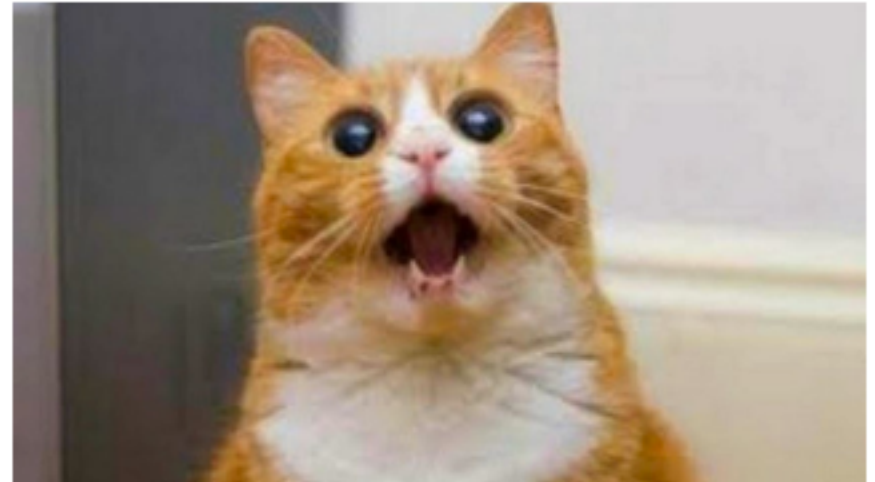
Edit the code above and click to see the result.

[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

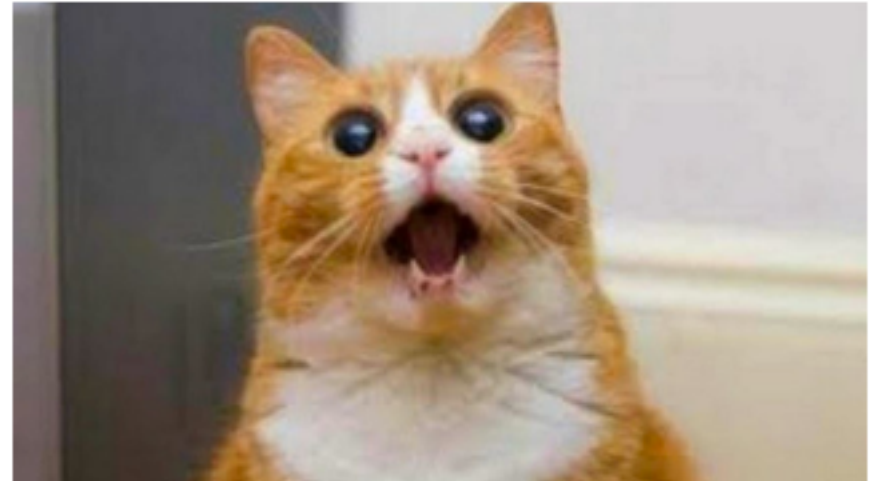
Exciting Times



More cat photos on the internet.

Example: myfirst.html

Exciting Times



More cat photos on the internet.

```
1 <html>
2 <head>
3 <title>Surprised Cat</title>
4 </head>
5 <body>
6 <h1>Exciting Times</h1>
7 
8 <p>More cat photos on the internet.</p>
9 </body>
10 </html>
```


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/~dustinadams">Dustin'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("cat.jpg");}
```

```
</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("cat.jpg");}
```

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 a lot of 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