Utility First CSS Isn't Inline Styles



Sarah Dayan | Principal Engineer at Algolia | CSS Day 2024



Hi, I'm Sarah! 📎

Principal Engineer at Algolia JavaScript & CSS Lover Massive Cheese Enthusiast

s exen a programming anguage?

Are you sure you don't want to be a manager?



Rapidly build modern websites without ever leaving your HTML.

A utility-first CSS framework packed with classes like **flex**, **pt-4**, **text-center** and **rotate-90** that can be composed to build any design, directly in your markup.

Get started



"Tailwind CSS is the only framework seen scale on large teams. It's easy customize, adapts to any design, an build size is tiny."

Sarah Dayan Staff Engineer, Algolia

	Q	Quick s	earch	жк
				<figure class="md:flex bg-slate-100 rounded-xl p-8 md:p-0 dag</th></tr><tr><th></th><th></th><th></th><th></th><th><pre><ing class=" h-24="" md:h-auto="" md:rounded-none="" md:w-48="" pre="" rou<="" w-24=""></figure>
				<pre><div <="" class="pt-6 md:p-8 text-center md:text-left space-y-4" pre=""></div></pre>
				<blockquote></blockquote>
rk that l've		've		"Tailwind CSS is the only framework that I've seen so
y t				on large teams. It's easy to customize, adapts to any
-	d the			and the build size is tiny."
				<pre><figcaption class="font-medium"> </figcaption></pre>
				<pre><div class="text-sky-500 dark:text-sky-400"> Sarah Dayan</div></pre>
				<pre><div class="text-slate-700 dark:text-slate-500"></div></pre>
			16	Staff Engineer, Algolia
			18	
			19	
			20	
		<u> </u>		



class="flex gap-x-4 py-5"> <div class="min-w-0"> Sarah Dayan Principal Engineer at Algolia </div>

class="divide-y divide-gray-100"> class="flex gap-x-4 py-5"> <div class="min-w-0"> Sarah Dayan Principal Engineer at Algolia </div>

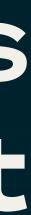
Atomic (or utility-first) CSS Visual APIs



 <div class="list-content"> Sarah Dayan Principal Engineer at Algolia </div>

 <div class="list-content"> Sarah Dayan Principal Engineer at Algolia </div>

Semantic CSS Identity-based contract



CSS Utility Classes and "Separation of Concerns"

"functional CSS."

Writing CSS this way can evoke a pretty visceral reaction from a lot of developers, so I'd like to explain how I got to this point and share some of the lessons and insights I've picked up along the way.

Phase 1: "Semantic" CSS

One of the best practices you'll hear about when you're trying to learn how to CSS good is "separation of concerns."

UnoCSS **Instant On-demand Atomic CSS Engine**

Customizable · Powerful · Fast · Joyful

etting Started Interactive Docs Playgro	ound
*	(
Fully Customizable	Ins
No core utilities, all functionalities are provided ria presets.	No tha
Getting Started →	
*	6
Rich Integrations	Sh
First class support of Vite, Webpack, PostCSS, CLI, VS Code, ESLint, etc.	Alia
.earn more →	Co
\odot	<u>ן</u>
Pure CSS Icons	Va
Jse any icon as a single class	Sho
@unocss/preset-icons →	@u

Built for designing.

Create fast loading, highly readable, and 100% responsive interfaces with as little css as possible.

Getting Started

Copy the line of code below and paste it in the head of the html file(s) you want to include tachyons in. <link rel="stylesheet" href="https://unpkg.com/tachyons@4.12.0/css/tachyons.min.css"/>

or install via npm npm install tachyons@4.12.0

or grab all the source files and build+develop locally git clone git@github.com:tachyons-css/tachyons.git

Create small, reusable CSS that scales as your website grows.

Atomizer is an unopinionated CSS utility library for modern websites. Just add classes like D(f) and Fz(1.5rem) to your markup to efficiently style your website.

Meet Atomizer!

Atomizer generates a simple static CSS stylesheet from the Atomizer classes you define in your project or predeclared configured styles - it's up to you.

Atomizer is not opinionated, brings no CSS of its own and integrates nicely with your favorite task runner.



Testimonials

We released Atomizer almost 10 years ago and to this day it is used on massive web

Truly pioneering work that deserves an enormous amount of credit - Tailwind Initially I did not like the concept, I had Atomizer is a v experience in using Bootstrap UI Library solves lots CS

Reimagine Atomic CSS

Oct 26, 2021 · 25min

This post will be a bit longer than usual. It's quite a big announcement to me, and there are many things I want to talk about. I'll be appreciated if you take the time to read through it. The table of contents is hidden on the left if you are on a desktop. Hope you enjoy :)

中文 Chinese Version

What is Atomic CSS?

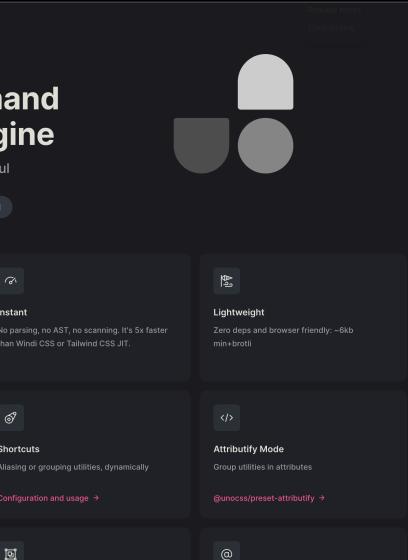
Let's first give a proper definition to **Atomic CSS**:

From this article by John Polacek:

Atomic CSS is the approach to CSS architecture that favors small, single-purpose classes with names based on visual function.

Some might also call it Functional CSS, or CSS utilities. Basically, you can say an

Over the last several years, the way I write CSS has transitioned from a very "semantic" approach to something much more like what is often called



CSS Directives Reuse utils in CSS with @apply directive



I for group utils with common prefixes

January 15, 2018

In Defense of Utility-First CSS

"Favor composition over inheritance". This piece of wisdom from Design Patterns, one of the most influential software engineering books, is the foundation of **utility-first CSS**. It also shares many principles with **functional programming**: immutability, composability, predictability, and avoidance of side-effects. The goal behind all those fancy terms is to write code that's easier to maintain and to scale.

Despite its growing popularity, utility-first CSS still hasn't convinced everyone. While some praise it, others have been vividly critical about such a practice. I used to be in the latter group. I was a BEM fan, sold to an approach I adopted for its advantages and ended up rooting for like we do for a sports team. I rejected utility-first because it was implying my beloved and familiar approach wasn't good anymore.

Q Quick search ⊮K	Installation				
	Get started with Tailwind CSS Tailwind CSS works by scanning all of your HTML files, JavaScript components, and any other template for class names, generating the corresponding styles and then writing them to a static CSS file.				
Documentation					
Components					
Templates	It's fast, flexible, and reliable — with zero-runtime.				
Screencasts					
OPlayground	Installation				
Resources	Tribuird OL L. Uning DectOCC Engineering Outdoo Digu ODN				
Community	Tailwind CLI Using PostCSS Framework Guides Play CDN				
Getting Started	The simplest and fastest way to get up and running with Tailwind CSS from scratch is with the				
Installation	Tailwind CLI tool. The CLI is also available as a <u>standalone executable</u> if you want to use it without				
Editor Setup	installing Node.js.				
Using with Preprocessors					
Optimizing for Production	1 Install Tailwind CSS	Terminal			
Browser Support	Install `tailwindcss` via npm, and create your				
Upgrade Guide	`tailwind.config.js` file.	 > npm install -D tailwindcss > npx tailwindcss init 			
Core Concepts					
	Configure your template paths Add the paths to all of your template files in your	tailwind.config.js			
	`tailwind.config.js` file.	/** @type {import('tailwindcss').Config} */			
		<pre>module.exports = { content: ["./src/**/*.{html,js}"],</pre>			
		theme: {			
		extend: {}, },			
		<pre>,, plugins: [],</pre>			
	3 Add the Tailwind directives to your CSS	src/input.css			
	Add the `atailwind` directives for each of Tailwind's				
	layers to your main CSS file.	<pre>@tailwind base; @tailwind components;</pre>			
		<pre>@tailwind utilities;</pre>			



Atomic CSS

Semantic CSS



Atomic CSS

Semantic CSS



It violates separation of concerns!







It's ugly and hard to read!

youtu.be/R50q4NES6lw

dotCSS 2019

Sarah Dayan IN DEFENSE OF UTILITY-FIRST CSS





It's just the same as inline styles!



It's just the same as inline styles!

Inline styles only have a local impact.



<article style="color: darkblue"> <header> <h2>Blade Runner 2049</h2> </header> <section> Officer K (Ryan Gosling), a new blade runner for the Los Angeles Police Department, unearths a long-buried secret that has the potential to plunge what's left of society into chaos. </section> </article>

No pseudo-classes No pseudo-elements No combinators No media queries No animations

Atomic classes live in style sheets.

.on-hover\:text-red:hover { color: red;

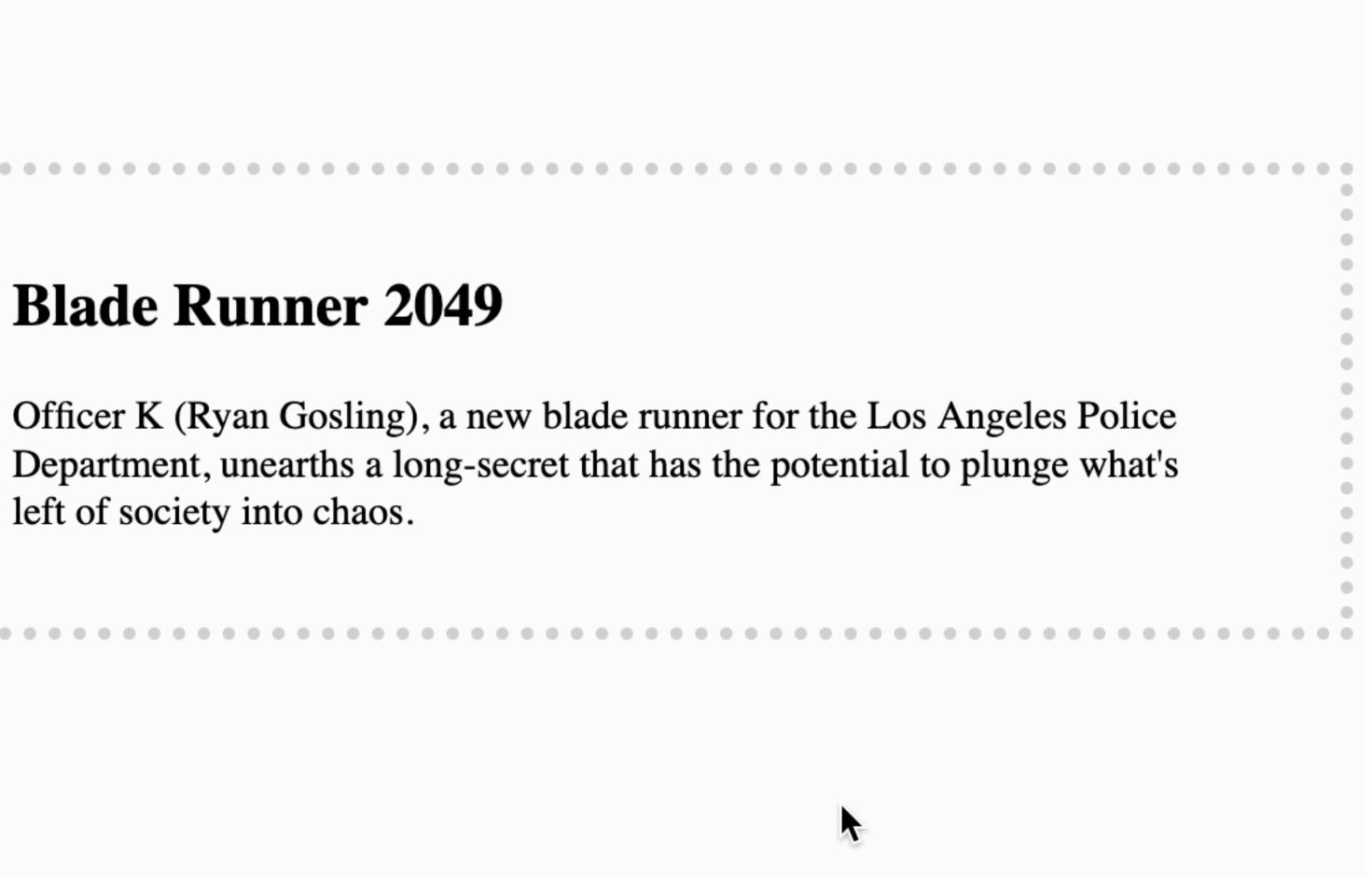
<article> <header> <h2>Blade Runner 2049</h2> </header> <section> Officer K (Ryan Gosling), a new blade runner for the Los Angeles Police Department, unearths a long-secret that has the potential to plunge what's left of society into chaos. </section> </article>

.group:hover .group-hover\:text-red { color: red;

<article class="group"> <header class="group-hover:text-red"> <h2>Blade Runner 2049</h2> </header> <section> Officer K (Ryan Gosling), a new blade runner for the Los Angeles Police Department, unearths a long-secret that has the potential to plunge what's left of society into chaos. </section> </article>

Blade Runner 2049

left of society into chaos.



Wait, it gets quirkier.

.peer:in-range ~ .peer-invalid { visibility: hidden;

.peer:out-of-range ~ .peer-invalid { visibility: visible;

<form> <label> Date <input type="date" class="peer" min = "2024 - 01 - 01"max = "2024 - 12 - 31"/> Please provide a valid date. </label> </form>

Date jj / mm / aaaa 📛
• • • • • • • • • • • • • • • • • • • •

.col-4	.col-4	.col-4
.col-sm-4	.col-sm-4	.col-sm-4
.col-md-4	.col-md-4	.col-md-4
	.col-lg-4	
	.col-lg-4	
	.col-lg-4	
	.col-xl-4	
	.col-xl-4	
	.col-xl-4	







@media (min-width: 768px) { .col-md-1 { flex: 0 0 auto; width: 8.33333333; } .col-md-2 { flex: 0 0 auto; width: 16.666666678; } .col-md-3 { flex: 0 0 auto; width: 25%;

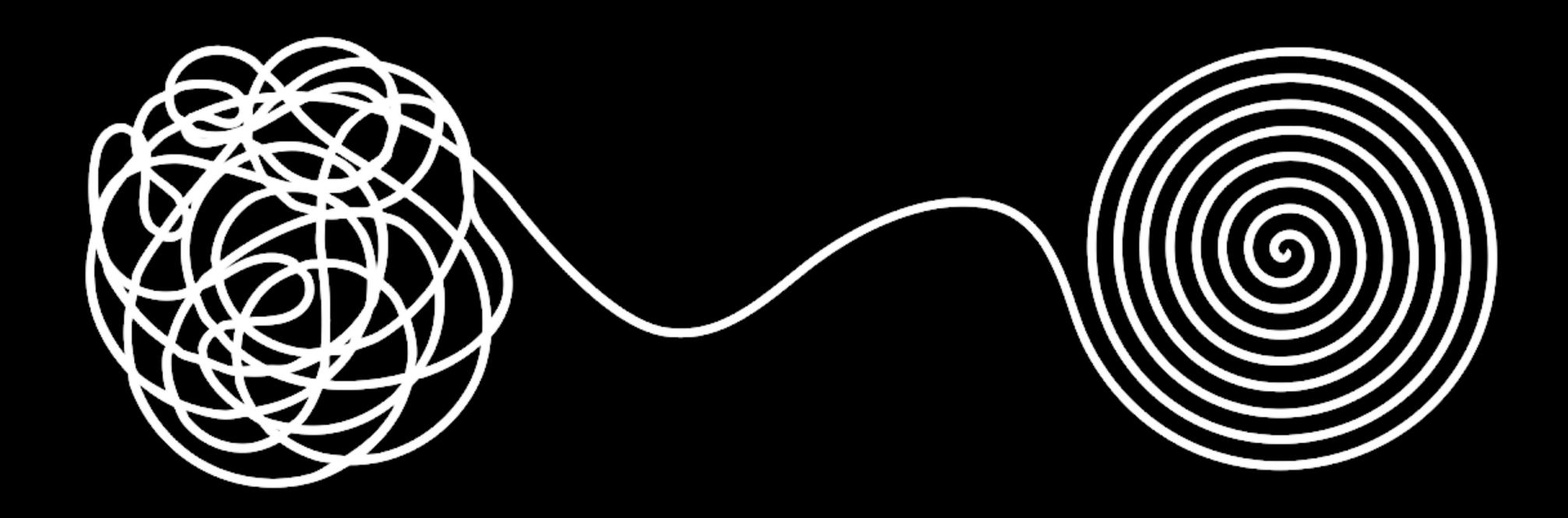
@media (hover: none)
and (pointer: coarse) {
 .on-touch\:block {
 display: block;

@media (orientation: landscape) { .on-landscape\:hidden { display: none;

.dark\:bg-darkblue { color: darkblue;

@media (prefers-color-scheme: dark) {

Atomic classes have context.



Inline styles are unbounded.



Zinc/100 #f4f4f5 • RGB: 244,244,245 Zinc/200 #e4e4e7 • RGB: 228,228,231

Zinc/300 #d4d4d8 • RGB: 212,212,216

Zinc/400 #a1a1aa • RGB: 161,161,170

Neutral



Neutral/100 #f5f5f5 • RGB: 245,245,245 Neutral/200 #e5e5e5 • RGB: 229,229,229 Neutral/300 #d4d4d4 • RGB: 212,212,212



Stone



Stone/100 #f5f5f4 • RGB: 245,245,244 Stone/200 #e7e5e4 • RGB: 231,229,228



Stone/400 #a8a29e • RGB: 168,162,158

Red

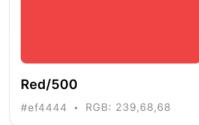




#fecaca • RGB: 254,202,202

Red/300 #fca5a5 • RGB: 252,165,165



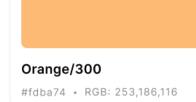


Orange





Orange/200 #fed7aa • RGB: 254,215,170



Orange/400

#fb923c • RGB: 251,146,60

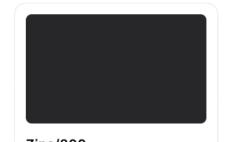




#52525b • RGB: 82,82,91



#3f3f46 • RGB: 63,63,70



Zinc/800 #27272a • RGB: 39,39,42



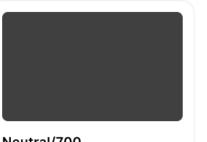
Zinc/900 #18181b • RGB: 24,24,27 Zinc/950 #09090b • RGB: 9,9,11



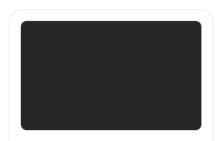
#737373 • RGB: 115,115,115



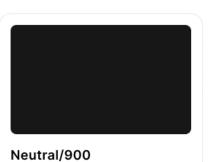
#525252 • RGB: 82,82,82



Neutral/700 #404040 • RGB: 64,64,64



Neutral/800 #262626 • RGB: 38,38,38



#171717 • RGB: 23,23,23

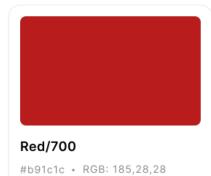
Neutral/950

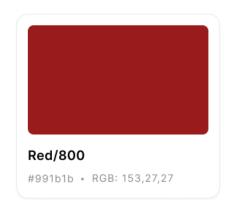
#0a0a0a • RGB: 10,10,10

Stone/950



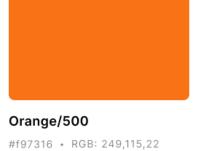


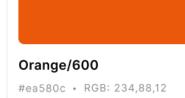


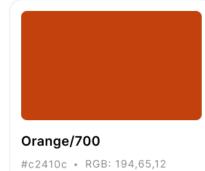


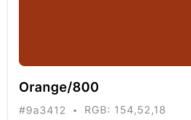


Red/950 #450a0a • RGB: 69,10,10



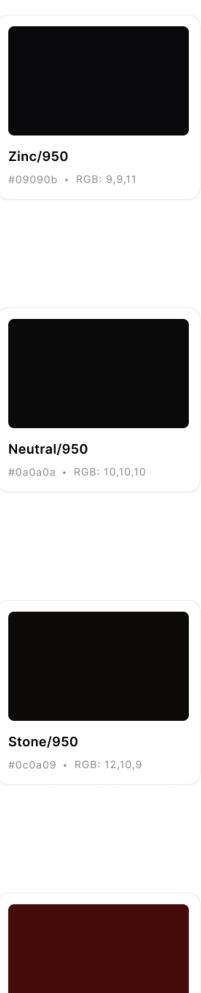








Orange/950 #431407 • RGB: 67,20,7



10	2.5rem	40px	
11	2.75rem	44px	
12	3rem	48px	
14	3.5rem	56px	
16	4rem	64px	
20	5rem	80px	
24	6rem	96px	
28	7rem	112px	
32	8rem	128px	
36	9rem	144px	

40	10rem	160px	
44	11rem	176px	
48	12rem	192px	
52	13rem	208px	
56	14rem	224px	
60	15rem	240px	
64	16rem	256px	
72	18rem	288px	
80	20rem	320px	
96	24rem	384px	

Inline styles don't have a strategy.

Atomic classes are a system.

Inline styles convey no intent.

.COl {float:left}

.COl { float: left }

.COl { float: left }



.COl { float: left }

Π

.COl { float: left }

.COl { float: left }





.clearfix:after { content: ''; display: table; clear: both;



<header> <h2 style=" overflow: hidden; text-overflow: ellipsis; white-space: nowrap >

Blade Runner 2049 </h2> </header>

<header> <h2 class="truncate"> Blade Runner 2049 </h2> </header>



```
<header>
  <h2
    style="
      overflow: hidden;
      text-overflow: ellipsis;
      white-space: nowrap
    >
    Blade Runner 2049
 </h2>
</header>
```

<header>
<h2 class="truncate">
Blade Runner 2049
</h2>
</header>

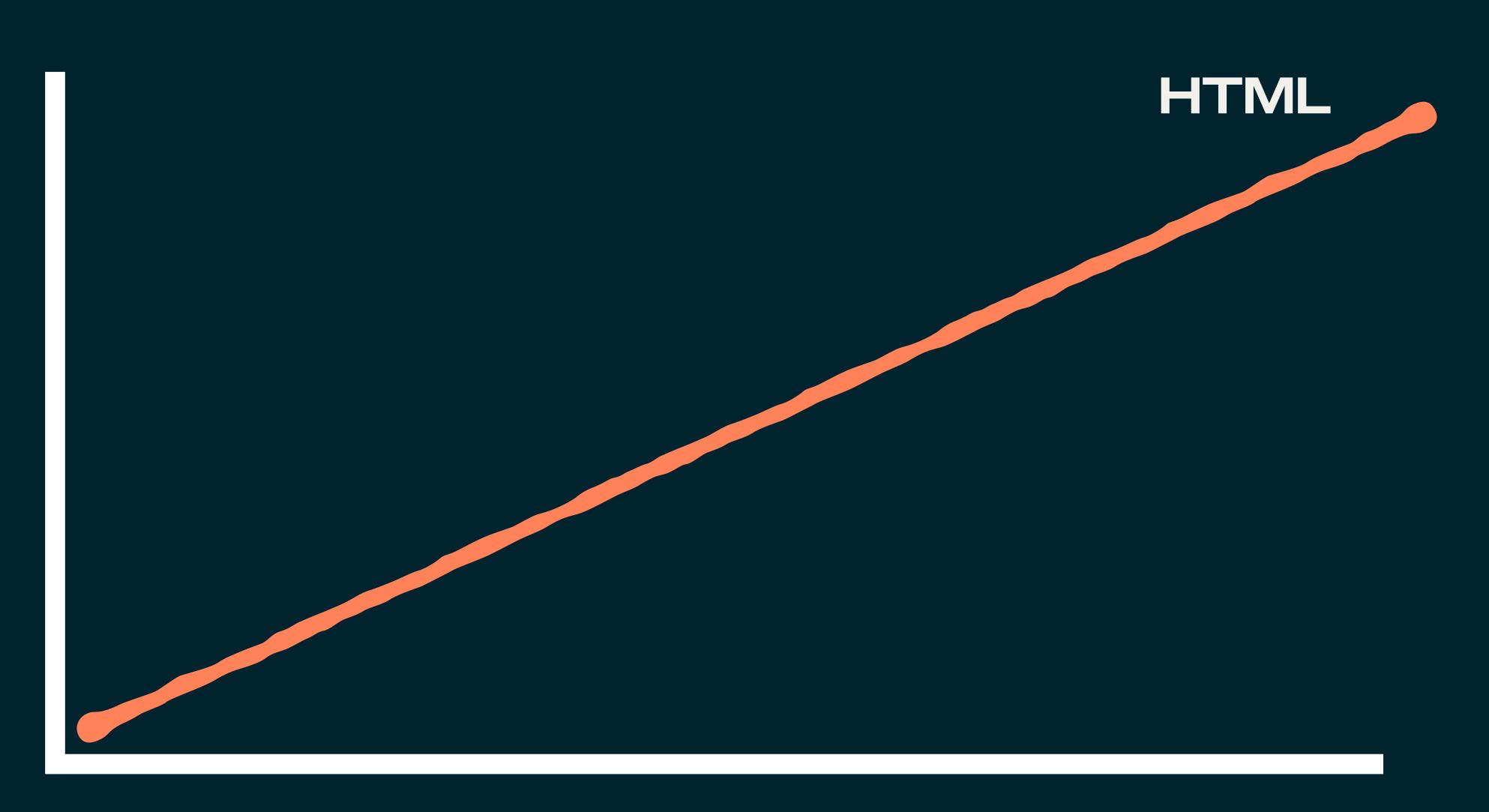
All abstractions convey intent.

Atomic CSS abstracts visuals, not identity.

Atomic CSS abstracts visuals, not identity.

Inline styles aren't cacheable.

File updates





Sunday, May 26, 2024 Today's Paper



U.S. ~ World \sim Lifestyle 🗸 Business 🗸 Arts 🗸

2024

Q

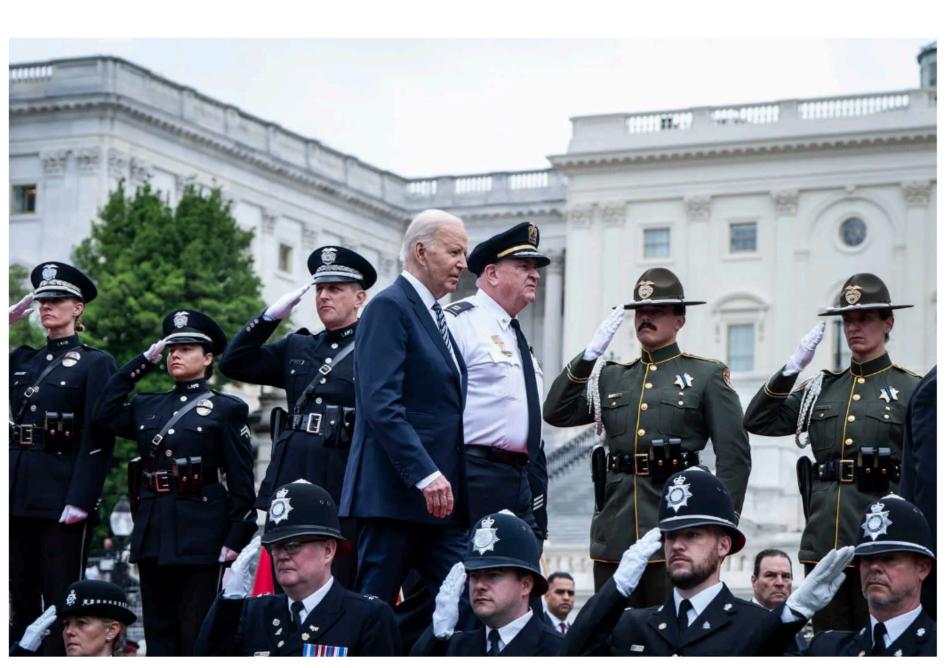
Even as Violent Crime Drops, Lawlessness Rises as an Election Issue

In most U.S. cities, rates of homicide and violent assault are down from pandemic-era highs. But property crimes have risen, fueling voter anxiety.

7 MIN READ

Trump's Post-Verdict Playbook: Anger and Retribution, Regardless of Outcome

Donald Trump has a history of attacking investigators, blaming President Biden and seeking vengeance on those who cross him. 5 MIN READ



Senator John Fetterman has battled with progressives on Israel, immigration and energy, alienating some supporters. 8 MIN READ

Election updates: Senator Tim Scott said Black Americans would be better off under another Trump administration. See more updates 6+

Optimistic About the War in Ukraine, Putin Unleashes a Purge at Home

Despite years of criticism President Vladimi



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Haiyun Jiang for The New York Times

Opinion

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'Contact. I.E.D.'

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MOHAMMAD ALI

Indians Are About to Re-elect a Dangerous Islamophobe

6 MIN READ

MICHELLE COTTLE

Marjorie Taylor Greene Has a Decision to





Issue

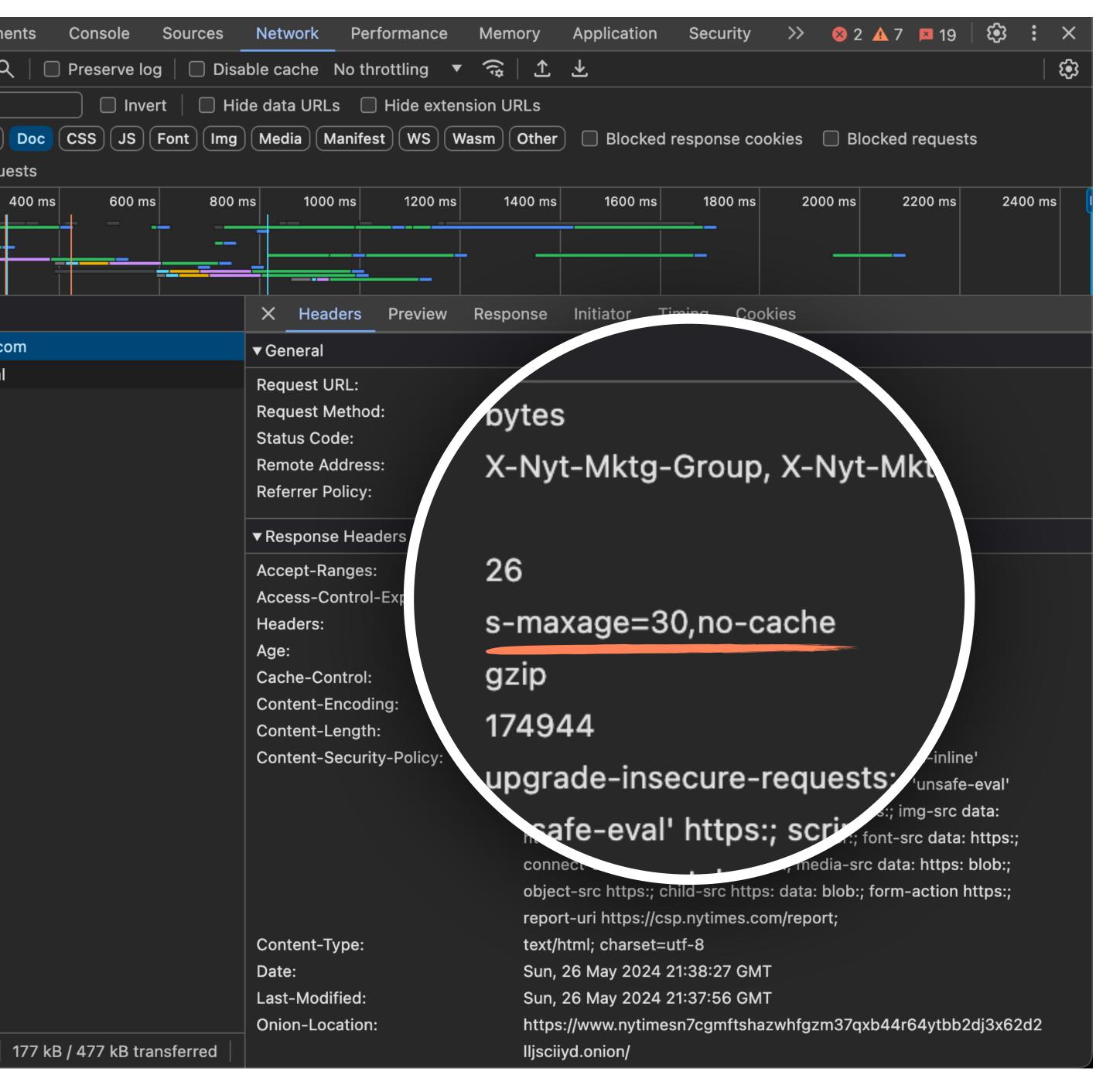
In most U.S. cities, rates of homicide and violent assault are down from pandemic-era highs. But property crimes have risen, fueling voter anxiety.

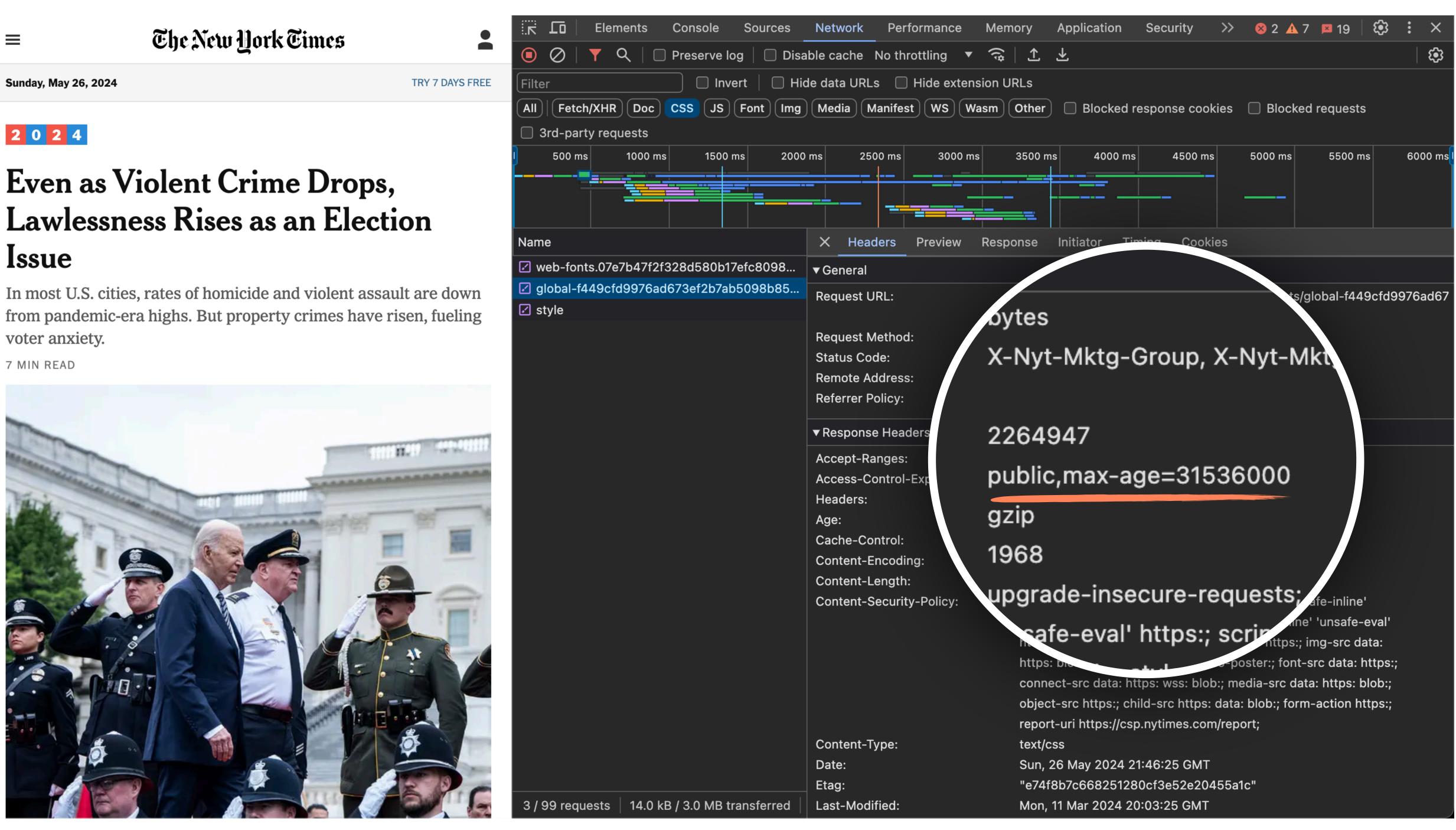
7 MIN READ

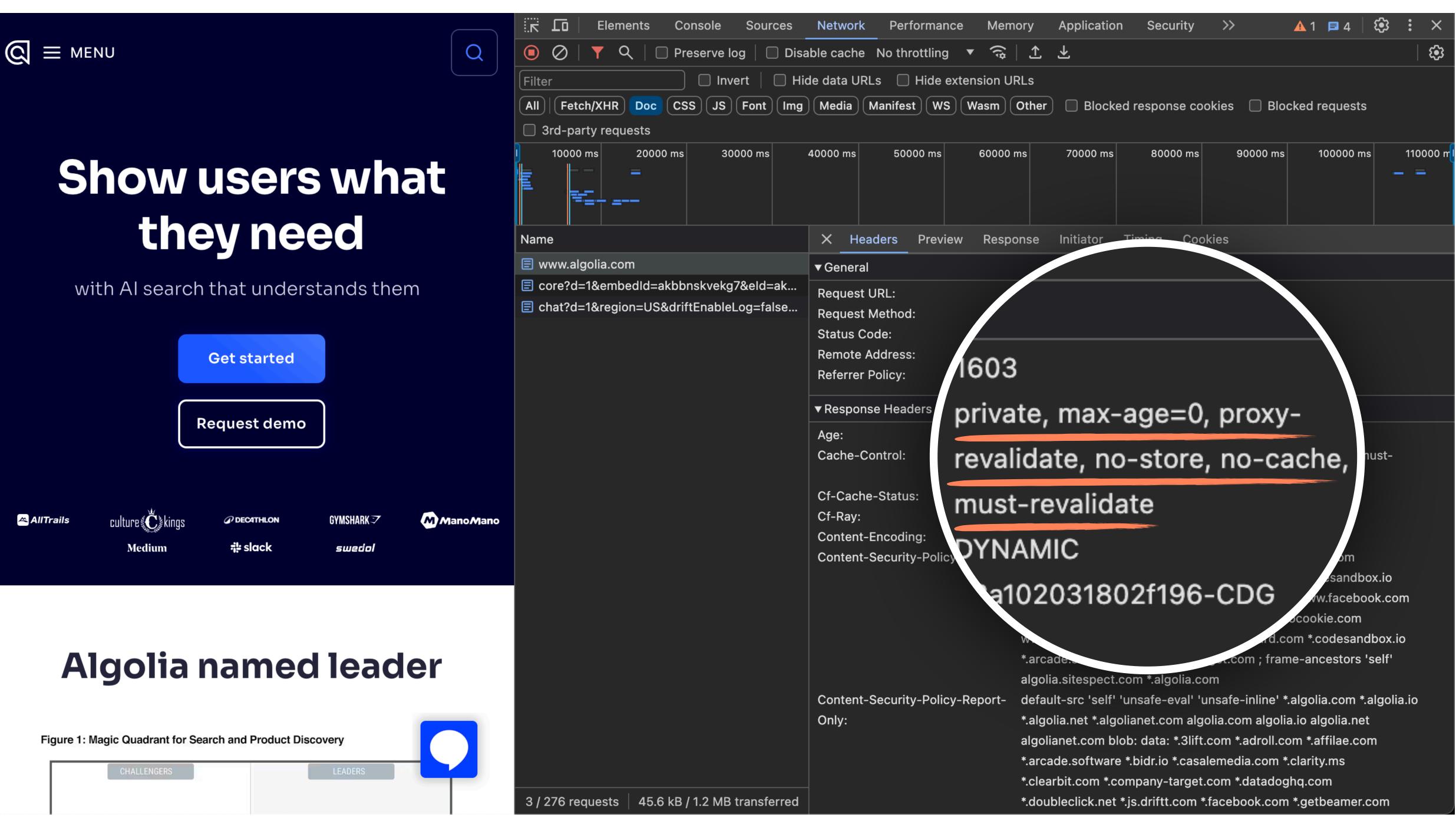


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Elements









Show users wha	t
they need	

with AI search that understands them

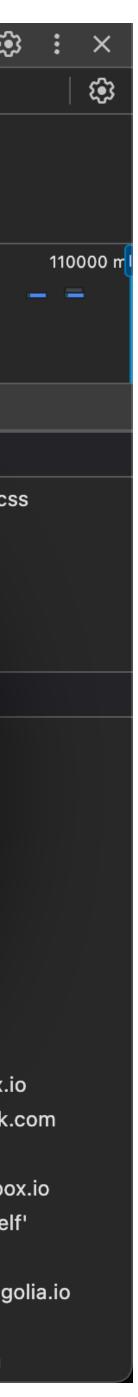
					 ✓ 8.ab226b4a.chunk.css ✓ 16.22abfce0.chunk.css
		Get started			☑ 39.eeb001f3.chunk.css
					27.b5e8f5e1.chunk.css
		Request demo			25.c695453b.chunk.cs
		Request demo			☑ 3.07aa08a5.chunk.css
					1.196b564b.chunk.css
					28.812d5a7c.chunk.css
Ӓ AllTrails	culture Č kings Medium	@ DEC4THLON	GYMSHARKः swedol	ManoMano	
	менни		362001		

Algolia named leader

Figure 1: Magic Quadrant for Search and Product Discovery

Q

Elements Console Sources	Network Performance Men	nory Application Security >> 🔥 1 🗖 4 🤅
💿 ⊘ 🍸 🔍 🔲 Preserve log 🔲 Disa	ıble cache No throttling 🔻 🕱	1 1 1
Filter Invert Inter	de data URLs 🛛 Hide extension L	JRLs
All Fetch/XHR Doc CSS JS Font Img	Media Manifest WS Wasm	Other 🔲 Blocked response cookies 🔲 Blocked requests
3rd-party requests		
10000 ms 20000 ms 30000 ms	40000 ms 50000 ms 60000	ms 70000 ms 80000 ms 90000 ms 100000 ms
Name	X Headers Preview Resp	oonse Initiator Timing
9eb260016674a175.css	▼ General	
8.ab226b4a.chunk.css	Request URL:	\$0016674a175.cs
I6.22abfce0.chunk.css	Request Method:	
8.ab226b4a.chunk.css	Status Code:	~ ~ ~ ~
16.22abfce0.chunk.css	Remote Address: 81	3349
☑ 39.eeb001f3.chunk.css	Referrer Policy:	
☑ 27.b5e8f5e1.chunk.css	▼Response Headers PU	blic,max-
✓ 25.c695453b.chunk.css		
3.07aa08a5.chunk.css	Access-Control-Allo	e=31536000,immutable
 I.196b564b.chunk.css 28.812d5a7c.chunk.css 	Age: Cache-Control:	
		nify
	Cf-Cache-Status:	
	Cf-Polished: HI Cf-Ray:	Τ
	Content-Disposition: Content-Encoding:	gSize=95504
	Content-Security-Policy:	algolia.com
		51020498f0f196-fo.com codesandbox.i js.driftt.com www.facebook.
		www.welcometothejungle.com www.youtube-nocookie.com
		www.youtube.com calendly.com play.vidyard.com *.codesandbo
		*.arcade.software s.company-target.com ; frame-ancestors 'sel
	Contant Crawity Delian Deve	algolia.sitespect.com *.algolia.com
	Content-Security-Policy-Report- Only:	default-src 'self' 'unsafe-eval' 'unsafe-inline' *.algolia.com *.algo *.algolia.net *.algolianet.com algolia.com algolia.io algolia.net
11 / 276 requests 23.1 kB / 1.2 MB transferred		algolianet.com blob: data: *.3lift.com *.adroll.com *.affilae.com



04046bfa139e01b8.css

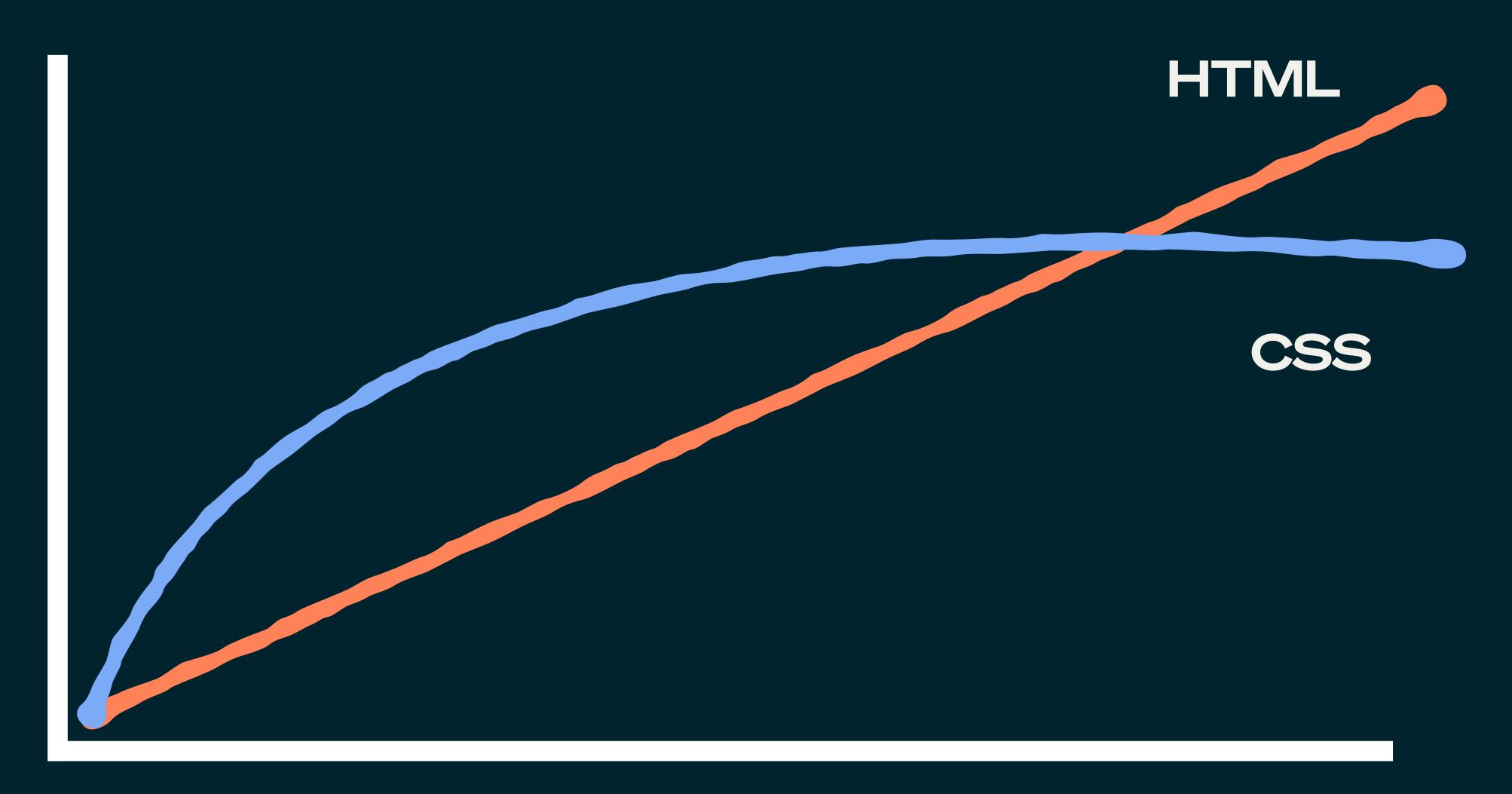
- 9eb260016674a175.css
- 8.ab226b4a.chunk.css
- 16.22abfce0.chunk.css
- 8.ab226b4a.chunk.css
- 16.22abfce0.chunk.css
- 39.eeb001f3.chunk.css
- 27.b5e8f5e1.chunk.css
- 25.c695453b.chunk.css
- 3.07aa08a5.chunk.css
- 1.196b564b.chunk.css
- 28.812d5a7c.chunk.css

You can cache inline styles. But that's pointless.

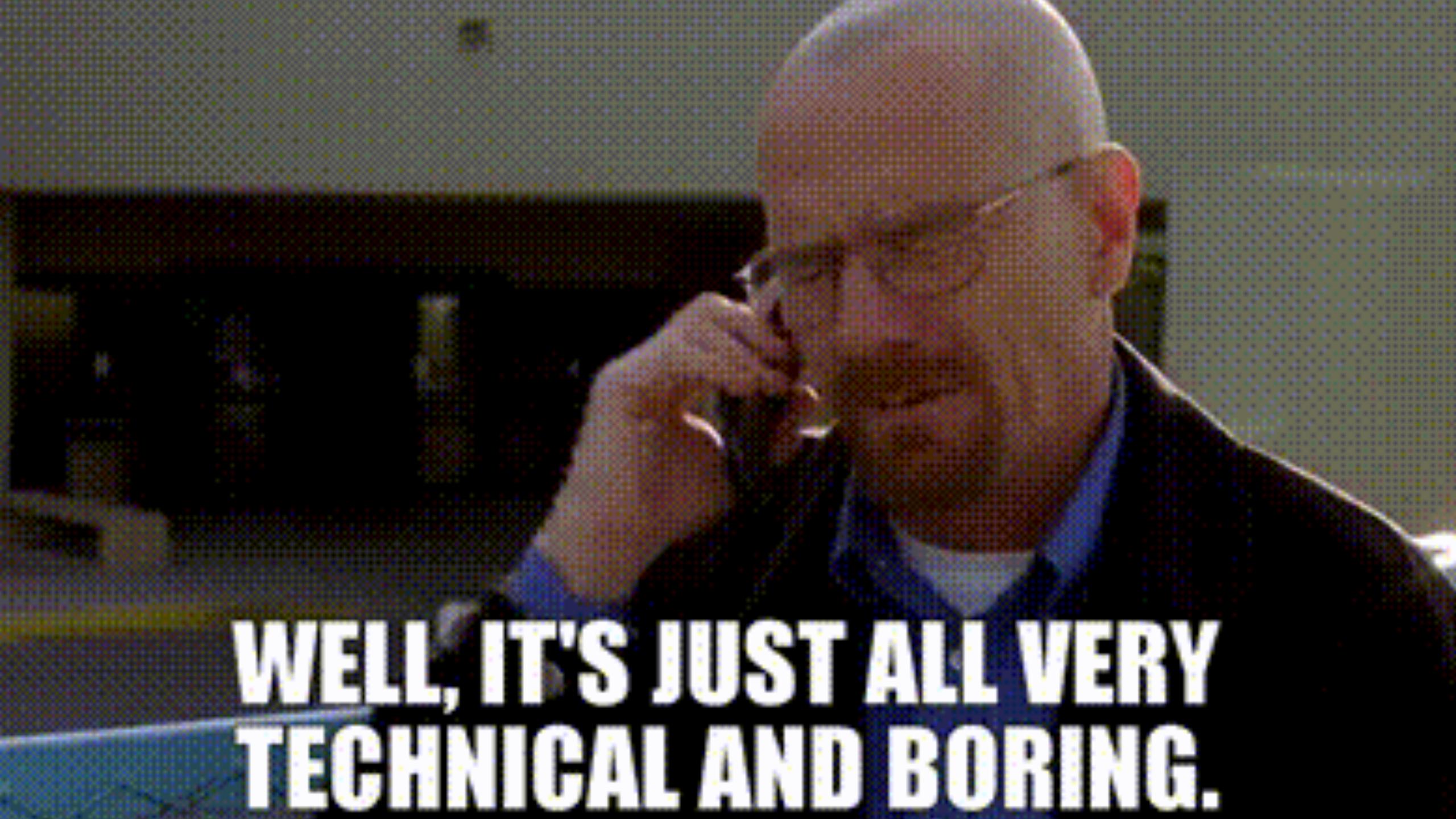


CSS assets ast onger.

File updates







Assets freshness speaks volumes on where to spend focus.

A healthy codebase grants you focus.

algolia DOCUMENTATION

EXPAND ALL

- Home ω
- Getting started \$
- Sending and managing data ⊥
- Managing results
- \Box **Building Search UI**
- Sending events ((0))
- Search analytics ∽
- പ് Personalization
- G A/B testing
- Algolia Recommend ⊕
- 0 Algolia Al
- Going to production \oplus
- ≶ Scaling
- Security U
- \bigcirc Solutions

Documentation

Interactive tutorial

Get a full overview of the basic settings that will take your search to the next level.

Fry interactive tutorial

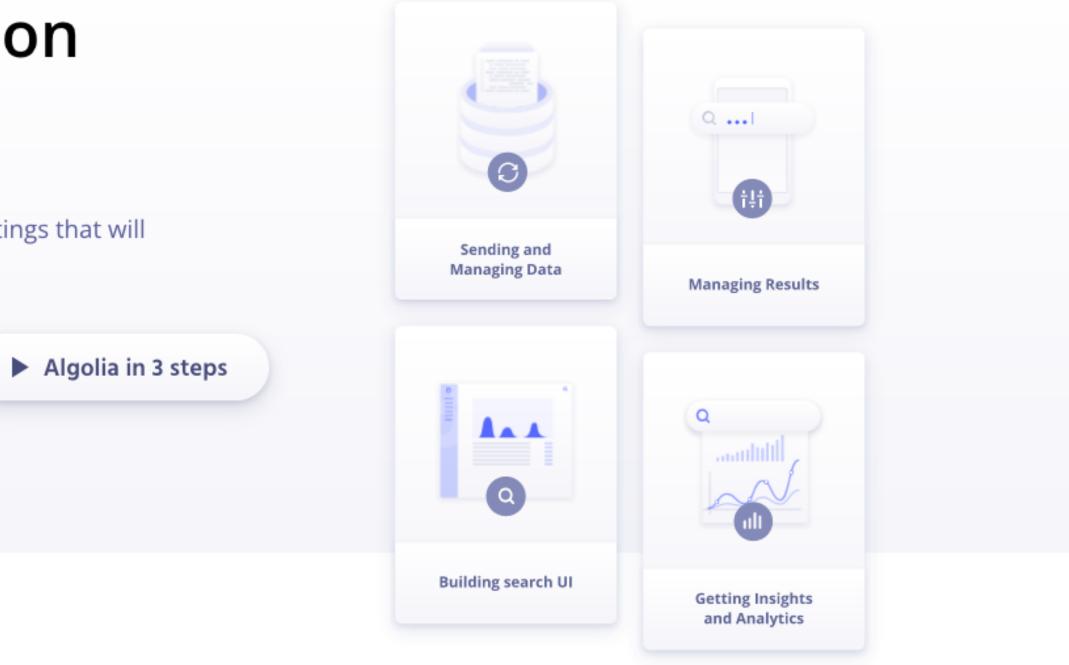
What is Algolia?

Algolia is a hosted search engine, offering full-text, numerical, and faceted search, capable of delivering real-time results from the first keystroke. Algolia's powerful API lets you quickly and seamlessly implement search within your websites and mobile applications. Our search API powers billions of queries for thousands of companies every month, delivering relevant results in under 100ms anywhere in the world.



No credit card required 🖉

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		-0

algolia DOCUMENTATION

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- Home ω
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- Sending and managing data ⊥
- Managing results
- \Box **Building Search UI**
- Sending events ((0))
- Search analytics ∽
- പ് Personalization
- G A/B testing
- Algolia Recommend ⊕
- 0 Algolia Al
- Going to production \oplus
- ≶ Scaling
- Security U
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Documentation

Interactive tutorial

Get a full overview of the basic settings that will take your search to the next level.

Fry interactive tutorial

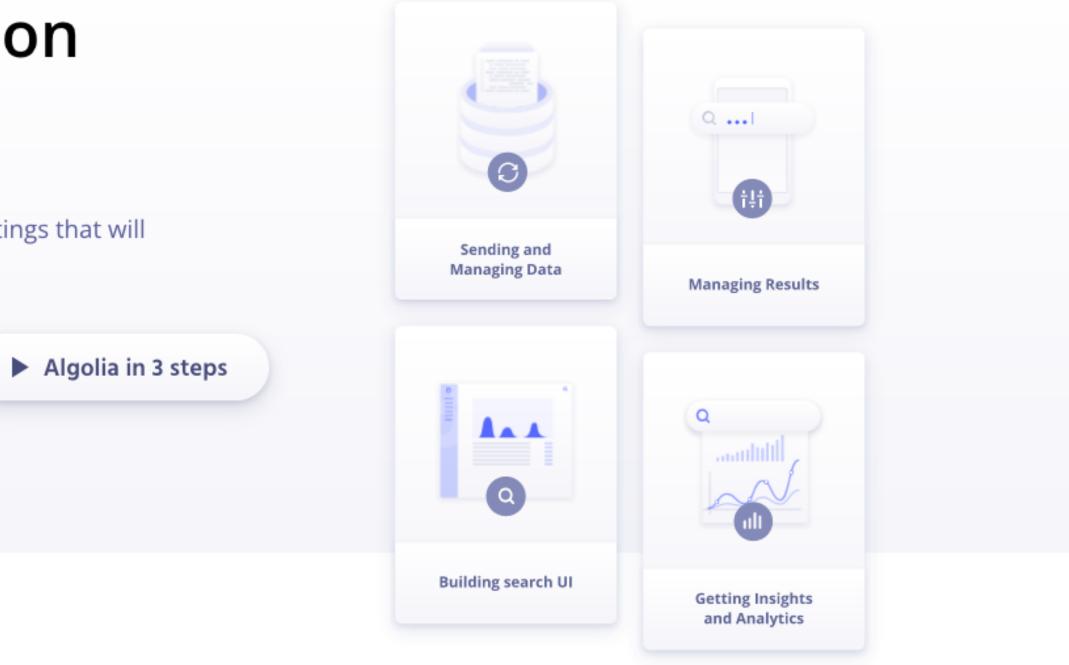
What is Algolia?

Algolia is a hosted search engine, offering full-text, numerical, and faceted search, capable of delivering real-time results from the first keystroke. Algolia's powerful API lets you quickly and seamlessly implement search within your websites and mobile applications. Our search API powers billions of queries for thousands of companies every month, delivering relevant results in under 100ms anywhere in the world.



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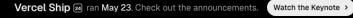




CSS compositions always have to be mentally compiled.

<div class="flex mb-16 md:mr-0 mr-24"> API keys </div> <div class="flex mb-16 md:mr-0</pre> Security best practices





The React Framework for the Web

Used by some of the world's largest companies, Next.js enables you to create high-quality web applications with the power of React components.

Get Started	Learn Next.js	
	-next-app@latest	

What's in Next.js? Everything you need to build great products on the web.



UnoCSS **Instant On-demand Atomic CSS Engine**

Customizable · Powerful · Fast · Joyful

Interactive Docs Playground

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Fully Customizable No core utilities, all functionalities are provided

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Rich Integrations

:

Pure CSS Icons

Instant than Windi CSS or Tailwind CSS JIT.

ଶ Shortcuts

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Configuration and usage \rightarrow

Variant Groups Shorthand for group utils with common prefixes @unocss/transformer-variant-group \rightarrow

Zero deps and browser friendly: ~6kt

Lightweight

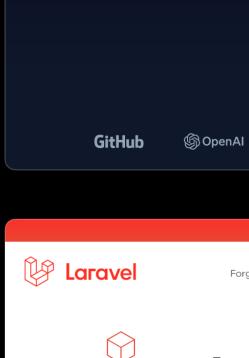
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Attributify Mode

ss/preset-attributify 🕂

@

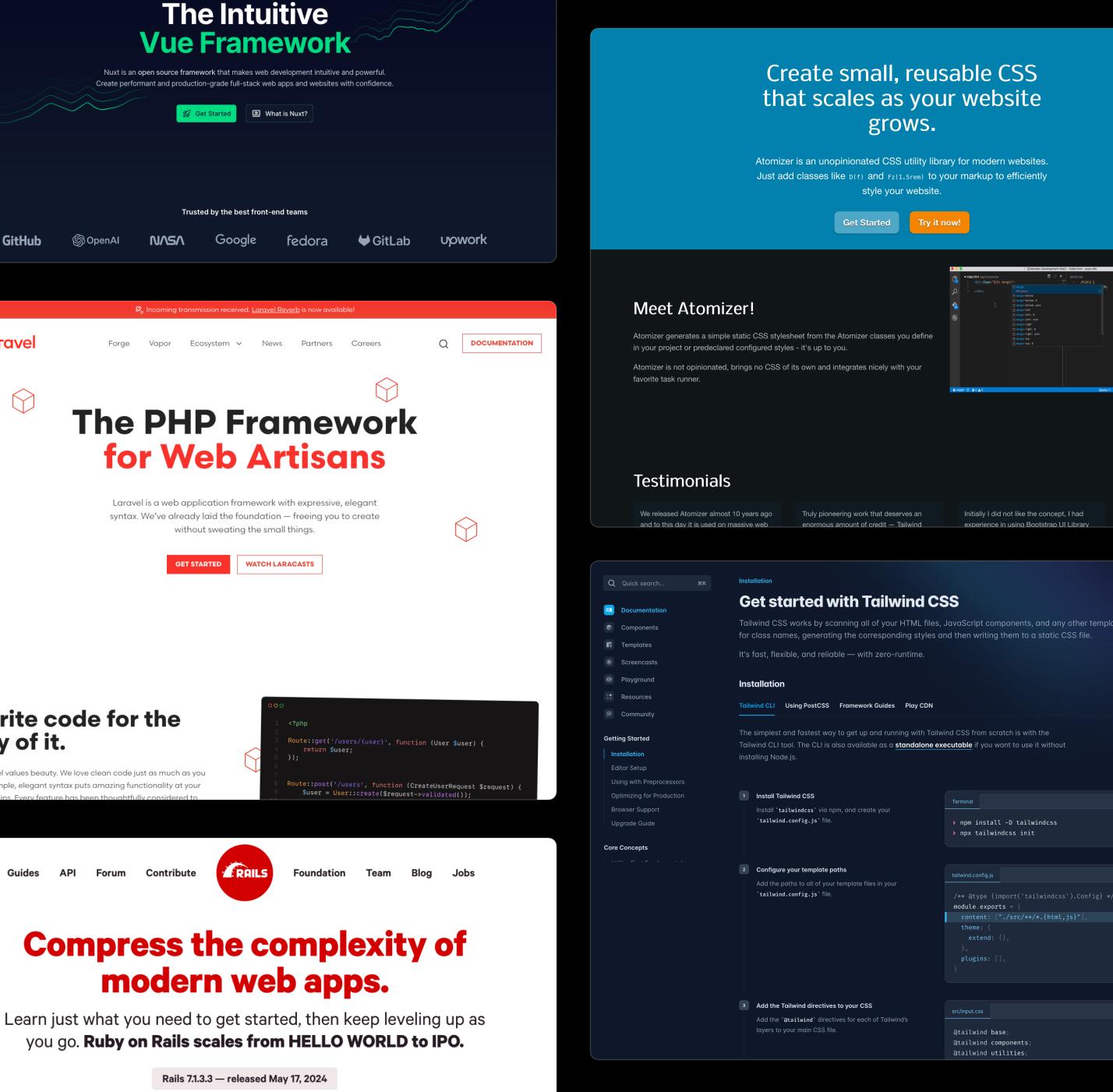
CSS Directives Reuse utils in CSS with @apply directive @unocss/transformer-directives →

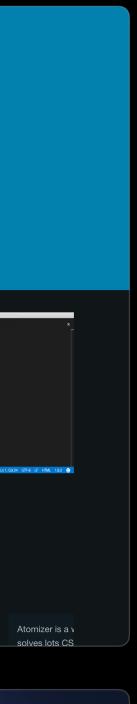


Write code for the joy of it.

Laravel values beauty. We love clean code just as much as you do. Simple, elegant syntax puts amazing functionality at your

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Well-crafted systems liberate you.

Well-crafted systems liberate you.



That was intense.

Constructive criticism is necessary.



Your brain rewards you for classifying new information into existing buckets.

Looking for similarities is lower energy than understanding new differences.







Proclaiming that the new idea is the same as the old idea gives you permission not to investigate it deeply, stick to the existing reality where you are an expert in the old idea, and the new ones are merely repackaging of your insight.





Proclaiming that the new idea is the same as the old idea gives you permission not to investigate it deeply, stick to the existing reality where you are an expert in the old idea, and the new ones are merely repackaging of your insight.



There's such a firehose of information that keeping up with even a single topic is impossible. We should be forgiven for not knowing and understanding and keeping up with everything, even if our job is knowing and understanding and keeping up with everything.





But let's try to make a habit of this.

When you feel "oh l get it, it's just like...", then follow up with "so what makes the new thing different from the old thing?"





But let's try to make a habit of this.

When you feel "oh l get it, it's just like...", then follow up with "so what makes the new thing different from the old thing?"



Atomic CSS isn't a one-size-fits-all.

And sometimes, problems don't exist.

This sucks.

This is not for me.

This is not for me. But it might, eventually.

7

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Think ciferent





Thank you! sarahdayan.dev algolia.com