

CSS Overview

Selectors, Integration, Inheritance, Cascading

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Scott Granneman

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Scott Granneman

contributed
in St. Louis &
plans, devel
[presentation](#)

Key S

Pages you're

Personal

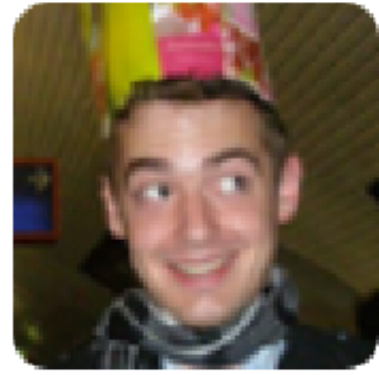
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in a Web development company in St. Louis, Missouri. Scott has written six books, for SecurityFocus and *Linux Magazine*. He is an Adjunct Professor at Washington University in technology, security, web development, & the Internet. As a Principal of [WebSanity](#), he states using an open source, UNIX-based [content management system](#). He has given speaking to people.



Gary Bernhardt

@garybernhardt



Follow

Watching me do CSS is like watching a drunk toddler in zero gravity repair a watch with mittens on. Also the watch randomly catches fire.

RETWEETS

59

LIKES

99



12:36 PM - 10 Nov 2015



History

CSS 1: December 1996

CSS 2: May 1998

CSS 2.1: July 2007

CSS 3: June 1999–Now

CSS 4: 2012–Now

CSS 1 & 2 each were one big specification document

CSS 3 & 4 are not each one large single spec

Instead, they are divided into many separate documents called *modules*

Currently 50+ modules!

Different modules have different statuses

www.w3.org/Style/CSS/current-work

Can I use

grid

? ⚙ Settings

2 results found

#

CSS Grid Layout - CR

Method of using a grid concept to lay out content, providing a mechanism for authors to divide available space for layout into columns and rows using a set of predictable sizing behaviors

Global

69.53% + 5.62% = 75.15%

unprefixed:

69.53%

Current aligned

Usage relative

Date relative

Show all

IE	Edge *	Firefox	Chrome	Safari	Opera	iOS Safari *	Opera Mini *	Android Browser *	Chrome for Android
			1 49			10.2			
	2 15	55	60	10.1	47	10.3		4.4	
2 11	16	56	61	11	48	11	all	56	61
		57	62	TP	49				
		58	63		50				
		59	64						

Notes

Known issues (2)

Resources (12)

Feedback

W3C indicates the maturity of specifications by a status code. The CSS working group uses the following, from *least* to *most stable*:

Abbreviation	Full name
FPWD	First Public Working Draft
WD	Working Draft
CR	Candidate Recommendation
PR	Proposed Recommendation
REC	Recommendation
SPSD	Superseded Recommendation

The following code indicates a document that is not intended to become a standard:

Abbreviation	Full name
NOTE	Working Group Note

The names are defined in [section 6](#) of the W3C process document. A REC is what is normally referred to as a 'standard.' W3C encourages everyday use starting from CR.

W3C CSS Working Group: Colors & Status Codes

Why CSS?

96.4% of all websites use CSS

Why?

As of Oct. 2022

Separation of Concerns

Divide computer program into separate *concerns*, each focusing on a specific resource

Structure & Meaning: HTML

Presentation & Layout: CSS

Behavior: JavaScript

HTML

1

<h1>At
the Mountains of Madness</h1>

2

<p>By H. P.
Lovecraft</p>

3

<h2><font face="'Iowan Old Style', Georgia, serif"
size="+2">I</h2>

4

<p>I am forced into
speech because men of science have refused to follow my advice
without knowing why. It is altogether against my will that I tell
my reasons for opposing this contemplated invasion of the
antarctic—with its vast fossil-hunt and its wholesale boring and
melting of the ancient ice-cap—and I am the more reluctant because
my warning may be in vain.</p>

5

<p>Doubt of the real
facts, as I must reveal them, is inevitable; yet if I suppressed
what will seem extravagant and incredible there would be nothing
left.</p>

6

<p>

7

Note:
People who use Comic Sans should get a visit from Cthulhu.

8

</p>

9

* CSS

JS

At the Mountains of Madness

By H. P. Lovecraft

I

I am forced into speech because men of science have refused to follow my advice without knowing why. It is altogether against my will that I tell my reasons for opposing this contemplated invasion of the antarctic—with its vast fossil-hunt and its wholesale boring and melting of the ancient ice-cap—and I am the more reluctant because my warning may be in vain.

Doubt of the real facts, as I must reveal them, is inevitable; yet if I suppressed what will seem extravagant and incredible there would be nothing left.

Note: People who use Comic Sans should get a visit from Cthulhu.

Not separating concerns

Separate content (HTML) from presentation (CSS)
from behavior (JavaScript)

This makes each one easier to understand if they are
kept separate instead of putting everything in one large,
confusing HTML (or JavaScript) file

Site-wide consistency: control how all content looks using only 1 (or a few) CSS file(s)

Apply different styles to same content in different *media*:

- » desktop web browser
- » mobile web browser
- » auditory
- » print
- » & more!

Adherence to standards



It's fun!



It's fun!

Integrating CSS

4 ways to connect your HTML with your CSS

1. Linking to external styles ★
2. Embedded styles
3. Inline styles
4. `@import`

Linking

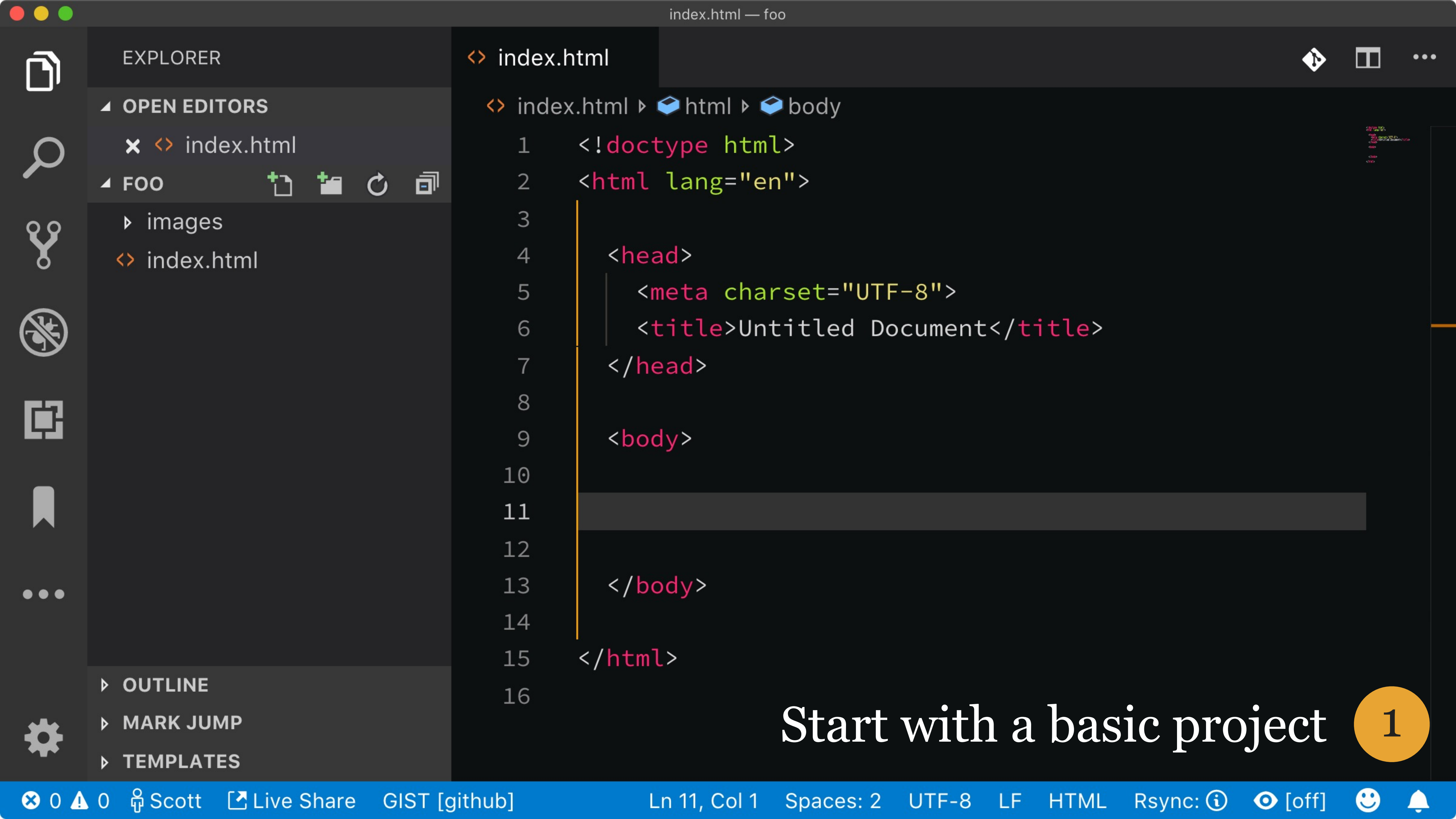
Linked styles use the `<link>` tag to connect the HTML to a CSS file

HTML 4.01

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

HTML 5

```
<head>  
  <link rel="stylesheet" href="/css/main.css">  
</head>
```



Start with a basic project



EXPLORER

▲ OPEN EDITORS

✕ <> index.html

▲ FOO



▲ CSS

▸ images

<> index.html



▸ OUTLINE

▸ MARK JUMP

▸ TEMPLATES

<> index.html

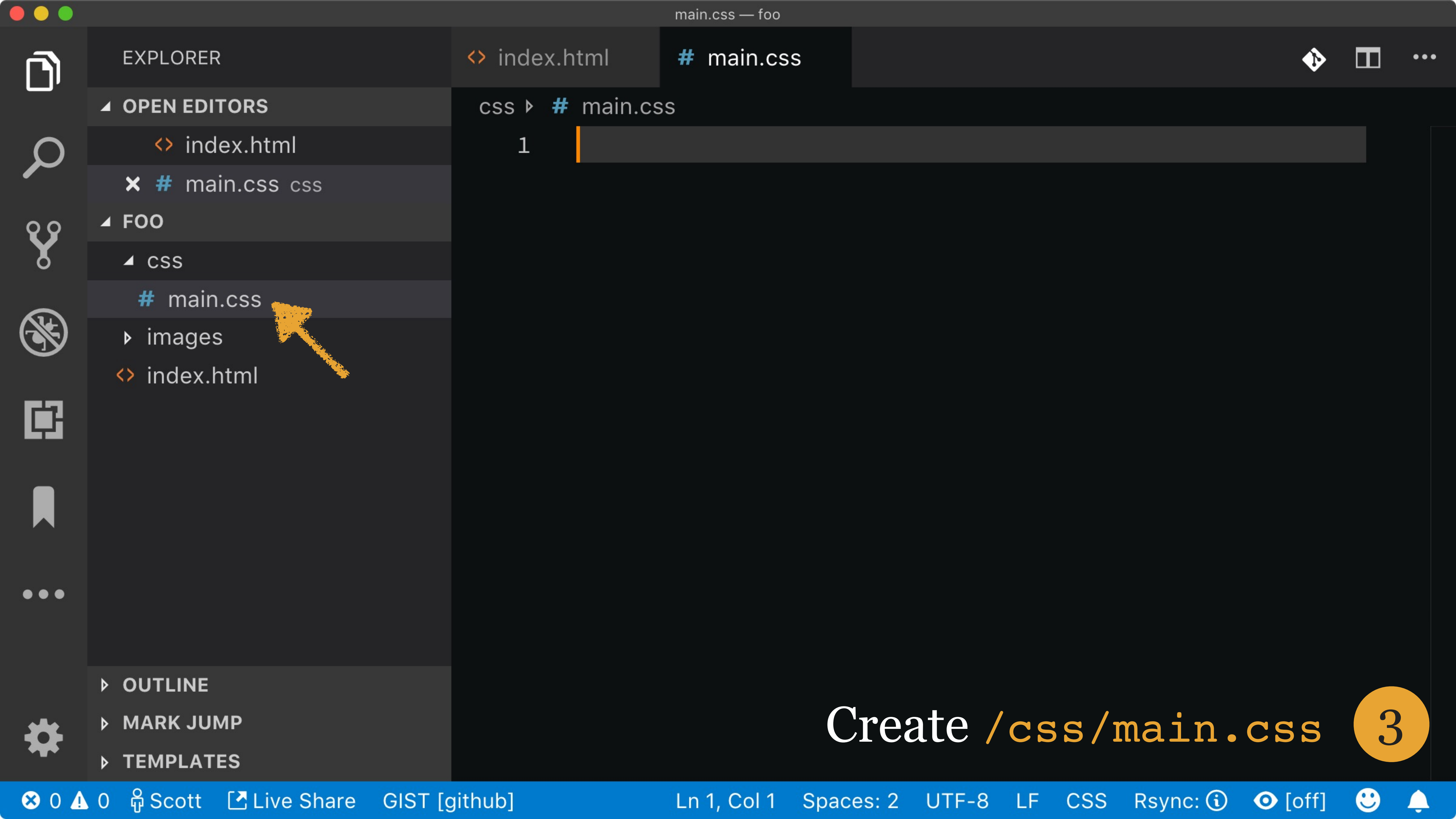
<> index.html ▸ html ▸ body

```
1  <!doctype html>
2  <html lang="en">
3
4      <head>
5          <meta charset="UTF-8">
6          <title>Untitled Document</title>
7      </head>
8
9      <body>
10
11
12
13
14
15  </body>
16
17  </html>
```

Create a **css** folder

2





EXPLORER

OPEN EDITORS

index.html

main.css css

FOO

css

main.css

images

index.html

OUTLINE

MARK JUMP

TEMPLATES

index.html

main.css

css # main.css

1

Create /css/main.css

3



EXPLORER

▲ OPEN EDITORS 1 UNSAVED

● <> index.html

main.css css

▲ FOO

▲ css

main.css

▸ images

<> index.html



▸ OUTLINE

▸ MARK JUMP

▸ TEMPLATES

<> index.html ● # main.css

<> index.html ▸ html ▸ head

```
1  <!doctype html>
2  <html lang="en">
3
4      <head>
5          <meta charset="UTF-8">
6          <title>Untitled Document</title>
7          <link rel="stylesheet" href="/css/main.css">
8      </head>
9
10     <body>
11
12
13
14     </body>
15
16 </html>
17
```

Link to `/css/main.css`

4



What should you name your CSS file?

It doesn't matter

`main.css` ← What we, & many others, use

`typography.css`

`client.css`

`search.css`

`navigation.css`

Where should you place your CSS file?

In your website's root directory, (almost) always create these directories:

- `css` (or `styles`)
- `images` (or `media`)
- `js` (or `scripts`)

- `fonts` (maybe)

A CSS file is made up of style rules & comments

```
/* Comment */
```

```
blockquote, p, td {  
    font-family: Verdana, sans-serif;  
    font-size: 1em;  
}
```

Style rule 1

```
#footer {  
    font-size: .9em;  
}
```

Style rule 2

```
.emphasis {  
    font-weight: bold;  
}
```

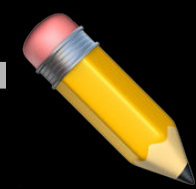
Style rule 3

You can link to more than one style sheet, but you should try to keep those links to a minimum

Every link is another server connection & another download, which slows down page load time

If you have more than one webpage, you really ought to use an external style sheet

You can now change the appearance & layout of an entire site by changing only one document!

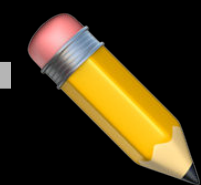


SIDE NOTE

You might see advice telling you to add this as the 1st line of your style sheet so the browser knows that `main.css` is encoded as UTF-8:

```
@charset "utf-8";
```

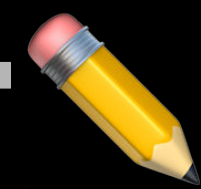
This is not correct & can be ignored



SIDE NOTE

In CSS 2.1, browsers try to figure out if `main.css` is UTF-8 using this order (& stop at the 1st match):

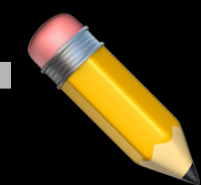
1. Unicode byte-order character at beginning of `main.css`
2. Value given by `charset` attribute of `Content-Type:` HTTP header or equivalent in protocol used to serve the style sheet
3. `@charset` CSS at-rule
4. Value of the `charset` attribute of `<link>` in the HTML; now obsolete in HTML5 & not to be used
5. Assume the document is UTF-8 (!)



SIDE NOTE

“However, there is no actual at-rule named `@charset`. When a stylesheet is actually parsed, any occurrences of an `@charset` rule must be treated as an unrecognized rule, and thus dropped as invalid when the stylesheet is grammar-checked.

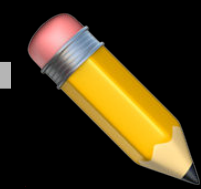
Note: In CSS 2.1, `@charset` was a valid rule. Some legacy specs may still refer to a `@charset` rule, and explicitly talk about its presence in the stylesheet.” —
W3C, 2019



SIDE NOTE

In CSS Syntax Module Level 3 (W3C Candidate Recommendation, 16 July 2019), *this* is the order:

1. Value given by `charset` attribute of `Content-Type`: HTTP header or equivalent in protocol used to serve the style sheet
2. Unicode byte-order character at beginning of `main.css`
3. Environment encoding (which should not be used)
4. Assume the document is UTF-8



SIDE NOTE

So, as long as you have Visual Studio Code or another editor set to save all files as UTF-8 automatically (which is the default, as it should be!), you are covered

EXPLORER

...

OPEN EDITORS

main.css css

Settings

MASONRY-LAYOUT

css

_fancybox.scss

main-lightbox.css

main-lightbox.scss

main-nobs.css

main-nobs.scss

main.css

main.scss

fonts

images

js

OUTLINE

NPM SCRIPTS

TEMPLATES

main.css

Settings

...

encoding

2 Settings Found

≡

User

Workspace

Last synced: now

Files: Auto Guess Encoding

When enabled, the editor will attempt to guess the character set encoding when opening files. This setting can also be configured per language.

Files: Encoding

The default character set encoding to use when reading and writing files. This setting can also be configured per language.

UTF-8

▼

Show matching extensions

<

0 0

Live Share

GIST [github]

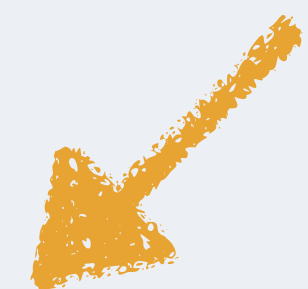
Assignments > masonry-layout

Watch Sass

Rsync: ⓘ

_fancybox.scss
main-lightbox.css
main-lightbox.scss
main-nobs.css
main-nobs.scss
main.css
main.scss
onts
mages
s
node_modules
index-1-nobs.html
index-2-bs.html
index-3-lightbox.html
package-lock.json
package.json
E
SCRIPTS
ATES

```
889 .item p::first-line {  
890     font-weight: 700;  
891 }  
892  
893 @media (max-width: 767px) {  
894     .masonry {  
895         column-count: 1;  
896     }  
897 }  
898  
899 @media (min-width: 768px) and (max-width: 991px) {  
900     .masonry {  
901         column-count: 2;  
902     }  
903 }  
904  
905 @media (min-width: 992px) and (max-width: 1199px) {  
906     .masonry {  
907         column-count: 3;  
908     }  
909 }  
910  
911 @media (min-width: 1200px) {  
912     .masonry {  
913         column-count: 4;
```



Embedded

Embedded styles insert CSS inside `<style> ... </style>`

Most often in the `<head>`, but can be found anywhere in the `<body>`

HTML

```
1 <head>
2   <meta charset="UTF-8">
3   <title>Embedded Styles
    Example</title>
4   <style>
5     html {
6       font-size: 24px;
7       font-family: "Iowan Old
    Style", Georgia, serif;
8     }
9     h1, h2 {
10      font-family: sans-serif;
11    }
12  </style>
13 </head>
14
15 <body>
16   <h1>Cthulhu</h1>
17   <p>Ph'nglui mglw'nafh Cthulhu
    R'lyeh wgah'nagl fhtagn!</p>
18   <h2>Nyarlathotep</h2>
19   <p>Ph'nglui mglw'nafh Cthulhu
    R'lyeh wgah'nagl fhtagn!</p>
20 </body>
```

CSS (SCSS)

JS

Cthulhu

Ph'nglui mglw'nafh Cthulhu R'lyeh wgah'nagl fhtagn!

Nyarlathotep

Ph'nglui mglw'nafh Cthulhu R'lyeh wgah'nagl fhtagn!

Embedded styles are great for one page ...

... but they rapidly become difficult to manage on multiple pages

So why use it?

Resource inlining: embedding reduces outbound requests

Portability: You have a widget that may get embedded into another webpage on another site, so embed the styles with the HTML*

*Portability now should be done with Web Components

Inline

Inline styles use the `style` global attribute

Do not do this!

⚙ HTML



```
1 <p style="color: red; font-weight: bold;  
  font-size: 180%;">  
2   Do not disturb Cthulhu!  
3 </p>  
4  
5 <p>  
6   Enjoy your trip to R'yleh.  
7 </p>  
8  
9 <p>  
10  We hope you emerge relatively sane.  
11 </p>
```

⚙ CSS



⚙ JS



Do not disturb Cthulhu!

Enjoy your trip to R'yleh.

We hope you emerge relatively sane.

Quick & easy to create, but difficult & time-consuming to manage

Must repeat over and over

Can't change the style according to the media, so styles apply to all media

Doesn't separate content & presentation

Inspector will give you Content Security Policy warnings

So why use it?

HTML email (but only because there are no standards for HTML email, which is why it's a nightmare to code)

@import



PRO TIP

If you have used `@import` with a CSS preprocessor like Sass or Less, `@import` here is different & will cause a server call

`@import` allows you to include external stylesheets in your CSS; in other words, it allows you to link to another CSS file from within a CSS file (yes, this is a little weird)

`@import` must always come 1st, ahead of any other CSS

import.css

import.css ▸ h2

```
1  html {  
2    font-size: 24px;  
3    font-family: "Iowan Old Style", Georgia, serif;  
4  }  
5  
6  h2,  
7  h3,  
8  h4 {  
9    border-bottom: 1px solid black;  
10   font-family: Verdana, Geneva, Tahoma, sans-serif;  
11 }  
12
```

`import.css` is the style sheet that will be imported


```
HTML
1 <h2>The Shadow out of Time
  <small>H.P.
  Lovecraft</small></h2>
2 <p>
3   After twenty-two years of
  nightmare and terror, saved only
  by a desperate conviction of the
  mythical source of certain
  impressions, I am unwilling to
  vouch for the truth of that which
  I think I found in Western
  Australia on the night of July
  17–18, 1935. There is reason to
  hope that my experience was
  wholly or partly an
  hallucination—for which, indeed,
  abundant causes existed. And yet,
  its realism was so hideous that I
  sometimes find hope impossible.
  If the thing did happen, then man

CSS
1 @import url("https://s3-us-
  west-2.amazonaws.com/s.cdpn.io
  /122116/import.css");
2

JS
```

The Shadow out of Time H.P. Lovecraft

After twenty-two years of nightmare and terror, saved only by a desperate conviction of the mythical source of certain impressions, I am unwilling to vouch for the truth of that which I think I found in Western Australia on the night of July 17–18, 1935. There is reason to hope that my experience was wholly or partly an hallucination—for which, indeed, abundant causes existed. And yet, its realism was so hideous that I sometimes find hope impossible. If the thing did happen, then man must be prepared to accept notions of the cosmos, and of his own place in the seething vortex of time, whose merest mention is paralysing. He must, too, be placed on guard against a specific lurking peril which, though it will never engulf the whole race, may impose monstrous and unguessable horrors upon certain venturesome members of it. It is for this latter reason that I urge, with all the force of my being, a final abandonment of all attempts at unearthing those fragments of unknown, primordial masonry which my expedition set out to investigate.

import.css included via @import


```
HTML
1 <h2>The Shadow out of Time
  <small>H.P.
  Lovecraft</small></h2>
2 <p>
3   After twenty-two years of
  nightmare and terror, saved only
  by a desperate conviction of the

CSS
1 @import url("https://s3-us-
  west-2.amazonaws.com/s.cdn.io
  /122116/import.css");
2
3 h2, h3, h4 {
4   font-family: -apple-system,
  BlinkMacSystemFont, "Segoe UI",
  Roboto, Oxygen, Ubuntu,
  Cantarell, "Fira Sans", "Droid
  Sans", "Helvetica Neue", Arial,
  sans-serif;
5 }
6
7 small {
8   display: block;
9   margin-top: .25em;
10 }
```

The Shadow out of Time

H.P. Lovecraft

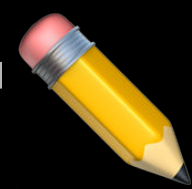
After twenty-two years of nightmare and terror, saved only by a desperate conviction of the mythical source of certain impressions, I am unwilling to vouch for the truth of that which I think I found in Western Australia on the night of July 17–18, 1935. There is reason to hope that my experience was wholly or partly an hallucination—for which, indeed, abundant causes existed. And yet, its realism was so hideous that I sometimes find hope impossible. If the thing did happen, then man must be prepared to accept notions of the cosmos, and of his own place in the seething vortex of time, whose merest mention is paralysing. He must, too, be placed on guard against a specific lurking peril which, though it will never engulf the whole race, may impose monstrous and unguessable horrors upon certain venturesome members of it. It is for this latter reason that I urge, with all the force of my being, a final abandonment of all attempts at unearthing those fragments of unknown, primordial masonry which my expedition set out to investigate.

Put `@import` 1st so it can be overridden

Don't use `@import` unless you absolutely need to*

- » Slows down your page loads (the browser downloads your CSS, *then* downloads the imported CSS)
- » Adds complexity

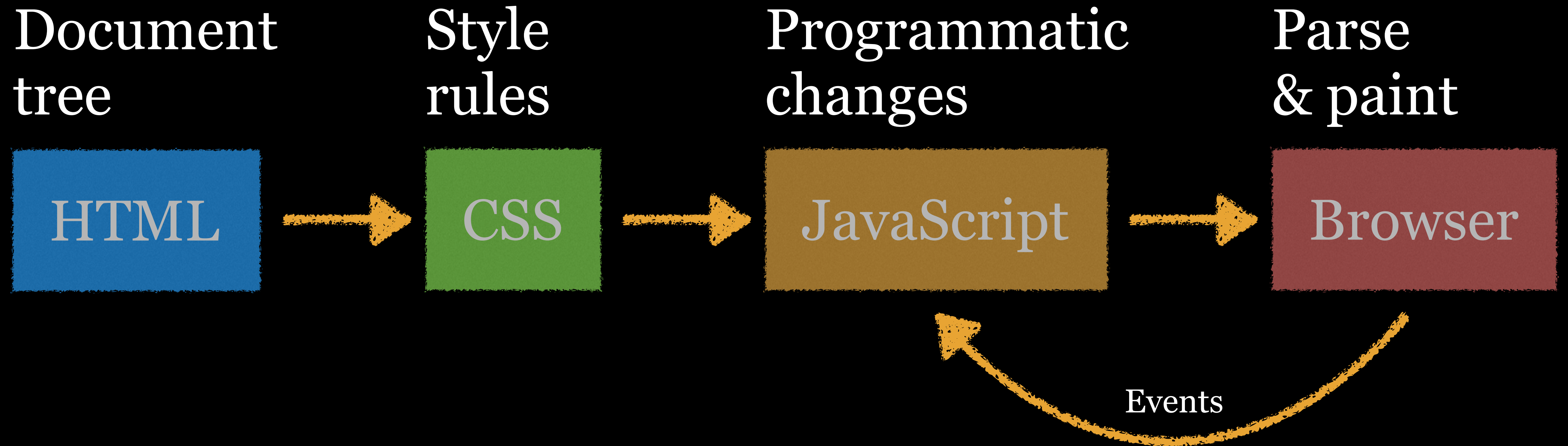
* Unless you are using a build system like SCSS; more on that in *CSS - Preprocessors*



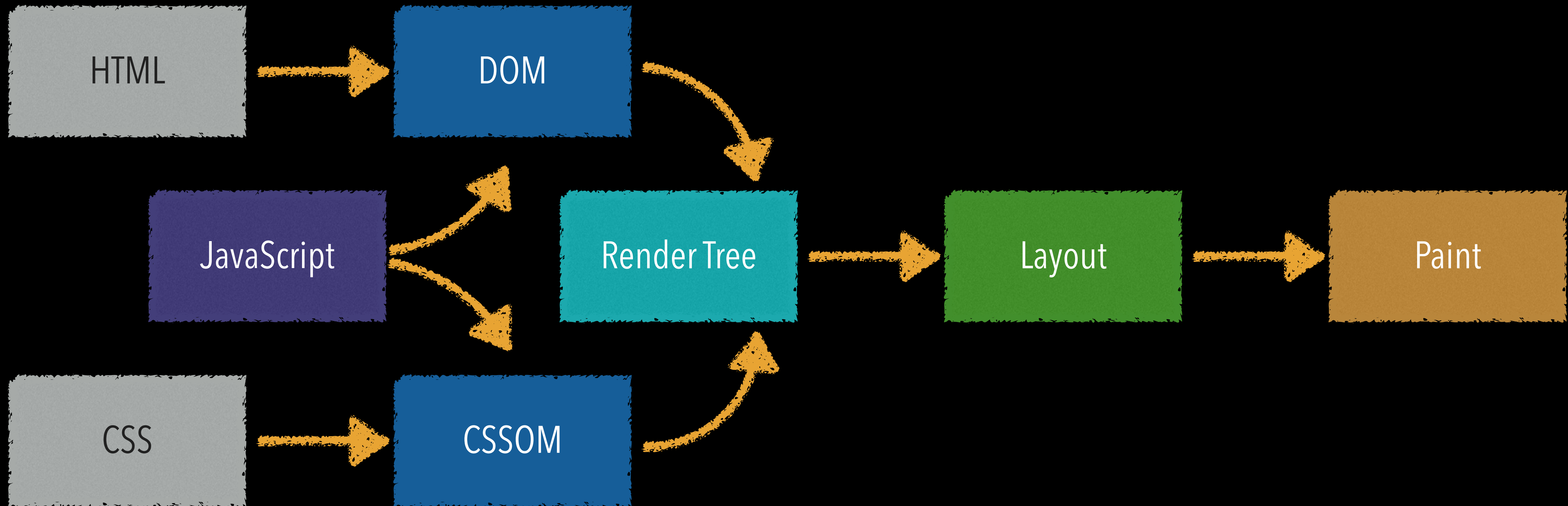
SIDE NOTE

Delay	User Perception
0–100 ms	Instant
100–300 ms	Small perceptible delay
300–1,000 ms	Machine is working
1,000+ ms	Likely mental context switch
10,000+ ms	Task abandoned

The Browser Processing Pipeline



The browser processing pipeline (simplified)



To understand CSS, you have to understand

- » the DOM (*Document Object Model*)
- » the CSSOM (*CSS Object Model*)
- » the browser processing pipeline

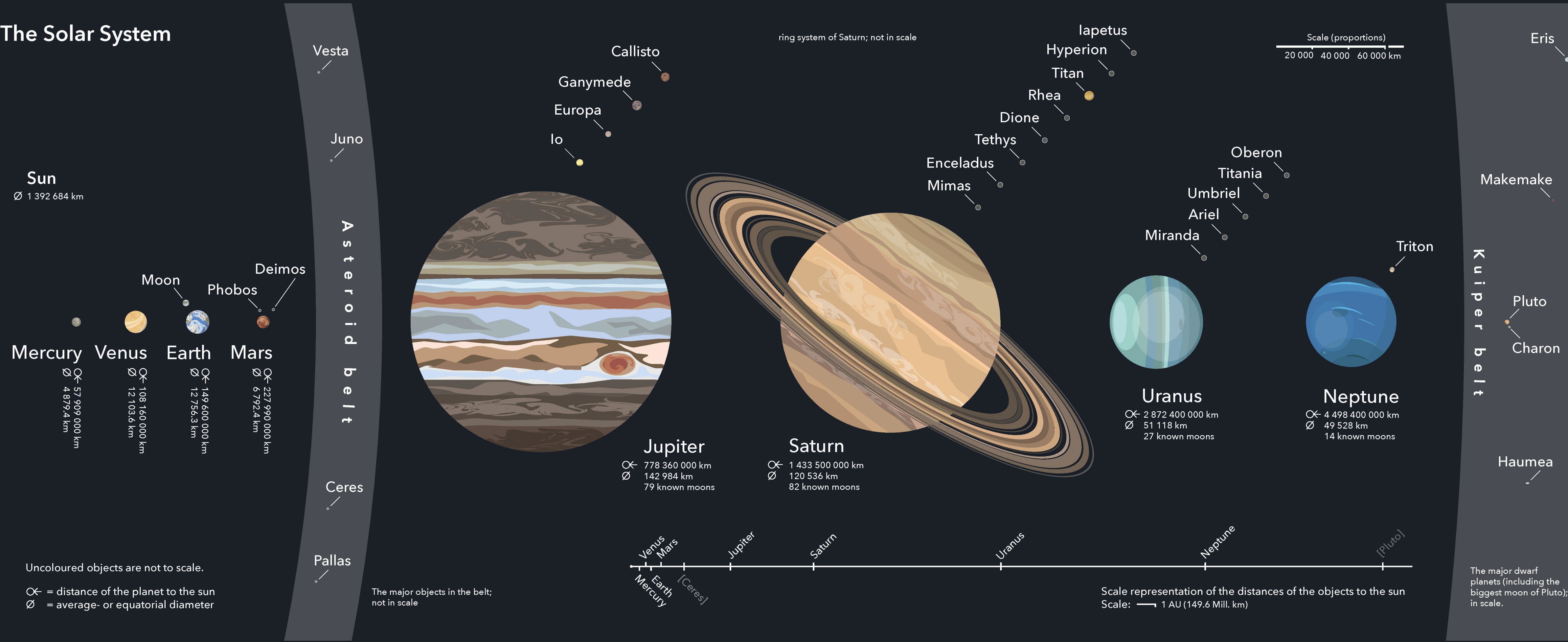
The DOM

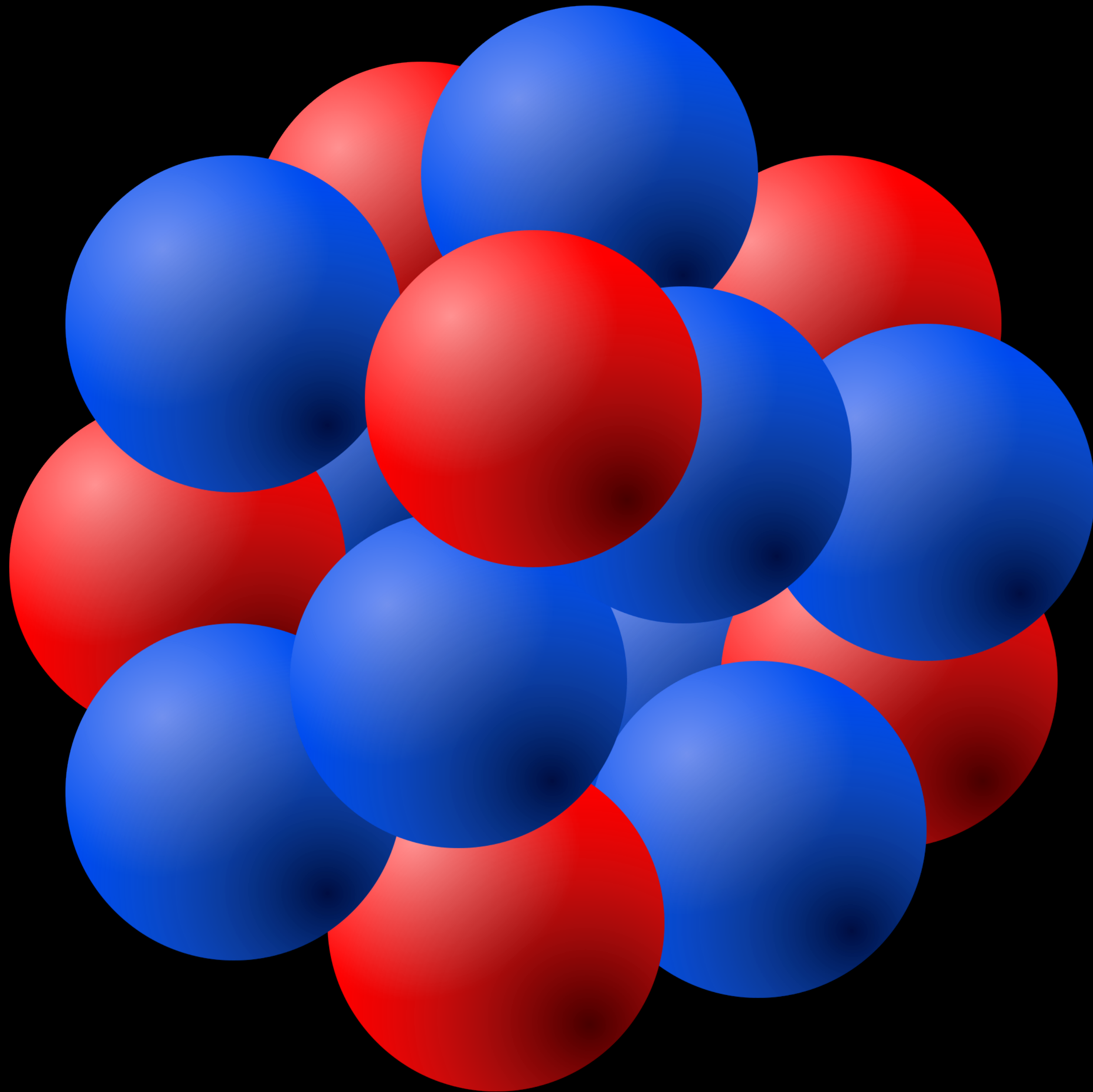
The DOM is a conceptual model

“A *conceptual model* is a representation of a system, made of the composition of concepts which are used to help people know, understand, or simulate a subject the model represents.” —Wikipedia

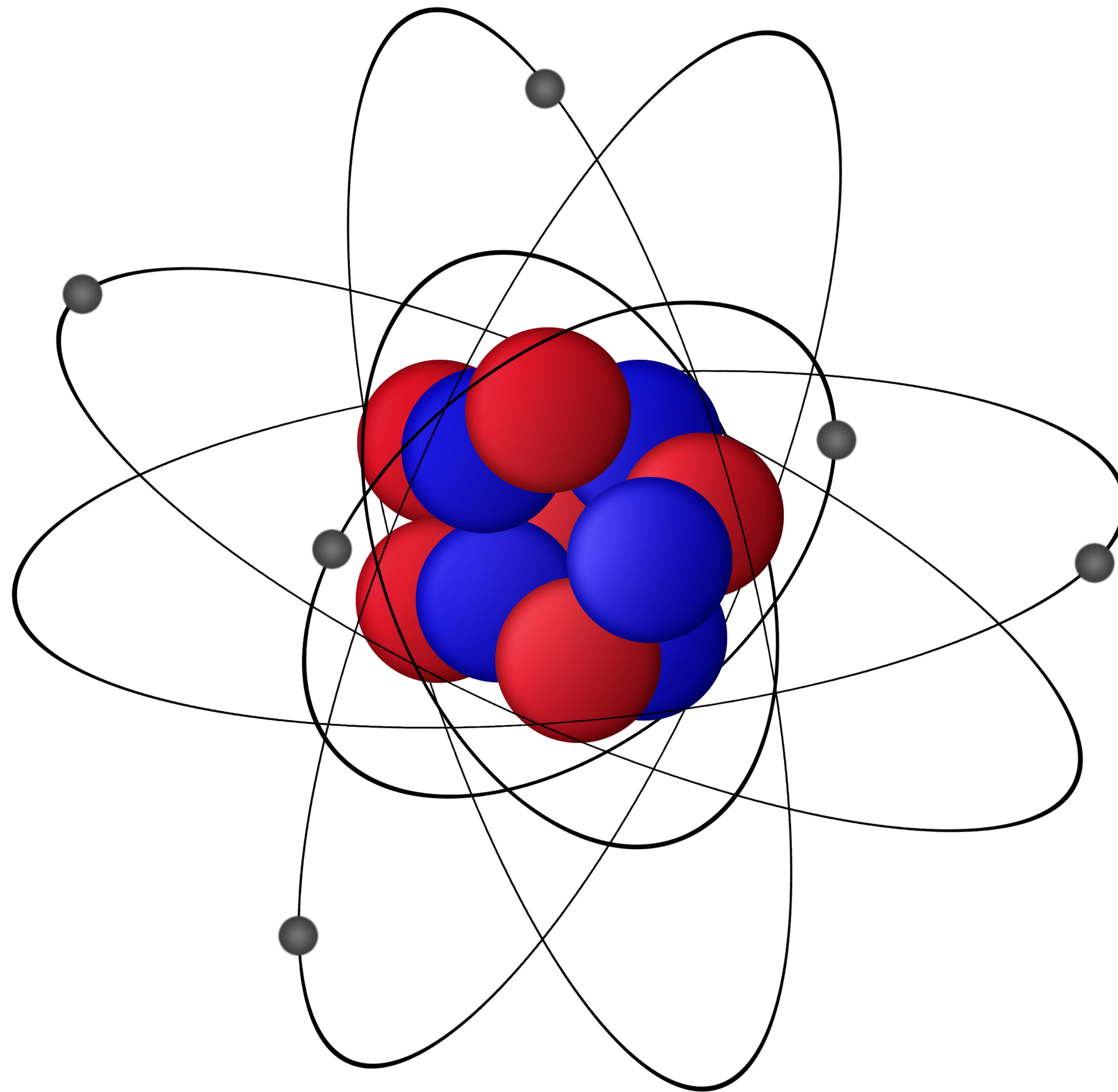
We often illustrate conceptual models of both tangible & intangible things so we can better understand them

The Solar System

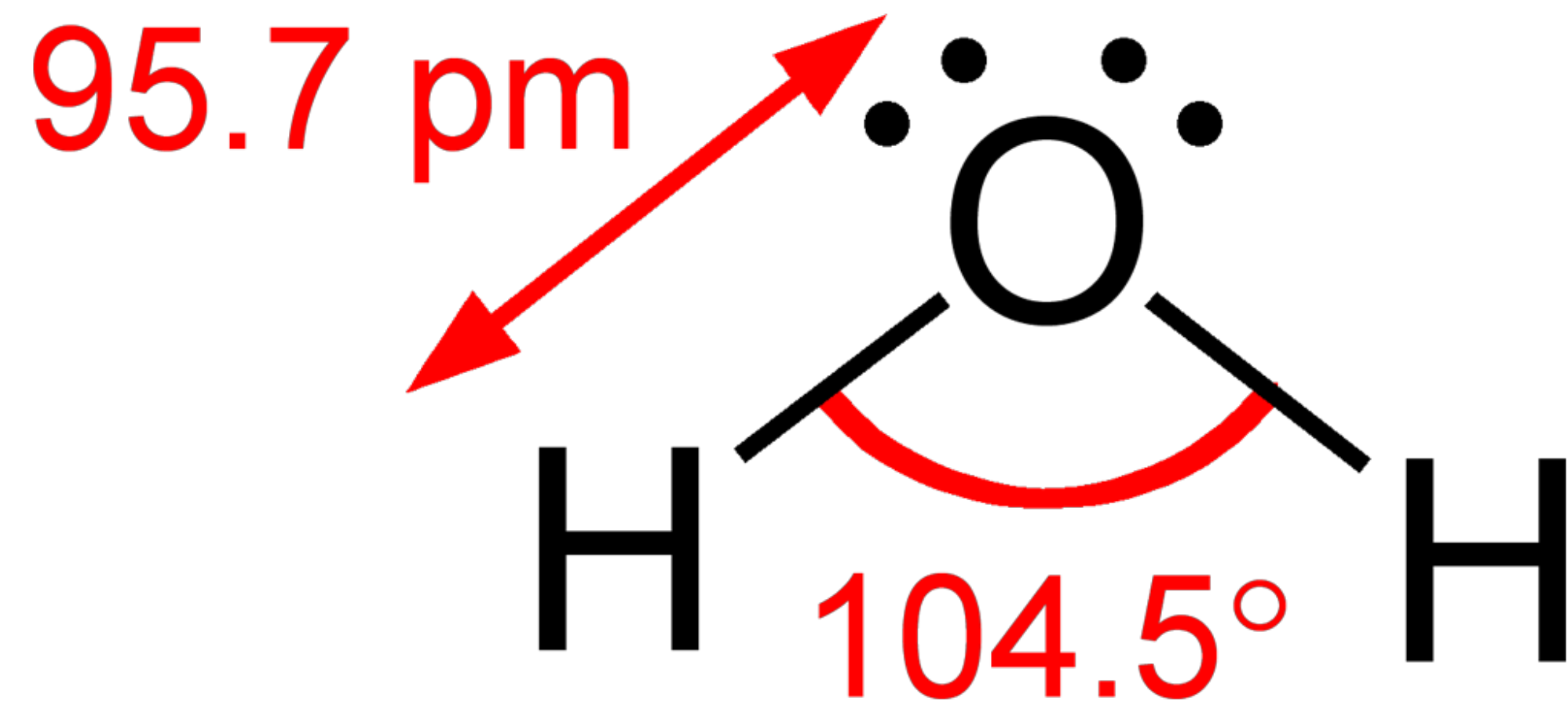
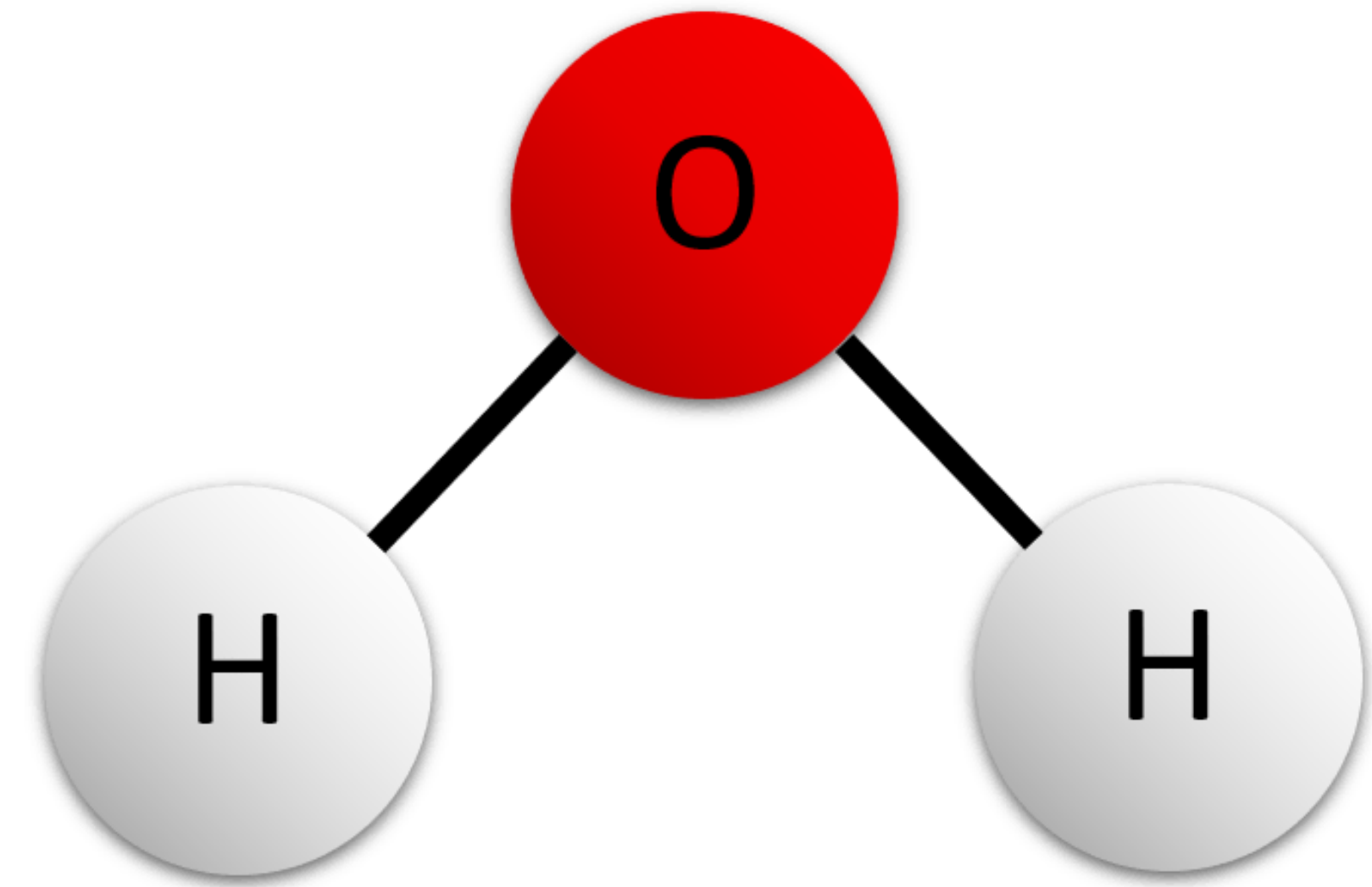
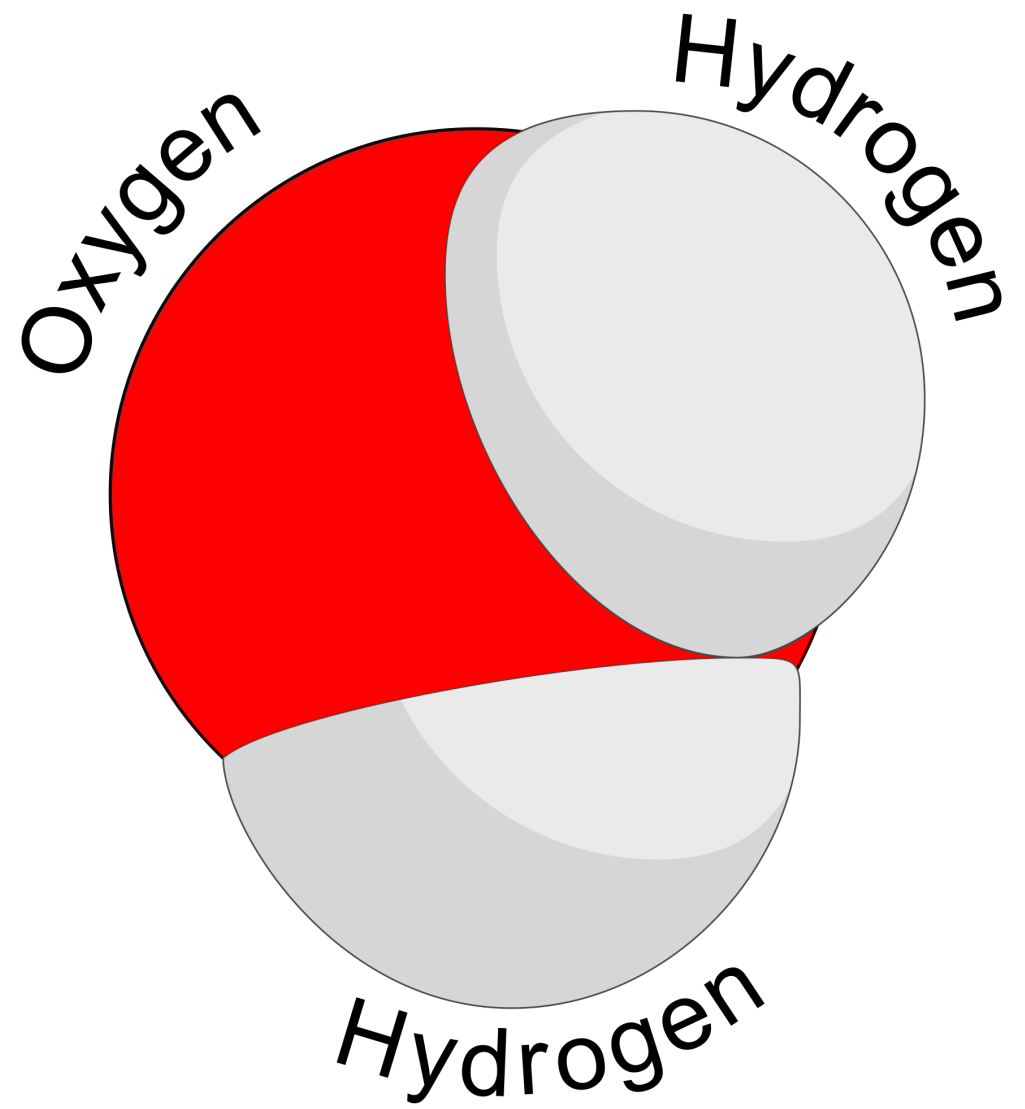




Atomic nucleus
composed of
neutrons (blue)
& protons (red)

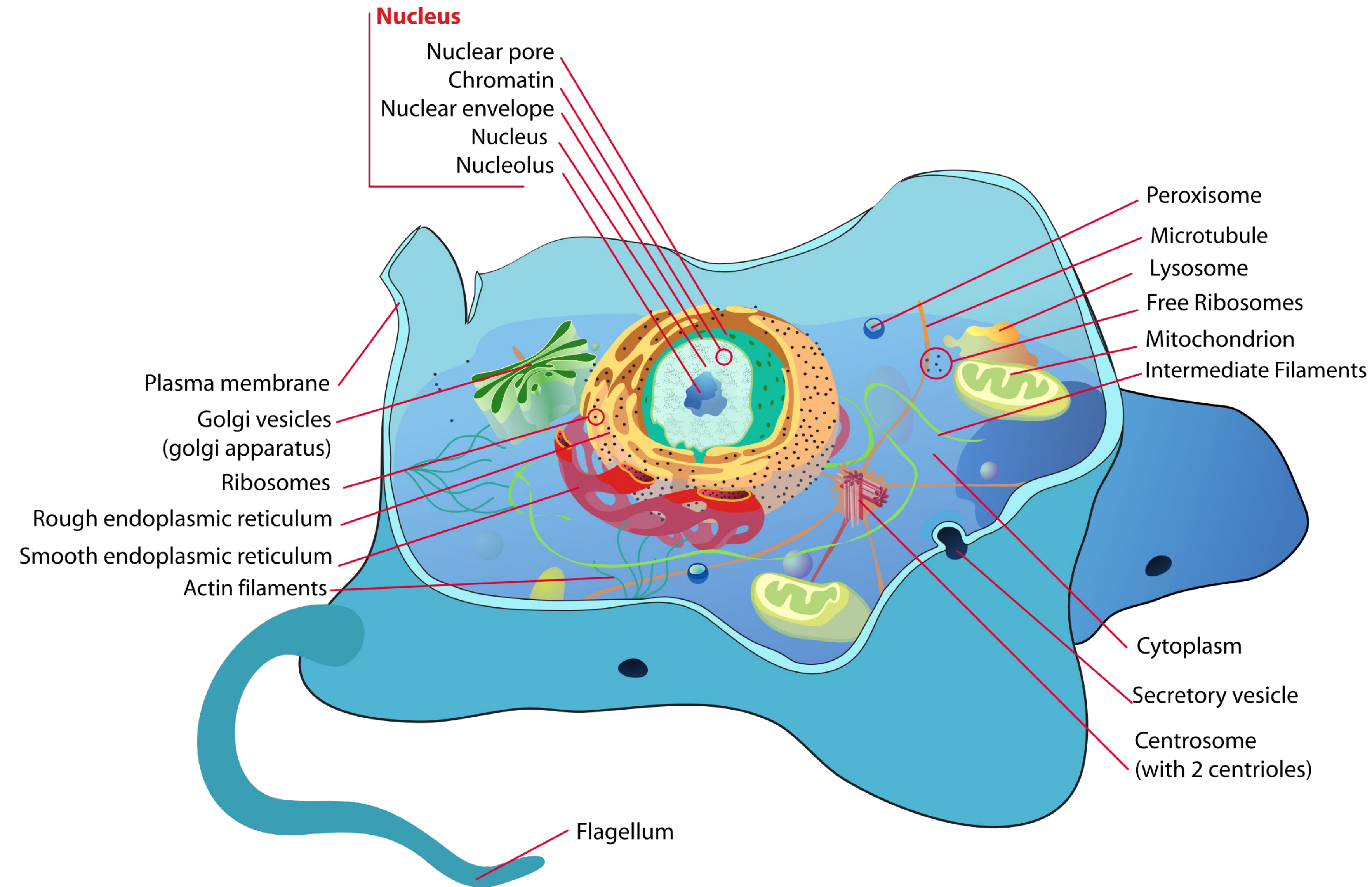


Carbon atom,
with electron
cloud around
nucleus

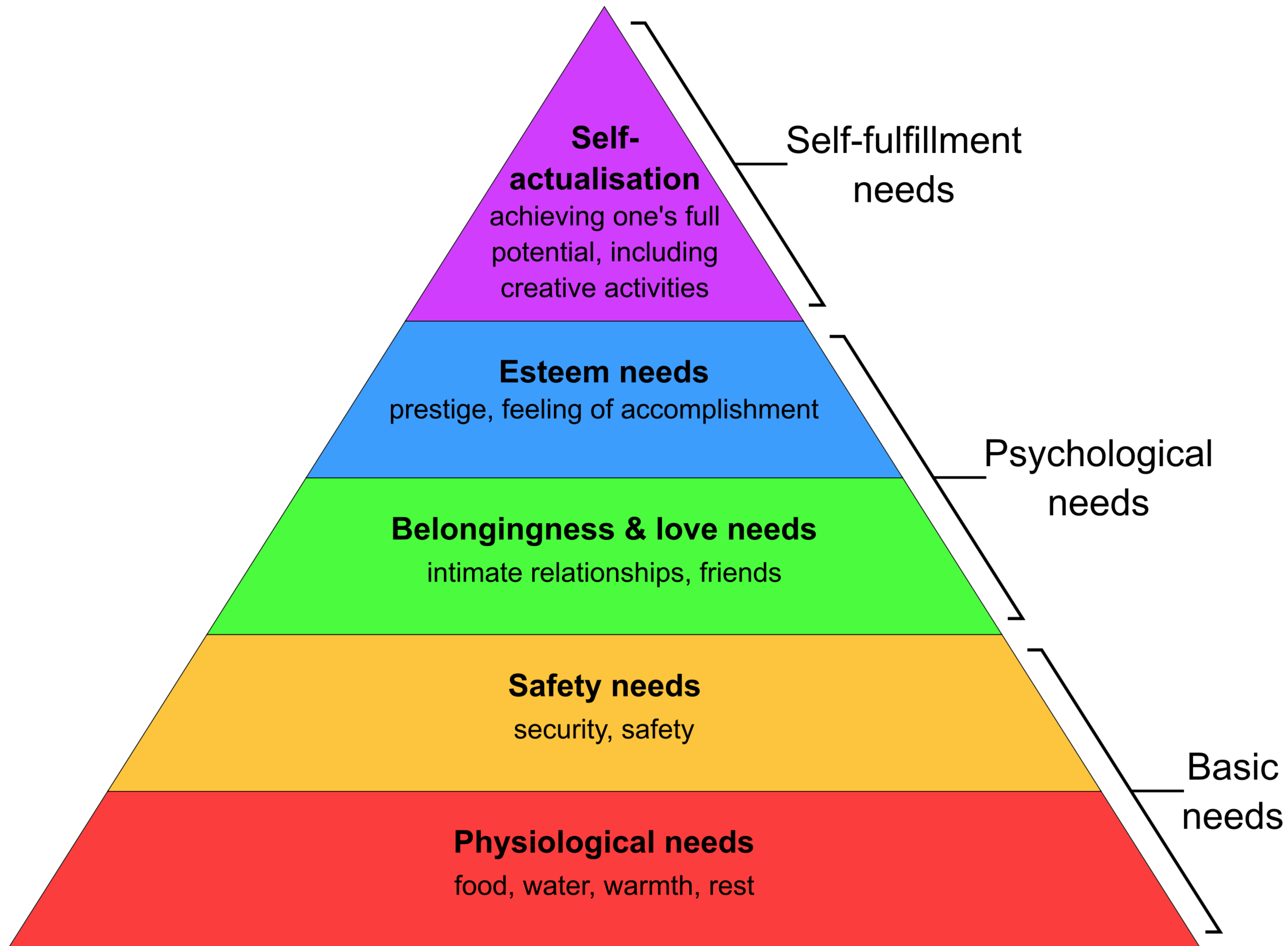


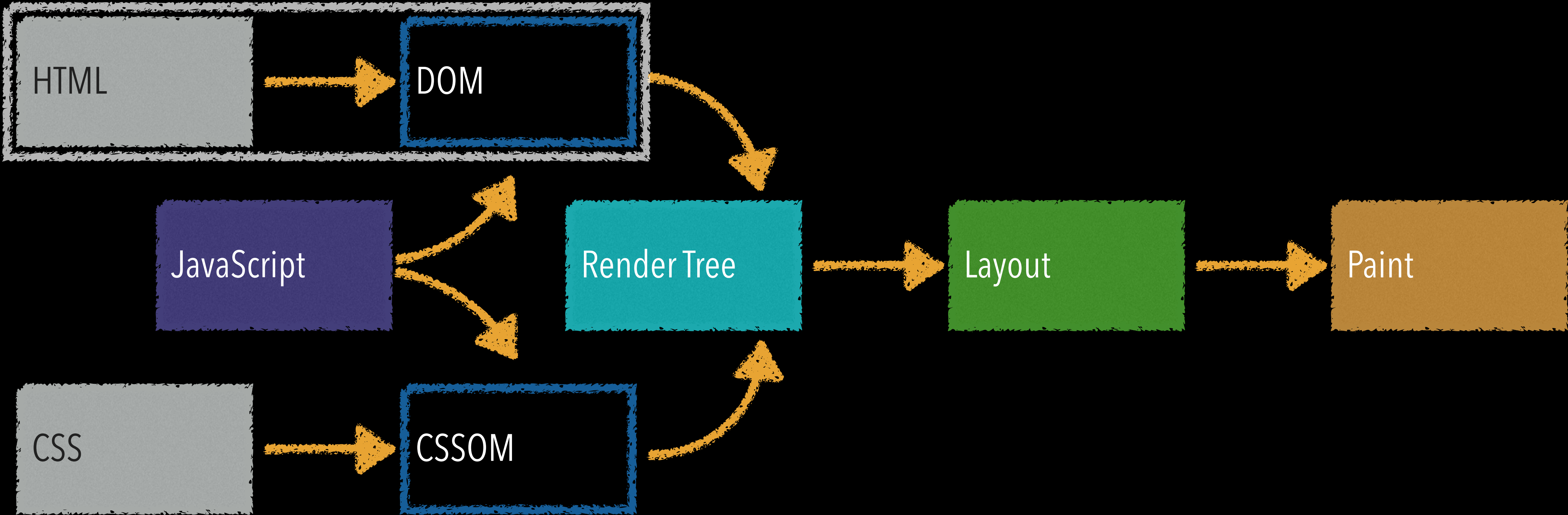
Different models for a water molecule (an electrically neutral group of 2 or more atoms held together by chemical bonds)

Animal cell,
made up of
molecules,
which contain
millions or even
trillions of
atoms



Maslow's Hierarchy of Needs





Before a webpage appears in a viewport, the rendering engine downloads the HTML & parses it to figure out how to display the webpage on screen

During this process, the rendering engine creates the *DOM tree*

“A Web page is a document. This document can be either displayed in the browser window or as the HTML source. But it is the same document in both cases.

The Document Object Model (DOM) represents that same document so [the document structure, style, and content] can be manipulated. *The DOM is an object-oriented representation of the web page, which can be modified with ... JavaScript.* —MDN web docs

So what's the DOM?

A JavaScript developer will say, “It's a JavaScript interface so that I can manipulate the page”

A CSS developer will say, “It's a set of boxes to style”

An HTML developer will say, “It's hierarchy & meaning”

They are all correct!

When is the DOM different than your HTML?

If you have mistakes in your HTML, the rendering engine “fixes” them when it generates the DOM

Article

Talk

Read

Edit


View history



The Thing (1982 film)

(Excellent horror flick!)

From Wikipedia, the free encyclopedia



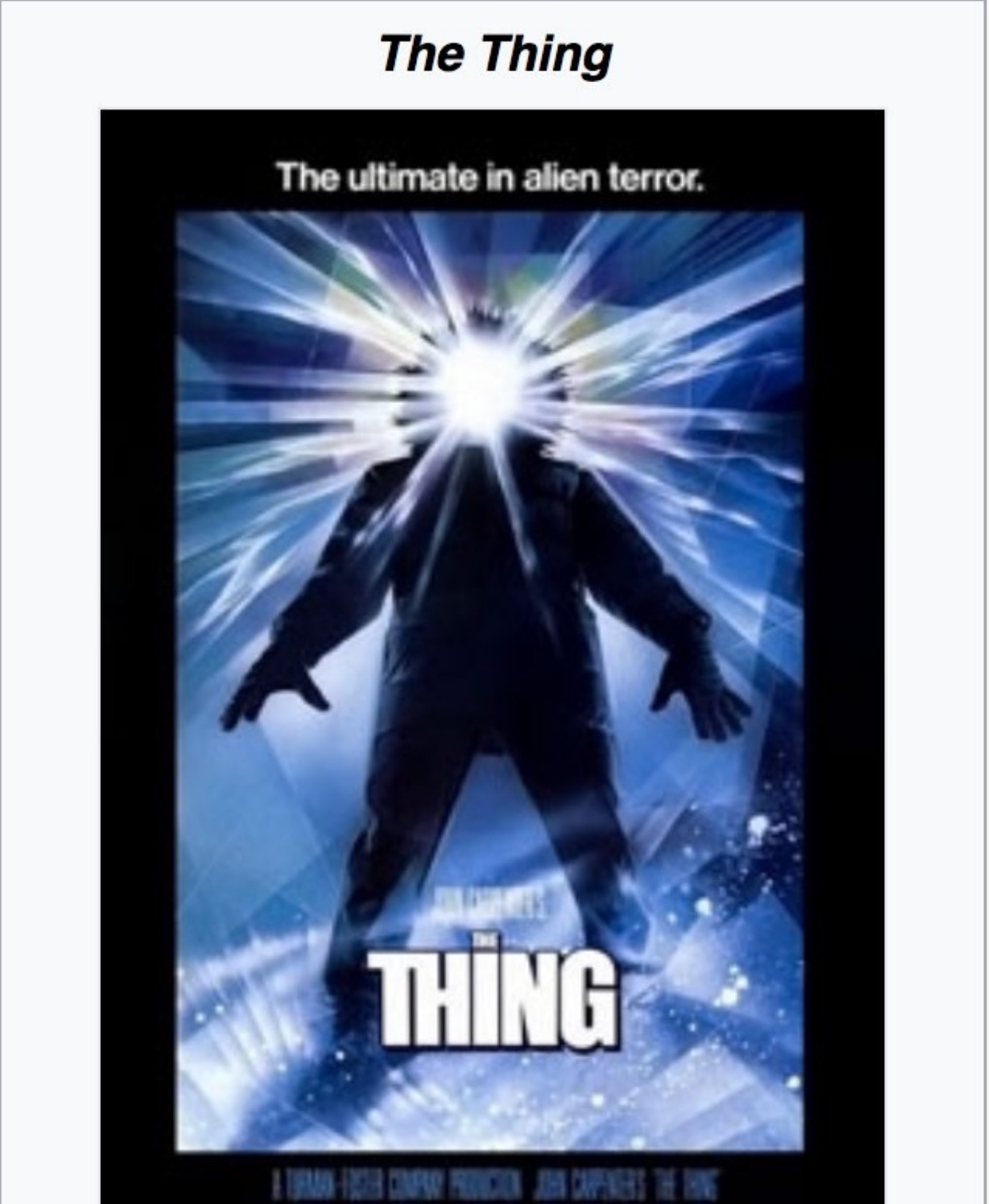
This article **needs additional citations for verification**. Please help [improve this article](#) by [adding citations to reliable sources](#). Unsourced material may be challenged and removed.

(May 2016) *([Learn how and when to remove this template message](#))*

The Thing (also known as ***John Carpenter's The Thing***) is a 1982 American science-fiction horror film directed by [John Carpenter](#), written by [Bill Lancaster](#), and starring [Kurt Russell](#). The film's title refers to its primary antagonist: a parasitic extraterrestrial lifeform that assimilates other organisms and in turn imitates them. The Thing infiltrates an Antarctic research station, taking the appearance of the researchers that it absorbs, and paranoia develops within the group.

The film is based on [John W. Campbell, Jr.](#)'s novella *Who Goes There?*, which was more loosely adapted by [Howard Hawks](#) and [Christian Nyby](#) as the 1951 film *The Thing from Another World*.^[3] Carpenter considers *The Thing* to be the first part of his *Apocalypse Trilogy*,^[4] followed by *Prince of Darkness* and *In the Mouth of Madness*. Although the films are narratively unrelated, each features a potentially apocalyptic scenario; should "The Thing" ever reach civilization, it would be only a matter of time before it consumes all life on Earth. Carpenter acknowledged that the work of [H.P. Lovecraft](#) also inspired the film.^{[5][6]}

On June 25, 1982, *The Thing* opened in 840 theaters, and it was the #8 movie of the



Source code for that webpage

```
1 <!DOCTYPE html>
2 <html class="client-nojs" lang="en" dir="ltr">
3 <head>
4 <meta charset="UTF-8"/>
5 <title>The Thing (1982 film) - Wikipedia</title>
6 <script>document.documentElement.className = document.documentElement.className.replace( /(^\s)client-nojs(\s|$)/, "$1client-
js$2" );</script>
7 <script>(window.RLQ=window.RLQ||[]).push(function()
{mw.config.set({"wgCanonicalNamespace":"","wgCanonicalSpecialPageName":false,"wgNamespaceNumber":0,"wgPageName":"The_Thing_(19
82_film)","wgTitle":"The Thing (1982
film)","wgCurRevisionId":806123497,"wgRevisionId":806123497,"wgArticleId":30809,"wgIsArticle":true,"wgIsRedirect":false,"wgAct
ion":"view","wgUserName":null,"wgUserGroups":["*"],"wgCategories":["CS1 maint: Unfit url","Webarchive template wayback
links","Pages with citations lacking titles","Pages with citations having bare URLs","Articles needing additional references
from May 2016","All articles needing additional references","Articles needing additional references from February
2017","Articles needing additional references from April 2017","All articles with unsourced statements","Articles with
unsourced statements from August 2016","Articles with hAudio microformats","Wikipedia articles with VIAF
identifiers","Wikipedia articles with GND identifiers","Wikipedia articles with BNF identifiers","1982 films","English-
language films","1982 horror films","1980s science fiction films","1980s science fiction horror films","Films based on science
fiction short stories","American films","American science fiction horror films","Norwegian-language films","Films directed by
John Carpenter","Action horror films","Films based on science fiction novels","Films set in Antarctica","Films set in
1982","Films shot in Alaska","Films shot in British Columbia","Monster movies","Films using stop-motion animation","Universal
Pictures films","Films about shapeshifting","Fictional parasites and parasitoids","Film scores by Ennio Morricone","Splatter
films","Body horror films","Films about extraterrestrial life","Films adapted into novels","Films adapted into comics","Films
adapted into video
games"],"wgBreakFrames":false,"wgPageContentLanguage":"en","wgPageContentModel":"wikitext","wgSeparatorTransformTable":
["",""],"wgDigitTransformTable":["",""],"wgDefaultDateFormat":"dmy","wgMonthNames":
["","January","February","March","April","May","June","July","August","September","October","November","December"],"wgMonthNam
esShort":
["","Jan","Feb","Mar","Apr","May","Jun","Jul","Aug","Sep","Oct","Nov","Dec"],"wgRelevantPageName":"The_Thing_(1982_film)","wgR
elevantArticleId":30809,"wgRequestId":"WekWTQpAICgAAC6@iyoAAABT","wgIsProbablyEditable":true,"wgRelevantPageIsProbablyEditable
":true,"wgRestrictionEdit":[],"wgRestrictionMove":[],"wgFlaggedRevsParams":{"tags":
{}},"wgStableRevisionId":null,"wgWikiEditorEnabledModules":
{"toolbar":true,"preview":false,"publish":false},"wgBetaFeaturesFeatures":
```



```
<!DOCTYPE html>
```

```
▼ <html class="client-js ve-not-available" lang="en" dir="ltr">
```

```
▶ <head>...</head>
```

```
▶ <body class="mediawiki ltr sitedir-ltr mw-hide-empty-elt ns-0 ns-subject page-The_Thing_1982_film rootpage-The_Thing_1982_film  
vector-experimental-print-styles vector-nav-directionality skin-vector action-view">...</body>
```

```
</html> = $0
```

DOM for that same page, as rendered by browser Inspector



Source code

No <tbody>


```

▼ <body class="mediawiki ltr sitedir-ltr mw-hide-empty-elt ns-0 ns-subject page-The_Thing_1982_film rootpage-The_Thing_1982_film
vector-experimental-print-styles vector-nav-directionality skin-vector action-view">
  <div id="mw-page-base" class="noprint"></div>
  <div id="mw-head-base" class="noprint"></div>
  ▼ <div id="content" class="mw-body" role="main">
    <a id="top"></a>
    ▶ <div class="mw-body-content" id="siteNotice">...</div>
    <div class="mw-indicators mw-body-content"> </div>
    ▶ <h1 id="firstHeading" class="firstHeading" lang="en">...</h1>
    ▼ <div id="bodyContent" class="mw-body-content">
      <div id="siteSub" class="noprint">From Wikipedia, the free encyclopedia</div>
      <div id="contentSub"></div>
      ▶ <div id="jump-to-nav" class="mw-jump">...</div>
      ▼ <div id="mw-content-text" lang="en" dir="ltr" class="mw-content-ltr">
        ▼ <div class="mw-parser-output">
          ▼ <table class="plainlinks metadata ambox ambox-content ambox-Refimprove" role="presentation">
            ▼ <tbody>
              ▼ <tr>
                ▼ <td class="mbox-image">
                  ▼ <div style="width:52px">
                    ▼ <a href="/wiki/File:Question_book-new.svg" class="image">
                      
                    </a>
                  </div>
                </td>
                ▶ <td class="mbox-text">...</td>
              </tr>
            </tbody>
          </table>
        </div>
      </div>
    </div>
  </div>

```

<tbody> added

Rendered DOM


```
<table>
  <tr>
    <td>Foo</td>
    <td>Bar</td>
  </tr>
  <tr>
    <td>Baz</td>
    <td>Qux</td>
  </tr>
</table>
```

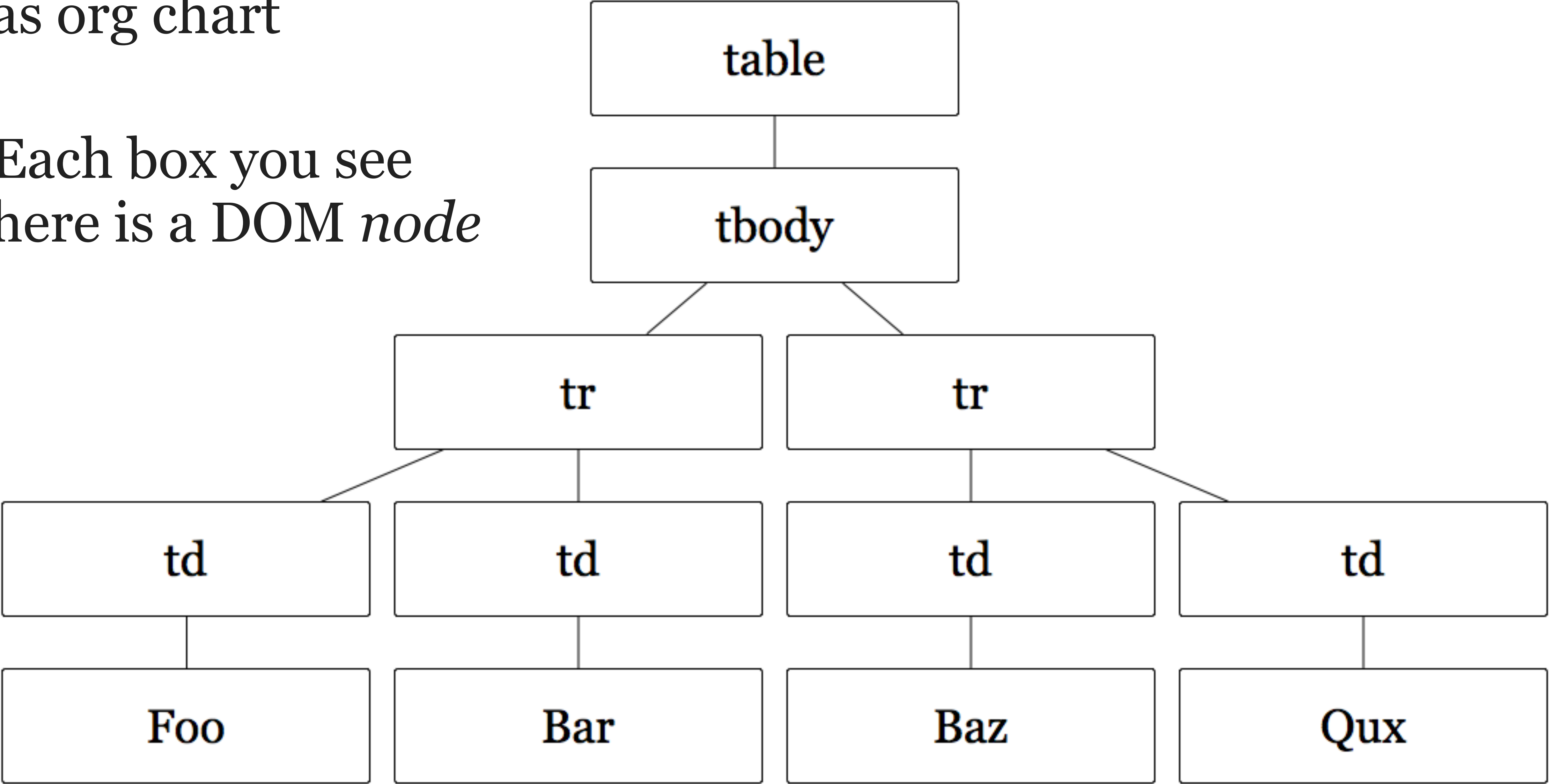
Source code

```
<table>
  <tbody>
    <tr>
      <td>Foo</td>
      <td>Bar</td>
    </tr>
    <tr>
      <td>Baz</td>
      <td>Qux</td>
    </tr>
  </tbody>
</table>
```

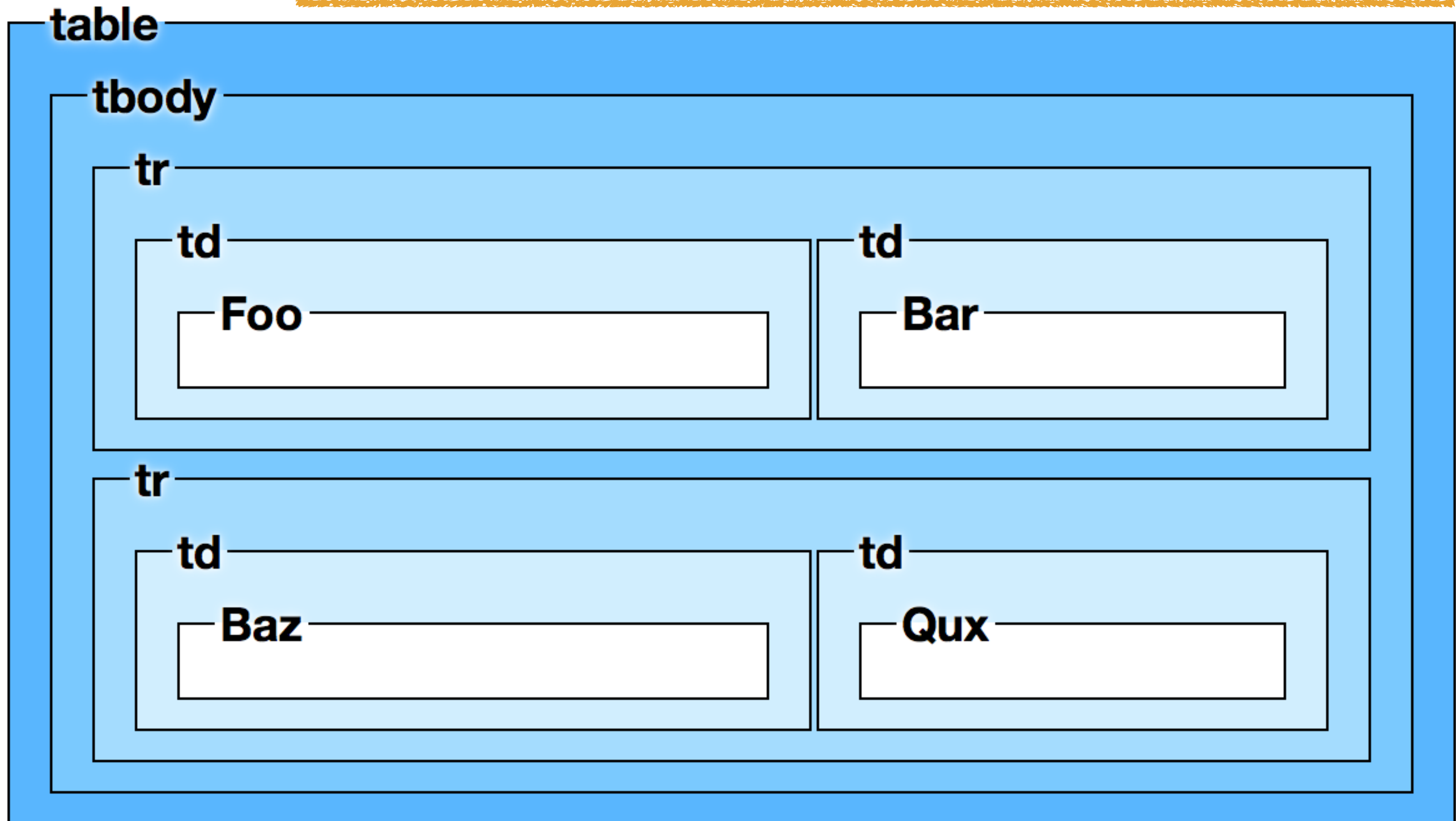
DOM tree

DOM tree
as org chart

Each box you see
here is a DOM *node*



DOM tree as nested boxes, each one a node

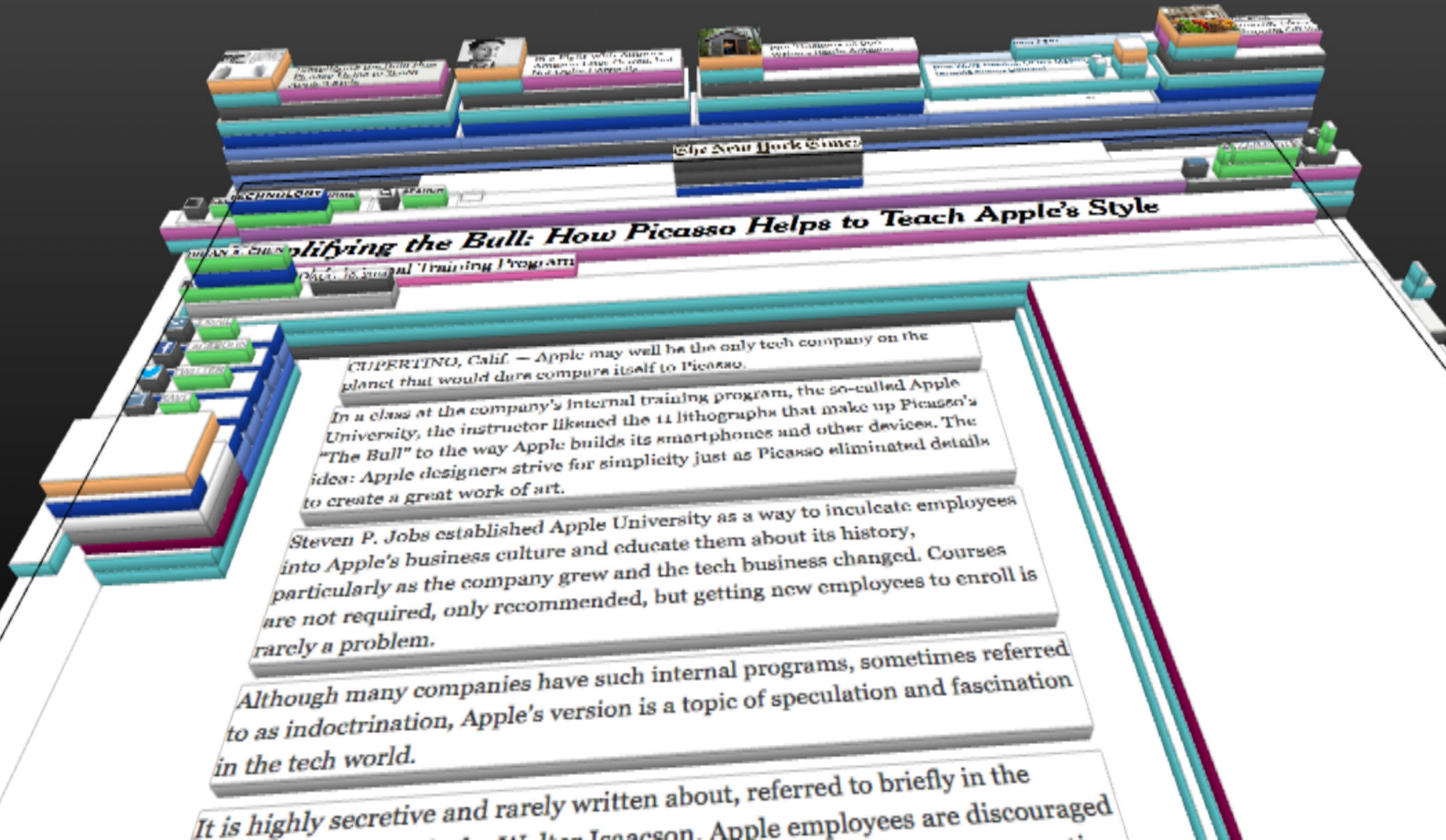


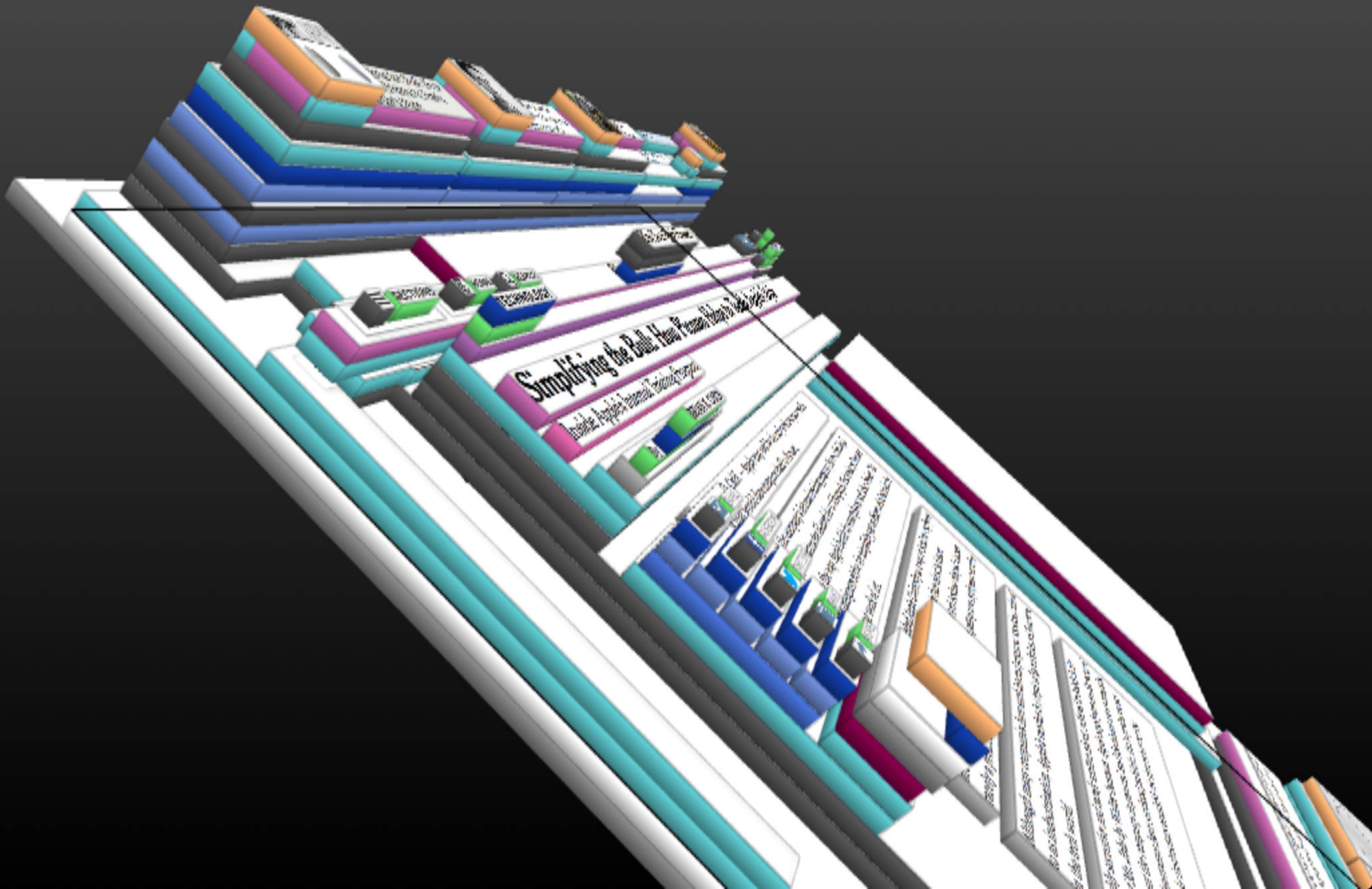
DOM tree as HTML elements,
each one a node, with `<html>`
as the document *root*

```
<html>
  <head> ... </head>
  <body>
    <header> ... </header>
    <main>
      <h1>The Call of Cthulhu</h1>
      <p>Ph'nenglui Cthulhu R'lyeh!</p>
    </main>
    <footer> ... </footer>
  </body>
</html>
```


Firefox up to version 47 had a cool feature called *3D View* that let you “rotate and re-orient the 3D presentation of the DOM hierarchy of your page to see it from different angles”

Each box you see is a DOM node





Simplifying the Bull Head From Head To Tail

Inside Apple's World

Apple's World

Apple's World

Apple's World

Apple's World

Apple's World

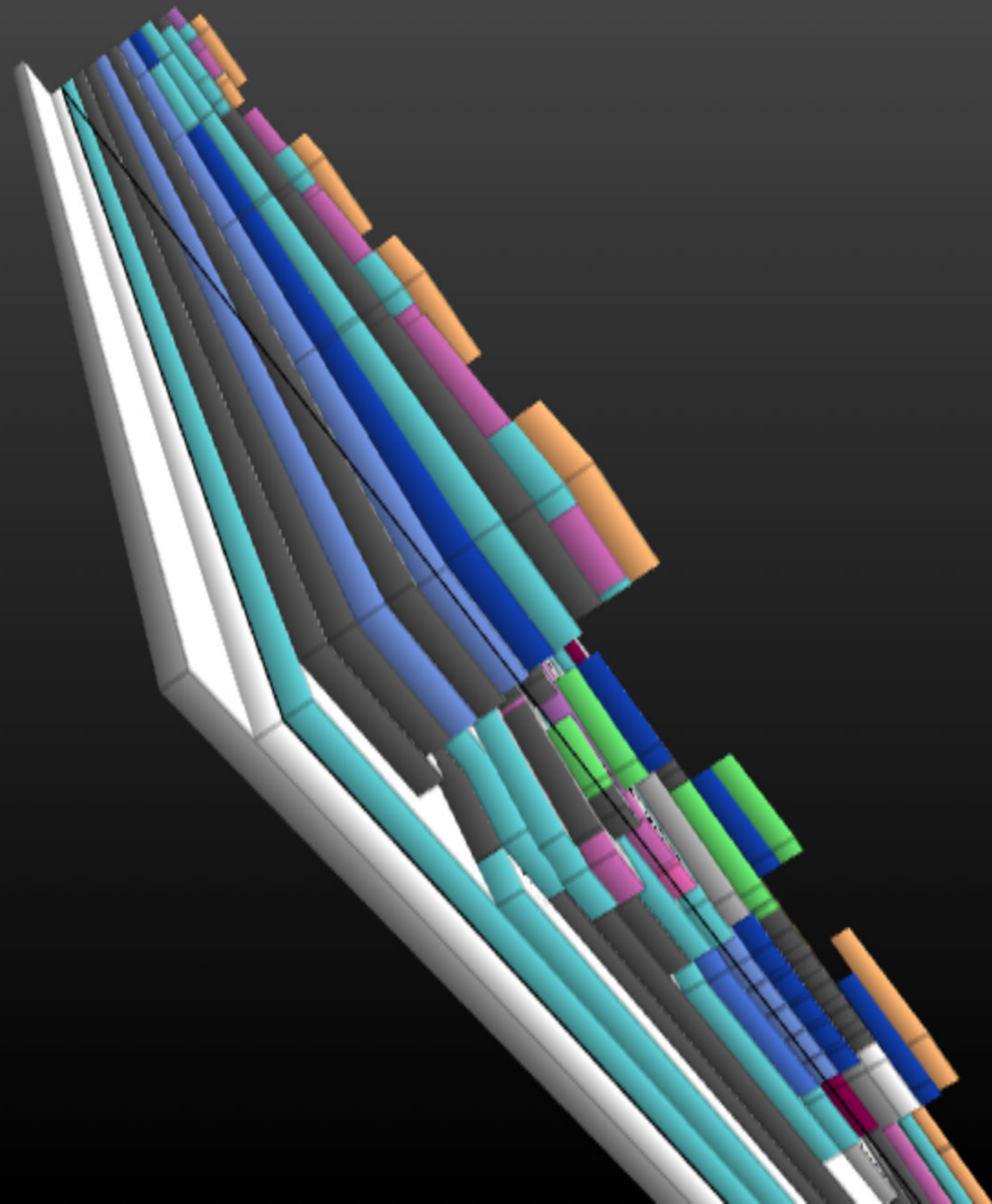
Apple's World

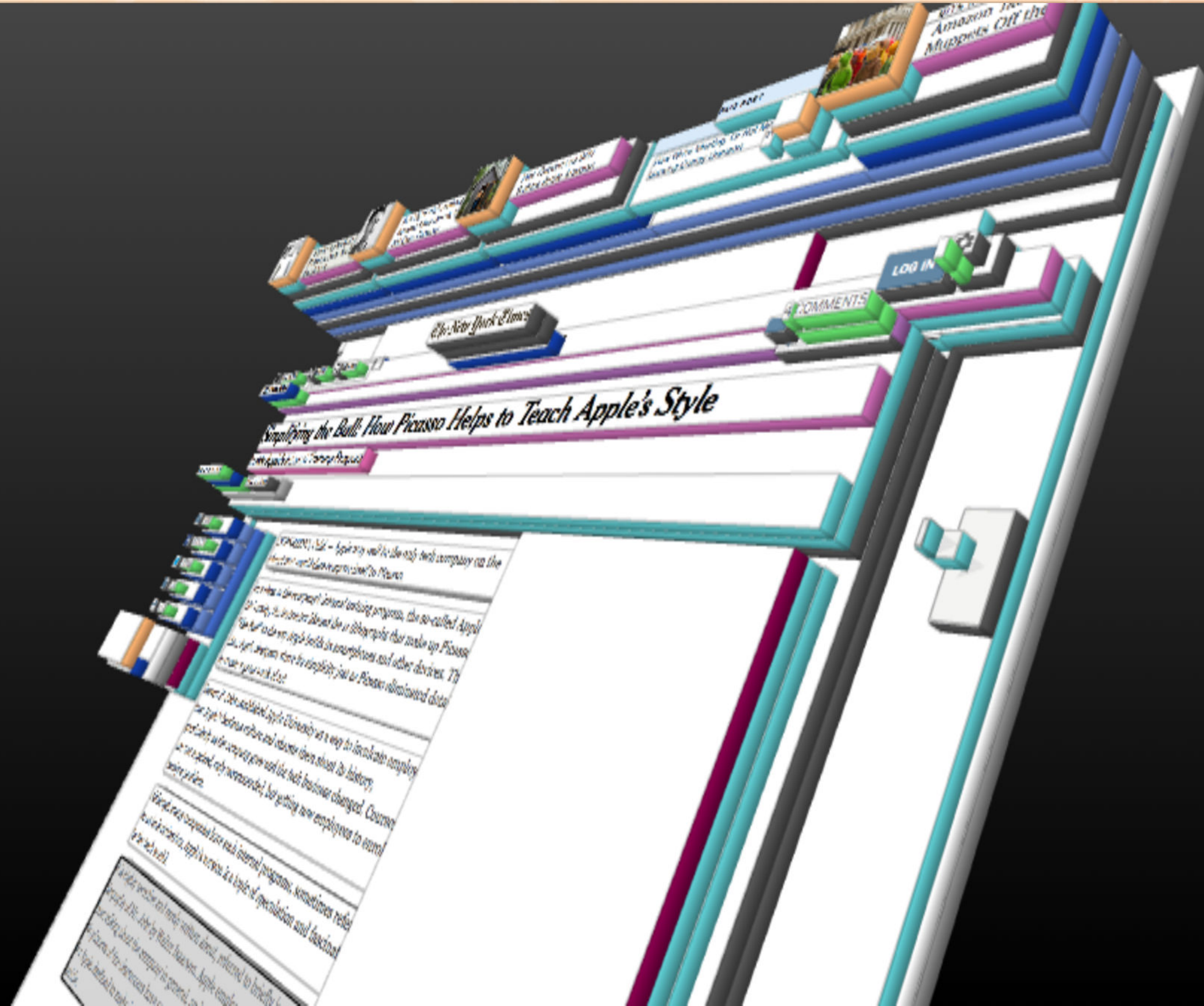
Apple's World

Apple's World

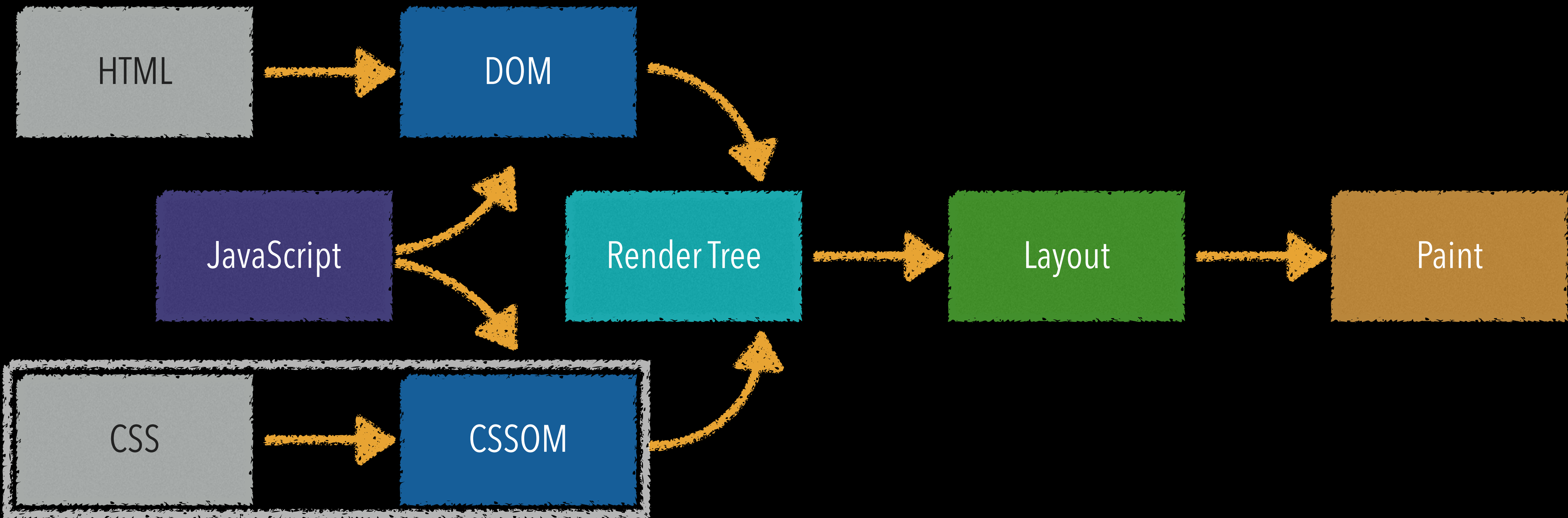
Apple's World

Apple's World





The CSSOM

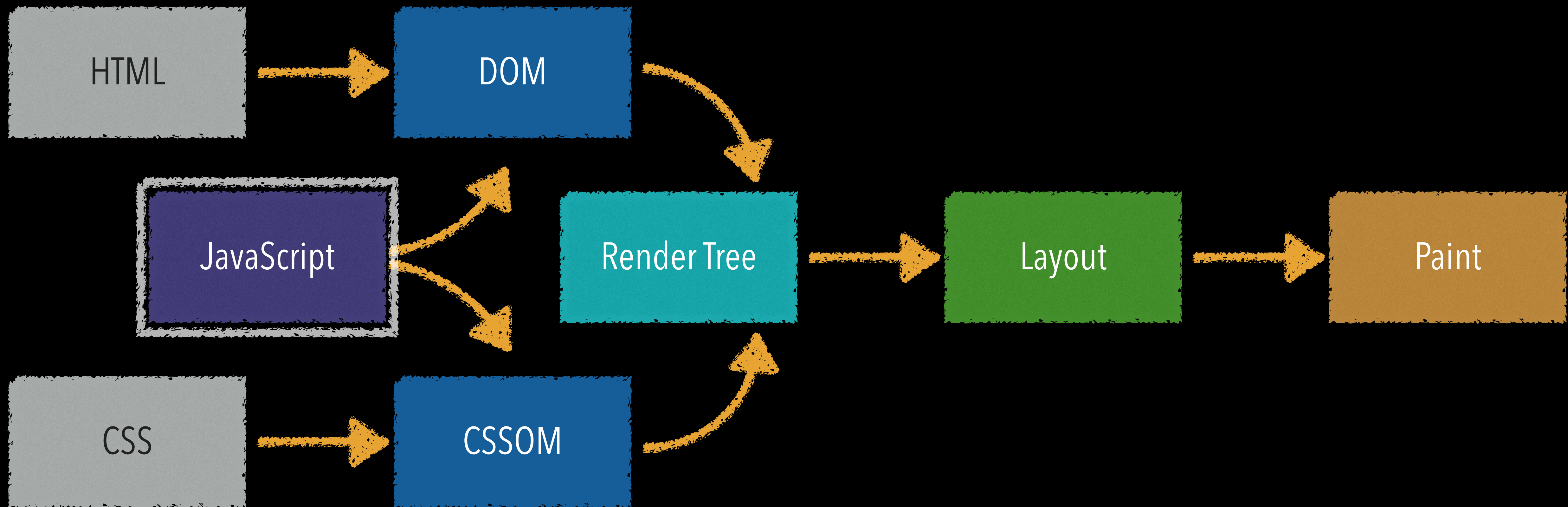


The CSSOM is built by the rendering engine using specified stylesheet rules from:

- » built-in rules that come with the *browser*
- » rules added by *user*
- » rules created by CSS *authors* (developers)

APIs allow developers to manipulate the CSSOM using JavaScript

Bringing It All
Together

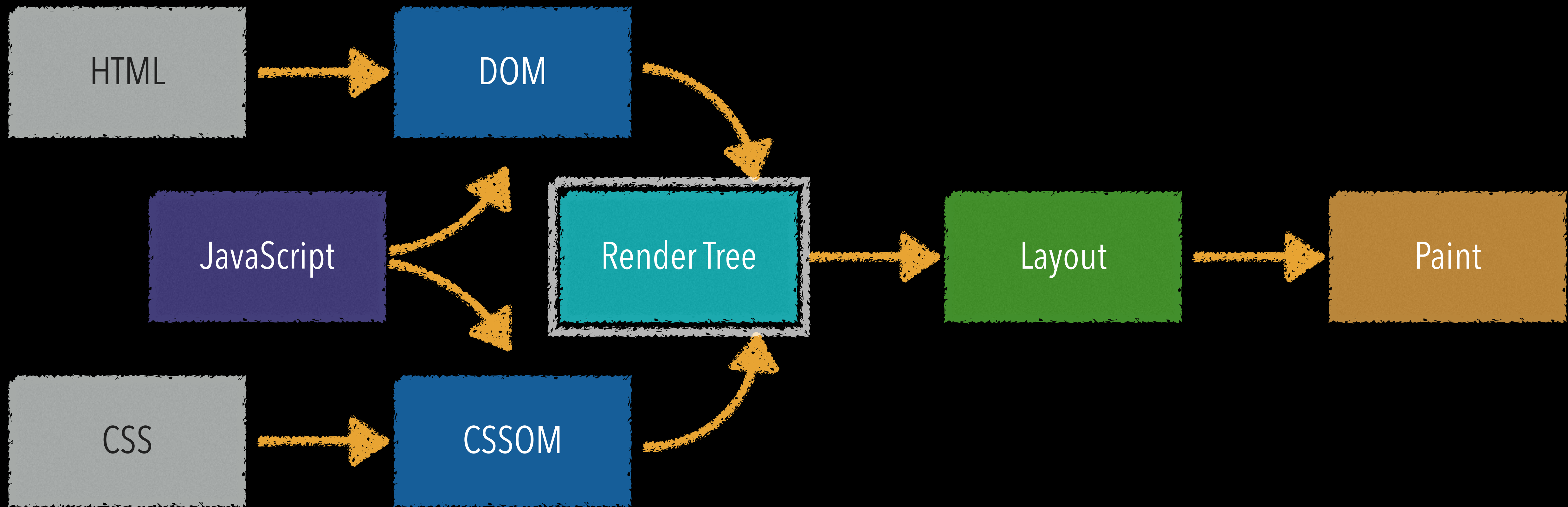


JavaScript can change the DOM & the CSSOM

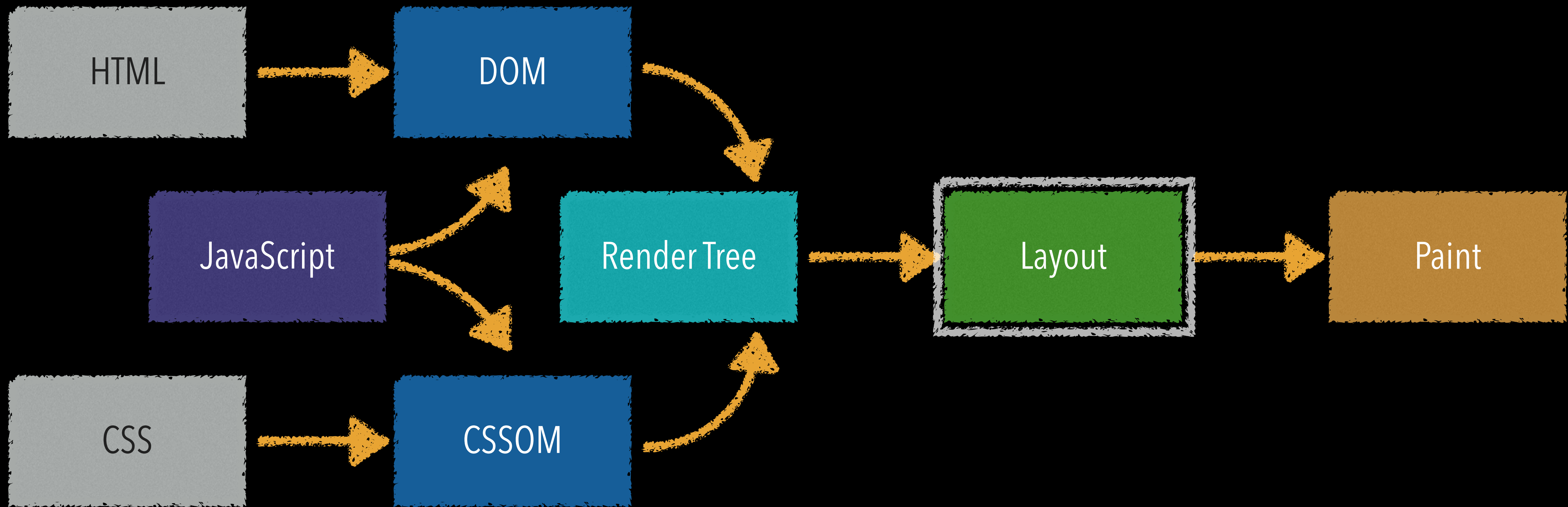
As of September 2022, there are 107 Web APIs

- » 80 available
- » 26 experimental
- » 1 deprecated

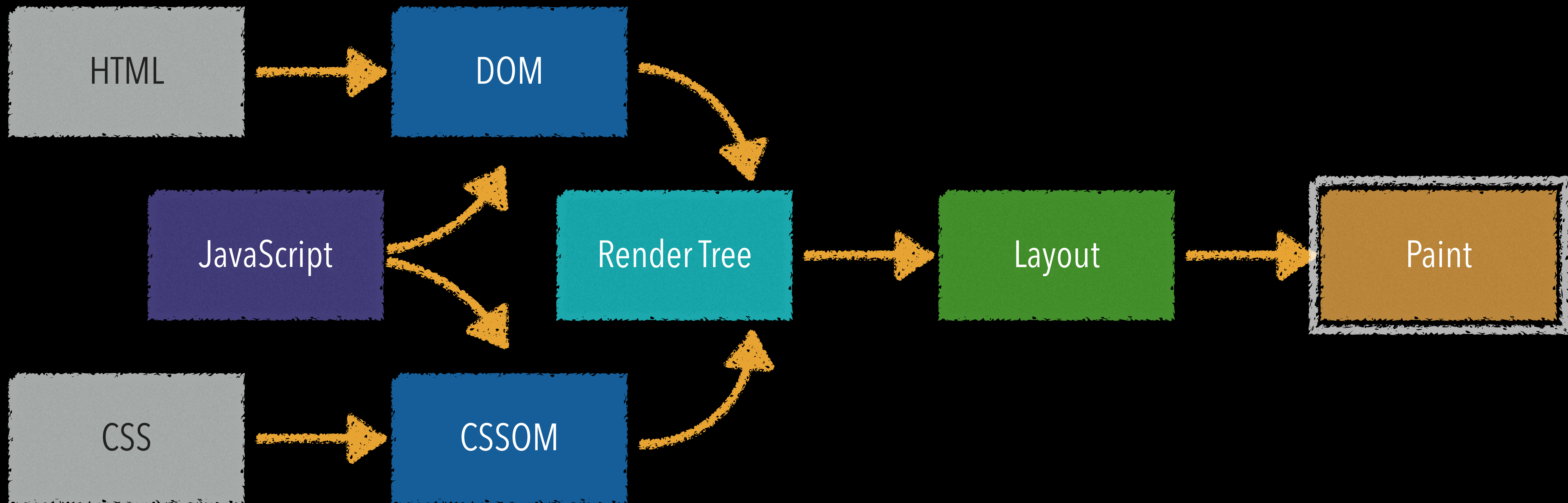
Background Tasks • Battery API • Beacon • Broadcast Channel API • CSS Counter Styles • CSS Font Loading API • CSS Painting API • CSS Typed Object Model API • CSSOM • Canvas API • Channel Messaging API • Clipboard API • Compression Streams API • Console API • Credential Management API • DOM • Device Orientation Events • Encoding API • Encrypted Media Extensions • Fetch API • File API • File System Access API • File and Directory Entries API • Fullscreen API • Gamepad API • Geolocation API • Geometry Interfaces • HTML DOM • HTML Drag and Drop API • High Resolution Time • History API • IndexedDB • Intersection Observer API • Media Capabilities API • Media Capture and Streams • Media Recorder API • Media Session API • MediaStream Recording • Navigation Timing • Page Visibility API • Paint Timing API • Payment Request API • Performance API • Performance Timeline API • Permissions API • Picture-in-Picture API • Pointer Events • Pointer Lock API • Prioritized Task Scheduling API • Resize Observer API • Resource Timing API • Screen Capture API • Screen Orientation API • Selection API • Sensor API • Server Sent Events • Service Workers API • Storage • Storage Access API • Touch Events • UI Events • URL API • Vibration API • Visual Viewport • Web Animations • Web Audio API • Web Authentication API • Web Crypto API • Web MIDI API • Web Notifications • Web Share API • Web Speech API • Web Storage API • Web Workers API • WebCodecs API • WebGL • WebRTC • WebVTT • Websockets API • XMLHttpRequest



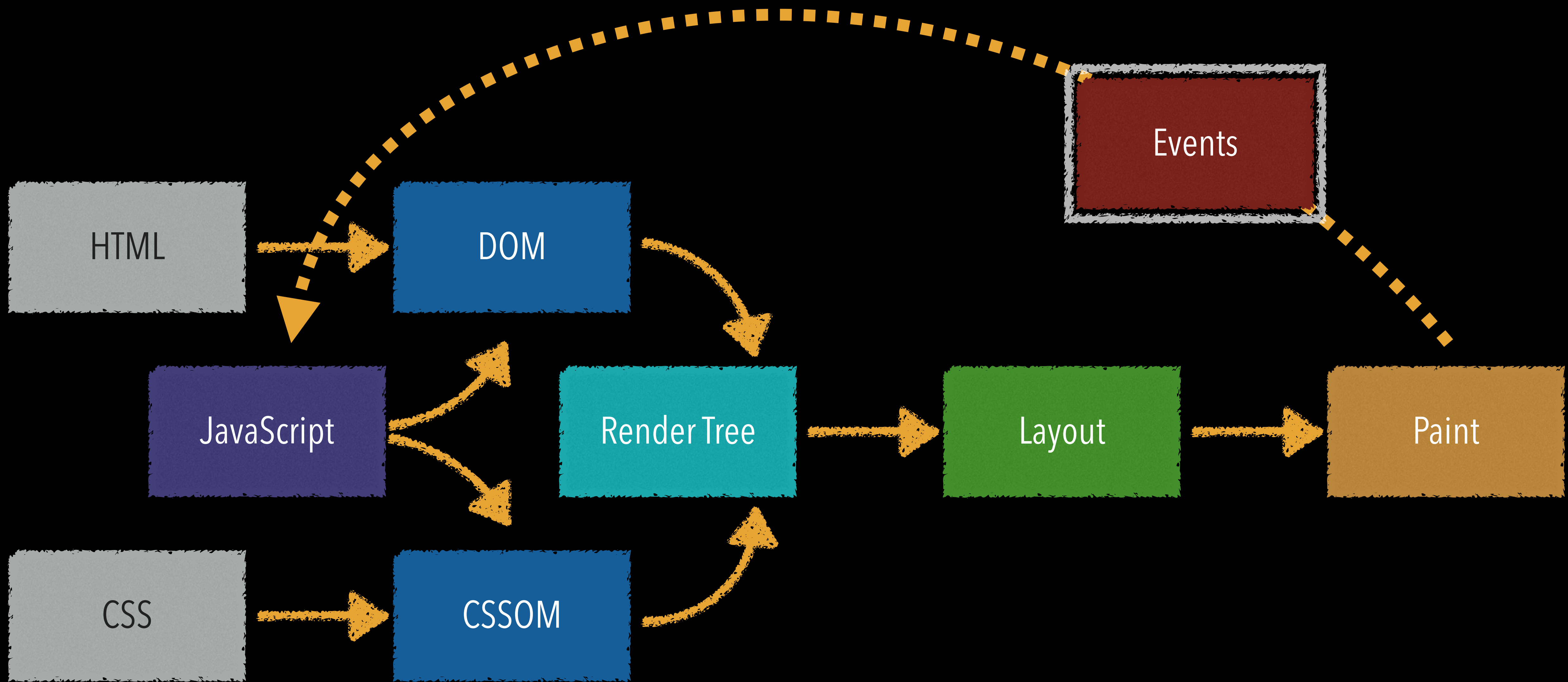
The rendering engine matches HTML element objects with CSS rule objects to generate the Render Tree



The rendering engine uses the Render Tree to lay out boxes in the viewport



The rendering engine displays (*paints*) all the content of the page in the viewport, from back to front



JavaScript events can further change the DOM & the CSSOM

The combination of the DOM, CSSOM, & JavaScript means that webpages are *dynamic* in that JavaScript can:

- » add, change, & remove any DOM elements & attributes
- » change any CSSOM styles
- » react to all existing events
- » create new events

So, when you're working with CSS, you are *styling boxes* that were rendered from DOM objects

Basic Selectors

A CSS *selector* declares which DOM objects should have particular styles applied to them

The browser's rendering engine...

- » parses the CSS & HTML
- » matches selectors to the appropriate DOM objects
- » applies the CSS style to the rendered DOM objects

HTML	CSS
<code><h1 align="center"></code>	<code>h1 {text-align: center;}</code>
Entire thing is a <i>tag</i>	Entire thing is a <i>style rule</i>
<code>h1</code> is an <i>tag name</i>	<code>h1</code> is a <i>selector</i>
<code>align</code> is an <i>attribute</i>	<code>text-align</code> is a <i>property</i>
<code>center</code> is a <i>value</i>	<code>center</code> is a <i>value</i>
<code>align="center"</code> is an <i>attribute-value pair</i>	<code>text-align: center</code> is a <i>declaration</i>
	Everything inside <code>{ & }</code> is a <i>declaration block</i>

CSS 1: 10 different selectors (including selectors,
combinators, pseudo-classes, & pseudo-elements)

CSS 2: 13

CSS 3: 21

CSS 4: 43 (as of May 2022)

87 in total

1. Simple selectors

- » Universal
- » Type
- » Class
- » ID
- » Pseudo-classes
- » Pseudo-elements
- » Attribute

2. Compound selectors

3. Complex selectors with combinators

- » Descendant
- » Child
- » Adjacent sibling
- » General sibling

4. Selector list

Simple Selectors

A simple selector describes a single condition on an element

If the condition is true, the element is selected

element: Is this the specific type of element?

.class: Does this element have this class on it?

#ID: Does this element have this ID on it?

***** (universal): Is this an element?

Type

element

Selects *every matching HTML element* (e.g., `<p>`, ``, or `<h3>`)

AKA Element Selectors

Used when you want to affect every instance of an element (you can then override selected elements with other CSS, e.g., `.class`)

⚙ HTML

```
1 <h3>H. P. Lovecraft's "The Dunwich  
Horror"</h3>  
2 <p>  
3 About 1923, when Wilbur was a boy of  
ten whose mind, voice, stature, and  
bearded face gave all the impressions  
of maturity, a second great siege of  
carpentry went on at the old house. It  
was all inside the sealed upper part,  
and from bits of discarded lumber  
people concluded that the youth and  
his grandfather had knocked out all  
the partitions and even removed the  
attic floor, leaving only one vast  
open void between the ground story and
```

⚙ CSS

```
1 p {  
2   color: red;  
3   font-weight: bold;  
4 }  
5  
6 /* Uninteresting stuff below here */  
7  
8 html {  
9   font-size: 24px;  
10  font-family: "Iowan Old Style",  
    Georgia, serif;  
11 }
```

⚙ JS

H. P. Lovecraft's "The Dunwich Horror"

About 1923, when Wilbur was a boy of ten whose mind, voice, stature, and bearded face gave all the impressions of maturity, a second great siege of carpentry went on at the old house. It was all inside the sealed upper part, and from bits of discarded lumber people concluded that the youth and his grandfather had knocked out all the partitions and even removed the attic floor, leaving only one vast open void between the ground story and the peaked roof. They had torn down the great central chimney, too, and fitted the rusty range with a flimsy outside tin stovepipe.

In the spring after this event Old Whateley noticed the growing number of whippoorwills that would come out of Cold Spring Glen to chirp under his window at night. He seemed to regard the circumstance as one of great significance, and told the loungers at Osborn's that he thought his time had almost come.

Class

`.class`

Selects any *element to which the class has been applied*,
as many times per page as needed

HTML:

```
<p class="intro">..</p>
```

CSS:

```
.intro {  
    font-weight: bold;  
}
```


HTML

1

<p class="attention">

2

Be careful when it is feeding

time for the Yog-Sothoths on

display.

3

</p>

4

<hr>

5

<p>

6

We hope you enjoy your stay at

the Lovecraft Zoo! We have many fun

creatures that the whole family

will enjoy. However, many of our

creatures can cause injury and/or

madness, so <span

class="attention">stay

alert.

7

</p>

CSS

1

.attention {

2

color: red;

3

font-weight: bold;

4

}

JS

Be careful when it is feeding time for the Yog-Sothoths on display.

We hope you enjoy your stay at the Lovecraft Zoo! We have many fun creatures that the whole family will enjoy. However, many of our creatures can cause injury and/or madness, so **stay alert**.

Dot in front of the class name in CSS, but no dot in HTML

Dot labels the class in CSS

The **class** attribute labels the element in HTML

HTML

1

<p class="attention">

2

Be careful when it is feeding

3

time for the Yog-Sothoths on

4

display.

5

</p>

6

<hr>

7

<p>

8

We hope you enjoy your stay at

9

the Lovecraft Zoo! We have many fun

10

creatures that the whole family

11

will enjoy. However, many of our

12

creatures can cause injury and/or

13

madness, so <span

14

class="attention">stay

15

alert.

16

</p>

CSS

1

.attention {

2

color: red;

3

font-weight: bold;

4

}

JS

Be careful when it is feeding time for the Yog-Sothoths on display.

We hope you enjoy your stay at the Lovecraft Zoo! We have many fun creatures that the whole family will enjoy. However, many of our creatures can cause injury and/or madness, so **stay alert**.

The paragraph with **class** applied to it is different from the paragraph that does not have that **class**

HTML

1

<p class="attention">

2

Be careful when it is feeding

3

time for the Yog-Sothoths on

4

display.

5

</p>

6

<hr>

7

<p>

8

We hope you enjoy your stay at

9

the Lovecraft Zoo! We have many fun

10

creatures that the whole family

11

will enjoy. However, many of our

12

creatures can cause injury and/or

13

madness, so <span

14

class="attention">stay

15

alert.

16

</p>

CSS

1

.attention {

2

color: red;

3

font-weight: bold;

4

}

JS

Be careful when it is feeding time for the Yog-Sothoths on display.

We hope you enjoy your stay at the Lovecraft Zoo! We have many fun creatures that the whole family will enjoy. However, many of our creatures can cause injury and/or madness, so **stay alert**.

A class can be applied as many times per page as you wish

You can use multiple (2, 3, 4, whatever) classes on an element when needed

```
HTML
1 <figure>
2   
3   <figcaption class="center image-caption">
4     Libby was a cute puppy
5   </figcaption>
6 </figure>

CSS
1 .center {
2   text-align: center;
3 }
4
5 .image-caption {
6   font-size: .9rem;
7   font-style: italic;
8 }
9

JS
```



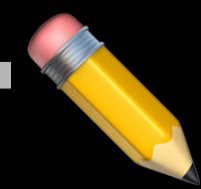
Libby was a cute puppy

Some frameworks encourage the use of many classes on elements

```
<div class="p-5 mb-4 bg-light rounded-bottom  
text-light hero maintenance">
```

```
<footer class="container-fluid bg-light  
border-top border-2 border-success mt-auto  
py-3 px-3">
```

This is a bit controversial among developers



SIDE NOTE

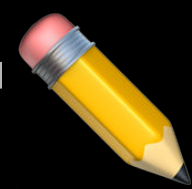
A student once did this:

```
<figcaption class="center" class="image-  
caption"> 🤔
```

This will *not* work! No duplicate attributes!

You *must* use:

```
<figcaption class="center image-caption">
```



SIDE NOTE

How do you match an element that has a particular combination of classes on it?

```
<p class="center note">
```

See *Compound Selectors* later in these slides

There is no default list of class names

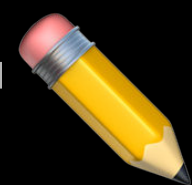
You come up with the class names your project uses (or you use those provided by a framework like Bootstrap)

You cannot use spaces in class names

Multiple words in a class name?

`.main-content-nav` ← What most developers use
`.main_content_nav`
`.maincontentnav`
`.mainContentNav`
`.MainContentNav`

Just be consistent!



SIDE NOTE

- `.main-content-nav` ← kebab-case ✍️
- `.main_content_nav` ← snake_case 🐍
- `.MAIN_CONTENT_NAV` ← SCREAMING_SNAKE_CASE 🐍
- `.maincontentnav` ← flatcase or lazycase 😴
- `.mainContentNav` ← lowerCamelCase 🐫
- `.MainContentNav` ← UpperCamelCase 🐫 / PascalCase

In fact, you can use emoji for class names (but don't)

```
•  {  
    background-color: hsl(0,0%,76%);  
}
```

```
•  {  
    font-family: "Comic Sans", cursive;  
}
```

```
<p class="">I have no taste in design!</p>
```


The big rule for class names: *describe function, not appearance*

Not “what does it look like?” but instead “what is it for?”

Bad class names

`.author name`
`.big-red`
`.small`

Good class names

`.author-name`
`.caption`
`.alert`
`.footnote`
`.center`

`.center` is unique, as it is both a function *and* appearance

ID

`#id`

Selects any *element to which the ID has been applied*, but each ID can only be used once per page

You can use multiple IDs on a page, but each ID must be unique

`#id` & `.class` share a lot of similarities

- » Names are made up by developers, not specs
- » Names can't have spaces
- » Names should denote purpose, not appearance
- » Names containing multiple words should be combined with a `-` (or something else consistently)


```
HTML
1 <article>
2   <h3>“The Shadow Over Innsmouth” by H. P. Lovecraft</h3>
3   <p></p>
6   <aside id="pull-quote">
7     There were all sorts of
rumours about how Marsh had come
to look.
8   </aside>
9   <p></p>
12 </article>
14 <aside id="sidebar">
15   <h3>August Derleth</h3>
16   <p></p>
19 </aside>
20
21
22
23
24
25
26
27
28

CSS
JS
```

“The Shadow Over Innsmouth” by H. P. Lovecraft

Of course the town’s real business was the refinery, whose commercial office was on the square only a few doors east of where we stood. Old Man Marsh was never seen, but sometimes went to the works in a closed, curtained car.

There were all sorts of rumours about how Marsh had come to look.

There were all sorts of rumours about how Marsh had come to look. He had once been a great dandy, and people said he still wore the frock-coated finery of the Edwardian age, curiously adapted to certain deformities. His sons had formerly conducted the office in the square, but latterly they had been keeping out of sight a good deal and leaving the brunt of affairs to the younger generation. The sons and their sisters had come to look very queer, especially the elder ones; and it was said that their health was failing.

August Derleth

Best remembered as the first publisher of the writings of H. P. Lovecraft, and for his own contributions to the Cthulhu Mythos genre of horror.


```
HTML
1 <article>
2   <h3>"The Shadow Over Innsmouth"
  by H. P. Lovecraft</h3>
3   <p></p>
6   <aside id="pull-quote">
7     There were all sorts of
  rumours about how Marsh had come
  to look.
8   </aside>
9   <p></p>
12 </article>
13
14 <aside id="sidebar">

CSS
11 #sidebar {
12   width: 11rem;
13   margin: 0 1em;
14   padding: 1em;
15   box-sizing: border-box;
16 }
17
18 #pull-quote {
19   float: left;
20   width: 12em;
21   margin: .4em .75em 0 0;

JS
```

"The Shadow Over Innsmouth" by H. P. Lovecraft

Of course the town's real business was the refinery, whose commercial office was on the square only a few doors east of where we stood. Old Man Marsh was never seen, but sometimes went to the works in a closed, curtained car.

There were all sorts of rumours about how Marsh had come to look.

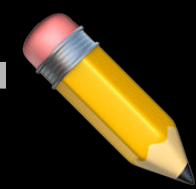
There were all sorts of rumours about how Marsh had come to look. He had once been a great dandy, and people said he still wore the frock-coated finery of the Edwardian age, curiously adapted to certain deformities. His sons had formerly conducted the office in the square, but latterly they had been keeping out of sight a good deal and leaving the brunt of affairs to the younger generation. The sons had been in the habit of coming to look very queer, especially when they were young, and it was said that their health

August Derleth

Best remembered as the first publisher of the writings of H. P. Lovecraft, and for his own contributions to the Cthulhu Mythos genre of horror.

A specific ID can be applied only *one time per page*

	Class	ID
CSS	<code>.foo</code>	<code>#bar</code>
HTML	<code>class="foo"</code>	<code>id="bar"</code>
Unique on page	No	Yes
	<code>class="foo" 1-∞</code>	<code>id="bar" once</code>
Values per element	Multiple	One
	<code>class="foo bar"</code>	<code>id="baz"</code>
Specificity	10×	100×
URL addressable	No	Yes

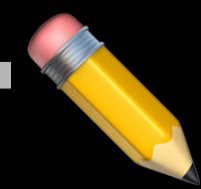


SIDE NOTE

The HTML Living Standard says that an ID should be an *opaque string* that doesn't convey any semantic information

Fine if your build process auto-generates IDs & values

If not, I'd rather work with `<h2 id="the-tomb">` than `<h2 id="3rdu8p">`



SIDE NOTE

A caveat: A `-` is valid in a CSS ID (`#hp-lovecraft`) & as a page fragment identifier (``), but it is not valid in a JavaScript variable

`this` will work, as will `window['hp-lovecraft']`

Bad ID names

#top nav

#tiny-little-fonts

Good ID names

#sidebar (use <aside>)

#utility-nav (use <nav>)

#site-footer (use
<footer>)

#logo

#legalese

We've stopped using IDs for CSS over the last 10+ years

Create classes instead of IDs for selectors

Classes can be reused, while IDs cannot

IDs make the *cascade* (more about that soon!) very complicated

Many (most?) frameworks (like Bootstrap) stick to classes entirely

However, even if we don't use IDs for CSS selectors like we used to, they are still necessary

- » Page fragment identifiers
- » Unique hooks for JavaScript

IDs as page fragment identifiers

Given this HTML on <http://www.foo.com/toc/>:

```
<h2 id="chapter2">
```

You could link directly to it on the same page:

```
<a href="#chapter2">
```

Or from a different page:

```
<a href="http://www.foo.com/toc/#chapter2">
```

HTMLTidy×

1<h3 id="toc">Table of Contents</h3>

2

3The Tomb

4Dagon

5Beyond the Walls of Sleep

6

7

8<h3 id="the-tomb">The Tomb [TOC]</h3>

9<p>In relating the circumstances which have led to my confinement...</p>

10

11<h3 id="dagon">Dagon [TOC]</h3>

12<p>I am writing this under an appreciable mental strain...</p>

13

14<h3 id="beyond-the-walls">Beyond the Walls of Sleep [TOC]</h3>

15<p>I have frequently wondered if the majority of mankind...</p>

CSSTidyView Compiled×

JS

Table of Contents

- [The Tomb](#)
- [Dagon](#)
- [Beyond the Walls of Sleep](#)

The Tomb [\[TOC\]](#)

In relating the circumstances which have led to my confinement...

Dagon [\[TOC\]](#)

I am writing this under an appreciable mental strain...

Beyond the Walls of Sleep [\[TOC\]](#)

I have frequently wondered if the majority of mankind...

Nothing in CSS re: `#dagon`!


```
HTML
1 <p>
2   <a href="javascript:void(0)" onclick="toggle_show('answer');">
3     Toggle visibility
4   </a>
5 </p>
6 <p id="answer" style="display:none;">
7   Foo
8 </p>

CSS
Tidy View Compiled

JS
1 function toggle_show(id) {
2   var e = document.getElementById(id);
3   if(e.style.display == 'block')
4     e.style.display = 'none';
5   else
6     e.style.display = 'block';
7 }
```

Toggle visibility

This parameter...

...helps the JavaScript...

...target this ID

⚙ HTML

Tidy ✕

```
1 <p>
2   <a href="javascript:void(0)" onclick="toggle_show('answer');">
3     Toggle visibility
4   </a>
5 </p>
6 <p id="answer" style="display:none;">
7   Foo
8 </p>
```

Toggle visibility

Foo

⚙ CSS

Tidy View Compiled ✕

⚙ JS

Tidy ✕

```
1 function toggle_show(id) {
2   var e = document.getElementById(id);
3   if(e.style.display == 'block')
4     e.style.display = 'none';
5   else
6     e.style.display = 'block';
7 }
```

Universal

*

Selects *every HTML element*

(Though later CSS rules can override these declarations)

```
1 <h3>From "The Shadow Over  
Innsmouth" by H. P.  
Lovecraft</h3>  
2 <p></p>  
5 <p></p>  
8 <hr>  
9 <p></p>  
12 <ul>  
13 <li>Dagon</li>  
14 <li>The Terrible Old Man</li>  
15 <li>The Colour Out of  
Space</li>  
16 </ul>
```

```
1 * {  
2   margin: 0;  
3   padding: 0;  
4 }  
5
```

From "The Shadow Over Innsmouth" by H. P. Lovecraft

Of course the town's real business was the refinery, whose commercial office was on the square only a few doors east of where we stood. Old Man Marsh was never seen, but sometimes went to the works in a closed, curtained car.

There were all sorts of rumours about how Marsh had come to look. He had once been a great dandy, and people said he still wore the frock-coated finery of the Edwardian age, curiously adapted to certain deformities.

After reading, also check out:

Dagon

The Terrible Old Man

The Colour Out of Space

This is sometimes used so you can specify **margin & padding** for every element


```
HTML
1 <h3>From “The Shadow Over
  Innsmouth” by H. P.
  Lovecraft</h3>
2 <p></p>
5 <p></p>
8 <hr>
9 <p></p>
12 <ul>
13 <li>Dagon</li>
14 <li>The Terrible Old Man</li>
15 <li>The Colour Out of
   Space</li>
16 </ul>

CSS
1 * {
2   margin: 0;
3   padding: 0;
4 }
5
6 * + * {
7   margin-top: 1em;
8 }
9

JS
```

From “The Shadow Over Innsmouth” by H. P. Lovecraft

Of course the town’s real business was the refinery, whose commercial office was on the square only a few doors east of where we stood. Old Man Marsh was never seen, but sometimes went to the works in a closed, curtained car.

There were all sorts of rumours about how Marsh had come to look. He had once been a great dandy, and people said he still wore the frock-coated finery of the Edwardian age, curiously adapted to certain deformities.

After reading, also check out:

Dagon

The Terrible Old Man

The Colour Out of Space

HTML

1

<h3>From “The Shadow Over
Innsmouth” by H. P.
Lovecraft</h3>

2

<p></p>

5

<p></p>

8

<hr>

9

<p></p>

12

13

Dagon

CSS

1

* {

2

margin: 0;

3

padding: 0;

4

}

5

6

* + * {

7

margin-top: 1em;

8

}

9

10

* + li {

11

margin-top: 0;

12

}

13

JS

From “The Shadow Over Innsmouth” by H. P. Lovecraft

Of course the town’s real business was the refinery, whose commercial office was on the square only a few doors east of where we stood. Old Man Marsh was never seen, but sometimes went to the works in a closed, curtained car.

There were all sorts of rumours about how Marsh had come to look. He had once been a great dandy, and people said he still wore the frock-coated finery of the Edwardian age, curiously adapted to certain deformities.

After reading, also check out:

Dagon

The Terrible Old Man

The Colour Out of Space

It's rare to use `*` by itself as a selector, because you rarely want to change every element

Instead, `*` is more useful when it is *scoped*, or limited to just a certain part of the code

An example is coming up in *Child Combinator*

Other simple selectors

- » Attribute selector
- » Pseudo-class
- » Pseudo-element

Those will be covered in *CSS Selectors*

Compound Selectors

A compound selector describes multiple conditions on an element

If all conditions are true, the element is selected

Consists of a chain of simple selectors connected together, but not connected by a combinator (which is coming up next)

p.alert matches

```
<p class="alert">
```

table.inventory matches

```
<table class="inventory">
```

table.inventory.northwest matches

```
<table class="inventory northwest">
```

.cthulhu:first-child matches a parent's first

```
<element class="cthulhu">
```


A compound selector is used to match an element that has two classes on it

```
<p class="center note">
```

```
.center {  
  text-align: center;  
}
```

```
.note {  
  font-size: .9em;  
}
```

```
.center.note {  
  font-style: italic;  
}
```

Selects elements with the
`.center` class

Selects elements with the
`.note` class

Selects elements with the
`.center` *and* `.note` classes

⚙ HTML



```
1 <p class="red">
2   Red
3 </p>
4 <p class="yellow">
5   Yellow
6 </p>
7 <p class="red yellow">
8   Orange
9 </p>
```

⚙ CSS



```
1 .red {
2   background-color: red;
3 }
4
5 .yellow {
6   background-color: yellow;
7 }
8
9 .red.yellow {
10  background-color: orange;
11 }
12
```

⚙ JS



Red

Yellow

Orange

Complex Selectors Using Combinators

A complex selector uses combinator(s) to combine multiple selectors together into 1 selector

`.ws-gallery img { ... }` ← `␣` (space)

`ul > li { ... }` ← `>`

`h2 + p.lead { ... }` ← `+`

Combinator	Name	Ex.	Which B is selected?
\sqsubset (space)	Descendant	A B	Any descendant of A
$>$	Child	A $>$ B	Direct children of A
$+$	Next Sibling	A $+$ B	Next sibling after A
\sim (tilde)	Subsequent Siblings	A \sim B	All siblings after A

A combinator *expresses a relationship between selectors*

Selector Subjects

Rendering engines match selectors from right to left

The right-most part of the selector represents the *subject* of the selector, the actual element being selected

Really helpful understanding complex selectors

Green indicates selected element(s)

ul li

ul > li

ul > li a[title="home"]

.callOut > p:last-child

.ws-header .nav > li > .current

p code, pre code, blockquote code

Descendant Combinator

`selectorA selectorB`

Selects *all* `selectorB` who have `selectorA` as *an ancestor*

`selectorB` can be a child, grandchild, or later descendant of `selectorA`

Any other `selectorB` who does *not* have `selectorA` as an ancestor is unaffected

⚙ HTML

1

<h2>The Terrible Old Man <small>
[TOC]</small>
</h2>

2

3

<p>

4

It was the design of Angelo Ricci and Joe Czanek and Manuel Silva* to call on the Terrible Old Man. This old man dwells all alone in a very ancient house on Water Street near the sea, and is reputed to be both exceedingly rich and exceedingly feeble; which forms a situation very attractive to men of the profession of Messrs. Ricci, Czanek, and Silva, for that profession was nothing less dignified than robbery.

5

</p>

6

<p>

⚙ CSS

⚙ JS

The Terrible Old Man [\[TOC\]](#)

It was the design of Angelo Ricci and Joe Czanek and Manuel Silva* to call on the Terrible Old Man. This old man dwells all alone in a very ancient house on Water Street near the sea, and is reputed to be both exceedingly rich and exceedingly feeble; which forms a situation very attractive to men of the profession of Messrs. Ricci, Czanek, and Silva, for that profession was nothing less dignified than robbery.

The inhabitants of Kingsport say and think many things about the Terrible Old Man which generally keep him safe from the attention of gentlemen like Mr. Ricci and his colleagues, despite the almost certain fact that he hides a fortune of indefinite magnitude somewhere about his musty and venerable abode.

* Note the “foreign” names that Lovecraft chooses.

⚙ HTML

and think many things about the
Terrible Old Man which generally
keep him safe from the attention
of gentlemen like Mr. Ricci and
his colleagues, despite the almost
certain fact that he hides a
fortune of indefinite magnitude
somewhere about his musty and
venerable abode.

8 </p>
9 <hr>
10 <p>
11 <small>*
 Note the “foreign” names
that Lovecraft chooses.</small>
12 </p>
13 <footer>
14 © 1921 <a
href="http://www.hplovecraft.com/w
ritings/fiction/tom.aspx">H.P.
Lovecraft
15 </footer>

⚙ CSS

⚙ JS

The Terrible Old Man [\[TOC\]](#)

It was the design of Angelo Ricci and Joe Czanek and Manuel Silva* to call on the Terrible Old Man. This old man dwells all alone in a very ancient house on Water Street near the sea, and is reputed to be both exceedingly rich and exceedingly feeble; which forms a situation very attractive to men of the profession of Messrs. Ricci, Czanek, and Silva, for that profession was nothing less dignified than robbery.

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* Note the “foreign” names that Lovecraft chooses.


```
HTML
10 <p>
11   <small><span class="fn-symbol">*
    </span> Note the “foreign” names
    that Lovecraft chooses.</small>
12 </p>
13 </body>

CSS
1 small {
2   font-size: .6em;
3 }
4
5 h2 small {
6   padding-left: 1em;
7 }
8
9 a {
10  text-decoration: none;
11 }
12
13 footer a {
14   border-bottom: 1px dotted white;
15   color: white;
16 }
17

JS
```

The Terrible Old Man [\[TOC\]](#)

It was the design of Angelo Ricci and Joe Czanek and Manuel Silva* to call on the Terrible Old Man. This old man dwells all alone in a very ancient house on Water Street near the sea, and is reputed to be both exceedingly rich and exceedingly feeble; which forms a situation very attractive to men of the profession of Messrs. Ricci, Czanek, and Silva, for that profession was nothing less dignified than robbery.

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* Note the “foreign” names that Lovecraft chooses.


```
HTML
1 <h2>The Terrible Old Man <small><a
  href="#toc">[TOC]</a></small></h2>
2
3 <p>
4 It was the design of Angelo
  Ricci and Joe Czanek and Manuel

CSS
1 small {
2   font-size: .6em;
3 }
4
5 h2 small {
6   padding-left: 1em;
7 }
8
9 a {
10  text-decoration: none;
11 }
12
13 footer a {
14   border-bottom: 1px dotted white;
15   color: white;
16 }
17

JS
```

The Terrible Old Man [\[TOC\]](#)

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2
3 <p>
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5
CSS
1 small {
2   font-size: .6em;
3 }
4
5 h2 small {
6   padding-left: 1em;
7 }
8
9 a {
10  text-decoration: none;
11 }
12
13 footer a {
14   border-bottom: 1px dotted white;
15   color: white;
16 }
17
JS
```

The Terrible Old Man [\[TOC\]](#)

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* Note the “foreign” names that Lovecraft chooses.


```
HTML
13 <footer>
14   © 1921 <a
      href="http://www.hplovecraft.com/w
      ritings/fiction/tom.aspx">H.P.
      Lovecraft</a>
15 </footer>

CSS
1 small {
2   font-size: .6em;
3 }
4
5 h2 small {
6   padding-left: 1em;
7 }
8
9 a {
10  text-decoration: none;
11 }
12
13 footer a {
14   border-bottom: 1px dotted white;
15   color: white;
16 }
17

JS
```

The Terrible Old Man [\[TOC\]](#)

It was the design of Angelo Ricci and Joe Czanek and Manuel Silva* to call on the Terrible Old Man. This old man dwells all alone in a very ancient house on Water Street near the sea, and is reputed to be both exceedingly rich and exceedingly feeble; which forms a situation very attractive to men of the profession of Messrs. Ricci, Czanek, and Silva, for that profession was nothing less dignified than robbery.

The inhabitants of Kingsport say and think many things about the Terrible Old Man which generally keep him safe from the attention of gentlemen like Mr. Ricci and his colleagues, despite the almost certain fact that he hides a fortune of indefinite magnitude somewhere about his musty and venerable abode.

* Note the “foreign” names that Lovecraft chooses.

Be careful — descendant combinators can match more than you expected

HTML

```
1 <ul class="lovecraft">
2   <li>Great Old Ones
3     <ul>
4       <li>Cthugha</li>
5       <li>Cthulhu</li>
6       <li>Cyäegha</li>
7     </ul>
8   </li> <!-- end Great Old Ones -->
9   <li>Gods
10    <ul>
11      <li>Outer Gods
12        <ul>
13          <li>Azathoth</li>
14          <li>Nyarlathotep</li>
15          <li>Yog-Sothoth</li>
16        </ul>
17      </li> <!-- end Outer Gods -->
18      <li>Elder Gods
19        <ul>
20          <li>Bastet</li>
21          <li>Hypnos</li>
22          <li>Nodens</li>
23        </ul>
24      </li> <!-- end Elder Gods -->
25    </ul>
```

CSS (SCSS)

JS

- Great Old Ones
 - Cthugha
 - Cthulhu
 - Cyäegha
- Gods
 - Outer Gods
 - Azathoth
 - Nyarlathotep
 - Yog-Sothoth
 - Elder Gods
 - Bastet
 - Hypnos
 - Nodens

Default for nested ``:
disc ●, circle ○, square ■

HTML

```
1 <ul class="lovecraft">
2   <li>Great Old Ones
3     <ul>
4       <li>Cthugha</li>
5       <li>Cthulhu</li>
6       <li>Cyäegha</li>
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12        <ul>
13          <li>Azathoth</li>
14          <li>Nyarlathotep</li>
15          <li>Yog-Sothoth</li>
16        </ul>
17      </li> <!-- end Outer Gods -->
```

CSS (SCSS)

```
1 ul.lovecraft li {
2   list-style-type: square;
3 }
4
5 /* Oh nos! I only wanted the <li> children of the top-
   level <ul> selected, not all of the <li>'s! The perils
   of the descendant combinator illustrated. */
6
```

JS

- Great Old Ones
 - Cthugha
 - Cthulhu
 - Cyäegha
- Gods
 - Outer Gods
 - Azathoth
 - Nyarlathotep
 - Yog-Sothoth
 - Elder Gods
 - Bastet
 - Hypnos
 - Nodens

I only wanted these ``s to change to ■, not *all* of them 😲

Child Combinator

`selectorA > selectorB`

Selects any `selectorB` who is a *direct child* of `selectorA`, not a grandchild or any other descendants

All siblings who are direct children of `selectorA` are selected

Siblings: 2 or more elements that share a parent

Contrasts with the descendant combinator, which selects both direct children & any descendants, no matter how deep

HTML

```
1 <ul class="lovecraft">
2   <li>Great Old Ones
3     <ul>
4       <li>Cthugha</li>
5       <li>Cthulhu</li>
6       <li>Cyäegha</li>
7     </ul>
8   </li> <!-- end Great Old Ones -->
9   <li>Gods
10    <ul>
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15          <li>Yog-Sothoth</li>
16        </ul>
17      </li> <!-- end Outer Gods -->
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19        <ul>
20          <li>Bastet</li>
21          <li>Hypnos</li>
22          <li>Nodens</li>
23        </ul>
24      </li> <!-- end Elder Gods -->
25    </ul>
```

CSS (SCSS)

JS

- Great Old Ones
 - Cthugha
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 - Nyarlathotep
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HTML

```
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```

CSS (SCSS)

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1 ul.lovecraft li {
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JS

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 - Elder Gods
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 - Hypnos
 - Nodens

I only wanted these ``s to change to ■, not *all* of them

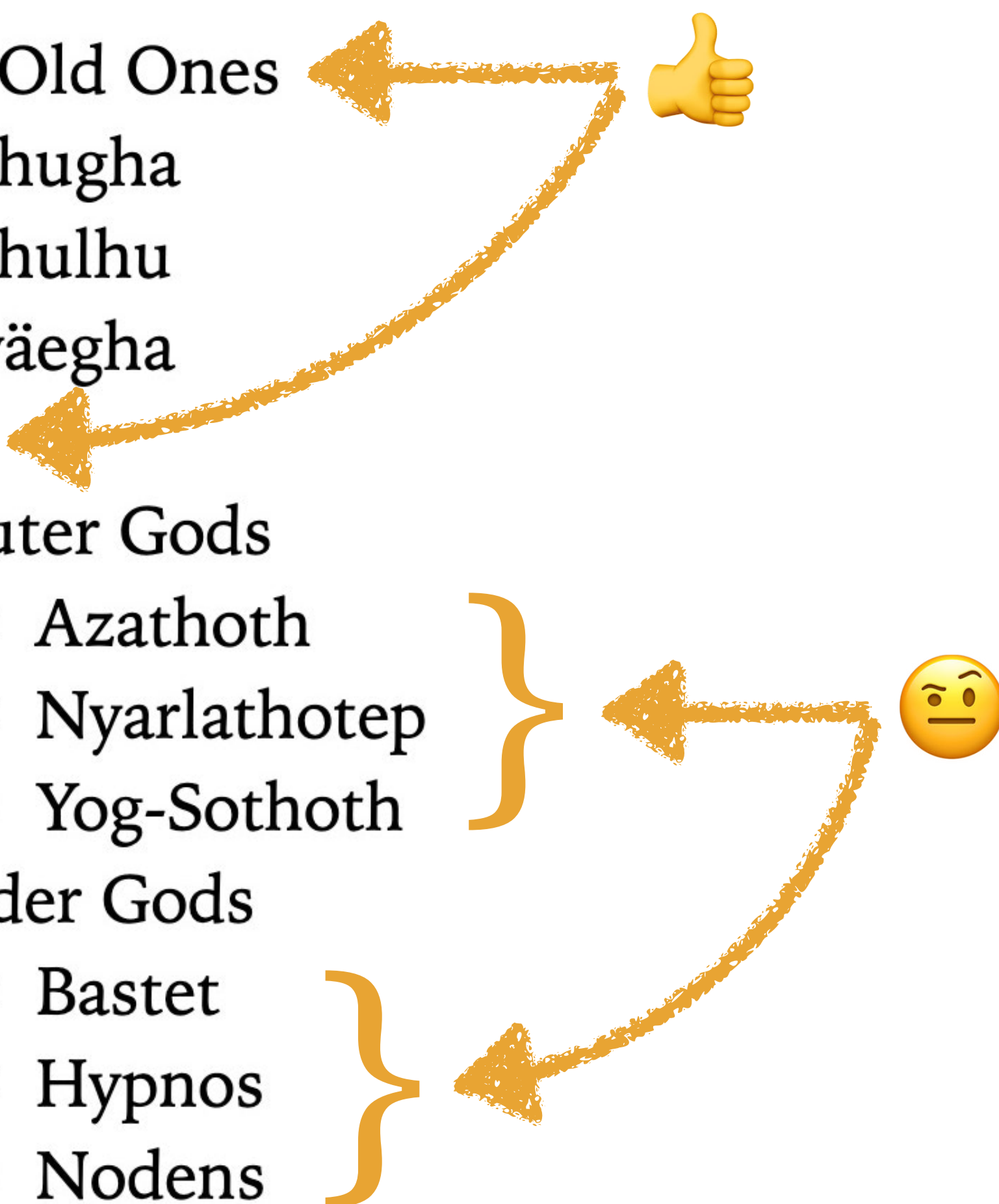
HTML

```
1 <ul class="lovecraft">
2   <li>Great Old Ones
3     <ul>
4       <li>Cthugha</li>
5       <li>Cthulhu</li>
6       <li>Cyäegha</li>
7     </ul>
8   </li> <!-- end Great Old Ones -->
9   <li>Gods
10    <ul>
11      <li>Outer Gods
12        <ul>
13          <li>Azathoth</li>
14          <li>Nyarlathotep</li>
15          <li>Yog-Sothoth</li>
16        </ul>
17      </li> <!-- end Outer Gods -->
18      <li>Elder Gods
19        <ul>
20          <li>Bastet</li>
21          <li>Hypnos</li>
```

CSS (SCSS)

```
1 ul.lovecraft > li {
2   list-style-type: square;
3 }
4
```

JS

- Great Old Ones
 - Cthugha
 - Cthulhu
 - Cyäegha
 - Gods
 - Outer Gods
 - Azathoth
 - Nyarlathotep
 - Yog-Sothoth
 - Elder Gods
 - Bastet
 - Hypnos
 - Nodens
- 

1st level changed from • to ■,
but 3rd level remains ■ because
that's the default


```

HTML
4<li>Cthugha</li>
5<li>Cthulhu</li>
6<li>Cyäegha</li>
7</ul>
8</li> <!-- end Great Old Ones -->
9<li>Gods
10<ul>
11<li>Outer Gods
12<ul>
13<li>Azathoth</li>
14<li>Nyarlathotep</li>
15<li>Yog-Sothoth</li>
16</ul>
17</li> <!-- end Outer Gods -->
18<li>Elder Gods

```

```

CSS (SCSS) Compiled
1ul.lovecraft > li {
2  list-style-type: square;
3 }
4ul.lovecraft > li > ul > li {
5  list-style-type: disc;
6 }
7ul.lovecraft > li > ul > li > ul > li {
8  list-style-type: circle;
9 }
10

```

```

JS

```

- Great Old Ones
 - Cthugha
 - Cthulhu
 - Cyäegha
- Gods
 - Outer Gods
 - Azathoth
 - Nyarlathotep
 - Yog-Sothoth
 - Elder Gods
 - Bastet
 - Hypnos
 - Nodens

Let's change all 3 level defaults:
 1st from • to ■, 2nd from ○ to •,
 & 3rd from ■ to ○

HTML

1

<table class="movies">

2

<thead>

3

<tr>

4

<th>Movie</th>

5

<th>Genre</th>

6

<th>Hero</th>

7

<th>Year</th>

8

</tr>

9

</thead>

10

<tbody>

11

<tr>

12

<td>Die Hard</td>

13

<td>Action</td>

14

<td>John McClane</td>

15

<td>1988</td>

16

</tr>

17

<tr>

18

<td>Star Wars</td>

19

<td>Sci-Fi</td>

20

<td>Luke Skywalker</td>

21

<td>1977</td>

22

</tr>

23

<tr>

24

<td>John Wick</td>

25

<td>Action</td>

CSS

JS

Movie	Genre	Hero	Year
Die Hard	Action	John McClane	1988
Star Wars	Sci-Fi	Luke Skywalker	1977
John Wick	Action	John Wick	2014

The table *header* cells (`<th>`) are in a single table row (`<tr>`) that is inside `<thead>`

The table *data* cells (`<td>`) are in 3 separate `<tr>`s, all of which are inside `<tbody>`

HTML

```
1 <table class="movies">
2   <thead></thead>
10  <tbody>
11    <tr>
12      <td>Die Hard</td>
13      <td>Action</td>
14      <td>John McClane</td>
15      <td>1988</td>
16    </tr>
17    <tr>
18      <td>Star Wars</td>
19      <td>Sci-Fi</td>
20      <td>Luke Skywalker</td>
21      <td>1977</td>
22    </tr>
23    <tr>
24      <td>John Wick</td>
25      <td>Action</td>
26      <td>John Wick</td>
27      <td>2014</td>
28    </tr>
29  </tbody>
30 </table>
```

CSS

JS

Movie	Genre	Hero	Year
Die Hard	Action	John McClane	1988
Star Wars	Sci-Fi	Luke Skywalker	1977
John Wick	Action	John Wick	2014

<thead> has been collapsed
so you can see all of <tbody>

HTML

1

<table class="movies">

2

<thead>

3

<tr>

4

<th>Movie</th>

5

<th>Genre</th>

6

<th>Hero</th>

7

<th>Year</th>

8

</tr>

9

</thead>

10

<tbody>

11

<tr>

12

<td>Die Hard</td>

13

<td>Action</td>

14

<td>John McClane</td>

15

<td>1988</td>

16

</tr>

17

<tr>

18

<td>Star Wars</td>

19

<td>Sci-Fi</td>

20

<td>Luke Skywalker</td>

21

<td>1977</td>

CSS

1

table.movies > tbody > tr:hover {

2

background-color: pink;

3

}

JS

Movie	Genre	Hero	Year
Die Hard	Action	John McClane	1988
Star Wars	Sci-Fi	Luke Skywalker	1977
John Wick	Action	John Wick	2014

As you hover your mouse over any cell in that `<tr>`, the row turns pink — why?

HTML

```
1 <table class="movies">
2   <thead>
3     <tr>
4       <th>Movie</th>
5       <th>Genre</th>
6       <th>Hero</th>
7       <th>Year</th>
8     </tr>
9   </thead>
10  <tbody>
11    <tr>
12      <td>Die Hard</td>
13      <td>Action</td>
14      <td>John McClane</td>
15      <td>1988</td>
16    </tr>
17    <tr>
18      <td>Star Wars</td>
19      <td>Sci-Fi</td>
20      <td>Luke Skywalker</td>
21      <td>1977</td>
```

CSS

```
1 table.movies > tbody > tr:hover {
2   background-color: pink;
3 }
```

JS

Movie	Genre	Hero	Year
Die Hard	Action	John McClane	1988
Star Wars	Sci-Fi	Luke Skywalker	1977
John Wick	Action	John Wick	2014

Why doesn't that `<tr>` turn pink when you hover your mouse over it?

You can often use a child (or descendant) combinator instead of a class (& you must if you cannot change the HTML)

```
<aside>  
    
</aside>
```

```
.headshot {}
```



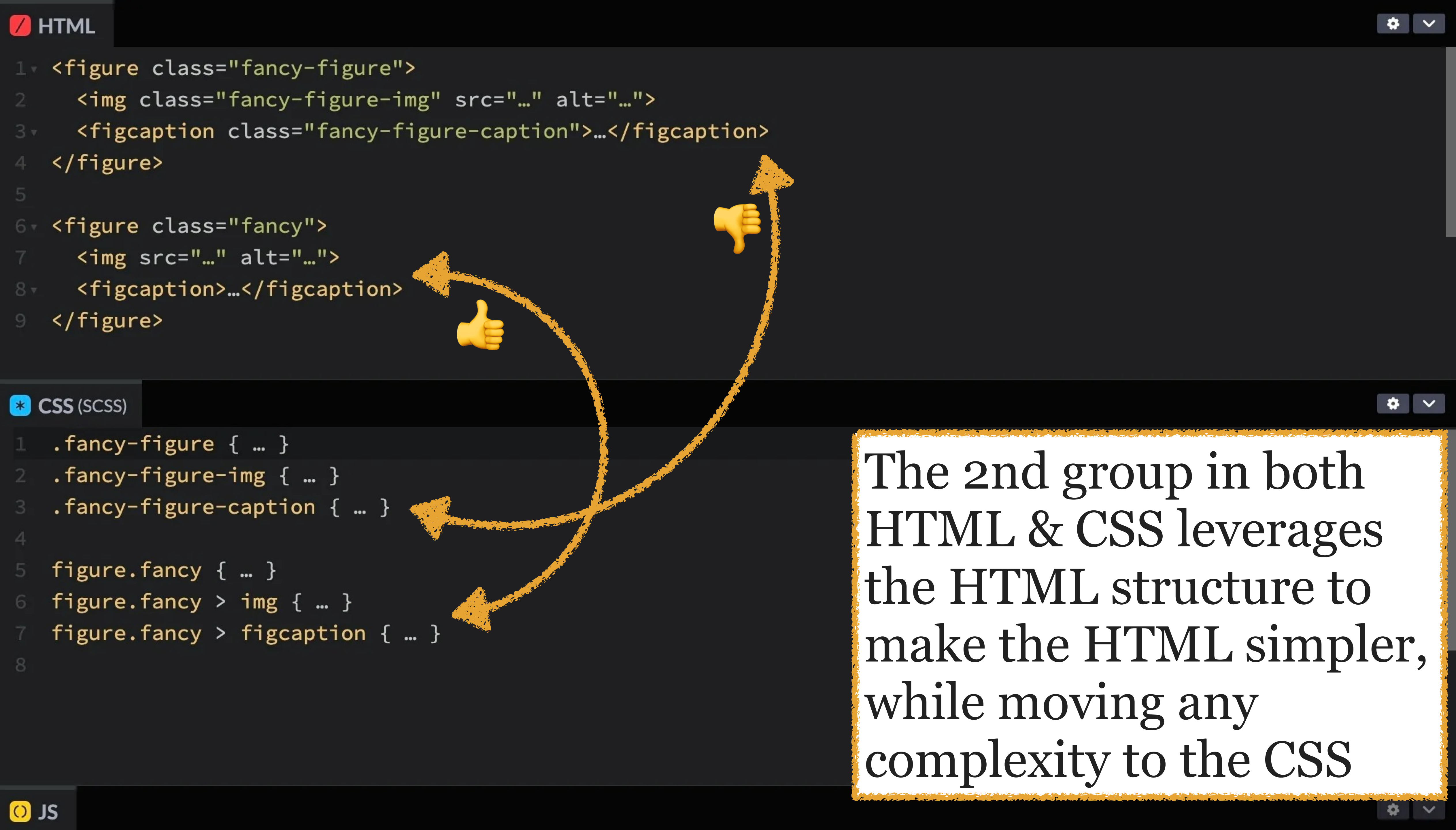
```
<aside>  
    
</aside>
```



```
aside > img {}
```

No need for a class,
so cleaner HTML

Instead of using a class on every element, try using a single class on the containing element & then using combinators to select child or descendant type selectors



A complex selector allows you to *scope* the universal selector in useful ways


```
HTML
1 <p>I still wonder that we deduced so much in
  the short time at our disposal.</p>
2
3 <blockquote>
4   <p>It may be the effect of this later study
  which has been the immediate source of
  Danforth's present breakdown.</p>
5   <ul>
6     <li>the revived memories and vague
  impressions</li>
7     <li>acting in conjunction with his general
  sensitiveness</li>
8     <li>and with that final supposed horror-
  glimpse whose essence he will not reveal even
  to me</li>
9   </ul>
10 </blockquote>
11
12 <p>Certain lingering influences in that unknown
  antarctic world of disordered time and alien
  natural law make it imperative that further
  exploration be discouraged.</p>

* CSS (SCSS)
JS
```

I still wonder that we deduced so much in the short time at our disposal.

It may be the effect of this later study which has been the immediate source of Danforth's present breakdown.

- the revived memories and vague impressions
- acting in conjunction with his general sensitiveness
- and with that final supposed horror-glimpse whose essence he will not reveal even to me

Certain lingering influences in that unknown antarctic world of disordered time and alien natural law make it imperative that further exploration be discouraged.


```
HTML
2
3 <blockquote>
4   <p>It may be the effect of this later study
   which has been the immediate source of
   Danforth's present breakdown.</p>
5   <ul>
6     <li>the revived memories and vague
       impressions</li>
7     <li>acting in conjunction with his general
       sensitiveness</li>
8     <li>and with that final supposed horror-
       glimpse whose essence he will not reveal even
       to me</li>
9   </ul>
10 </blockquote>
11
12 <p>Certain lingering influences in that unknown
CSS (SCSS)
1 blockquote {
2   background-color: dodgerblue;
3   color: white;
4   padding: 1em;
5 }
```

I still wonder that we deduced so much in the short time at our disposal.

It may be the effect of this later study which has been the immediate source of Danforth's present breakdown.

- the revived memories and vague impressions
- acting in conjunction with his general sensitiveness
- and with that final supposed horror-glimpse whose essence he will not reveal even to me

Certain lingering influences in that unknown antarctic world of disordered time and alien natural law make it imperative that further exploration be discouraged


```
HTML
2
3 <blockquote>
4   <p>It may be the effect of this later study
   which has been the immediate source of
   Danforth's present breakdown.</p>
5   <ul>
6     <li>the revived memories and vague
   impressions</li>
7     <li>acting in conjunction with his general
   sensitiveness</li>
8     <li>and with that final supposed horror-
   glimpse whose essence he will not
   reveal even to me</li>
9   </ul>
10 </blockquote>
11
12 <p>Certain lingering influences in that unknown
   world of disordered time and alien natural law make it
   imperative that further exploration be discouraged</p>
CSS (SCSS)
1 blockquote {
2   background-color: dodgerblue;
3   color: white;
4   padding: 1em;
5 }
```

I don't like that extra space

I still wonder that we deduced so much in the short time at our disposal.

It may be the effect of this later study which has been the immediate source of Danforth's present breakdown.

- the revived memories and vague impressions
- acting in conjunction with his general sensitiveness
- and with that final supposed horror-glimpse whose essence he will not reveal even to me

Certain lingering influences in that unknown antarctic world of disordered time and alien natural law make it imperative that further exploration be discouraged


```
HTML
3 <blockquote>
4   <p>It may be the effect of this later study
  which has been the immediate source of
  Danforth's present breakdown.</p>
5   <ul>
6     <li>the revived memories and vague
  impressions</li>
7     <li>acting in conjunction with his general

CSS (SCSS)
1 blockquote {
2   background-color: dodgerblue;
3   color: white;
4   padding: 1em;
5 }
6
7 blockquote > *:first-child {
8   margin-top: 0;
9 }
10
11 blockquote > *:last-child {
12   margin-bottom: 0;
13 }
```

I still wonder that we deduced so much in the short time at our disposal.

It may be the effect of this later study which has been the immediate source of Danforth's present breakdown.

- the revived memories and vague impressions
- acting in conjunction with his general sensitiveness
- and with that final supposed horror-glimpse whose essence he will not reveal even to me

We scope the `*` so it has limited effect

Certain lingering influences in that unknown antarctic law make it imperative that further exploration be discouraged.


```
HTML
3 <blockquote>
4   <p>It may be the effect of this later study
   which has been the immediate source of
   Danforth's present breakdown.</p>
5   <ul>
6     <li>the revived memories and vague
   impressions</li>
7     <li>acting in conjunction with his general

CSS (SCSS)
1 blockquote {
2   background-color: dodgerblue;
3   color: white;
4   padding: 1em;
5 }
6
7 blockquote > *:first-child {
8   margin-top: 0;
9 }
10
11 blockquote > *:last-child {
12   margin-bottom: 0;
13 }
```

I still wonder that we deduced so much in the short time at our disposal.

It may be the effect of this later study which has been the immediate source of Danforth's present breakdown.

- the revived memories and vague impressions
- acting in conjunction with his general sensitiveness
- and with that final supposed horror-glimpse whose essence he will not reveal even to me

Certain lingering influences in that unknown antarctic world of disordered time and alien natural law make it imperative that further exploration be discouraged.


```
HTML
impressions</li>
7 <li>acting in conjunction with his general
  sensitiveness</li>
8 <li>and with that final supposed horror-
  glimpse whose essence he will not reveal even
  to me</li>
9 </ul>
10 </blockquote>

CSS (SCSS)
1 blockquote {
2   background-color: dodg
3   color: white;
4   padding: 1em;
5 }
6
7 blockquote > *:first-child {
8   margin-top: 0;
9 }
10
11 blockquote > *:last-child {
12   margin-bottom: 0;
13 }

JS
```

C'est parfait!

I still wonder that we deduced so much in the short time at our disposal.

It may be the effect of this later study which has been the immediate source of Danforth's present breakdown.

- the revived memories and vague impressions
- acting in conjunction with his general sensitiveness
- and with that final supposed horror-glimpse whose essence he will not reveal even to me

Certain lingering influences in that unknown antarctic world of disordered time and alien natural law make it imperative that further exploration be discouraged.

An illustration showing the difference between the descendant & child combinators


```
HTML
1 <div>
2   <p></p>
5   <blockquote>
6     <p></p>
9     <p></p>
12  </blockquote>
13  <p></p>
16 </div>
17
18 <!-- From H.P. Lovecraft's "The
    Tomb" at
    http://www.hplovecraft.com
    /writings/texts/fiction/t.aspx
    -->

CSS
1 /* div p:last-child { */
2 div > p:last-child {
3   font-family: Creepster,
   fantasy;
4   font-size: 1.2em;
5 }
6

JS
```

On the following day I was brought to this room with the barred windows, but I have been kept informed of certain things through an aged and simple-minded servitor, for whom I bore a fondness in infancy, and who like me loves the churchyard.

What I have dared relate of my experiences within the vault has brought me only pitying smiles. My father, who visits me frequently, declares that at no time did I pass the chained portal, and swears that the rusted padlock had not been touched for fifty years when he examined it.

He even says that all the village knew of my journeys to the tomb, and that I was often watched as I slept in the bower outside the grim facade, my half-open eyes fixed on the crevice that leads to the interior.

AGAINST THESE ASSERTIONS I HAVE NO TANGIBLE PROOF TO OFFER, SINCE MY KEY TO THE PADLOCK WAS LOST IN THE STRUGGLE ON THAT NIGHT OF HORRORS. THE STRANGE THINGS OF THE PAST WHICH I LEARNT DURING THOSE NOCTURNAL MEETINGS WITH THE DEAD HE DISMISSES AS THE FRUITS OF MY LIFELONG AND OMNIVOROUS BROWSING AMONGST THE ANCIENT VOLUMES OF THE FAMILY LIBRARY.


Using `>` limits the scope of the styles 😊


```
HTML
1 <div>
2   <p></p>
5   <blockquote>
6     <p></p>
9     <p></p>
12  </blockquote>
13  <p></p>
16 </div>
17
18 <!-- From H.P. Lovecraft's "The
    Tomb" at
    http://www.hplovecraft.com
    /writings/texts/fiction/t.aspx
    -->

CSS
1 div p:last-child {
2   /* div > p:last-child { */
3   font-family: Creepster,
    fantasy;
4   font-size: 1.2em;
5 }
6

JS
```

On the following day I was brought to this room with the barred windows, but I have been kept in servitor, for whom churchyard.

Using  is not what I wanted! 😡

What I have dared relate of my experiences within the vault has brought me only pitying smiles. My father, who visits me frequently, declares that at no time did I pass the chained portal, and swears that the rusted padlock had not been touched for fifty years when he examined it.

HE EVEN SAYS THAT ALL THE VILLAGE KNEW OF MY JOURNEYS TO THE TOMB, AND THAT I WAS OFTEN WATCHED AS I SLEPT IN THE BOWER OUTSIDE THE GRIM FACADE, MY HALF-OPEN EYES FIXED ON THE CREVICE THAT LEADS TO THE INTERIOR.

AGAINST THESE ASSERTIONS I HAVE NO TANGIBLE PROOF TO OFFER, SINCE MY KEY TO THE PADLOCK WAS LOST IN THE STRUGGLE ON THAT NIGHT OF HORRORS. THE STRANGE THINGS OF THE PAST WHICH I LEARNT DURING THOSE NOCTURNAL MEETINGS WITH THE DEAD HE DISMISSES AS THE FRUITS OF MY LIFELONG AND OMNIVOROUS BROWSING AMONGST THE ANCIENT VOLUMES OF THE FAMILY LIBRARY.

Selector List

selectorA, selectorB, selectorC

*List selectors that have similar declarations for
simpler & cleaner CSS & HTML*

Don't do this:

```
p {  
  font-family: serif;  
  font-size: 1em;  
}
```

```
blockquote {  
  font-family: serif;  
  font-size: 1em;  
}
```

Do this:

```
blockquote, p {  
  font-family: serif;  
  font-size: 1em;  
}
```


Any selector can be included in the list

```
.emphasis, .title {font-style: italic;}
```

```
em, .title {font-style: italic;}
```

```
p, #nav, .pullquote {font-family: Verdana,  
sans-serif;} 🤪
```

A very common selector list because you want all your headings to use the same font

```
h1, h2, h3, h4, h5, h6 {  
    font-family: "Georgia Pro", Georgia, serif;  
}
```

Group similar selectors, but be specific where needed

CSS is *cumulative* unless overridden

```
blockquote, p {  
    font-family: Verdana, sans-serif;  
}
```

```
p {  
    line-height: 1.5;  
}
```

<p> will use Verdana *and*
have a *line-height* of 1.5

Turn this...

```
h1 {  
  font-weight: normal;  
  font-size: 2.5em;  
  font-family: serif;  
}
```

```
h2 {  
  font-weight: normal;  
  border-bottom: 1px  
dotted black;  
  font-family: serif;  
  font-size: 1.8em;  
}
```

...into this:

```
h1, h2 {  
  font-weight: normal;  
  font-family: serif;  
}
```

```
h1 {  
  font-size: 2.5em;  
}
```

```
h2 {  
  border-bottom: 1px dotted  
black;  
  font-size: 1.8em;  
}
```

Good practice

```
blockquote,  
option,  
p,  
td,  
.info,  
.legalese {  
    font-family: Verdana, sans-serif;  
    font-size: 1em;  
}
```

Each selector on its own line

Elements then classes (no IDs!)

Alphabetical order within
each grouping of selectors

Formatting

Don't do this:

```
h1 {color: dimgray;}
```

```
h1 {font-size: 1.4em;}
```

```
h1 {font-weight: bold;}
```

```
h1 {font-family: Verdana, sans-serif;}
```

Instead, combine related declarations

```
h1 {  
  color: dimgray;  
  font-family: Verdana, sans-serif;  
  font-size: 1.4em;  
  font-weight: bold;  
}
```

Formatting CSS style rules

```
selector {  
    property: value;  
    property: value;  
    property: value;  
    ...  
}
```

The order of declarations in the declaration block
doesn't matter

Do not forget to put ; at the end of every declaration

You do not actually have to put ; at the end of the last line in a style rule, but that is a very bad habit to get into

Use comments in CSS for the same reasons as in HTML

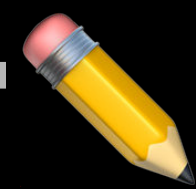
- » *Notes* to yourself & others
- » ~~*Debugging*: comment out troublesome CSS for testing~~
(use your browser's Inspector)

HTML comments

```
<!-- The Doom That Came to Sarnath -->
```

CSS comments

```
/* The Statement of Randolph Carter */
```

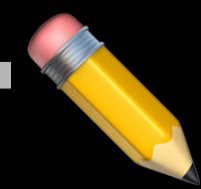


SIDE NOTE

Design Pattern

“a formal way of documenting a solution to a design problem in a particular field of expertise.” —Wikipedia

“Each pattern describes a problem that occurs over and over again in our environment, and then describes the core of the solution to that problem” —Christopher Alexander, architect & author of *A Pattern Language* (1977)



SIDE NOTE

Navbar

Home

Link

Dropdown ▼

Disabled

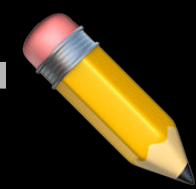
Search

HTML

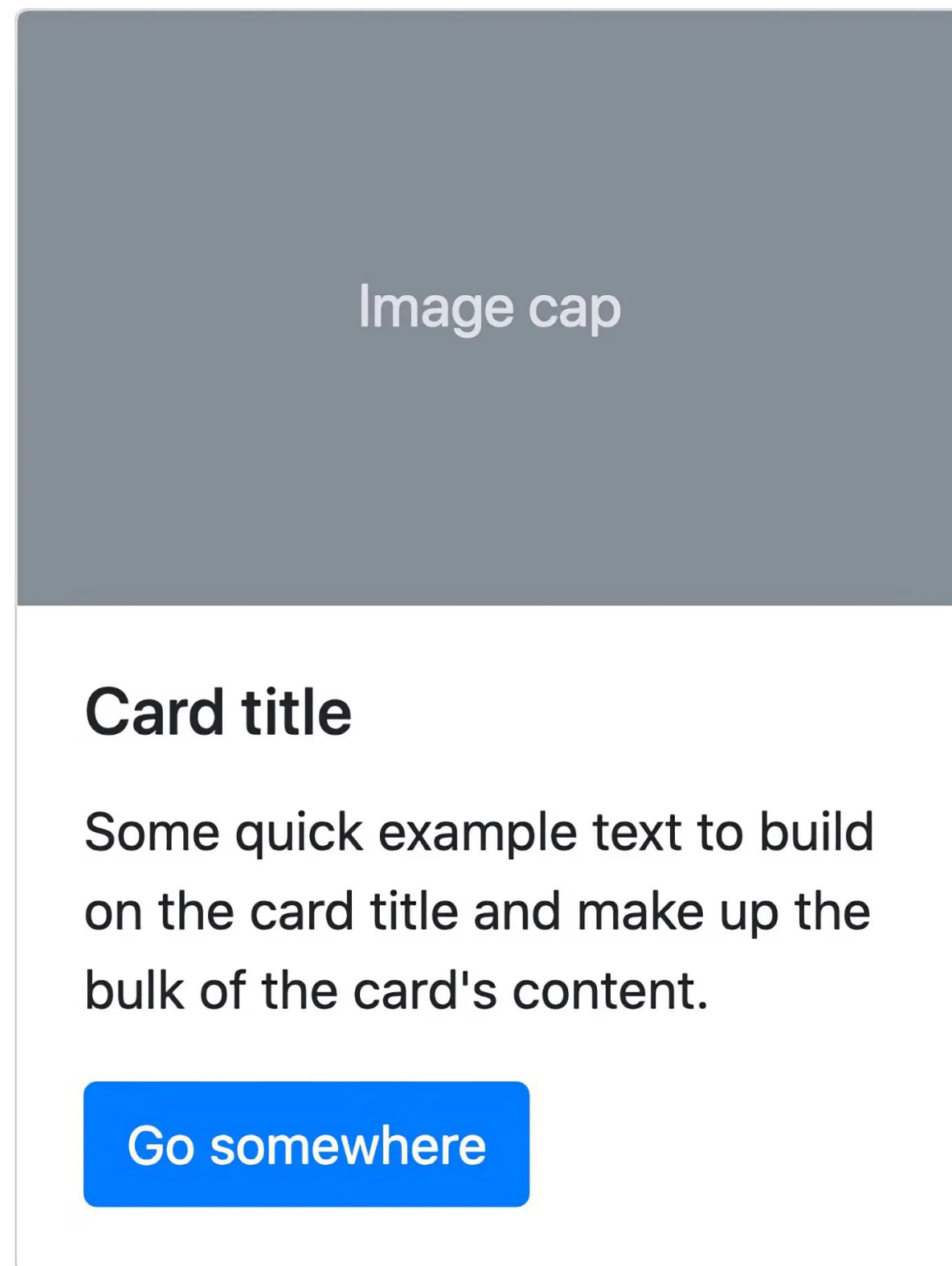


```
<nav class="navbar navbar-expand-lg bg-light">
  <div class="container-fluid">
    <a class="navbar-brand" href="#">Navbar</a>
    <button class="navbar-toggler" type="button" data-bs-toggle="collapse" (
      <span class="navbar-toggler-icon"></span>
    </button>
    <div class="collapse navbar-collapse" id="navbarSupportedContent">
```

Bootstrap 5's structure & classes for the common design pattern of a main navigation bar



SIDE NOTE



```
<div class="card" style="width: 18rem;">
  
  <div class="card-body">
    <h5 class="card-title">Card title</h5>
    <p class="card-text">Some quick example text to build on
    <a href="#" class="btn btn-primary">Go somewhere</a>
  </div>
</div>
```

Bootstrap 4's classes for the common design pattern of cards



PRO TIP

Here's the order Jans normally uses in his stylesheets

1. General rules that apply to the whole site (e.g., linked libraries, typography, `html`, `body`)
2. Site-wide design patterns (e.g., `header`, `nav`, `footer`)
3. Page type design patterns (e.g., `aside`, `.news`, `.post`)
4. Content design patterns (e.g., `.cards`, `.gallery`)
5. Specific page design patterns (e.g., `.home`, `.products`)

With appropriate comments sprinkled throughout

Here's the order I sometimes shoot for in my stylesheets

```
@font-face
html
body
/* General */
<type selectors, A→Z>
<class selectors, A→Z>
/* <New Section> */
<type>
<class>
...
```


&

<div>

HTML elements “work” without attributes & values,
e.g., `<p>` or `<h2>`

(...with a tiny few exceptions, like `` & ``)

`` & `<div>` are HTML elements that exist solely to work with CSS*

`` & `<div>` by themselves do nothing on a webpage (except draw invisible boxes)

They must use CSS (`class="foo"`) to do anything productive

* & JavaScript

` ... `

Creates an *inline box* around a *span of text* so it can be styled with CSS or manipulated with JavaScript

Does *nothing* visually on its own!

Normally you use `` with a class attribute that is then referenced in your CSS

```
<p>
```

```
  The cultists all scream <span class="hpl">Ph'nglui  
mglw'nafh Cthulhu R'lyeh wgah'nagl fhtagn!</span>
```

```
<p>
```

In your CSS you would then refer to `.hpl` & style it:

```
.hpl {  
  font-size: 18px;  
  font-family: Creepster;  
}
```

`` should be used *only* if nothing semantic is appropriate

If you can use `<b class="hpl">` because the text is first bold, or `<i class="hpl">` because the text is first italic, then do so

And so on

```
HTML
4 <p>
5   I heard it, and knew no more. Heard it as I
   sat petrified in that unknown cemetery in the
   hollow, amidst the crumbling stones and the
   falling tombs, the rank vegetation and the
   miasmal vapours. Heard it well up from the
   innermost depths of that damnable open
   sepulchre as I watched amorphous, necrophagous
   shadows dance beneath an accursed waning moon.
   And this is what it said: "<span
   class="eeek">You fool, Warren is dead!</span>"
6 </p>
```

```
* CSS
1 .eeek {
2   font-family: Creepster, cursive;
3   font-size: 1.2em;
4   /* In case font fails to load */
5   text-transform: uppercase;
6 }
7
```

```
JS
```

From H. P. Lovecraft's "The Statement of Randolph Carter":

I heard it, and knew no more. Heard it as I sat petrified in that unknown cemetery in the hollow, amidst the crumbling stones and the falling tombs, the rank vegetation and the miasmal vapours. Heard it well up from the innermost depths of that damnable open sepulchre as I watched amorphous, necrophagous shadows dance beneath an accursed waning moon. And this is what it said: **"YOU FOOL, WARREN IS DEAD!"**

<div>

```
<div> ... </div>
```

Generic container for adding a *division* (a *block box* or new object on the document tree) that can be manipulated with CSS & JavaScript

Does *nothing* visually on its own!

`<div>` is a grouping element that creates a *block box* by default & does nothing else without CSS

Use `<div>` to hold attribute-value pairs relevant to CSS

As a grouping element, it groups other elements, e.g.,
put a `<div>` around 3 `<p>`s & a ``

Use it when other elements (e.g., `<article>`, `<header>`,
or `<aside>`) are not semantically appropriate


```
HTML Tidy x
1 <i>H. P. Lovecraft's </i>The Case of
  Charles Dexter Ward</i>, a
  novella in five parts.
3 </p>
4 <p>
5   I. A Result and a Prologue
6 </p>
7 <p>
8   II. An Antecedent and a Horror
9 </p>
10 <p>
11   III. A Search and an Evocation
12 </p>
13 <p>
14   IV. A Mutation and a Madness
15 </p>
16 <p>
17   V. A Nightmare and a Cataclysm
18 </p>
19 <p>
20   After that, you will write a
    paper looking at the importance
    of place in the novella.

CSS Tidy View Compiled x
JS Tidy x
```

Your assignment is to read H. P. Lovecraft's *The Case of Charles Dexter Ward*, a novella in five parts.

I. A Result and a Prologue

II. An Antecedent and a Horror

III. A Search and an Evocation

IV. A Mutation and a Madness

V. A Nightmare and a Cataclysm

After that, you will write a paper looking at the importance of place in the novella.

I want the table of contents to stand out with a background color, borders, & rounded corners

HTML

Tidy

1

<p>

2

Your assignment is to read H. P. Lovecraft's <i>The Case of Charles Dexter Ward</i>, a novella in five parts.

3

</p>

4

<p class="toc">

5

I. A Result and a Prologue

6

</p>

7

<p class="toc">

8

II. An Antecedent and a Horror

9

</p>

10

<p class="toc">

11

III. A Search and an Evocation

CSS

Tidy

View Compiled

1

.toc {

2

background-color: #E8E8E8;

3

margin: 1em;

4

border: 1px solid #ccc;

5

padding: 0 1em;

6

width: 90%;

7

border-radius: 1em;

8

}

JS

Tidy

Your assignment is to read H. P. Lovecraft's *The Case of Charles Dexter Ward*, a novella in five parts.

I. A Result and a Prologue

II. An Antecedent and a Horror

III. A Search and an Evocation

IV. A Mutation and a Madness

V. A Nightmare and a Cataclysm

After that, you will write a paper looking at the importance of place in the novella.

Well that looks stupid...


```
HTML Tidy x
3 </p>
4 <div class="toc">
5   <p>
6     I. A Result and a Prologue
7   </p>
8   <p>
9     II. An Antecedent and a
10    Horror
11  </p>
12  <p>
13    III. A Search and an
14    Evocation
15  </p>
16  <p>
17    IV. A Mutation and a Madness
18  </p>
19  <p>
20    V. A Nightmare and a
21    Cataclysm
22  </p>
23 </div>
24 <p>
```

```
CSS Tidy View Compiled x
JS Tidy x
```

Your assignment is to read H. P. Lovecraft's *The Case of Charles Dexter Ward*, a novella in five parts.

- I. A Result and a Prologue
- II. An Antecedent and a Horror
- III. A Search and an Evocation
- IV. A Mutation and a Madness
- V. A Nightmare and a Cataclysm

After that, you will write a paper looking at the importance of place in the novella.


```
HTML
1 <p>
2 Your assignment is to read H.
  P. Lovecraft's <i>The Case of
  Charles Dexter Ward</i>, a
  novella in five parts.
3 </p>
4 <div class="toc">
5   <p>
6     I. A Result and a Prologue
7   </p>
8   <p>
9     II. An Antecedent and a
      Horror
10  </p>

```

```
CSS
1 .toc {
2   background-color: #E8E8E8;
3   margin: 1em;
4   border: 1px solid #ccc;
5   padding: 0 1em;
6   width: 90%;
7   border-radius: 1em;
8 }

```

```
JS

```

Your assignment is to read H. P. Lovecraft's *The Case of Charles Dexter Ward*, a novella in five parts.

- I. A Result and a Prologue
- II. An Antecedent and a Horror
- III. A Search and an Evocation
- IV. A Mutation and a Madness
- V. A Nightmare and a Cataclysm

After that, you will write a paper looking at the importance of place in the novella.

Much better—& that is why we have
<div>


```

HTML
4 <ol class="toc">
5   <li>A Result and a Prologue</li>
6   <li>An Antecedent and a Horror</li>
7   <li>A Search and an Evocation</li>
8   <li>A Mutation and a Madness</li>
9   <li>A Nightmare and a Cataclysm</li>
10 </ol>
11 <p>
12   After that, you will write a paper looking at
    the importance of place in the novella.
13 </p>

```

```

CSS
1 .toc {
2   background-color: #E8E8E8;
3   margin: 1em auto;
4   border: 1px solid #ccc;
5   padding: 1em;
6   width: 80vw;
7   border-radius: 1em;
8   list-style-type: upper-roman;
9 }
10
11 li {
12   margin-left: 1em;
13 }

```

```

JS

```

Your assignment is to read H. P. Lovecraft's *The Case of Charles Dexter Ward*, a novella in five parts.

- I. A Result and a Prologue
- II. An Antecedent and a Horror
- III. A Search and an Evocation
- IV. A Mutation and a Madness
- V. A Nightmare and a Cataclysm

After that, you will write a paper looking at the importance of place in the novella.

Actually, to be semantic, I should really use an ``

This is a useless `<div>`

```
<div class="lead-copy">
```

```
<p>
```

When a traveller in north central Massachusetts takes the wrong fork at the junction of the Aylesbury pike just beyond Dean's Corners he comes upon a lonely and curious country.

```
</p>
```

```
</div>
```

Only use `<div>` around 2 or more elements that create block boxes*

* It's OK to wrap a `<div>` around 1 element in a few cases


```
HTML
1 <div>
2   <p>Then, at last, the truth dawned
  upon me. The curvilinear patterns on
  many of those blocks were closely
  related—parts of one vast decorative
  conception. For the first time in this
  aeon-shaken waste I had come upon a
  mass of masonry in its old position—
  tumbled and fragmentary, it is true,
  but none the less existing in a very
  definite sense.</p>
3 </div>
```

```
* CSS (SCSS)
1 div,
2 p {
3   border: 2px solid dodgerblue;
4 }
5
```

```
JS
```

Then, at last, the truth dawned upon me. The curvilinear patterns on many of those blocks were closely related—parts of one vast decorative conception. For the first time in this aeon-shaken waste I had come upon a mass of masonry in its old position—tumbled and fragmentary, it is true, but none the less existing in a very definite sense.

One reason to use a `<div>` around a single element

Inheritance

⚙ HTML



```
1 <p>
2   And they called him <span class="alert">Seamus</span>...
3 </p>
```

⚙ CSS



```
1 html {
2   font-size: 24px; /* inherited */
3 }
4
5 p {
6   font-family: Georgia, serif; /* inherited */
7 }
8
9 .alert {
10  color: red;
11 }
```

⚙ JS



And they called him **Seamus**...

Why is **Seamus** red?

Why is **Seamus** using the
Georgia font?

Why is **Seamus** 24px?

Some properties, like `font-size` & `color`, are *inherited*: elements with those properties pass those properties down through the DOM to their descendant elements (unless overridden)

Other properties, like `background-image` & `border`, are *not inherited*: elements with those properties do not pass those properties down to their descendent elements

Inheritance is for elements that do not have properties set

⚙ HTML



```
1 <blockquote>
2   <p>
3     Of the five remaining pictures, three were of
      swamp and hill scenes which seemed to bear
      traces of hidden and <em>unwholesome</em>
      tenancy. Another was of a queer mark in the
      ground very near Akeley's house...
4   </p>
5 </blockquote>
```

⚙ CSS



```
1 html {
2   font-size: 24px; /* inherited */
3 }
4
5 blockquote {
6   font-family: "Iowan Old Style", Georgia,
  serif; /* inherited */
7   border: 1px solid black; /* not inherited */
8   padding: 0 1em; /* not inherited */
9 }
10
```

⚙ JS



Of the five remaining pictures, three were of swamp and hill scenes which seemed to bear traces of hidden and *unwholesome* tenancy. Another was of a queer mark in the ground very near Akeley's house...

Notice what is inherited in CSS & what is not

It would be pretty ugly if **border** or **padding** was inherited!

border-collapse	font-style	line-height
border-spacing	font-variant	orphans
caption-side	font	quotes
color	letter-spacing	text-align
cursor	list-style-type	text-edge
direction	list-style-position	text-indent
empty-cells	list-style-image	text-transform
font-family	list-style	visibility
font-size		white-space
font-weight		widows
		word-spacing

Partial list of inherited properties

Cascading Style Sheets

How does the rendering engine know which style to apply to an element?

Inheritance comes into play if an element does not have properties set

If a selector matches an element, that selector's styles are used

But what if the CSS rules *conflict*; e.g., what if CSS tells the rendering engine to make all `<p>`s black *and* blue?



DESIGN FOR THE NEW
FARMERS & MECHANICS BANK OF LA GRANGE

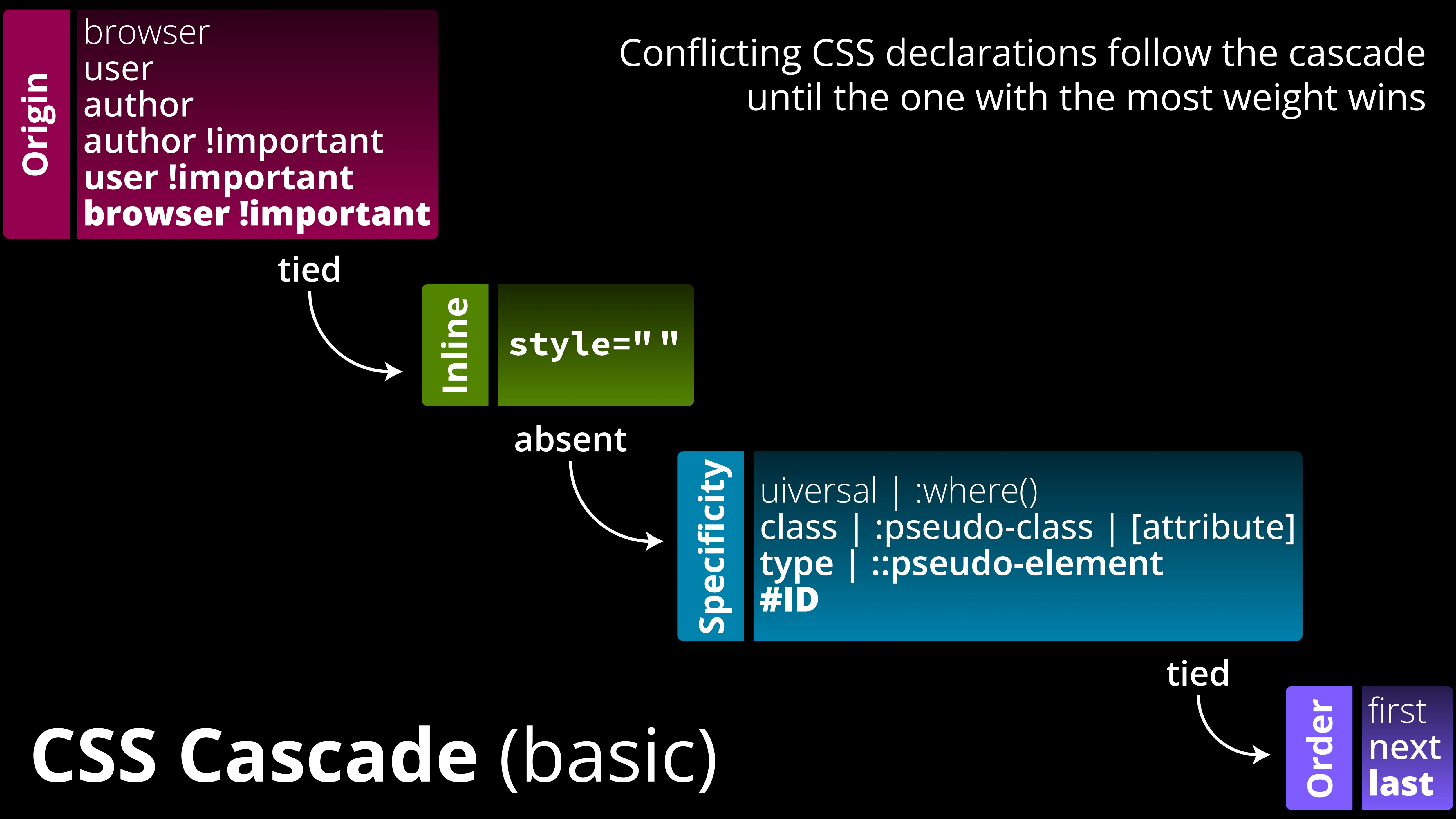
Raising Arizona, 1987



DESIGN FOR THE NEW
FARMERS & MECHANICS BANK of LA GRANGE








If an element's CSS declaration conflicts with another declaration, the rendering engine uses the *Cascade* to find a winner

In other words, conflicting declarations follow a *cascade*, & the rule with the most *weight* wins



Origin
(+ !important)

CSS can originate from 3 places:

- » Browser, aka the *user agent*    
- » User, the person utilizing the user agent  
- » Author, i.e., a developer 

All Web browsers have built-in CSS rules

In Firefox, for example, why does `<p>` have a certain amount of space before & after it?

Because of Firefox's built-in default CSS

[summary](#) | [shortlog](#) | [changelog](#) | [pushlog](#) | [graph](#) | [tags](#) | [bookmarks](#) | [branches](#) | [files](#) | [changeset](#) | file | [latest](#) | [revisions](#) | [annotate](#) | [diff](#) | [comparison](#) | [raw](#) | [help](#)

layout/style/html.css

author	ffxbld
	Sat, 26 Dec 2015 04:05:31 -0800
changeset 277655	c39a71cf4146
parent 275624	ddf13e6aa97e
permissions	-rw-r--r--

No bug, Automated blocklist update from host bld-linux64-spot-593 - a=blocklist-update

```
1  /* This Source Code Form is subject to the terms of the Mozilla Public
2   * License, v. 2.0. If a copy of the MPL was not distributed with this
3   * file, You can obtain one at http://mozilla.org/MPL/2.0/. */
4
5  @namespace url(http://www.w3.org/1999/xhtml); /* set default namespace to HTML */
6  @namespace xul url(http://www.mozilla.org/keymaster/gatekeeper/there.is.only.xul);
7
8  /* bidi */
9
10 [dir="rtl"] {
11     direction: rtl;
12     unicode-bidi: embed;
13 }
14 [dir="ltr"] {
15     direction: ltr;
16     unicode-bidi: embed;
17 }
18
19 bdi:-moz-dir(ltr), [dir="auto"]:-moz-dir(ltr) { direction: ltr; }
20 bdi:-moz-dir rtl), [dir="auto"]:-moz-dir rtl) { direction: rtl; }
21
22 /* To ensure http://www.w3.org/TR/REC-html40/struct/dirlang.html#style-bidi:
23  *
24  * "When a block element that does not have a dir attribute is transformed to
25  * the style of an inline element by a style sheet, the resulting presentation
26  * should be equivalent, in terms of bidirectional formatting, to the
27  * formatting obtained by explicitly adding a dir attribute (assigned the
28  * inherited value) to the transformed element."
29  *
```



```
109 hgroup,
110 html,
111 main,
112 nav,
113 section {
114     display: block;
115 }
116
117 body {
118     display: block;
119     margin: 8px;
120 }
121
122 p, dl, multicol {
123     display: block;
124     margin-block-start: 1em;
125     margin-block-end: 1em;
126 }
127
128 dd {
129     display: block;
130     -moz-margin-start: 40px;
131 }
132
133 blockquote, figure {
134     display: block;
135     margin-block-start: 1em;
136     margin-block-end: 1em;
137     -moz-margin-start: 40px;
138     -moz-margin-end: 40px;
139 }
140
141 address {
142     display: block;
```

Equivalent to `margin-top: 1em`
& `margin-bottom: 1em`



source: [trunk](#) / [Source](#) / [WebCore](#) / [css](#) / [html.css](#) @ 194427

Visit:

View revision:

Revision 191751, 30.6 KB checked in by [wenson_hsieh@apple.com](#), 2 months ago (diff)

Date input values should not overlap with menu list dropdown button on iOS

→ https://bugs.webkit.org/show_bug.cgi?id=150681

<rdar://problem/19965078>

Reviewed by Zalan Bujtas.

Source/WebCore:

Adds a right margin on iOS date and time inputs so that the inner div does not render the value of the date on top of the dropdown button on the right of the menu list.

Tests: fast/forms/date/date-input-rendering-basic.html

fast/forms/time/time-input-rendering-basic.html

- css/html.css:
(input::-webkit-date-and-time-value):
LayoutTests:
Tests that date and time inputs render properly. Namely, the text should not be rendered such that it covers the dropdown button on the right of the menu list.
- fast/forms/date/date-input-rendering-basic-expected.txt: Added.
- fast/forms/date/date-input-rendering-basic.html: Added.
- fast/forms/time/time-input-rendering-basic-expected.txt: Added.
- fast/forms/time/time-input-rendering-basic.html: Added.

Property **svn:eol-style** set to *native*

Line	
1	/*
2	* The default style sheet used to render HTML.
3	*
4	* Copyright (C) 2000 Lars Knoll (knoll@kde.org)
5	* Copyright (C) 2003-2011, 2014 Apple Inc. All rights reserved.
6	*
7	* This library is free software; you can redistribute it and/or
8	* modify it under the terms of the GNU Library General Public
9	* License as published by the Free Software Foundation; either
10	* version 2 of the License, or (at your option) any later version.

Safari's built-in CSS


```

26 html {
27     display: block;
28 }
29
30 /* children of the <head> element all have display:none */
31 head, link, meta, script, style, title {
32     display: none;
33 }
34
35 /* generic block-level elements */
36
37 body {
38     display: block;
39     margin: 8px;
40 }
41
42 p {
43     display: block;
44     -webkit-margin-before: 1__qem;
45     -webkit-margin-after: 1__qem;
46     -webkit-margin-start: 0;
47     -webkit-margin-end: 0;
48 }
49
50 address, article, aside, div, footer, header, hgroup, layer, main, nav, section {
51     display: block;
52 }
53
54 marquee {
55     display: inline-block;
56     overflow: -webkit-marquee;
57 }
58
59 blockquote {

```

Equivalent to `margin-top: 1em`
& `margin-bottom: 1em`


```
/* Copyright 2010 Opera Software */
```

```
a {  
    color: #00C;  
    text-decoration: underline;  
}
```

```
a:visited {  
    color: #800080;  
}
```

```
abbr {  
    border-bottom-style: dotted;  
    border-bottom-width: 1px;  
}
```

```
address {  
    display: block;  
    font-style: italic;  
    padding-left: 2px;  
    padding-right: 2px;  
}
```

```
area {  
    display: none;  
}
```

Opera's built-in CSS


```
padding: 0 40px 0 0;
```

```
optgroup {  
    text-indent: 0;  
}
```

```
option {  
    text-indent: 0;  
}
```

```
p {  
    display: block;  
    margin: 1em 0;  
}
```

```
pre {  
    display: block;  
    font-family: use-lang-def;  
    font-size: 0.81em;  
    margin: 1em 0;  
    white-space: pre;  
}
```

```
q {
```

1em on top & bottom; 0 on right & left

HTML

Living Standard — Last Updated 24 December 2015



[← 13 The XHTML syntax](#) — [Table of Contents](#) — [15 Obsolete features](#) →

14 Rendering

14.1 Introduction

14.2 The CSS user agent style sheet and presentational hints

14.3 Non-replaced elements

14.3.1 Hidden elements

14.3.2 The page

14.3.3 Flow content

14.3.4 Phrasing content

14.3.5 Bidirectional text

14.3.6 Quotes

14.3.7 Sections and headings

14.3.8 Lists

14.3.9 Tables

14.3.10 Margin collapsing quirks

14.3.11 Form controls

14.3.12 The `hr` element

14.3.13 The `fieldset` and `legend` elements

WHATWG's standard

[File an issue about the selected text](#)

HTML

Living Standard — Last Updated 24 December 2015



← 13 The XHTML syntax — Table of Contents — 15 Obsolete features →

14 Rendering

14.1 Introduction

“The CSS rules given in these subsections are, except where otherwise specified, expected to be used as part of the user-agent level style sheet defaults for all documents that contain HTML elements.”

14.2 The CSS user-agent style sheet and presentational hints

14.3 Non-replaced elements

14.3.1 Hidden elements

14.3.2 The page

14.3.3 Flow content

14.3.4 Floating content

14.3.5 Bidirectional text

14.3.6 Quotes

14.3.7 Sections and headings

14.3.8 Lists

14.3.9 Tables

14.3.10 Margin collapsing quirks

14.3.11 Form controls

14.3.12 The `hr` element

14.3.13 The `fieldset` and `legend` elements

WHATWG's standard

[File an issue about the selected text](#)

14.3.3 Flow content

Spec bugs: [27673](#)

```
CSS @namespace url(http://www.w3.org/1999/xhtml);
```

```
address, blockquote, center, div, figure, figcaption, footer, form, header, hr,  
legend, listing, main, p, plaintext, pre, summary, xmp {  
    display: block;  
}
```

```
blockquote, figure, listing, p, plaintext, pre, xmp {  
    margin-top: 1em; margin-bottom: 1em;  
}
```

```
blockquote, figure { margin-left: 40px; margin-right: 40px; }
```


```
address { font-style: italic; }  
listing, plaintext, pre, xmp {  
    font-family: monospace; white-space: pre;  
}
```

```
dialog:not([open]) { display: none; }
```

```
dialog {  
    position: absolute;  
    left: 0; right: 0;  
    width: fit-content;  
    height: fit-content;  
    margin: auto;  
    border: solid;
```

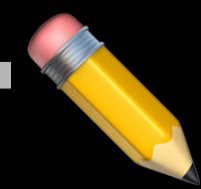
Users can specify CSS rule sets too

Why? Accessibility & other reasons

- » A more readable font
- » All fonts are at least a certain size
- » Always enable `text-decoration: underline` so links are obvious
- » See outlines around  elements with keyboard focus using `outline: solid`

Firefox has always allowed users to create their own styles in a file called `userContent.css` that goes into your Firefox Profile

(Look in the slides' Notes for more info about your Profile & `userContent.css`)

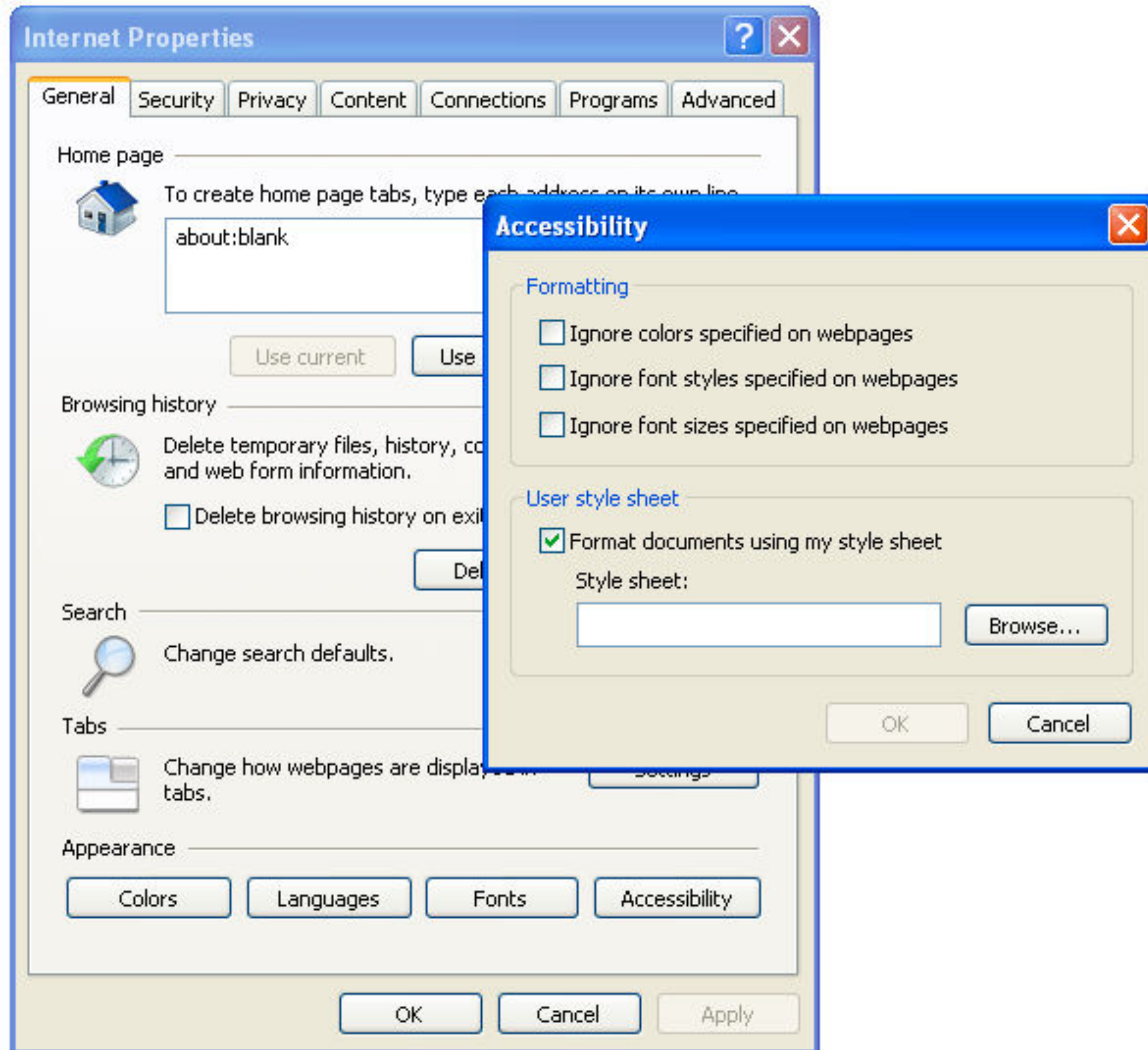


SIDE NOTE

As of Firefox 69, `userContent.css` isn't supported by default unless users first enable the feature

1. Type `about:config` in the Firefox address bar & select Enter
2. Click the button that confirms you Accept the Risk and Continue
3. In the box at the top, search for `toolkit.legacyUserProfileCustomizations.stylesheets`
4. Double-click on the resulting line to toggle to `true`
5. Restart Firefox

Internet Explorer actually
had good support for user
CSS





Chrome 33 (2014) dropped support for a user styles file



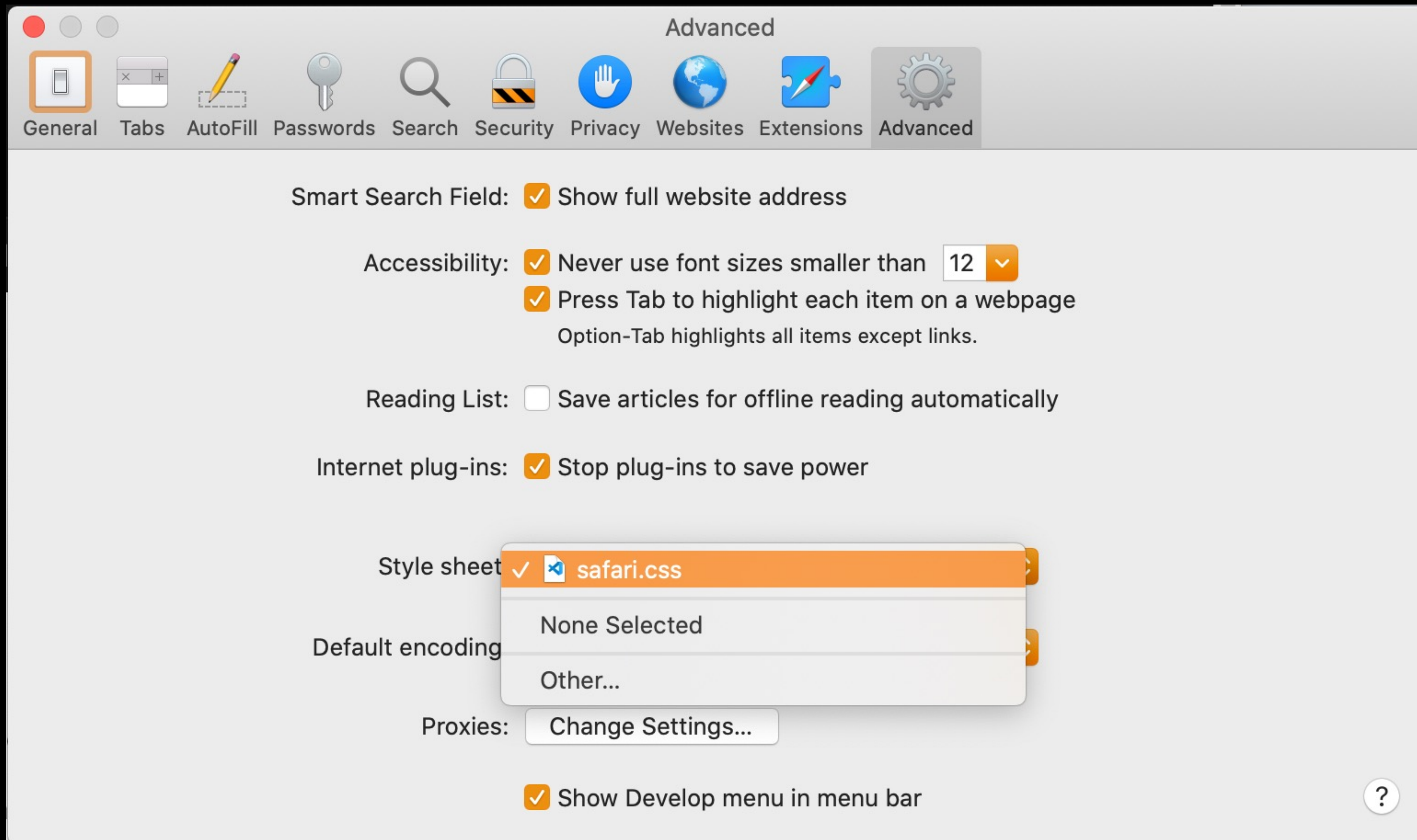
Chrome 33 (2014) dropped support for a user styles file



Edge: *Never supported* a user styles file!



Edge: *Never supported* a user styles file!



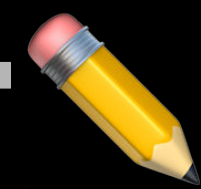
Safari — I created `safari.css` for my own use

My safari.css file

```
html {  
    font-family: "Source Sans Pro", sans-serif;  
}
```

```
h1, h2, h3, h4, h5, h6 {  
    font-family: "Georgia Pro", serif;  
}
```

```
code, kbd, pre, samp, tt, var {  
    font-family: "Source Code Pro", monospace;  
}
```



SIDE NOTE

Browser makers' response when asked about missing support for a user styles file: "Get an extension"

Do get:

- » Stylus for Chromium-based browsers & Firefox (which is excellent & removes all analytics, telemetry, & data collection)
- » Cascadea for Safari

Do *not* get: ~~Stylus~~ Stylish (was good, but now it's spyware)

Default, without Stylus

Page issues

Article **Talk**

文A Language

★ Watch

 History [Edit](#)

More

Not to be confused with the psychotherapy of Fritz Perls, [Gestalt therapy](#).

Gestalt psychology, gestaltism or configurationism^[1] is a [school of psychology](#) that emerged in the early twentieth century in Austria and Germany as a theory of [perception](#) that was a rejection of basic principles of [Wilhelm Wundt](#)'s and [Edward Titchener](#)'s elementalist and [structuralist psychology](#).^{[2][3][4]}

As used in Gestalt psychology, the German word *Gestalt* (/gəˈʃtælt, -ˈʃtɑːlt, -ˈʃtɔːlt, -ˈstaːlt, -ˈstɔːlt/ gə-SHTA(H)LT, -STAHLT, -S(H)TAWLT,^{[5][6]} German: [gəˈʃtalt] (🔊 listen); meaning "form"^[7]) is interpreted as "pattern" or "configuration".^[8] Gestalt psychologists emphasized that organisms perceive entire patterns or configurations, not merely individual components.^[8] The view is sometimes summarized using the adage, "the whole is more than the sum of its parts."^[9]:13 Gestalt principles, proximity, similarity, figure-ground, continuity, closure, and connection, describe how humans perceive visuals in connection

Part of a series on

Psychology

$$\Psi$$

[Outline](#) · [History](#) · [Subfields](#)

Basic types

Abnormal • Behavioral • Behavioral genetics •
Biological • Cognitive/Cognitivism •
Comparative • Cross-cultural • Cultural •

Page issues

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文A Language

 Watch

 **History** [Edit](#)

⋮ More

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Comparative • Cross-cultural • Cultural •

W Editing Gestalt psychology - Wi X

https://en.wikipedia.org/wiki/Gestalt_psychology

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More

Not to be confused with the psychotherapy of Fritz Perls, [Gestalt therapy](#).

Gestalt psychology, gestaltism or configurationism^[1] is a [school of psychology](#) that emerged in the early twentieth century in Austria and Germany as a theory of [perception](#) that was a rejection of basic principles of [Wilhelm Wundt](#)'s and [Edward Titchener](#)'s elementalist and [structuralist psychology](#).^{[2][3][4]}

As used in Gestalt psychology, the German word *Gestalt* (/ɡəˈʃtælt, -ˈʃtælt, -ˈʃtɔːlt, -ˈʃtɔːlt, -ˈʃtɔːlt/ *ɡə-ʃtɑː(h)lt, -ʃtɑːhlt, -ʃ(h)tɑːwlt*,^{[5][6]} German: [ɡəˈʃtɔːlt] (listen); meaning "form"^[7]) is interpreted as "pattern" or "configuration".^[8] Gestalt psychologists emphasized that organisms perceive entire patterns or configurations, not merely individual components.^[8] The

Part of a series on

Psychology

Ψ

Outline · History · Subfields

Basic types

Abnormal · Behavioral · Behavioral genetics ·

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Basic types

Abnormal • Behavioral • Behavioral genetics •

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<input type="checkbox"/> +All	×	4y	Everything
<input checked="" type="checkbox"/> +Granneman	×	9m	granneman.com finn.gabefinn.com wu.granneman.com
<input checked="" type="checkbox"/> +NYT	×	2y	nytimes.com nymag.com
<input checked="" type="checkbox"/> +Printing	×	2y	Everything
<input checked="" type="checkbox"/> +Wikis	×	17h	wikipedia.org wikimedia.org mediawiki.org
<input checked="" type="checkbox"/> admin.mailroute.net	×	3y	admin.mailroute.net
<input checked="" type="checkbox"/> allmusic.com	×	1y	allmusic.com allmovie.com
<input checked="" type="checkbox"/> Amazon	×	3y	amazon.com
<input checked="" type="checkbox"/> archive.org	×	5m	archive.org
<input checked="" type="checkbox"/> atariarchives.org	×	6m	atariarchives.org
<input checked="" type="checkbox"/> brado.net	×	10m	brado.net
<input checked="" type="checkbox"/> cloudform.com	×	4y	blog.cloudform.org
<input checked="" type="checkbox"/> community.folivora.ai	×	4y	community.folivora.ai
<input checked="" type="checkbox"/> corecode io	×	3y	corecode io

Publish style

Add another section Clone Beautify

Beautify

Edit Style

google.com

☒ Enabled ☒ Live preview

Save Beautify Back to manage

Import Export ⓘ

Options

- ☒ Word wrap
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- ☒ Autoclose brackets and quotes
- ☐ Autocomplete on typing
- ☒ Double-clicking selects tokens
- ☒ Colorpickers for CSS colors ⚙

Tab size

Keymap ⓘ

Theme

Highlight

CSS Linter ⚙

Publish

Using [userstyles.world](#)

Code 1:

```
1 #taw {
2   display: none;
3 }
```

Applies to ⓘ - +

Edit Style

interaction-design.org

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Import Export ⓘ

Options

- ☒ Word wrap
- ☒ Use smart indentation
- ☐ Use tabs with smart indentation
- ☒ Autoclose brackets and quotes
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- ☒ Colorpickers for CSS colors ⚙

Tab size

Keymap ⓘ

Theme

Highlight

CSS Linter ⚙

Publish

Using [userstyles.world](#)

Publish style

Code 1:

```
1 .navigationHeader {
2   position: static !important;
3 }
4
5 .navigationHeader__secondaryNavigationBar,
6 .ux-share-panel-bottom,
7 .uxArticleWithSidebar__sidebar {
8   display: none !important;
9 }
10
```

Applies to ⓘ URLs on the domain - +

Add another section Clone Beautify

Edit Style

webster.edu

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Import Export ⓘ

Options

- ☒ Word wrap
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- ☒ Colorpickers for CSS colors ⚙

Tab size

Keymap ⓘ

Theme

Highlight

CSS Linter ⚙

Publish

Using [userstyles.world](#)

Publish style

Code 1:

```
1 h1, h2, h3, h4, h5, h6 {
2   font-family: "Source Sans 3" !important;
3   border-bottom: 0;
4   margin-top: 1rem;
5   margin-bottom: 0;
6   padding-top: 0;
7   padding-bottom: 0;
8 }
9
10 /*
11 p {
12   margin-top: 0;
13 }
14 */
```

Applies to ⓘ URLs on the domain - +

Add another section Clone Beautify



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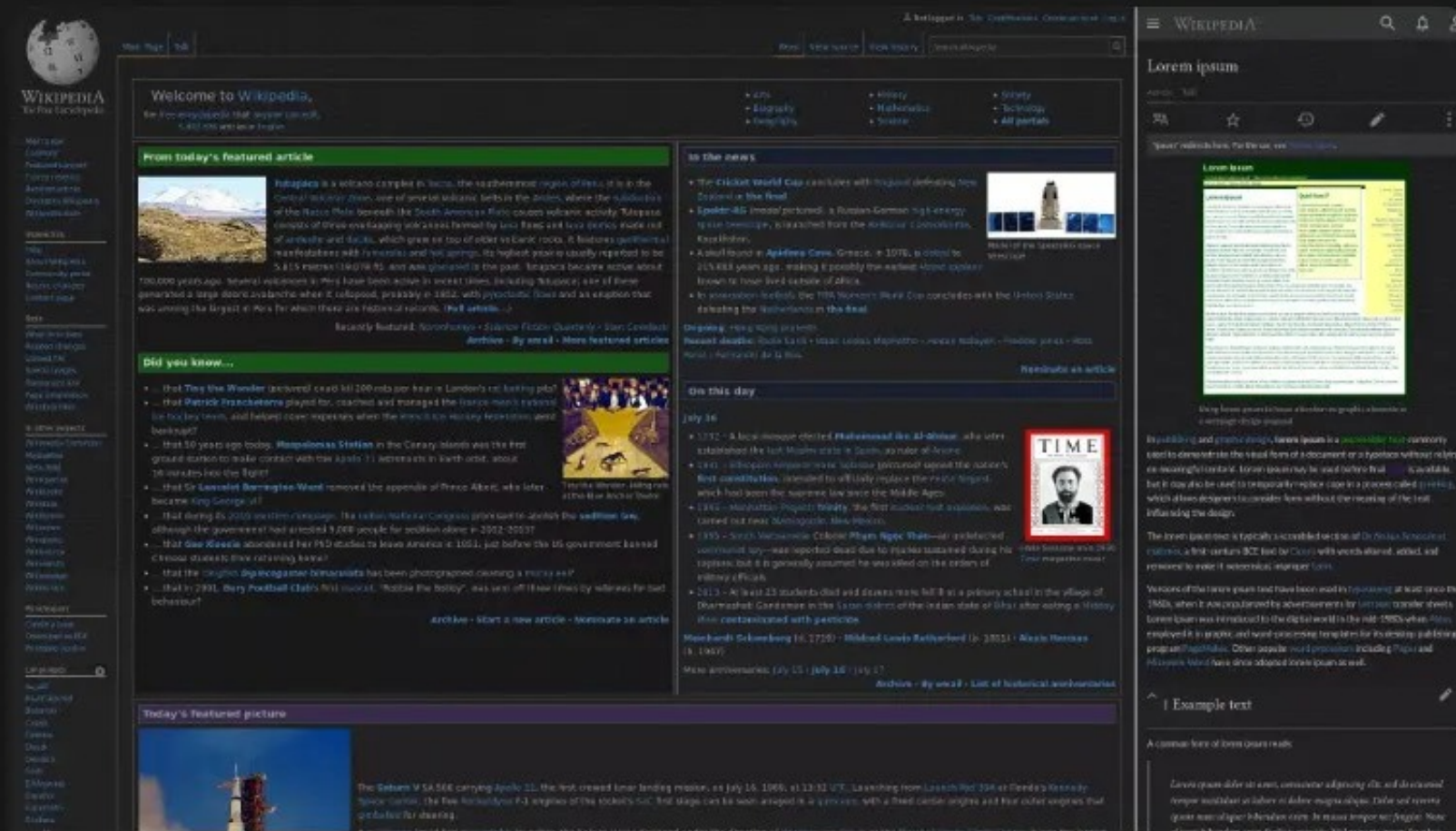
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Sort by Most installs

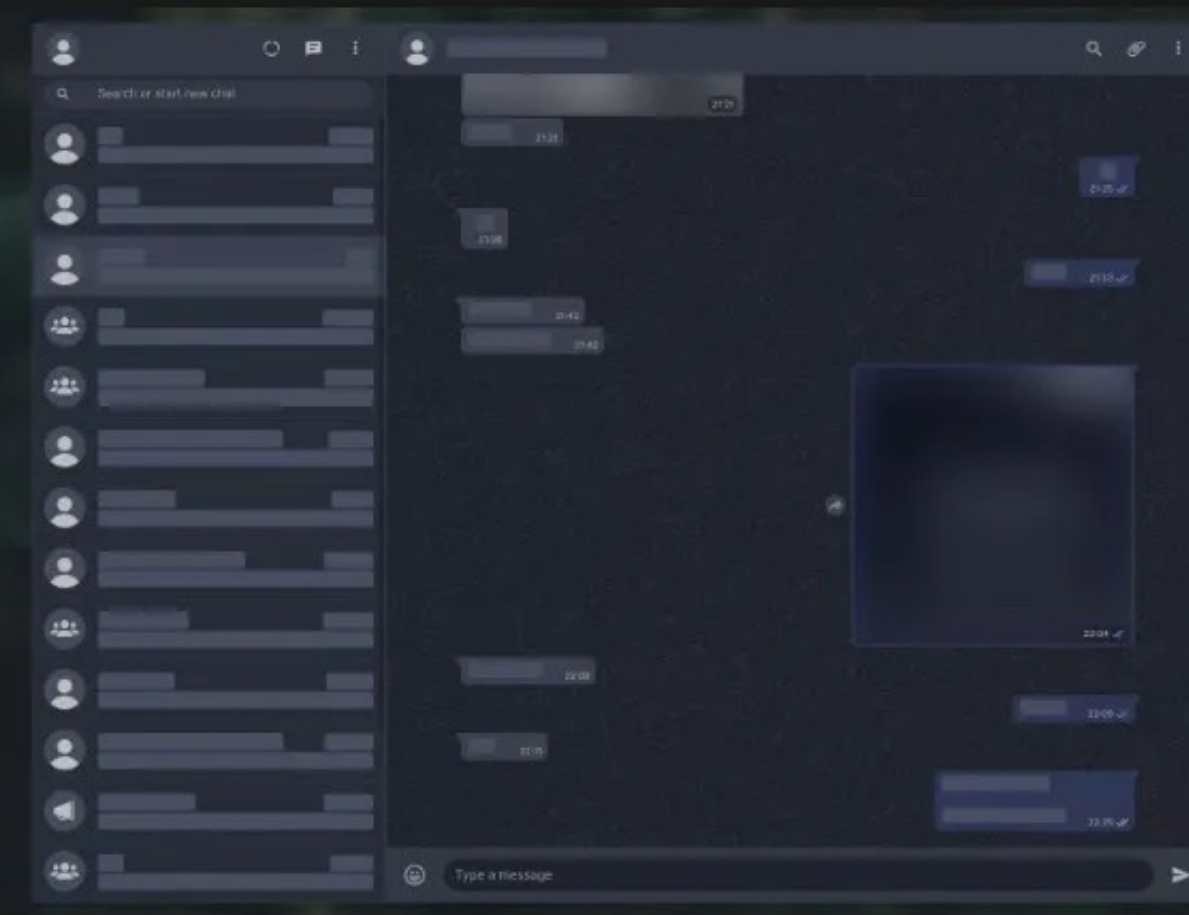
Sort



Updated December 25, 2021 00:30

Wikipedia Dark
by stylishthemes

1.6k views 186.9k installs -/5



Updated July 18, 2021 00:56

Dark-WhatsApp
by vednoc

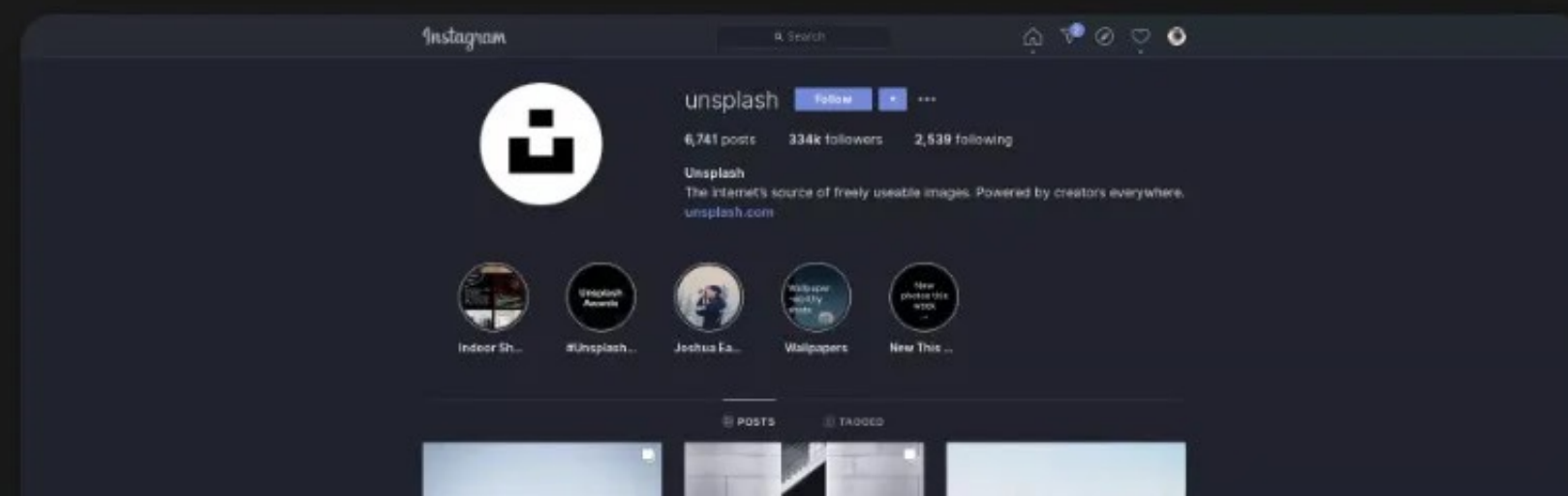
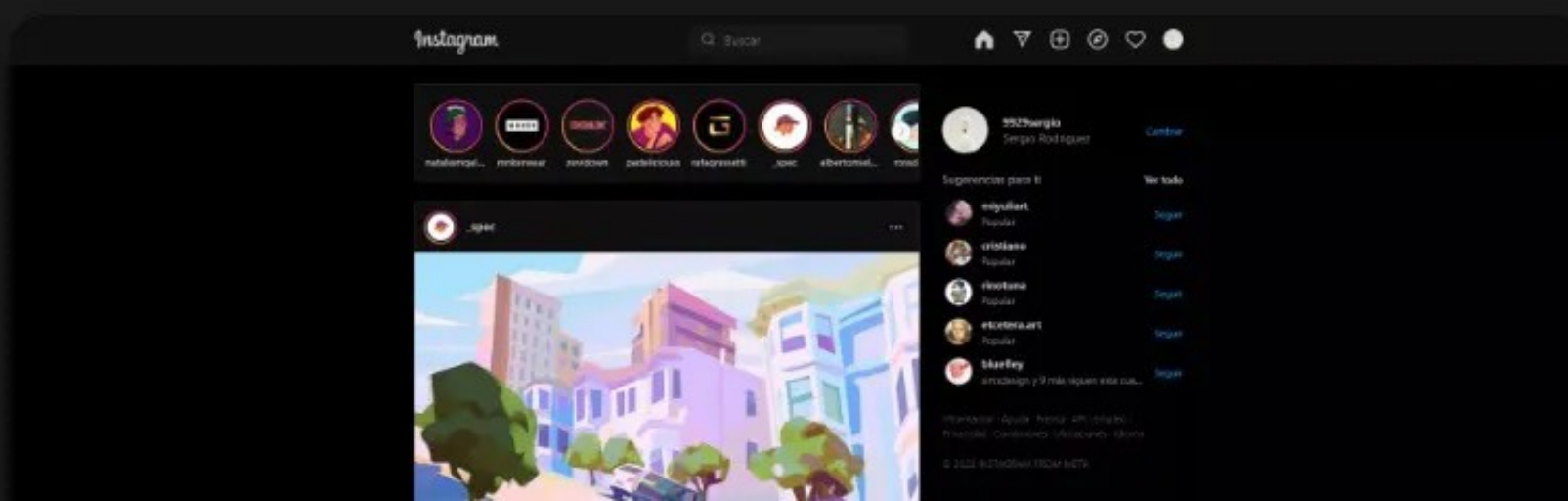
1.5k views 57.3k installs 5/5



Updated April 7, 2022 06:55

Google Dark Theme
by blyad

4k views 37.2k installs 5/5



Explore

Browse all available userstyles.

Sort by Most views



Sort



Updated April 8, 2022 13:09

osu color changer
by cyperdark

👁 4.9k views

↓ 9.2k installs

☆ -/5



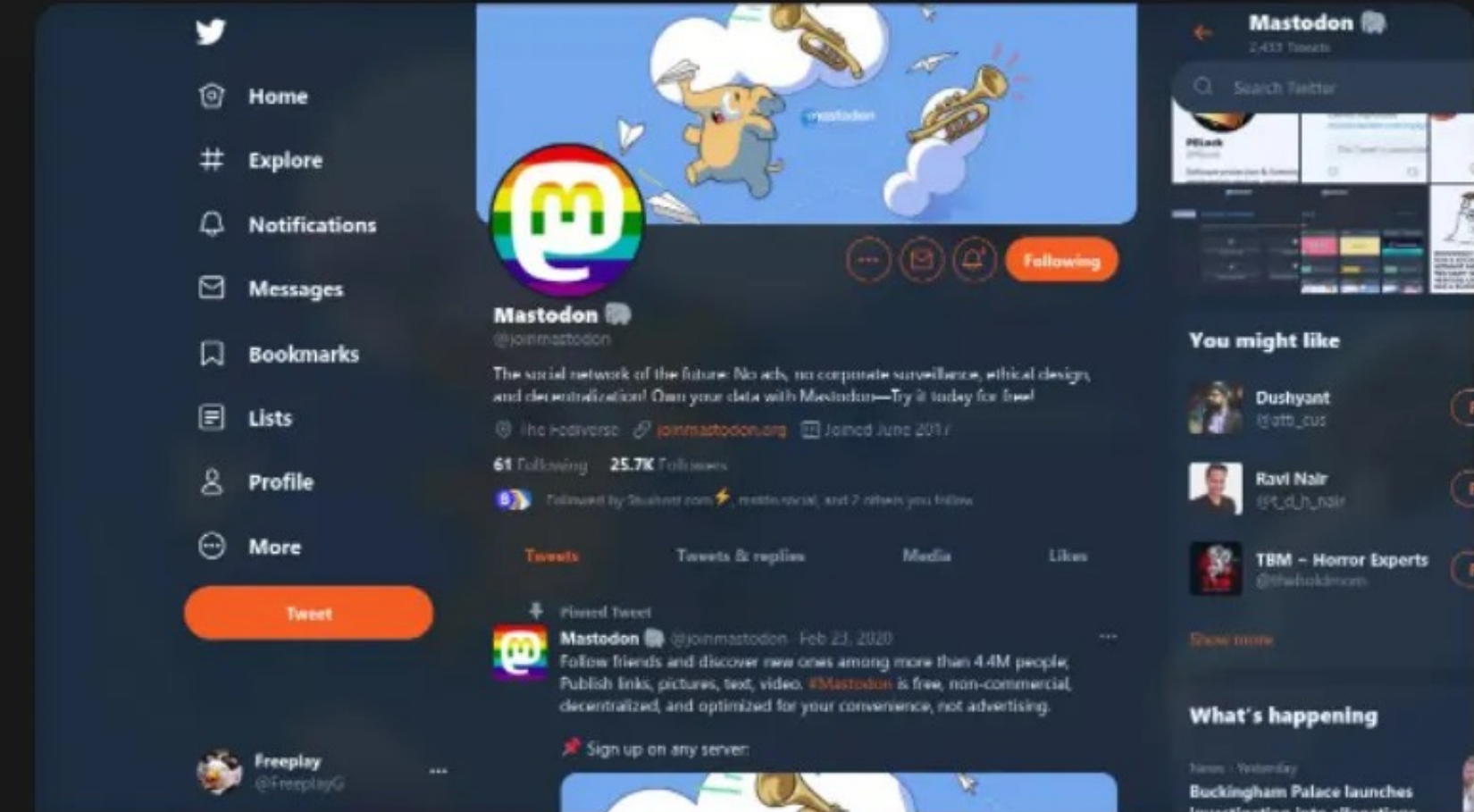
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by blyad

👁 4k views

↓ 37.2k installs

☆ 5/5



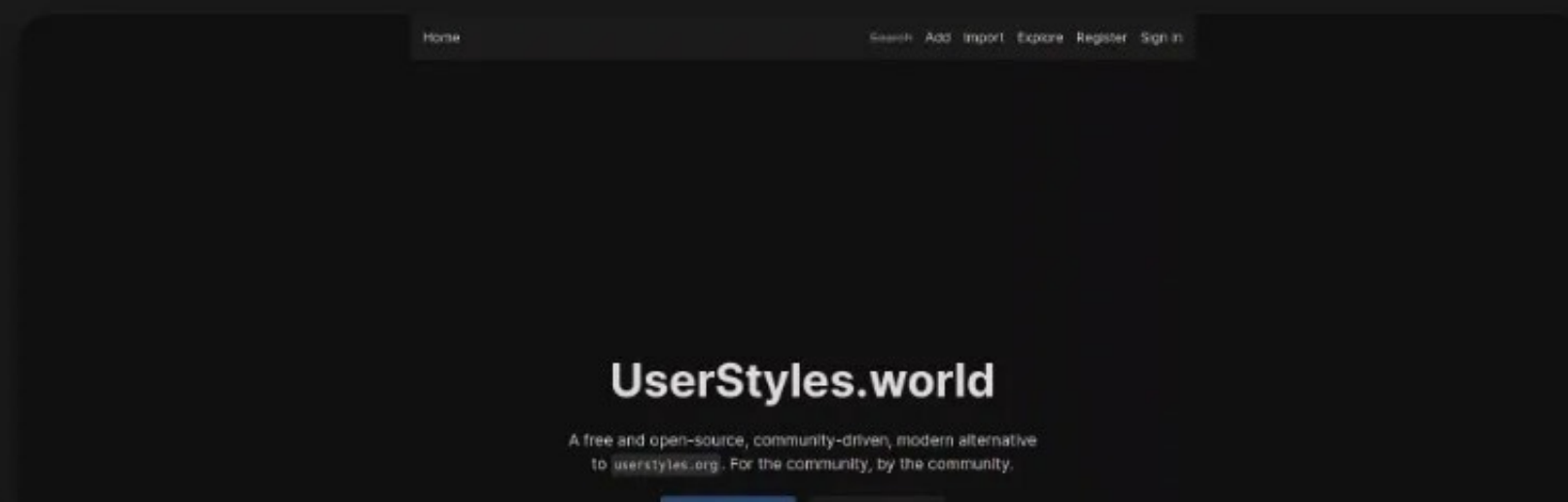
Updated March 1, 2022 23:30

Twitter Tweaks
by freeplay

👁 3.1k views

↓ 8.1k installs

☆ 5/5



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Sorted from most to least relevant results.

Search keyword

duckduckgo

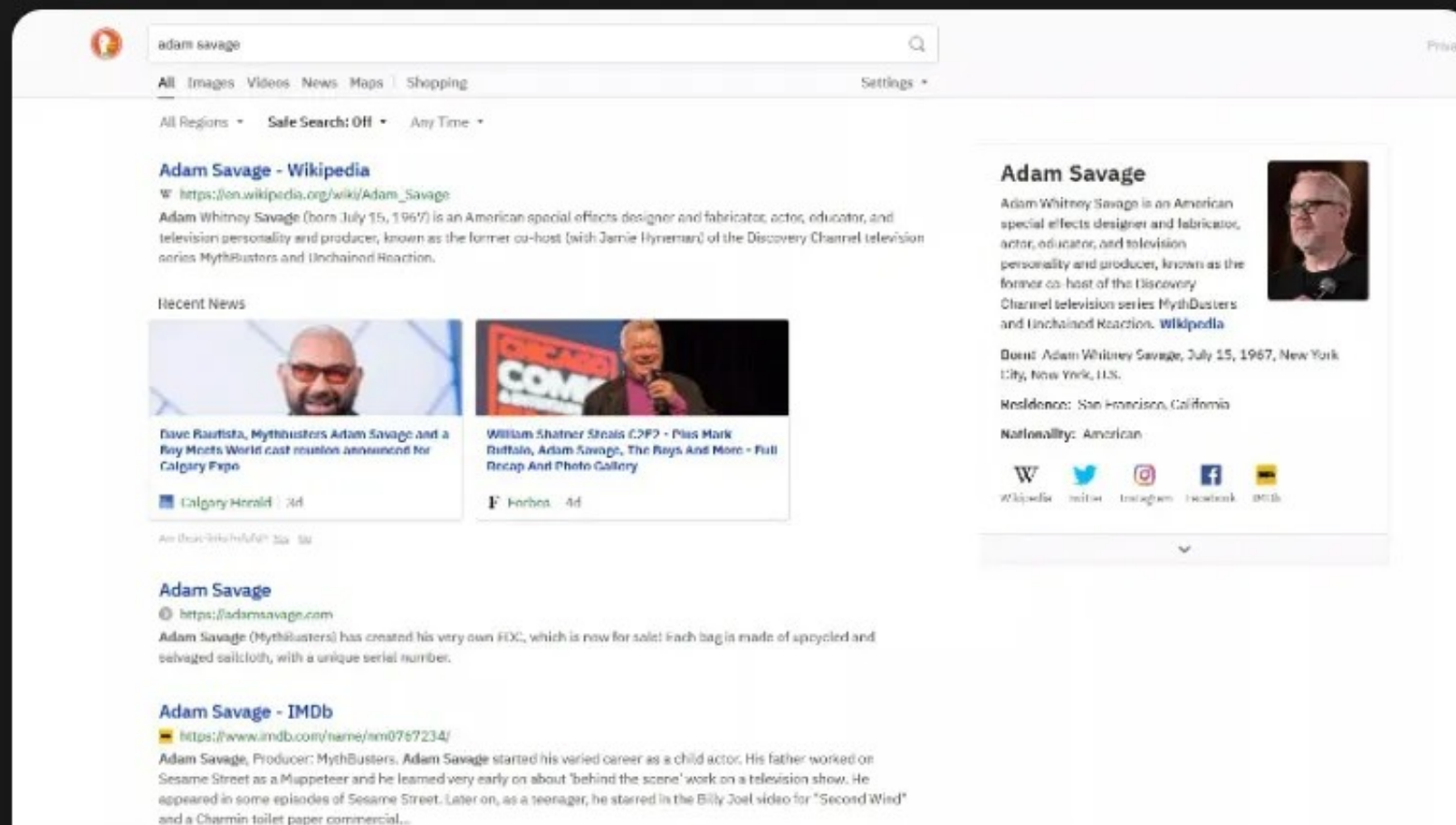
Sort by

Default



Search

Metrics of search engine: Hits: 25 · Time Spent: 2.145ms



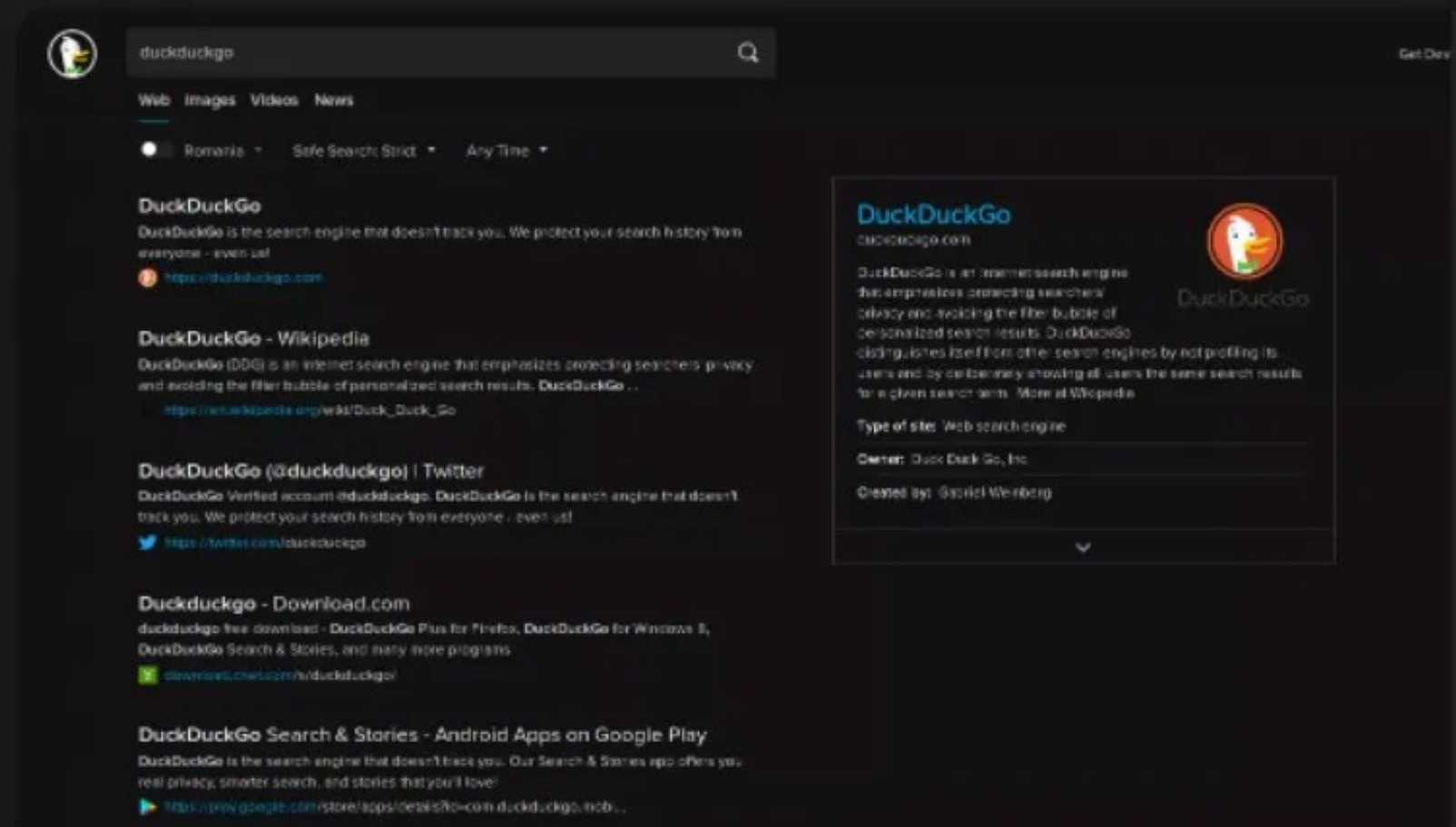
Updated January 17, 2022 19:00

DuckDuckGo - Wider, Prettier and Cu...
by krisu

388 views

1.4k installs

-/5



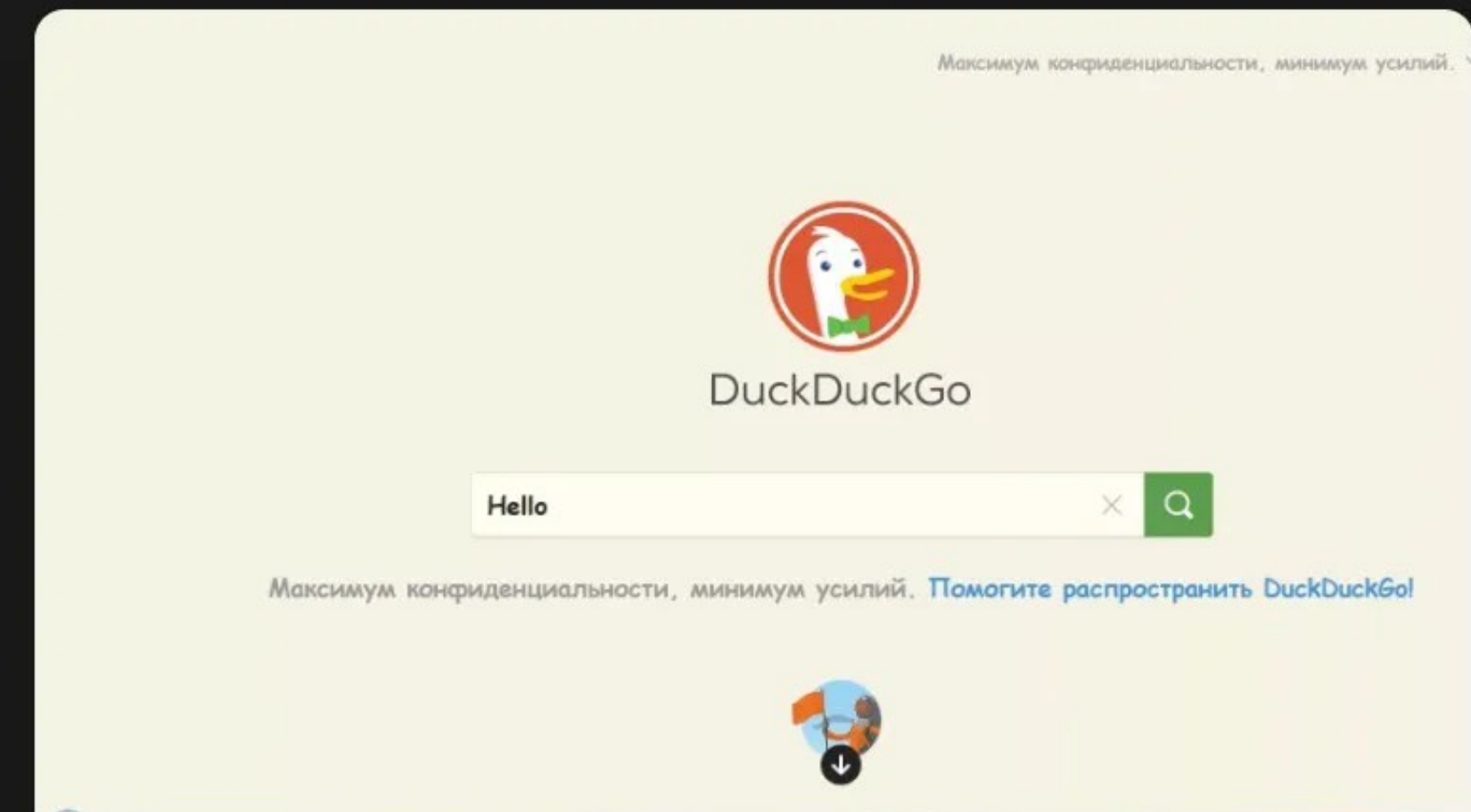
Updated September 24, 2021 11:00

DuckDuckGo DeepDark
by raitarohikami

606 views

1.2k installs

-/5



Updated April 8, 2022 16:27

Beige Duckduckgo
by odd

82 views

173 installs

-/5

Authors (developers) can specify CSS (obviously!)

If a user's CSS contradicts a author's CSS, the user can make sure hers “wins”

Use `!important` after a declaration & before the `;`

```
p {  
    font-size: 36px !important;  
}
```

However, CSS authors can do the same thing!

My safari.css file

Notice: no !important

```
html {  
    font-family: "Source Sans Pro", sans-serif;  
}
```

```
h1, h2, h3, h4, h5, h6 {  
    font-family: "Georgia Pro", serif;  
}
```

```
code, kbd, pre, samp, tt, var {  
    font-family: "Source Code Pro", monospace;  
}
```

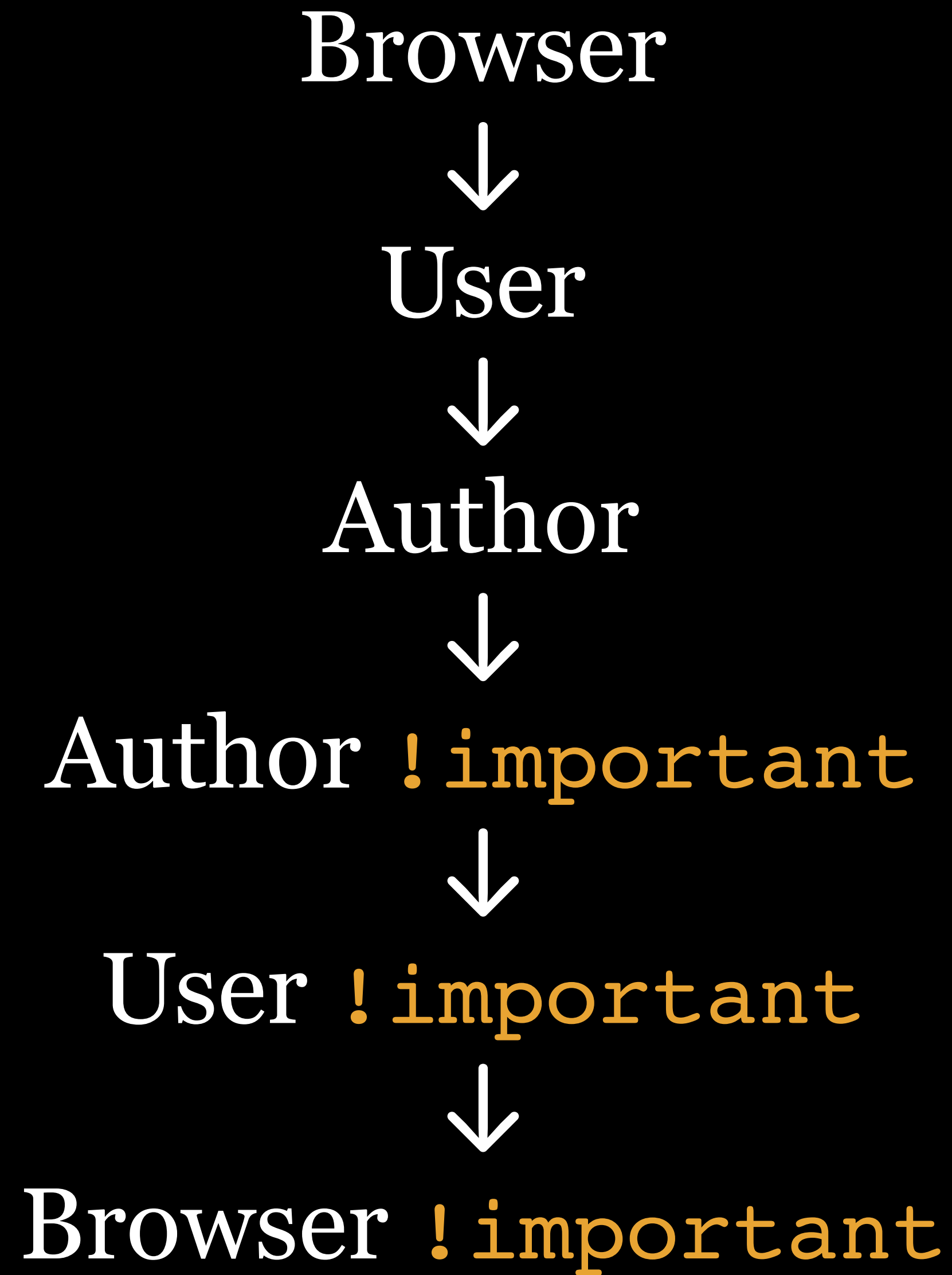


The order of origin & importance

AKA

The order in which stylesheets are *weighted*, from lightest to heaviest

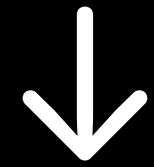
Order of
origin &
importance,
from lightest
to heaviest



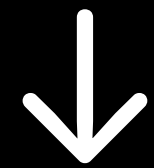
Browser



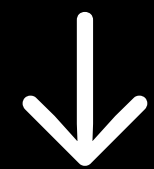
User



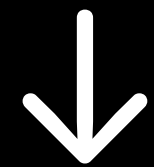
Author



Author !important



User !important



Browser !important

Browser



User



Author



Author !important



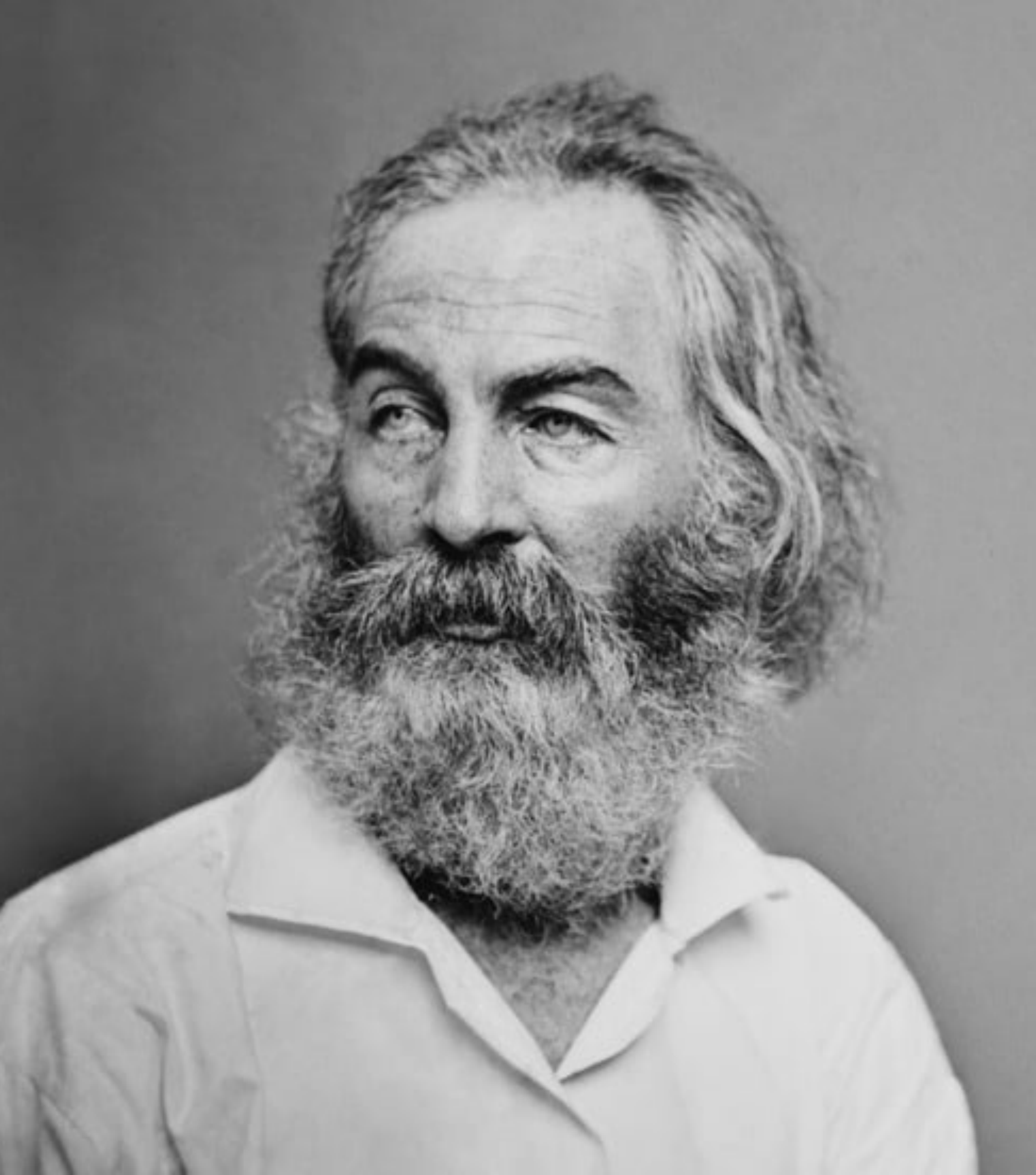
User !important



Browser !important

Author & Author !important?

Why are you contradicting yourself?



Do I contradict myself?
Very well then I contradict
myself,
(I am large, I contain
multitudes.)

From Walt Whitman's
"Song of Myself" in *Leaves
of Grass*

You're not contradicting *yourself* (hopefully!)

What if you're using Bootstrap & its default CSS?

```
<link rel="stylesheet" href="bootstrap.css">
```

Is that CSS coming from the browser, user, or author?

You will want to override some of Bootstrap's selectors


```
<link rel="stylesheet" href="bootstrap.css">  
<link rel="stylesheet" href="me.css">
```

Author vs. author

Sometimes, you will have to use `!important` to beat the *other* author

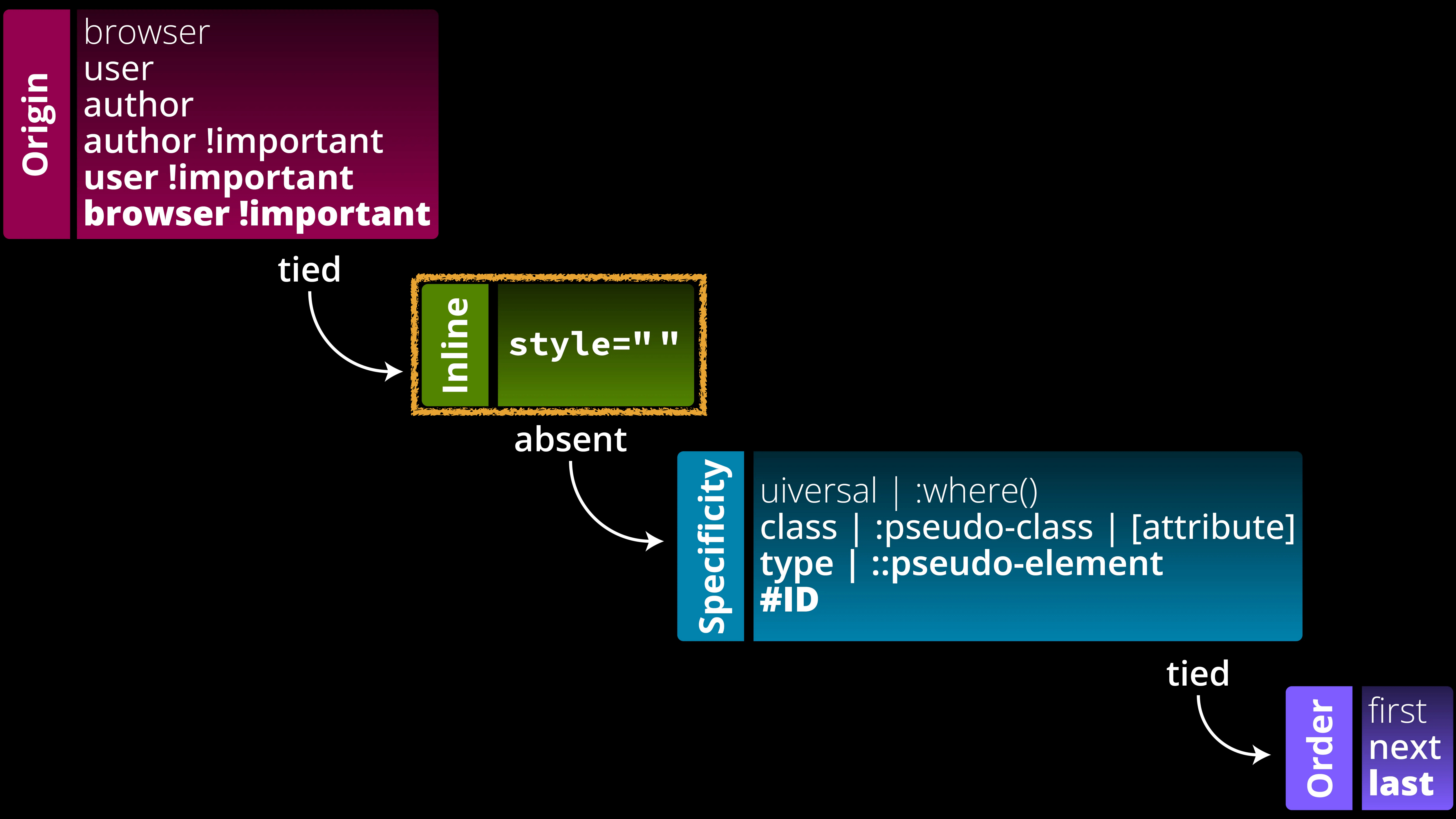
Be careful using `!important`

“`!important`: 3 seconds to type, 3 years to remove.”
—Harry Roberts

“`!important` is the Hammer of Thor, smiting everything in its path.” —Jans Carton 

Only use it as a last resort

Inline
(style="...")



Remember at the beginning how we talked about inline styles (`<p style="font-size: 18px;">`) & we gave several reasons why you should avoid them?

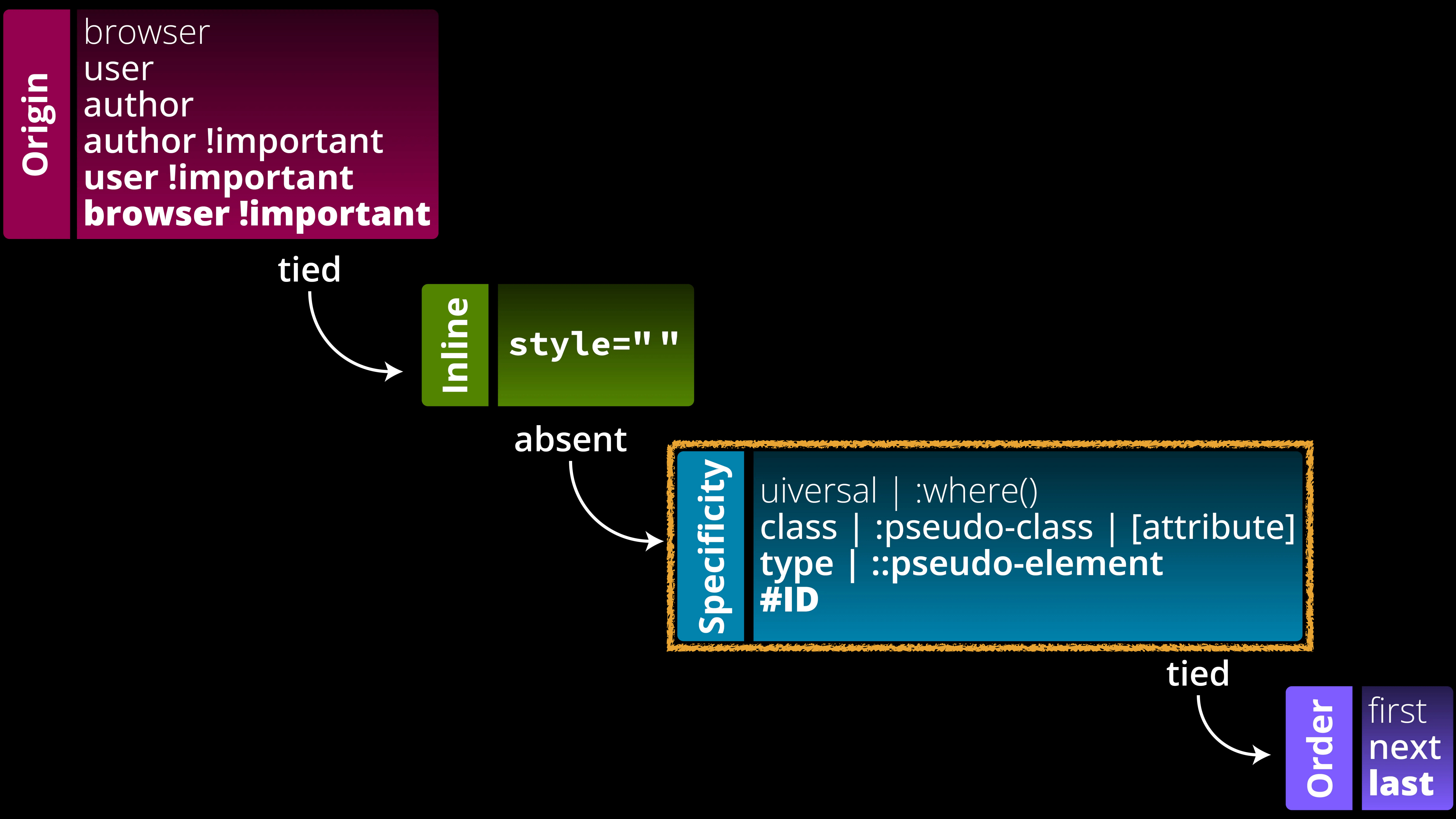
Here's another reason: they hamper the Cascade

In the Cascade, inline styles are always assigned to the *author* in terms of Origin

And in terms of Specificity, coming up next, inline styles outweigh anything else

So inline styles really short circuit the Cascade — yet another great reason to avoid them

Specificity



Specificity asks how *specific* is each selector?

Each simple selector is assigned a weight value

The greater the weight, the more specific the selector

In other words, with great weight comes great specificity 🕸️🤪

Selector(s)		Column
1 ×	#ID	a
1 ×	.class, :pseudo-class, & [attribute]	b
1 ×	type & ::pseudo-element	c

Take the numbers & place them **a,b,c**, e.g., **0,2,1**

	a	b	c	Total
*				0,0,0
li			1	0,0,1
.foo		1		0,1,0
#chapter1	1			1,0,0

Remember, compound & complex selectors are made up of multiple simple selectors

Simply add their simple selector weight values together

`p.foo.bar` (compound) is made up of 1 type & 2 classes, so `0,2,1`

`.foo > cite` (complex) is composed of 1 class & 1 type, so `0,1,1`

The following are *ignored* when calculating specificity:

- » Combinators: `└`, `>`, `+`, `~`
- » Universal selector: `*`
- » `:where()` & its contents
- » `:is()`, `:not()`, or `:has()` (but not the contents — the most specific selector is counted!): `:not(.but-this-part-is-counted)`

```
HTML
1 <ul>
2   <li>Great Old Ones
3     <ul>
4       <li>Abholos</li>
5       <li>Alala</li>
6       <li>Ammutseba</li>
7       <li>Amon-Gorloth</li>
8       <li>Aphoom-Zhah</li>
9       <li>Apocolothoth</li>
10      <li>Arwassa</li>
11      <li>Atlach-Nacha</li>
12      <li>Ayi'ig</li>
13      <li>Aylith</li>
14      <li>Baoh't Z'uqqa-Mogg</li>
15      <li>Basatan</li>
16      <li>B'gnu-Thun</li>
17      <li>Bokrug</li>

CSS
2
3 * ul > li { /* Specificity = 0,0,2 */
4   color: blue;
5 }
6
7 ul li { /* Specificity = 0,0,2 */
8   color: red;
9 }
10

JS
```

- Great Old Ones
 - Abholos
 - Alala
 - Ammutseba
 - Amon-Gorloth
 - Aphoom-Zhah
 - Apocolothoth
 - Arwassa
 - Atlach-Nacha
 - Ayi'ig
 - Aylith
 - Baoh't Z'uqqa-Mogg
 - Basatan
 - B'gnu-Thun
 - Bokrug
 - Bugg-Shash
 - Byagoona
 - Byatis
 - Chaugnar Faugn
 - Coatlicue

“In the cascade, these declarations [`style="foo"`] are considered to have author origin and *a specificity higher than any selector.*”

In other words, inline styles (`<p style="foo">`) always outweigh everything else (which is a good reason to hate them 🤔)

	a	b	c	Total
*				0,0,0
li			1	0,0,1
.foo		1		0,1,0
#chapter1	1			1,0,0
ul li			1 × 2	0,0,2
.foo > li		1	1	0,1,1
ul ol li.steps		1	1 × 3	0,1,3
li.steps.mech		1 × 2	1	0,2,1
style="foo"				∞

```
HTML
1 <div class="a b c d e f g h i j k l m n o p q r s t u v
  w x y z" id="alphabet">🎵 Let's call the whole thing off...
  🎵</div>

* CSS (SCSS)
1 // Specificity: 0,0,1
2 div {
3   color: seagreen;
4   font-size: 48px;
5 }
6
7 // Specificity: 0,26,0
8 .a.b.c.d.e.f.g.h.i.j.k.l.m.n.o.p.q.r.s.t.u.v.w.x.y.z {
9   color: dodgerblue;
10 }
11
12 // Specificity: 1,0,0
13 #alphabet {
14   color: tomato;
15 }
```

🎵 Let's call the whole thing off... 🎵

Any value > 0 in **a** outweighs any value > 0 in **b**, which outweighs any value > 0 in **c**

$(a > 0) > (b > 0) > (c > 0)$

1 in **a** outweighs the 26 in **b**

Visual Studio Code shows you the specificity of a selector when you hover over it in your CSS & what it will look like visually

EXPLORER

> OPEN EDITORS

▼ BOOTSTRAP-4-101

▼ CSS

main.css

> fonts

> images

> videos

index-01.html

index-02-jumbotron.h...

index-02.1-jumbotron...

index-02.2-jumbotron...

index-03-breadcrumb...

index-04-nav-click-to...

index-04.1-nav-no-dr...

index-05-fonts.html

> OUTLINE

> NPM SCRIPTS

> TEMPLATES

index-01.html

main.css

css > main.css > ...

```
68  *****/
69
70  /* For video background */
71
72  .jumbotron-video {
73      /* must set this so we can use position: absolute for the video
74         inside it, but didn't move it because we don't want it to */
75      position: relative;
76      /* don't let video exceed the boundaries we set */
77      ...
78      <video>
79
80      Selector Specificity: (0, 1, 1)
81  .jumbotron-video video {
82      /* ↓ take video out of flow; relied on containing block (.
83         jumbotron-rsg-video) using position: relative */
84      position: absolute;
85      /* ↓ make sure video is behind content, which has z-index of 20 */
86      z-index: 10;
87      /* ↓ place video in area */
```

<element class="jumbotron-video">

...

<video>

< 0 0

Live Share

GIST [github]

Assignments > bootstrap-4-101

CSS

Go Live

Rsync: ⓘ

[off]

EXPLORER

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✓ BOOTSTRAP-4-101

- css
 - main.css
- fonts
- images
- videos
- index-01.html
- index-02-jumbotron.h...
- index-02.1-jumbotron...
- index-02.2-jumbotron...
- index-03-breadcrumb...
- index-04-nav-click-to...
- index-04.1-nav-no-dr...
- index-05-fonts.html

> OUTLINE

> NPM SCRIPTS

> TEMPLATES

index-01.html

main.css

css > main.css > .breadcrumb-item.active

```
105  /* For breadcrumb */
106
107  .jumbotron-breadcrumb {
108      padding: 0 2rem;
109      margin-top: -2rem;
110      border-top: 1px dotted lightgrey;
111  }
112
113  .breadcrumb-item + .breadcrumb-item::before {
114      <element class="breadcrumb-item active">
115
116      Selector Specificity: (0, 2, 0)
117  .breadcrumb-item.active {
118      color: #333;
119  }
120
121  /* Footer */
122
123  footer {
124      text-align: center;
125      border-top: 1px dotted darkgrey;
```


EXPLORER

> OPEN EDITORS

✓ BOOTSTRAP-4-101

css

main.css

> fonts

> images

> videos

index-01.html

index-02-jumbotron.h...

index-02.1-jumbotron...

index-02.2-jumbotron...

index-03-breadcrumb...

index-04-nav-click-to...

index-04.1-nav-no-dr...

index-05-fonts.html

> OUTLINE

> NPM SCRIPTS

> TEMPLATES

index-01.html

main.css

css > main.css > .breadcrumb-item.active

105 /* For breadcrumb */

106

107 .jumbotron-breadcrumb {

108 padding: 0 2rem;

109 <element class="breadcrumb-item">

110 <element class="breadcrumb-item" ::before>

111 Selector Specificity: (0, 2, 1)

112 .breadcrumb-item + .breadcrumb-item::before {

113 content: ">";

114 }

115

116

117 .breadcrumb-item.active {

118 color: #333;

119 }

120

121 /* Footer */

122

123 footer {

124 text-align: center;

125 border-top: 1px dotted darkgrey;

<<

⊗ 0 ⊠ 0

↗ Live Share

⚡

GIST [github]

📁 Assignments > bootstrap-4-101

CSS

📶 Go Live

Rsycn: ⓘ

⏻ [off]

👤

🔔

Specificity Calculator

Sort by specificity

A visual way to understand [CSS specificity](#). Change the selectors or paste in your own.

nav > a:hover::before

0

IDs

1

Classes, attributes and pseudo-classes

3

Elements and pseudo-elements

+ Duplicate

ul#primary-nav li.active

1

IDs

1

Classes, attributes and pseudo-classes

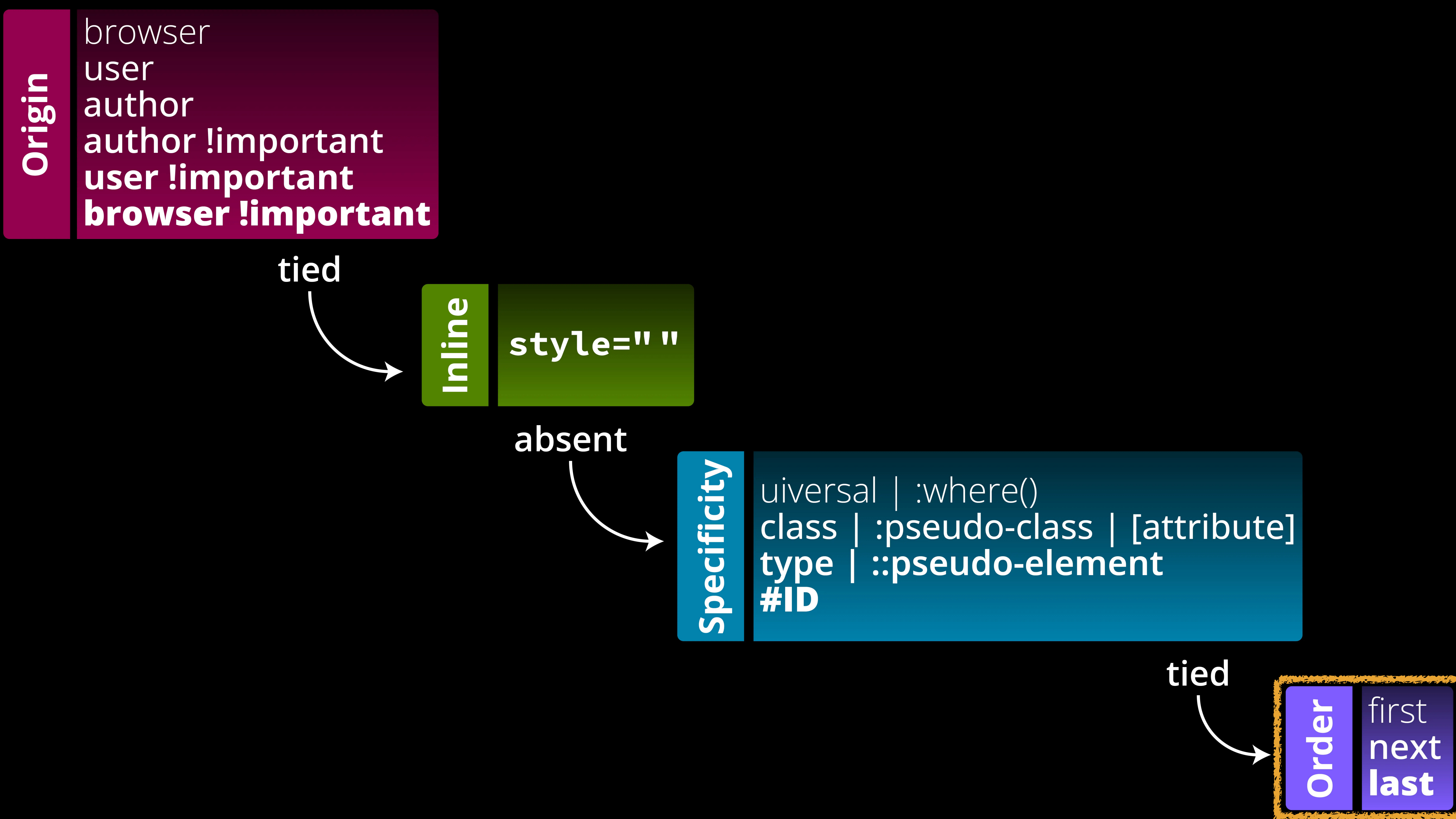
2

Elements and pseudo-elements

+ Duplicate

Specificity Calculator was built by [Keegan Street](#). The [specificity calculator JavaScript module](#) is available on GitHub or via `npm install specificity`.

Order



Later CSS in the stylesheet wins over earlier CSS

main.css:

```
.blue {color: blue}  
.red {color: red}
```

index.html:

```
<p class="red blue">  
  What color am I?  
</p>
```


main.css:

```
.blue {color: blue}  
.red {color: red}
```

index.html:

```
<p class="red blue">  
  What color am I?  
</p>
```

main.css:

```
.red {color: red}  
.blue {color: blue}
```

index.html:

```
<p class="blue red">  
  What color am I?  
</p>
```

main.css:

```
.red {color: red}  
.blue {color: blue}
```

index.html:

```
<p class="blue red">  
  What color am I?  
</p>
```


The Cascade

Origin

browser
user
author
author !important
user !important
browser !important

Conflicting CSS declarations follow the cascade until the one with the most weight wins

tied

Inline

style=" "

absent

Specificity

universal | :where()
class | :pseudo-class | [attribute]
type | ::pseudo-element
#ID

tied

Order

first
next
last


CSS Cascade (basic)


Let me walk you through a real example that happened to me in which knowing how the Cascade works made my life a lot easier

Here's some code I have on a website:

```
<div class="callOut">  
  <p>  
    For the next 2 weeks...  
  </p>  
</div>
```

```
.callOut {  
  background-color: #E6E8F2;  
  margin: 1em 1em 2em 1em;  
  padding: 1em;  
  border: 1px #ccc solid;  
  border-radius: 1em;  
}
```

Source: [xkcd](#) 

For the next 2 weeks, in addition to learning about wikis, you're also going to edit articles at Wikipedia. In order to fulfill this assignment, please [create an account at Wikipedia](#)  if you do not already have one. Do this as soon as possible, as you must have an account in existence for a few days before you can create/edit certain articles at Wikipedia.

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A list of informational & useful wikis, besides Wikipedia.

The result!
However...

- Broadcast Flag
- Bullying
- Business-Education Partnerships
- Business Intelligence
- Business School
- Cameras
- Capitalism
- Cartels
- CBDTPA
- Cell Phones
- Climate Change
- Cloud Computing
- Collaboration
- Comic Books
- Communications
- Concepts
- Consolidation
- Content Management Systems
- Conveniences
- Copy Protection
- Copyright
- Cracking
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- Creative Commons
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- Cultural Differences
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- Database
- Death
- DeCSS
- Definition
- Demographics
- Design
- DeskSwap
- Developing Nations

Source: [xkcd](#) 

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- Broadcast Flag
- Bullying
- Business-Education Partnerships
- Business Intelligence
- Business School
- Cameras
- Capitalism
- Cartels
- CDDPA

46

For the next 2 weeks, in addition to learning about wikis, you're also going to edit articles at Wikipedia. In order to fulfill this assignment, please [create an account at Wikipedia](#) if you do not already have one. Do this as soon as possible, as you must have an account in existence for a few days before you can create/edit certain articles at Wikipedia.

61

Why & how do wikis work?

Read all of these

- [The Wiki Way](#)
A review of a
- [Some useful](#)
A list of informational & useful wikis, besides Wikipedia.

That extra space at the bottom really bothers me

- Cultural Differences
- Customer Tracking
- Database
- Death
- DeCSS
- Definition
- Demographics
- Design
- DeskSwap
- Developing Nations


To fix it, I put this in my CSS at lines 194–196:

```
.callOut > p:last-child {  
    margin-bottom: 0;  
}
```

Let me explain what that means...

> is a *combinator* that selects the direct children of (*not* descendants of) the `.callOut` class

`p:last-child` is a *pseudo-class* that means the `<p>` that is the last child of (*not* descendant of) the `.callOut` class



```
.callOut > p:last-child {  
    margin-bottom: 0;  
}
```

So this selects the `<p>` that is the *last direct child* of the `.callOut` class

EXAMPLE

```
.callOut > p:last-child {  
  margin-bottom: 0;  
}
```

```
<div class="callOut">
```

```
  <p>foo</p>
```

```
  <p>bar</p>
```

```
  <p>baz</p>
```

```
  <p>quz</p>
```

```
  <blockquote>
```

```
    <p>quux</p>
```

```
  </blockquote>
```

```
</div>
```

← Selected!

← Not selected, as this **<p>** is
not the last direct child

Why use this?

```
.callOut > p:last-child {  
    margin-bottom: 0;  
}
```

Why not just use this?

```
.callOut > p {  
    margin-bottom: 0;  
}
```


Because sometimes there are 2 or more paragraphs inside
`.callOut`

So back to where I was... I put this in my CSS at line 194:

```
.callOut > p:last-child {  
    margin-bottom: 0;  
}
```

Let's check the webpage...

46

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Nothing changed!

Why didn't it work?

Let's open the Inspector & find out why

Source: [xkcd](#)

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p 574px × 120px

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Definitions

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- Consolidation
- Content Management Systems

×

📄

📑

↺

⬇

📄 72

🛒

🕒

💬 0

🚫 11

⚠ 0

🔍 Search

🧱 Elements

🌐 Network

📄 Resources

🕒 Timelines

🐛 Debugger

📦 Storage

📝 Console

+

E > E > E > E > E > E > E

div#post-10096.post-10096.post.type-post.status-publish.... > div.entry-content > div.callOut > p

⏏

🔍

✎

📏

<script>onmousedown=function(){document.getElementById('primary').style.display='block';}else{document.getElementById('primary').style.display='none';document.getElementById('content').style.margin='0px 200px;'}}Toggle Visibility</script>-->

<div class="entry-meta">...</div>

<!-- .entry-meta -->

<div class="entry-content">

<p>...</p>

<div class="callOut">

<p>...</p> = \$0

</div>

<p>...</p>

<h2>Definitions</h2>

<p>Read all of these.</p>

...

<h2>Why & how do wikis work?</h2>

<n>Read all of these.</n>

Node

Styles

Layers

Computed

Rules

Metrics

#content p — style.css:146


margin-bottom: 12px;


.callOut > p:last-child — style.css:194

margin-bottom: 0;

Main Frame

Filter Styles


```
 #content p — style.css:146  
margin-bottom: 12px;
```

```
 .callout > p:last-child — style.css:194  
margin-bottom: 0;
```

Hmmm... mine is being beaten by earlier code

Lines 146–148:

```
#content p {  
    margin-bottom: 12px;  
}
```

Lines 194–196:

```
.callOut > p:last-child {  
    margin-bottom: 0;  
}
```

Why isn't mine winning since it's later in order?

Lines 146–148:

```
#content p {  
    margin-bottom: 12px;  
}
```

Lines 194–196:

```
.callOut > p:last-child {  
    margin-bottom: 0;  
}
```

Is *origin & importance* causing the 1st declaration block to win? 🙋

Lines 146–148:

```
#content p {  
    margin-bottom: 12px;  
}
```

Lines 194–196:

```
.callOut > p:last-child {  
    margin-bottom: 0;  
}
```

Is *specificity* causing the 1st declaration block to win? 🤔

```
#content p {  
  margin-bottom: 12px;  
}
```

Specificity

$(\text{\#content} = 1 \times a) +$
 $(p = 1 \times c) =$
 $1, 0, 1$

```
.callout > p:last-  
child {  
  margin-bottom: 0;  
}
```

Specificity

$(.callout = 1 \times b) +$
 $(p = 1 \times c) +$
 $(:last-child = 1 \times b) =$
 $0, 2, 1$

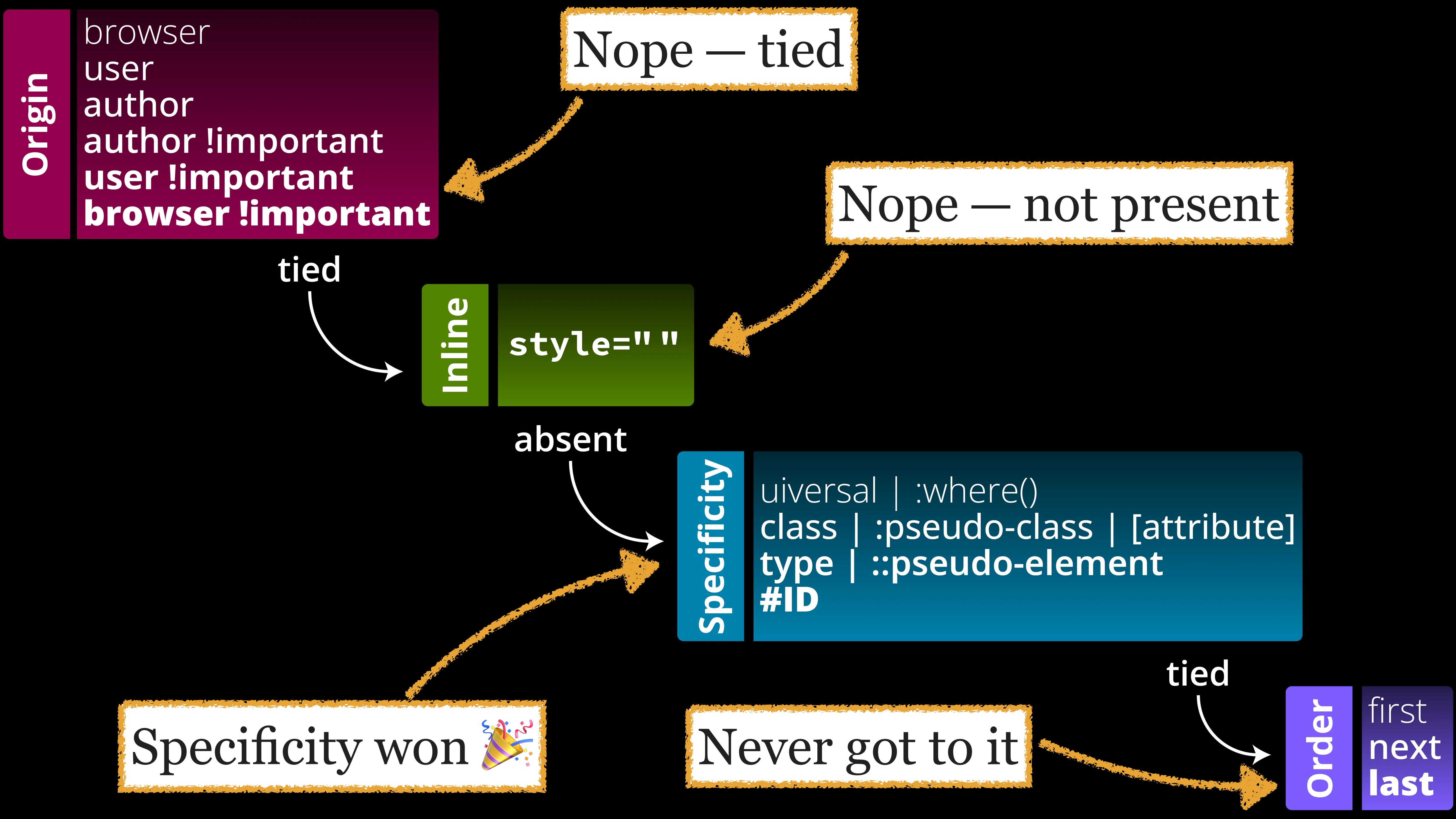
Lines 146–148:

```
#content p {                                1,0,1
    margin-bottom: 12px;
}
```

Lines 194–196:

```
.callOut > p:last-child {
    margin-bottom: 0;                        0,2,1
}
```

Because *specificity* meant the 1st declaration block had the most weight, *order* never entered into the picture



There are 3 solutions to this problem

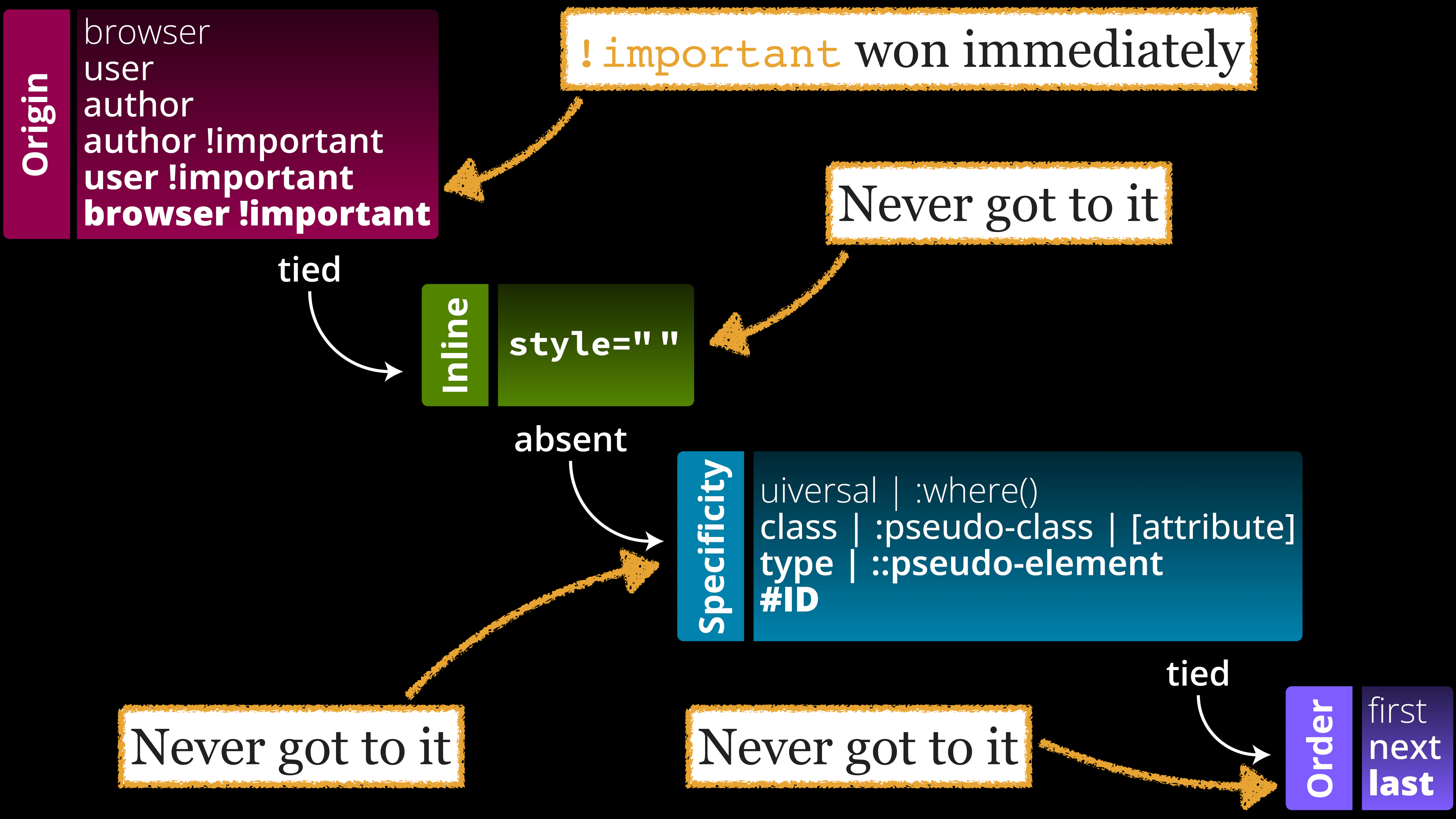
Lines 146–148:

```
#content p {  
    margin-bottom: 12px;  
}
```

Lines 194–196:

```
.callOut > p:last-child {  
    margin-bottom: 0 !important;  
}
```

Adding `!important` makes the 2nd style rule win due to *origin & importance*, so *specificity & order* never come into play



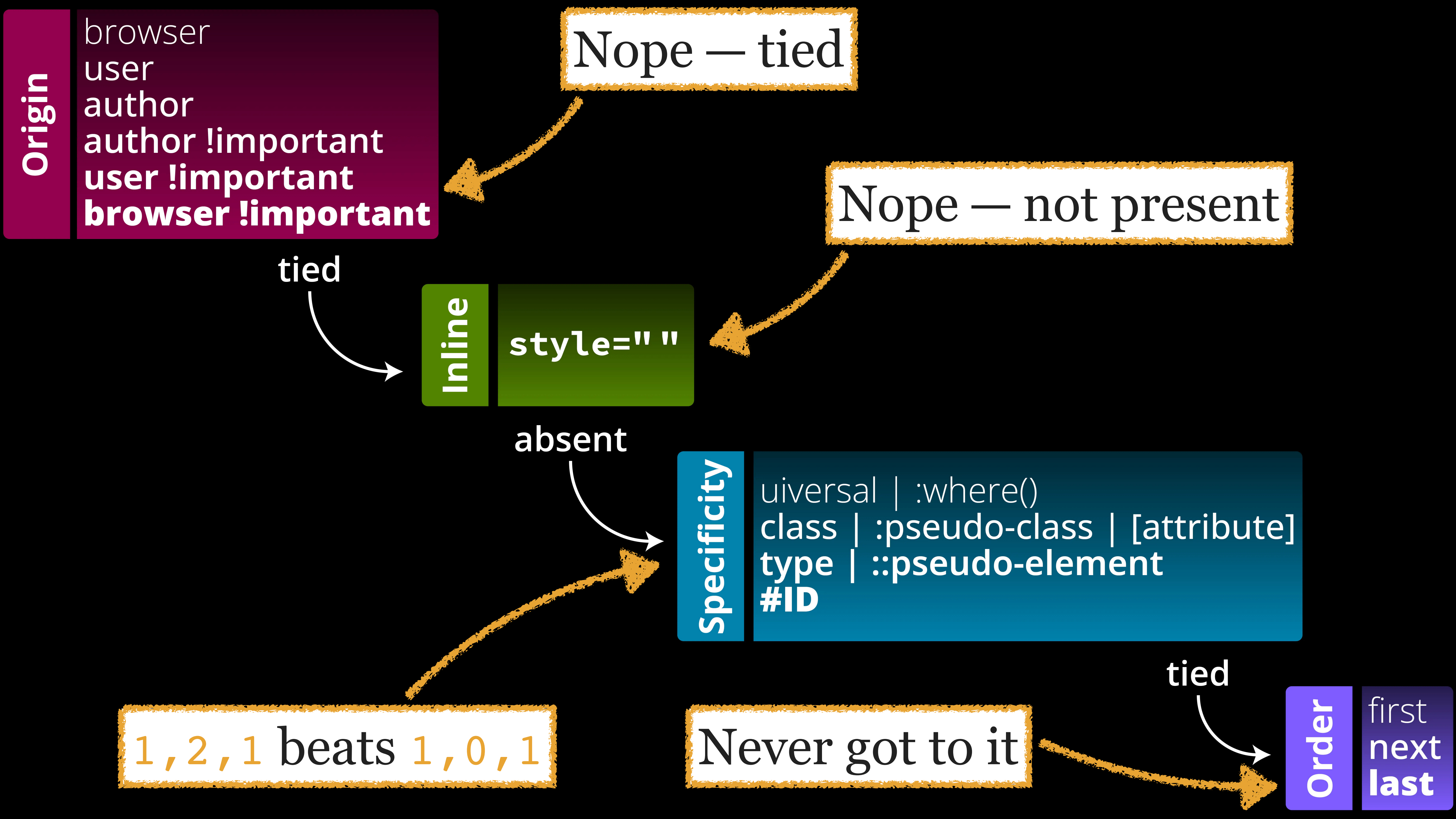
Lines 146–148:

```
#content p {                                1,0,1
  margin-bottom: 12px;
}
```

Lines 194–196:

```
#content .callOut > p:last-child {
  margin-bottom: 0;                          1,2,1
}
```

Adding `#content` to line 194 makes the 2nd style rule win due to *specificity*, so *order & importance* never comes into play




Lines 146–148:


```
#content p {  
    margin-bottom: 12px;           0,0,1  
}
```

Lines 194–196:

```
.callOut > p:last-child {  
    margin-bottom: 0;             0,2,1  
}
```

Deleting `#content` on line 146 makes the 2nd style rule win due to *specificity*, but I can't do that or things will break!

Source: [xkcd](#) 

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Much better!

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Source: [xkcd](#)

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37

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Bonus question: how do we get rid of those extra pixels at the top?

46

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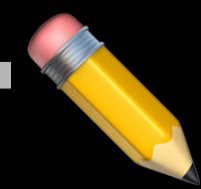
Then I realized that `<div class="callOut">` doesn't always end with `<p>`, so I fixed that:

```
#content .callOut > :last-child {  
    margin-bottom: 0;  
}
```

Now it's weighted to win *and* selecting the correct DOM objects

Remember, `:last-child` is the same as `*:last-child`

CSS Reset Keywords



SIDE NOTE

CSS keywords have special meaning in CSS & are reserved by the language, e.g.:

- » `border` & `font-family` are *property* keywords
- » `solid` & `dotted` are *value* keywords
- » `black` & `red` are *color value* keywords
- » `<length>` & `<color>` are *data type* keywords
- » `@media` & `@supports` are *at-rule* keywords
- » `attr()` & `calc()` are *function* keywords
- » `:hover` & `:focus` are *pseudo-class* keywords
- » `::before` & `::first-letter` are *pseudo-element* keywords

There are 5 *global* keywords in CSS

- » 4 are values: *initial*, *inherit*, *unset*, & *revert*
- » 1 is a property: *all*

`initial` value resets property back to its default value as defined in the spec

`inherit` value forces an element to inherit styles from an ancestor that it would not normally inherit

`unset` value acts as either `inherit` (if the property is inherited) or `initial` (if the property is not)

`revert` value rolls back the property's cascade, depending upon who declared it: the browser, user, or author

`initial` value resets property *back to its default value as defined in the spec*

Remember, in the specs for CSS...

- » `display` default is `inline`
- » `font-size` default is `medium`
- » `border-style` default is `none`
- » `border-width` default is `medium`
- » `margin` & `padding` defaults are `0`
- » `font-family` default “depends on user agent”

caption-side

On this Page

- Syntax
- Formal definition
- Formal syntax
- Examples
- Specifications
- Browser compatibility

Related Topics

- CSS
- CSS Reference
- CSS Table

The **caption-side** CSS property puts the content of a table's `<caption>` on the specified side. The values are relative to the **writing-mode** of the table.




CSS Demo: caption-side

Reset



```
caption-side: top;
```



```
caption-side: bottom;
```

Famous animals	
Name	Location
Giraffe	Africa
Penguin	Antarctica
Sloth	South America
Tiger	Asia

Formal definition

Initial value	top
Applies to	table-caption elements
Inherited	yes
Computed value	as specified
Animation type	discrete

Formal syntax

top | bottom | block-start | block-end | inline-start | inline-end

HTML

```
1 <p>
2   Now that I am telling it anyway, lest the brooding
   make me a maniac, I wish I had never concealed it.
3 </p>
4 <p>
5   For I, and I only, know what manner of fear lurked on
   that spectral and desolate mountain.
6 </p>
```

CSS (SCSS) Compiled

```
1 html {
2   font-size: 24px;
3   font-family: "Iowan Old Style", Georgia, serif;
4 }
5
6 p {
7   font-size: initial;
8   font-family: initial;
9   display: initial;
10 }
11
```

JS

Now that I am telling it anyway, lest the brooding make me a maniac, I wish I had never concealed it. For I, and I only, know what manner of fear lurked on that spectral and desolate mountain.

This can be a bit confusing

The *browser's* default for
`<p>` is `display: block`

The *spec* says that all boxes
default to `display: inline`

`initial` resets back to the
spec, not the browser

The `inherit` value forces an element to inherit values from properties that are not normally inherited

HTML

```
1 <blockquote>
2   <p>
3     Of the five remaining pictures, three were of swamp
    and hill scenes which seemed to bear traces of hidden
    and <em>unwholesome</em> tenancy. Another was of a queer
    mark in the ground very near Akeley's house...
4   </p>
5 </blockquote>
```

CSS

```
1 html {
2   font-size: 24px; /* inherited */
3 }
4
5 blockquote {
6   font-family: "Iowan Old Style", Georgia, serif; /*
    inherited */
7   border: 1px solid black; /* not inherited */
8   padding: 0 1em; /* not inherited */
9 }
10
11 em, p {
12   border: inherit; /* p inherits from blockquote; em
    inherits from p */
13 }
```

JS

Of the five remaining pictures, three were of swamp and hill scenes which seemed to bear traces of hidden and *unwholesome* tenancy. Another was of a queer mark in the ground very near Akeley's house...

`unset` value acts as either `inherit` (if the property is inherited) or `initial` (if the property is not)

What's the use case for this? See `all` just ahead

revert value rolls back the property's cascade, depending upon who declared it: the browser, user, or author

- » if the author is the origin, it rolls back to the user
- » if the user is the origin, it rolls back to the browser
- » if the browser is the origin, it rolls back to the spec

If the origin that is rolled back to does not declare a value for the property, it is skipped & the rendering engine rolls back another level

Effects of `revert`



If `revert` is rolling back a property's style set by an author, & the user has not set a style, it skips the user & rolls back to the browser, & so on

Most common use-case for `revert`: you have a heavily-modified selector & you want to revert back to the browser's defaults (remember, most users never set any styles, so that one is skipped over)

`all`

Magic property that resets all property values, except for `direction` & `unicode-bidi`

Really designed to be used with small components — you wouldn't want to do this for an entire page

Values are the 4 global keywords: `initial`, `inherit`, `unset` (which now makes sense in a limited scenario!), & `revert`

⚙ HTML ▾

```
1 <nav>
2   <menu>
3     <li><a href="✖">Search</a></li>
4     <li><a href="✖">Log In</a></li>
5     <li><a href="✖">Shopping Cart</a></li>
6   </menu>
7 </nav>
8
9 <nav class="nav-widget">
10  <menu>
11    <li><a href="✖">Search</a></li>
12    <li><a href="✖">Log In</a></li>
13    <li><a href="✖">Shopping Cart</a></li>
14  </menu>
15 </nav>
```

⚙ CSS (SCSS) ▾

```
1 html {
2   /* font-size & font-family are inherited */
3   font-size: 24px;
4   font-family: "Iowan Old Style", Georgia, serif;
5 }
6
7
```

⚙ JS ▾

- [Search](#)
- [Log In](#)
- [Shopping Cart](#)

- [Search](#)
- [Log In](#)
- [Shopping Cart](#)

HTML

```
6   </menu>
7 </nav>
8
9 <nav class="nav-widget">
10  <menu>
11    <li><a href="✗">Search</a></li>
12    <li><a href="✗">Log In</a></li>
13    <li><a href="✗">Shopping Cart</a></li>
14  </menu>
15 </nav>
```







CSS (SCSS) Compiled

```
1 html {
2   /* font-size & font-family are inherited */
3   font-size: 24px;
4   font-family: "Iowan Old Style", Georgia, serif;
5 }
6
7 .nav-widget * {
8   /* Resets all uninherited properties below back to spec */
9   all: unset;
10 }
11
```

JS

- [Search](#)
- [Log In](#)
- [Shopping Cart](#)

Search Log In Shopping Cart

					ios		
<code>initial</code>	—	12	19	3.2	4	4	2.3
<code>inherit</code>	8	12	2	3.1	3.2	4	2.1
<code>unset</code>	—	13	27	9.1*	9.3*	41	41
<code>revert</code>	—	84	67	9.1	9.3	84	84
<code>all</code>	—	79	27	9.1	9.3	37	4.4.4

* `all`: `unset` is buggy in Safari & sets `color` to `black`, preventing you from setting another `color`; the workaround is to use `-webkit-text-fill-color` everywhere you also use `color`; Safari 14 fixes this

Tools

Books



Jon Duckett's *HTML & CSS: Design & Build Websites*

Great overview of (some) HTML5 & CSS2 (& some CSS3)

Getting pretty out of date, though (published in 2011), but still good for the basics

References

RELATED TOPICS

Learn CSS

- ▶ CSS first steps
- ▶ CSS building blocks
- ▶ Styling text
- ▶ CSS layout

Reference

- ▶ Modules
- ▶ Properties
- ▶ Selectors
- ▶ Pseudo-classes
- ▶ Pseudo-elements
- ▶ At-rules
- ▶ Types

Guides

CSS reference

Use this **CSS reference** to browse an [alphabetical index](#) of all of the standard [CSS](#) properties, [pseudo-classes](#), [pseudo-elements](#), [data types](#), [functional notations](#) and [at-rules](#). You can also browse [key CSS concepts](#) and a list of [selectors organized by type](#). Also included is a brief [DOM-CSS / CSSOM reference](#).

Basic rule syntax

Style rule syntax

```
style-rule ::=
  selectors-list {
    properties-list
  }
```

IN THIS ARTICLE

- Basic rule syntax
- Index
- Selectors
- Concepts
- DOM-CSS / CSSOM
- See also
- External Links

696 terms as of April 2022!

Fresh Article July 6, 2020

Bootstrap 5



Author

Chris Coyier

Comments

Start Conversation →

It's always notable when the world biggest CSS framework goes up a major version (it's in alpha now).

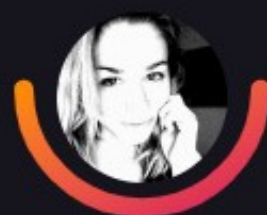
It has dropped jQuery and IE, started using some CSS custom properties, gone fully customized with form elements, started to embrace utility classes, and includes a massive icon set you can use via SVG sprite. Sweet....

[Read article](#)

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Article Jun 26, 2020

In Defense of a Fussy Website



Author
Sarah
Drasner

CARE

INTENTION

PORTFOLIO

UX

Article Jun 17, 2020

Advice for Complex CSS Illustrations



Author
Jhey
Tompkins

ART

CSS SHAPES

Article Jul 1, 2020

A Complete Guide to Dark Mode on the Web



Author
Adhuam

DARK MODE

Article Jun 15, 2020

What is Developer Experience (DX)?



Author
Chris Coyier

DX

UX

Article Jun 12, 2020

Striking a Balance Between Native and Custom Select Elements



Author
Sandra
Pereira

ACCESSIBILITY

FORMS

SELECT

Some of the Guides on CSS Tricks (+ many more!):

- » A Complete Guide to Flexbox ★
- » Media Queries for Standard Devices
- » A Complete Guide to Grid ★
- » A Complete Guide to the Table Element
- » Centering in CSS: A Complete Guide
- » A Complete Guide to CSS Cascade Layers
- » A Nerd's Guide to Color on the Web
- » A Complete Guide to Data Attributes

Can I use

?  [Settings](#)

CSS

- `::placeholder` CSS pseudo-element
- `::selection` CSS pseudo-element
- `:placeholder-shown` CSS pseudo-class
- `@font-face` Web fonts
- Blending of HTML/SVG elements
- `calc()` as CSS unit value
- 2.1 selectors
- `background-attachment`
- `background-blend-mode`
- `background-position` edge offsets
- `box-decoration-break`
- `clip-path` property
- Counter Styles
- Counters
- `currentColor` value
- Device Adaptation
- Exclusions Level 1
- Feature Queries
- Filter Effects

HTML5

- Audio element
- Audio Tracks
- Autofocus attribute
- Canvas (basic support)
- Canvas blend modes
- `classList` (`DOMTokenList`)
- Color input type
- `contenteditable` attribute (basic support)
- Custom Elements
- Custom protocol handling
- Datalist element
- `dataset` & `data-*` attributes
- Date and time input types
- Details & Summary elements
- Dialog element
- `disabled` attribute of the fieldset element
- Download attribute
- Drag and Drop
- Email, telephone & URL input types

SVG

- Inline SVG in HTML5
- SVG (basic support)
- SVG effects for HTML
- SVG favicons
- SVG filters
- SVG fonts
- SVG fragment identifiers
- SVG in CSS backgrounds
- SVG in HTML `img` element
- SVG SMIL animation
- **All SVG features**

JS API

- Ambient Light API
- Base64 encoding and decoding
- Battery Status API
- Blob constructing
- Blob URLs

Can I use grid

? ⚙ Settings

2 results found

#

CSS Grid Layout 📄 - CR

Global

69.53% + 5.62% = 75.15%

unprefixed:

69.53%

Method of using a grid concept to lay out content, providing a mechanism for authors to divide available space for layout into columns and rows using a set of predictable sizing behaviors

Current aligned

Usage relative

Date relative

Show all

IE	Edge *	Firefox	Chrome	Safari	Opera	iOS Safari *	Opera Mini *	Android Browser *	Chrome for Android
			1 49			10.2			
	2 15	55	60	10.1	47	10.3		4.4	
2 11	16	56	61	11	48	11	all	56	61
		57	62	TP	49				
		58	63		50				
		59	64						

Notes

Known issues (2)

Resources (12)

Feedback


```
/* Styles */

@import "extra.css";

ul li
{
    list-style: square;
    margin: 2em 20% 15px 0;
}

#content
{
    -webkit-font-smoothing: antialiased;
    background: url(img/gradient.png);
    background: linear-gradient(to bottom, red, rgba(255,0,0,0));
}

@media only screen and (min-width: 35em)
{
    #content
    {
        width: 50%;
    }
}

.item + .item,
.item ~ .item
```

- Comment
- Statement
- Rule-set
- At-rule
- At-keyword
- Media query
- Media query list
- Media type
- Expression
- Media feature
- Block
- Declaration block
- Selector
- Simple selector
- Type selector
- Universal selector
- Compound selector
- Complex selector
- Attribute selector

apps.workflower.fi/vocabs/css/

```
/* Styles */
```

```
@import "extra.css";
```

```
ul li  
{  
    list-style: square;  
    margin: 2em 20% 15px 0;  
}
```

```
#content  
{  
    -webkit-font-smoothing: antialiased;  
    background: url(img/gradient.png);  
    background: linear-gradient(to bottom, red, rgba(255,0,0,0));  
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```
@media only screen and (min-width: 35em)  
{  
    #content  
    {  
        width: 50%;  
    }  
}
```

```
.item + .item,
```

```
.item ~ .item
```

CSS VOCABULARY

?

Comment

Statement

Rule-set

At-rule

At-keyword

Media query

Media query list

Media type

Expression

Media feature

Block

Declaration block

Selector

Simple selector

Type selector

Universal selector

ID selector

Class selector

Attribute selector

```

/* Styles */

@import "extra.css";

ul li
{
    list-style: square;
    margin: 2em 20% 15px 0;
}

#content
{
    -webkit-font-smoothing: antialiased;
    background: url(img/gradient.png);
    background: linear-gradient(to bottom, red, rgba(255,0,0,0));
}

@media only screen and (min-width: 35em)
{
    #content
    {
        width: 50%;
    }
}

.item + .item,
.item ~ .item

```

Class selector
 Attribute selector
 Pseudo-class
 Pseudo-element
 Combinator
 Descendant combinator
 Child combinator
 Adjacent sibling combinator
 General sibling combinator
 Declaration
 Property
 Value
 Function
 Keyword
 String
 URL
 Number
 Percentage
 Length
 Unit
 Color
 Vendor prefix

rsgranne + css 192

RSS

Search All

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About CodePen

CodePen is a playground for the front end side of the web. It's all about inspiration, education, and sharing.

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fonts google typography css

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design + dhtml + diagnostic + dictionary +

directory + div + documentation + download

editing + education + email +

encmeyer + examples + extensions +

firefox + flash + flickr + fonts + framework

+ free + friends + fun + generator +

pinboard.in/u:rsgranne/t:css

Browser Tools

Built-in developer tools (aka DevTools or the Inspector)
are excellent

We empower and enlighten!

WebSanity works closely with clients to plan, develop, and host attractive, usable websites that enable editors to manage all aspects of their sites.

a.page-scroll.btn.btn-xl 206.817 x 67.7167

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Inspector

Console

3

+

✎

Search HTML

::before

<div class="intro-text row">

::before

<div class="col-sm-10 col-sm-offset-1 col-md-8 col-md-offset-2 col-lg-8 col-lg-offset-2">

<div class="intro-lead-in">We empower and enlighten!</div>

<p>...</p>

Learn More

</div>

::after

</div>

::after

</div>

</header>

<!--Services Section-->

<tro-text.row> > div.col-sm-10.col-sm-offset-1.col-md-8.c... > a.page-scroll.btn.btn-xl >

Rules

Layout

Computed

Changes

Compatibility

Fonts

Anim

Filter Styles

:hov .cls + ☀ 🌙 📄

► Pseudo-elements

This Element

element { ☐ inline

}

html[stopthemadness-user-select] * ☐ { style.css:3

-webkit-user-select: ► text !important;

}

.btn-xl ☐ { websanity.css:126

color: ○ white;

background-color: ● #ffd333;

border-color: ► ● #ffd333;

font-family: Montserrat, sans-serif;

font-weight: 700;

text-transform: uppercase;

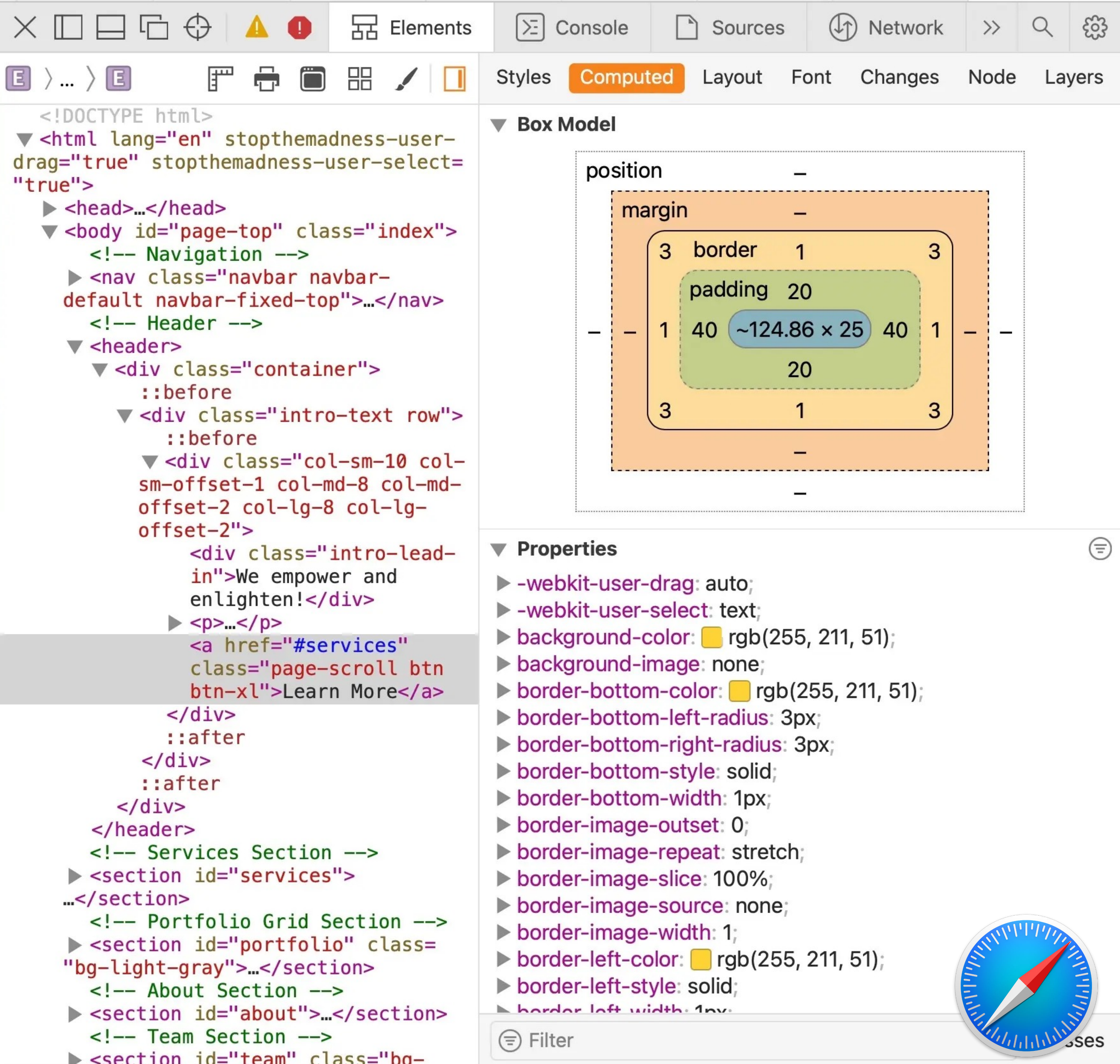
border-radius: ► 3px;

font-size: 18px;

padding: ► 20px 40px;



You bring industry knowledge, professional expertise, and insight unique to

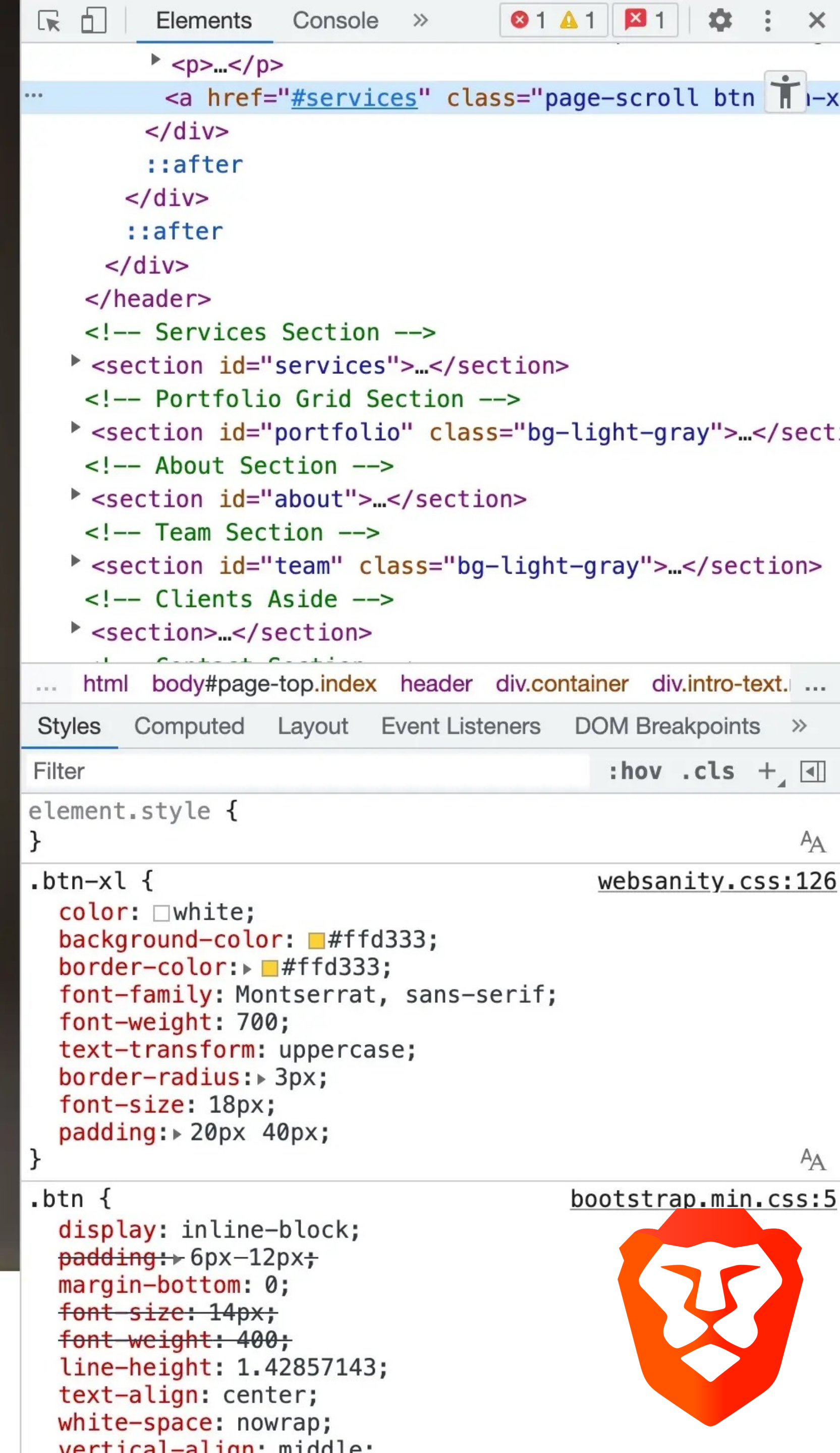


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a.page-scroll.btn.btn-xl 206.85 x 67.71

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Validation



CSS Validation Service

Check Cascading Style Sheets (CSS) and (X)HTML documents with style sheets

By URI

By file upload

By direct input

jigsaw.w3.org/css-validator/

Validate by file upload

Choose the document you would like validated:

Local CSS file:

Choose File

no file selected

► More Options

Check



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Note: If you want to validate your CSS style sheet embedded in an (X)HTML document, you should first [check that the \(X\)HTML you use is valid](#).

Color Pickers



System Color Picker by Sindre Sorhus

Color picker

theolabrothers.com

\$0 in the Mac App Store (& open source!)



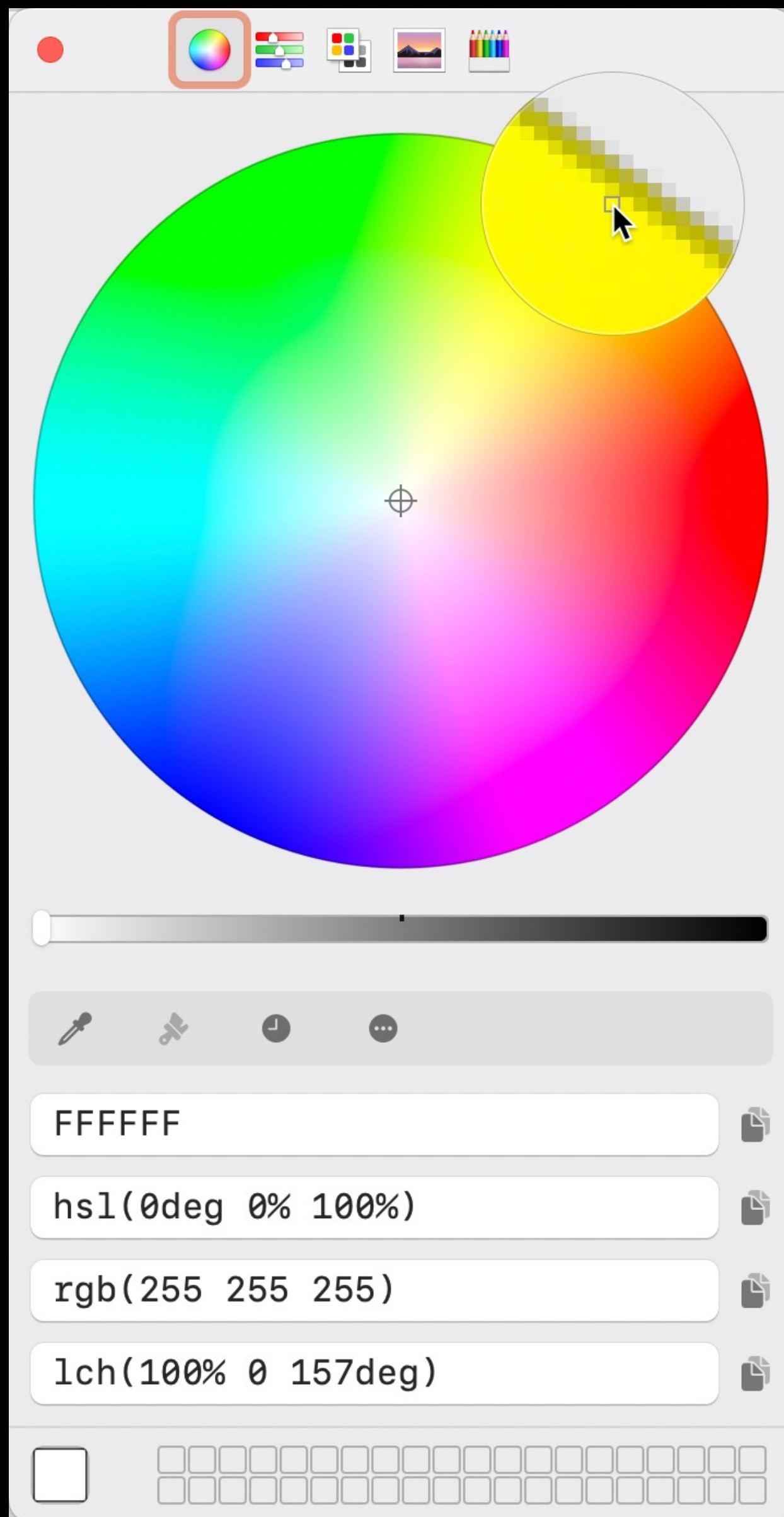
System Color Picker

The familiar color picker supercharged

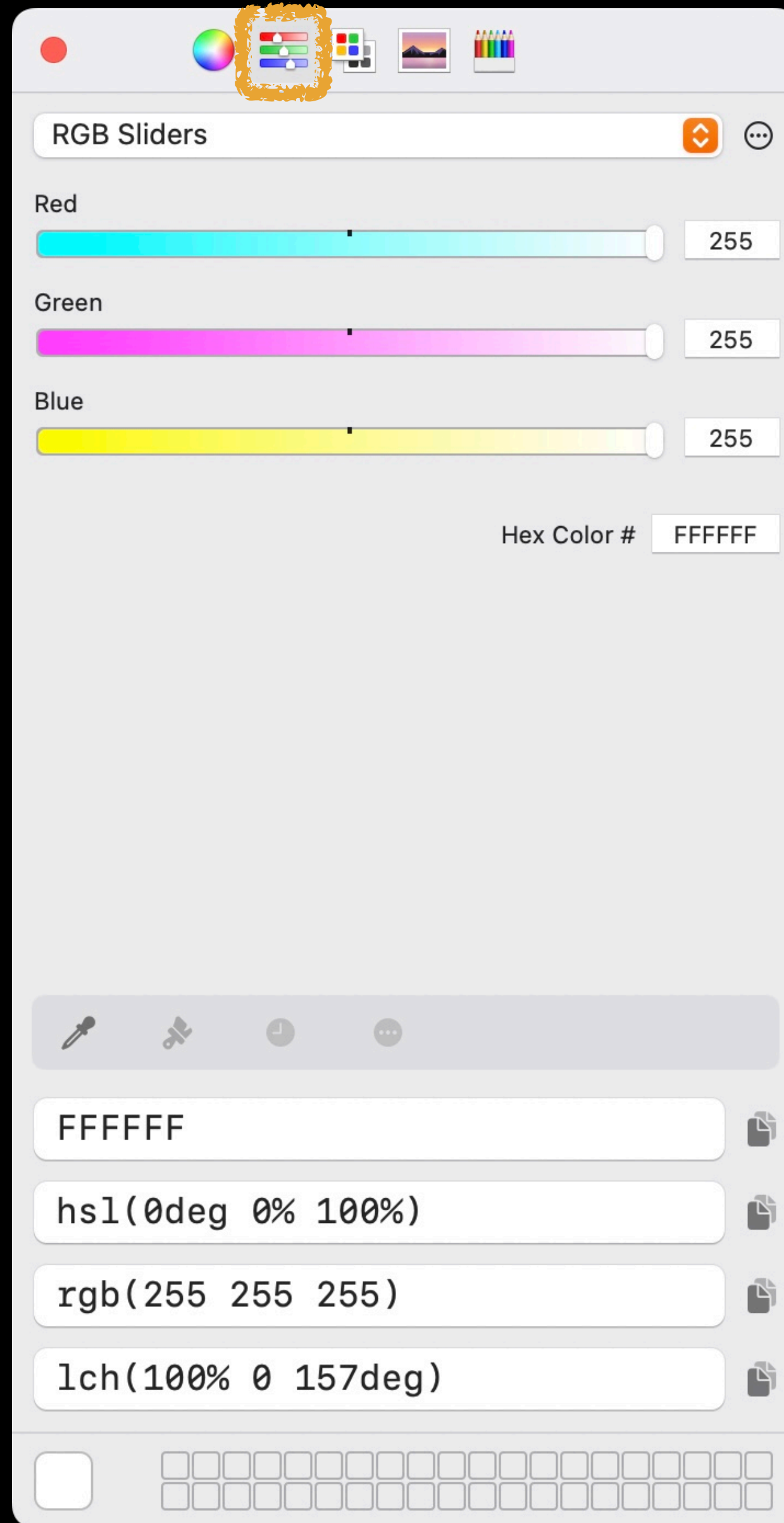


[Read more](#)

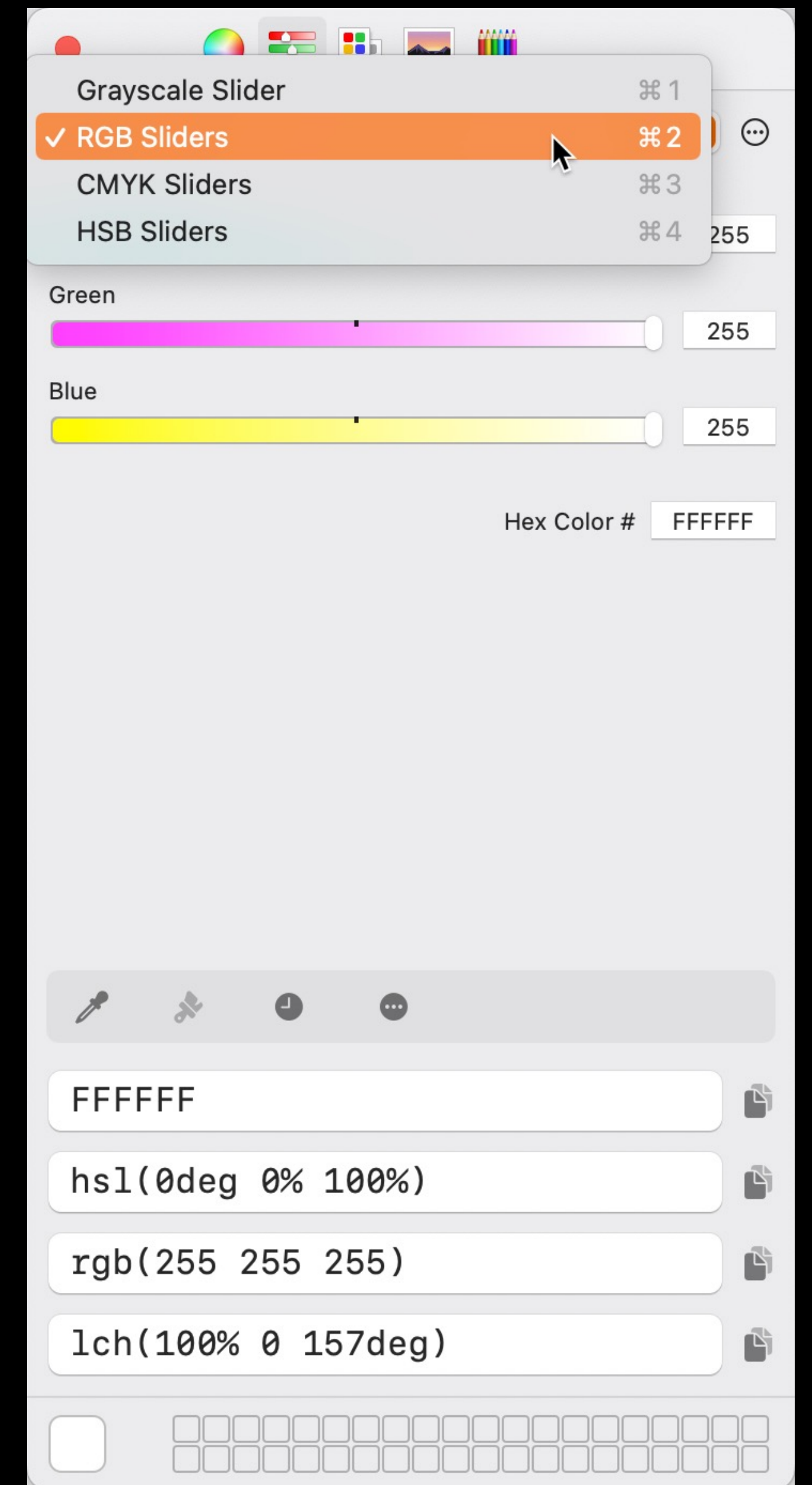
[Source on GitHub](#)

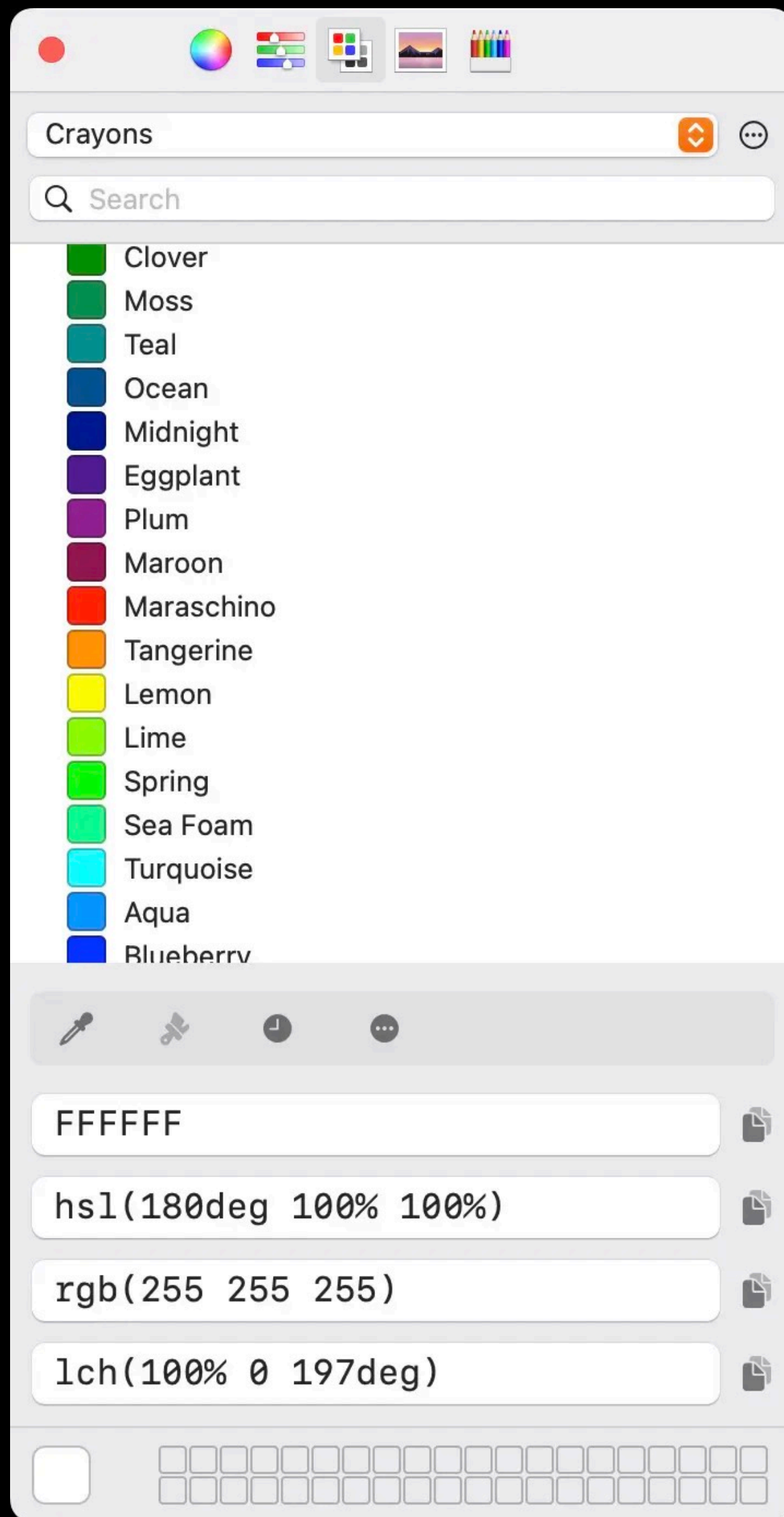


Color Wheel

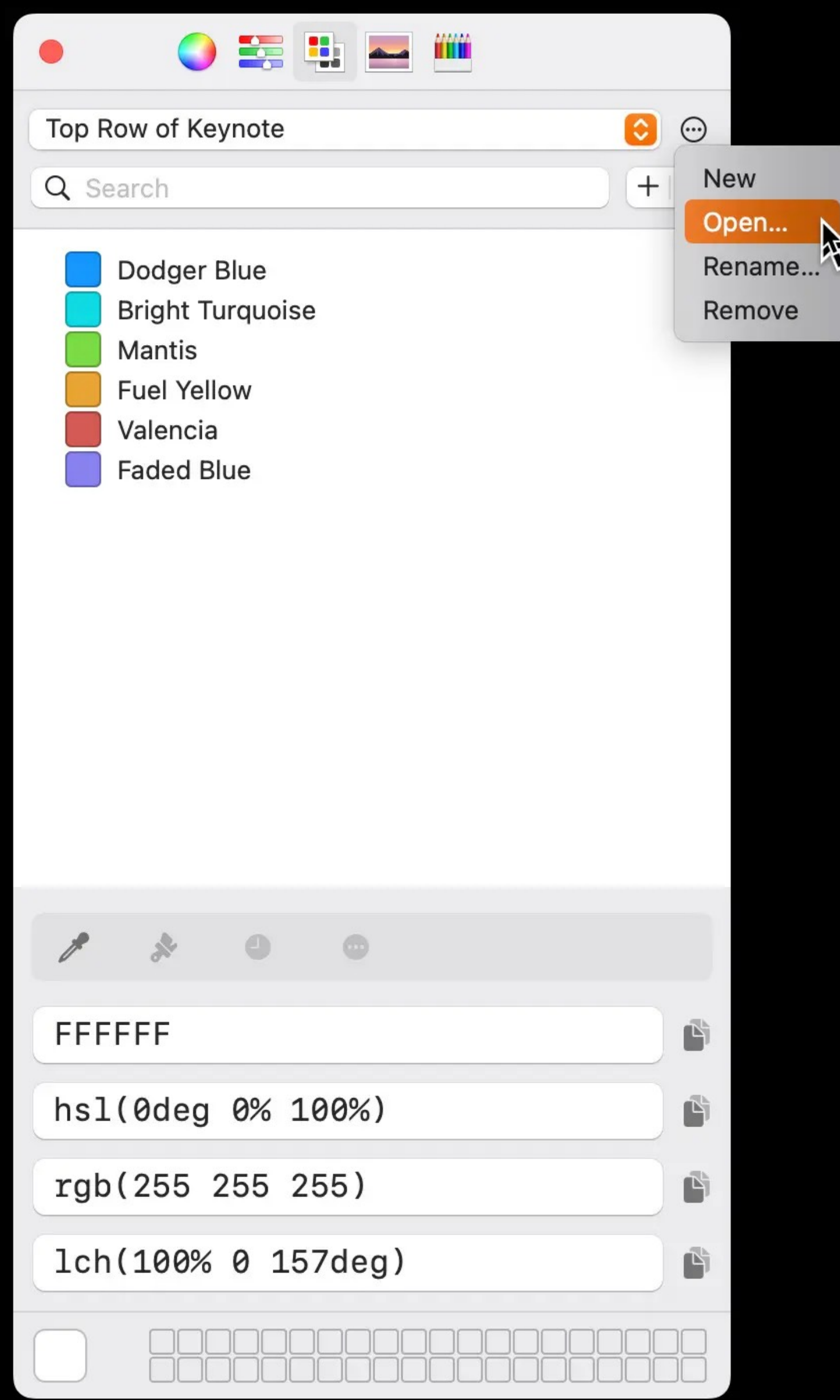


Sliders

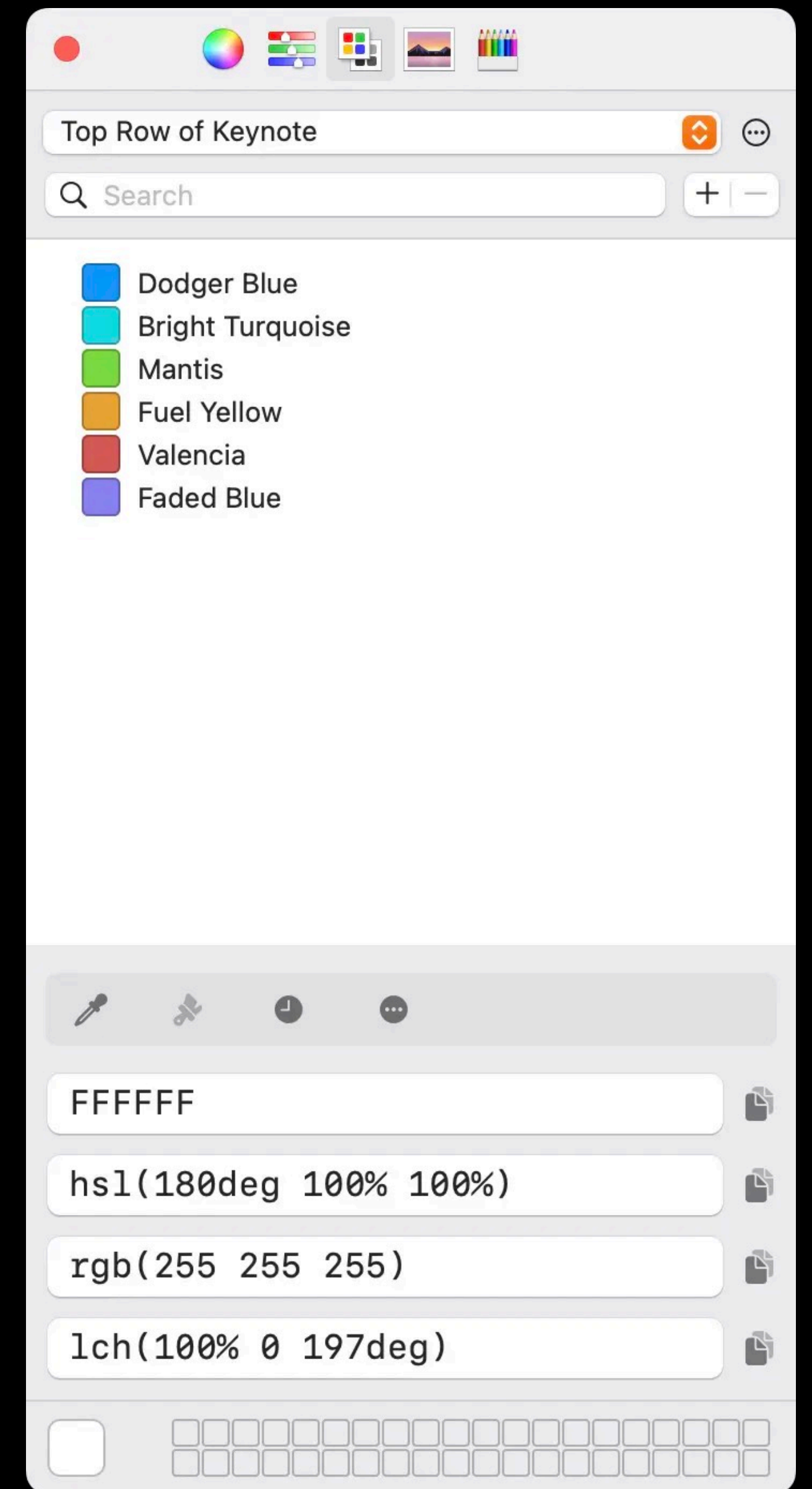




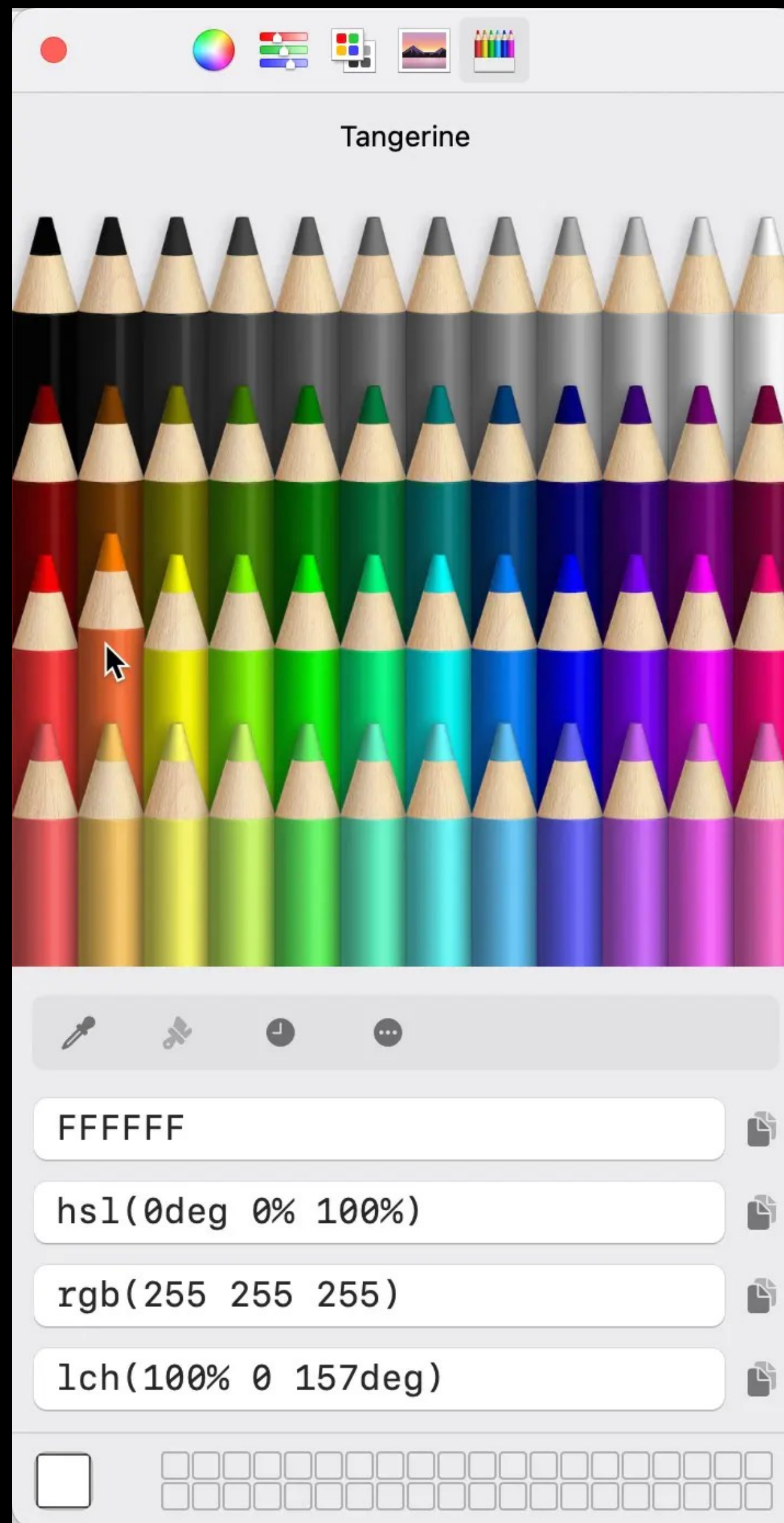
Color Palettes



Open palettes generated elsewhere

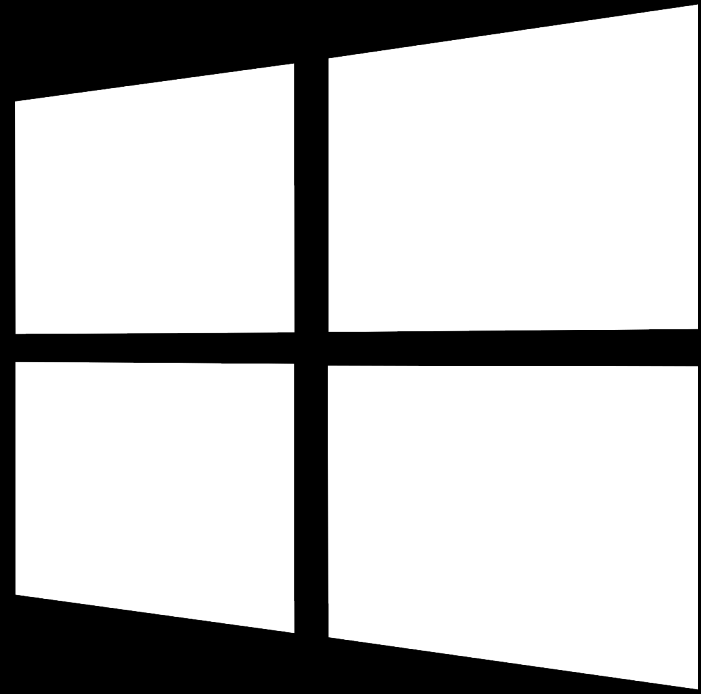


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Pencils

Supports
hexadecimal,
HSL, RGB, & LCH



Color Picker, from Microsoft PowerToys

One of many small, very useful tools

\$0

docs.microsoft.com/en-us/windows/powertoys/

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Microsoft PowerToys: Utilities to customize Windows

Article • 07/06/2022 • 4 minutes to read • [10 contributors](#)



Microsoft PowerToys is a set of utilities for power users to tune and streamline their Windows experience for greater productivity.

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Processor support

- x64: Supported
- Arm: Supported

In this article

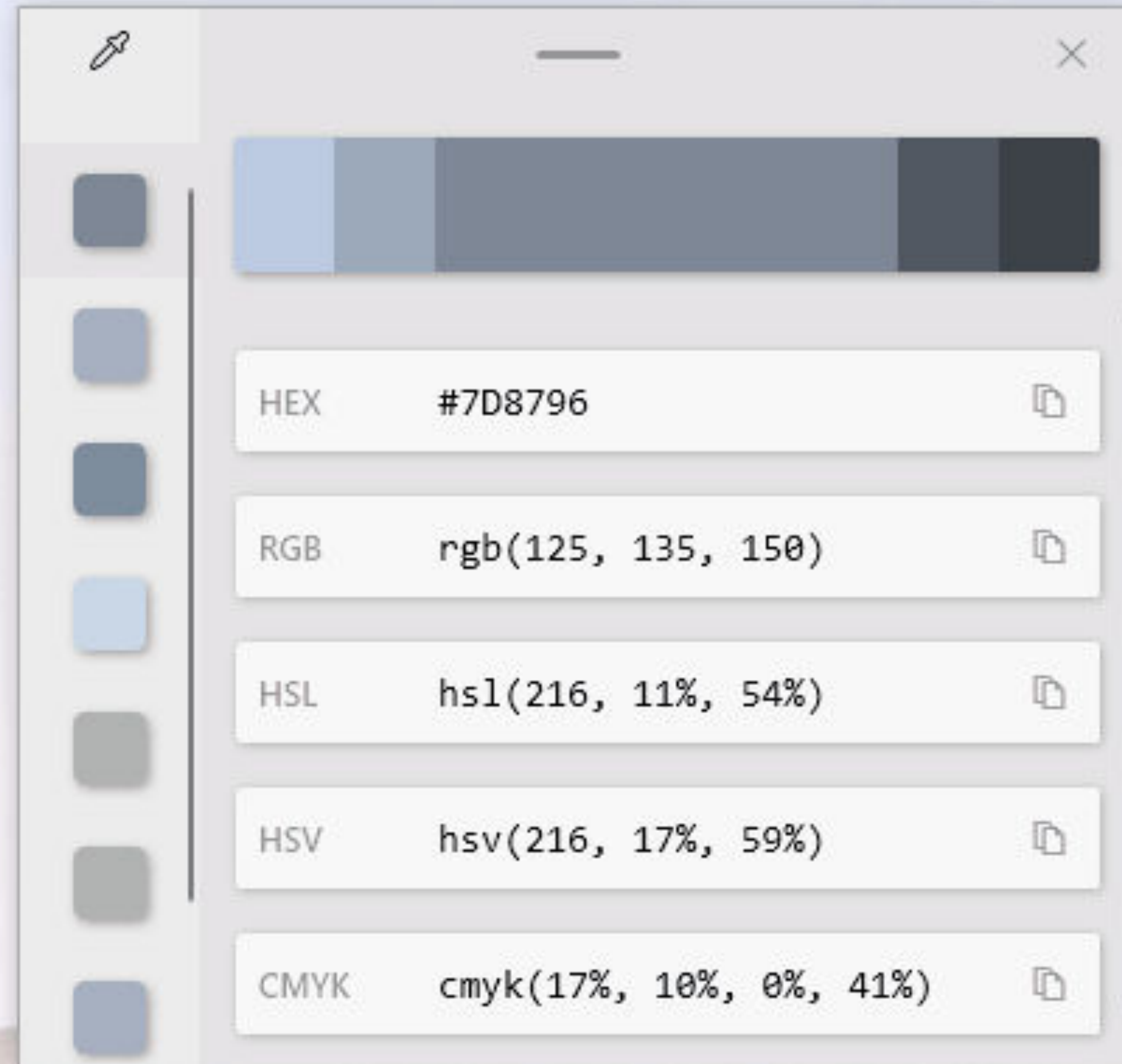
[Processor support](#)

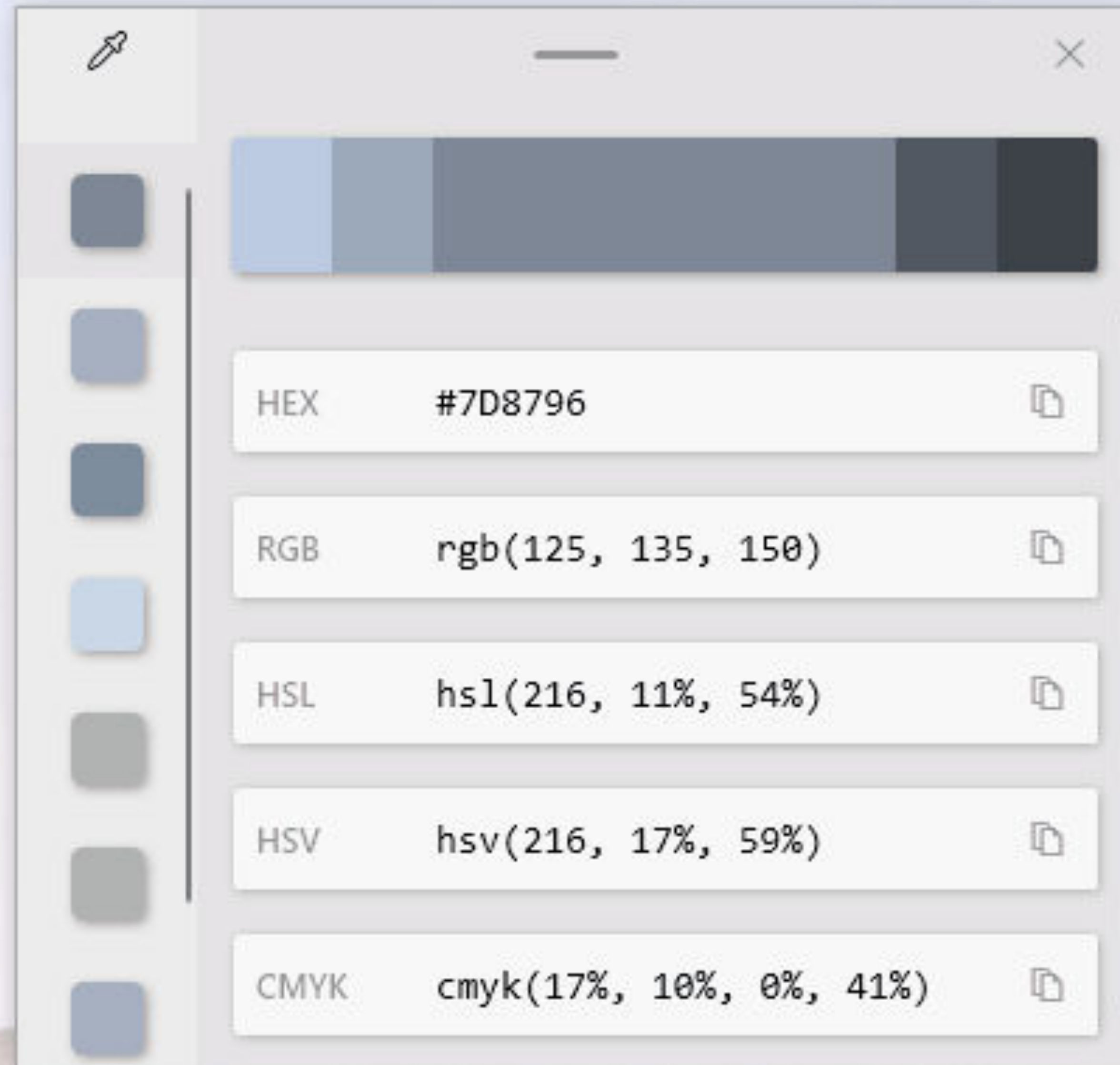
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Thank you!

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CSS Overview

Selectors, Integration, Inheritance, Cascading

R. Scott Granneman & Jans Carton

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Last updated 2022-10-04

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Changelog

2022-10-04 3.0: (con't. from ↓) better images for *Formatting*; better explained when rendering engine matches, inherits, or cascades; removed *CSS Reset Keywords*; added more info to Jon Duckett's book; fixed links & screenshot for System Color Picker; re-did IE user CSS slide layout; re-did all Cascade screenshots; made my Cascade example clearer; linked to Pixel Winch; updated citations in *CSS Reset Keywords*; many other fixes, corrections, & improvements; so many changes I bumped it up to 3.0!

Changelog

2022-10-04 3.0: (con't. from ↓) details re: multiple classes; better on emojis for class names; added note re: `.center`; better annotations for `#ID`; moved *Universal* after *ID*; better labeled *Child Combinator* examples; better labeling for *Selector List* examples; better labeling & citations for *Formatting*; added full citations & better class names to `` & `<div>`; added citations & annotations to Inheritance; changed *Key Selectors* to *Selector Subjects*; added number of inherited properties; (con't. ↑)

Changelog

2022-10-04 3.0: In *Color Pickers*, replaced Sip with System Color Picker by Sindre Sorhus; added disco music in *Why CSS?*; changed *ruleset* to *style rule* per new W3C renaming; between annotations when introducing style rules; added why you should keep CSS [`<link>`](#)s to a minimum; better annotations on *The Thing* & the DOM; added citations; updated list of CSS 4 selectors & added citations; moved `*` last in *Simple Selectors*; you can override type selectors; (con't. ↑)

Changelog

2022-07-24 2.12: Added Color Picker from Microsoft PowerToys to *Color Pickers* & got rid of other Windows-based tools; added warning re descendant combinator

2022-04-15 2.11: Better specificity calculation screenshot; added UserStyles.world screenshots to Stylus; removed a few Stylus screenshots; added chart & *Raising Arizona* clip to Cascade to show conflicting directions; updated Cascade diagrams; moved example of using complex selector instead of class from descendent to child combinator

Changelog

2022-04-15 2.10: Added or updated all citations in *Specificity*; more examples of what get ignored when calculating specificity; updated theme to Granneman 1.7; minor formatting corrections; updated definition of the DOM; better universal selector example; moved more scoped universal selector example to child combinator; added shish kebab icon to Kebab case; new screenshot for `<div>`; added OpenDyslexic3 font to Origin & Importance; added screenshots of Stylus; new screenshots of Inspectors; add more complete, correct citations

Changelog

2021-11-17 2.9: Added Side Note re camelCase & other case names; added simple Browser Processing Pipeline before full diagram as reminder; added much better example of *** in *Universal*; clarified *Specificity*; added Spider-Man head icon to make my joke super-obvious

2021-08-16 2.8: Explained how `@import` is different from Sass `@import`; removed wrong advice to put `@charset` at top of style sheet with emoji; more detail about ~~`@charset`~~ & how parsers detect UTF-8

Changelog

2021-07-13 2.7: Added another explanation of the DOM, from Wikipedia; more improvements to *Specificity*; updated chart in *Reset Keywords*; added conceptual models to DOM

2021-04-12 2.6: Added in Notes that class & ID names are *identifiers*; added better explanation & chart for *Complex Selectors Using Combinators*; completely re-did *Specificity* section; added Side Note under *Linking* about using `@charset "utf-8";`; fixed W3C logo in MDN members

Changelog

2020-11-30 2.5: Re-ordered & changed wording slightly in *Specificity*; updated examples in *Compound Selectors*; added detail re: Shadow DOM & the Cascade; changed *Importance* to *Order & Importance* to match the spec more closely; updated Cascade diagram & improved wording throughout *Cascading Style Sheets*

2020-07-31 2.4: Created diagram for the *Browser Processing Pipeline*; made *Descendant Combinator* examples clearer by adding arrows

Changelog

2020-07-21 2.3: Added list of Web APIs after JavaScript; added slides about design patterns in *Formatting*; added example of looking up property's initial value at MDN; updated screenshot for `initial` value & added explanation to it; added additional, easier examples for descendant & child combinators; changed *CSS Resets* to *CSS Reset Keywords*; improved wording explaining `inherit` value; moved *Key Selectors* at the beginning of *Complex Selectors*

Changelog

2020-07-15 2.2: Minor fixes; re-did *Specificity* completely; removed the *Miller's Crossing* example; made clearer in *Order* what is in HTML & what is in CSS

2020-07-10 2.1: Added note about Safari bug with `all: unset`

Changelog

2020-07-09 2.0: (con't. from ↓) added better descriptions of `` & `<div>`; changed “Default inherited properties” to “Partial list of inherited properties” & added `text-edge`; added detail to MDN’s CSS Reference in *Tools*; updated screenshots of CSS-Tricks in *Tools*; added CSS Resets section for `initial`, `inherit`, `unset`, `revert`, & `all`; added explanation of CSS keywords; so many changes I bumped version number up to 2!

Changelog

2020-07-09 2.0: Added more details to Specificity; minor edits; added definition of simple selector; moved *Key Selectors* under *Complex Selectors*; for user styles, gave more detail re: Firefox's `userContent.css`, Chrome, & extensions, & updated screenshot of Safari's Advanced Preferences; better screenshot for embedded styles; updated screenshot for `.class` selector; updated table showing difference between HTML & CSS terms; added order Jans places things in his stylesheets; (con't. ↑)

Changelog

2018-12-06 1.20: Added screenshots showing embedding with `<style>` & how to link to `main.css`; added logos for MDN supporters; `*:first-child` is the same as `:first-child`; added Side Note re: using 2 `class` attributes; in Formatting, always put `;` at the end of each declaration; added CSS Tricks to Tools; in Class, told viewer to see Compound to learn how to match an element with 2 classes; screenshots for `@import` & reorganized those slides; minor wording changes; better example for Compound selectors; replaced ID screenshots

Changelog

2018-11-21 1.19: Called out items on browser processing pipeline illustration; fixed image for multiple classes (`<figurecaption>?!`); updated screenshots for child combinator; for selector lists, removed silly example & added headings slide; added Side Note on `<div>` that it should semantically be ``; fixed Cascade example so proper method is shown; added slides showing difference between descendant & child combinators; added table on Time & User Perception to `@import`; replaced `inherit` screenshot

Changelog

2018-10-01 1.18: Added how DOM changes attribute-value pairs; replaced DOM section with The Browser Processing Pipeline; fixed Default inherited properties slide; updated theme to Granneman 1.5; added Walt Whitman on contradicting yourself

2017-11-06 1.17: Improved key selectors; added reasons for user CSS

Changelog

2017-10-30 1.16: Added Just Color Picker; added screenshot of ColorPro website; changed color of some arrows & shapes to **Tulip Tree** (**#E8A433**); better solutions to specificity problem with **.callOut**; fixed wording to be correct &/or more specific; added emoji for class names; added Opera user-agent styles; better examples for Key Selectors; applied Granneman 1.4 theme; fixed formatting issues; added default order I use in stylesheets

Changelog

2017-10-25 1.15: Added better examples for DOM vs source code; organized Basic Selectors much better; moved Key Selectors, IDs as page fragment identifiers & JavaScript hooks, & Compound Selector example from CSS Selectors to here; gave full list of selectors & grayed out ones we're not covering here; fixed wording introducing the Cascade

Changelog

2017-10-18 1.14: Took out details about how to turn on Firefox 3D View, since it's not longer supported; made Cascading chapter slide italicized; corrected & added info on anonymous boxes; in History, hid modules & added Can I Use, minor fixes & corrections

2016-09-23 1.13: Moved slide comparing class & ID; under Importance, rearranged IE & Safari & added Firefox for Windows, Chrome, & Edge; re-ordered examples of Descendant Combinator; fixed formatting errors

Changelog

2016-09-16 1.12: Updated theme to Granneman 1.2; small changes in wording to make things clearer; cleaned up formatting in a few places; added slide re: using classes instead of IDs; fixed slides in Selector Grouping; changed Important example from WordPress to Bootstrap; fixed wrong information re: `class` & `id` values & clarified; added example for Descendant Combinator

Changelog

2016-01-20 1.11: Added slide re: CSS3 Taxonomy & Status; better explanation why we need `<div>`; added note re: specificity

2016-01-11 1.10: Minor improvements taken from CSS - Selectors; added Child Combinator to Selectors; added another example of Child Combinator; added screenshots of browser CSS; explained author vs author in Importance; explained how my Safari CSS works; added a long example showing how the Cascade works in practice

Changelog

2015-12-13 1.9: Clarified source of DOM quote; changed numbers of selectors; got rid of **E** & **F** in selectors & made them clearer; changed **.bigRed** to **.big-red**; clarified source of class & ID names; add tweet re: CSS to beginning

2015-05-10 1.8: Added info about CSS 4; clarified that **** & **<div>** draw boxes; added additional names of directories that are always created; changed “What Google prefers” to “... uses”; removed Hues & added Sip to Color Pickers; fixed URL & screenshots for CSS Vocabulary; moved Viewport Resizer to Bootstrap; for Separation of Concerns, added “& Meaning” to HTML

Changelog

2015-03-06 1.7: Added another example of selector grouping; added details about *resource inlining*

2015-01-12 1.6: Added my `safari.css` file; clarified & added info on specificity

2015-01-11 1.5: Clarified Inheritance

2014-09-27 1.4: Changed “browser” to “rendering engine” in a few places where it made sense

Changelog

2014-08-12 1.3: Improved Descendant Selector examples; improved wording & added slides in DOM section; improved Cascade diagram; fixed `<div>` screenshot; added URLs for `<div>` & `` screenshots; fixed Viewport Resizer screenshots

2014-08-10 1.2: Added DOM spec info & screenshots of DOM & Source Code; added details about Firefox Web Dev Tools

2014-08-04 1.1.1: Added definition of *anonymous object*

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