



AA

uofa-cmput404.github.io



CMPUT 404 - Part 06: HTML

eclasse.srv.ualberta.ca/pluginfile.php/7625204/mod_res...

HTML STANDARDS

- The current version of HTML has two standards
- WHATWG's HTML "living standard"
 - <https://html.spec.whatwg.org/multipage/>
 - Continually updated, constantly evolving
 - No version numbers
- W3C's HTML 5 Standards 2017
 - <https://www.w3.org/TR/html52/>
 - Occasionally releases versions
 - Versions: 5.0, 5.1, 5.2 5.3 → 2021
- Best? *but browsers not support everything*
 - Generally people prefer WHATWG's "living standard"
 - Your best option when writing HTML is to use a reference with a compatibility table





AA

uofa-cmput404.github.io



CMPUT 404 - Part 06: HTML

eclass.srv.ualberta.ca/pluginfile.php/7625204/mod_res...

ex. searchogg media /mp4.

Safari not support many

- Example compatibility table from MDN:

Browser Compatibility

firefox supports chrome.

almost everything

Update compatibility data on GitHub

	Chrome	Edge	Firefox	Internet Explorer	Opera	Safari	Android webview	Chrome for Android	Edge Mobile	Firefox for Android	Opera for Android	Safari on iOS	Samsung Internet
Basic support	35	No	30	No	22	?	59	59	Yes	54	?	?	7.0

... Full support ... No support

... Compatibility unknown

*java script → for Browser.
use Compiler to work on iPhone.
ZOS*

- Hazel's favorite resource is MDN because its up to date, and its provided by Mozilla, who actually make a browser, and aren't just trying to show you ads: <https://developer.mozilla.org/en-US/docs/Web>

Can I use? Can





AA

uofa-cmput404.github.io



CMPUT 404 - Part 06: HTML

eclass.srv.ualberta.ca/pluginfile.php/7625204/mod_res...

use WC3 Validator

LET'S START HTMLING!

It's best to start from the bare essentials. You can validate this HTML using

document type <http://validator.w3.org/check>.

↓
!DOCTYPE html ① tag no version.
<html> ② html tag
<head> ③ head tag
<title>Page Title</title>
<meta charset="UTF-8">
</head> end of head
<body>
Here's your minimal and validating HTML page.
</body>
</html>

↓ break. (for new line)

 inside
↓ "
"

xml: not human readable.
need to close tag!!!





AA

uofa-cmput404.github.io



CMPUT 404 - Part 06: HTML

eclass.srv.ualberta.ca/pluginfile.php/7625204/mod_res...

DON'T FORGET!

You need to tell the world that this is a modern HTML file!

Put your DOCTYPE at the top!

Also enclose your content in the HTML tag!

```
<!DOCTYPE html>
<html>
...
</html>
```

*add after end, may
not show on html page*





AA

uofa-cmput404.github.io



CMPUT 404 - Part 06: HTML



e class.srv.ualberta.ca/pluginfile.php/7625204/mod_res...

HEAD/HEADER

The head tag is where we put information about the webpage. You will usually include a title here.

Meta tags contain meta information for browsers and other tools to help interpret.

```
<head>
<title>Page Title</title>
<meta charset="UTF-8" > → for user agent(browser) to use
<meta name="description" content="Example Page" > → to search engines
<meta name="author" content="Abram Hindle">

<!-- proprietary extensions -->
<meta name="apple-mobile-web-app-capable" content="yes" >
<meta name="apple-mobile-web-app-status-bar-style" content="black-translucent" >
<!-- mobile viewport information -->
<meta name="viewport" content="width=device-width, initial-scale=1.0, maximum-scale=1.0" >
<!-- stylesheets / css -->
<link rel="stylesheet" href="css/reveal.min.css" >
<link rel="stylesheet" href="css/theme/default.css" id="theme" >
<link rel="stylesheet" href="lib/css/zenburn.css" >

</head>
```

can link to other resources you use

<body>
HI
</body>

Fiddle!

click





AA

uofa-cmput404.github.io



CMPUT 404 - Part 06: HTML

eclasse.srv.ualberta.ca/pluginfile.php/7625204/mod_res...

cfg: context free grammar

phrase HTML

BODY

paragraph ~~fix~~ ^{fix}

```
<body>
<p>Visible content goes here.</p> → no need, but recommended.
<p>Consider that you should not directly specify layout information
here but that you should mark up blocks with a class allowing you to
apply layouts later. You can abstract layout</p>
</body>
```

布局

Fiddle!

↓
see HTML using different devices. Save CSS
file for computer/ human to read.
it is as wild as your browser





AA

uofa-cmput404.github.io



X



CMPUT 404 - Part 06: HTML



eclass.srv.ualberta.ca/pluginfile.php/7625204/mod_res...

TAGS

All tags should be closed to allow for ease of reading and parsing, except void tags.

Start Tags are enclosed in < and >
*
 </br>*

End Tags are enclosed in </ and >

```
<tag>
  <enclosedtag>
  </enclosedtag>
</tag>
```

*white space is ignored for most part for
html.*

Should use indentation

Fiddle!





Reader View Available



CMPUT 404 - Part 06: HTML



eclass.srv.ualberta.ca/pluginfile.php/7625204/mod_res...

Void tags are enclosed in < and > like start tags, but don't have a matching end tag

```
<tag>
  <voidtag>
    <br>
</tag>
```

Fiddle!





AA

uofa-cmput404.github.io



CMPUT 404 - Part 06: HTML

eclass.srv.ualberta.ca/pluginfile.php/7625204/mod_res...

HTML: not case-sensitive.

TAGS

Unless you are writing XHTML, in which case you must follow XML syntax, void tags typically look like `<voidtag>`. but sometimes are written like `<voidtag/>`.

This is against the HTML spec.

Tags can be any capitalization in HTML, but typically they are written in lower case. Stick to lower-case when writing HTML.

“profile-image”: “`https://.../jpg`”
↓
public





E-tag : w/ "etag" weak etag : for the important
if non-match : content → thing hasn't change.
304 → send 0 bits

XHTML

- You can write HTML in XML format if you follow XML syntax: XHTML
- Valid HTML is not valid XML, and valid XML is not valid HTML
 - For a while there was a drive to combine XML and HTML into "polyglot HTML" where you could write both at the same time, but this was abandoned in 2015.
 - Browsers still support `<voidtag/>` syntax in HTML but it breaks other HTML parsers
- XML is very unforgiving, a simple mistake could cause a parser to refuse to parse the XML
- Breaks `Document.write()`, the `<template>` tag, most entities...
- Adds support for namespaces
- HTML 5 XML has no DTD URL
- Uses `Content-Type: application/xhtml+xml`

↓
want to use XHTML!



HTTP security

HTTP access control (CORS)

HTTP authentication

HTTP caching

HTTP compression

HTTP conditional requests

HTTP content negotiation

HTTP cookies

HTTP range requests

HTTP redirects

HTTP specifications

Feature policy

References:

- HTTP headers
 - Accept-CH-Lifetime
 - Accept-CH
 - Accept-Charset
 - Accept-Encoding
 - Accept-Language
 - Accept-Patch
 - Accept-Post
 - Accept-Ranges
 - Accept
 - Access-Control-Allow-Credentials
 - Access-Control-Allow-Headers
 - Access-Control-Allow-Methods
 - Access-Control-Allow-Origin
 - Access-Control-Expose-Headers
 - Access-Control-

Syntax

```
ETag: W/"<etag_value>"  
ETag: "<etag value>"
```

Directives

W/ [Optional]

'W/' (case-sensitive) indicates that a weak validator is used. Weak etags are easy to generate, but are far less useful for comparisons. Strong validators are used for comparisons but can be very difficult to generate efficiently. Weak ETag values of two representations of the same resources might be semantically equivalent, but not byte-for-byte identical. This means weak etags prevent caching when byte range requests are used, but strong etags mean range requests can still be cached.

~ can't send video's fragment

<etag_value>

Entity tag that uniquely represents the requested resource. It is a string of ASCII characters placed between double quotes, like "675af34563dc-tr34". The method by which ETag values are generated is not specified. Typically, the ETag value is a hash of the content, a hash of the last modification timestamp, or just a revision number. For example, a wiki engine can use a hexadecimal hash of the documentation article content.

Examples

```
ETag: "33a64df551425fcc55e4d42a148795d9f25f89d4"  
ETag: W/"0815"
```

Avoiding mid-air collisions

With the help of the ETag and the If-Match headers, you can detect mid-air edit collisions.

For example, when editing a wiki, the current wiki content may be hashed and put into an ETag header in the response:

```
ETag: "33a64df551425fcc55e4d42a148795d9f25f89d4"
```





AA

uofa-cmput404.github.io



CMPUT 404 - Part 06: HTML

Twitch

eclass.srv.ualberta.ca/pluginfile....

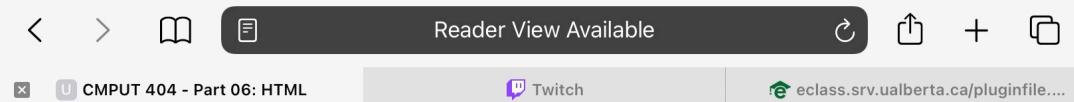
PARAGRAPH TAG: <P>

```
<p>  
Now bears us onward one of the hard margins,  
    And so the brooklet's mist o'ershadows it,  
        From fire it saves the water and the dikes.  
</p>  
<p>  
Even as the Flemings, 'twixt Cadzand and Bruges,  
    Fearing the flood that tow'rds them hurls itself,  
        Their bulwarks build to put the sea to flight;  
</p>
```

Fiddle!

We can use CSS to style these text blocks. Whitespace in the <p> block doesn't matter.





Html don't care about white space

PARAGRAPH TAG

That code now looks like:

Now bears us onward one of the hard margins, And so
the brooklet's mist o'ershadows it, From fire it saves the
water and the dikes. can only see paragraph.

Even as the Flemings, 'twixt Cadsand and Bruges,
Fearing the flood that tow'rds them hurls itself, Their
bulwarks build to put the sea to flight;



AA

uofa-cmput404.github.io



x U CMPUT 404 - Part 06: HTML

Twitch

e class.srv.ualberta.ca/pluginfile....

PARAGRAPH TAG: <P> AND

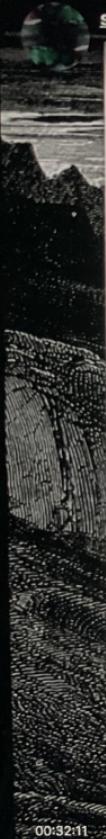
- The previous example broke up the explicit lines from that canto.
- We can make line-breaks explicit with
.

```
<p>  
Now bears us onward one of the hard margins,<br>  
    And so the brooklet's mist o'ershadows it,<br>  
        From fire it saves the water and the dikes.<br>  
</p>  
<p>  
Even as the Flemings, 'twixt Cadzand and Bruges,<br>  
    Fearing the flood that tow'rds them hurls itself,<br>  
        Their bulwarks build to put the sea to flight;<br>  
</p>
```

→ if the line
is too long:
still not
break for
every line.

- We can use CSS to style these text blocks.
Whitespace in the <p> block doesn't matter.





[skrunt](#)

PARAGRAPH TAG AND

That code now looks like:

*Even as the Flemings, 'twixt Cadsand and Bruges,
Fearing the flood that tow'rs them hurls itself,
Their bulwarks build to put the sea to flight;*

Specify layout information
to with a class allowing you to
Layout.com

use CSS.

justify → use

text-align: center; >
left: all on to left

A portrait of a middle-aged man with short, light-colored hair, wearing dark-rimmed glasses and a light-colored collared shirt. He is looking slightly to his left with a neutral expression.



Reader View Available



x U CMPUT 404 - Part 06: HTML

Twitch

eclass.srv.ualberta.ca/pluginfile....

PARAGRAPH TAG AND

That code now looks like:

*Now bears us onward one of the hard margins,
And so the brooklet's mist o'ershadows it,
From fire it saves the water and the dikes.*

*Even as the Flemings, 'twixt Cadsand and Bruges,
Fearing the flood that tow'rds them hurls itself,
Their bulwarks build to put the sea to flight;*





AA

uofa-cmput404.github.io



CMPUT 404 - Part 06: HTML

Twitch

eclass.srv.ualberta.ca/pluginfile....

: THE IMAGE TAG

We want to show images, we cannot embed them in HTML easily so we use hyperlinks (URIs) to reference them and include them.

Remember to include alt tags so they are machine and human-readable.

Source

url: not full url. relative url: on current page, then add the url to the file path
add the url to the file path

```

<!-- scaling -->

<!-- scaling without respecting aspect -->

```



according width.





AA

uofa-cmput404.github.io



CMPUT 404 - Part 06: HTML

eclass.srv.ualberta.ca/pluginfile....

doc-00-5k-docs.googleusercontent...

<a>: THE ANCHOR TAG

We wouldn't have hypertext without hyperlinks!

Anchor tags let us link to other documents or locations. The href attribute links to a URL. The URL can be relative to the location of the current page. Anchor tags used to place anchors on pages, but hyperlinks in HTML 5 they just navigate to ID'd sections now.

```
<a href="http://slashdot.org">Slashdot.org: News for Nerds Stuff that Matters<br>
<a href="http://cnn.com">T</a><a href="http://msn.com">a</a>
<a href="http://softwareprocess.es/">g</a><a href="http://ualberta.ca">s</a>
don't have to be very long.<br>
<a href="#">The a directory down!</a> Relative Link
```

can use image button

hyperlink: text need to have for you to click on

Slashdot.org: News for Nerds Stuff that Matters click on

Tags don't have to be very long.

The parent directory! Relative Link

add the hyperlink of image so can use there image as button to click link



AA

uofa-cmput404.github.io



x U CMPUT 404 - Part 06: HTML

e eclass.srv.ualberta.ca/pluginfile....

G doc-00-5k-docs.googleusercontent...

TEXT LAYOUT PHILOSOPHY

Let the user agent decide how to display the text. You don't need to control everything. But provide the appropriate semantics first. Then apply layout information to those semantics. *give them*

If you want something to show up in a certain make a CSS class and style a span or a div or a paragraph that way.

If you want a fancy layout use flexbox or grid layouts.



Charles Web Inspector

?print pdf
↓
css stylesheet

TEXT LAYOUT PHILOSOPHY

Let the user agent decide how to display the text. You don't need to control everything. But provide the appropriate semantics first.

Then apply layout information to those semantics.

If you want something to show up in a certain make a CSS class and style a span or a div or a paragraph that way.

If you want a fancy layout use flexbox or grid layouts.

Inspector Console Debugger Style Editor Performance Memory Network Storage Accessibility Application

Search HTML

```
<!--***** END MARKDOWN SLIDE *****-->
<!--***** START MARKDOWN SLIDE . . . *****-->
<section class="part1" style="font-size: 80px; top: 94.5px; display: block;" aria-hidden="true" hidden"></section>
<!--***** END MARKDOWN SLIDE *****-->
<!--***** START HTML SLIDE . . . *****-->
<!--***** END HTML SLIDE *****-->
<!--***** START MARKDOWN SLIDE *****-->
<section class="current" style="top: 142.5px; display: block;" aria-hidden="true" hidden">
  <h1>Learn PHP</h1>
  <p>PHP</p>
  <ul>
    <li>HTML</li>
    <li>CSS</li>
    <li>JavaScript</li>
  </ul>
<!--***** END MARKDOWN SLIDE *****-->
<!--***** START MARKDOWN SLIDE *****-->
<section class="future" style="top: 110px; display: block;" aria-hidden="true" hidden"></section>
<!--***** END MARKDOWN SLIDE *****-->
<!--***** START MARKDOWN SLIDE *****-->
<section class="future" style="top: 114px; display: block;" aria-hidden="true" hidden"></section>
<!--***** END MARKDOWN SLIDE *****-->
<!--***** START MARKDOWN SLIDE *****-->
<section class="future" style="top: 120px; display: none;" aria-hidden="true" hidden"></section>
<!--***** END MARKDOWN SLIDE *****-->
<!--***** START MARKDOWN SLIDE *****-->
<section class="future" style="top: 0px; display: none;" aria-hidden="true" hidden"></section>
<!--***** END MARKDOWN SLIDE *****-->
<!--***** START MARKDOWN SLIDE *****-->
<section class="future" style="top: 140px; display: none;" aria-hidden="true" hidden"></section>
<!--***** END MARKDOWN SLIDE *****-->
<!--***** START MARKDOWN SLIDE *****-->
<section class="future" style="top: 94px; display: none;" aria-hidden="true" hidden"></section>
<!--***** END MARKDOWN SLIDE *****-->
<!--***** START MARKDOWN SLIDE *****-->
<section class="future" style="top: 80px; display: none;" aria-hidden="true" hidden"></section>
<!--***** END MARKDOWN SLIDE *****-->
<!--***** START MARKDOWN SLIDE *****-->
<section class="future" style="top: 112.5px; display: none;" aria-hidden="true" hidden"></section>
<!--***** END MARKDOWN SLIDE *****-->
<!--***** START MARKDOWN SLIDE *****-->
<section class="future" style="font-size: 80px; top: 16.5px; display: none;" aria-hidden="true" hidden"></section>
<!--***** END MARKDOWN SLIDE *****-->
<!--***** START MARKDOWN SLIDE *****-->
<section class="future" style="font-size: 80px; top: 29.5px; display: none;" aria-hidden="true" hidden"></section>
<!--***** END MARKDOWN SLIDE *****-->
```





<DIV> AND TAGS

- <div> and tags have no particular meaning.
- <div>^{→ block} will cause a line break before it is displayed.
- will be inlined.

```
<div>
<span>Now bears us onward one of the hard margins,</span><br>
  And so the brooklet's mist o'ershadows it,<br>
    From fire it saves the water and the dikes.<br>
</div>
<div>
Even <span>as the Flemings</span>, 'twixt Cadsand and Bruges,<br>
  Fearing the flood that tow'rds them hurls itself,<br>
    Their bulwarks build to put the sea to flight;<br>
</div>
```

Fiddle!





AA

uofa-cmput404.github.io



x U CMPUT 404 - Part 06: HTML

e eclass.srv.ualberta.ca/pluginfile....

G doc-00-5k-docs.googleusercontent...

<DIV> AND TAGS

Looks like this:

*Now bears us onward one of the hard margins,
And so the brooklet's mist o'ershadows it,
From fire it saves the water and the dikes.
Even as the Flemings, 'twixt Cadsand and Bruges,
Fearing the flood that tow'rds them hurls itself,
Their bulwarks build to put the sea to flight;*

It did not change.

no paragraph space between paragraphs





AA

uofa-cmput404.github.io



CMPUT 404 - Part 06: HTML

eclasse.srv.ualberta.ca/pluginfile....

doc-00-5k-docs.googleusercontent...

cascade: inherited

<DIV> AND TAGS: WITH STYLE

- We can add a style attribute to these tags

```
<div>
<span style="background-color:#AAAAAA;font-weight:bold">
  Now bears us onward one of the hard margins,</span><br>
  And so the brooklet's mist o'ershadows it,<br>
  From fire it saves the water and the dikes.<br>
</div>
<div style="font-size:150%"> → castle style sheet change
  Even <span style="color:red">as the Flemings</span>, 'twixt Cadands a
  Fearing the flood that tow'rds them hurls itself,<br>
  Their bulwarks build to put the sea to flight;<br>
</div>
```

Fiddle!

can make style : cascade style sheet
样式表

cascade changing

cascading
style sheet
inherited from div

the layout

cascading: children inherited the property.
but children can overwrite





skrunt

local overrule the
global

<DIV> AND TAGS: WITH STYLE

Looks like this:

**Now bears us onward one of the hard margins,
And so the brooklet's mist o'ershadows it,
From fire it saves the water and the dikes.**

*Even as the Flemings, 'twixt Cadsand and
Bruges,
Fearing the flood that tow'rds them hurls
itself,
Their bulwarks build to put the sea to flight:*



<DIV> AND TAGS: WITH STYLE

Looks like this:

*Now bears us onward one of the hard margins,
And so the brooklet's mist o'ershadows it,
From fire it saves the water and the dikes.
Even as the Flemings, 'twixt Cadsand
and Bruges,
Fearing the flood that tow'rds them
hurls itself,
Their bulwarks build to put the sea to
flight;*



AA

uofa-cmput404.github.io



CMPUT 404 - Part 06: HTML

eclasse.srv.ualberta.ca/pluginfile....

doc-00-5k-docs.googleusercontent...

STYLE

*sheet: CSS file /
Style attributes*

I showed how to modify the style properties of tags.
Tags can have attributes defined like so:

```
<tag attribute1="value1" attribute2="val2">
```

We added style attributes. The style attributes are
Cascading Style Sheet properties.



[<](#) [>](#) [Book](#)

Reader View Available



x U CMPUT 404 - Part 06: HTML

e class.srv.ualberta.ca/pluginfile....

G doc-00-5k-docs.googleusercontent...

bing or ... go

added class and style sheet → add file for
Ntm 1

CASCADING

- Cascading refers to accumulation of CSS properties (like color, font-weight, etc.).

```
<span style="color:blue;">Hello!
<span style="color:blue;font-weight: bold;">Hello!
  <span style="color:blue;font-weight: bold;box-shadow: 10px 10px 5px black">
    </span>
  </span>
</span>
```

Fiddle!

Looks like:

Hello! Hello! Hello!

don't do `use style: use CSS : tag !!!`
entire document



< >



Reader View Available



x U CMPUT 404 - Part 06: HTML

e eclass.srv.ualberta.ca/pluginfile....

G doc-00-5k-docs.googleusercontent...

Shadow is expensive → more CPU use. / more juice

CASCADING

Inheranting from paragraph.

- Cascading refers to accumulation of CSS properties (like color, font-weight, etc.).

```
<span style="color:blue;">Hello!
<span style="font-weight: bold;">Hello!
<span style="box-shadow: 10px 10px 5px #888888;">Hello!
  <span style="color:red;">Hello!</span> inside.
</span>
</span>
</span>
```

Fiddle!

Looks like:

Hello! Hello! Hello! Hello! Hello!

inherantion.





AA

uofa-cmput404.github.io



CMPUT 404 - Part 06: HTML

eclass.srv.ualberta.ca/pluginfile....

doc-00-5k-docs.googleusercontent...

CASCADING STYLE SHEETS

- Cascades
 - Children Inherit Properties
- Style
 - Properties refer to style properties such as layout, position, color, font, background, padding, borders
- Sheets
 - Apply to a page, change a page.



CASCADING STYLE SHEETS

CSS can be applied on a per tag level, but can also be applied globally.

class

```
<!-- Include a file of CSS -->
<link href="path/to/cssfile.css" rel="stylesheet"> download that CSS file and apply that stylesheet
```

Inline CSS -->

```
<style type="text/css">
.angry {
font-weight:900;
zoom: 3;
}
.angry:nth-child(odd) Selector not often.
{
color:green;
transform:rotate(7deg);
-webkit-transform:rotate(7deg); /* Safari and Chrome */
float: left;
}
.angry:nth-child(even)
{
color:red;
transform:rotate(-12deg);
-webkit-transform:rotate(-12deg); /* Safari and Chrome */
float: right;
}
</style>
<p style="color:orange">Apply style directly</p>
<div>
```

angry *FUNK* *smaSH*



AA

uofa-cmput404.github.io



+



x U CMPUT 404 - Part 06: HTML

e eclass.srv.ualberta.ca/pluginfile....

G doc-00-5k-docs.googleusercontent...

STYLE

Looks like this:

Apply style directly

HULK

SMASH!





AA

uofa-cmput404.github.io



CMPUT 404 - Part 06: HTML

University of Alberta Single Sign...

doc-00-5k-docs.googleusercontent...

can I use?
→ wtf... check the font.

CSS: PROPERTIES TO KNOW!

- color -- color of the text or object
 - color:green
 - color:#abc (short form)
- font-family -- the font
 - font-family:"Times New Roman"
 - font-family:"Verdana"
- font-size -- the font size
 - ~~dangerous~~ font-size:10px; → for different scale
 - ~~font-size:10pt;~~ → useful for phone
 - font-size:large;
 - font-size:200%;
- font-style -- normal, italic, oblique
 - font-style:normal;





AA

uofa-cmput404.github.io



CMPUT 404 - Part 06: HTML



University of Alberta Single Sign...



doc-00-5k-docs.googleusercontent...

CSS BACKGROUNDS

- background-color -- Background color of a div or a span

```
.bg1 { background-color:red }  
.bg2 { background-color:#aabbc }
```

- background-image -- Background image

```
.bg3 {background-image:url('images/plasma.png');}
```



- On this HTML

```
<p class="bg1 ">This is example 1</p>  
<p class="bg2 ">This is example 2</p>  
<p class="bg3 ">This is example 3.<br/>  
    This is example 3.<br/>  
    This is example 3.<br/>  
</p>
```





AA

uofa-cmput404.github.io



x U CMPUT 404 - Part 06: HTML

University of Alberta Single Sign...

G doc-00-5k-docs.googleusercontent...

W3 school
MDN → different CSS here

CSS BACKGROUNDS

This is example 1

This is example 2



This is example 3.
This is example 3.
This is example 3.





AA

uofa-cmput404.github.io



x U CMPUT 404 - Part 06: HTML

University of Alberta Single Sign...

G doc-00-5k-docs.googleusercontent...

select
→ class and applying style.

CSS SELECTORS

Did you notice I had .bg1 and .bg2 in the previous example?
class

Those are CSS selectors. .bg1 and .bg2 are classes. We can use HTML attributes to label tags with classes that allow the tags to inherit CSS style information.

```
.bg1 { background-color:red; }  
.bg2 { background-color:#aabbcc; }  
.bg3 {background-image:url('images/plasma.png');}
```

"class 1, class 2, class 3"





AA

uofa-cmput404.github.io



CMPUT 404 - Part 06: HTML

University of Alberta Single Sign...

doc-00-5k-docs.googleusercontent...

CSS SELECTORS

- .class

- class selectors let you mark up HTML with a class.

```
.highlight { background-color:yellow; }
```

<div> from </div>

```
<p class="highlight">ALERT!</p>
```

- You can also combine classes with HTML tag selectors; this example makes p tags with class="highlight" orange instead of yellow. You can override other CSS as well.

```
p.highlight { background-color:orange; }
```

```
<p class="highlight">ALERT in orange!</p>
```

Here's some highlighted stuff in a div

ALERT in orange!

can target by tag, class, name ID.



2021-10-15_12-55-47.mkv

Use Inspector

CSS SELECTORS

- class selectors let you mark up HTML with a class
 - highlight = background-color: yellow;
 - no highlight = background-color: white;
- you can also combine classes with HTML tag selectors; this example makes p tags with class="highlight" orange instead of yellow. You can override other CSS as well.
 - highlight = background-color: orange;
 - no highlight = background-color: white;

Here's some highlighted stuff in a div

on override orange
previous

```
Search HTML Inspector Console Debugger Style Editor Performance Memory Network Storage Accessibility Application
+ Filter Styles Pseudo-elements This Element inline
element { background-color: red; } inline/6
p.highlight { background-color: orange; } inline/6
.reveal { margin-top: 20px; line-height: 1.3; } white.css/75
white.css/75
background-color: yellow; inline/2
background-color: yellow; inline/2
Inherited from section element { font-size: 60%; } inline
section { font-size: 60%; } inline
.reveal .slides section, .reveal .slides section { font-size: 60%; } inline
.reveal .slides section, .reveal .slides section { line-height: 1.3; font-weight: inherit; } white.css/33
.reveal .slides section, .reveal .slides section { line-height: 1.3; font-weight: inherit; } white.css/33
.reveal .slides > section, .reveal .slides > section { font-size: 60%; } inline
.reveal .slides > section, .reveal .slides > section { line-height: 1.3; font-weight: inherit; } white.css/400
.reveal .slides > section, .reveal .slides > section { font-size: 60%; } inline
.reveal .slides > section, .reveal .slides > section { pointer-events: auto; } white.css/400

```



37:31 / 1:03:50

MacBook Pro

-00:26:20

00:37:31



AA

uofa-cmput404.github.io



CMPUT 404 - Part 06: HTML



University of Alberta Single Sign...



doc-00-5k-docs.googleusercontent...

CSS SELECTORS

- **#id** *only one tag.*
 - ID selectors are like class selectors except they aim at the one tag with the id="idtag" as an attribute.

`#yellowtag { background-color:yellow; }`

`<p id="yellowtag">Yellow Tag Sale!</p>`

*↓
paragraph*





AA

uofa-cmput404.github.io



CMPUT 404 - Part 06: HTML



University of Alberta Single Sign...



doc-00-5k-docs.googleusercontent...

CSS SELECTORS

- element

- element selectors let you style entire HTML elements (tags).
- Important because you might want to theme all divs or imgs or links



```
p { background-color:yellow; }  
<p>Great. Everything is yellow now.</p>
```

Great. Everything is yellow now.





AA

uofa-cmput404.github.io



CMPUT 404 - Part 06: HTML

University of Alberta Single Sign...

doc-00-5k-docs.googleusercontent...

CSS SELECTORS

- :context

- Selectors that behave depending on the context
- Can be chained with other selectors
- :hover - when the mouse is over
- :active - active link
- :first-letter - operate on the first letter
- :nth-child(2) second child
of div.

```
span:hover { background-color:yellow; }  
.x:nth-child(even) { background-color:red; }
```

```
<span class="x">How</span>  
<span class="x">is</span>  
<span class="x">this</span>  
<span class="x">going</span>  
<span class="x">to</span>  
<span class="x">work?</span>
```

How is this going to work?

If we use <div> sup </div>

hover doesn't work since

div is not span





AA

uofa-cmput404.github.io



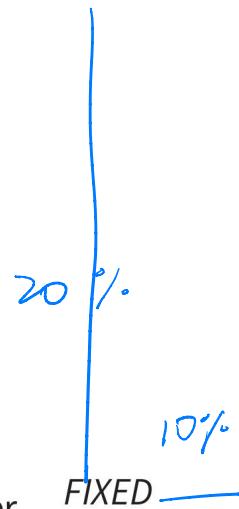
CMPUT 404 - Part 06: HTML



University of Alberta Single Sign...



doc-00-5k-docs.googleusercontent...



CSS POSITIONING

- position: (use left, right, top, bottom)
 - fixed -- stays on one spot in the browser
 - relative -- position relative to where it normally goes.

```
p.fixed { position: fixed; right: 10%; top: 20%; }
```

```
<!-- a little to the left -->  
p.relative { position: relative; left:-10px; }  
p.bigrelative { position: relative; left:-100px; }
```

!relative

Relative

ative

move on left.

PX: often scaled
browser, not very safe

+ down, right
- up, left





AA

uofa-cmp404.github.io



x U CMPUT 404 - Part 06: HTML

University of Alberta Single Sign...

G doc-00-5k-docs.googleusercontent...

5%

10%

Ab-solutely!

CSS POSITIONING

Redbox!

Bluebox

- position: (use left, right, top, bottom)
 - absolute -- absolute positioning relative to the first parent that was positioned (often the page itself).

```
p.abs { position: absolute; left: 10%; top: 5%; }
```

```
<p class="abs">Ab-solutely!</p>
```

- z-index can be used to order overlapping elements!

Z-index
how close
to camera

```
p.redbox { z-index: 5; position: absolute; right: 11%; top: 10%;  
background-color:red; }  
p.bluebox { position: absolute; right: 15%; top: 15%;  
background-color:blue; }
```

```
<p class="redbox">Redbox!</p>  
<p class="bluebox">Bluebox!</p>
```

→ red is closer to the camera
use can make red on top





AA

uofa-cmput404.github.io



CMPUT 404 - Part 06: HTML

University of Alberta Single Sign...

doc-00-5k-docs.googleusercontent...

use API project already have

CSS TEXT ALIGNMENT

One big problem with CSS is how to center something!

- Margins can be used
- text-align: center can be used

```
p.centered { margin-left: auto; margin-right: auto; }
```

```
<p class="centered">A pretty long line of text, it might not looked centered</p>
<p class="centered" style="width: 10em;">A pretty long line of text, it might not
<p class="centered">A short bit of text</p>
```

A pretty long line of text, it might not looked centered

A pretty long line of
text, it might not
looked centered

can be
break.

A short bit of text

+
short one look fine

→ see CSS href for
assignment



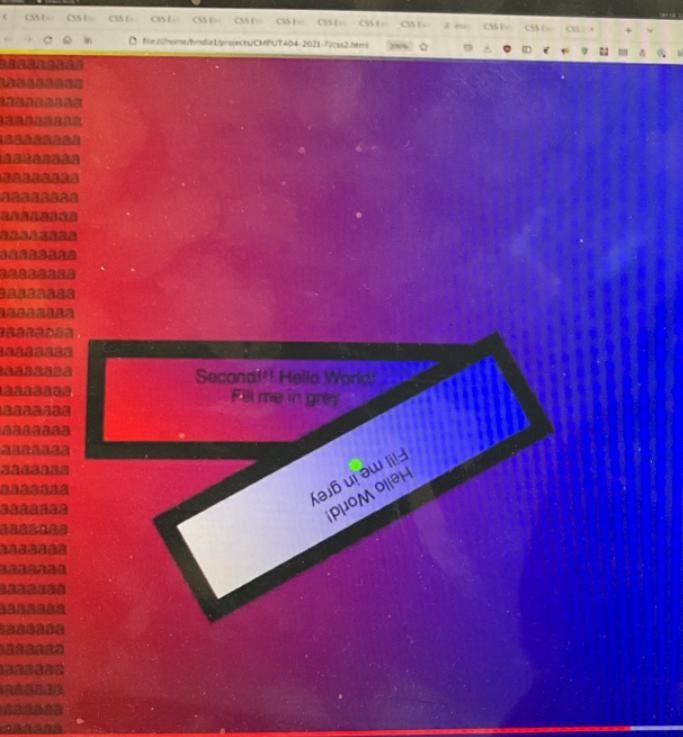
position: absolute. → no infected by other elements
use `<div id="a">` even `<div> a`
`<div class="a">` → div.a
↓
multiple elements
body: → can make all change to the page

CSS TEXT ALIGNMENT

One big problem with CSS is how to center something! Flex box model helps for big centering jobs

- display:flex https://developer.mozilla.org/en-US/docs/Web/CSS/CSS_Flexible_Box_Layout
- align-content: center
- justify-content: center

Can do `class="kw"`: `id="abc"` >
↓ more general more specific
specification go to the most local
can overwrite the background



```
<!DOCTYPE html>
<html>
<head>
<title>CSS Exercise</title>
<style>
div#firsthw {
    background: linear-gradient(90deg,blue,white);
    z-index: 4;
    left: 25%;
    top: 50%;
    animation:spin 4s linear infinite;
}
@keyframes spin {
    100% {
        transform:rotate(360deg);
    }
}
div.hw {
    border: solid;
    border-width: 1em 1em 1em 1em;
    text-align: center;
    padding-top: 0.5em;
    padding-bottom: 2em;
    width: 50%;
    position: absolute;
    left: 15%;
    top: 40%;
    background-color: rebeccapurple;
    background: radial-gradient(45deg,rebeccapurple,aliceblue);
}
div {
    background: linear-gradient(45deg,red,blue);
}
body {
    background: linear-gradient(90deg,yellow,blue);
}
</style>
</head>
<body>


Hello World!  

    Fill me in grey



Second!!!
    Hello World!  

    Fill me in grey


</div>
<div>aaaaaaaaaa</div>
<div>aaaaaaaaaa</div>
<div>aaaaaaaaaa</div>
```

U... css2.html Top (11,14) (HTML+CSS)





AA

uofa-cmput404.github.io



CMPUT 404 - Part 06: HTML



University of Alberta Single Sign...



doc-00-5k-docs.googleusercontent...

对齐

```
.flex { border: 1px solid blue; }
.flex-container { display: flex; align-items: center; justify-content: center; border: 1px solid red; width: 100%; }

<p class="flex" style="">Check me out! I'm not centered!</p>
<div class="flex-container">
  <p class="flex" style="">Check me out! I'm centered!</p>
</div>
<div class="flex-container">
<p class="flex" style="width: 5em; height: 6em; text-align: center;">Check me out! I'm
  centered!</p>
</div>
```

Check me out! I'm not centered!

Check me out! I'm centered!

Check me
out! I'm
centered!

If too many → overflow. use flex-flow: row wrap





flex → useful for phone

CSS TEXT ALIGNMENT

Display flex also lays out other objects too.

```
.flexxx { display: flex; align-items: center; justify-content: center; align-content: cen
```

```
<p class="flexxx" style="width: 100%; height: 10em;">  
    
    
    
</p>
```

mix text and image



flexbox floppy
#garden
{ display: grid;
 }





CSS HELP!

CSS is spread across many specs, so it is hard to really get a clear grasp on it.

- [CSS Specifications](#) -- Not all of these are available or work
- [CSS3 Tutorial](#) from W3Schools.
- [CSS Tutorial](#) from W3Schools.
- [Full property table from CSS2](#) -- The CSS2 Spec is more encapsulated in one place





AA

uofa-cmput404.github.io



x U CMPUT 404 - Part 06: HTML

University of Alberta Single Sign...

G doc-00-5k-docs.googleusercontent...

HTML FOR USER INTERFACES

The HTML Form elements let us accept input from browsers in a structured way and form HTTP GETs and POSTs.

In the lab you should have covered some of this.



AA

uofa-cmput404.github.io



CMPUT 404 - Part 06: HTML

University of Alberta Single Sign...

doc-00-5k-docs.googleusercontent...

<FORM> TAG

The form tag encloses a group of HTML input/UI widgets which can then be submitted as once.

- method - We can specify the HTTP method (POST/GET)
- action - We can specify the URI to GET or POST to.

```
<form action="http://webdocs.cs.ualberta.ca/~hindle1/1.py" method="get">  
What is your name? <input name="name"/></br>  
What is your quest? <input name="quest"/></br>  
What is your favorite colour? <input name="colour"/></br>  
<input type="submit"/>  

```

no file
post for file

What is your name?

What is your quest?

What is your favorite colour?



<INPUT> TAG

type=date → date

The input tag can take in textual input, passwords, or act as submit button.

*how you want
to be*

*if you choose are
Color, it will show
name it color
choice*

- type - button / checkbox / color / date / datetime / datetime-local / email / file / hidden / image / month / number / password / radio / range / reset / search / submit / tel / text / time / url / week
- name - the name of the data sent to the URI
- value - the default value Hidden types allow you to embed values to send along to help the request.



Reader View Available



x U CMPUT 404 - Part 06: HTML



University of Alberta Single Sign...



doc-00-5k-docs.googleusercontent...

user ID/cookie

<INPUT> TAG

```
<form action="http://webdocs.cs.ualberta.ca/~hindle1/1.py" method="get">
What is your name? <input name="name"/></br>
What is your quest? <input name="quest"/></br>
What is your favorite colour? <input name="colour"/></br>
<input type="hidden" name="hitchhiker" value="I'm coming too!"/>
<input type="submit"/>
</form>
```

written value can automatically

sent

What is your name? What is your quest? What is your favorite colour? 



AA

uofa-cmput404.github.io



CMPUT 404 - Part 06: HTML



University of Alberta Single Sign...



doc-00-5k-docs.googleusercontent...

<INPUT> TAG

```
<form action="http://webdocs.cs.ualberta.ca/~hindle1/1.py" method="ge  
Do you like cake? <input name="cakeliker" type="checkbox" checked/><b  
How much do you like cake? <input min="0" max="15" value="10"  
  
        type="range"/><br/>  
<!-- does not work on FF right now --&gt;<br/>When should we eat cake? <input type="date" name="cakewhen"/><br/>  
What kind of filling? some wate  
Chocolate: <input name="filling" value="chocolate" type="radio"/>  
Vanilla: <input name="filling" value="vanilla" type="radio"/><br/>  
<input type="submit"/> only send one from these 2
```

Do you like cake? *checkbox*

How much do you like cake?

When should we eat cake?

What kind of filling? Chocolate: Vanilla:
mutual exclusive

Submit





AA

uReader View Available



CMPUT 404 - Part 06: HTML



University of Alberta Single Sign-on



doc-00-5k-docs.googleusercontent...

<SELECT> TAG

Select tag is for a dropdown box of options

```
<form action="http://webdocs.cs.ualberta.ca/~hindle1/1.py" method="get">
What kind of cake shall we have?<br>
<select name="caketype">
    <option value="angel">Angel Food Cake</option>
    <option value="devil" selected>Devil's Food Cake</option>
    <option value="cowpatty">Marie Antionette's Cake</option>
</select>
<input type="submit"/>
</form>
```

just send
one of
these

What kind of cake shall we have?



AA

uofa-cmput404.github.io



CMPUT 404 - Part 06: HTML

University of Alberta Single Sign...

doc-00-5k-docs.googleusercontent...

Q: !image caption

2. license

div class="fit center"
— alt attr alt.
— image caption

PW: abc 9727
+++

FILE UPLOAD

You can upload files with the input tag but we need to switch the POST encoding.

```
<form action="http://webdocs.cs.ualberta.ca/~hindle1/1.py"  
      enctype="multipart/form-data"  
      method="post" post → for file upload  
Choose a file to upload!  
<input name="uploadFile" type="file" />  
<input type="submit" />  
</form>
```

Choose a file to upload!

no file selected

username: admin

Email: lyugang@ualberta.ca

pw: abc 123



CGI DIVERSION

In the lab you setup a CGI server and wrote a very small CGI script.

Did you know you can write CGI in just about any language?

All it takes is printing HTTP Response headers, reading environment variables and reading from STDIN!

Here's a minimal PERL example

```
#!/usr/bin/perl
use Data::Dumper;
print "Content-type: text/plain\r\n\r\n";
print Dumper(\%ENV);
my $line = 0;
while(<>) {
    print $line++ . " " . $_ . $/;
}
```





AA

uFrederick104.agathabio



x U CMPUT 404 - Part 06: HTML

University of Alberta Single Sign...

G doc-00-5k-docs.googleusercontent...

CGI DIVERSION

Perl example:

```
hindle1@st-francis:~$ curl -v -X POST -F what=1 -F zuh=weawifsdifsdif
* About to connect() to webdocs.cs.ualberta.ca port 80 (#0)
*   Trying 129.128.184.6... connected
> POST /-hindle1/simple.pl HTTP/1.1
> User-Agent: curl/7.22.0 (x86_64-pc-linux-gnu) libcurl/7.22.0 OpenSSL/1.0.2f zlib/1.2.8(3) libidn2/2.0.5 libuv/1.18.1
> Host: webdocs.cs.ualberta.ca
> Accept: */*
> Content-Length: 248
> Expect: 100-continue
> Content-Type: multipart/form-data; boundary=-----
>
< HTTP/1.1 100 Continue
< HTTP/1.1 200 OK
< Date: Fri, 31 Jan 2014 02:07:05 GMT
< Server: Apache/2.2.3 (Red Hat)
< Content-Length: 1570
< Connection: close
< Content-Type: text/plain; charset=UTF-8
```





AA

uofa-cmput404.github.io



CMPUT 404 - Part 06: HTML



University of Alberta Single Sign...



doc-00-5k-docs.googleusercontent...

CGI DIVERSION

Now in bash

```
#!/bin/bash
echo -e "Content-type: text/plain\r\n\r\n"
/usr/bin/env
cat
```

Results in:

```
hindle1@st-francis:~$ curl -v -X POST -F what=1 -F zuh=weawifsdifsdif
* About to connect() to webdocs.cs.ualberta.ca port 80 (#0)
*   Trying 129.128.184.6... connected
> POST /~hindle1/2.cgi HTTP/1.1
> User-Agent: curl/7.22.0 (x86_64-pc-linux-gnu) libcurl/7.22.0 OpenSSL/1.0.2d zlib/1.2.8
> Host: webdocs.cs.ualberta.ca
> Accept: /*
> Content-Length: 248
> Expect: 100-continue
> Content-Type: multipart/form-data; boundary=-----
>
< HTTP/1.1 100 Continue
< HTTP/1.1 200 OK
< Date: Fri, 31 Jan 2014 02:08:34 GMT
< Server: Apache/2.2.3 (Red Hat)
< Connection: close
< Transfer-Encoding: chunked
< Content-Type: text/plain; charset=UTF-8
```





AA

uofa-cmput404.github.io



CMPUT 404 - Part 06: HTML



University of Alberta Single Sign...



doc-00-5k-docs.googleusercontent...

CGI DIVERSION

So you can use multiple languages.

I really really recommend using the CGI library that comes with your language if you do. Mostly for parsing of GET and POST arguments.

Perl:

```
use CGI;  
print CGI->new->header();
```

Python:

```
import cgi  
import cgitb  
cgitb.enable()  
# print your header
```





AA

uofa-cmput404.github.io



+



x U CMPUT 404 - Part 06: HTML



University of Alberta Single Sign...



doc-00-5k-docs.googleusercontent...

CGI PROBLEMS

What are some problems with CGI?





AA

uofa-cmput404.github.io



X U CMPUT 404 - Part 06: HTML

University of Alberta Single Sign...

G doc-00-5k-docs.googleusercontent...

CGI PROBLEMS

- Slow
- 1 process per invocation
- Inefficient communication of requests
- Lack of OO representation of a request
- Difficult to share state.





AA

uofa-cmput404.github.io



x U CMPUT 404 - Part 06: HTML

University of Alberta Single Sign...

G doc-00-5k-docs.googleusercontent...

NOW ONTO JAVASCRIPT!

Modern UIs are now part HTML and CSS and part Javascript.

Javascript tends to smooth over the rough edges and fill in the gaps that HTML, HTML Forms and CSS leave.

