

Rendimiento Web

Intro y Herramientas

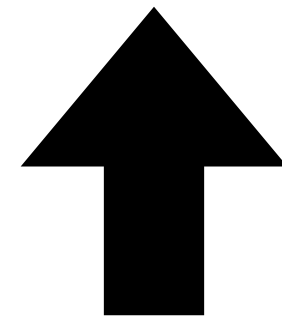
Kevin Chavez · JSConf MX 2024

Kevin Chavez

- Web Speed en Facebook
- Tech Lead en un startup haciendo un motor de videojuegos en WebGL+React
- Consultoría, incluyendo rendimiento
- Fig 1: yo buscando la siguiente optimización



Acción => Efecto



Todo código tarda tiempo en ejecutarse

Todos los datos tarda tiempo en accederse

Todo código, todo dato, y toda acción es rendimiento

30 min 🤔

1. ¿Por qué?

Calidad. Utilidad > Métricas.

Vodafone: Una mejora del 31% en el LCP **umentó las ventas en un 8%**

Cómo The Economic Times pasó los umbrales de las Métricas web esenciales y logró un **porcentaje de rebote un 43% más alto en general**

Cómo redBus mejoró la métrica Interaction to Next Paint (INP) de su sitio web y **umentó sus ventas un 7%**

Carpe improved Largest Contentful Paint by 52% and Cumulative Layout Shift by 41% and saw a **10% increase in traffic**, a 5% increase in online store conversion rate, and a **15% increase in revenue**.

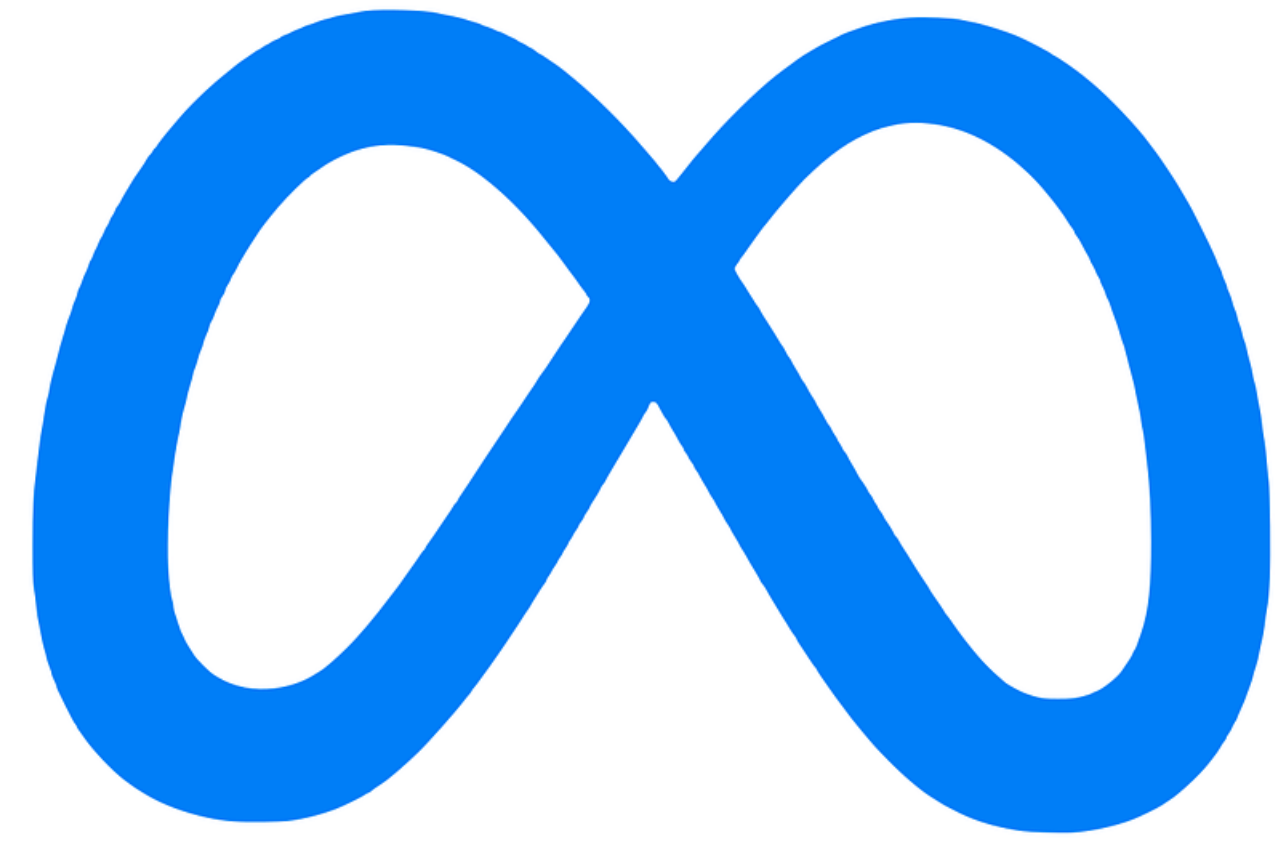
Adobe improved from 7.2 seconds to 3.4 seconds and **engaged visit rate increased by 35%**, bounce rates decreased by 6%, and the **average time spent on page increased by 21%** for mobile visitors.

Ingram Micro focused on reducing Total Blocking Time and saw a **35% increase in organic traffic** by improving their homepage TBT by 40%.

NDTV, one of India's leading news stations and websites, improved LCP by 55% and saw a **50% reduction in bounce rate**.

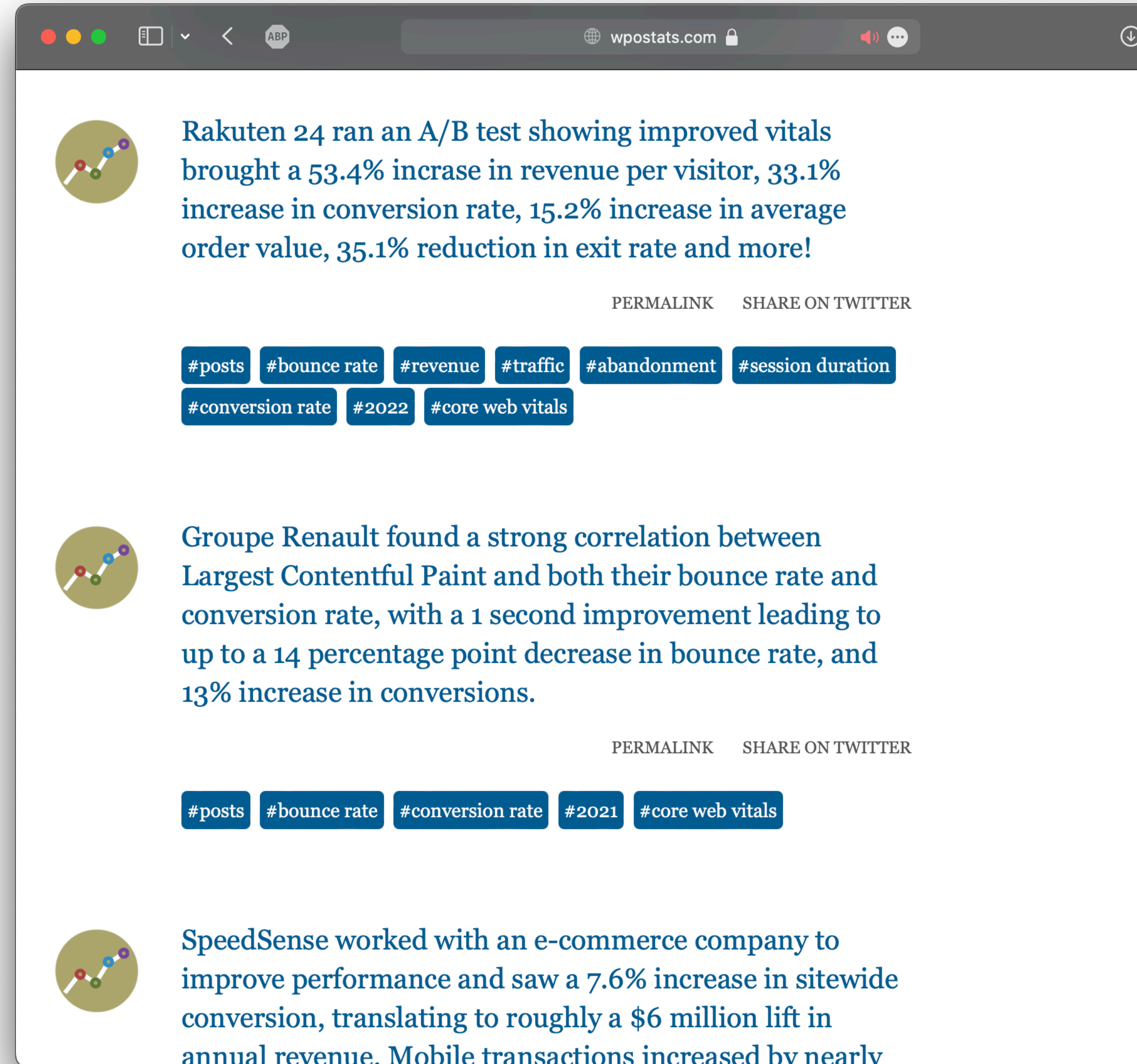
Cómo la inversión de Rakuten 24 en Métricas web esenciales **umentó los ingresos por visitante en un 53.37%** y el porcentaje de **conversiones en un 33.13%**

QuintoAndar reduced LCP by 26% and FID by 72% and saw a **46% reduction in bounce rate**, and **87% increase in pages per session**, and a **5% improvement in conversion**.



WPO stats

<https://wpostats.com/>



The screenshot shows a browser window with the URL wpostats.com. The page features three articles, each with a circular icon containing a line graph with four data points. The first article is about Rakuten 24, the second about Groupe Renault, and the third about SpeedSense. Each article includes a title, a short description, and a list of related hashtags.

Rakuten 24 ran an A/B test showing improved vitals brought a 53.4% increase in revenue per visitor, 33.1% increase in conversion rate, 15.2% increase in average order value, 35.1% reduction in exit rate and more!

PERMALINK SHARE ON TWITTER

#posts #bounce rate #revenue #traffic #abandonment #session duration
#conversion rate #2022 #core web vitals

Groupe Renault found a strong correlation between Largest Contentful Paint and both their bounce rate and conversion rate, with a 1 second improvement leading to up to a 14 percentage point decrease in bounce rate, and 13% increase in conversions.

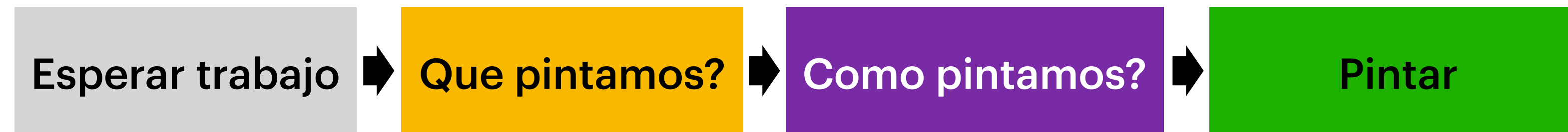
PERMALINK SHARE ON TWITTER

#posts #bounce rate #conversion rate #2021 #core web vitals

SpeedSense worked with an e-commerce company to improve performance and saw a 7.6% increase in sitewide conversion, translating to roughly a \$6 million lift in annual revenue. Mobile transactions increased by nearly

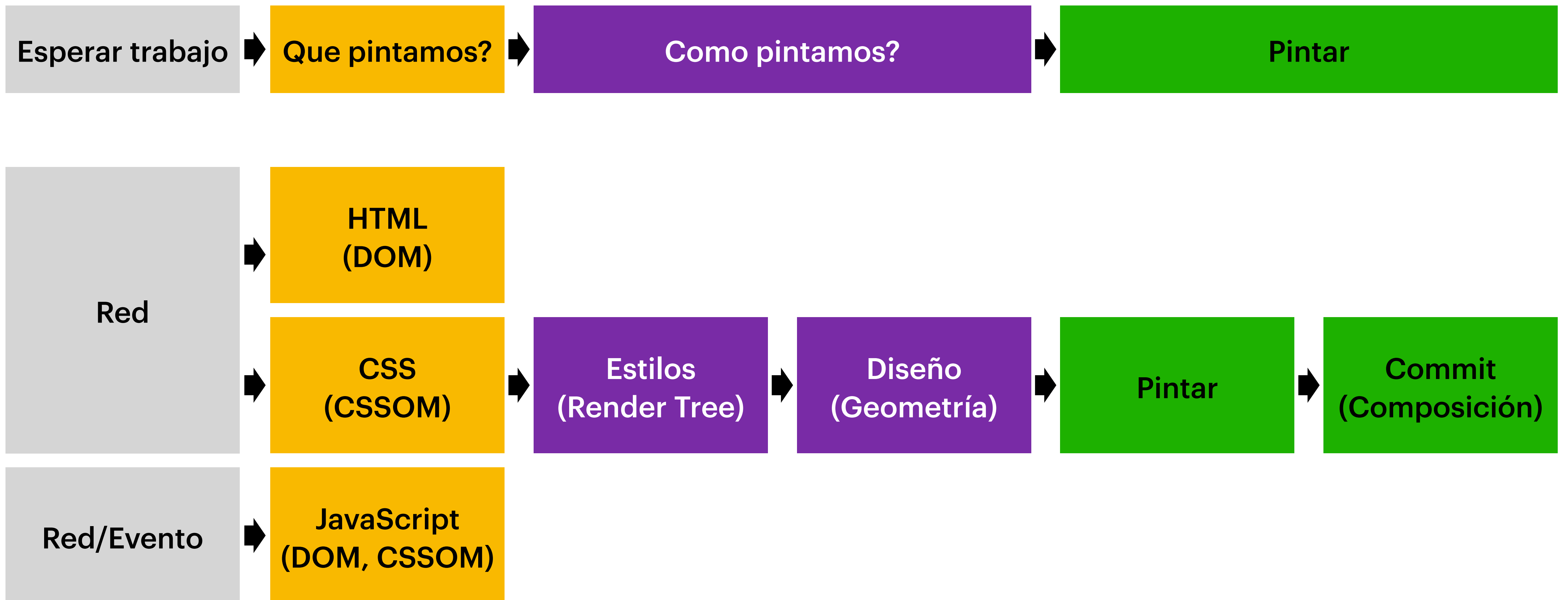
Como pintar?

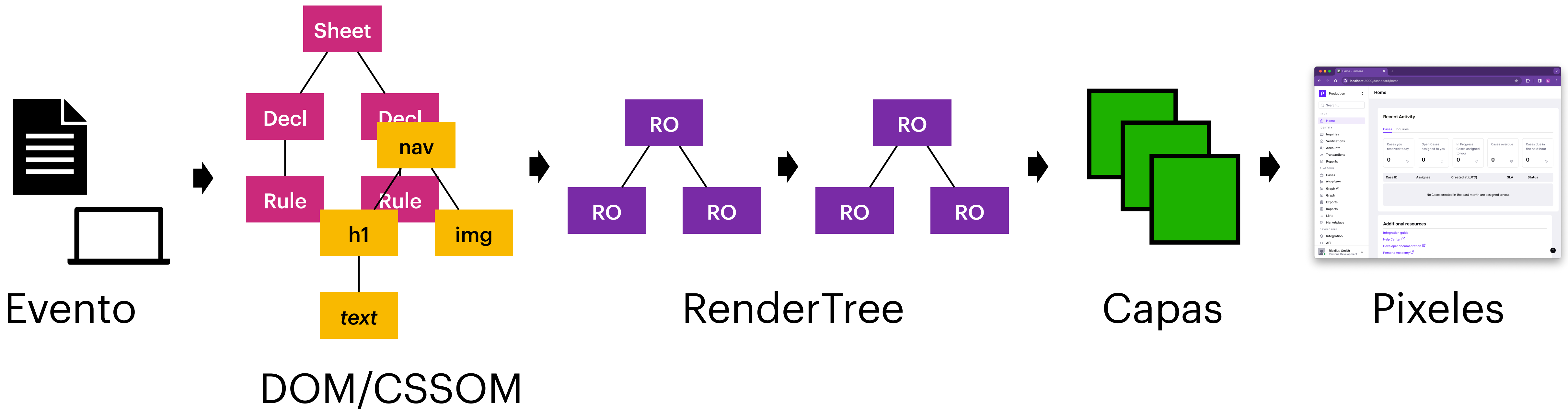
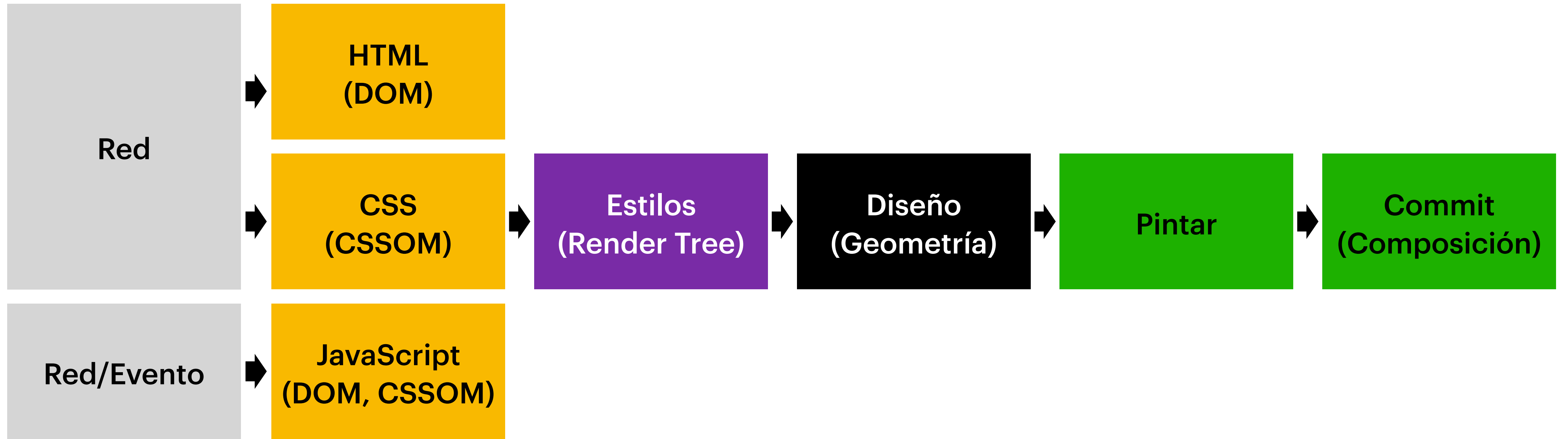
Version General

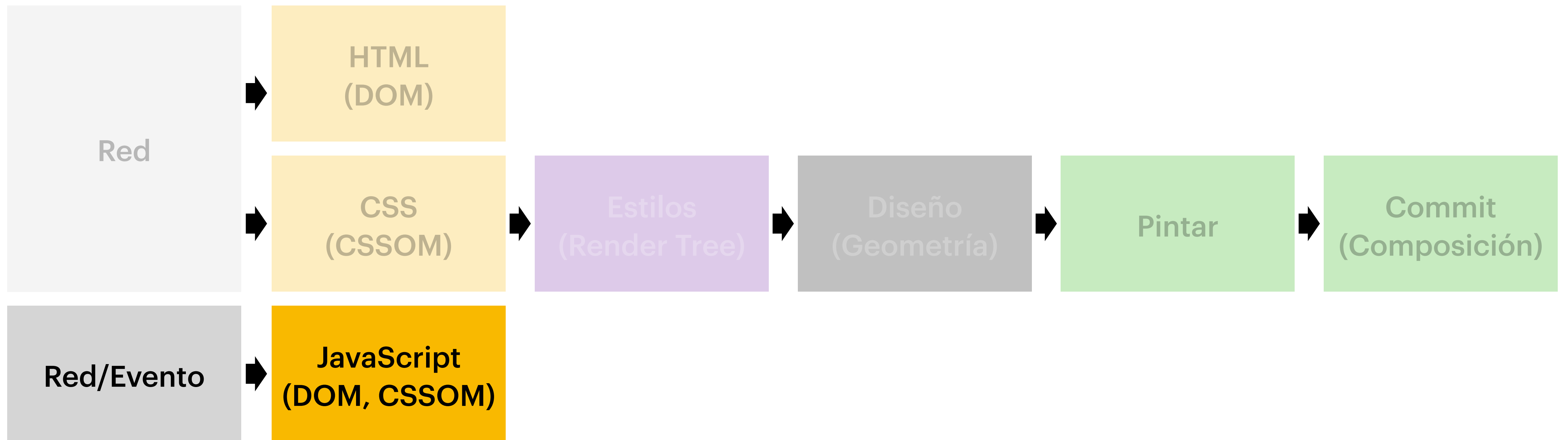


Como pintar?

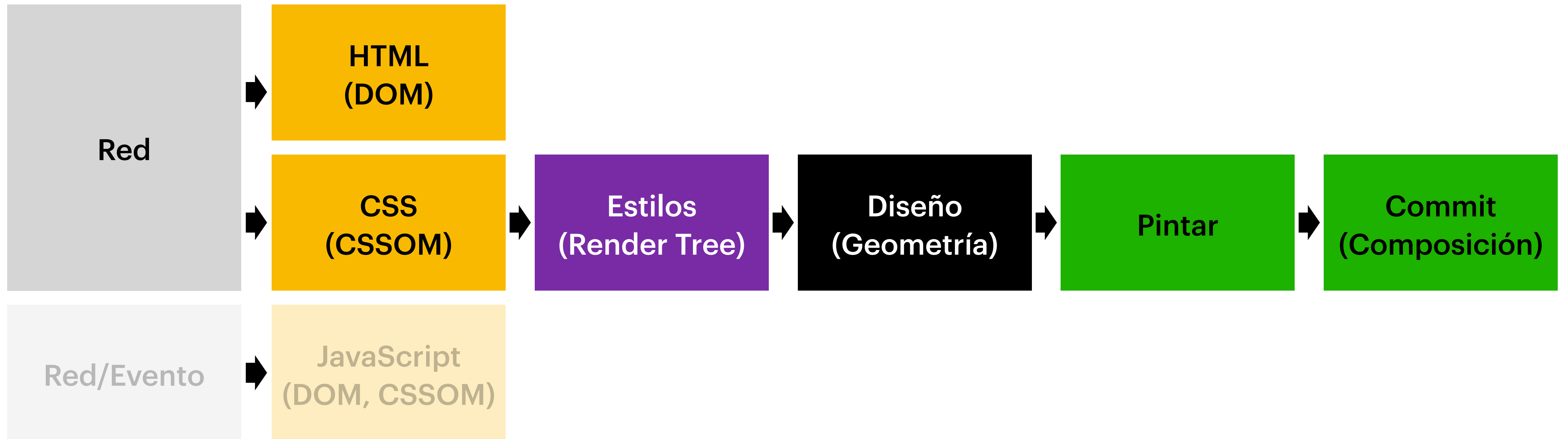
Version navegador



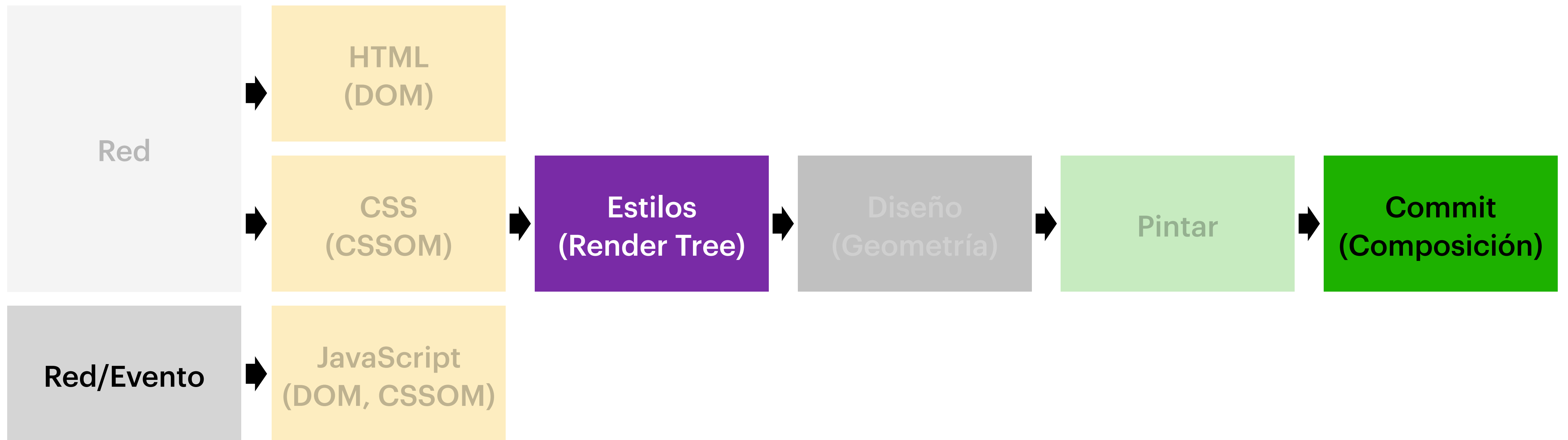




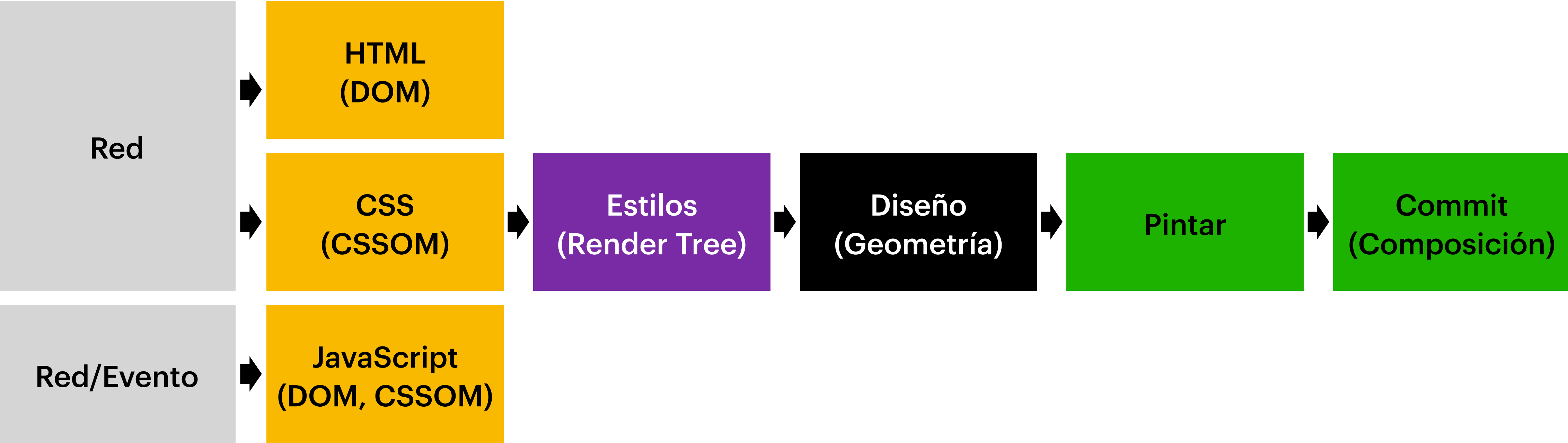
Un usuario presiona una tecla,
pero nada cambia en el DOM/CSSOM



Cargamos una página sin JS



Un usuario se desplaza en una página de HTML simple y sin JS

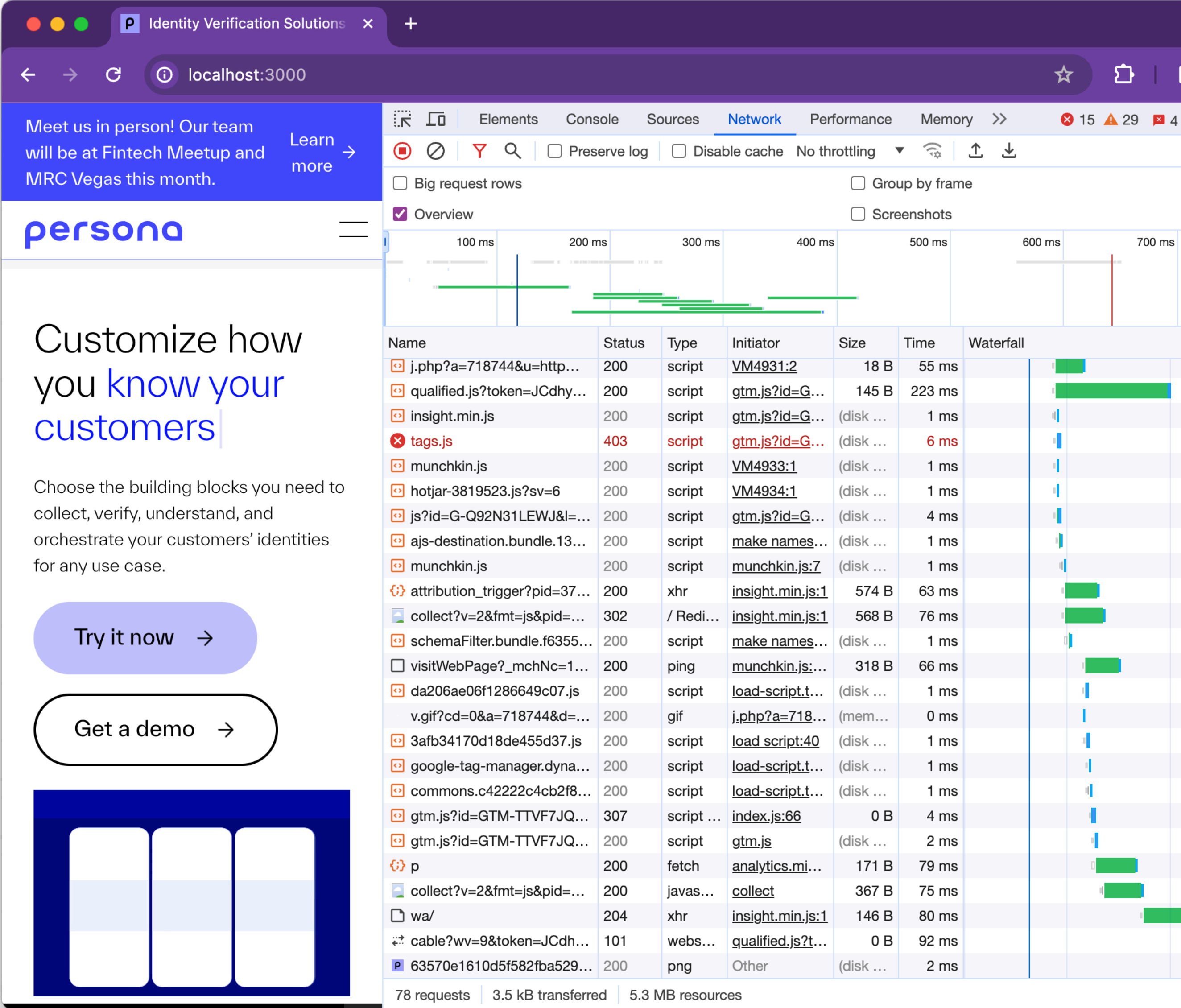




Network Tab

Información sobre las solicitudes de red

- ¿Cuándo ocurrió un request?
- ¿Qué lo inició?
- ¿Por qué se detuvo/falló? ¿Red? ¿Servidor?
- Opciones útiles:
 - Desactivar caché
 - Limitación de velocidad
 - Link al código que inició un request



The screenshot shows a web browser window with the Network Tab open. The page content is for 'persona' and includes a navigation bar, a main heading 'Customize how you know your customers', and two buttons: 'Try it now' and 'Get a demo'. Below the buttons are three placeholder images. The Network Tab interface includes a search bar, a list of requests, and a waterfall chart. The list of requests is as follows:

Name	Status	Type	Initiator	Size	Time	Waterfall
j.php?a=718744&u=http...	200	script	VM4931:2	18 B	55 ms	
qualified.js?token=JCdh...	200	script	gtm.js?id=G...	145 B	223 ms	
insight.min.js	200	script	gtm.js?id=G...	(disk ...)	1 ms	
tags.js	403	script	gtm.js?id=G...	(disk ...)	6 ms	
munchkin.js	200	script	VM4933:1	(disk ...)	1 ms	
hotjar-3819523.js?sv=6	200	script	VM4934:1	(disk ...)	1 ms	
js?id=G-Q92N31LEWJ&l=...	200	script	gtm.js?id=G...	(disk ...)	4 ms	
ajs-destination.bundle.13...	200	script	make names...	(disk ...)	1 ms	
munchkin.js	200	script	munchkin.js:7	(disk ...)	1 ms	
attribution_trigger?pid=37...	200	xhr	insight.min.js:1	574 B	63 ms	
collect?v=2&fmt=js&pid=...	302	/ Redi...	insight.min.js:1	568 B	76 ms	
schemaFilter.bundle.f6355...	200	script	make names...	(disk ...)	1 ms	
visitWebPage?_mchNc=1...	200	ping	munchkin.js:...	318 B	66 ms	
da206ae06f1286649c07.js	200	script	load-script.t...	(disk ...)	1 ms	
v.gif?cd=0&a=718744&d=...	200	gif	j.php?a=718...	(mem...)	0 ms	
3afb34170d18de455d37.js	200	script	load script:40	(disk ...)	1 ms	
google-tag-manager.dyna...	200	script	load-script.t...	(disk ...)	1 ms	
commons.c42222c4cb2f8...	200	script	load-script.t...	(disk ...)	1 ms	
gtm.js?id=GTM-TTVF7JQ...	307	script ...	index.js:66	0 B	4 ms	
gtm.js?id=GTM-TTVF7JQ...	200	script	gtm.js	(disk ...)	2 ms	
p	200	fetch	analytics.mi...	171 B	79 ms	
collect?v=2&fmt=js&pid=...	200	javas...	collect	367 B	75 ms	
wa/	204	xhr	insight.min.js:1	146 B	80 ms	
cable?wv=9&token=JCdh...	101	webs...	qualified.js?t...	0 B	92 ms	
63570e1610d5f582fba529...	200	png	Other	(disk ...)	2 ms	

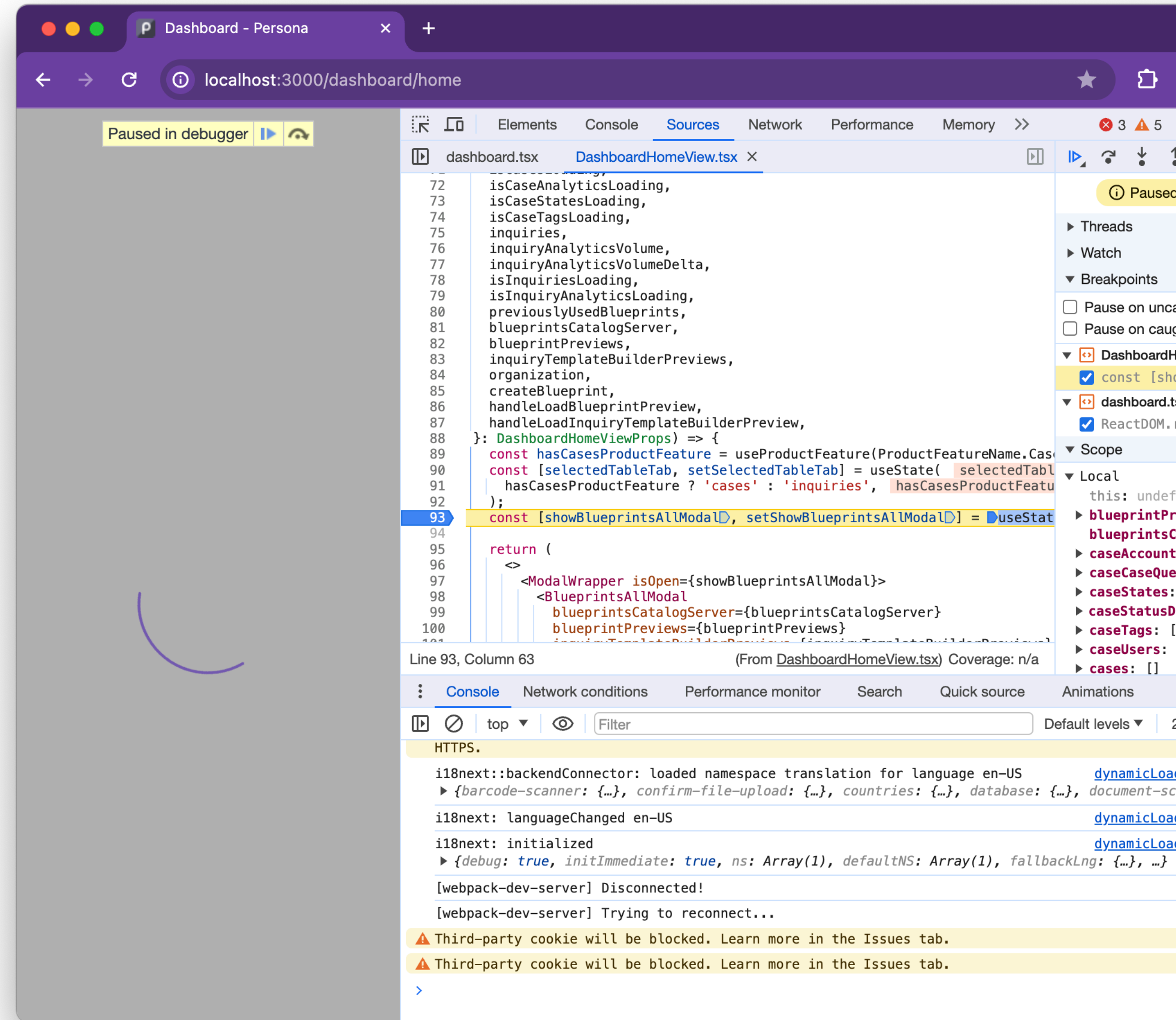
78 requests | 3.5 kB transferred | 5.3 MB resources



Sources Tab

Debugger de JavaScript

- Agregar puntos de interrupción. Al detenerse, ver:
 - Pila de llamadas
 - Variables en el ámbito
- Interrupción automática en excepciones
- Otras opciones para interrupciones:
 - Al cambiar un elemento DOM, al hacer una solicitud con una URL que contiene una cadena específica, en eventos DOM, etc.



Memory Tab

Uso de memoria de JavaScript

- 3 tipos de profiling:
 - Snapshot— ver qué está en la memoria y por qué
 - Allocation Timeline— grabar y ver qué se asignó y cuándo
 - Allocation Sampling— grabar y ver cuánta memoria asignó cada llamada de función
- También se puede activar la recolección de basura

The screenshot shows the Chrome DevTools Memory tab. The browser window displays a page for 'persona' with a navigation menu. The Memory tab is open, showing a summary of heap snapshots and allocation timelines. The 'Summary' view is selected, showing a list of objects with their distance from the root and their shallow size. The 'Object @729381' is selected, showing its prototype chain and properties. The 'Retainers' view is also visible, showing the objects that retain the selected object.

Constructor	Distance	Shallow Size
▶ Window ×103	1	40 632 0
▶ (compiled code) ×352052	3	21 252 884 39
▶ (closure) ×106548	2	3 279 680 6
▶ system / Context ×23496	3	745 072 1
▼ Object ×106142	2	3 079 836 6
▼ Object @729381	7	28 0
▶ dispatch :: v() @886007	8	32 0
▶ getState :: u() @886005	8	32 0
▶ map :: system / Map @1019199	8	40 0
▶ __proto__ :: Object @213809 []	2	28 0
▶ <symbol observable> :: f() @1648653	8	32 0
▶ replaceReducer :: d() @1648651	8	32 0
▶ subscribe :: h() @879439	8	32 0
▶ properties :: system / PropertyArray @1	8	20 0
▶ Object @118311	7	28 0
▶ Object @514357	7	28 0
▶ Object @451937	7	28 0
▶ Object @231777	7	28 0

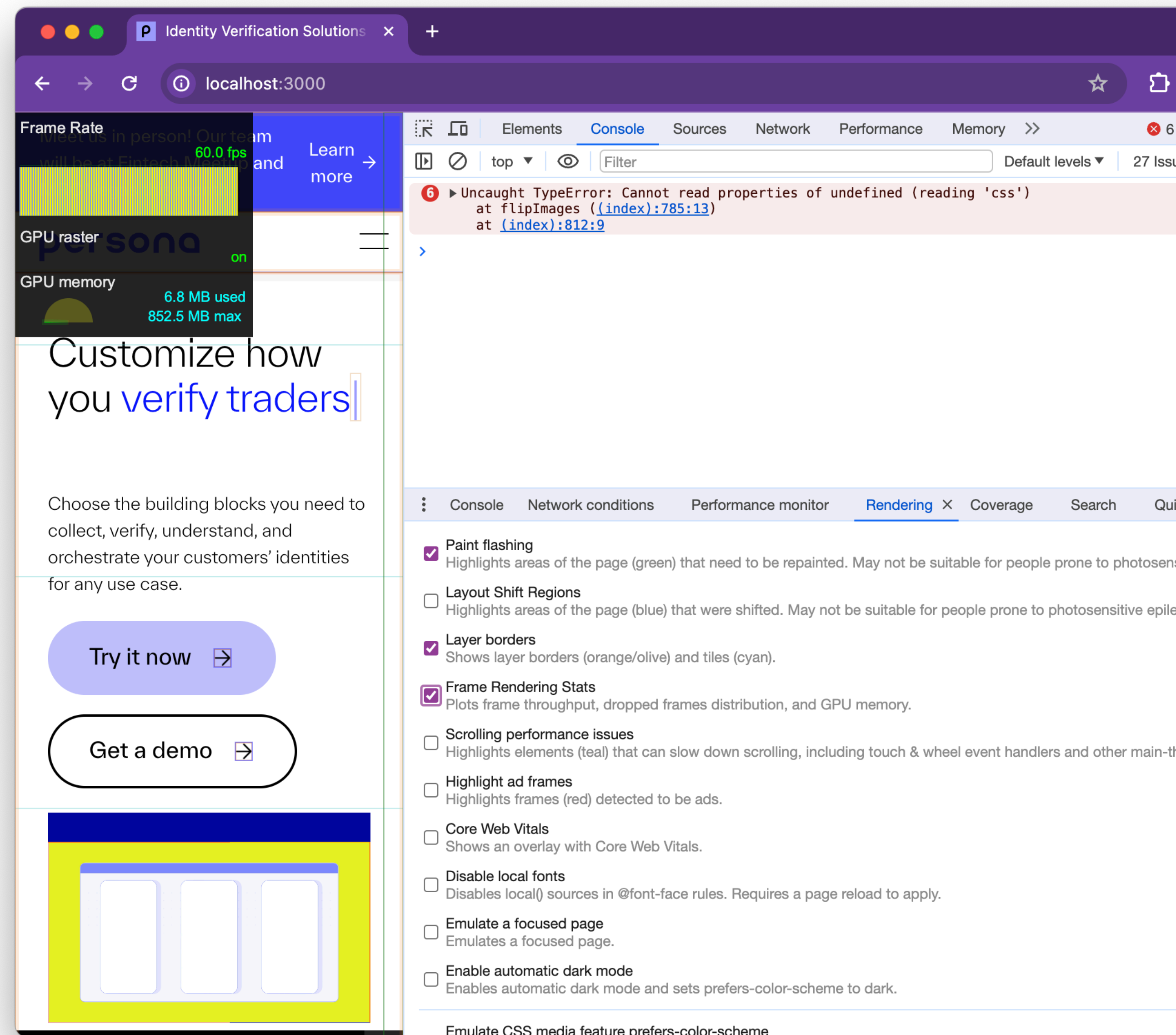
Object	Distance	Shallow Size
▼ store in Object @891437	6	28 0
▼ ix2 in Object @876121	5	28 0
▼ kr in system / Context @448693	4	92 0
▼ context in () @879961 []	3	32 0
▼ validClick in Object @452941 []	2	28 0
▶ Webflow in Window @7419 []	1	36 0
▶ value in system / PropertyCell @	3	20 0
ge in system / Context @448693	4	92 0
▶ ac in system / Context @898215	6	60 0
▶ exports in Object @459107	7	16 0
▶ qr in system / Context @1167899	8	36 0
▶ \$s in system / Context @1167717	8	20 0
▶ mr in system / Context @1167623	8	28 0
▶ gr in system / Context @1167407	8	24 0



Rendering Tab

Información sobre diseño, pintura y composición

- Habilita overlays útiles:
 - Destello de pintura: resalta los elementos cuando se repintan
 - Estado de renderizado de fotogramas: FPS, uso de memoria de la GPU
 - Bordos de capas
 - Regiones de cambio de diseño: resalta áreas donde el diseño (layout) ha cambiado





Layers Tab

Perspectivas sobre pintura/composición

- Muestra todas las capas, su tamaño y uso de memoria
- Muestra por qué es su propia capa
- Profiler de pintura: ¿cómo se pintó y cuánto tiempo tomó?

Identity Verification Solutions x +

localhost:3000

Meet us in person! Our team will be at Fintech Meetup and MRC Vegas this month. Learn more →

persona

Customize how you [tr](#)

Choose the building blocks you need to collect, verify, understand, and orchestrate your customers' identities for any use case.

Try it now →

Get a demo →

▼#552(0 x 0)

- #document(640 x 27893)
- ::after(17 x 78)
- svg(16 x 17)
- svg(16 x 17)
- video#homepageVideo(532 x 295)
- img.logo-img(205 x 77)
- img.logo-img(196 x 77)
- img.logo-img(203 x 77)
- img.logo-img(151 x 77)
- img.logo-img(166 x 77)
- img.logo-img(159 x 77)
- img.logo-img(237 x 77)
- img.logo-img(144 x 77)
- img.home-val-icon(96 x 97)
- img.home-val-icon(96 x 97)
- img.home-val-icon(96 x 97)
- img.home-val-icon(96 x 97)
- header.site-header_wrapper.is--d
- .nav-v2.w-nav(640 x 100)
- #580(32 x 1524)
- img.logo-img(175 x 77)
- img.logo-img(182 x 77)
- img.logo-img(207 x 77)
- img.logo-img(157 x 77)
- img.logo-img(261 x 77)
- img.logo-img(133 x 77)
- img.logo-img(195 x 77)
- img.logo-img(184 x 77)
- img.logo-img(345 x 77)

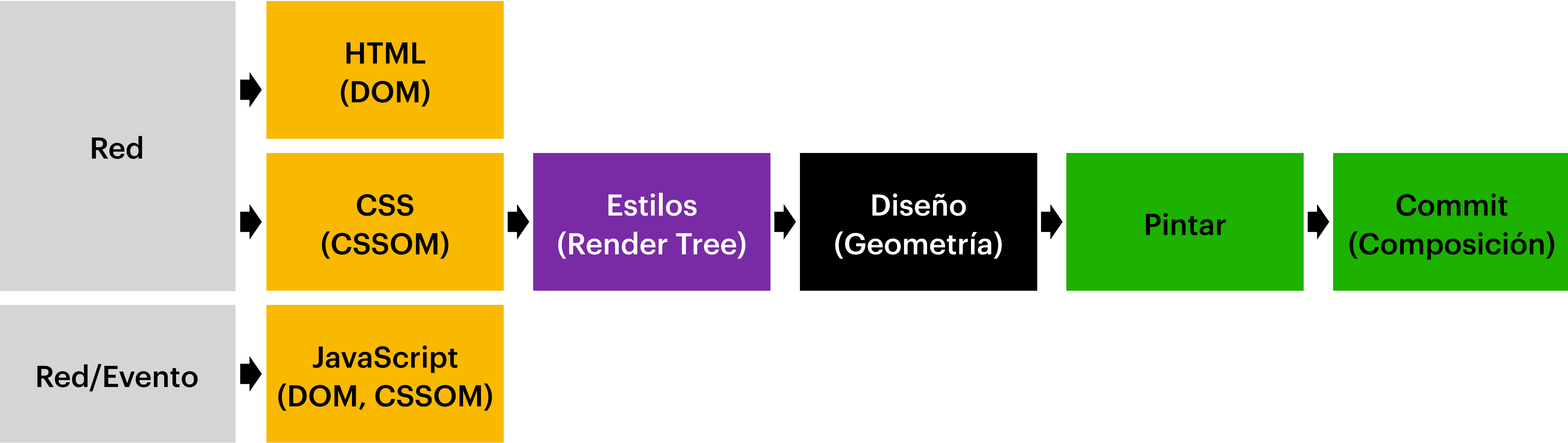
Meet us in person! Our team will be at Fintech Meetup and MRC Vegas this month. Learn more →

persona

Details

Size	16 x 17 (at 0, 0)
Compositing Reasons	Leaf of a 3D scene, for flattening its descendants in
Memory estimate	1.1 kB
Paint count	1
Slow scroll regions	
Sticky position constraint	

[Paint Profiler](#)



Performance Tab

Información sobre todo

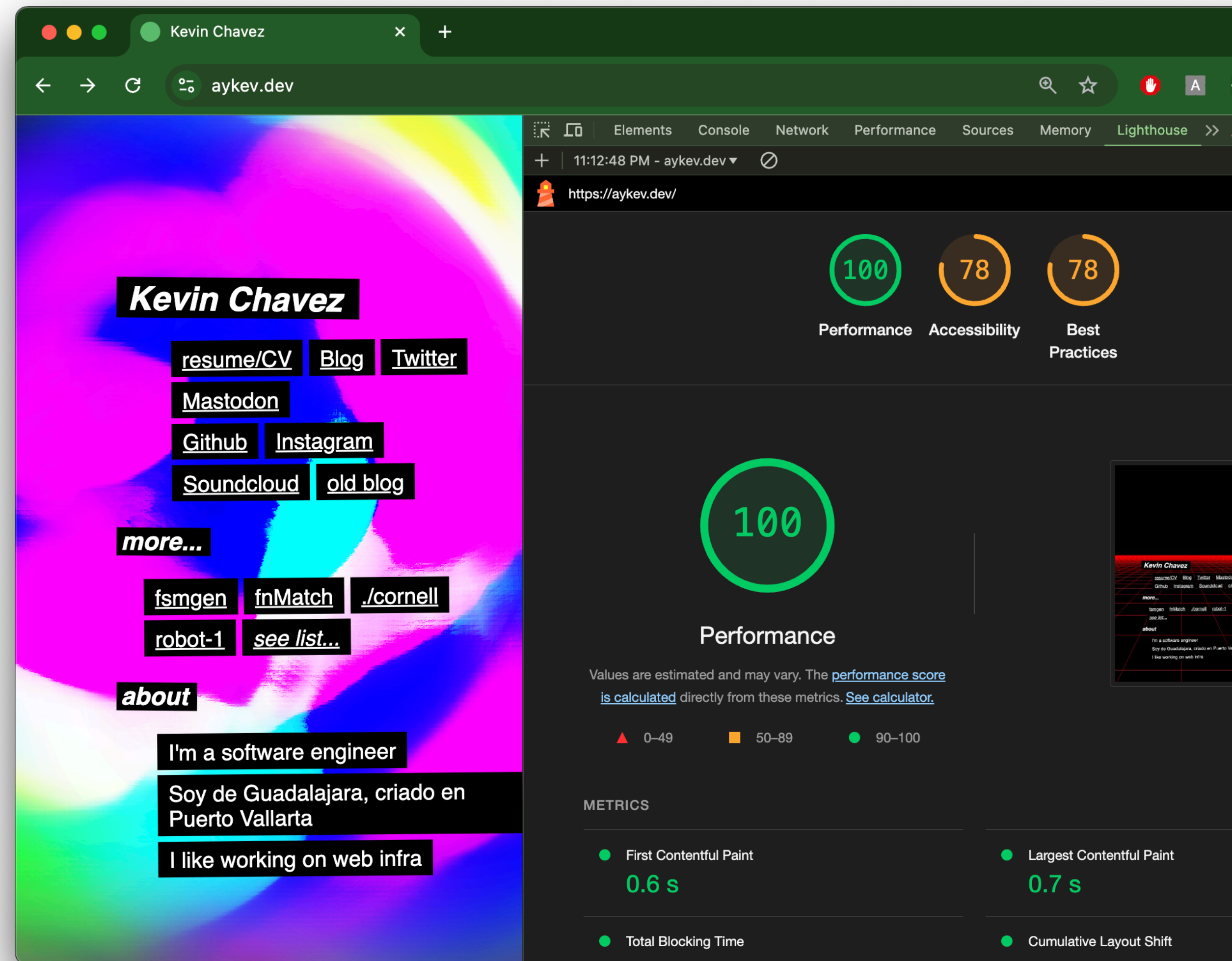
- Registra el tiempo de ejecución de JavaScript y su jerarquía, además del tiempo de ejecución de otras acciones del hilo principal del navegador.
- Registra otros datos auxiliares: uso de memoria, solicitudes de red, capturas de pantalla, tareas (y tareas largas), eventos clave (DCL, FP, LCP), trabajo en hilos, etc
- Puede limitar la velocidad de la red y del CPU
- Puede mostrar tus propios puntos y períodos de tiempo "personalizados"

The screenshot displays the Performance Tab of a web browser. The page being viewed is 'persona' on 'localhost:3000'. The Performance Tab is active, showing a detailed timeline of page load events. The timeline includes various tasks such as 'Evaluate Script', 'Parse HTML', 'Function Call', and 'Event: re...atechange'. A donut chart at the bottom indicates a total time of 13 ms for the selected range. The chart is broken down into categories: Loading (0 ms), Scripting (8 ms), Rendering (0 ms), Painting (3 ms), System (2 ms), Idle (0 ms), and Total (13 ms).

Lighthouse

Chrome Developer Tools

- Metricas
- Buen punto de inicio, poco detalle

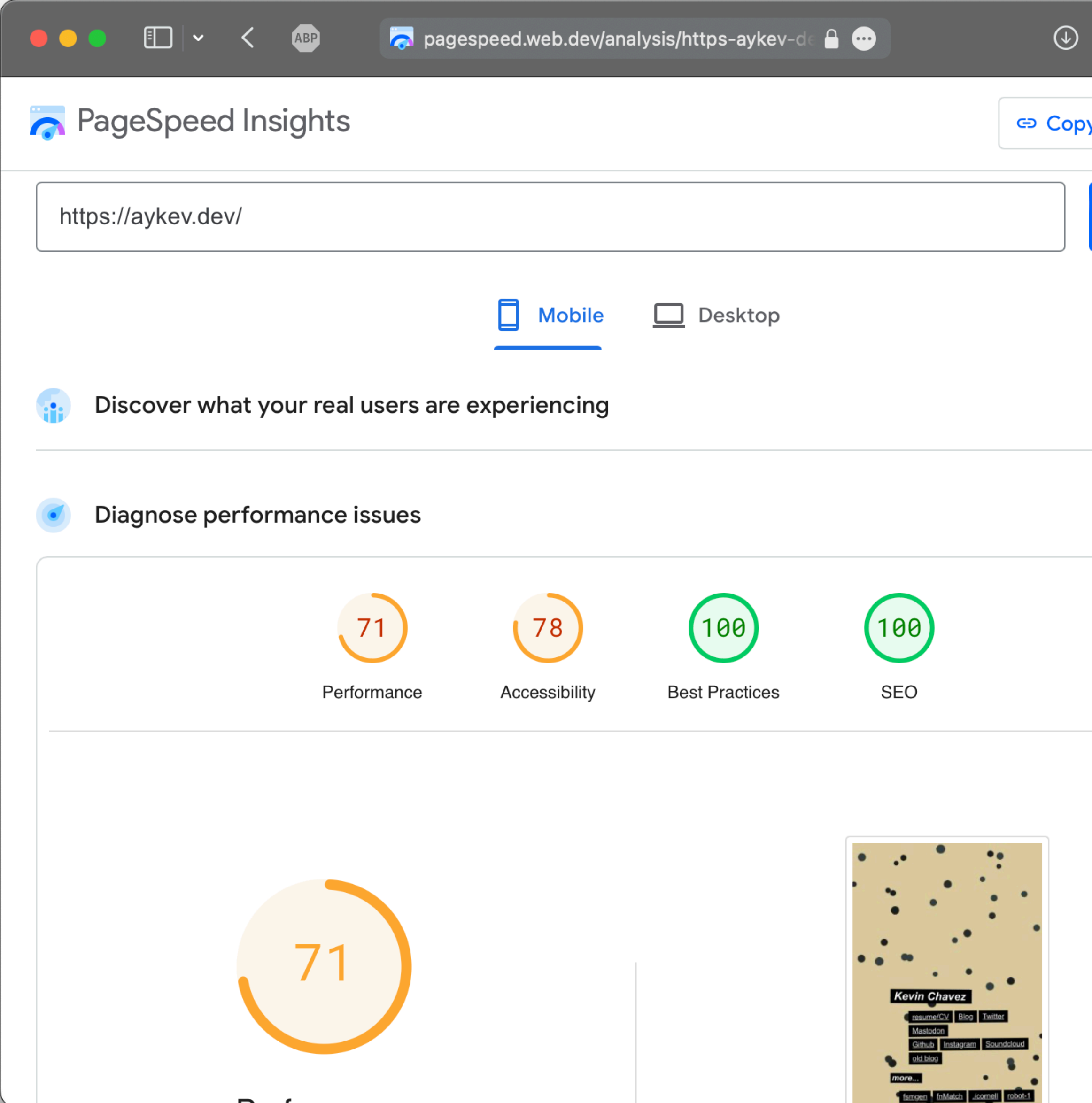


PageSpeed

<https://pagespeed.web.dev>

- Similar a Lighthouse, usan el mismo motor de análisis desde 2018

- Links para compartir reportes



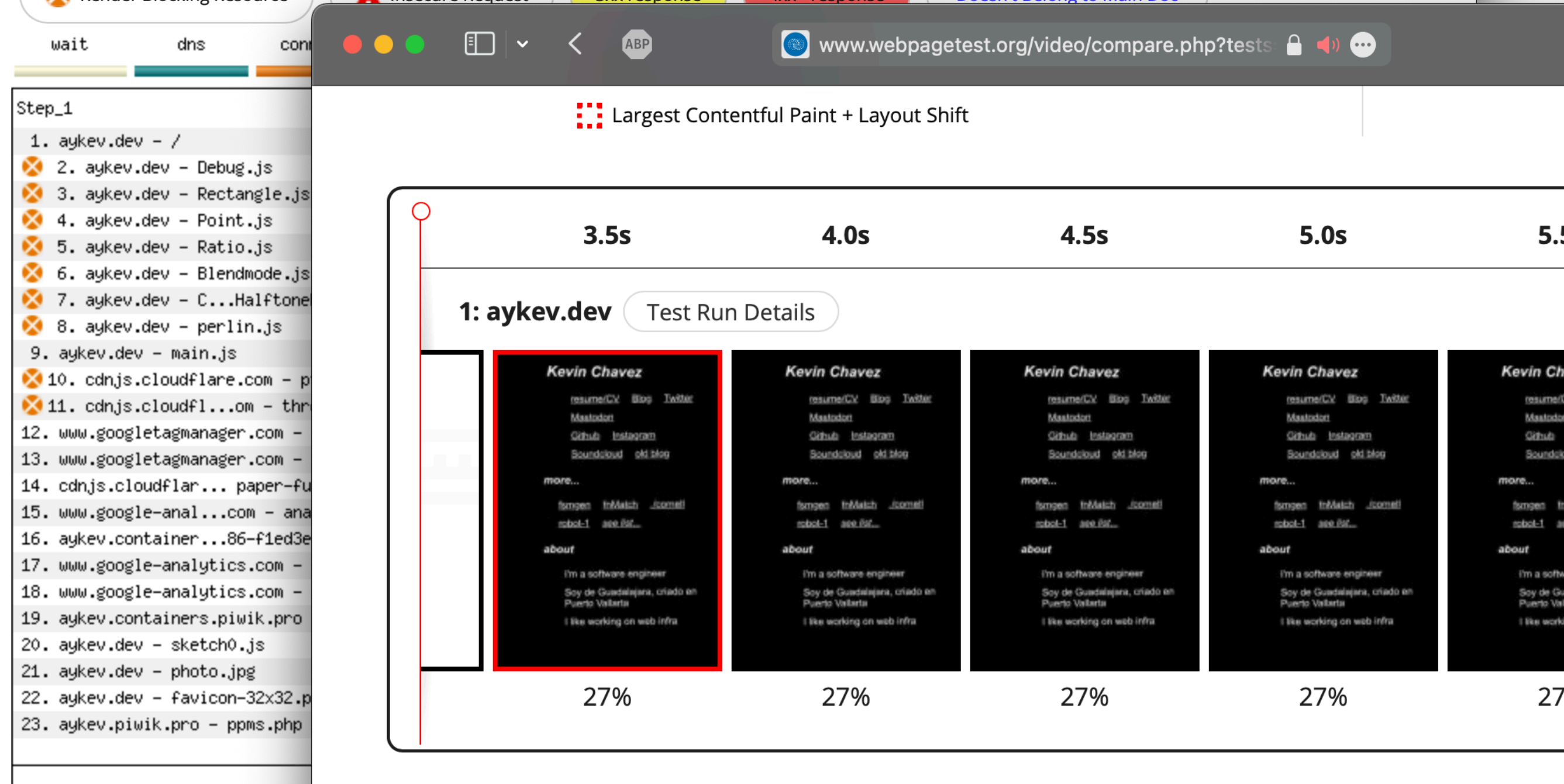
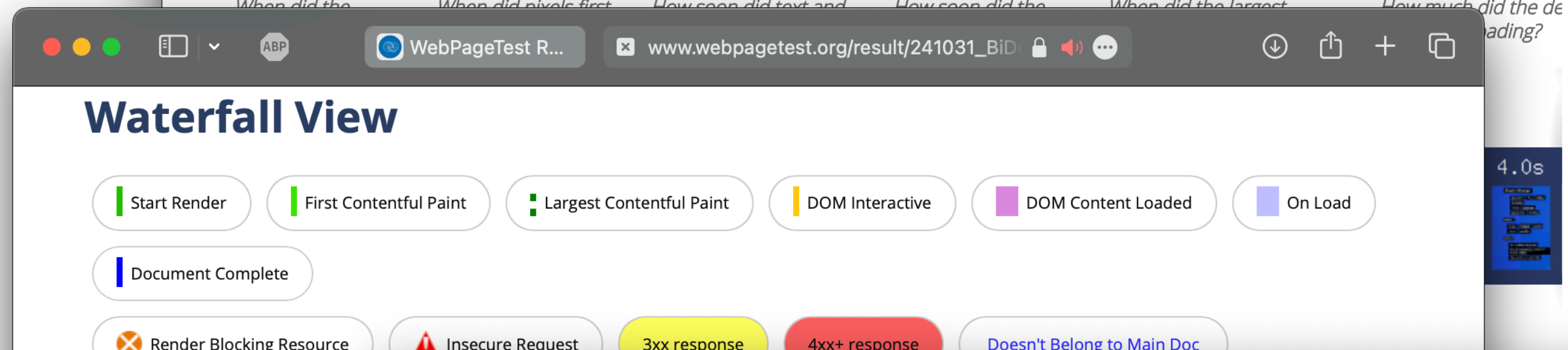
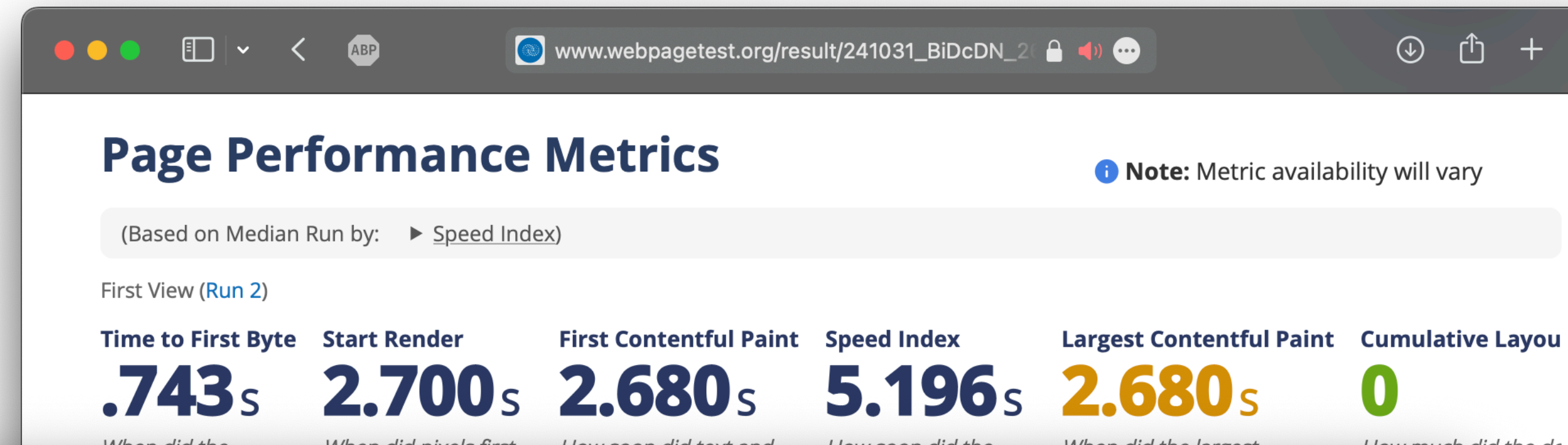
The screenshot shows the PageSpeed Insights interface for the URL <https://aykev.dev/>. The page is set to 'Mobile' view. It displays four performance metrics: Performance (71), Accessibility (78), Best Practices (100), and SEO (100). A large orange circle with the number 71 is prominently displayed in the center, representing the overall performance score. Below the metrics, there is a section for 'Performance' with a large orange circle containing the number 71. On the right side, there is a preview of the website's content, including a bio for 'Kevin Chavez' with links to various social media and portfolio items.

Metric	Score
Performance	71
Accessibility	78
Best Practices	100
SEO	100

WebPageTest

webpagetest.org

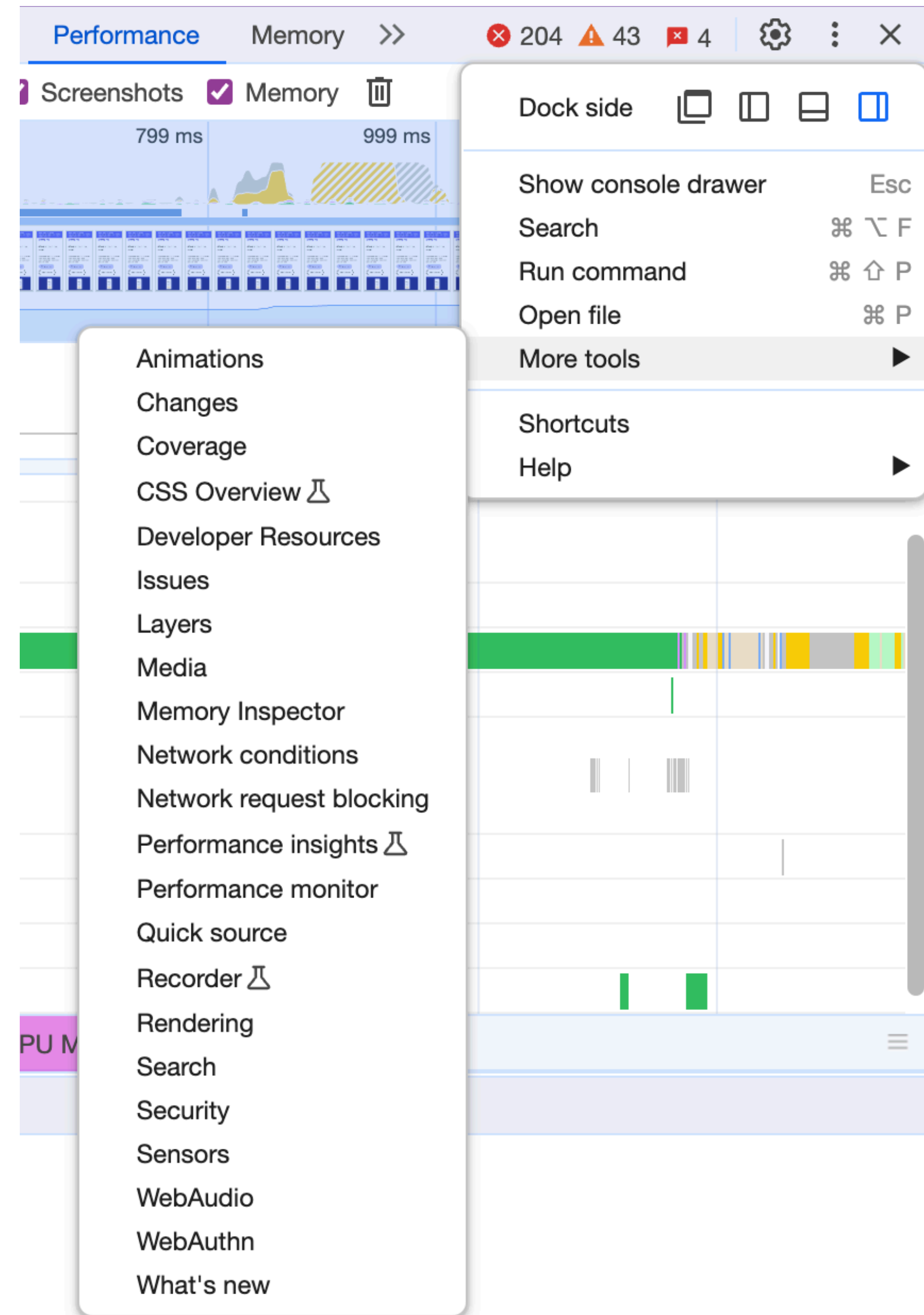
- Mas detalle
- Reportes fáciles de guardar y compartir



iy hay mas!

otras menciones honoríficas

- React Profiler / React Components — en la extensión React Developer Tools
- Medios — ver propiedades sobre reproductores de medios (detalles del decodificador, registros de ffmpeg, eventos de reproducción/pipeline).
- Problemas — advertencias, especialmente sobre futuras deprecaciones
- Cobertura — para encontrar JS/CSS no utilizado
- Inspector de Memoria — para ArrayBuffers, TypedArray, memoria utilizada en WASM, etc



Gracias!