

4th
EDITION

runVISION



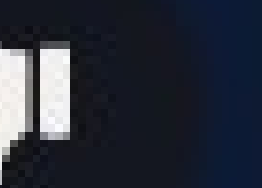
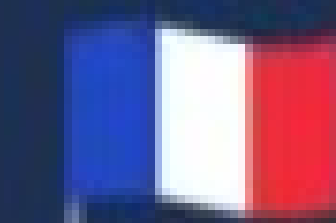
SYLIUS_CON_25

Core Web Vitals debugging with DevTools
Erwin Hofman

biz

tech

17.10.2025 FR LYON_FRANCE Centre Congrès de Lyon



WiFi pass: Sylus25

Core Web Vitals debugging with DevTools

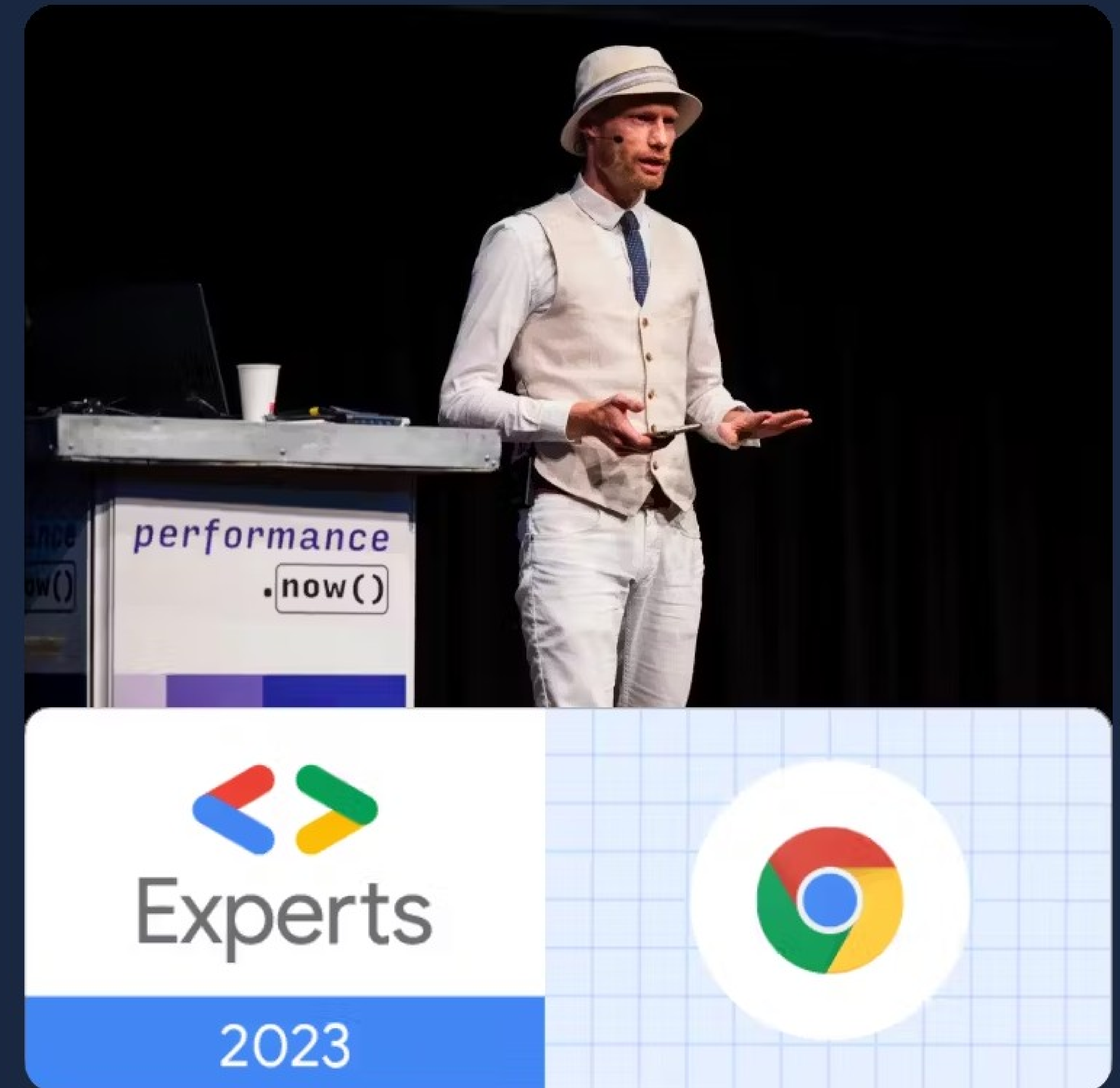
- 1. Who are you
- 2. Sitespeed into
- 3. Tools
- 4. Why DevTools?
- 5. Code & browsers
- 6. When DevTools?
- 7. What's new?
- 8. Debug with DevTools



erwinhofman.com/erwin-hofman/

Who am I?

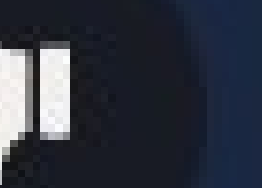
- Erwin Hofman
- developer (2001) + consultant (2015)
- audits, training, talks
- co-founder + CTO RUMvision
- Google Developer Expert + APIs

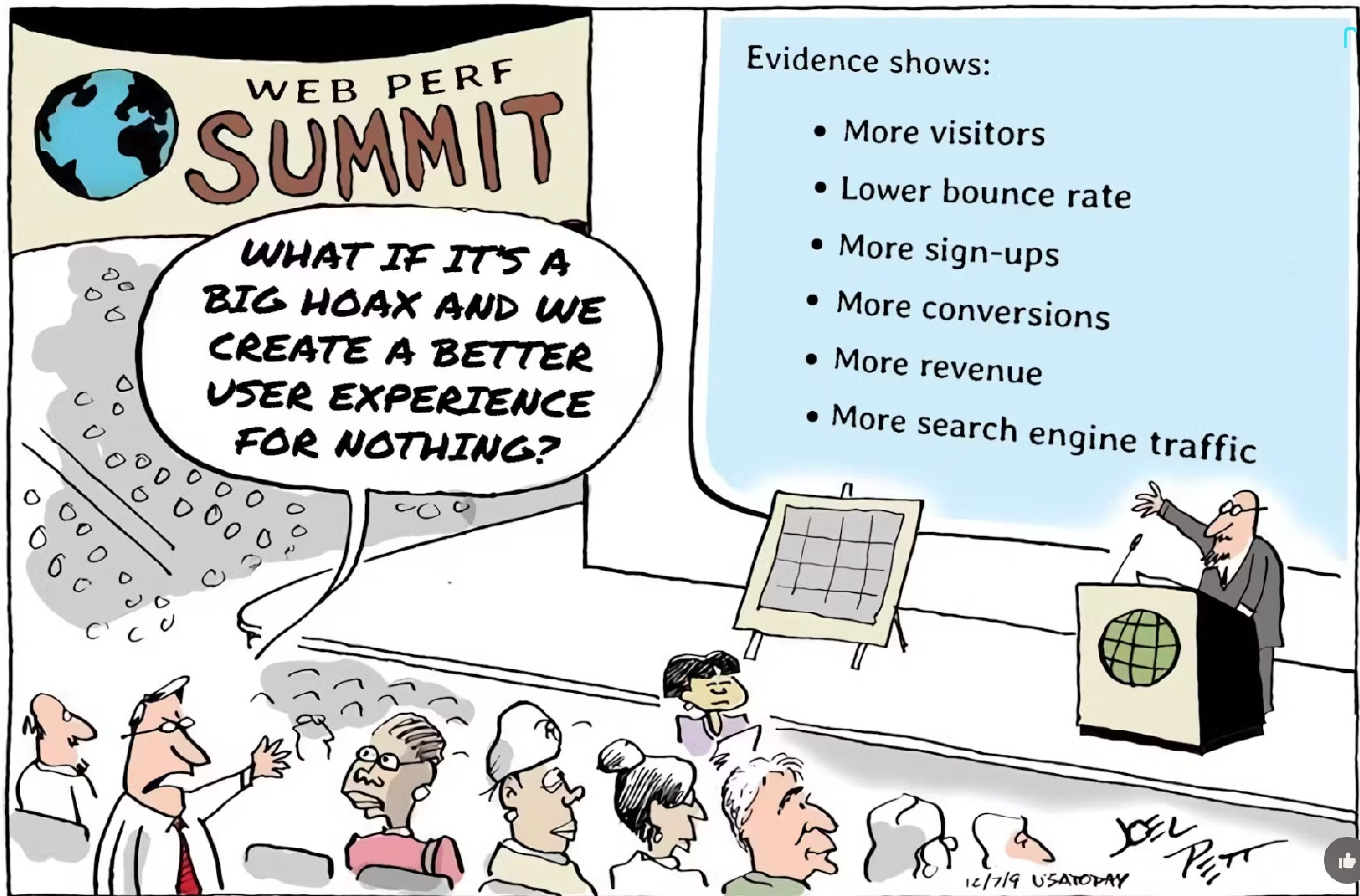






2. Sitespeed intro





WiFi pass: Sylus25

What about ...

- PageLoad Time & DOMContentLoaded
- too technical
- no UX value

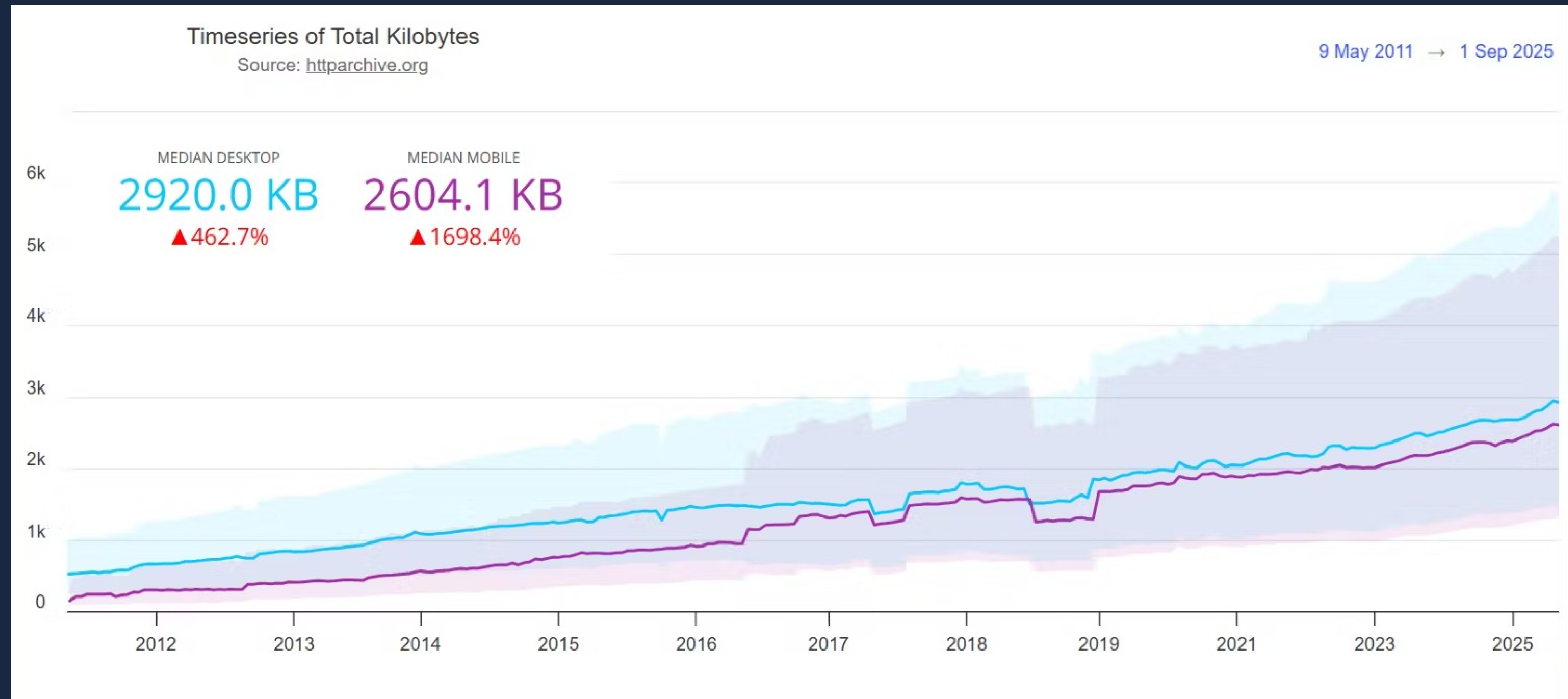


WiFi pass: Sylus25

A new pagespeed era

- metrics keep evolving in favor of UX
- new monitoring capabilities
- new browser API's





httparchive.org/reports/page-weight

First step for mankind (*878kb*) vs launching a website (*2604kb*)





[linkedin.com/feed/update/urn:li:activity:6899662873329496064/](https://www.linkedin.com/feed/update/urn:li:activity:6899662873329496064/)

Who do you blame?



Largest Contentful Paint (LCP)

The time it takes until the **largest element** (usually the hero) is **rendered**.



First Input Delay (FID)

The delay between very first user interaction and **next browser work**.



Cumulative Layout Shift (CLS)

The biggest (5 seconds) sum of **unexpected shifts**, usually by banners and video ads.



First Contentful Paint (FCP)

The moment a users sees the **white screen disappear** and first user engagement happens.



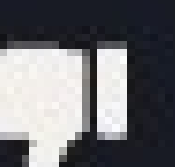
Interaction to Next Paint (INP)

The biggest delay between user interaction and **visual feedback** during the whole page life cycle.



Time to First Byte (TTFB)

Time between a page request and the browser **receiving the first HTML** (DNS lookup & redirects included).





(Loading)

LCP

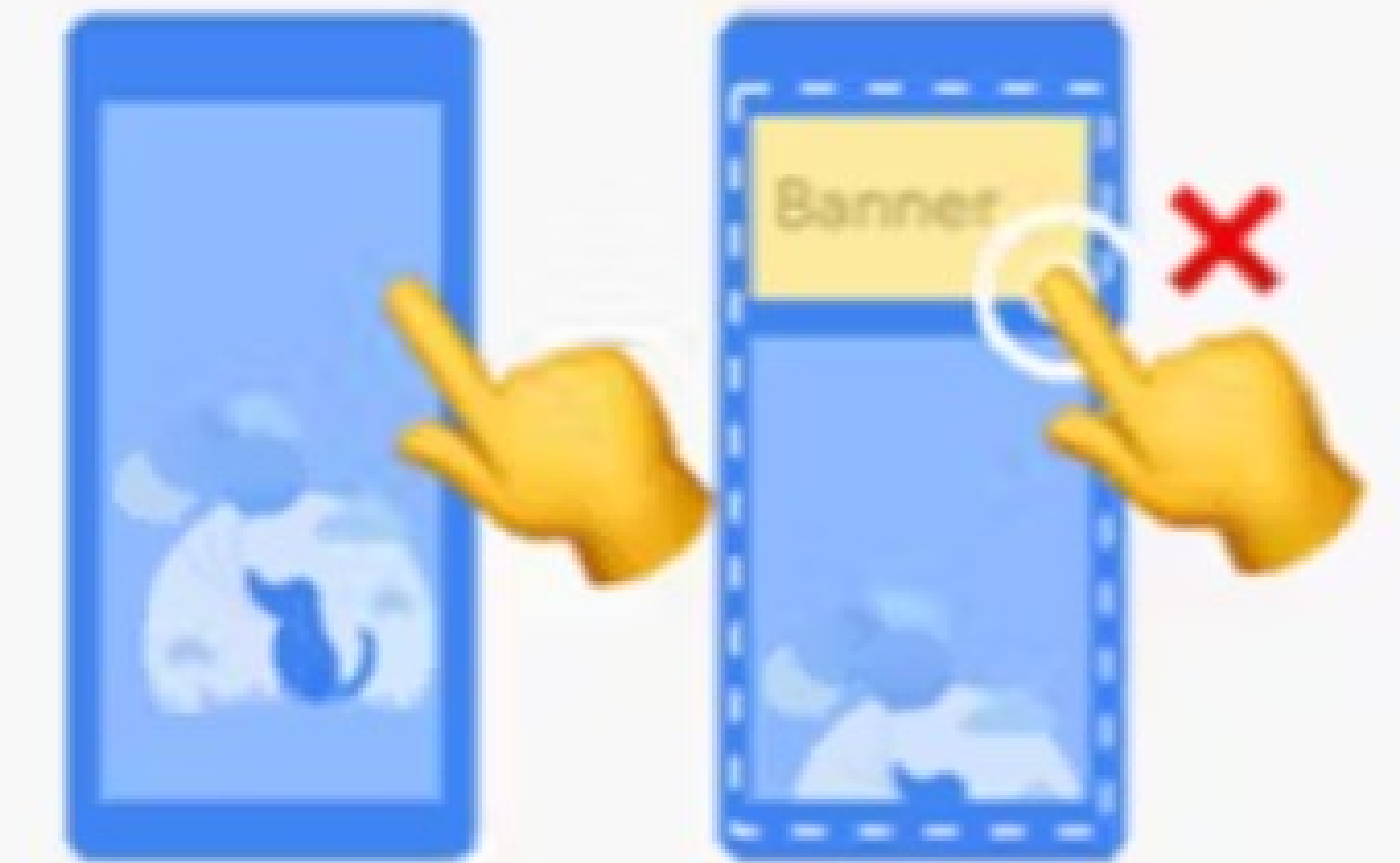
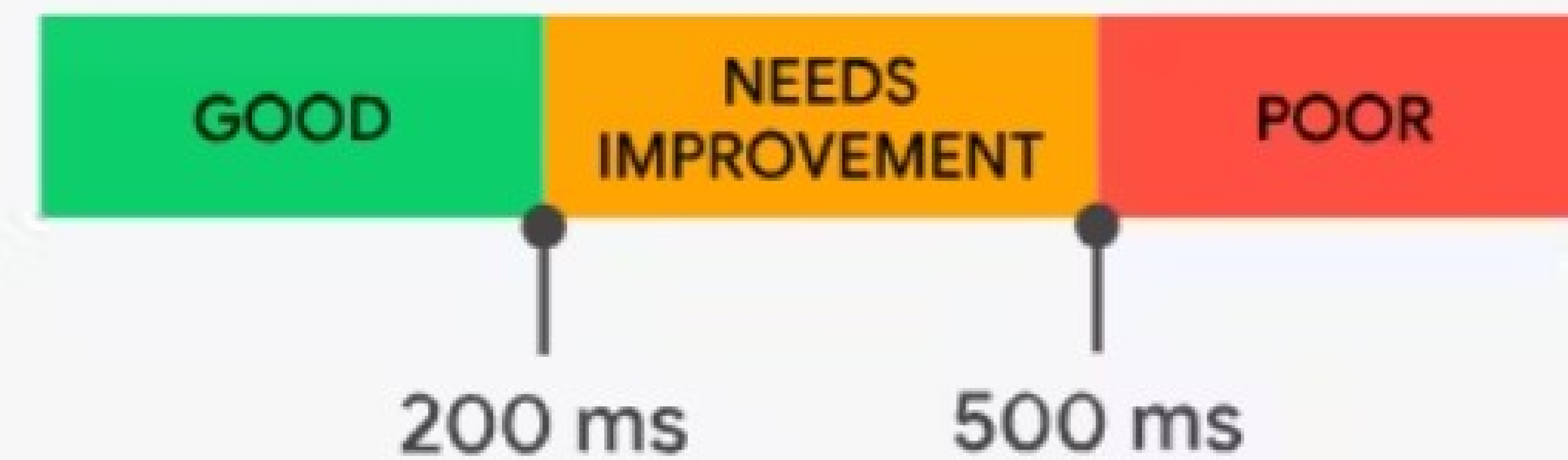
Largest Contentful Paint



(Interactivity)

INP

Interaction to Next Paint



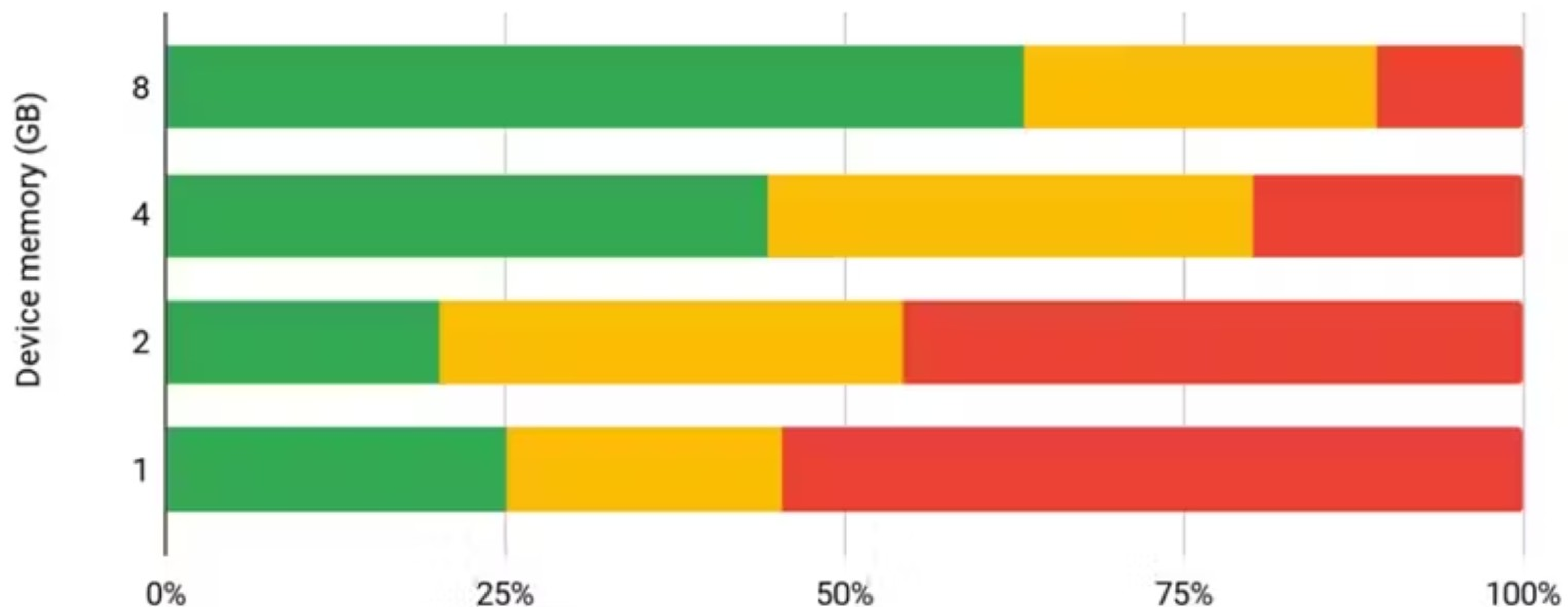
(Visual Stability)

CLS

Cumulative Layout Shift



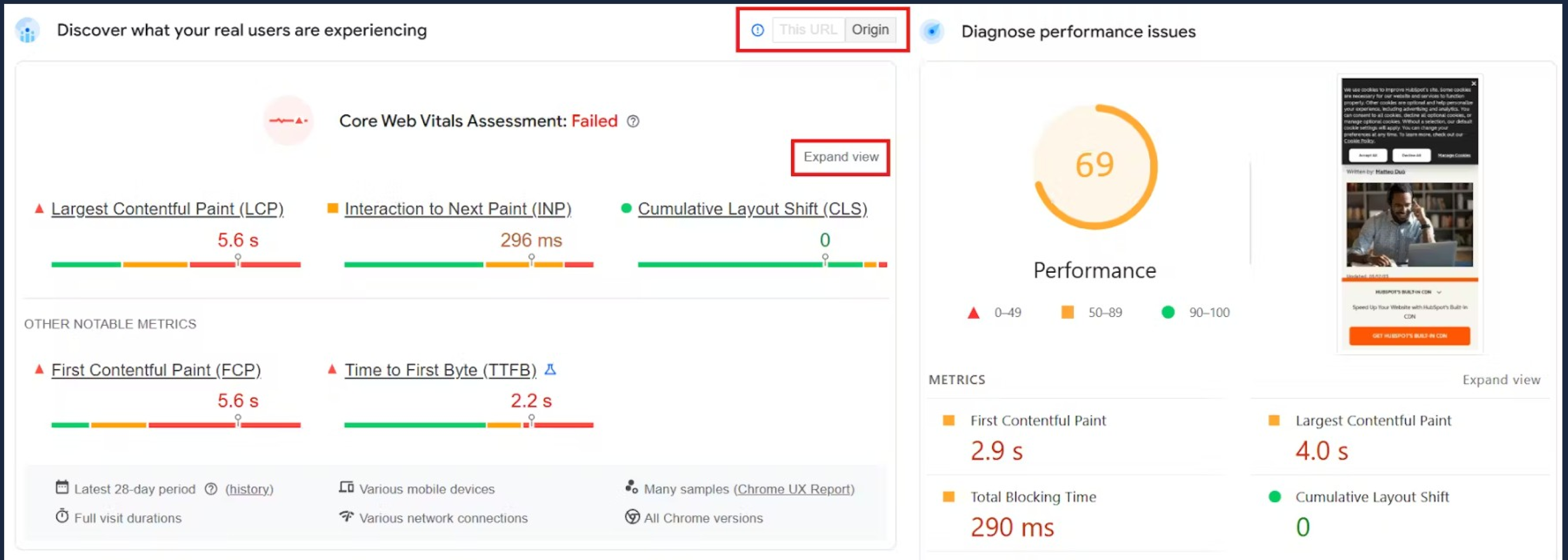
web.dev/articles/defining-core-web-vitals-thresholds



calendar.perfplanet.com/2023/inp-performance-analysis-runvision-data/

Google + run VISION

3. Tools



blog.hubspot.com/marketing/how-to-reduce-your-websites-page-speed

Core Web Vitals (left) vs Lighthouse (right)

rumvision.com/help-center/glossary/monitoring/lighthouse/

Lighthouse

- No interaction (scroll nor click)
- Stops after 5 second inactivity
- Always fixed conditions
- Google "Lighthouse variability"





DIAGNOSTICS



Reduce unused CSS — Est savings of 13 KiB

Reduce unused rules from stylesheets and defer CSS not used for above-the-fold content to decrease bytes consumed by network activity. [Learn how to reduce unused CSS.](#) LCP FCP

URL	Transfer Size	Est Savings
erwinhofman.com 1st Party	15.6 KiB	12.8 KiB
...min/d1537d1....css (www.erwinhofman.com)	15.6 KiB	12.8 KiB

linkedin.com/feed/update/urn:li:activity:7371451551015649280/

Lighthouse be like..



Lighthouse is:

- for developers only
- not based on real users experience
- not representative for your audience
- easy to fake



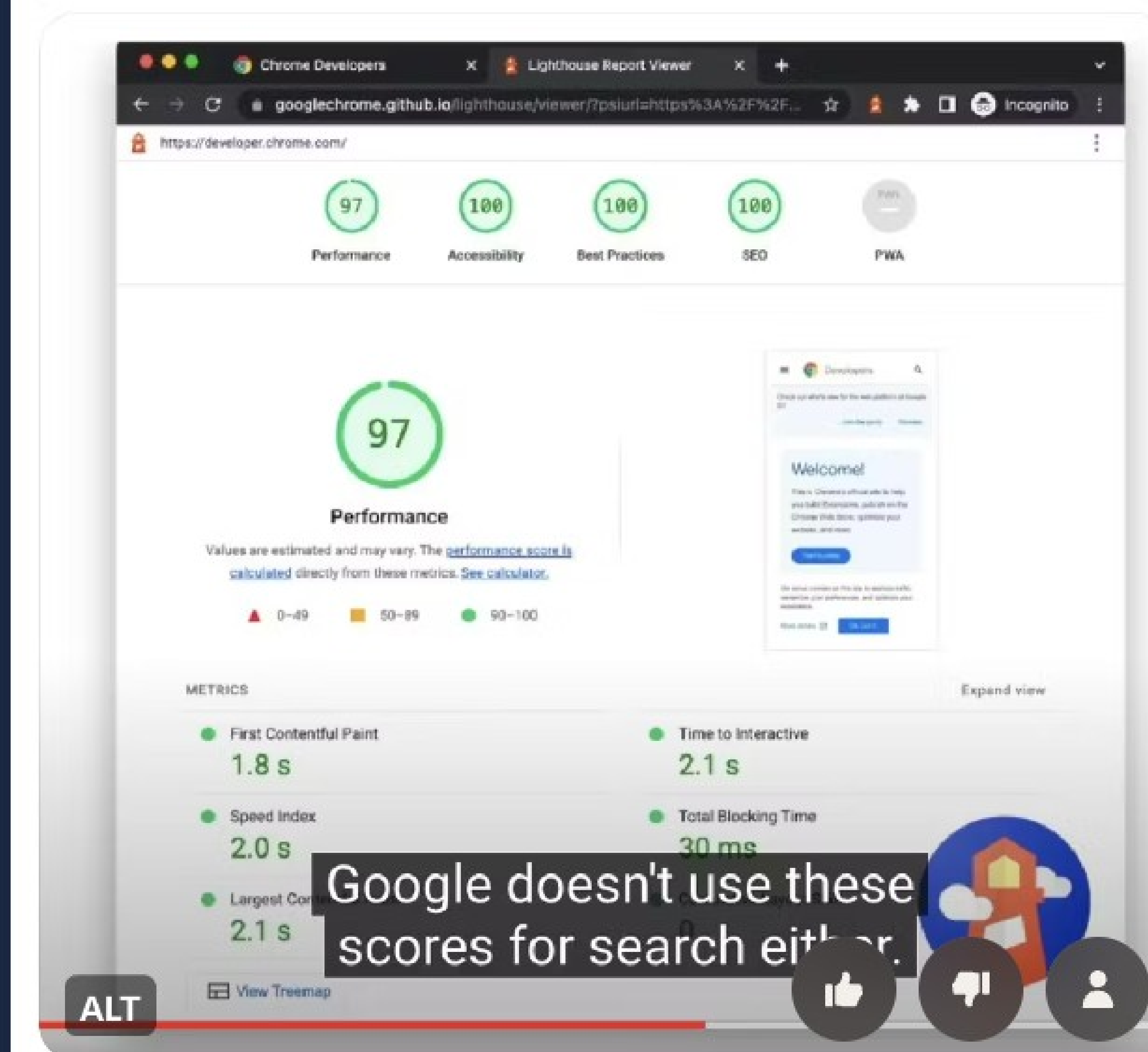
Barry Pollard
@tunetheweb

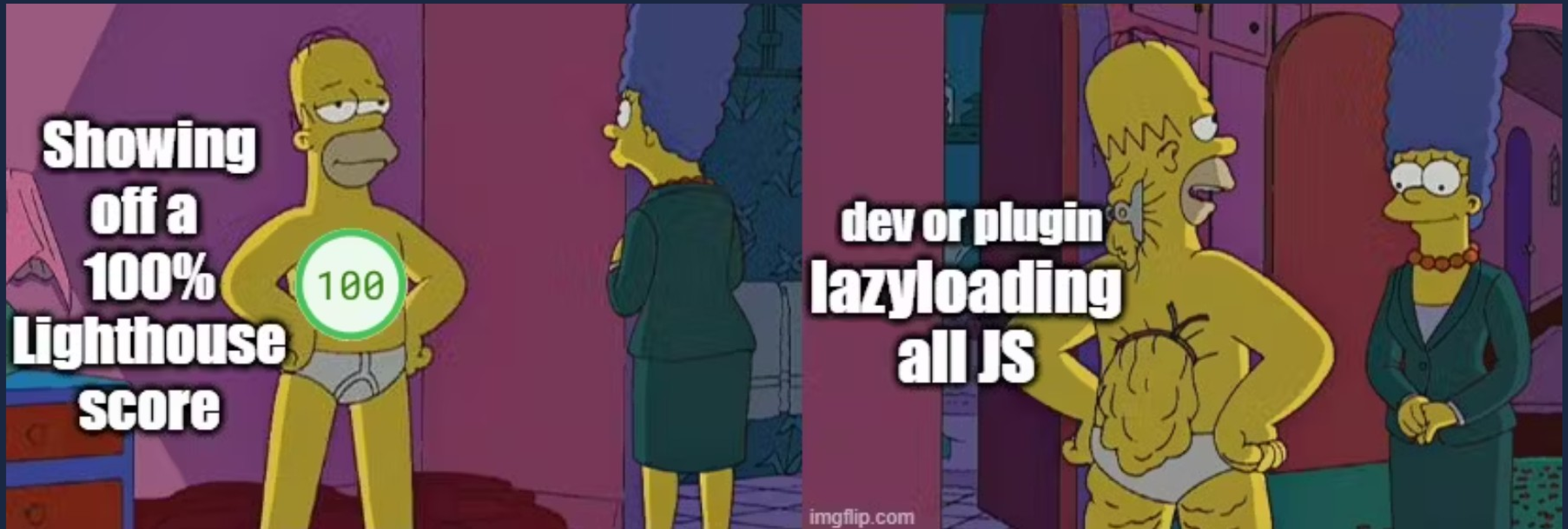


@___lighthouse is a fantastic tool, but we fixate too much on the Performance score. It's a diagnostic tool under very specific conditions.

@ChromeUXReport as surfaced in PSI and GSC is what users ACTUALLY experienced, and what is used for Core Web Vitals.

[Post vertalen](#)





[linkedin.com/feed/update/urn:li:activity:7269293969497378816/](https://www.linkedin.com/feed/update/urn:li:activity:7269293969497378816/)

lazyloading JS



When *not* to use Lighthouse

Lighthouse (or Lighthouse CI) **is *not* a substitute for field data**. Lighthouse is primarily a diagnostic tool listing potential issues and best practices from a predefined page load. The recommendations it surfaces may not always match the performance experienced by your users.

💡 **Always concentrate on field Core Web Vitals over Lighthouse metrics and scores.** In particular, the Performance Score of Lighthouse is a broad measure of that lab test and often does not correlate with field Core Web Vitals.

[linkedin.com/feed/update/urn:li:activity:7308793954026545153/](https://www.linkedin.com/feed/update/urn:li:activity:7308793954026545153/)

Lighthouse is *not* a substitute and often does not correlate

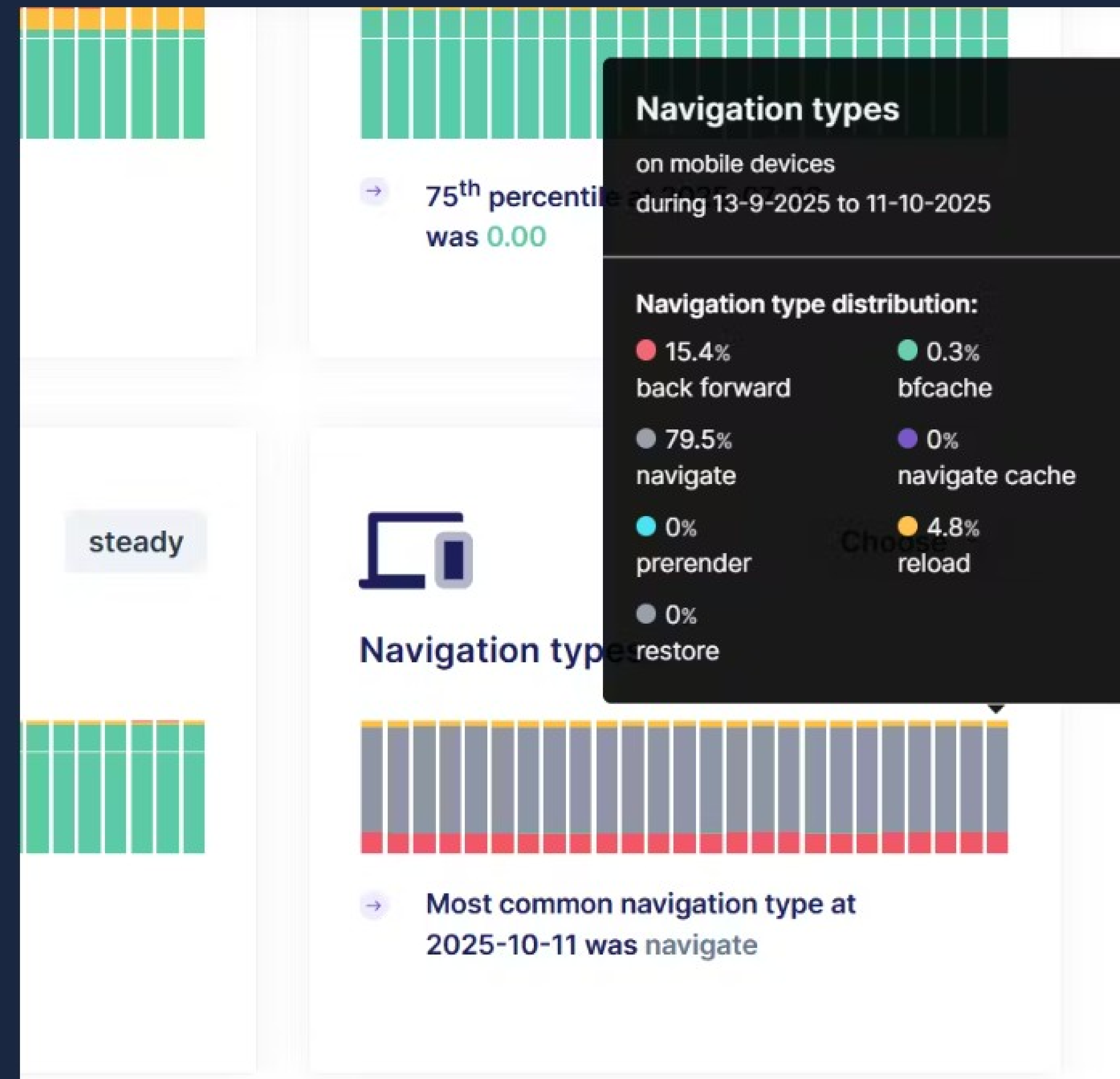


rumvision.com/help-center/glossary/monitoring/crux-api/

CrUX

- Chrome user experience report
- Public data, owned by Google
- Real logged-in + opted-in Google Chrome pageviews
- And used by GSC, PSI, CWV/SEO & CrUX APIs



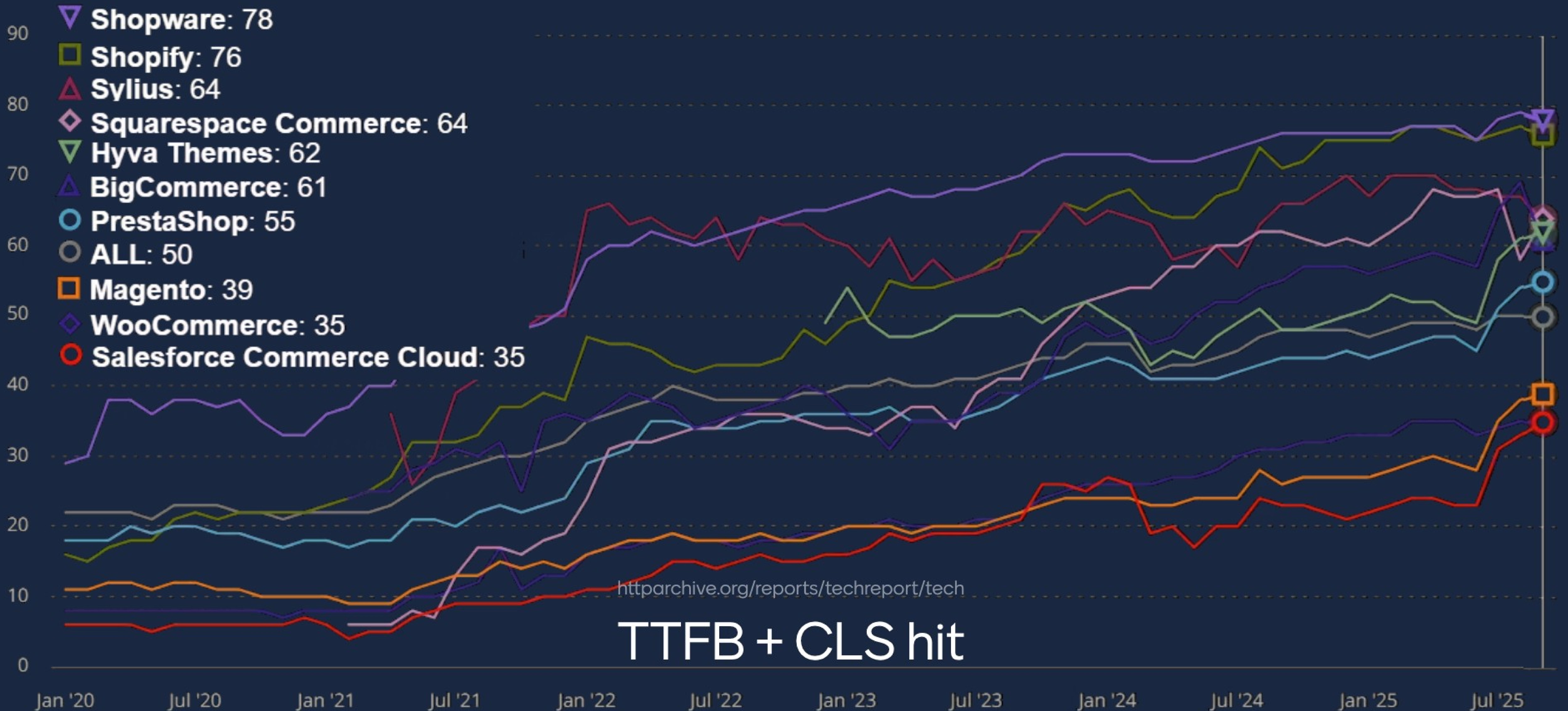


rumvision.com/tools/core-web-vitals-history/www.wattoo.dk/

Passing CWV, but still work to do

Sep 1, 2025

Origins with good scores over time



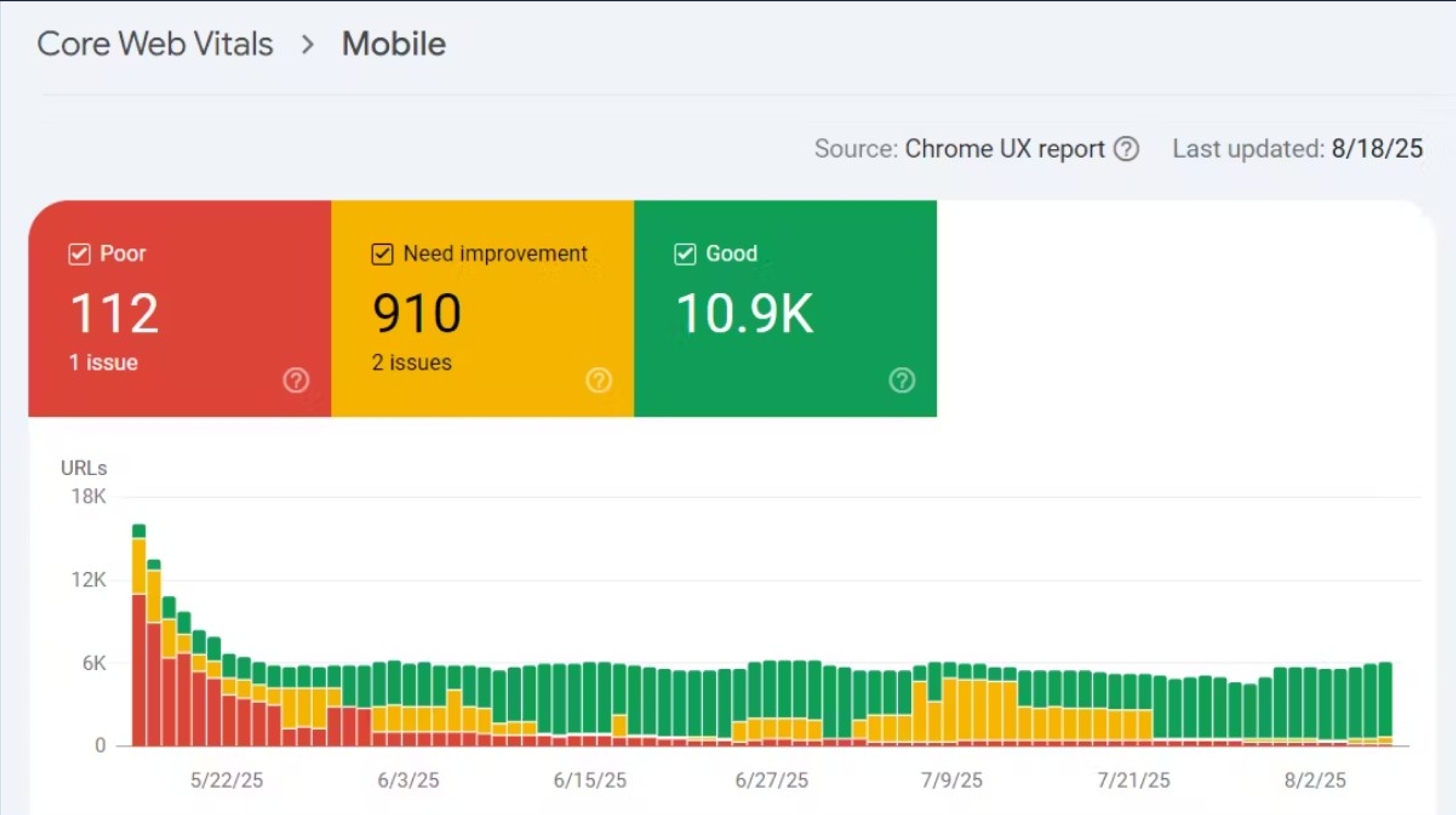
TTFB + CLS hit

rumvision.com/help-center/glossary/monitoring/core-web-vitals/

Core Web Vitals

- Minimum amount of pageviews needed per url
- or else falls back to (grouped in GSC or) origin level
- 75th percentile of all pageviews
- 28 day rolling period

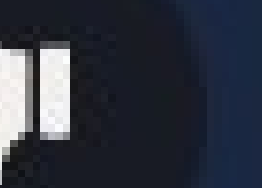




[linkedin.com/feed/update/urn:li:activity:7363864253516107776/](https://www.linkedin.com/feed/update/urn:li:activity:7363864253516107776/)

CWV in Google Search Console

4. Why DevTools?



rumvision.com/help-center/glossary/metrics/largest-contentful-paint/

LCP nuances

- LCP stops at user interaction (in CrUX)
- Placeholder (aka low entropy) images are ignored
- Full viewport images are ignored
- Causes: bad TTFB, hidden content, large images



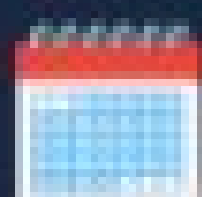
rumvision.com/help-center/glossary/metrics/cumulative-layout-shift/

CLS nuances

- 5 second window and 500ms interaction threshold
- CLS above the fold vs full page life cycle
- Only highest value is collected (like INP)
- Causes: CSR, ads, font swapping, missing width + height





 April 14, 1994

Tobacco company CEOs declare (under oath) that nicotine is not addictive

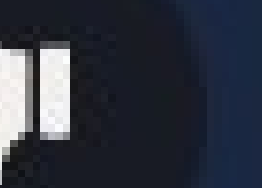


✔ low impact	8 hostname(s)	⚠ moderate impact	12 hostname(s)	❗ critical impact	3 hostname(s)
✔ cdn-cookieyes.com	69 ms	🕒 cdn.privacy-mgmt.com	243 ms	🔒 consent.cookiefirst.com	753 ms
🇦🇹 cdn.cookielaw.org	102 ms	🔒 web.cmp.usercentrics.eu	244 ms	🔒 app.prive.eu	1576 ms
🇦🇹 cdn-ukwest.onetrust.com	103 ms	🍌 assets.cookieconfirm.com	264 ms	🔒 cdn.clarip.com	4859 ms
🇱🇹 ats-wrapper.privacymana...	127 ms	🔒 eu-us-cdn.consentmanag...	272 ms		
🇳🇱 cdn.cookiecode.nl	128 ms	🎮 cdn.cookie-script.com	277 ms		
🇬🇧 fundingchoicesmessages....	152 ms	🔒 static.fastcmp.com	311 ms		
🇮🇹 cdn.iubenda.com	182 ms	🔒 app.usercentrics.eu	316 ms		
🔒 consent.cookiebot.com	196 ms	🔒 cdn.consentmanager.net	363 ms		
		🇸🇮 choices.consentframewor...	405 ms		
		🔒 consent.cookiebot.eu	468 ms		

[linkedin.com/feed/update/urn:li:activity:7364279898313486336/](https://www.linkedin.com/feed/update/urn:li:activity:7364279898313486336/)

impact from CMPs on INP (good <= 200ms)

5. Code & browsers





```
.header .menu {  
  transition: all .3s;  
}
```

erwinhofman.com/blog/website-performance-laggy-animations-gpu-vs-cpu/

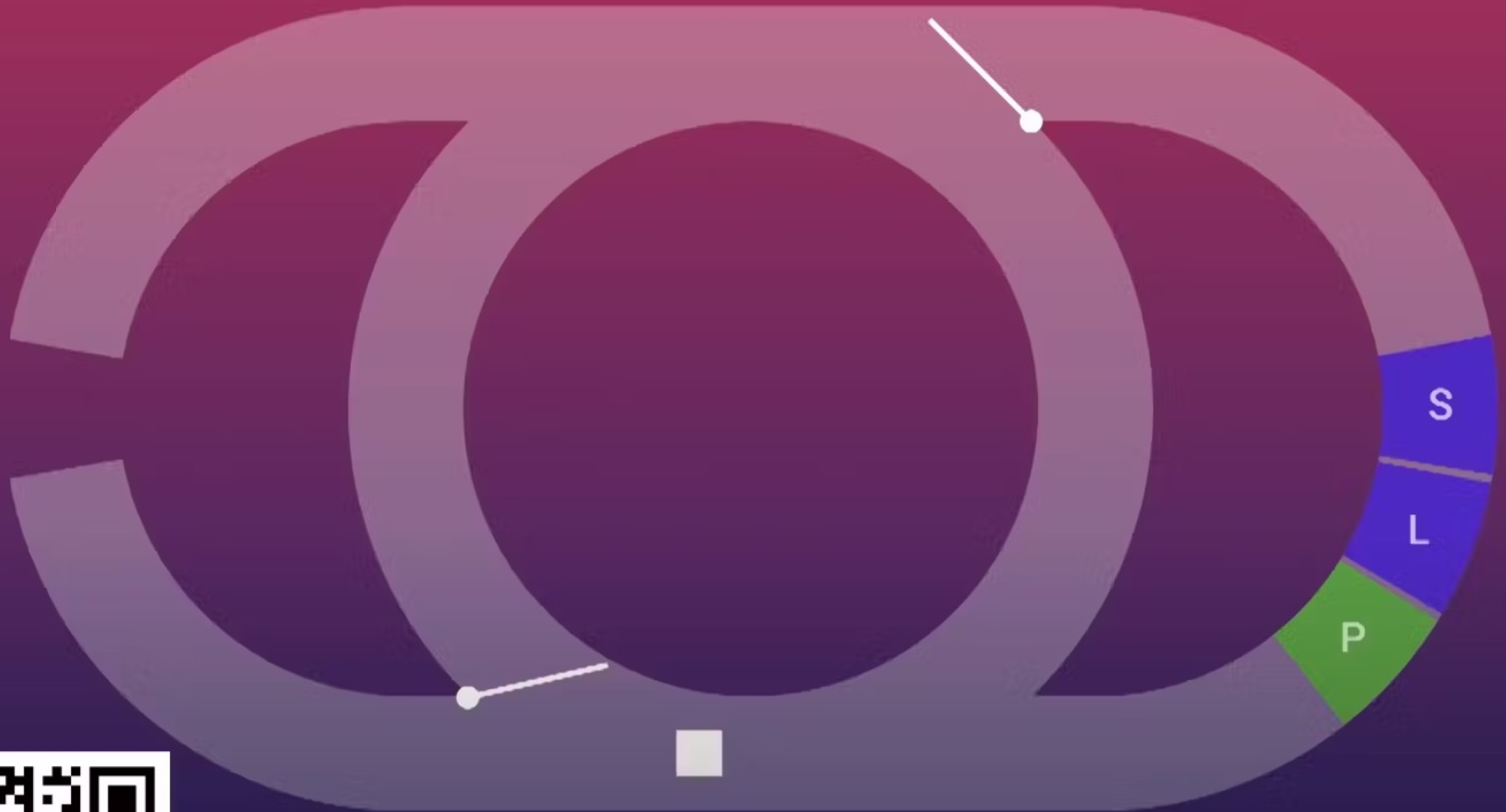
Limit animations to opacity and transform



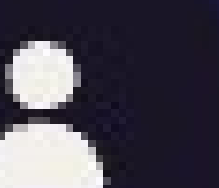


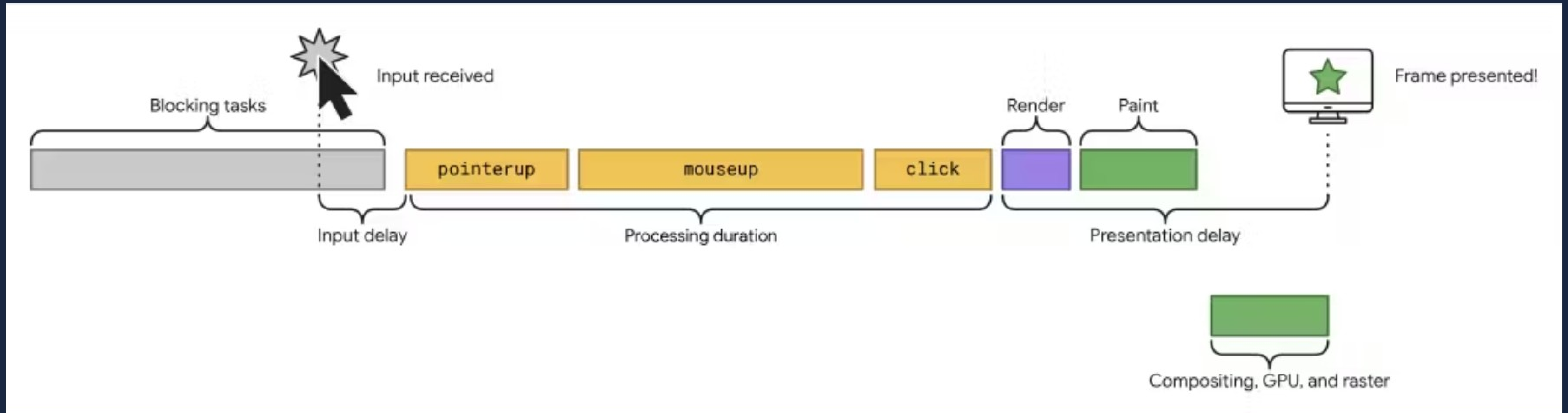
```
const h1 = document.createElement( 'h1' );  
h1.textContent = 'Hello World';  
document.body.appendChild(h1);  
h1.style.display = 'none';
```





youtu.be/cCOL7MC4PI0?t=508



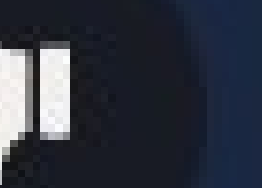


web.dev/articles/inp#whats_in_an_interaction

What is an interaction?



6. When DevTools?

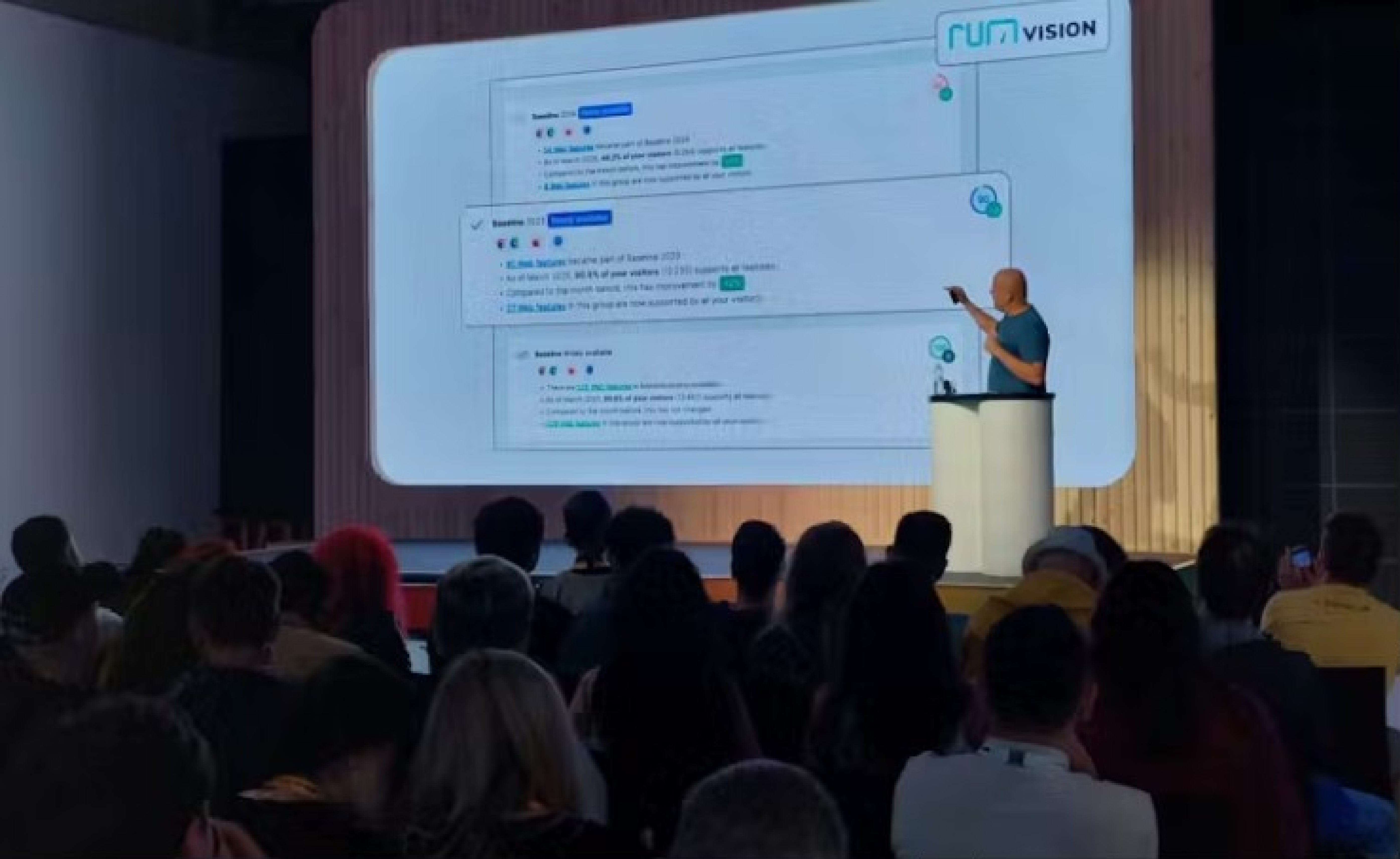


rumvision.com/blog/understanding-the-difference-between-core-web-vitals-tools/

Real User Monitoring

- RUM a.k.a. field data tracks all users and browsers
- tells you how to reproduce it + impact of the fix
- DIY: BigQuery via GTM with web-vitals.js
- or commercial tool for real-time data, filters, auto-updates, reports, alerts





Consider a Real User Monitoring (RUM) vendor

RUM is a technology that uses JavaScript on the web to get field data, which provides valuable insight into real user experiences. Using one can save you time, and provide rich and detailed visualizations of aggregated real user performance data—including INP!

Logos for Cloudflare, Blue Triangle (Friction Quantified), SpeedCurve, Akamai, and RUM VISION.

A video frame showing a man with long hair and glasses, wearing a black t-shirt, standing and speaking.

provide services that can do this work for you.

16:22 / 17:30

rumvision.com/google-io
 4x featured at Google I/O

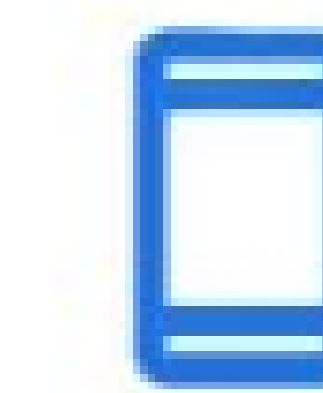


rumvision.com/blog/core-web-vitals-assessment-failed/

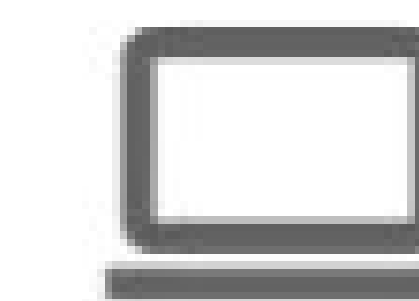
Lab vs field data

- structurally bad response times
- high paid traffic volume (cache miss)
- third parties behind cookie notice
- lazyloading JS
- SPA / hydration

PageSpeed Insights



Mobile



Desktop



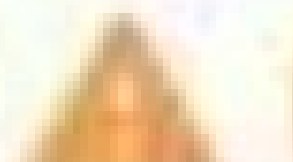
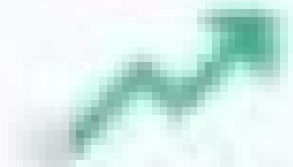
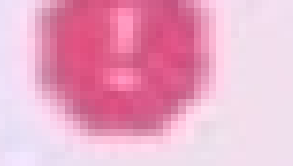
Discover what your real users are experiencing



Core Web Vitals Assessment: **Failed**

Computed from the Core Web Vitals metrics over the latest 28-day collection period. [Learn more](#)

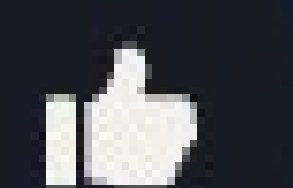


GET PARAMETERS	P75	TREND	EVENTS
all	 669 ms	→ baseline	3.2M
none	 302 ms	 54.9%	41% of all
page	 387 ms	 42.2%	21% of all
srsltid	 1417 ms	 111.8%	10% of all

linkedin.com/feed/update/urn:li:activity:7245374876671250433/

cache miss → must-fix before BFCM

7. What's new?





```
<link rel="preload" href="/fonts/custom.woff2"  
      as="font" type="font/woff2" crossorigin>
```

[linkedin.com/feed/update/urn:li:activity:7366748540611518465/](https://www.linkedin.com/feed/update/urn:li:activity:7366748540611518465/)

Preloading can regress FCP (in Chromium)





```

```

linkedin.com/feed/update/urn:li:activity:7316027736118943744/

No more lazysizes.js to lazyload images





```
<button popovertarget="mypopover">Open Popover</button>  
<div id="mypopover" popover>Popover without JS</div>
```

[linkedin.com/feed/update/urn:li:activity:7340729297864671233/](https://www.linkedin.com/feed/update/urn:li:activity:7340729297864671233/)

No more popper/tooltip.js to create popovers



linkedin.com/feed/update/urn:li:activity:7345385459981705217/

Other browser native APIs

- Back/forward cache
- Speculation Rules
- View Transitions



developer.chrome.com/docs/web-platform/prerender-pages

Speculation Rules.. rules!

- Chromium only API = no JS needed
- Choose between prefetch & prerender
- For instant pageloading
- Increased server load
- DevTools debugging



web.dev/articles/bfcache

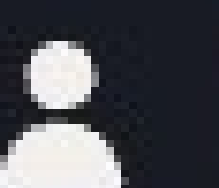
Best Friends' Cache

- Back Forward Cache = snapshot of page
- browsers: FF, Safari & Chromium
- instant TTFB + other metrics
- improved INP & CLS
- DevTools debugging

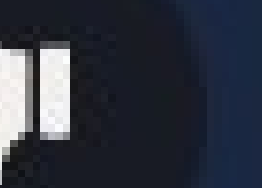


View transitions

- SPA or native-like page transitions
- None to limited JS needed
- To add smooth transitions
- demo @ rumvision.com



8. Debug with DevTools





Chrome for Developers

22,264 followers

1d ...

Class is in session 📄 The Sylius community is in for a great deep-dive on Chrome DevTools and Core Web Vitals.

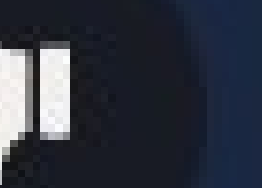
Like · 👍 2 | Reply

linkedin.com/feed/update/urn:li:activity:7356979519242575872/

deep-div

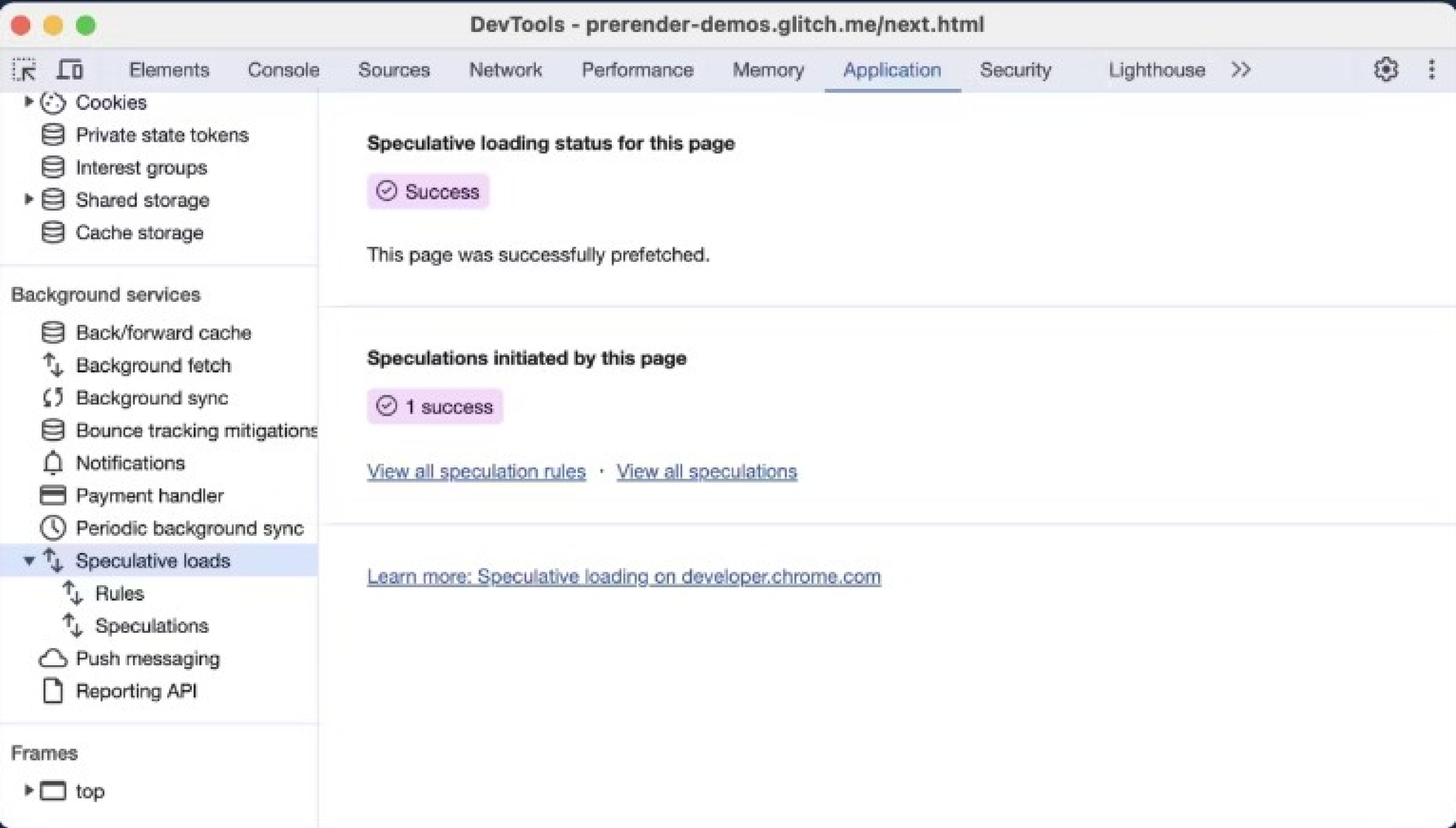


Which domain should we now debug?



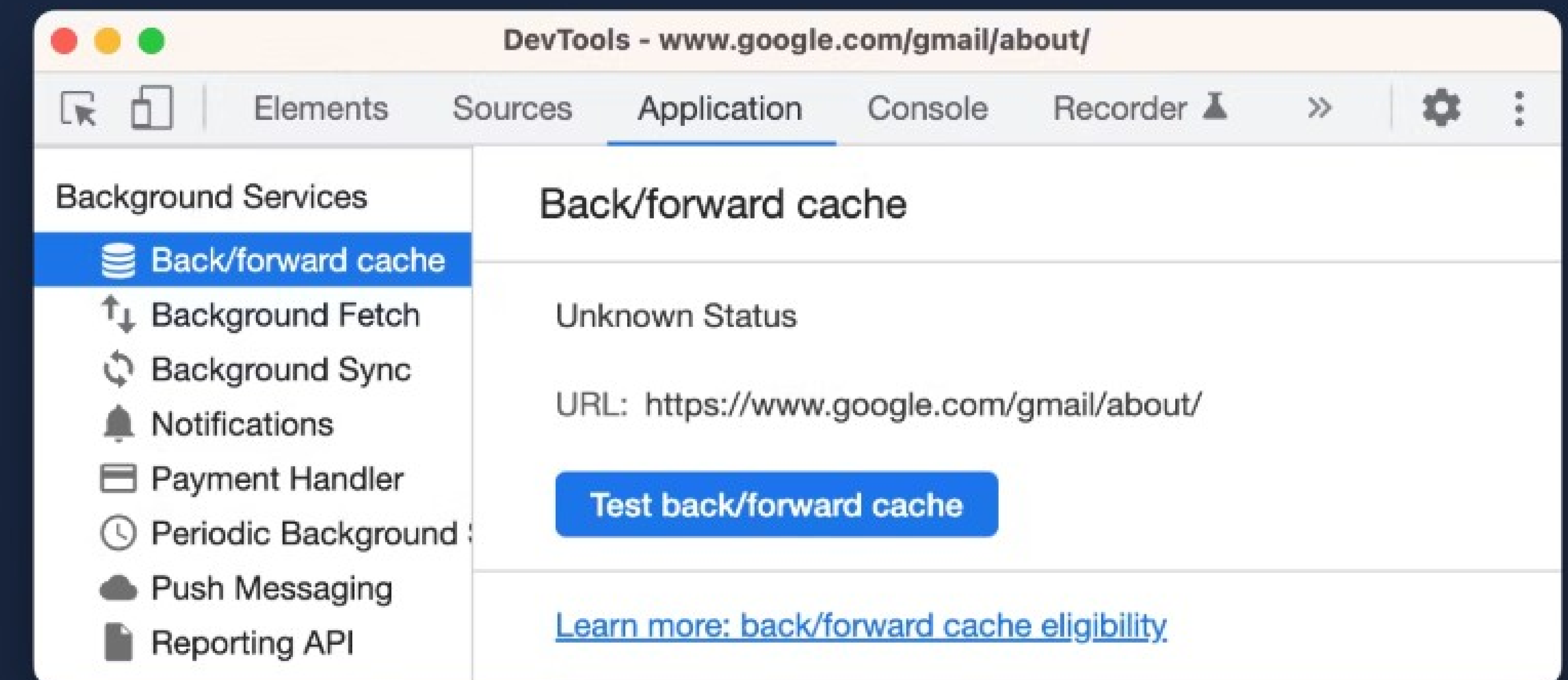
Speculation Rules

developer.chrome.com/docs/devtools/application/debugging-speculation-rules



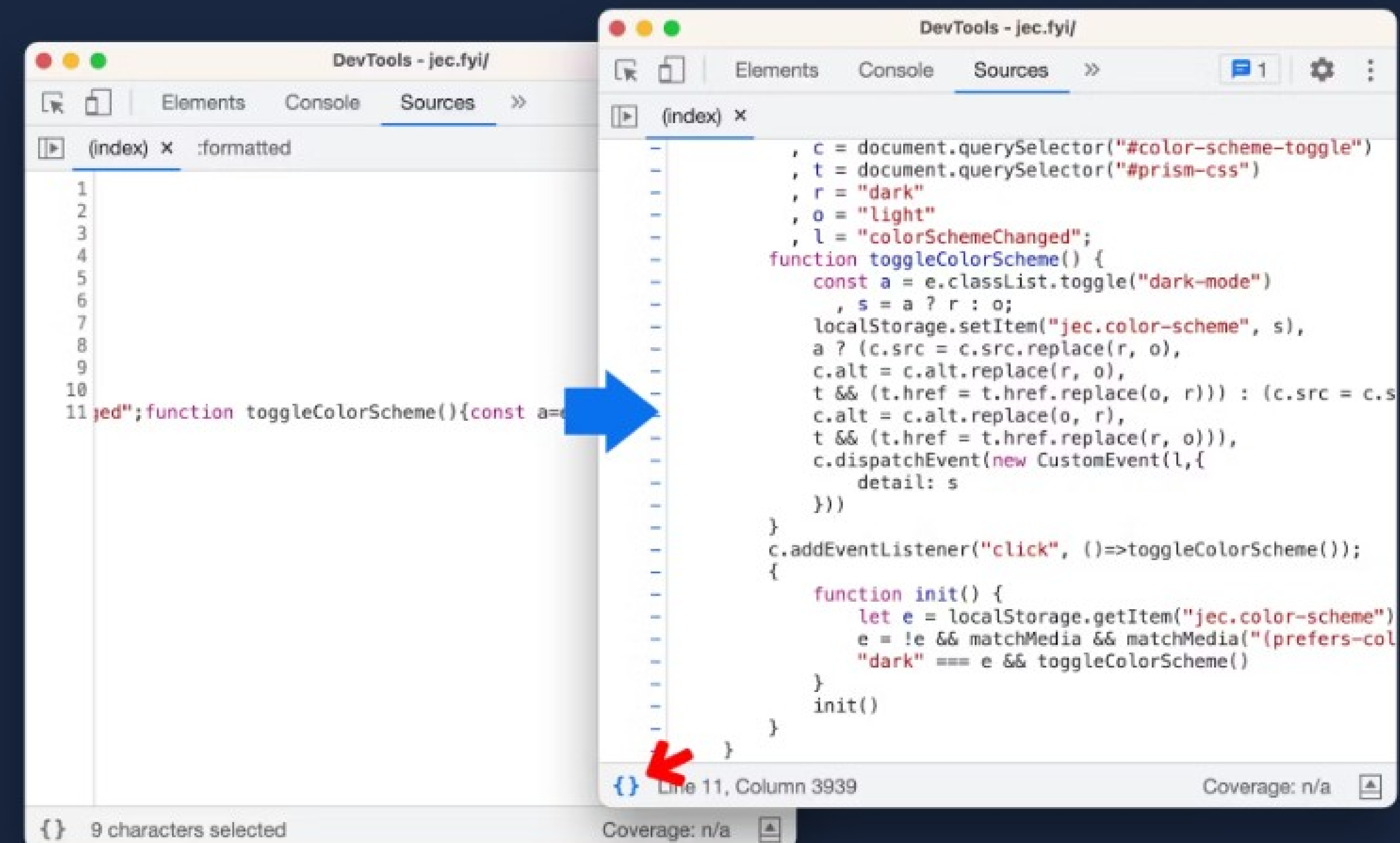
Back/forward cache

developer.chrome.com/docs/devtools/application/back-forward-cache



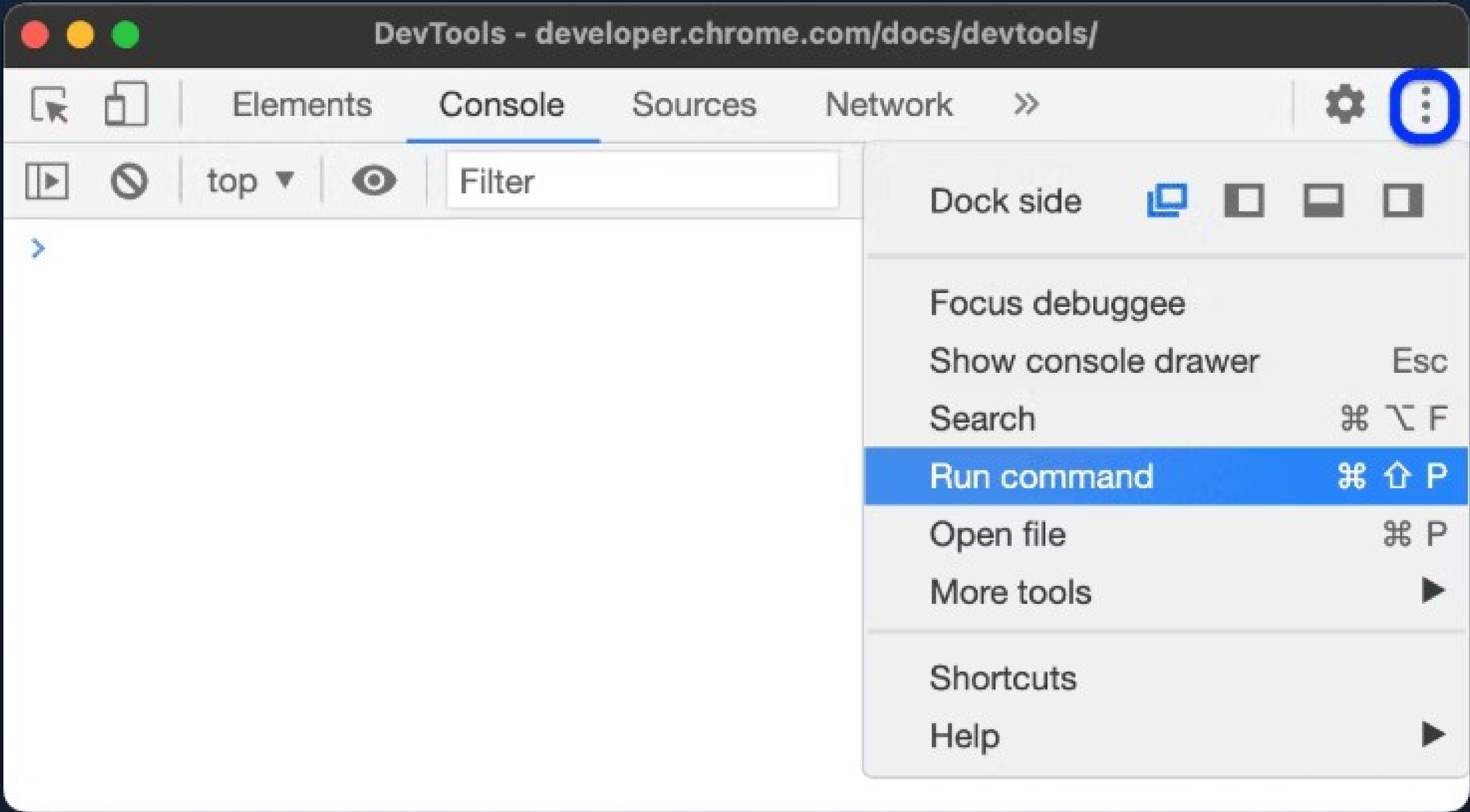
Pretty print

developer.chrome.com/blog/new-in-devtools-110#pretty-print



Command Menu

developer.chrome.com/docs/devtools/command-menu



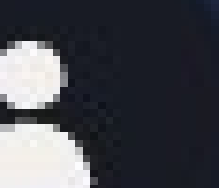
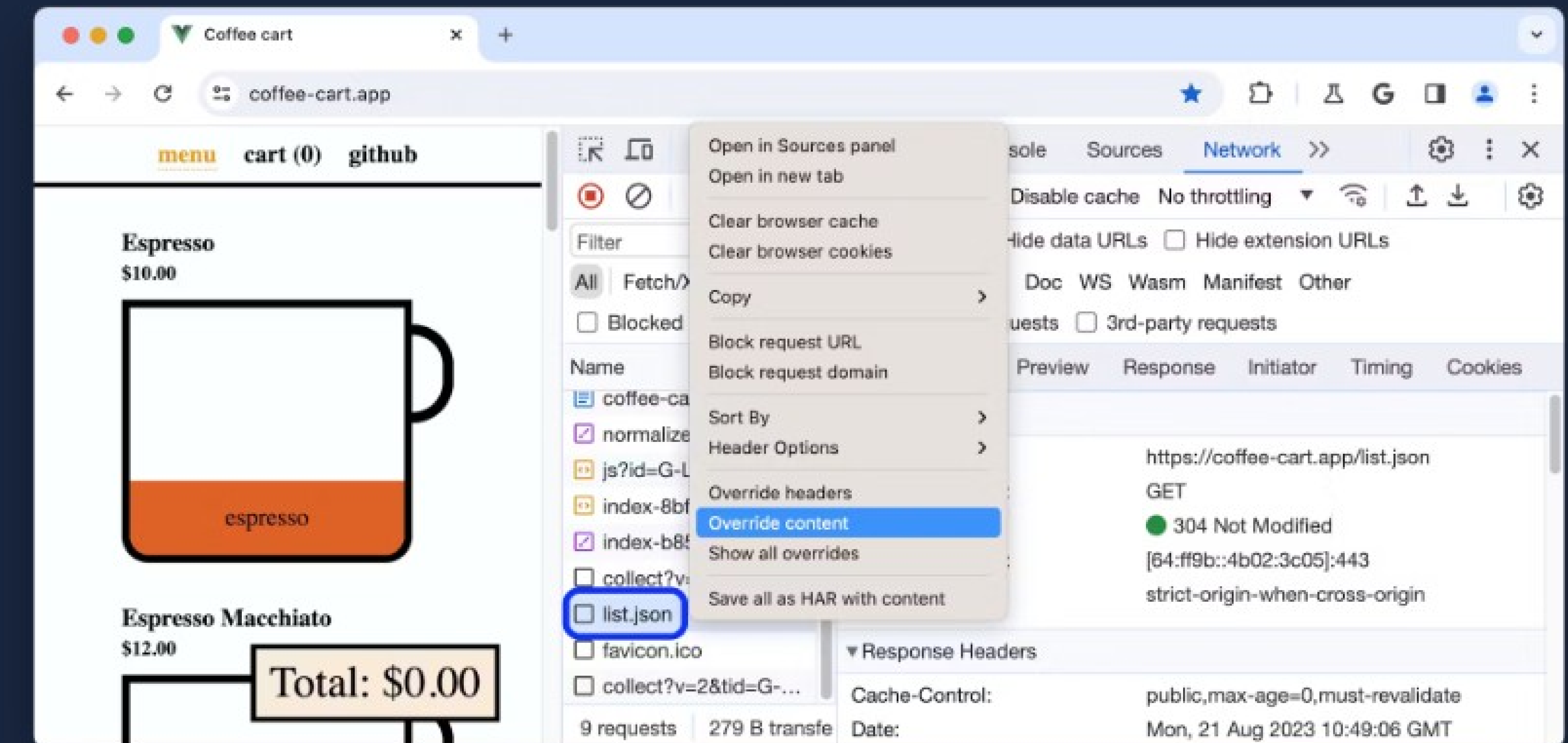
Command menu

- easy way to find DevTools features
- or even do a11y (color blindness etc) testing



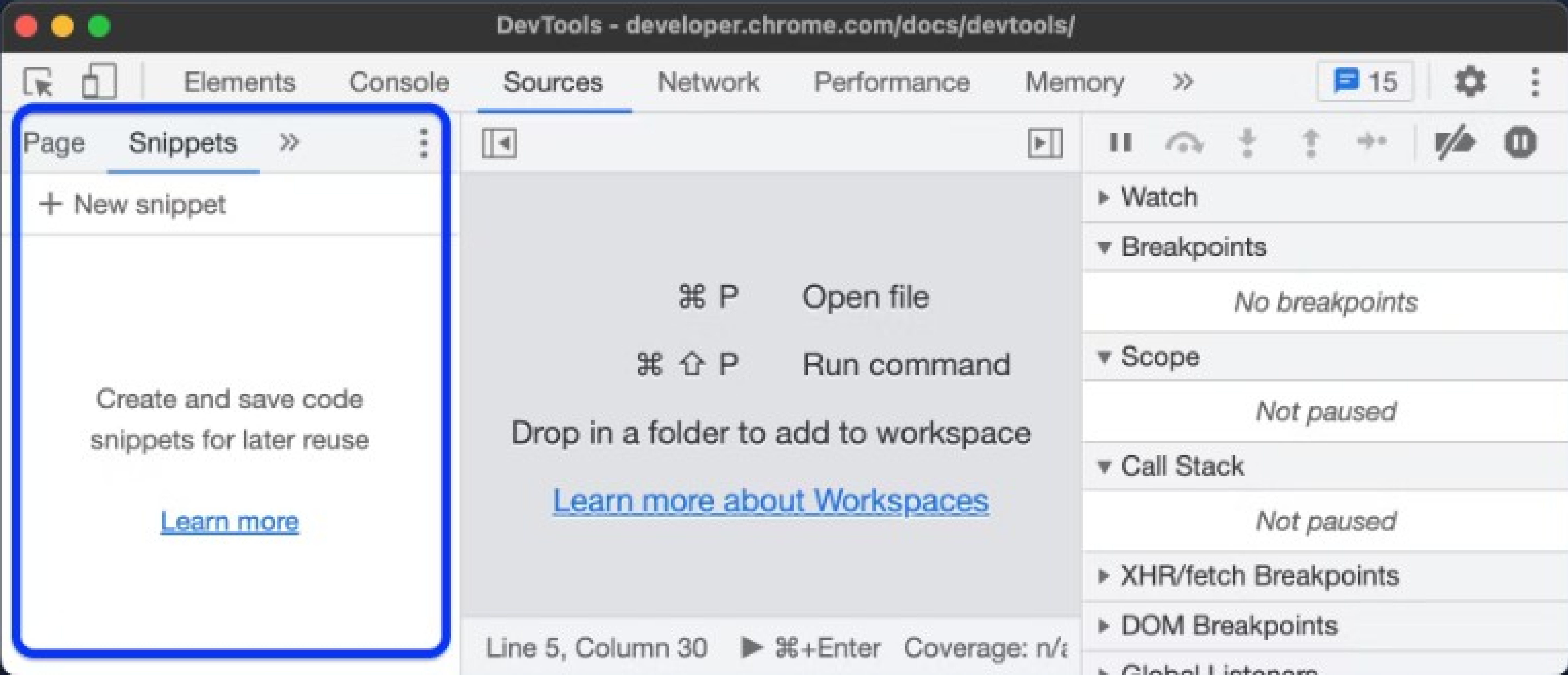
Local overrides

developer.chrome.com/docs/devtools/overrides



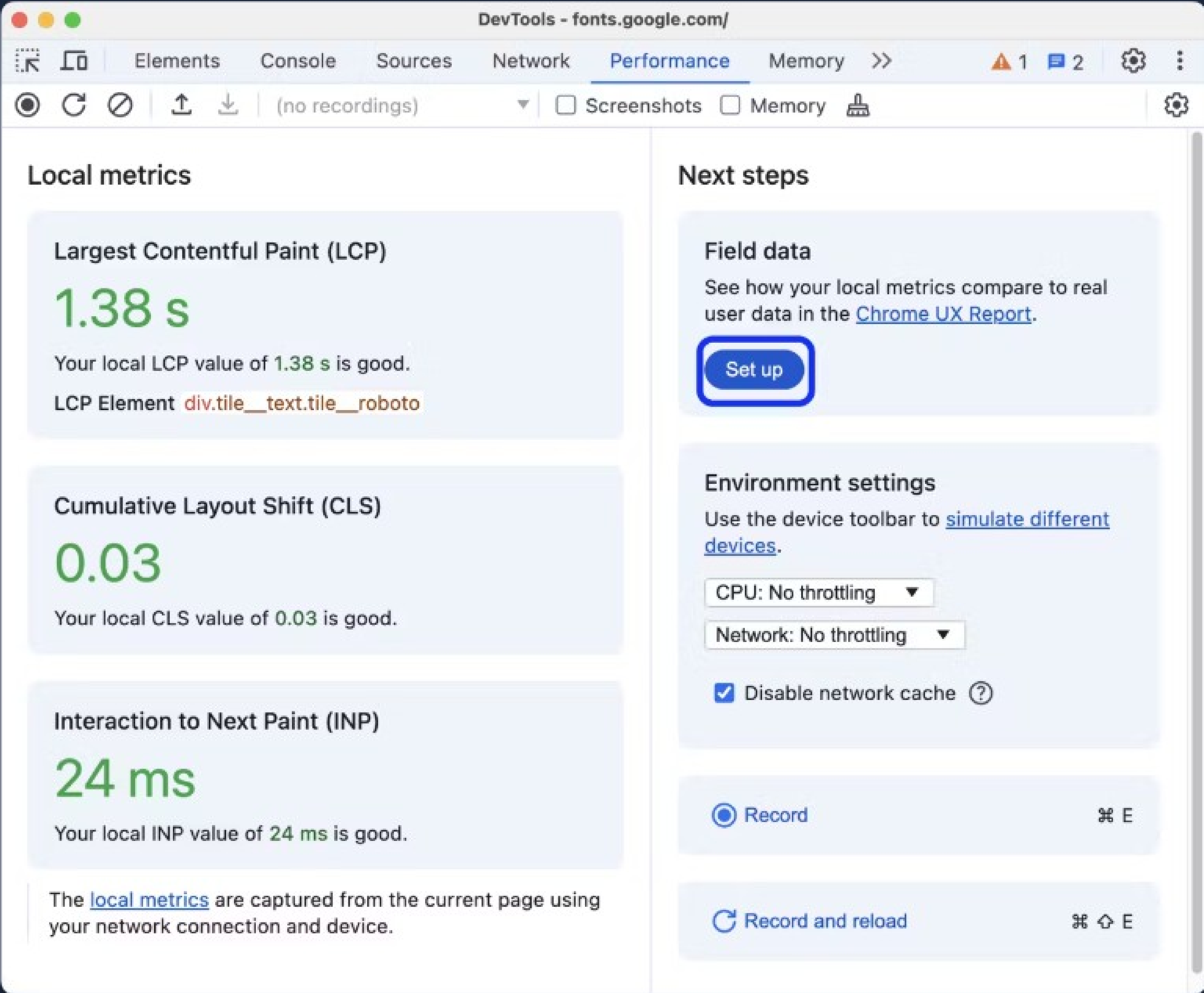
Save JS snippets

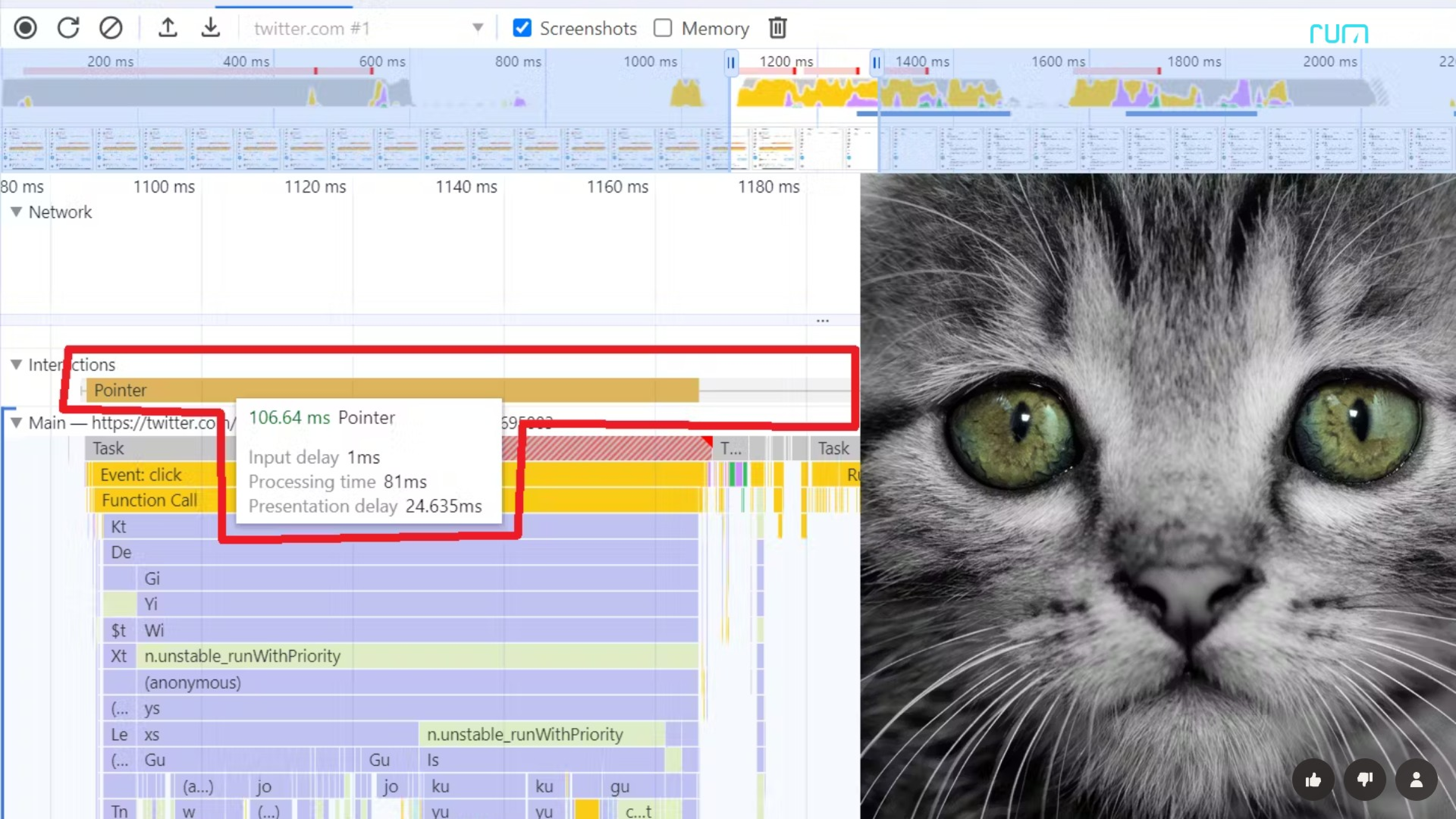
developer.chrome.com/docs/devtools/javascript/snippets



Performance Panel

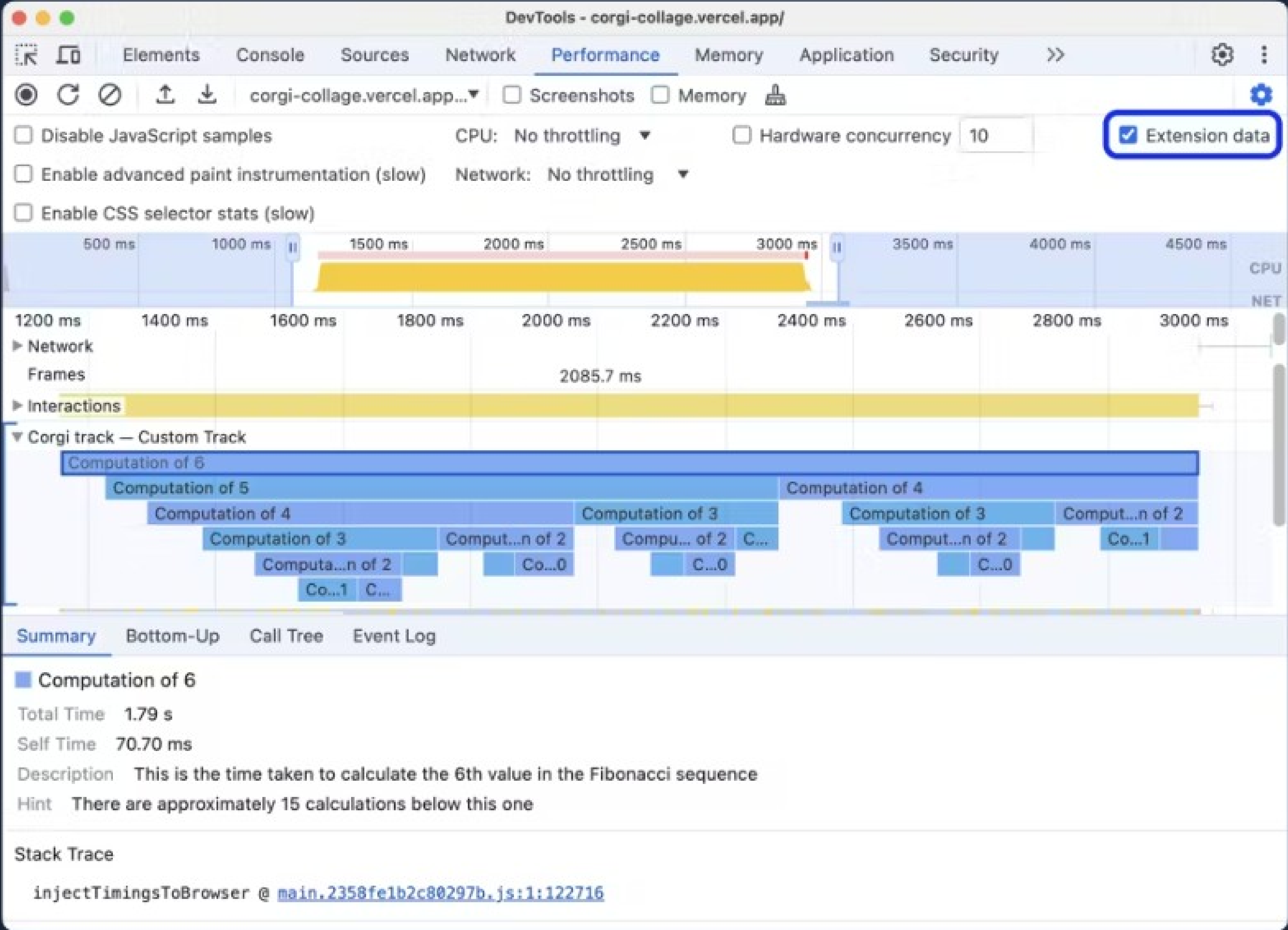
developer.chrome.com/docs/devtools/performance/overview





Extensibility API

developer.chrome.com/docs/devtools/performance/extension



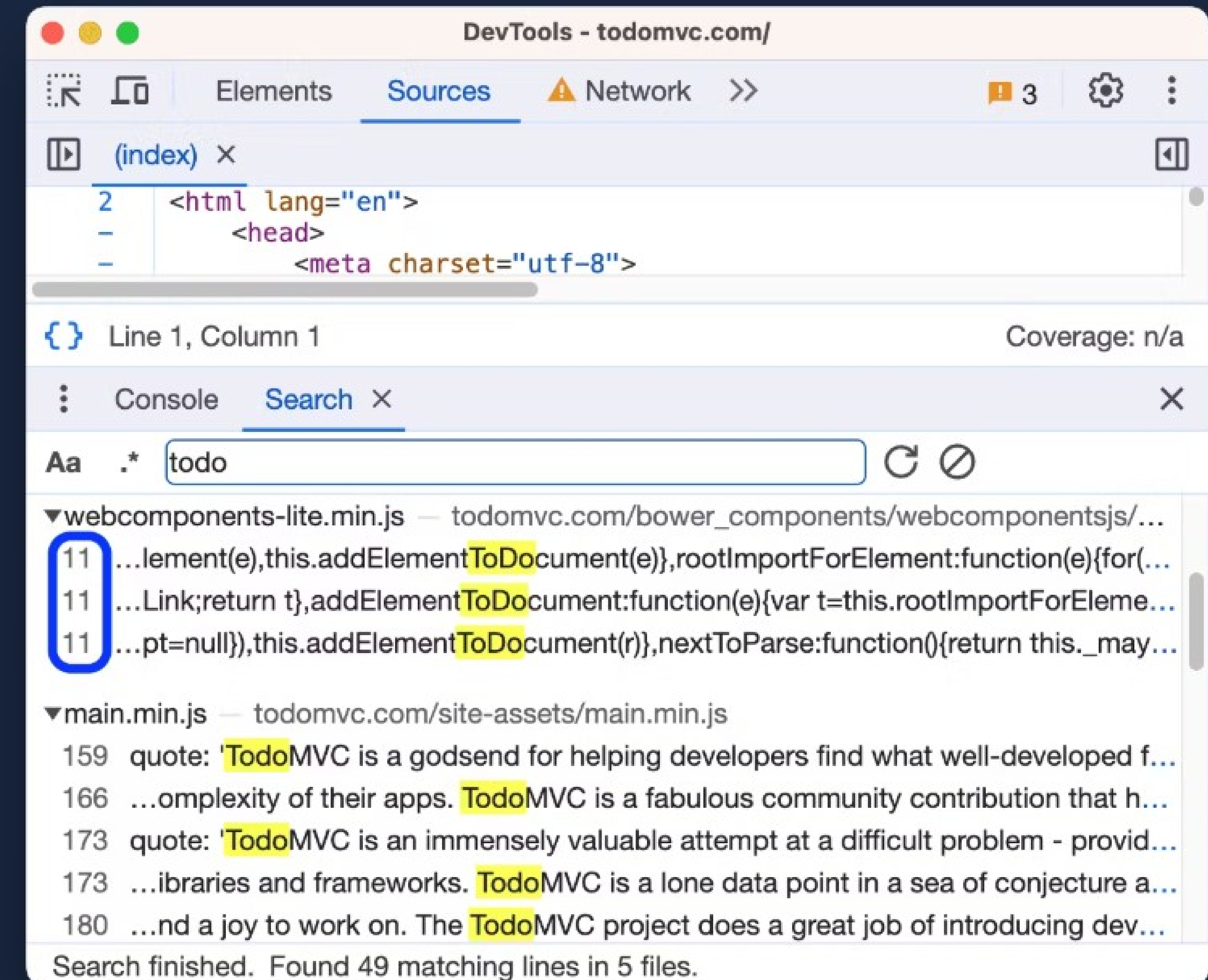
Extensibility API

- via `performance.mark + measure`
- customize via `detail.devtools` object
- developer.chrome.com/docs/devtools/performance/extension



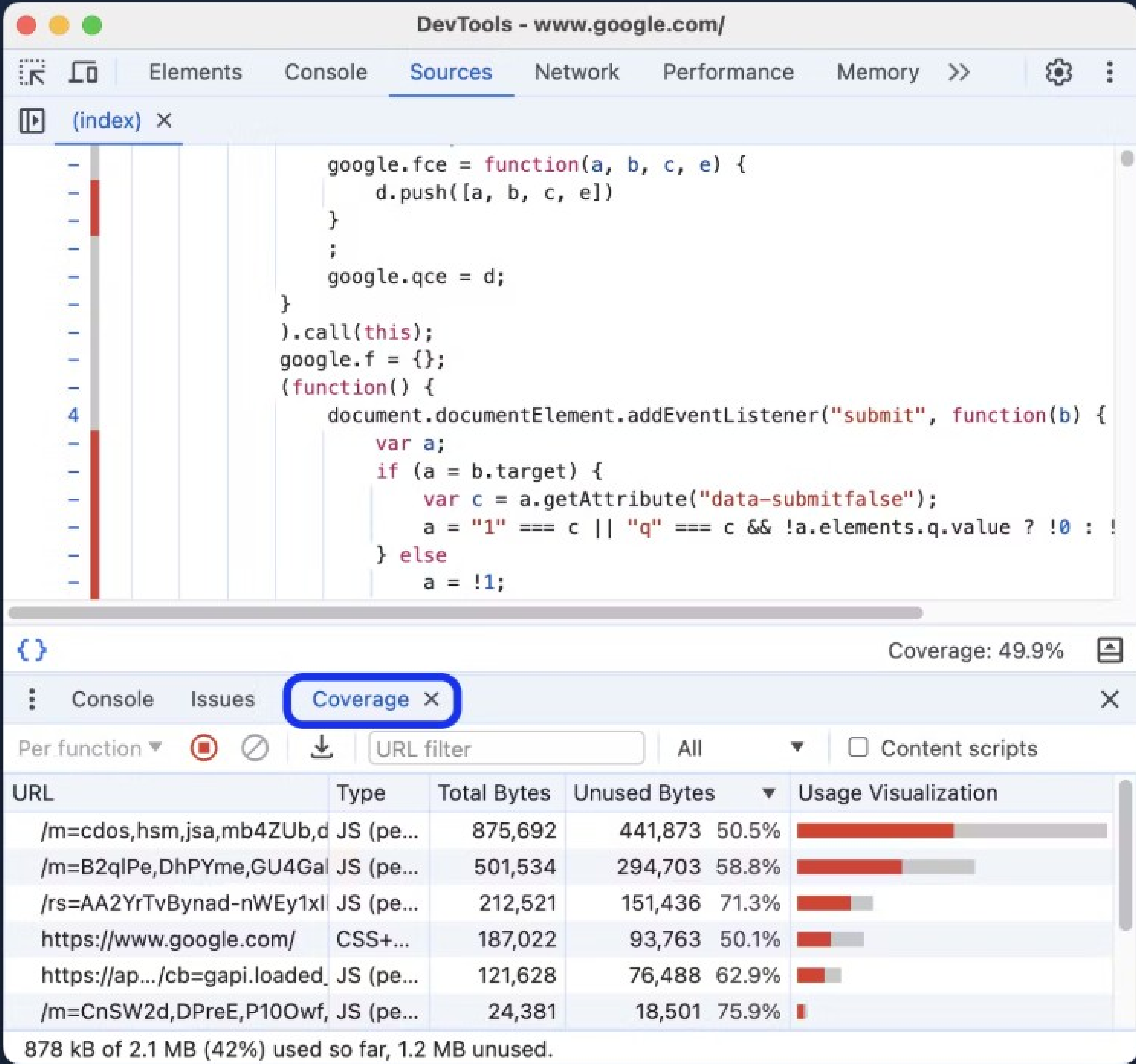
Search in contents

developer.chrome.com/docs/devtools/search



Coverage panel

developer.chrome.com/docs/devtools/coverage





Slides and more

Thanks! Find me at:

- linkedin.com/in/erwinhofman
- rumvision.com/sylius-con

