

How I made the web more responsive

Real-world case studies of INP optimizations



Andrea Verlicchi
Web Performance GDE
@verlok

we ❤️ speed

T-Shirt Details

This t-shirt is made from 100% organic cotton. It is available in various sizes and colors.

Shipment Details

Return Policy



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What you'll learn

by the end of this talk

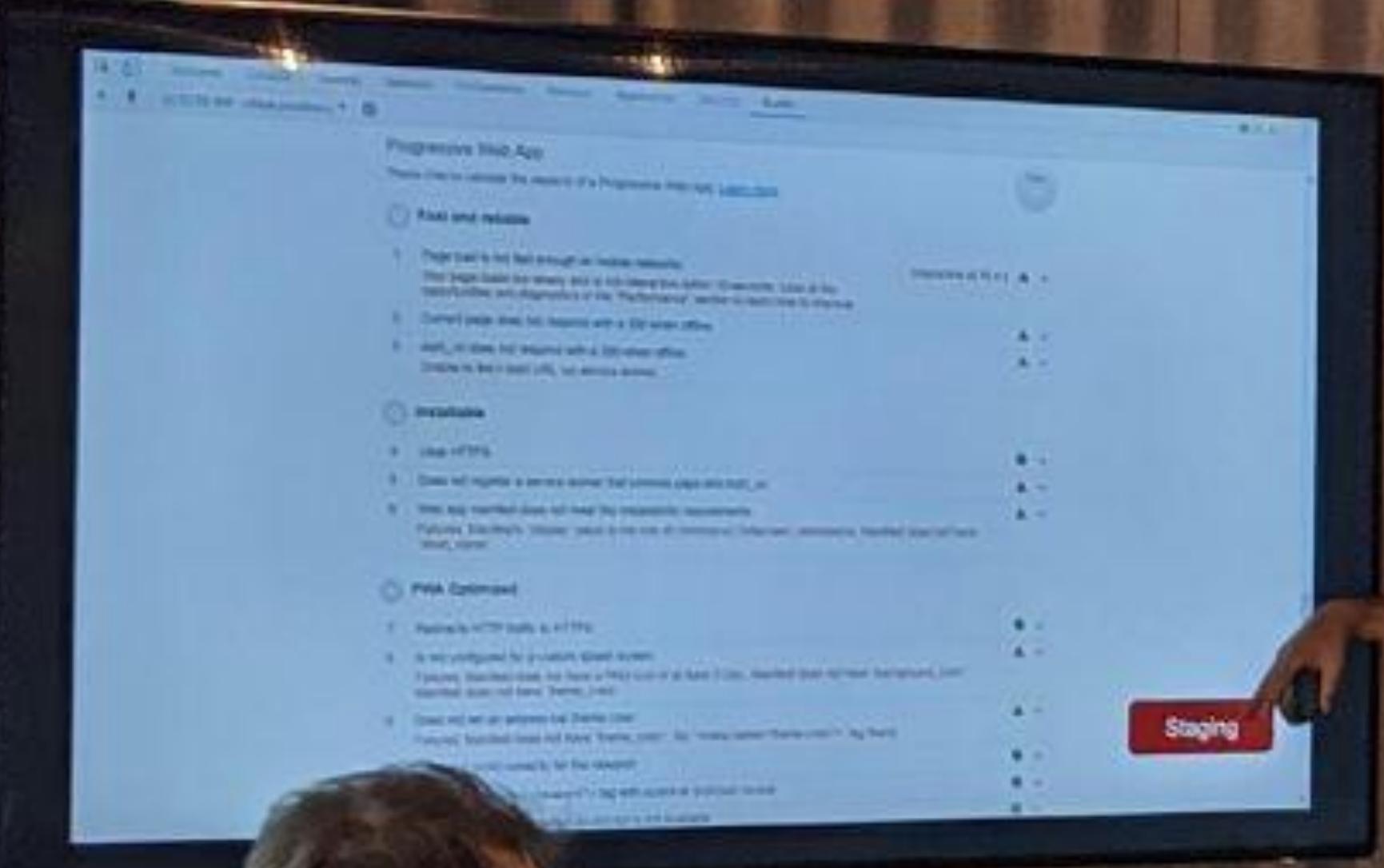
- How interactions are **measured**
- How to **debug slow interactions...**
- ...with and without **Real User Monitoring data**
- What's the **most common cause** of high INP
- Other **mistakes** and how to **avoid them**

Andrea Verlicchi

Web Performance Engineer

- Web developer
- Frontend
- Ecommerce

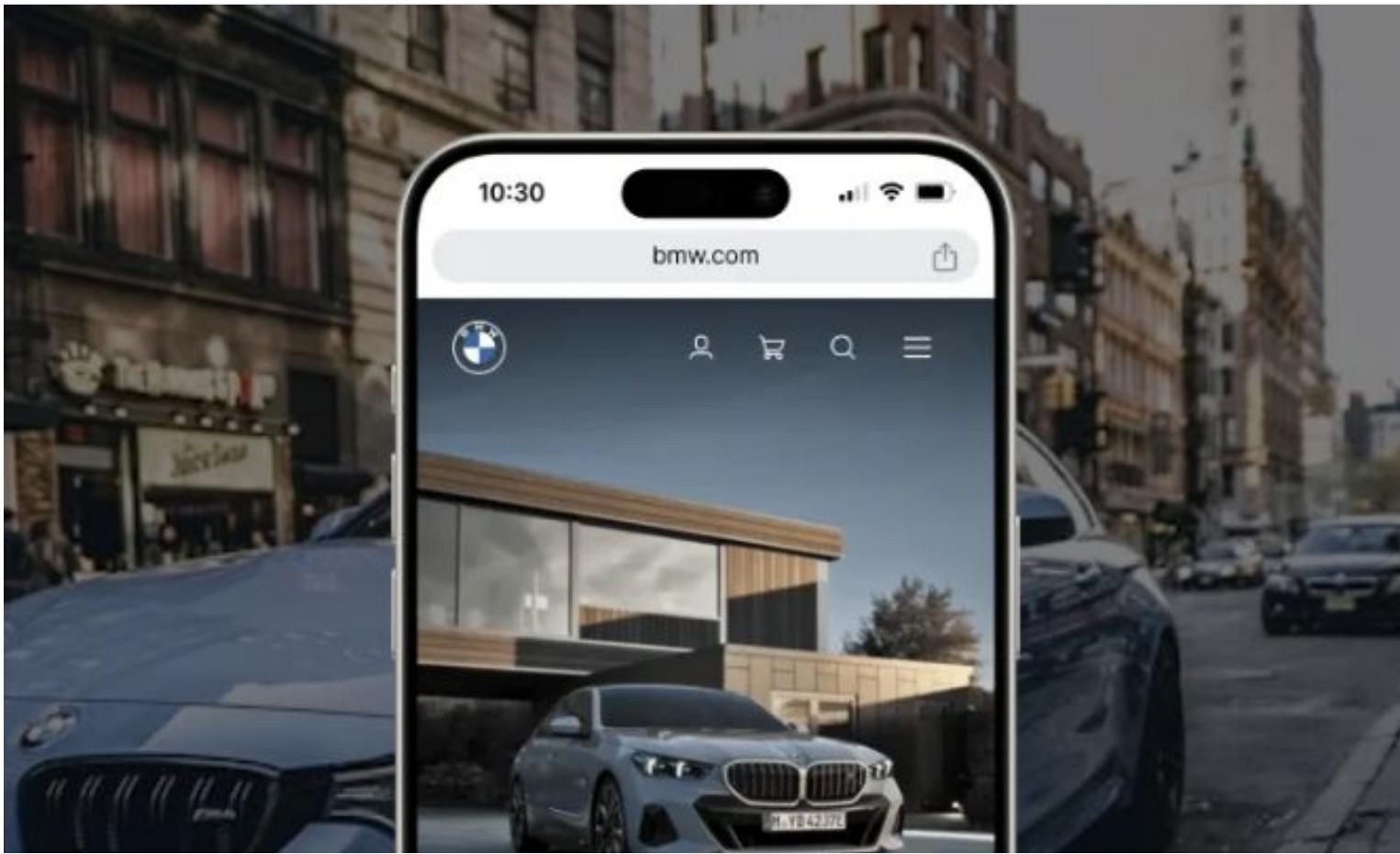




Google Hackathon, London



An all-in-one page speed tool to accelerate your website & revenue.



" [...] rolled out for 118 countries and achieved a **1.5x faster LCP** overall."

BMW Group

1.5x faster

118 countries

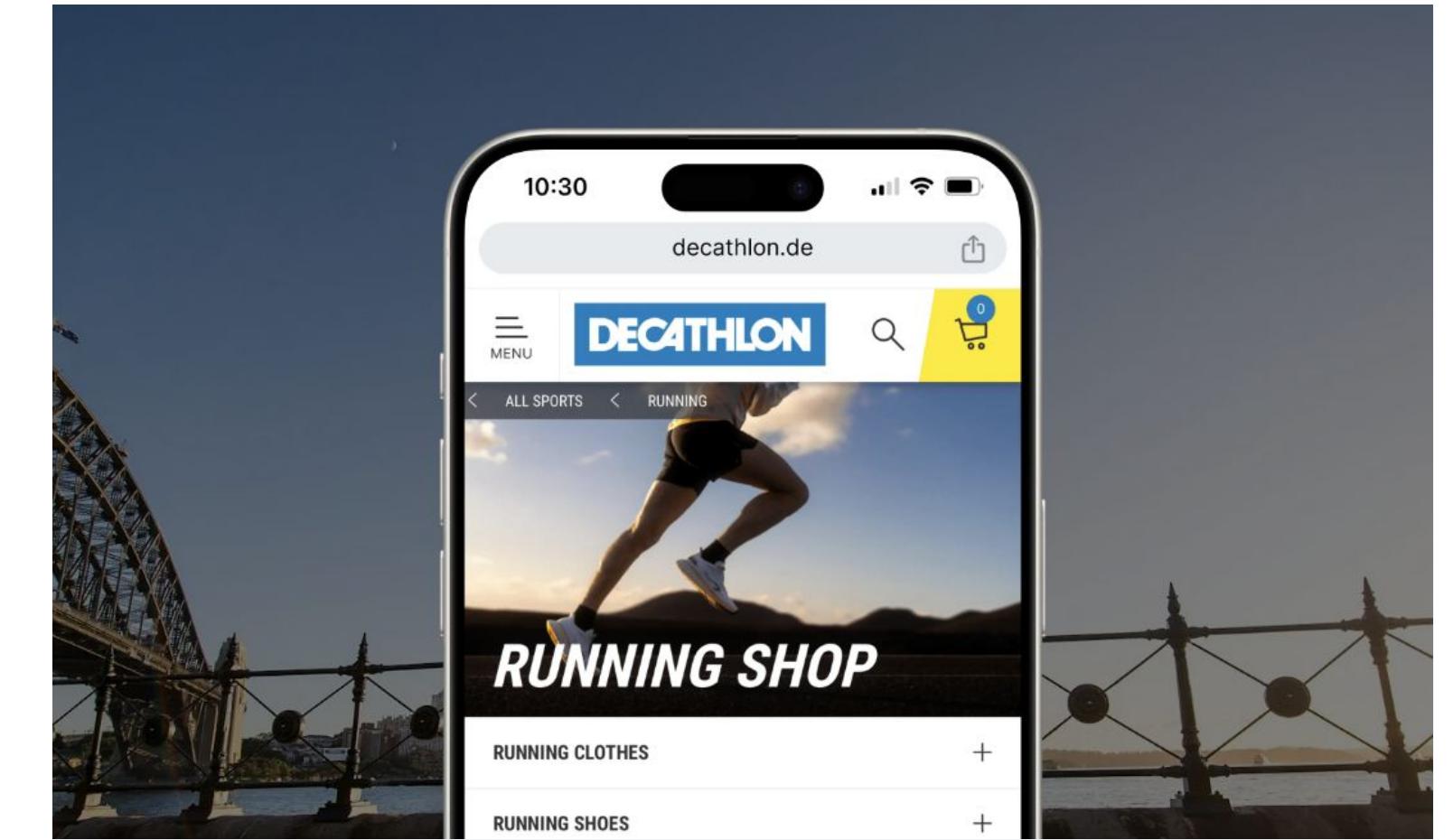


"Shorter loading times lead to a **sizeable increase in revenue**."

Florian Nagel, Head of Consumer Solutions

1.4x faster

+5% revenue



"After a long partnership, we still **highly recommend Speed Kit**."

Florian Bischoff, Chief Digital Officer

300 ms faster

+2% revenue

O₂ carhartt.
WORK IN PROGRESS

TUICruises

snipes®

GANT

coop

TOM TAILOR

condor

AUTODOC

Speed Kit turns slow website visitors into fast customers.



What is Interaction
to Next Paint (INP)?



Debugging slow
interactions



Identified mistakes
and solutions



What is Interaction
to Next Paint (INP)?



Debugging slow
interactions



Identified mistakes
and solutions

Have you heard of INP before?



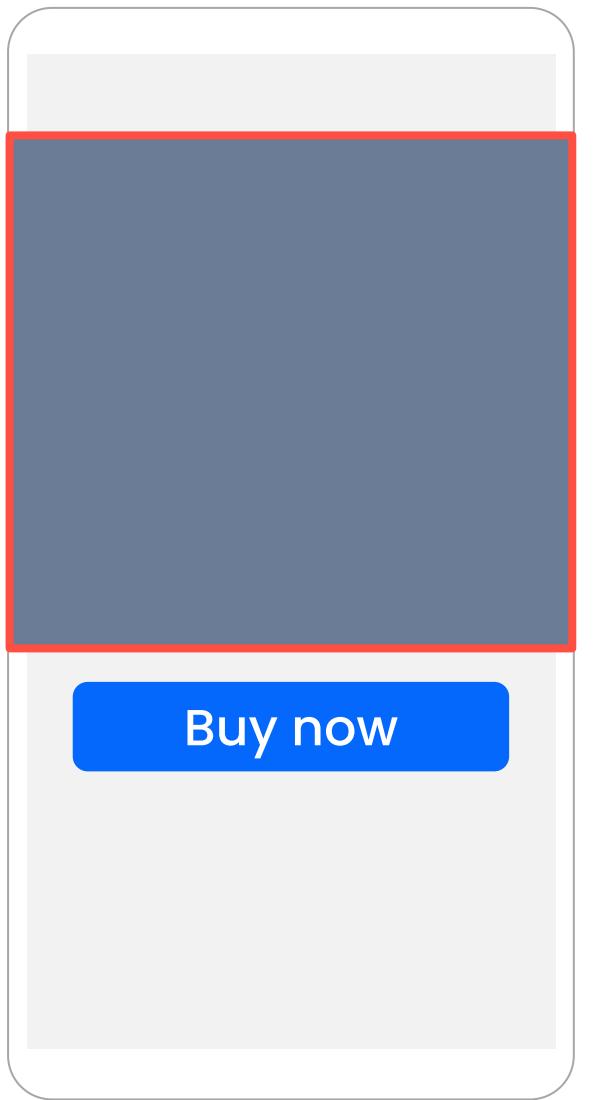
Heard of it today for
the first time

Know the basic
concepts of it

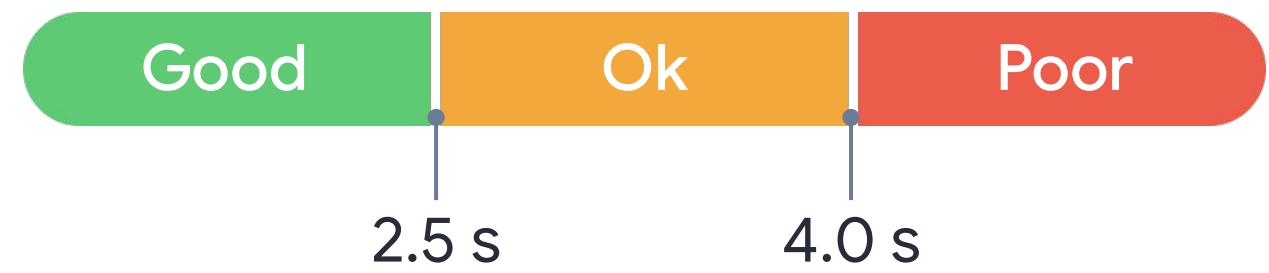
Know exactly what it is
and how it's measured



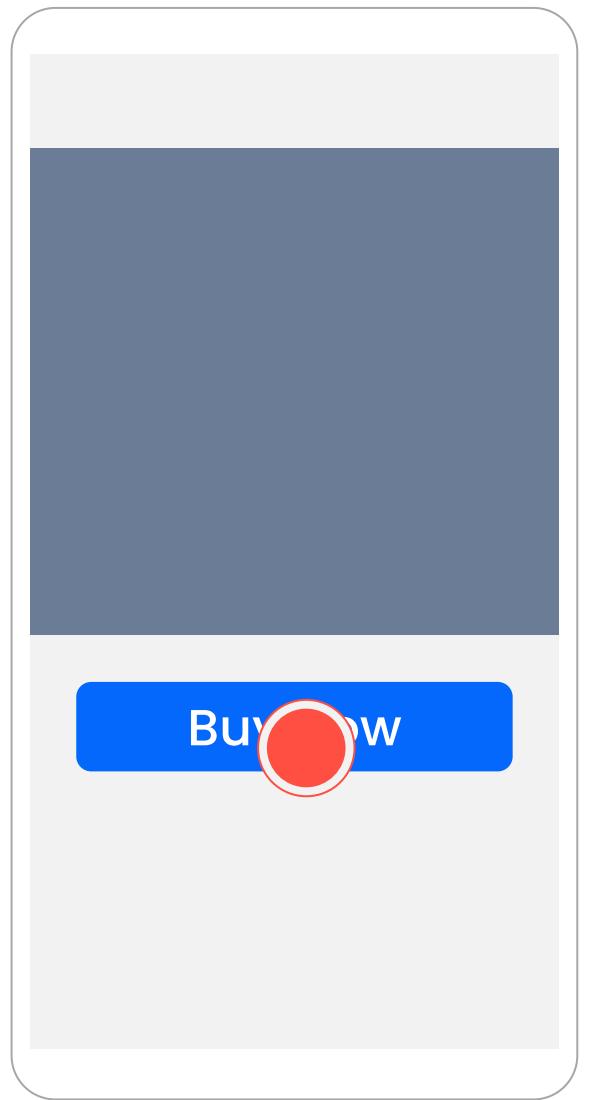
Loading



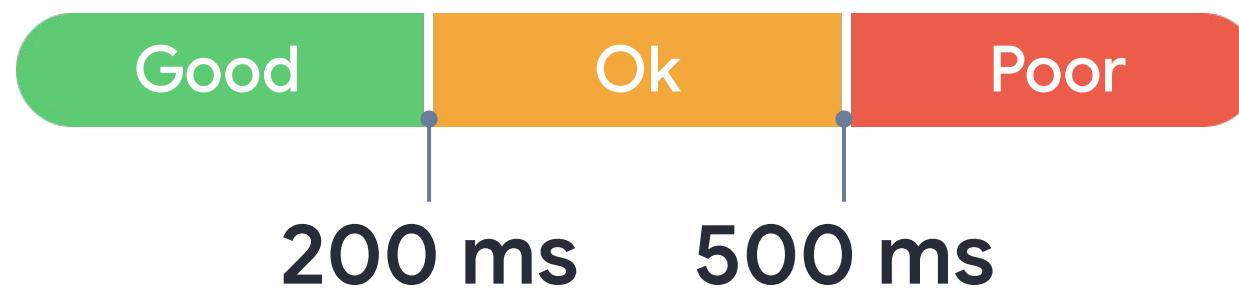
Largest Contentful Paint (LCP)



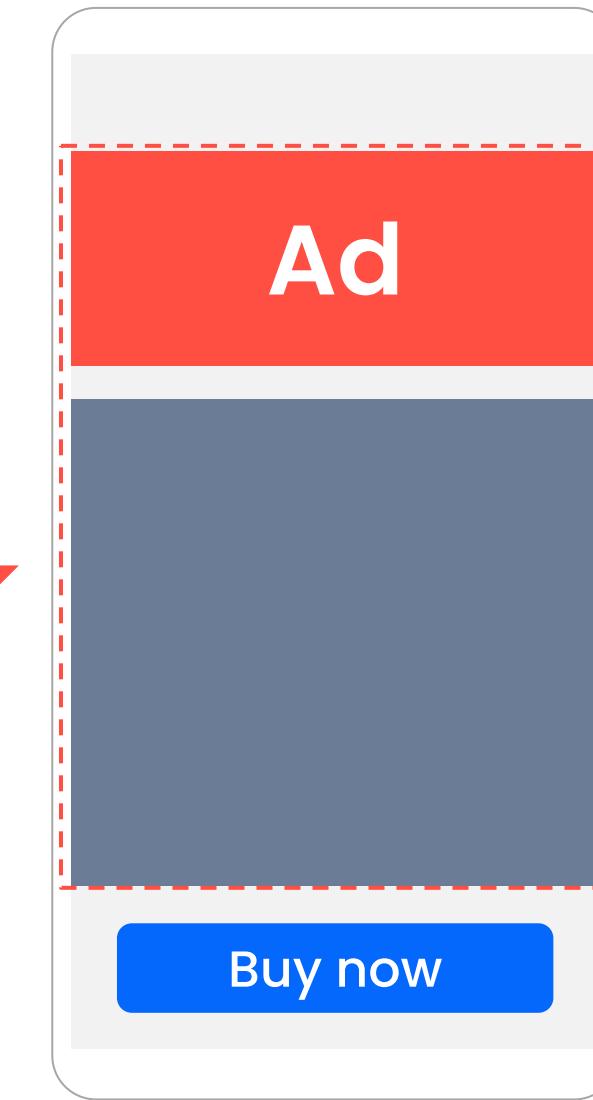
Interactivity



Interaction to Next Paint (INP)



Visual Stability

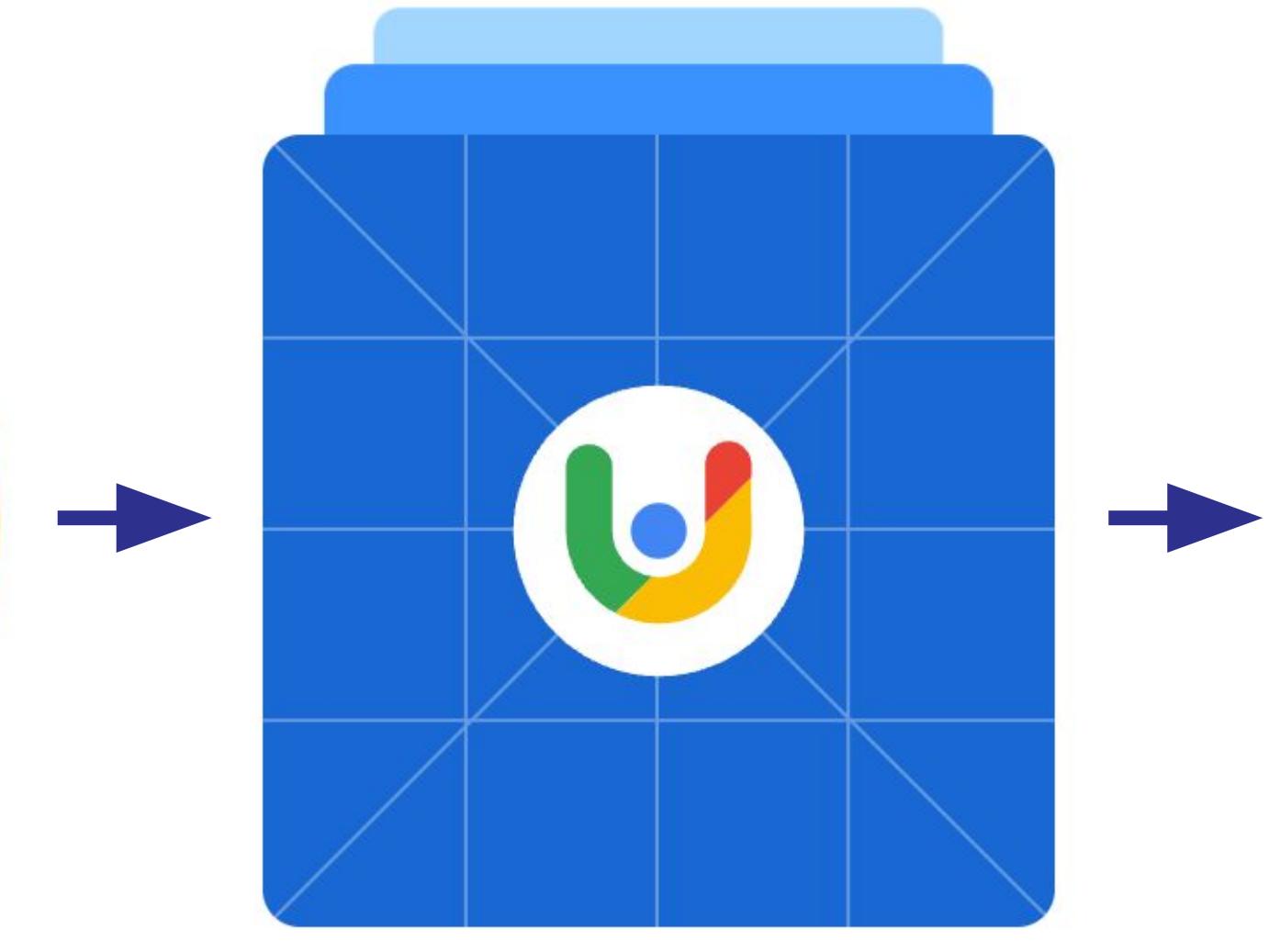


Cumulative Layout Shift (CLS)

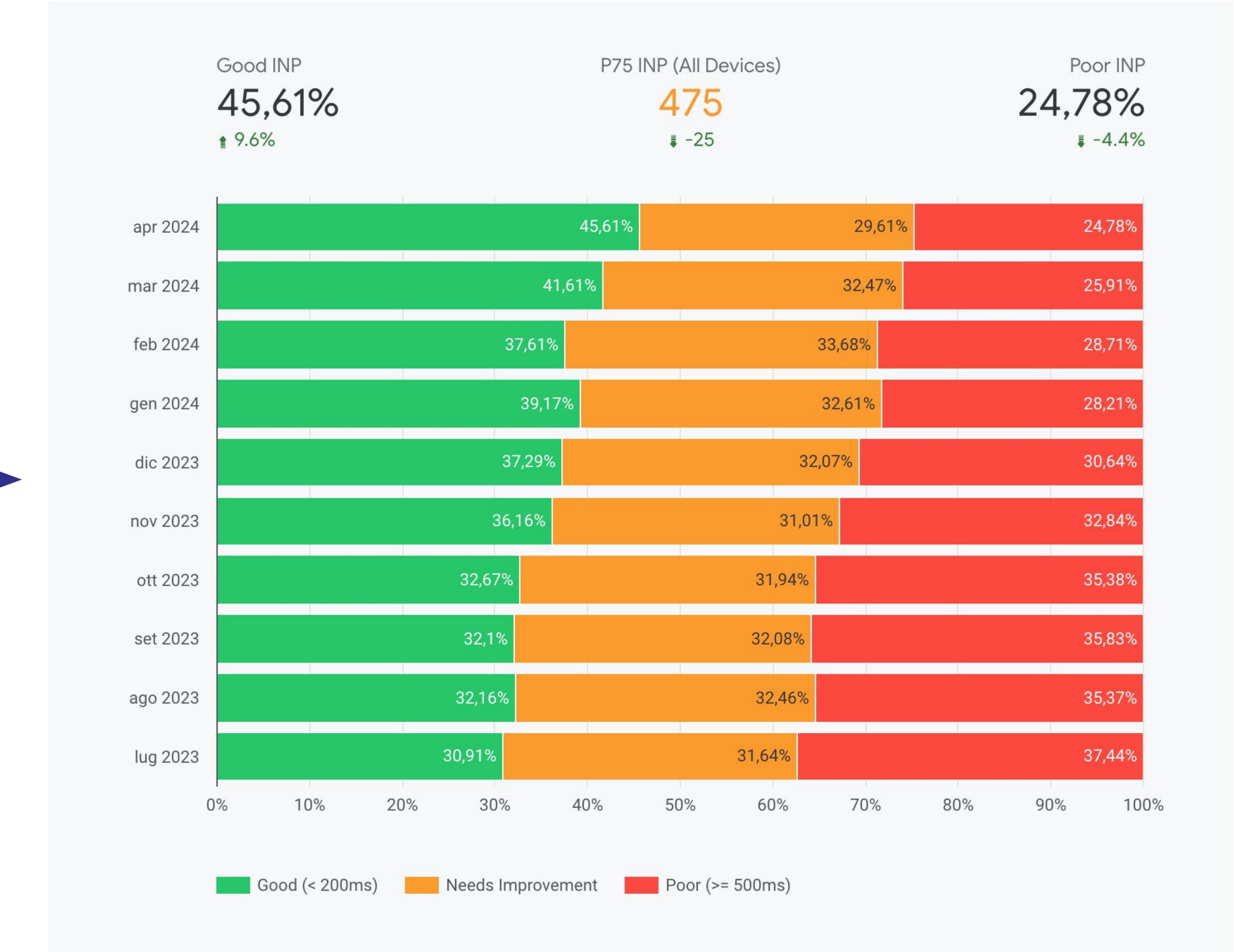




Chrome



Chrome User Experience
(CrUX)



Chrome User Experience Report
(CrUX report)



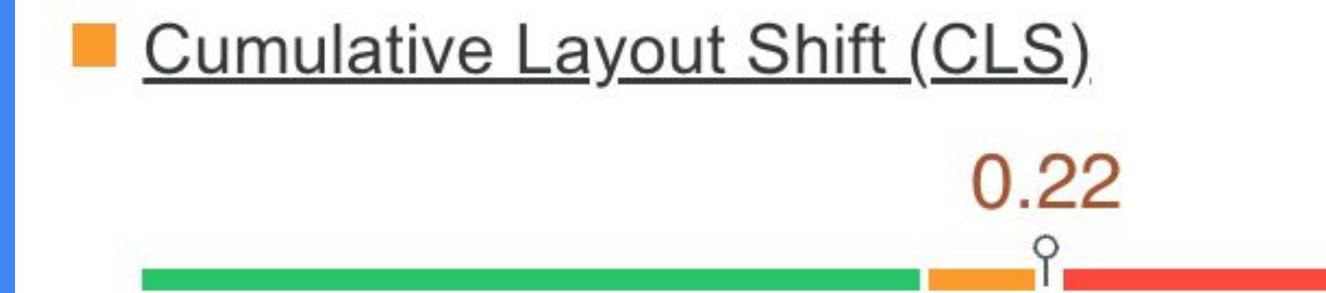
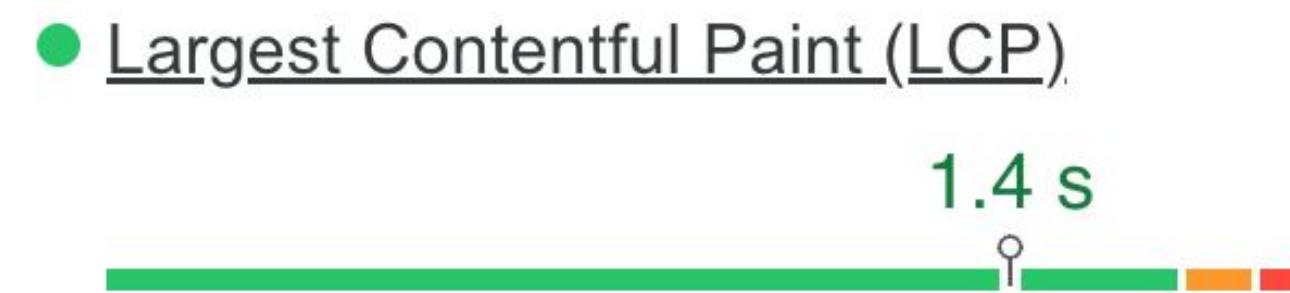
Discover what your real users are experiencing

This URL Origin

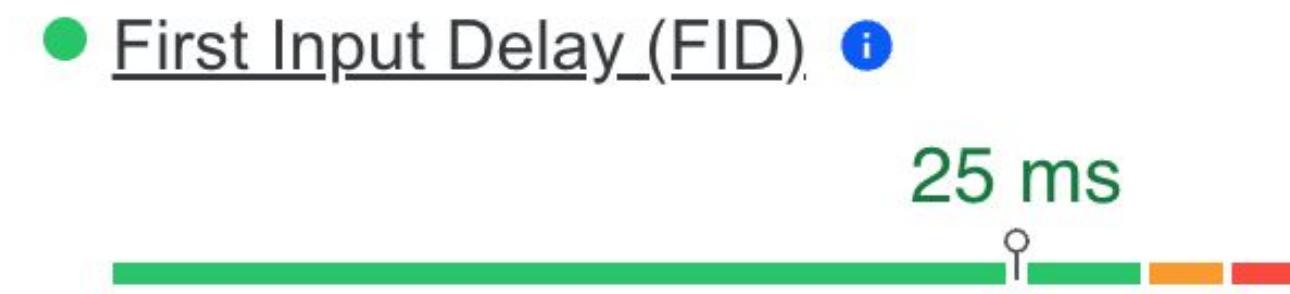


Core Web Vitals Assessment: Failed ?

Expand view



OTHER NOTABLE METRICS



📅 Latest 28-day collection period

⌚ Full visit durations

📱 Various mobile devices

📶 Various network connections

➊ Many samples ([Chrome UX Report](#))

➋ All Chrome versions



Q Che cosa stai cercando?



Consegna seleziona una
data

Per festa della m

Vedi la selezione

Sorprendi con un regalo speciale!



Che cosa stai cercando?

Festa della Mamma

Domenica 12 maggio, esprimi il tuo amore con i nostri fiori!

Scopri di più

Selezione la tua data

Mag 2024

LUN MAR MER GIO VEN SAB DOM

6	7	8	1	2	3	4	5
13	14	15	16	17	18	19	
20	21	22	23	24	25	26	
27	28	29	30	31			

150 ms

The screenshot shows the Interflora mobile website. At the top, there is a black header bar with the Interflora logo (a stylized flower) and a search icon. Below the header is a search bar with the placeholder text "Che cosa stai cercando?". The main content area features a large image of a woman and a child with a floral crown, with the text "Festa della Mamma" and "Domenica 12 maggio, esprimi il tuo amore con i nostri fiori!". A green button labeled "Scopri di più" is overlaid on the image. Below this, a white overlay box contains two dropdown menus: "Consegna mercoledì 22 maggio 2024" and "Per festa della mamma". A large orange hand cursor icon is pointing at the second dropdown menu. A blue button at the bottom of the overlay says "Vedi la selezione". At the bottom of the page, the text "Sorprendi con un regalo speciale!" is followed by two small images of flower arrangements.

150 ms

300 ms

Interflora

Che cosa stai cercando?

Festa della Mamma
Domenica 12 maggio, esprimi

Qual è l'occasione del tuo regalo? ×

Festa della Mamma

Consegna Express

Auguri

Amore

Condoglianze

Nascita

Congratulazioni

150 ms

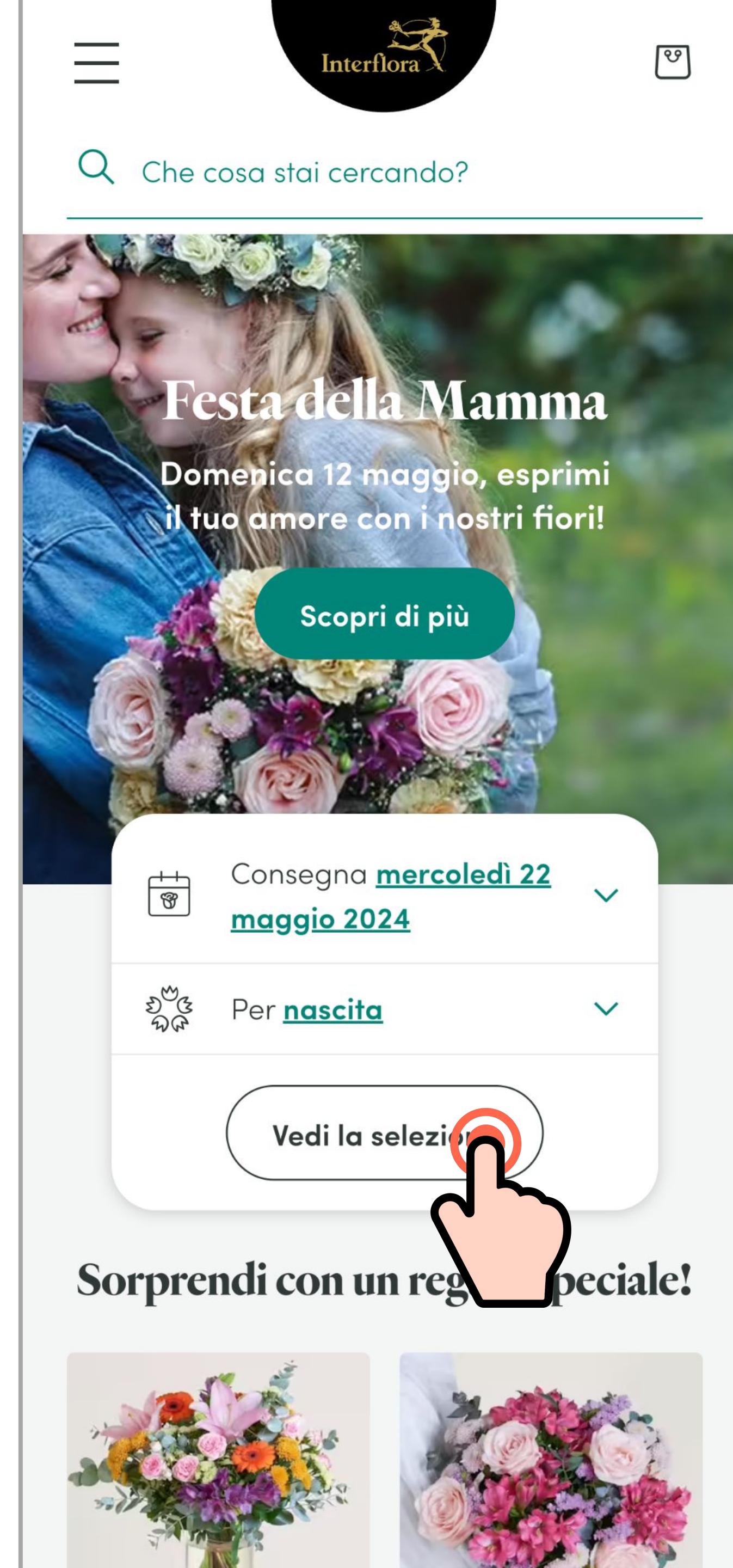
300 ms

200 ms

INP measures the time taken to update the screen after a user interaction.

All user interactions within a page are considered: pointer events (click / tap), and keyboard interactions.

The slowest interaction is reported as the Interaction to Next Paint (INP) for the current page view.



150 ms

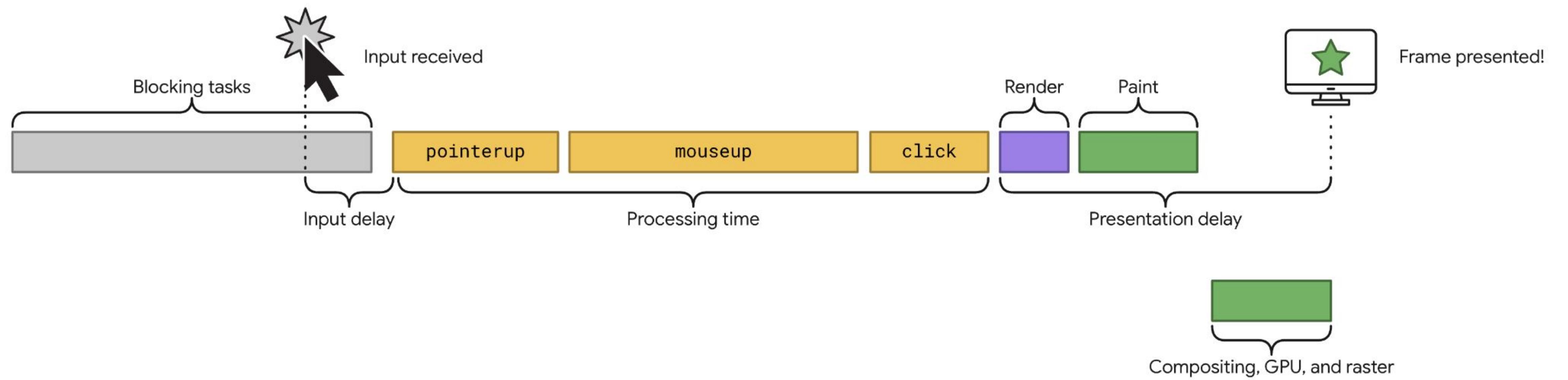
300 ms

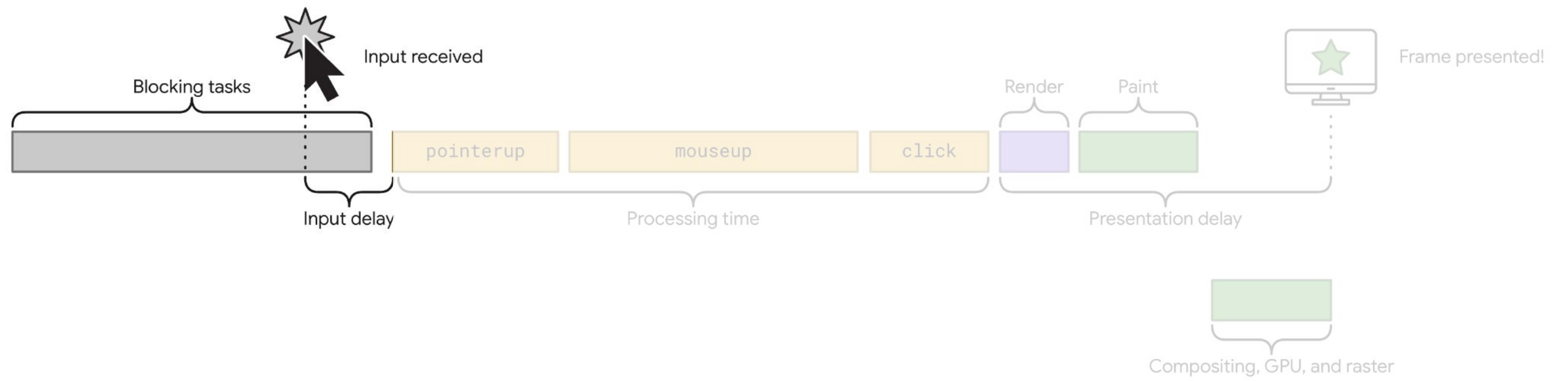
200 ms

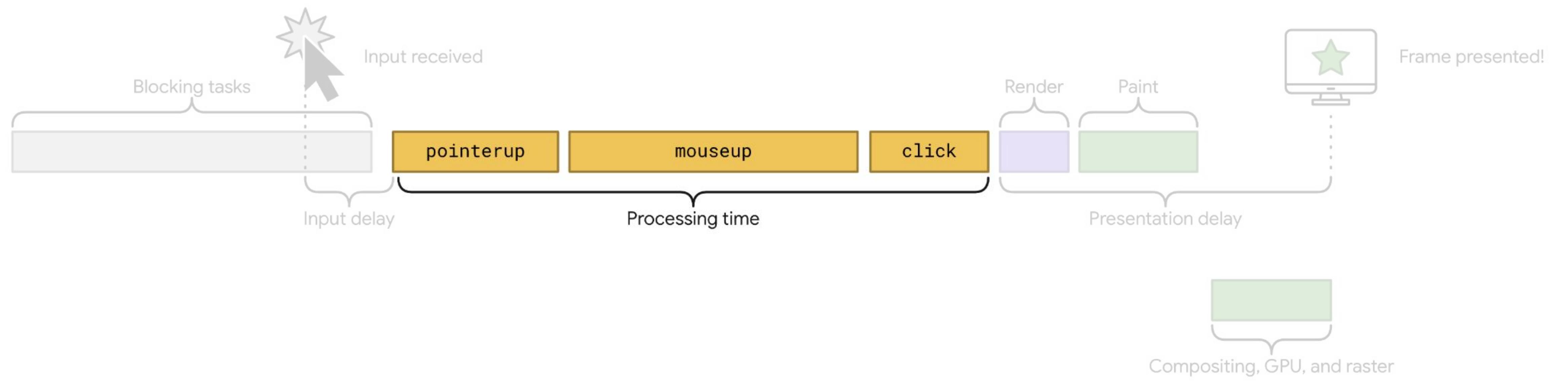
250 ms

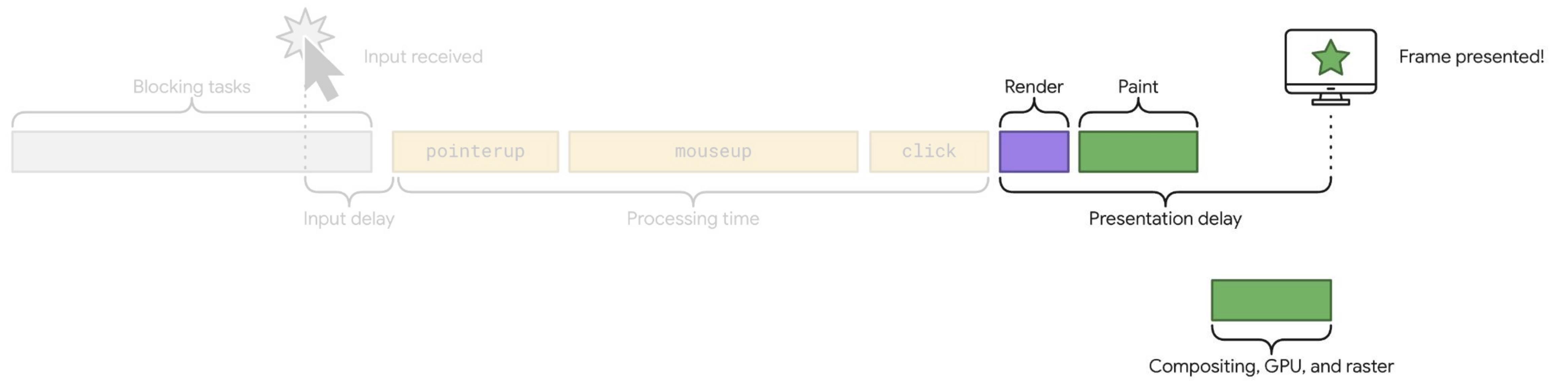
150 ms

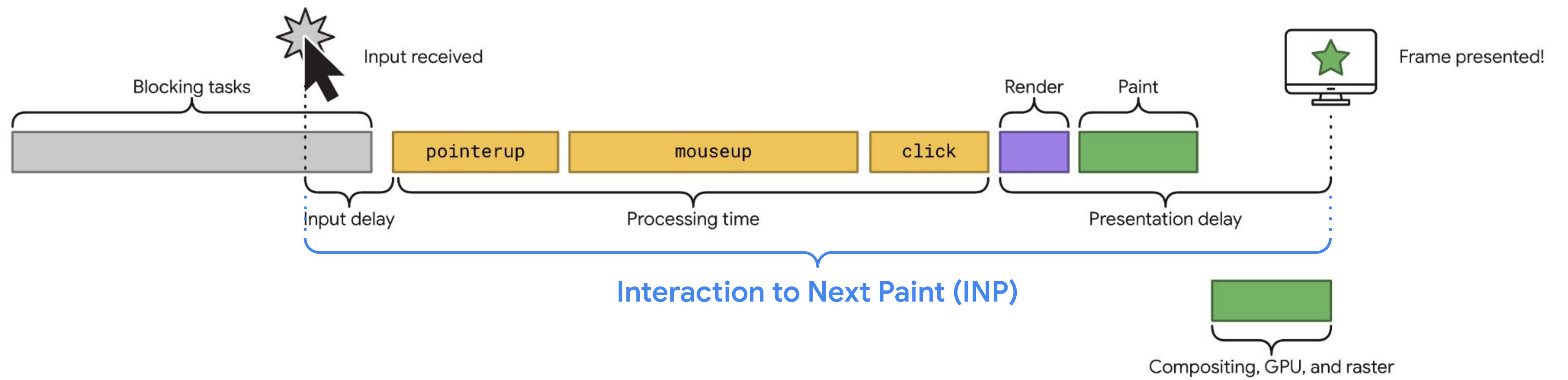
Reported INP value

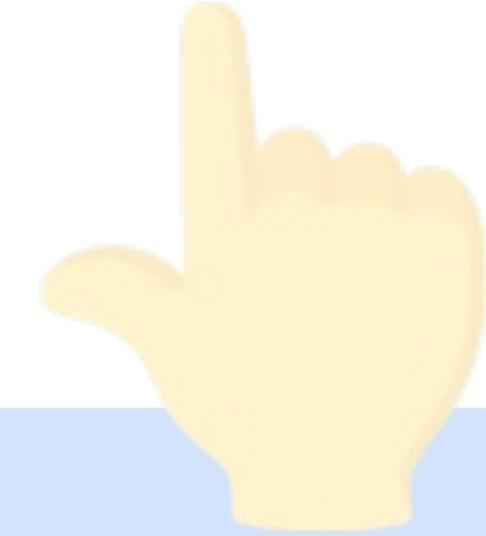












What is Interaction
to Next Paint (INP)?



Debugging slow
interactions



Identified mistakes
and solutions

Have you debugged INP before?



Never tried to debug
slow interactions

Tried to debug it,
didn't find the issue

Debugged and
found the issue



Debugging INP

3 steps

1. **Find out where**
the slowest interactions
are occurring
 2. **Analyze the causes**
of slow interactions
 3. **Fix the problem**
- a. Manually troubleshoot interactions
- b. Leverage real user monitoring data
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Debugging INP

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The screenshot shows the Interflora website. At the top, there's a search bar with the placeholder "Che cosa stai cercando?". Below it is a banner with the text "Rendi speciale ogni momento" and "Fiori di stagione in Consegna Express". A woman is shown using a laptop. A call-to-action button says "Scopri di più". Below the banner, there's a delivery selection form with fields for "Consegna seleziona una data" and "Per consegna express". A button "Vedi la selezione" is at the bottom. At the very bottom, there are two images of flower bouquets.

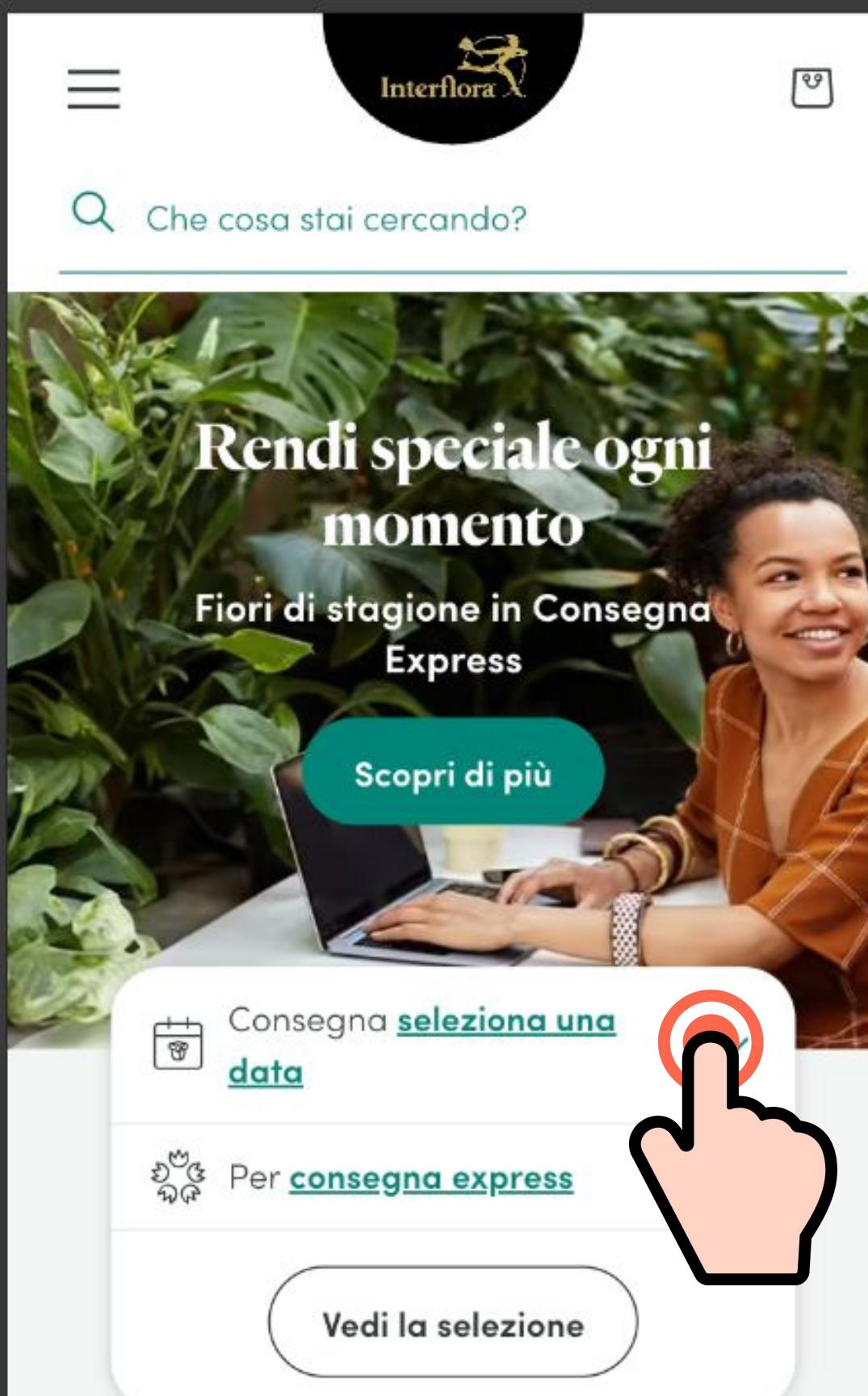
Local metrics

Largest Contentful Paint (LCP)
120 ms
Your local LCP **120 ms** is good.
LCP Element [img](#)

Cumulative Layout Shift (CLS)
0.06
Your local CLS **0.06** is good.

Interaction to Next Paint (INP)
-
Interact with the page to measure INP.

The [local metrics](#) are captured from the current page using your network connection and device.



Sorprendi con un regalo speciale!



Next steps

Field data
See how your local metrics compare to real user data in the [Chrome UX Report](#).

[Set up](#)

Recording settings

CPU: 6x slowdown ▾
Network: No throttling ▾

Record ⌘ E

Record and reload ⌘ ⌉ E

Dimensions:... ▾ 412 x 915 8... ▾

Elements Console Sources Network **Performance** Memory Application Security Lighthouse Recorder > ▲ 2 □ 1 | ⚙ : X

(no recordings) Screenshots Memory

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Interaction to Next Paint (INP)
232 ms
Your local INP **232 ms** needs improvement.

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Interactions

pointer	i.IconInline.IconInline--arrow-alt-bottom	24 ms
pointer	i.IconInline.IconInline--arrow-alt-bottom	232 ms
keyboard	main.AfwHelper_PageContainer	48 ms

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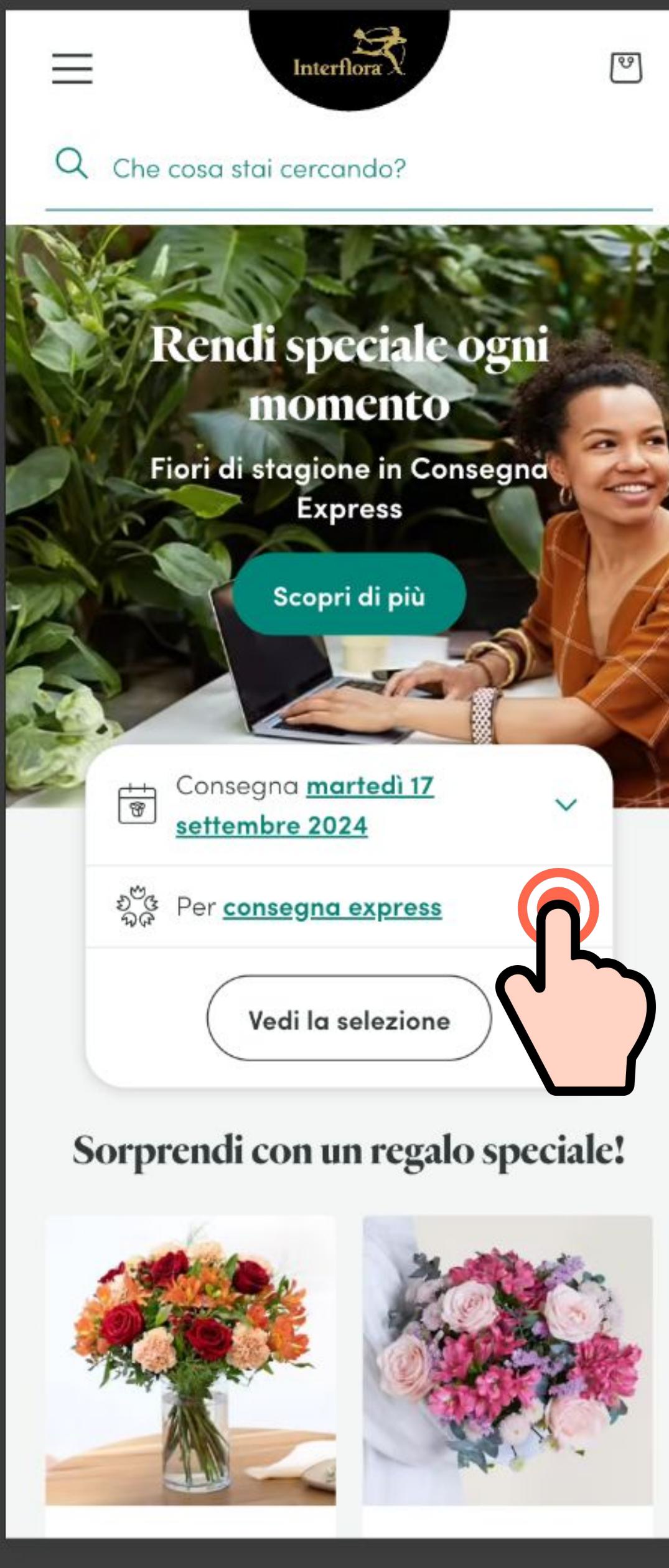
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Record ⌘ E

Record and reload ⌘ ⌉ E



Rendi speciale ogni momento

Fiori di stagione in Consegna Express

Scopri di più

Consegna martedì 17 settembre 2024

Per consegna express

Vedi la selezione

Sorprendi con un regalo speciale!



The screenshot shows the homepage of the Interflora website. At the top, there's a search bar with the placeholder "Che cosa stai cercando?". Below it is a large image of a woman smiling while using a laptop. Text overlays on the image include "Rendi speciale oggi momento" and "Fiori di stagione in Consegna Express". A green button labeled "Scopri di più" is visible. In the bottom right corner of the image, there's a date selector showing "Consegna martedì 17 settembre 2024" and a dropdown menu for "Per congratulazioni". A large hand icon with a red circle is overlaid on the image, pointing towards the search bar.

Sorprendi con un regalo speciale!

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pointer	i.IconInline.IconInline--arrow-alt-bottom	192 ms
pointer	li.FormMomentsFirst-option.isSelected	144 ms

Next steps

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Record

⌘ E

Record and reload

⌘ ⌘ E

che cosa stai cercando?

Speciale ogni momento

Fiori di stagione in Consegna Express

Scopri di più

Consegna martedì 17 settembre 2024

Per congratulazioni

Vedi la selezione

Sorprendi con un regalo speciale!

Abbraccio

Bouquet misto dalle tonalità calde con Rose

Melodia

Bouquet con rose, alstroemeria ed

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pointer	i.IconInline.IconInline--arrow-alt-bottom	192 ms
pointer	li.FormMomentsFirst-option.isSelected	144 ms
pointer	input#field_ru6bq82xi.FormField-fieldSearch	96 ms
keyboard	input#field_ru6bq82xi.FormField-fieldSearch	16 ms

Next steps

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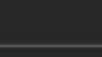
⌘ E

Record and reload

⌘ ⌘ E

Dimensions:... ▾ 412 x 915 8... ▾

Elements Console Sources Network **Performance** Memory Application Security Lighthouse Recorder > ▲ 2 □ 1 | ⚙ : X

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pointer	li.FormMomentsFirst-option.isSelected	144 ms
pointer	input#field_ru6bq82xi.FormField-fieldSearch	96 ms
keyboard	input#field_ru6bq82xi.FormField-fieldSearch	16 ms
pointer	input#field_ru6bq82xi.FormField-fieldSearch	40 ms
keyboard	input#field_ru6bq82xi.FormField-fieldSearch	64 ms
keyboard	input#field_ru6bq82xi.FormField-fieldSearch	24 ms
keyboard	input#field_ru6bq82xi.FormField-fieldSearch	56 ms
keyboard	input#field_ru6bq82xi.FormField-fieldSearch	64 ms

Next steps

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[Set up](#)

Recording settings

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Record ⌘ E
Record and reload ⌘ ⌉ E

Rose [Cancella](#)

Suggerimenti di ricerca

- rose rosse
- rose bianche
- rose
- rose blu
- rose rosa

Categorie

- Tutti i fiori
- Rose

Prodotti [Vedi tutto](#)

	
Rose Rosse Premium Rose lunghe con numero a scelta da 42,00€	Tre rose rosse Bouquet di tre rose rosse a gambo lungo 29,99€




Dimensions:... ▾ 412 x 915 8... ▾

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pointer	input#field_ru6bq82xi.FormField-fieldSearch	40 ms
keyboard	input#field_ru6bq82xi.FormField-fieldSearch	64 ms
keyboard	input#field_ru6bq82xi.FormField-fieldSearch	24 ms
keyboard	input#field_ru6bq82xi.FormField-fieldSearch	56 ms
keyboard	input#field_ru6bq82xi.FormField-fieldSearch	64 ms
pointer	span.LinkItem.ButtonClose.LinkItem--fallbackLink	112 ms

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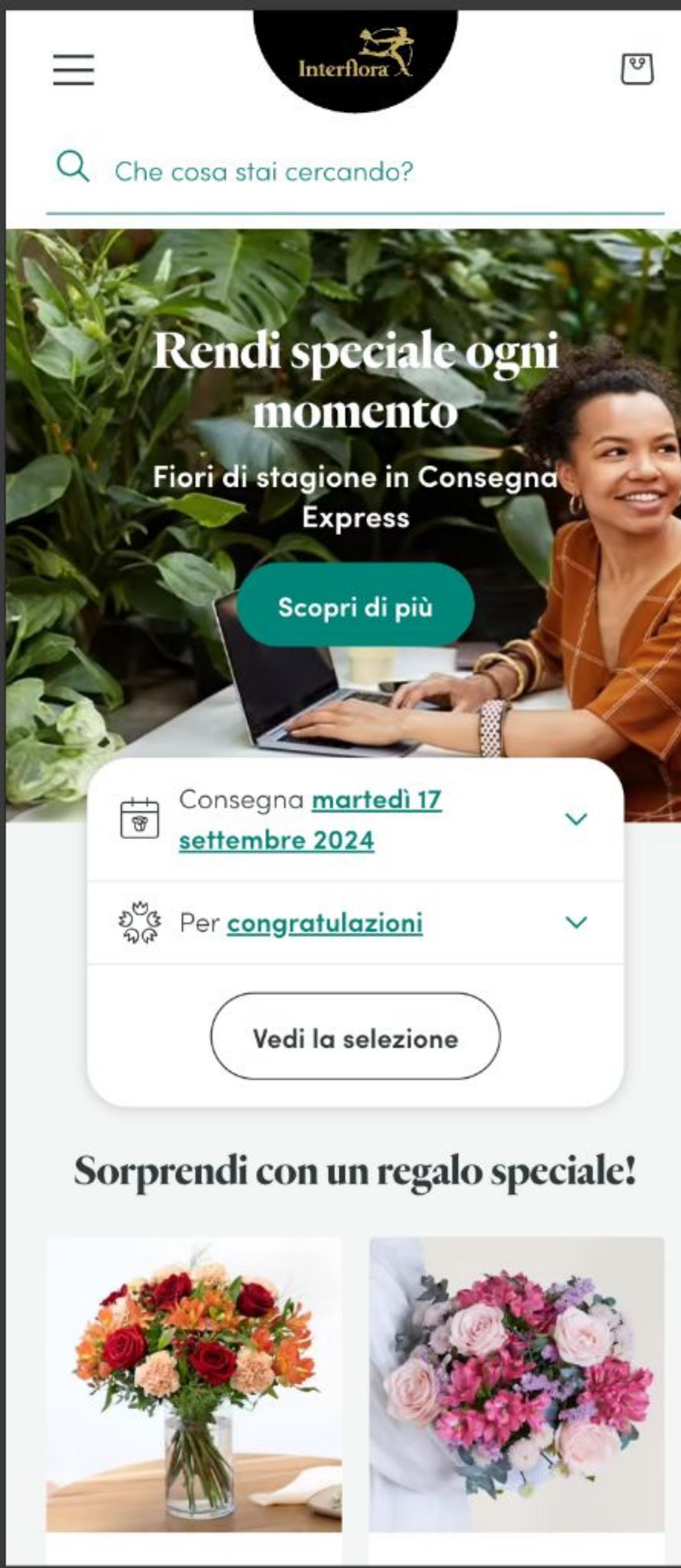
[Set up](#)

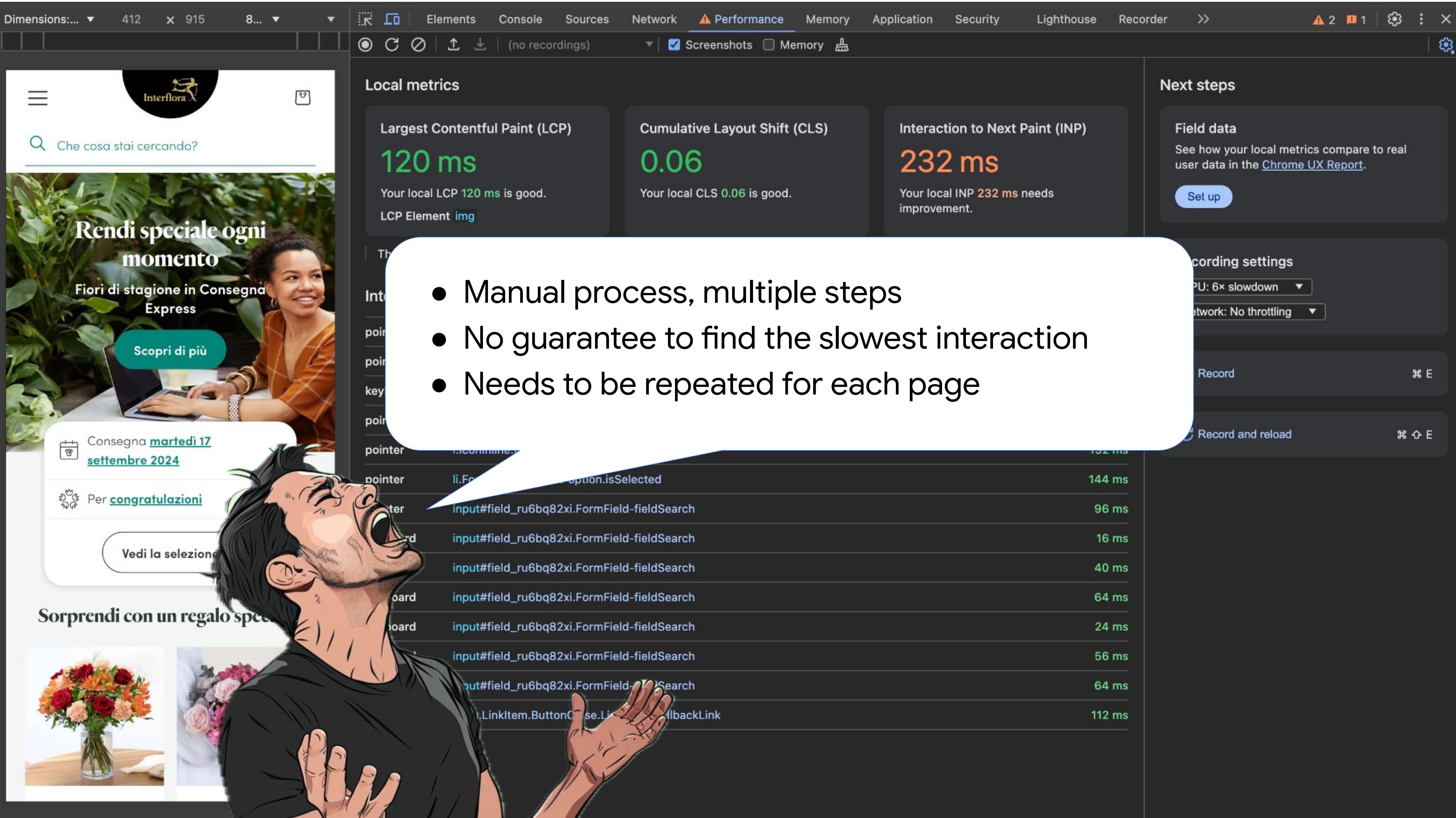
Recording settings

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Record ⌘ E

Record and reload ⌘ ⌘ E





Debugging INP

3 steps

1. **Find out where**
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Real User Monitoring (RUM)



Ongoing monitoring of
users' experience



Spot problems and verify fixes
in just minutes

A Event	A Element	123 INP	123 Occurred ↓Ξ	123 Impact	123 InpDel	123 Process	123 PresDel	A Device	A Example ...
pointer	button.LinkItem.ButtonPrimary.LinkItem--fallbackLink.ButtonPrimary--disabled	310	4,328	1,341,680	37	197	80	Mobile	https://www....
pointer	div.SiteHeader-nav>div.BurgerMenu.BurgerMenu--reversed.isOpened>button.BurgerMenu-trigger	386	3,486	1,345,596	251	53	88	Mobile	https://www....
pointer	div.OptionIcon-content>p.OptionIcon-label	619	2,665	1,649,635	28	515	75	Mobile	https://www....
pointer	span.vc-day-content.vc-focusable	340	2,403	817,020	30	224	84	Mobile	https://www....
pointer	a.LinkItem.ButtonSecondary.PaginatedList-loadmore.ButtonSecondary--outlined.ButtonSecondary	265	1,884	499,260	29	150	78	Mobile	https://www....
pointer	i.IconInline.IconInline--option-normal	592	1,313	777,296	28	496	72	Mobile	https://www....
pointer	ul.MenuMain-subMenuList>li.MenuMain-item>div.MenuMain-label>a.LinkItem.MenuMain-link	312	1,008	314,496	23	176	115	Mobile	https://www....
pointer	div.TeaaserCard-picture>div.TeaaserCard-overflow>picture.BlockPicture.BlockResizePicture>img	481	956	459,836	44	219	82	Mobile	https://www....
pointer	div.OptionIcon-content>div.OptionIcon-price>span.TagPrice	623	907	565,061	30	528	73	Mobile	https://www....
pointer	div.SiteHeader-nav>div.BurgerMenu.BurgerMenu--reversed>button.BurgerMenu-trigger	1161	699	811,539	1,019	43	113	Mobile	https://www....
pointer	div.FunnelHeader-backButton>a.ButtonBack.hideOnDesktop	411	680	279,480	106	182	66	Mobile	https://www....
pointer	span.LinkItem.FilterBanner-link.LinkItem--fallbackLink	498	621	309,258	36	337	74	Mobile	https://www....
pointer	span.LinkItem.QuickAccess-link>i.IconInline.IconInline--tools-deliver	413	600	247,800	207	151	60	Mobile	https://www....
pointer	div.SelectQuantity.SelectQuantity--big>button.SelectQuantity-button>span	2727	339	924,453	844	1,627	62	Mobile	https://www....
pointer	main.AfwHelper_PageContainer>div.ProductList>div.AfwHelper_PageState.AfwHelper_PageState--	1302	246	320,292	1,206	3	68	Mobile	https://www....

A Event	A Element	123 INP	123 Occurred	↓	123 Impact	123 InpDel	123 Process	123 PresDel	A Device	A Example ...
pointer	button.LinkItem.ButtonPrimary.LinkItem--fallbackLink.ButtonPrimary--disabled	310	4,328	1,341,680	37	197	80	Mobile	https://www....	
pointer	div.SiteHeader-nav>div.BurgerMenu.BurgerMenu--reversed.isOpened>button.BurgerMenu-trigger	386	3,486	1,345,596	251	53	88	Mobile	https://www....	
pointer	div.OptionIcon-content>p.OptionIcon-label	619	2,665	1,649,635	28	515	75	Mobile	https://www....	
pointer	span.vc-day-content.vc-focusable	340	2,403	817,020	30	224	84	Mobile	https://www....	
pointer	a.LinkItem.ButtonSecondary.PaginatedList-loadmore.ButtonSecondary--outlined.ButtonSecondary	265	1,884	499,260	29	150	78	Mobile	https://www....	
pointer	i.IconInline.IconInline--option-normal	592	1,313	777,296	28	496	72	Mobile	https://www....	
pointer	ul.MenuMain-subMenu1.list>li.MenuMain-item>div.MenuMain-label>a.LinkItem.MenuMain-link	312	1,008	314,496	23	176	115	Mobile	https://www....	

A Event	A Element
pointer	button.LinkItem.ButtonPrimary.LinkItem--fallbackLink.ButtonPrimary--disabled
pointer	div.SiteHeader-nav>div.BurgerMenu.BurgerMenu--reversed.isOpened>button.BurgerMenu-trigger
pointer	div.OptionIcon-content>p.OptionIcon-label

Where is INP occurring?

A Event	A Element	123 INP	123 Occurred ↓Ξ	123 Impact	123 InpDel	123 Process	123 PresDel	A Device	A Example ...
pointer	button.LinkItem.ButtonPrimary.LinkItem--fallbackLink.ButtonPrimary--disabled	310	4,328	1,341,680	37	197	80	Mobile	https://www....
pointer	div.SiteHeader-nav>div.BurgerMenu.BurgerMenu--reversed.isOpened>button.BurgerMenu-trigger	386	3,486	1,345,596	251	53	88	Mobile	https://www....
pointer	div.OptionIcon-content>p.OptionIcon-label	619	2,665	1,649,635	28	515	75	Mobile	https://www....
pointer	span.vc-day-content.vc-focusable	340	2,403	817,020	30	224	84	Mobile	https://www....
pointer	a.LinkItem.ButtonSecondary.PaginatedList-loadmore.ButtonSecondary--outlined.ButtonSecondary	265	1,884	499,260	29	150	78	Mobile	https://www....
pointer	i.IconInline.IconInline--option-normal	582	1,313	777,296	28	496	72	Mobile	https://www....
pointer	ul.MenuMain-subMenuList>li.MenuMain-item>div.MenuMain-label>a LinkItem MenuMain-link	312	1,008	314,496	23	176	115	Mobile	https://www....
pointer	div.TeaserCard-picture>div.TeaserCard-overflow>picture	123 INP	123 Occurred ↓Ξ	123 Impact	44	219	82	Mobile	https://www....
pointer	div.OptionIcon-content>div.OptionIcon-price>span.Tap	310	4,328	1,341,680	1,019	43	113	Mobile	https://www....
pointer	div.SiteHeader-nav>div.BurgerMenu.BurgerMenu--rever	386	3,486	1,345,596	106	182	66	Mobile	https://www....
pointer	span.LinkItem.FilterBanner-link.LinkItem--fallbackLin	619	2,665	1,649,635	36	337	74	Mobile	https://www....
pointer	span.LinkItem.QuickAccess-link>i.IconInline.IconInlin				207	151	60	Mobile	https://www....
pointer	div.SelectQuantity.SelectQuantity--big>button.SelectQ				844	1,627	62	Mobile	https://www....

How bad is it?

A Event	A Element	123 INP	123 Occurred	↓	123 Impact	123 InpDel	123 Process	123 PresDel	A Device	A Example ...	
						123 InpDel	123 Process	123 PresDel	A Device	A Example ...	
pointer	button.LinkItem.ButtonPrimary.LinkItem--fallbackLink.ButtonPrimary--disabled	310	4,328		1,341,680	37	197	80	Mobile	https://www....	
pointer	div.SiteHeader-nav>div.BurgerMenu.BurgerMenu--reversed.isOpened>button.BurgerMenu-trigger	386	3,486		1,345,596	251	53	88	Mobile	https://www....	
pointer	div.OptionIcon-content>p.OptionIcon-label	619	2,665		1,649,635	28	515	75	Mobile	https://www....	
pointer	span.vc-day-content.vc-focusable	340	2,403		817,020	30	224	84	Mobile	https://www....	
pointer	a.LinkItem.ButtonSecondary.PaginatedList-loadmore.ButtonSecondary--outlined.ButtonSecondary	265	1,884		499,260	29	150	78	Mobile	https://www....	
pointer	i.IconInline.IconInline--option-normal	592	1,313		777,296	28	496	72	Mobile	https://www....	
pointer	ul.MenuMain-subMenuList>li.MenuMain-item>div.MenuMain-label>a LinkItem MenuMain-link	112	1,008		314,496	23	176	115	Mobile	https://www....	
pointer	div.TeaserCard-picture>div.TeaserCard-overflow>picture.BorderImage	6	6		6	44	219	82	Mobile	https://www....	
pointer	div.OptionIcon-content>div.OptionIcon-price>span.TagPrice	1	1		1	30	528	73	Mobile	https://www....	
pointer	div.SiteHeader-nav>div.BurgerMenu.BurgerMenu--reversed	37	197		80	9	1,019	43	113	Mobile	https://www....
pointer	div.FunnelHeader-backButton>a.ButtonBack.hideOnDesktop	251	53		88	0	106	182	66	Mobile	https://www....
pointer	span.LinkItem.FilterBanner-link.LinkItem--fallbackLink	28	515		75	3	36	337	74	Mobile	https://www....
pointer	span.LinkItem.QuickAccess-link>i.IconInline.IconInline--to					0	207	151	60	Mobile	https://www....
pointer	div.SelectQuantity.SelectQuantity--big>button.SelectQuant					3	844	1,627	62	Mobile	https://www....
pointer	main.AfwHelper_PageContainer>div.ProductList>div.AfwH					2	1,206	3	68	Mobile	https://www....

Which part should I investigate?

A Event	A Element	123 INP	123 Occurred	↓	123 Impact	123 InpDel	123 Process	123 PresDel	A Device	A Example ...
pointer	button.LinkItem.ButtonPrimary.LinkItem--fallbackLink.ButtonPrimary--disabled	310	4,328	1,341,680	37	197	80	Mobile	https://www....	
pointer	div.SiteHeader-nav>div.BurgerMenu.BurgerMenu--reversed.isOpened>button.BurgerMenu-trigger	386	3,486	1,345,596	251	53	88	Mobile	https://www....	
pointer	div.OptionIcon-content>p.OptionIcon-label	619	2,665	1,649,635	28	515	75	Mobile	https://www....	
pointer	span.vc-day-content.vc-focusable	340	2,403	817,020	30	224	84	Mobile	https://www....	
pointer	a.LinkItem.ButtonSecondary.PaginatedList-loadmore.ButtonSecondary--outlined.ButtonSecondary	265	1,884	499,260	29	150	78	Mobile	https://www....	
pointer	i.IconInline.IconInline--option-normal	592	1,313	777,296	28	496	72	Mobile	https://www....	
pointer	ul.MenuMain-subMenuList>li.MenuMain-item>div.MenuMain-label>a.LinkItem.MenuMain-link	201	1,008	314,496	23	176	115	Mobile	https://www....	
pointer	div.TeaaserCard-picture>div.TeaaserCard-overflow>picture.BlockPicture		459,836	44	219	82	Mobile	https://www....		
pointer	div.OptionIcon-content>div.OptionIcon-price>span.TagPrice		565,061	30	528	73	Mobile	https://www....		
pointer	div.SiteHeader-nav>div.BurgerMenu.BurgerMenu--reversed>button.BurgerMenu-trigger		811,539	1,019	43	113	Mobile	https://www....		
pointer	div.FunnelHeader-backButton>a.ButtonBack.hideOnDesktop		279,480	106	182	66	Mobile	https://www....		
pointer	span.LinkItem.FilterBanner-link.LinkItem--fallbackLink		309,258	36	337	74	Mobile	https://www....		
pointer	span.LinkItem.QuickAccess-link>i.IconInline.IconInline--tools-deliver		247,800	207	151	60	Mobile	https://www....		
pointer	div.SelectQuantity.SelectQuantity--big>button.SelectQuantity-button		924,453	844	1,627	62	Mobile	https://www....		
pointer	main.AfwHelper_PageContainer>div.ProductList>div.AfwHelper_PageContent		320,292	1,206	3	68	Mobile	https://www....		

Where can I reproduce it?

“RUM data has saved me countless hours when auditing Core Web Vitals”

Andrea Verlicchi

```
function filterStudies({ studies, filterByOrg = false, filterByCategory = false }) {
  return studies.filter(study => {
    if (filterByCategory) {
      return study.categories.some(category => category === filterByCategory);
    }
    if (filterByOrg) {
      return study.organizations.some(organization => organization === filterByOrg);
    }
    return true;
  });
}
```

Debugging INP

3 steps

1. Find out where
the slowest interactions
are occurring
 2. Analyze the causes
of slow interactions
 3. Fix the problem
- a. Manually troubleshoot interactions
b. Leverage real user monitoring data
- 

Take a slow interaction

A Event	A Element	A Device	A Example UF
pointer	span.vc-day-content.vc-focusable	Mobile	https://www.int

123 INP	123 Occ... ↓Ξ	123 Impact	123 InpDel	123 Process	123 PresDel
345	2,201	759,345	30	227	84

Découvrez nos fleurs et plantes de saison

Interflora

Des fleurs pour toutes les occasions !

Voir la collection

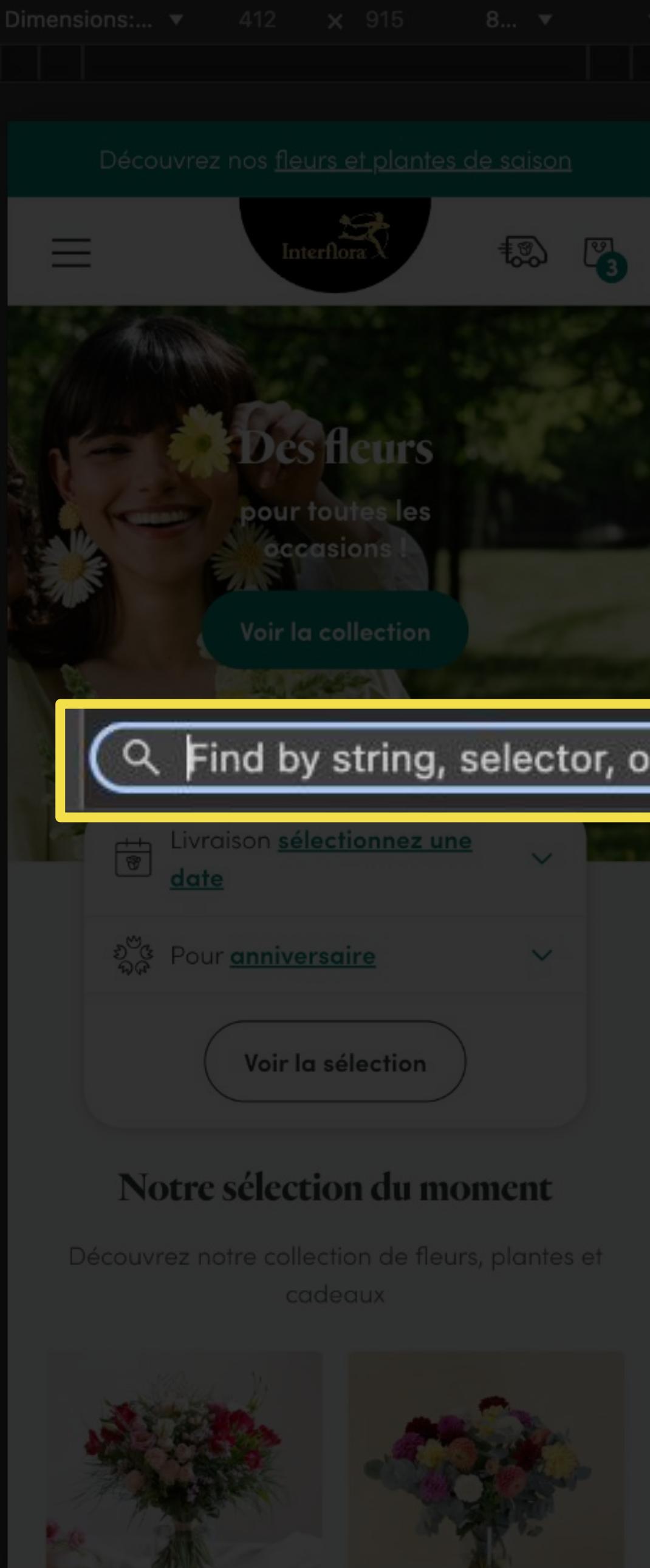
Livraison sélectionnez une date

Pour anniversaire

Voir la sélection

Notre sélection du moment

Découvrez notre collection de fleurs, plantes et cadeaux



Find by string, selector, or XPath

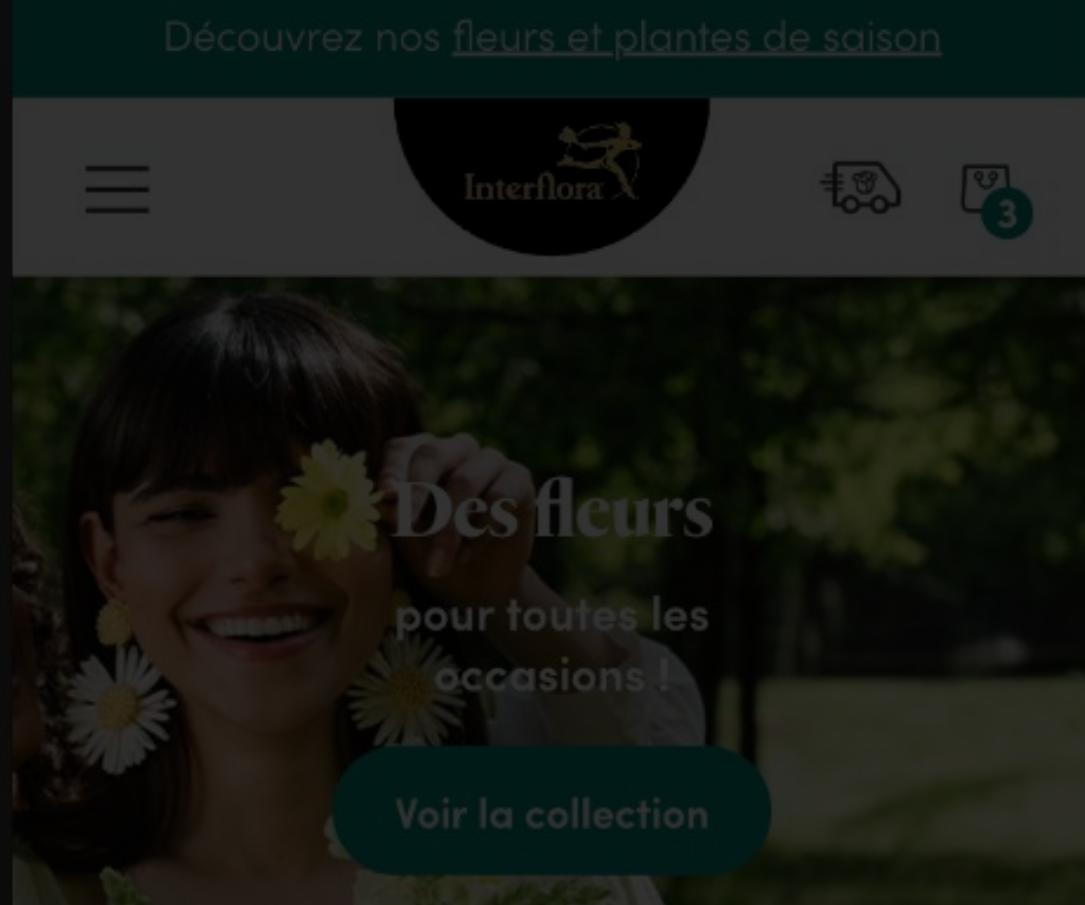
```
<!DOCTYPE html>
<html lang="fr">
  <head>@...</head>
  <body data-frz-flags="{"lazyload":false,"deferjs":false,"cssontop":false,"minifyhtml":true,"concatcss":true,"minifycss":true,"concatjs":false,"minifyjs":false,"early-hints":true,"unsharding":true,"responsive":false,"edge_speed":true,"edge_seo":true}" data-frz-version="2">
    <p class="sr-only" tabindex="-1">Interflora : livraison de fleurs à domicile en 4H</p>
    
  <div id="__nuxt">@...</div>
  <script>...</script>
  <script src="/_nuxt/runtime.1e0d6fe...js" defer></script>
  <script src="/_nuxt/ac54ca9.js" defer></script>
  <script src="/_nuxt/d6e60cb.js" defer></script>
  <script src="/_nuxt/ac26a49.js" defer></script>
  <script src="/_nuxt/25652c9.js" defer></script>
  <script src="/_nuxt/e6c2a4c.js" defer></script>
  ...
  <script src="/_nuxt/68b5184.js" defer></script> == $0
  <script src="/_nuxt/f87186c.js" defer></script>
  <script src="/_nuxt/f9fd442.js" defer></script>
  <script src="/_nuxt/fc33da8.js" defer></script>
  <script src="/_nuxt/hcff28h.js" defer></script>
```

Find by string, selector, or XPath

```
font-size: 100%; font: inherit; vertical-align: baseline; }
body {
  font-size: 16px; line-height: 1.5;
}
.AfwHelper_TextLink, body, body.isFixture:after {
  font-weight: 400; font-style: normal; font-family: "Sofia-Pro", sans-serif; -webkit-font-feature-settings: "kern"; font-feature-settings: "kern"; font-kerning: normal; -webkit-font-smoothing: antialiased; -moz-osx-font-smoothing: grayscale;
}
body {
  color: #303030; color: var(--DS-colors-grayscale-black);
}
body {
  line-height: 1;
}
a, abbr, acronym, address, applet, article, aside, audio, b, big, blockquote, body, canvas, caption, center, cite, code, dd, del, details, dfn, div, dl, dt, em, embed, fieldset, figcaption, figure, footer, form, h1, h2, h3, h4, h5, h6, header, hgroup, html, i, iframe, img, ins, kbd, label, legend, li, main, mark, menu, nav, object, ol, output, p, pre, q, ruby, s, samp, section, small, span, strike, strong, sub, summary, sup, table, tbody, tfoot, tr, var,
```

Dimensions:... 412 x 915 8...

Elements Sources Network Performance Memory Application Security Lighthouse Recorder > Styles Computed Layout Event Listeners >



Livraison sélectionnez une date

Pour anniversaire

Voir la sélection

Notre sélection du moment

Découvrez notre collection de fleurs, plantes et cadeaux

Two images of flower arrangements are shown side-by-side at the bottom of the section.

```
...<span data-v-1623f44d aria-label="lundi 26 août 2024" aria-disabled="true" role="button" class="vc-day-content vc-focusable is-disabled">26</span> == $0</div>><div data-v-1623f44d data-v-22657c30 class="vc-day id-2024-08-27 day-27 day-from-end-5 weekday-3 weekday-position-2 weekday-ordinal-4 weekday-ordinal-from-end-1 week-5 week-from-end-1 in-prev-month on-top vc-day-box-center-center is-not-in-month">...</div> flex><div data-v-1623f44d data-v-22657c30 class="vc-day id-2024-08-28 day-28 day-from-end-4 weekday-4 weekday-position-3 weekday-ordinal-4 weekday-ordinal-from-end-1 week-5 week-from-end-1 in-prev-month on-top vc-day-box-center-center is-not-in-month">...</div> flex><div data-v-1623f44d data-v-22657c30 class="vc-day id-2024-08-29 day-29 day-from-end-3 weekday-5 weekday-position-4 weekday-ordinal-5 weekday-ordinal-from-end-1 week-5 week-from-end-1 in-prev-month on-top vc-day-box-center-center is-not-in-month">...</div> flex><div data-v-1623f44d data-v-22657c30 class="vc-day id-2024-08-30 day-30 day-from-end-2 weekday-6 weekday-position-5 weekday-ordinal-5 weekday-ordinal-from-end-1 week-5 week-from-end-1 in-prev-month on-top vc-day-box-center-center is-not-in-month">...</div> flex><div data-v-1623f44d data-v-22657c30 class="vc-day id-2024-08-31 day-31 day-from-end-1 weekday-7 weekday-position-6 weekday-ordinal-5 weekday-ordinal-from-end-0 week-5 week-from-end-1 in-prev-month on-top vc-day-box-center-center is-not-in-month">...</div> flex><div data-v-1623f44d data-v-22657c30 class="vc-day id-2024-09-01 day-1 day-from-end-30 weekday-1 weekday-position-7 weekday-ordinal-1 weekday-ordinal-from-end-5 week-1 week-from-end-6 is-first-day in-month on-top on-right vc-day-box-center-center">...</div> flex><div data-v-1623f44d data-v-22657c30 class="vc-day id-2024-09-02 day-2 day-from-end-29 weekday-2 weekday-position-8 weekday-ordinal-2 weekday-ordinal-from-end-4 week-2 week-from-end-5 in-month on-top vc-day-box-center-center is-not-in-month">...</div> flex
```

span.vc-day-content.vc-focusable

X ^ v 1 of 42 X

```
.vc-day.is-not-in-month *[data-v-1623f44d] { opacity: 0; pointer-events: none; } .DatePicker .vc-container .vc-day-content { display: inline-flex; width: auto; margin: 0; } .DatePicker .vc-container .vc-day-content, .DatePicker .vc-container .vc-nav-popover-container .vc-nav-item { position: relative; } .DatePicker .vc-container .vc-day-content, .DatePicker .vc-container .vc-nav-popover-container .vc-nav-item, .DatePicker .vc-container .vc-nav-popover-container .vc-nav-title, .DatePicker .vc-container .vc-title { text-align: center; } .DatePicker .vc-container .vc-day-content, .DatePicker .vc-container .vc-nav-popover-container .vc-nav-item { display: inline-block; cursor: pointer; height: var(--DatePicker-nav-size); }
```

span.vc-day-content.vc-focusable

X ^ v 1 of 42 X

Dimensions:... 412 x 915 8... Elements Console Network Performance Memory Application Security Lighthouse Recorder > Styles Computed Layout Event Listeners >

... 26 == \$0

<div data-v-1623f44d data-v-22657c30 class="vc-day id-2024-08-27 day-27 day-from-end-5 weekday-3 weekday-position-2 weekday-ordinal-4 weekday-ordinal-from-end-1 week-5 week-from-end-1 in-prev-month on-top vc-day-box-center-center is-not-in-month">...</div> flex

<div data-v-1623f44d data-v-22657c30 class="vc-day id-2024-08-28 day-28 day-from-end-4 weekday-4 weekday-position-3 weekday-ordinal-4 weekday-ordinal-from-end-1 week-5 week-from-end-1 in-prev-month on-top vc-day-box-center-center is-not-in-month">...</div> flex

<div data-v-1623f44d data-v-22657c30 class="vc-day id-2024-08-29 day-29 day-from-end-3 weekday-5 weekday-position-4 weekday-ordinal-5 weekday-ordinal-from-end-1 week-5 week-from-end-1 in-prev-month on-top vc-day-box-center-center is-not-in-month">...</div> flex

<div data-v-1623f44d data-v-22657c30 class="vc-day id-2024-08-30 day-30 day-from-end-2 weekday-6 weekday-position-5 weekday-ordinal-5 weekday-ordinal-from-end-1 week-5 week-from-end-1 in-prev-month on-top vc-day-box-center-center is-not-in-month">...</div> flex

<div data-v-1623f44d data-v-22657c30 class="vc-day id-2024-08-31 day-31 day-from-end-1 weekday-7 weekday-position-6 weekday-ordinal-6 weekday-ordinal-from-end-0 week-5 week-from-end-1 in-prev-month on-top vc-day-box-center-center is-not-in-month">...</div> flex

<div data-v-1623f44d data-v-22657c30 class="vc-day id-2024-09-01 day-1 day-from-end-30 weekday-1 weekday-position-7 weekday-ordinal-1 weekday-ordinal-from-end-5 week-1 week-from-end-6 is-first-day-in-month on-top on-right vc-day-box-center-center">...</div> flex

<div data-v-1623f44d data-v-22657c30 class="vc-day id-2024-09-02 day-2 day-from-end-29 weekday-2 weekday-position-8 weekday-ordinal-2 weekday-ordinal-from-end-4 week-2 week-from-end-5 in-month on-top vc-day-box-center-center">...</div> flex

<div data-v-1623f44d data-v-22657c30 class="vc-day id-2024-09-03 day-3 day-from-end-28 weekday-3 weekday-position-9 weekday-ordinal-3 weekday-ordinal-from-end-3 week-3 week-from-end-4 in-month on-top vc-day-box-center-center">...</div> flex

<div data-v-1623f44d data-v-22657c30 class="vc-day id-2024-09-04 day-4 day-from-end-27 weekday-4 weekday-position-3 weekday-ordinal-1 weekday-ordinal-from-end-4 week-2 week-from-end-5 in-month vc-day-box-center-center">...</div> flex

<div data-v-1623f44d data-v-22657c30 class="vc-day id-2024-09-05 day-5 day-from-end-26 weekday-5 weekday-position-4 weekday-ordinal-1 weekday-ordinal-from-end-4 week-2 week-from-end-5 in-month vc-day-box-center-center">...</div> flex

<div data-v-1623f44d data-v-22657c30 class="vc-day id-2024-09-06 day-6 day-from-end-25 weekday-6 weekday-position-5 weekday-ordinal-1 weekday-ordinal-from-end-4 week-2 week-from-end-5 in-month vc-day-box-center-center">...</div> flex

<div data-v-1623f44d data-v-22657c30 class="vc-day id-2024-09-07 day-7 day-from-end-24 weekday-7 weekday-position-6 weekday-ordinal-1 weekday-ordinal-from-end-4 week-2 week-from-end-5 in-month vc-day-box-center-center">...</div> flex

<div data-v-1623f44d data-v-22657c30 class="vc-day id-2024-09-08 day-8 day-from-end-23 weekday-1 weekday-position-7 weekday-ordinal-2 weekday-ordinal-from-end-4 week-2 week-from-end-5 in-month on-right vc-day-box-center-center">...</div> flex

<div data-v-1623f44d data-v-22657c30 class="vc-day id-2024-09-09 day-9 day-from-end-22 weekday-2 weekday-position-1 weekday-ordinal-2 weekday-ordinal-from-end-4 week-3 week-from-end-4 is-today in-month on-left vc-day-box-center-center">...</div> flex

<div data-v-1623f44d data-v-22657c30 class="vc-day id-2024-09-10 day-10 day-from-end-21 weekday-3 weekday-position-2 weekday-ordinal-2 weekday-ordinal-from-end-3 week-3 week-from-end-4 in-month on-right vc-day-box-center-center">...</div> flex

<div data-v-1623f44d data-v-22657c30 class="vc-day id-2024-09-11 day-11 day-from-end-20 weekday-4 weekday-position-3 weekday-ordinal-2 weekday-ordinal-from-end-3 week-3 week-from-end-4 in-month on-right vc-day-box-center-center">...</div> flex

element.style { }

.DatePicker .vc-container .vc-day-in-next-month .vc-day-content, .DatePicker .vc-container .vc-day-in-next-month .vc-day-layer, .DatePicker .vc-container .vc-day-in-prev-month .vc-day-content, .DatePicker .vc-container .vc-day-in-prev-month .vc-day-layer { display: none; }

.DatePicker .vc-container .vc-day-content.is-disabled { pointer-events: none; }

.DatePicker .vc-container .vc-day-content.is-disabled { color: #ddd; color: var(--DS-colors-grayscale-neutral); }

1623f44d] { opacity: 0; pointer-events: none; }

.DatePicker .vc-container .vc-day-content { display: inline-flex; width: auto; margin: 0; }

.DatePicker .vc-container .vc-day-content, .DatePicker .vc-container .vc-nav-popover-container .vc-nav-item { position: relative; }

.DatePicker .vc-container .vc-day-content, .DatePicker .vc-container .vc-nav-popover-container .vc-nav-item, .DatePicker .vc-container .vc-nav-popover-container .vc-nav-title, .DatePicker .vc-container .vc-title { text-align: center; }

.DatePicker .vc-container .vc-day-content, .DatePicker .vc-container .vc-nav-popover-container .vc-nav-item, .DatePicker .vc-container .vc-nav-popover-container .vc-nav-title, .DatePicker .vc-container .vc-title { display: inline-block; cursor: pointer; height: var(--DatePicker-nav-size); }

Découvrez nos fleurs et plantes de saison

Interflora

Des fleurs pour toutes les occasions !

Voir la collection

Événement sélectionné date

Pour anniversaire

Voir la sélection

Notre sélection du moment

Découvrez notre collection de fleurs, plantes et cadeaux

span.vc-day-content.vc-focusable

Dimensions:... 412 x 915 8...

> Elements Sources Network Performance Memory Application Security Lighthouse Recorder >

26 == \$0

</div>

><div data-v="1623f44d" data-id="2024-08-27" data-class="vc-day id-2024-08-27 day-27 day-from-end-5 weekday-3 day-ordinal-4 weekday-ordinal-from-end-1 week-5 week-from-end-1 in-prev-month center-center is-not-in-month">...</div> flex

ta-v="1623f44d" class="vc-day id-2024-08-28" data-id="2024-08-28" data-class="vc-day id-2024-08-28 day-28 day-from-end-4 weekday-4 day-ordinal-4 weekday-ordinal-from-end-1 week-5 week-from-end-1 in-prev-month center-center is-not-in-month">...</div> flex

ta-v="1623f44d" class="vc-day id-2024-08-29" data-id="2024-08-29" data-class="vc-day id-2024-08-29 day-29 day-from-end-3 weekday-5 day-ordinal-5 weekday-ordinal-from-end-1 week-5 week-from-end-1 in-prev-month center-center is-not-in-month">...</div> flex

ta-v="1623f44d" class="vc-day id-2024-08-30" data-id="2024-08-30" data-class="vc-day id-2024-08-30 day-30 day-from-end-2 weekday-6 day-ordinal-5 weekday-ordinal-from-end-1 week-5 week-from-end-1 in-prev-month center-center is-not-in-month">...</div> flex

ta-v="1623f44d" class="vc-day id-2024-08-31" data-id="2024-08-31" data-class="vc-day id-2024-08-31 day-31 day-from-end-1 weekday-7 day-ordinal-5 weekday-ordinal-from-end-0 week-5 week-from-end-1 in-prev-month center-center is-not-in-month">...</div> flex

ta-v="1623f44d" class="vc-day id-2024-09-01" data-id="2024-09-01" data-class="vc-day id-2024-09-01 day-1 day-from-end-30 weekday-1 day-ordinal-1 weekday-ordinal-from-end-5 week-1 week-from-end-6 is-first-right vc-day-box-center-center">...</div> flex

ta-v="1623f44d" class="vc-day id-2024-09-02" data-id="2024-09-02" data-class="vc-day id-2024-09-02 day-2 day-from-end-29 weekday-2 day-ordinal-1 weekday-ordinal-from-end-5 week-2 week-from-end-5 in-month center-center">...</div> flex

ta-v="1623f44d" class="vc-day id-2024-09-03" data-id="2024-09-03" data-class="vc-day id-2024-09-03 day-3 day-from-end-28 weekday-3 day-ordinal-1 weekday-ordinal-from-end-4 week-2 week-from-end-5 in-month center-center">...</div> flex

ta-v="1623f44d" class="vc-day id-2024-09-04" data-id="2024-09-04" data-class="vc-day id-2024-09-04 day-4 day-from-end-27 weekday-4 day-ordinal-1 weekday-ordinal-from-end-4 week-2 week-from-end-5 in-month center-center">...</div> flex

ta-v="1623f44d" class="vc-day id-2024-09-05" data-id="2024-09-05" data-class="vc-day id-2024-09-05 day-5 day-from-end-26 weekday-5 day-ordinal-1 weekday-ordinal-from-end-4 week-2 week-from-end-5 in-month center-center">...</div> flex

ta-v="1623f44d" class="vc-day id-2024-09-06" data-id="2024-09-06" data-class="vc-day id-2024-09-06 day-6 day-from-end-25 weekday-6 day-ordinal-1 weekday-ordinal-from-end-4 week-2 week-from-end-5 in-month center-center">...</div> flex

ta-v="1623f44d" class="vc-day id-2024-09-07" data-id="2024-09-07" data-class="vc-day id-2024-09-07 day-7 day-from-end-24 weekday-7 day-ordinal-1 weekday-ordinal-from-end-4 week-2 week-from-end-5 in-month center-center">...</div> flex

ta-v="1623f44d" class="vc-day id-2024-09-08" data-id="2024-09-08" data-class="vc-day id-2024-09-08 day-8 day-from-end-23 weekday-1 day-ordinal-2 weekday-ordinal-from-end-4 week-2 week-from-end-5 in-month center-center">...</div> flex

ta-v="1623f44d" class="vc-day id-2024-09-09" data-id="2024-09-09" data-class="vc-day id-2024-09-09 day-9 day-from-end-22 weekday-2 day-ordinal-2 weekday-ordinal-from-end-4 week-3 week-from-end-4 is-today box-center-center">...</div> flex

ta-v="1623f44d" class="vc-day id-2024-09-10" data-id="2024-09-10" data-class="vc-day id-2024-09-10 day-10 day-from-end-21 weekday-2 day-ordinal-2 weekday-ordinal-from-end-3 week-3 week-from-end-4 in-month center-center">...</div> flex

ta-v="1623f44d" class="vc-day id-2024-09-11" data-id="2024-09-11" data-class="vc-day id-2024-09-11 day-11 day-from-end-20 weekday-2 day-ordinal-2 weekday-ordinal-from-end-3 week-3 week-from-end-4 in-month center-center is-not-in-month span.vc-day-content.vc-focusable.is-disabled

element.style {

.DatePicker .vc-container .vc-day .in-next-month .vc-day-content, .DatePicker .vc-container .vc-day .in-next-month .vc-day-layer, .DatePicker .vc-container .vc-day .in-prev-month .vc-day-content, .DatePicker .vc-container .vc-day .in-prev-month .vc-day-layer {

display: none;

}

.DatePicker .vc-container .vc-day-content.is-disabled {

pointer-events: none;

}

.DatePicker .vc-container .vc-day-content.is-disabled {

color: #ddd;

color: var(--DS-colors-grayscale-neutral);

}

.vc-day-content.is-disabled[data-v="1623f44d"] {

color: var(--gray-400);

}

.vc-day.is-not-in-month *[data-v="1623f44d"] {

opacity: 0;

pointer-events: none;

}

.DatePicker .vc-container .vc-day-content {

display: inline-flex; width: auto;

margin: 0;

}

.DatePicker .vc-container .vc-day-content, .DatePicker .vc-container .vc-nav-popover-container .vc-nav-item {

position: relative;

}

.DatePicker .vc-container .vc-day-content, .DatePicker .vc-container .vc-nav-popover-container .vc-nav-item, .DatePicker .vc-container .vc-nav-popover-container .vc-nav-title, .DatePicker .vc-container .vc-title {

text-align: center;

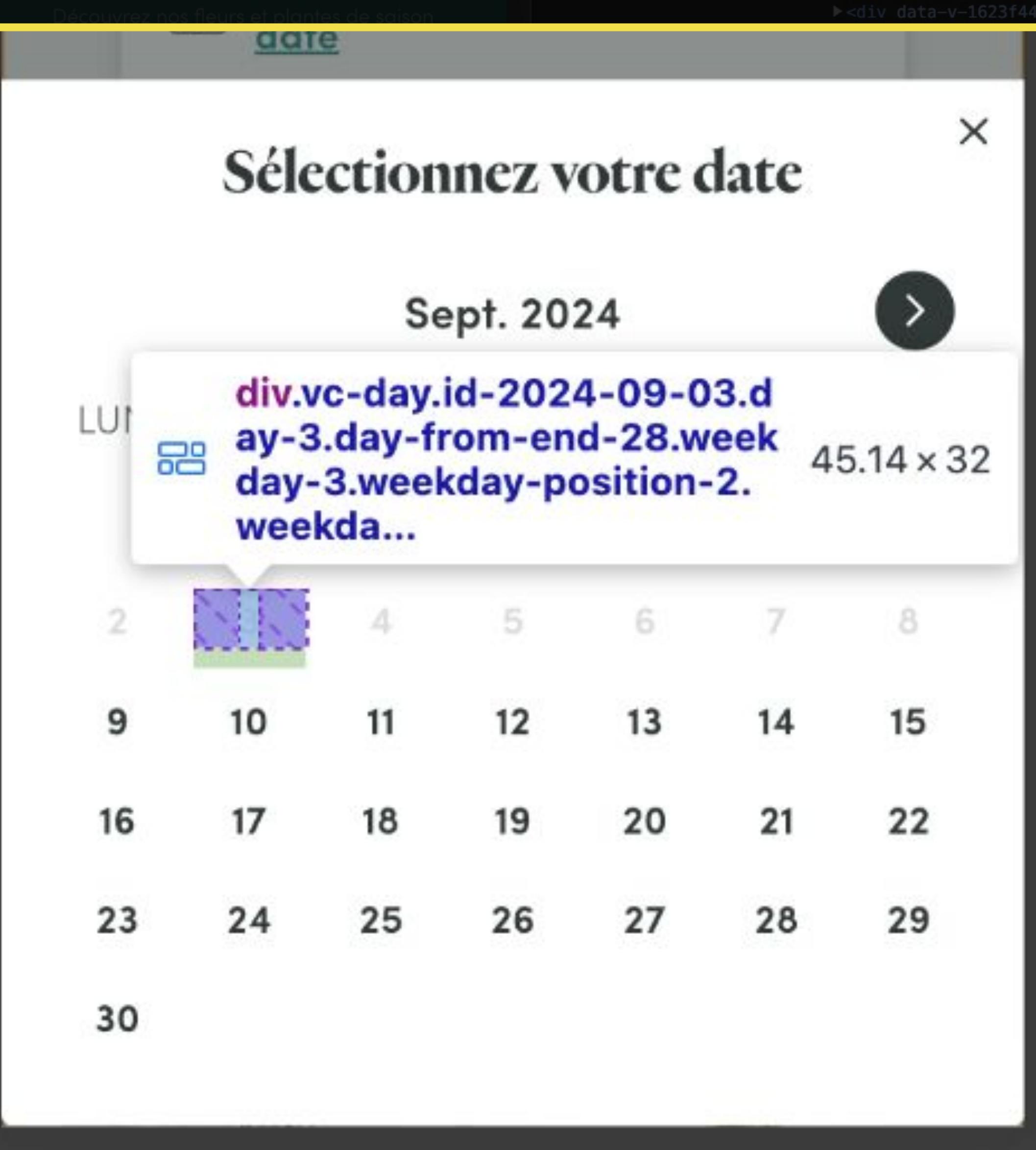
}

.DatePicker .vc-container .vc-day-content, .DatePicker .vc-container .vc-nav-popover-container .vc-nav-item {

display: inline-block;

cursor: pointer;

height: var(--DatePicker-nav-size);



Dimensions:... 412 x 915 8... ▾

Découvrez nos fleurs et plantes de saison

Interflora

Des fleurs pour toutes les occasions

Voir la collection

Livraison sélectionnez une date

Sélectionnez votre date

Sept. 2024

LUN. MAR. MER. JEU. VEN. SAM. DIM.

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	
16	17	18	19	20	21	22	
23	24	25	26	27	28	29	
30							

Elements Console Sources Network **Performance** Memory Application Security Lighthouse Recorder > ▲ 3 □ 1 ⚙️ X

(no recordings) Screenshots Memory

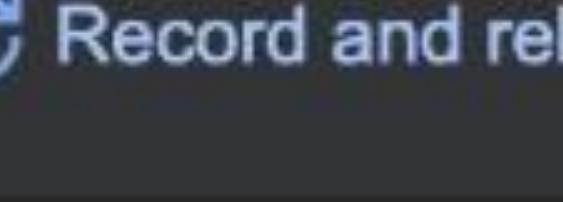
Local metrics

Recording settings

CPU: 20x slowdown 

Network: No throttling

 Record

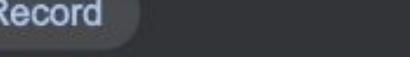
 Record and reload

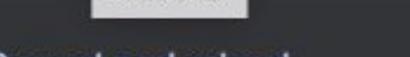
144 ms

Recording settings

CPU: 20x slowdown ▾

Network: No throttling ▾

 Record

 Record and reload

Next steps

Field data

See how your local metrics compare to real user data in the [Chrome UX Report](#).

Set up

Dimensions:... 412 x 915 8... ▾

Découvrez nos fleurs et plantes de saison

Interflora

Des fleurs pour toutes les occasions !

Voir la collection

Livraison sélectionnez une date

Sélectionnez votre date

Sept. 2024

LUN. MAR. MER. JEU. VEN. SAM. DIM.

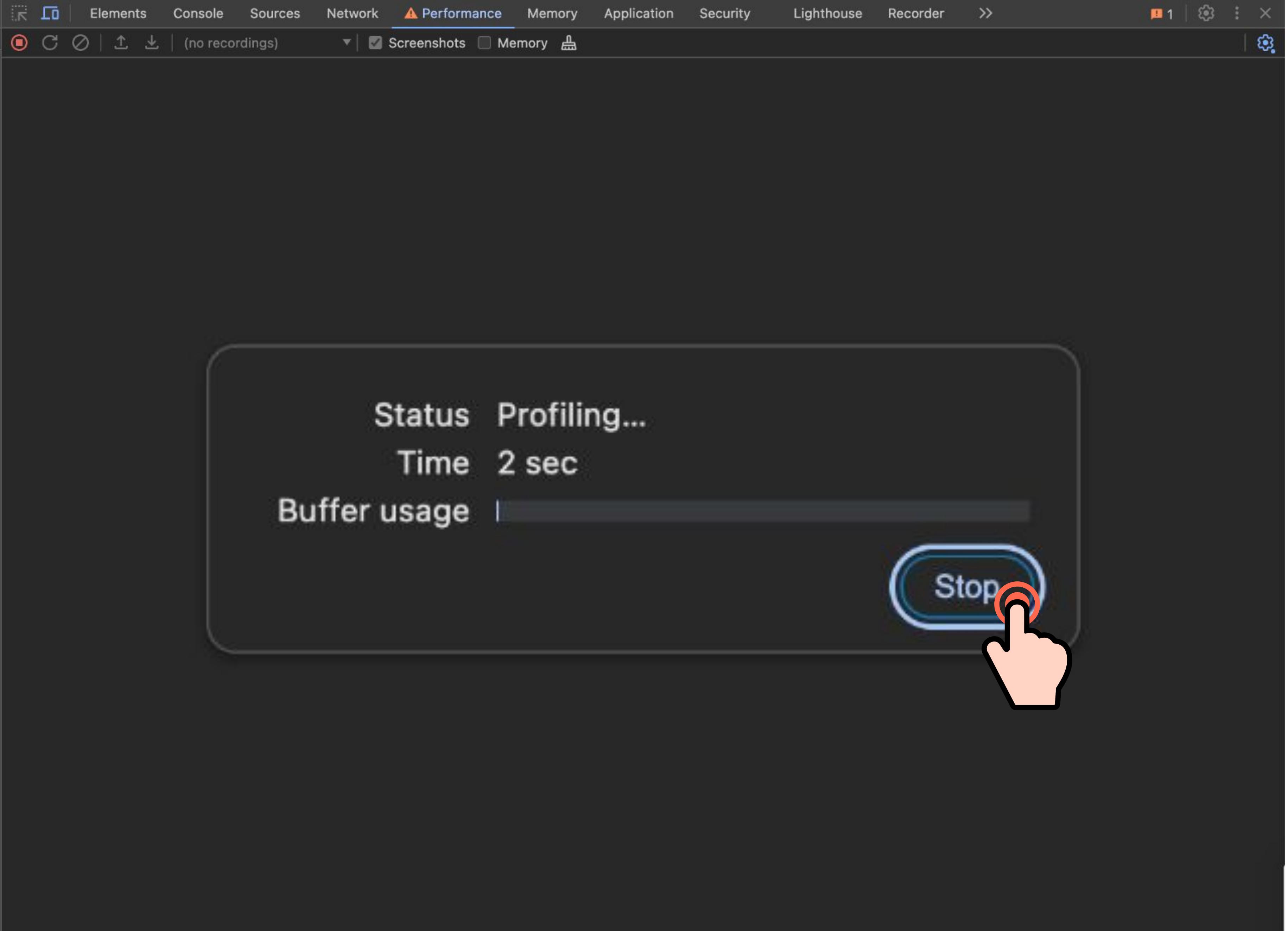
1						
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

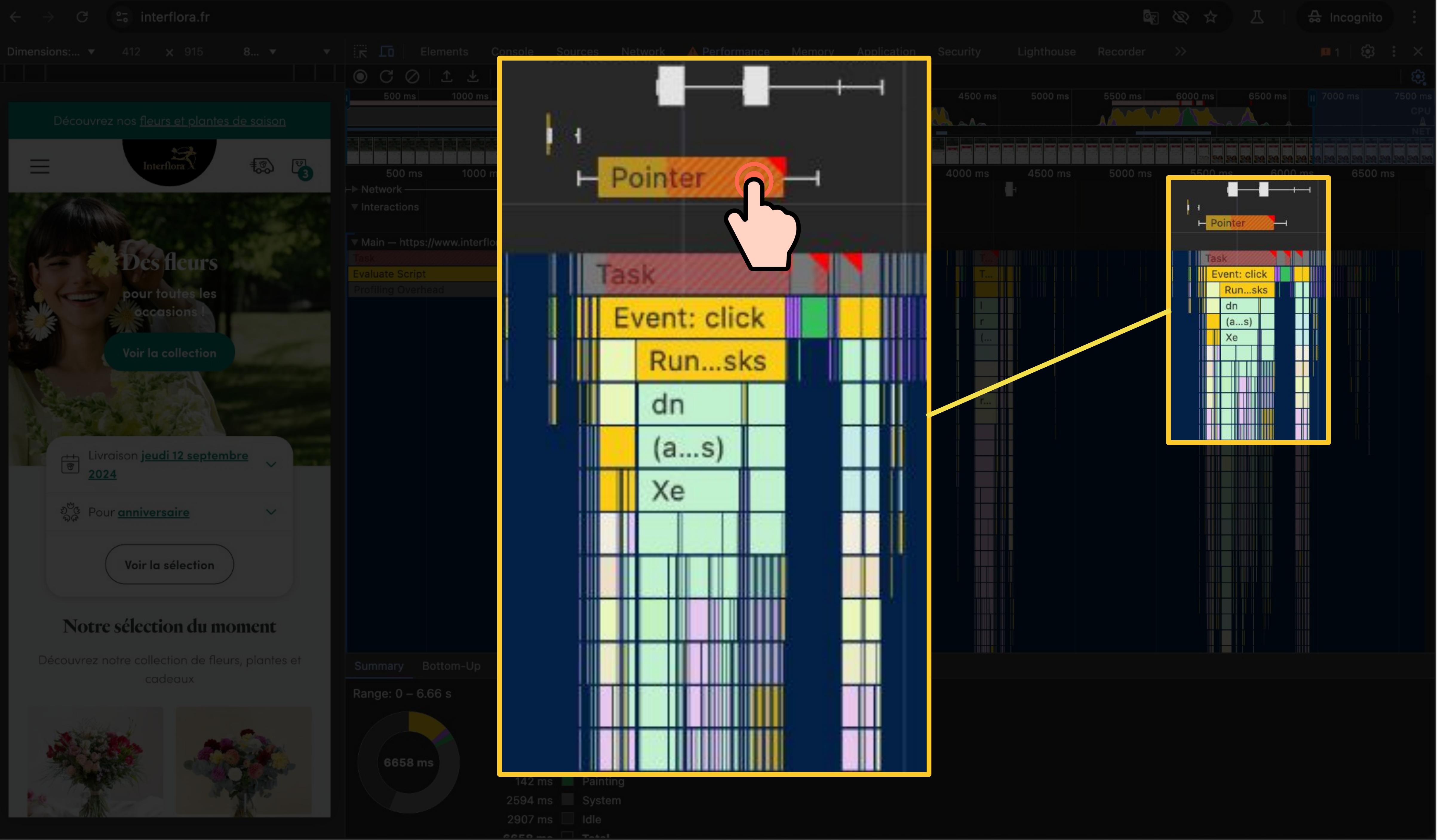
Elements Console Sources Network Performance Memory Application Security Lighthouse Recorder > 1 Screenshot Memory

(no recordings) Screenshots Memory

Status Profiling... Time 2 sec Buffer usage

Stop





Dimensions:... 412 x 915

8...

▼

Elements

Console

Sources

Network

Performance

Memory

Application

Security

Lighthouse

Recorder

>

1

⚙

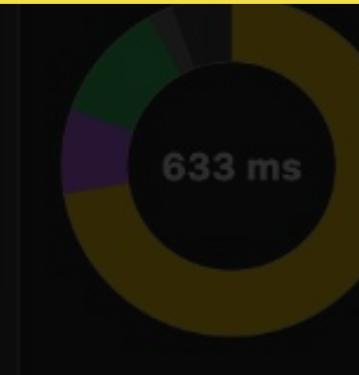
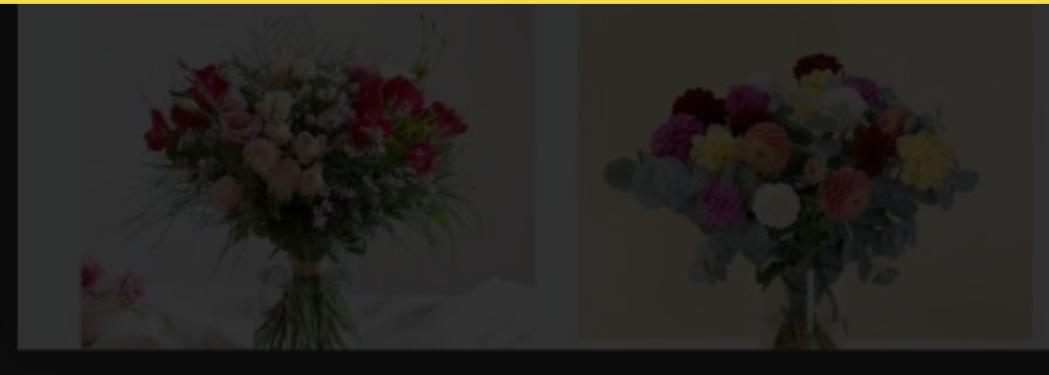
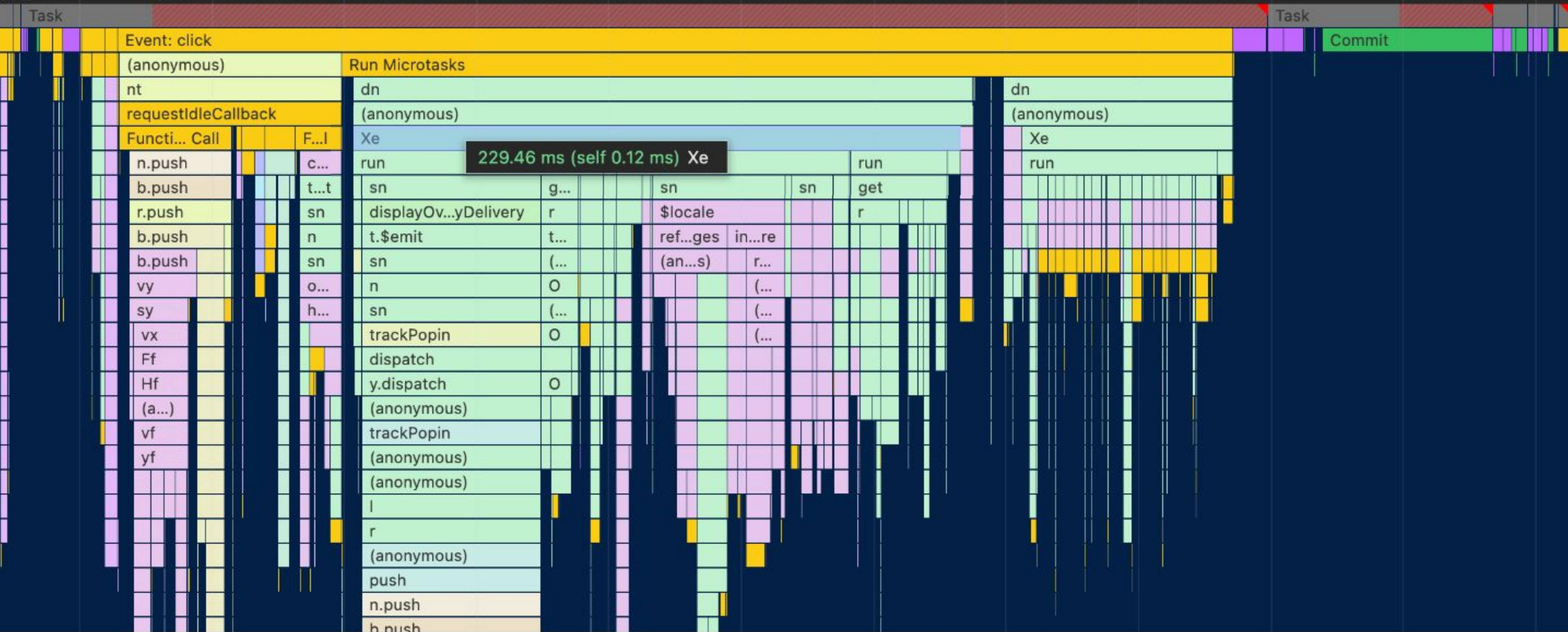
⋮

X

▼ Interactions

Pointer

▼ Main — https://www.interflora.fr/



0 ms	Loading
458 ms	Scripting
51 ms	Rendering
73 ms	Painting
15 ms	System
36 ms	Idle
633 ms	Total

Dimensions:... ▾ 412 x 915 8... ▾

Découvrez nos fleurs et plantes de saison

Interflora

50 ms 5300 ms 5350 ms 5400 ms 5450 ms 5500 ms 5550 ms 5600 ms 5650 ms 5700 ms 5750 ms 5800 ms 5850 ms

▶ Network
▼ Interactions

Pointer

(anonymous)

Xe

run 229.46 ms (self 0.12 ms) Xe

sn g... sn sn get

Livraison jeudi 12 septembre 2024

Pour anniversaire

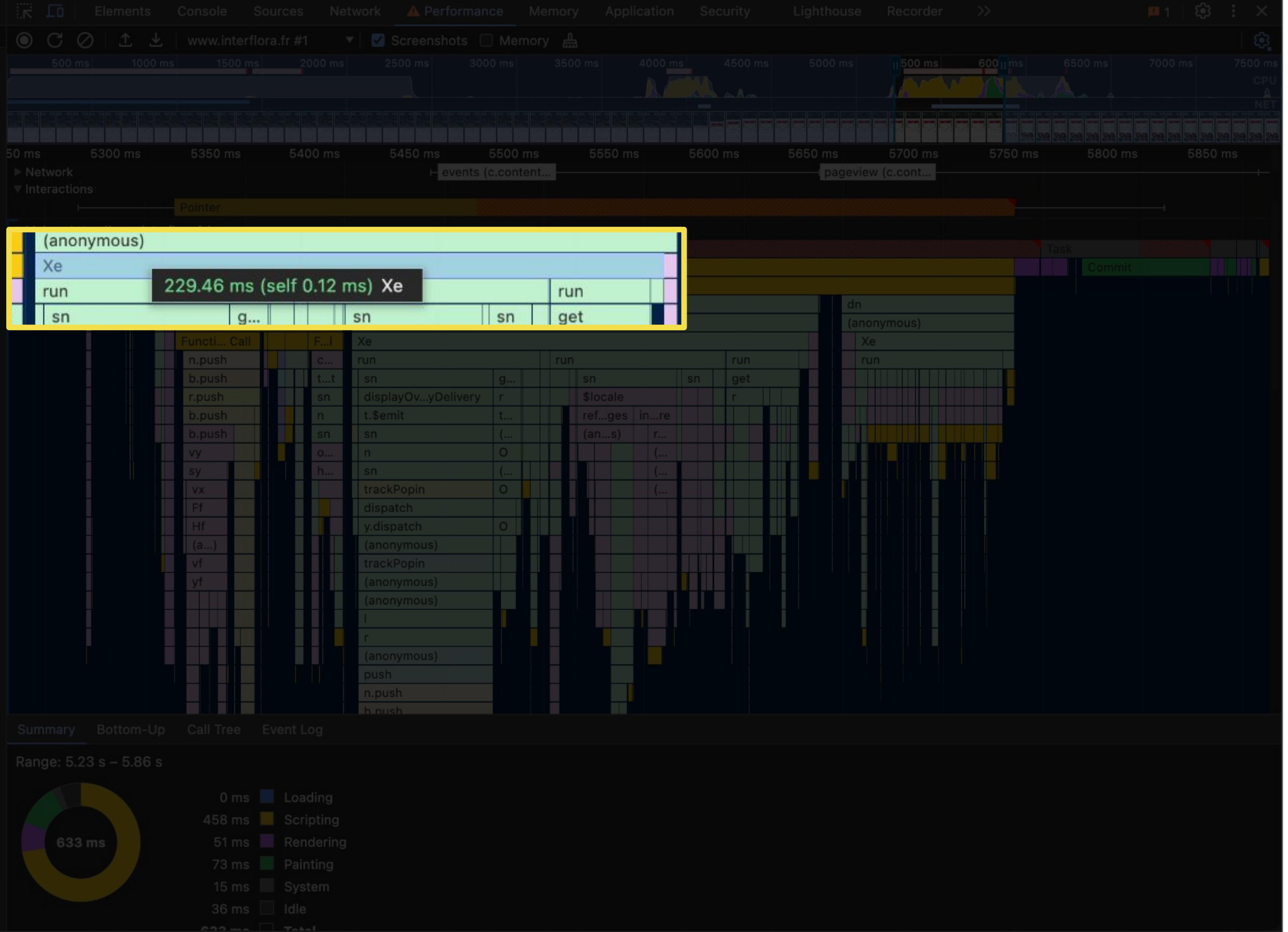
Voir la collection

Voir la sélection

Notre sélection du moment

Découvrez notre collection de fleurs, plantes et cadeaux

The screenshot shows a dark-themed browser window with the Interflora website loaded. The DevTools Network tab is active, displaying a timeline of network requests and their execution times. A specific event, 'events (c.content...)', is highlighted with a yellow border, showing a duration of 229.46 ms. The timeline includes markers for '500 ms' through '7500 ms'. Below the timeline, the 'Event Log' section is visible, showing a detailed list of events and their execution times. The 'Summary' tab is selected at the bottom.



Dimensions:... ▾ 412 x 915 8... ▾

Découvrez nos fleurs et plantes de saison

Interflora

50 ms 5300 ms 5350 ms 5400 ms 5450 ms 5500 ms 5550 ms 5600 ms 5650 ms 5700 ms 5750 ms 5800 ms 5850 ms

▶ Network
▼ Interactions

Pointer

(anonymous)

Xe

run sn 94.63 ms run sn sn get

displayOv...yDelivery \$locale r

b.push t...t sn g... sn sn get

r.push sn displayOv...yDelivery r \$locale r

b.push n t.\$emit t... ref...ges in...re

v... sn (...) (an...s) r...

vy sn (...) (...)

sy n O (...)

vx h... sn (...) (...)

Ff trackPopin O (...)

Hf dispatch

(a...) y.dispatch O

vf (anonymous)

yf trackPopin

(anonymous)

(anonymous)

I (anonymous)

r (anonymous)

push (anonymous)

n.push push

h.push n.push

Livraison jeudi 12 septembre 2024

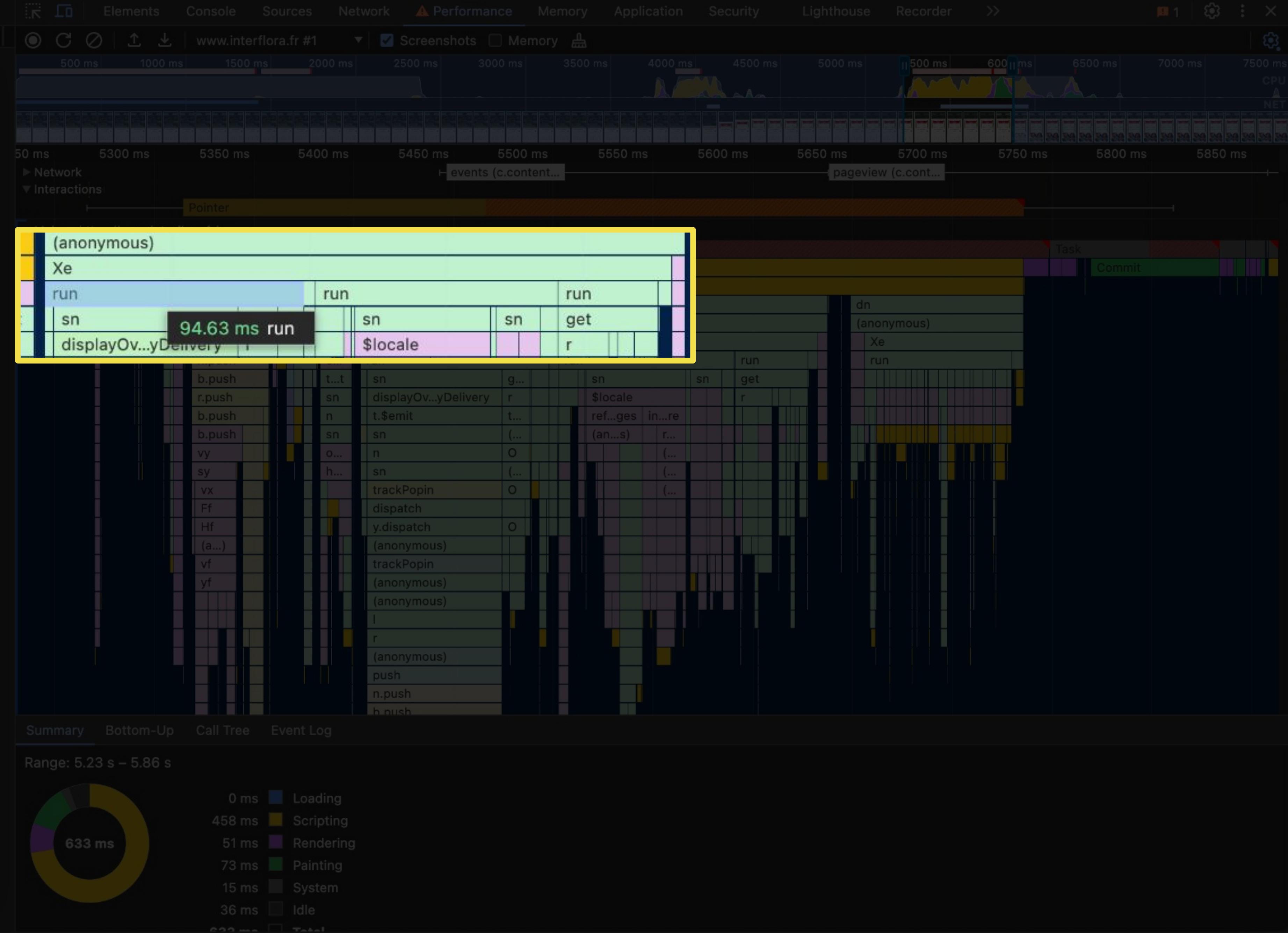
Pour anniversaire

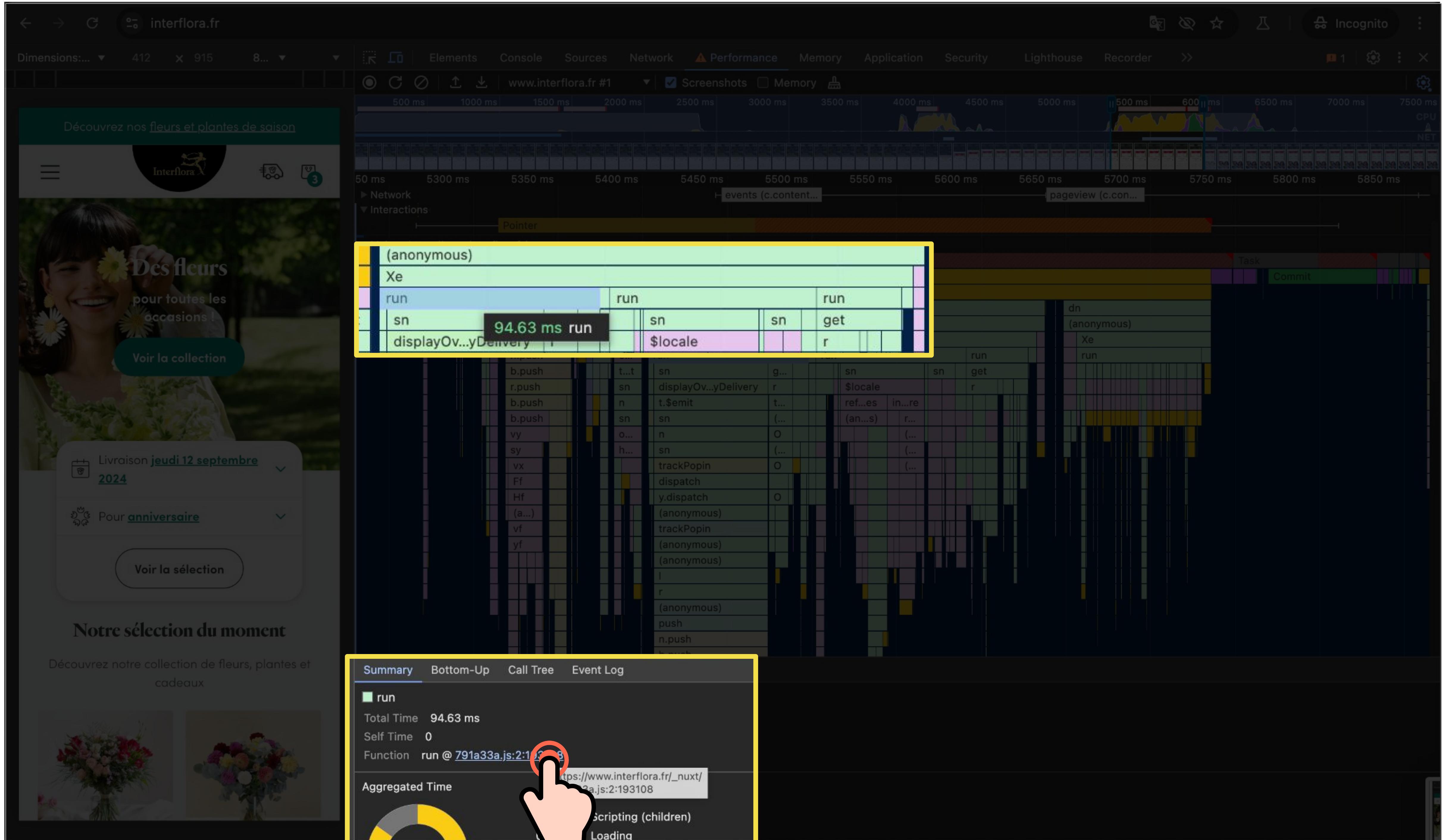
Voir la collection

Voir la sélection

Notre sélection du moment

Découvrez notre collection de fleurs, plantes et cadeaux





The screenshot shows the Chrome DevTools interface with the Sources tab selected. The left sidebar displays the page structure with files like 9d0f105.js and 791a33a.js. The main area shows the code for the 791a33a.js file, specifically focusing on a watcher implementation. A yellow box highlights the `run` method of the watcher object. The code within this method is as follows:

```
run() {
  if (this.active) {
    const t = this.get();
    if (t !== this.value || h(t) || this.deep) {
      const e = this.value;
      if (this.value = t,
        this.user) {
        const n = `callback for watcher "${this.expression}"`;
        sn(this.cb, this.vm, [t, e], this.vm, n)
      } else
        this.cb.call(this.vm, t, e)
    }
  }
}
```

The right sidebar contains settings for breakpoints, scopes, and call stacks.

Debugging INP

3 steps

1. Find out where
the slowest interactions
are occurring
 2. Analyze the causes
of slow interactions
 3. Fix the problem
- a. Manually troubleshoot interactions
b. Leverage real user monitoring data
- 



What is Interaction
to Next Paint (INP)?

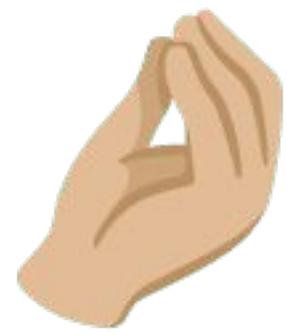


Debugging slow
interactions



Identified mistakes
and solutions

Have you improved INP?



Never tried to
improve INP

Tried to improve it,
didn't succeed yet

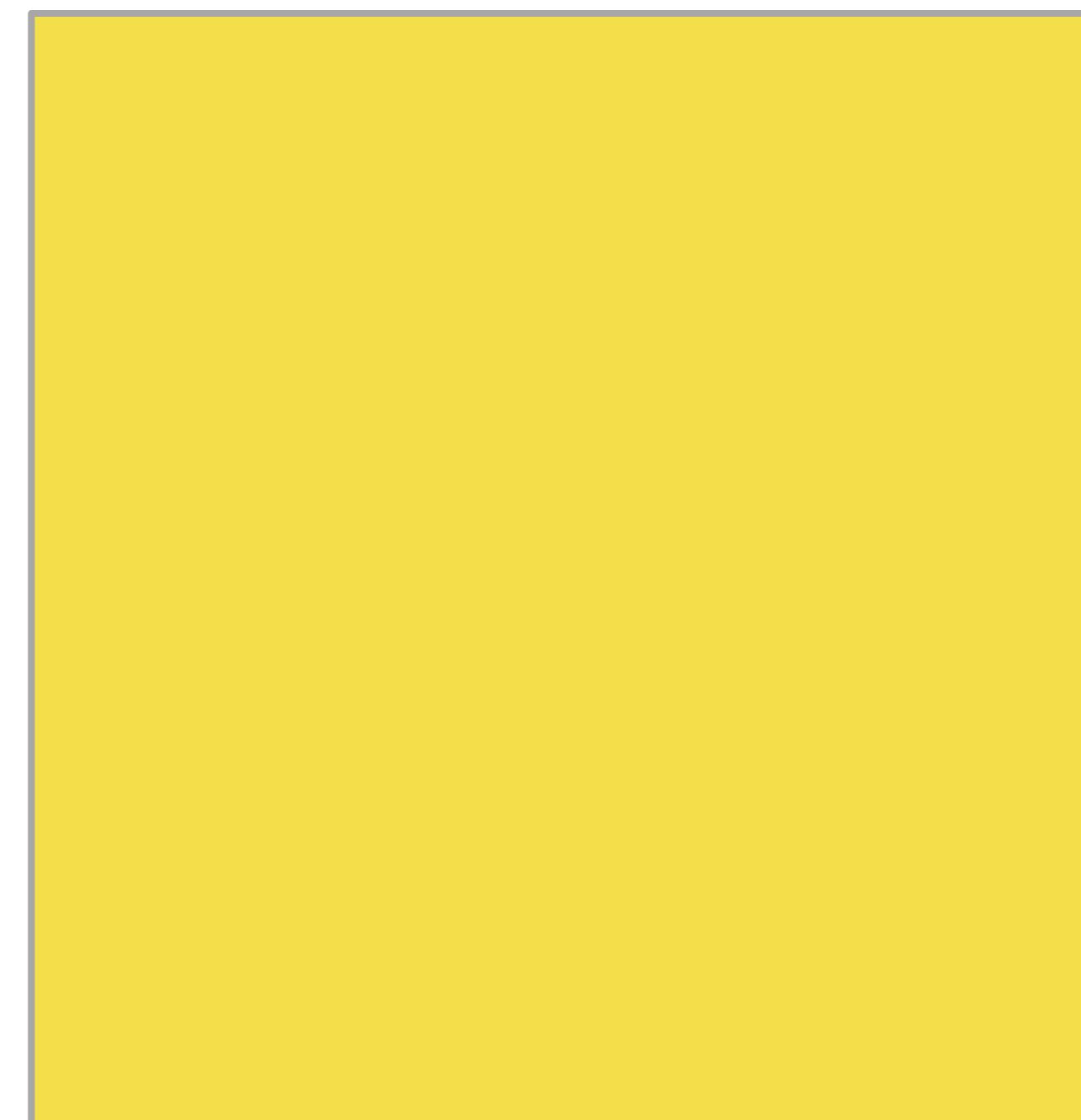
Successfully
improved INP



Identified mistakes

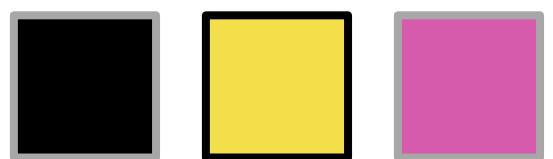
- Synchronously sending analytics beacons
- Inducing style recalculation
- Executing too much UI-related JavaScript at once

Synchronously sending analytics beacons

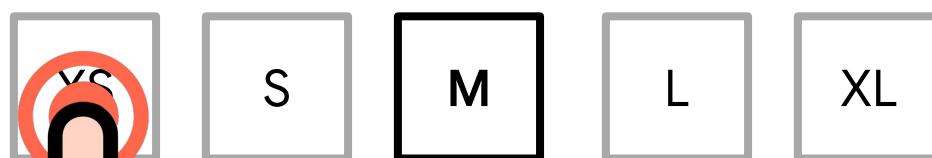


Fancy T-shirt

Available colors

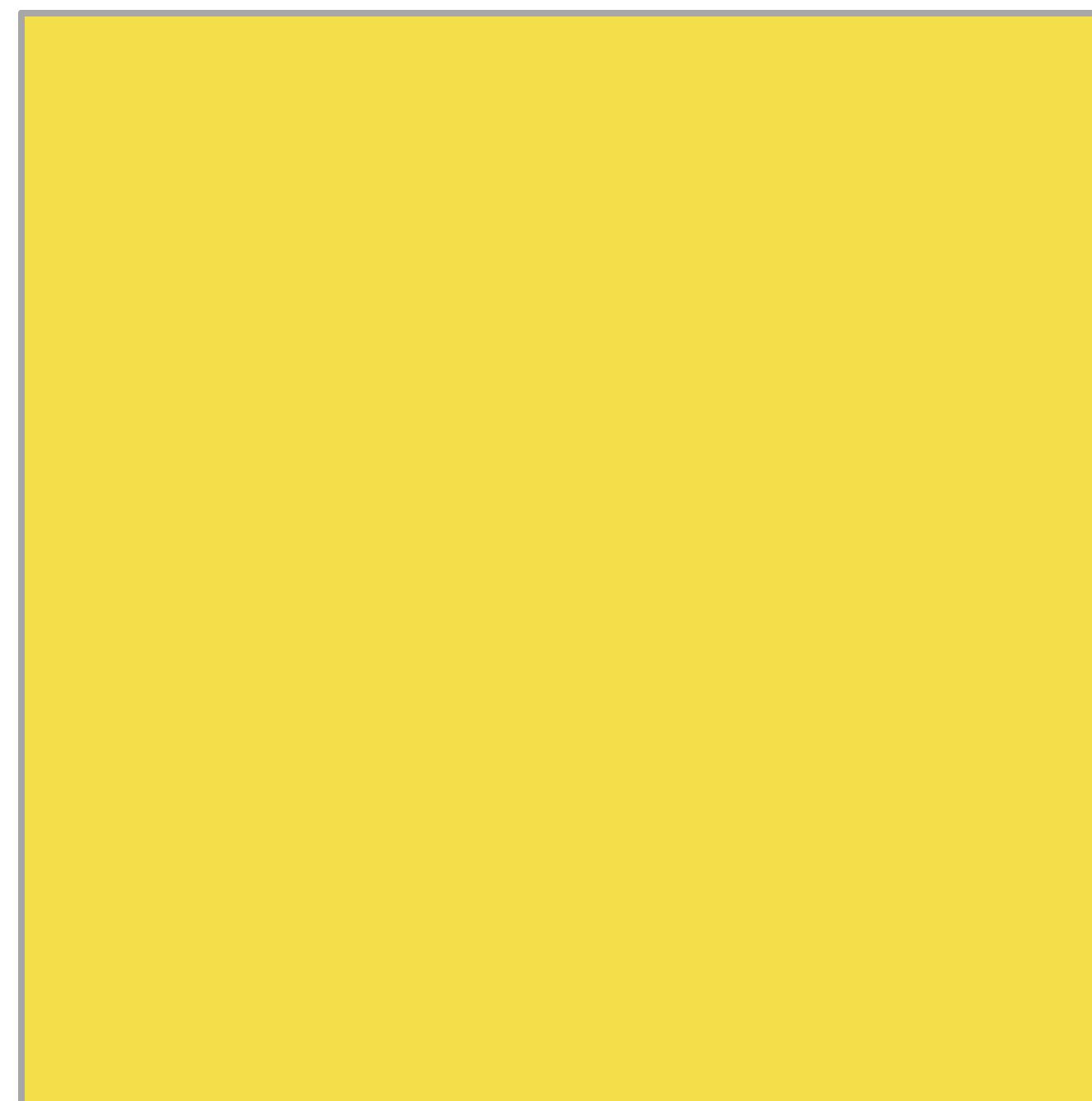


Choose your size



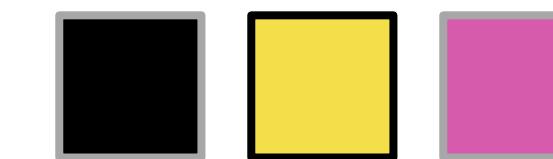
delivery in 1 day

1100 ms



Fancy T-shirt

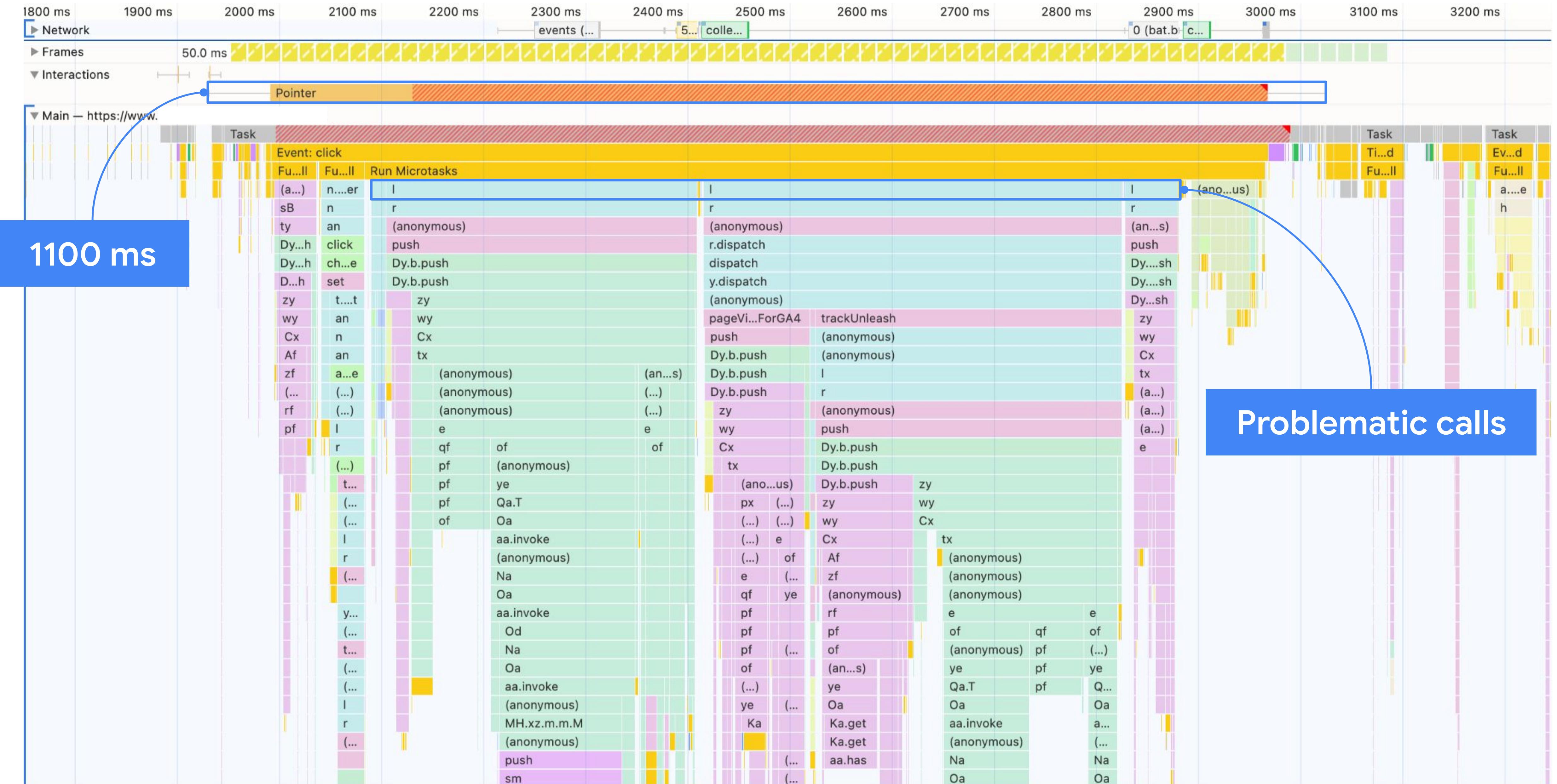
Available colors



Choose your size



Express delivery in 1 day

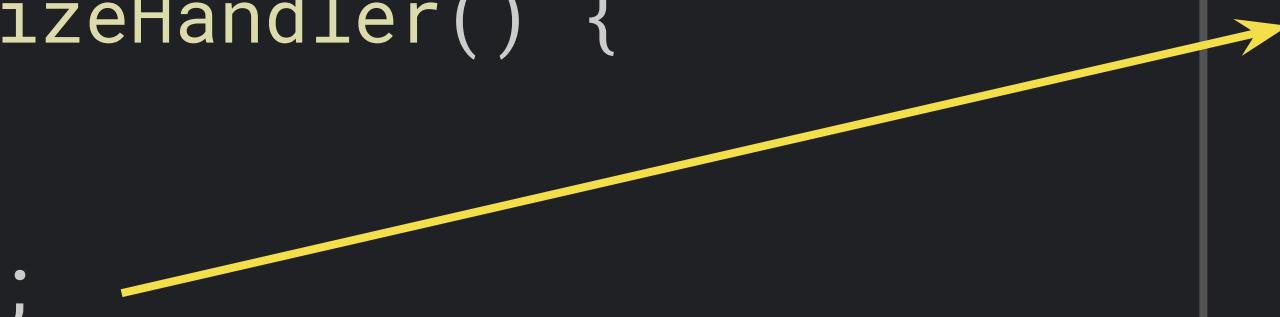


```
function selectSizeHandler() {  
    selectSize();  
    pushToTagManager();  
}  
 
```

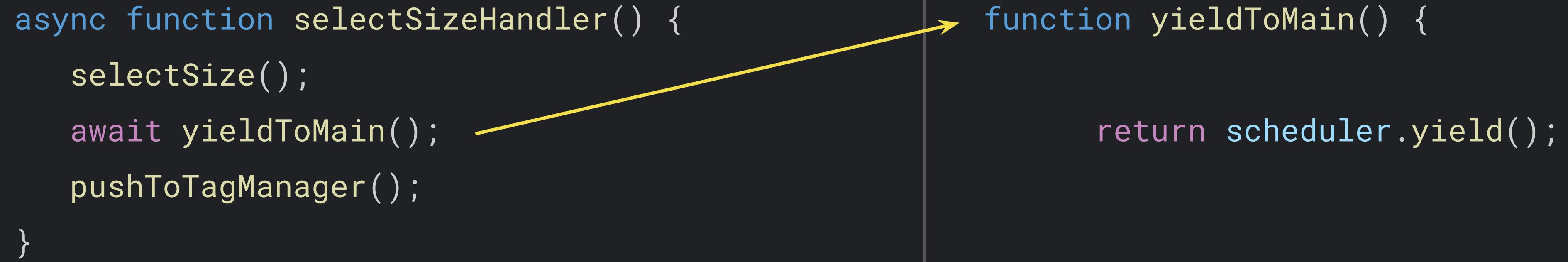
```
function selectSizeHandler() {  
    selectSize();  
  
    pushToTagManager();  
}
```

```
async function selectSizeHandler() {  
  selectSize();  
  await yieldToMain();  
  pushToTagManager();  
}
```

```
async function selectSizeHandler() {  
  selectSize();  
  await yieldToMain();  
  pushToTagManager();  
}  
  
function yieldToMain() {  
}  
}
```



```
async function selectSizeHandler() {  
  selectSize();  
  await yieldToMain();  
  pushToTagManager();  
}  
  
function yieldToMain() {  
  return scheduler.yield();  
}
```

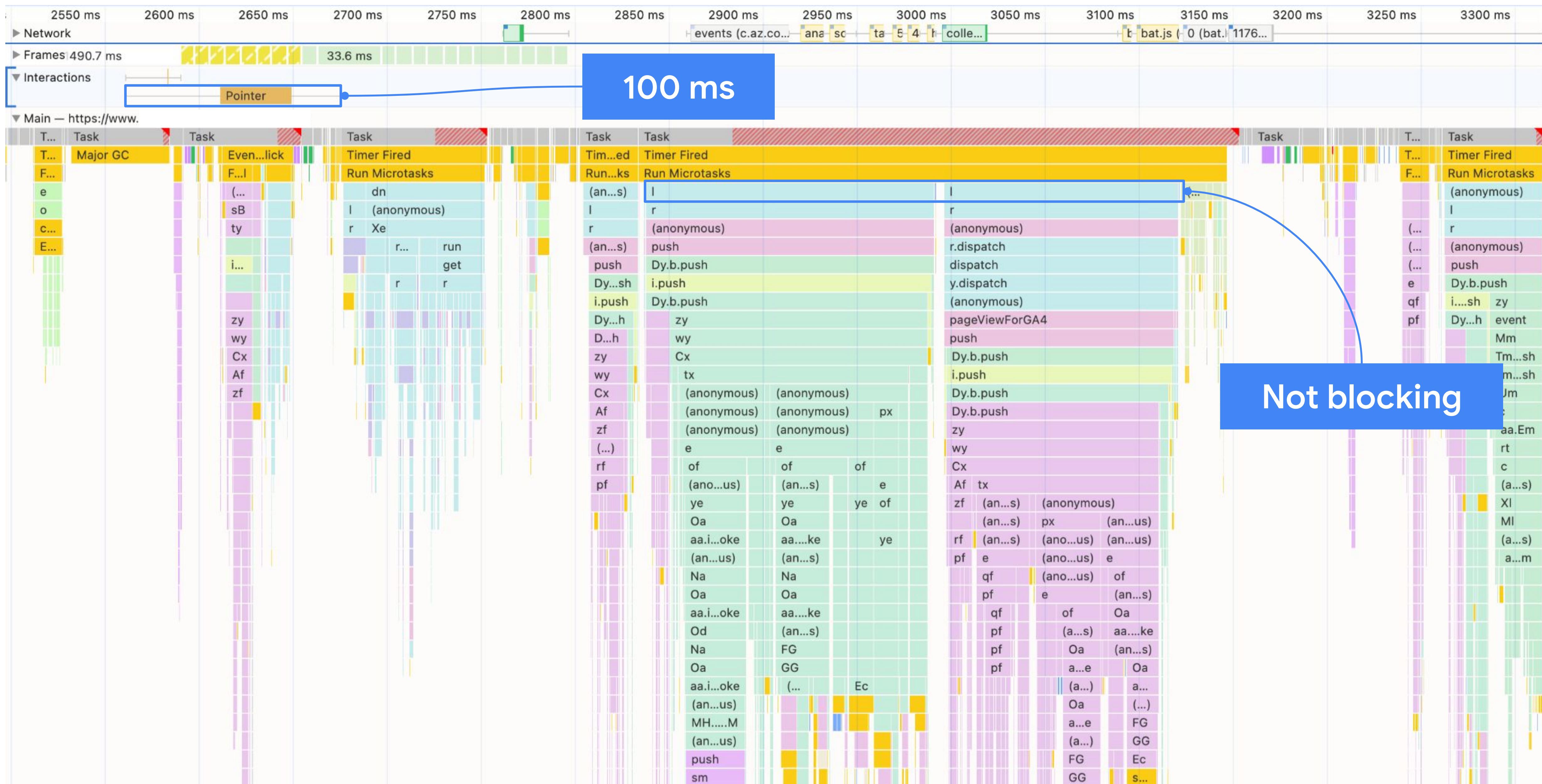


```
async function selectSizeHandler() {  
    selectSize();  
    await yieldToMain();  
    pushToTagManager();  
}
```

```
function yieldToMain() {  
    if ("scheduler" in window && "yield" in scheduler) {  
        return scheduler.yield();  
    }  
}
```

```
async function selectSizeHandler() {  
    selectSize();  
    await yieldToMain();  
    pushToTagManager();  
}
```

```
function yieldToMain() {  
    if ("scheduler" in window && "yield" in scheduler) {  
        return scheduler.yield();  
    }  
    return new Promise((resolve) => {  
        setTimeout(resolve, 0);  
    });  
}
```



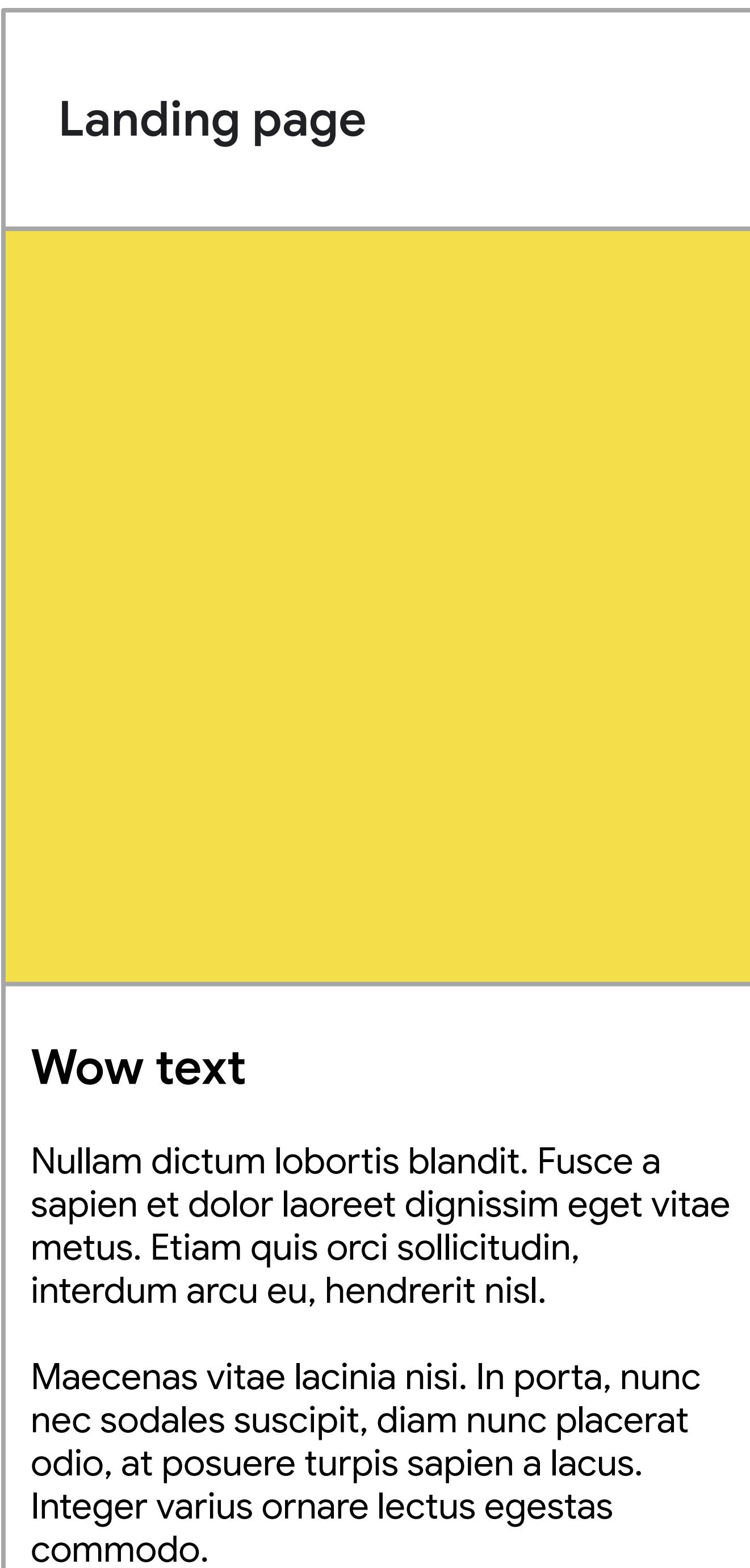
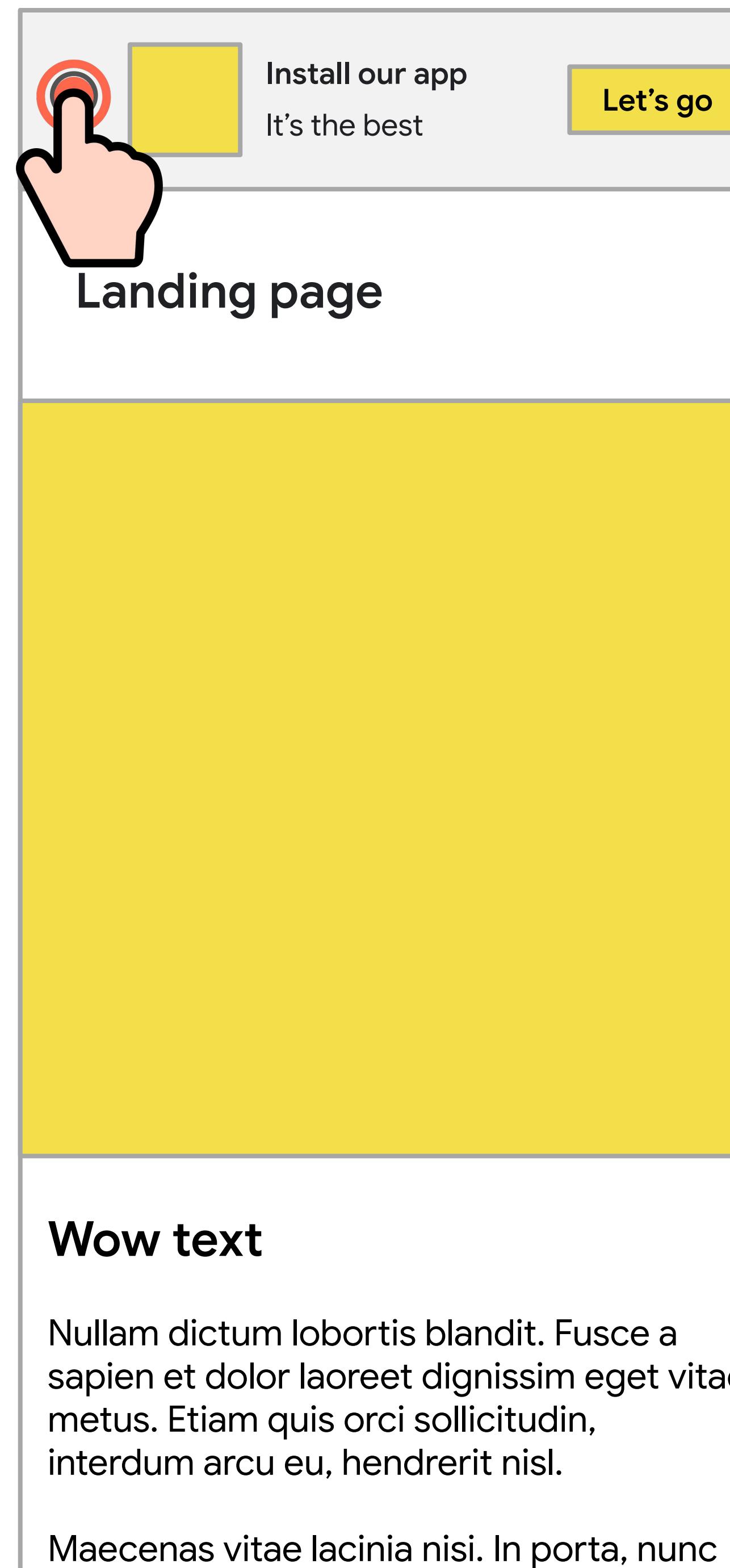
**Always yield to the main thread
before calling tracking functions**

(or any other long-running function)

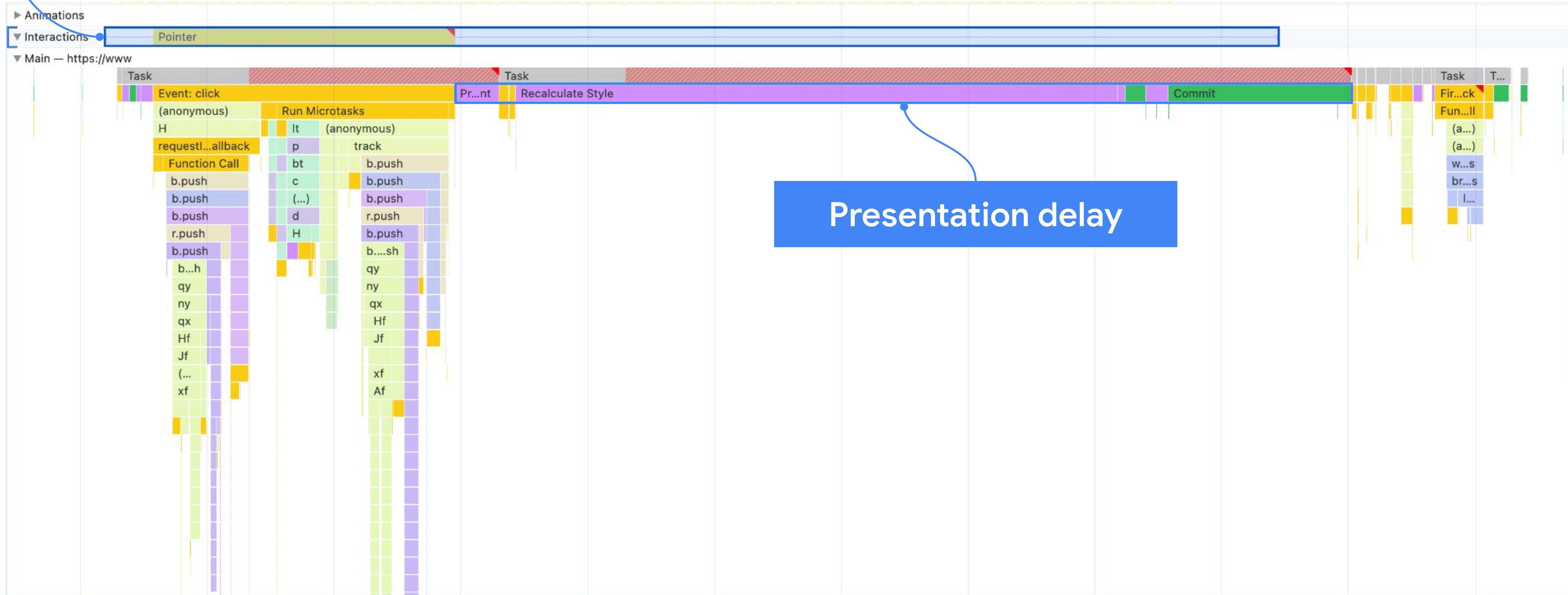
“When I get back to work, I’ll have to check how my website handles event tracking calls to analytics platforms.”

“À mon retour au travail, il me faudra vérifier le fonctionnement de mon site web concernant les appels de suivi d'événements sur les plateformes d'analyse.”

Inducing style recalculation



250 ms




```
<html>  
  <head>  
    ...  
  </head>  
  <body  
    class="..."  
    style="--app-header-height: 223px; --app-header-offset-top: 223px"  
  >  
  ...  
</body>  
</html>
```

“...if you're adding new custom properties, you defeat those optimizations and we have to go down the slow path. So this is expected.”

Comment on Chromium issue 342214592, May 2024

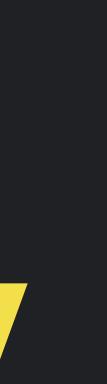
```
<html>  
  <head>  
    ...  
  </head>  
  <body  
    class="...">  
    ...  
  </body>  
</html>
```



Can we use
classes instead?

```
<html>  
  <head>  
    ...  
  </head>  
  <body  
    class="... app-header__visible"  
    >  
    ...  
  </body>  
</html>
```

```
<body  
  class="..."  
  style="--app-header-height: 223px; --app-header-offset-top: 223px"  
>  
  
<header  
  class="..."  
  ...  
>  
  ...  
</header>  
  
<main  
  class="..."  
  ...  
>  
  ...  
</main>  
</body>
```



Assign
custom props
to lower levels
of the DOM tree

```
<body  
  class="..."  
  ...>  
  
<header  
  class="..."  
  style="--app-header-height: 223px; --app-header-offset-top: 223px"  
  ...>  
  
</header>  
  
<main  
  class="..."  
  ...>  
  
</main>  
</body>
```

```
<body  
  class="..."  
>  
<header  
  class="..."  
>  
  ...  
</header>  
<main  
  class="..."  
  style="--app-header-height: 223px; --app-header-offset-top: 223px"  
>  
  ...  
</main>  
</body>
```

```
<body  
  class="..."  
  ...>  
  
<header  
  class="..."  
  style="--app-header-height: 223px; --app-header-offset-top: 223px"  
  ...>  
  
</header>  
  
<main  
  class="..."  
  style="--app-header-height: 223px; --app-header-offset-top: 223px"  
  ...>  
  
</main>  
</body>
```

```
<body  
  class="..."  
  style="--app-header-height: 223px; --app-header-offset-top: 223px"  
>  
  
<header  
  class="..."  
>  
  ...  
</header>  
<main  
  class="..."  
>  
  ...  
</main>  
</body>
```



Avoid
inheritance

```
<body  
  class="..."  
  style="--app-header-height: 223px; --app-header-offset-top: 223px"  
>  
  
<header  
  class="..."  
  >  
  ...  
</header>  
  
<main  
  class="..."  
  >  
  ...  
</main>  
</body>
```

Javascript

```
CSS.registerProperty({  
  name: "--app-header-height",  
});
```

```
<body  
  class="..."  
  style="--app-header-height: 223px; --app-header-offset-top: 223px"  
>  
  
<header  
  class="..."  
>  
  
  ...  
  
</header>  
  
<main  
  class="..."  
>  
  
  ...  
  
</main>  
</body>
```

Javascript

```
CSS.registerProperty({  
  name: "--app-header-height",  
  syntax: "<length>",  
});
```

```
<body  
  class="..."  
  style="--app-header-height: 223px; --app-header-offset-top: 223px"  
>  
  
<header  
  class="..."  
>  
  
  ...  
  
</header>  
  
<main  
  class="..."  
>  
  
  ...  
  
</main>  
</body>
```

Javascript

```
CSS.registerProperty({  
  name: "--app-header-height",  
  syntax: "<length>",  
  inherits: false,  
});
```

```
<body  
  class="..."  
  style="--app-header-height: 223px; --app-header-offset-top: 223px"  
>  
  
<header  
  class="..."  
>  
  ...  
</header>  
  
<main  
  class="..."  
>  
  ...  
</main>  
</body>
```

Javascript

```
CSS.registerProperty({  
  name: "--app-header-height",  
  syntax: "<length>",  
  inherits: false,  
  initialValue: "223px",  
});
```

```
<body  
  class="..."  
  style="--app-header-height: 223px; --app-header-offset-top: 223px"  
>  
  
<header  
  class="..."  
>  
  ...  
</header>  
  
<main  
  class="..."  
>  
  ...  
</main>  
</body>
```

Javascript

```
CSS.registerProperty({  
  name: "--app-header-height",  
  syntax: "<length>",  
  inherits: false,  
  initialValue: "223px",  
});  
  
CSS.registerProperty({  
  name: "--app-header-offset-top",  
  syntax: "<length>",  
  inherits: false,  
  initialValue: "223px",  
});
```

```
<body  
  class="..."  
  style="--app-header-height: 223px; --app-header-offset-top: 223px"  
>  
  
<header  
  class="..."  
>  
  ...  
</header>  
<main  
  class="..."  
>  
  ...  
</main>  
</body>
```



“Is this
really used?”

```
<body  
    class="..."
```

```
>
```

```
    <header  
        class="..."
```

```
>
```

```
    ...
```

```
    </header>
```

```
    <main  
        class="..."
```

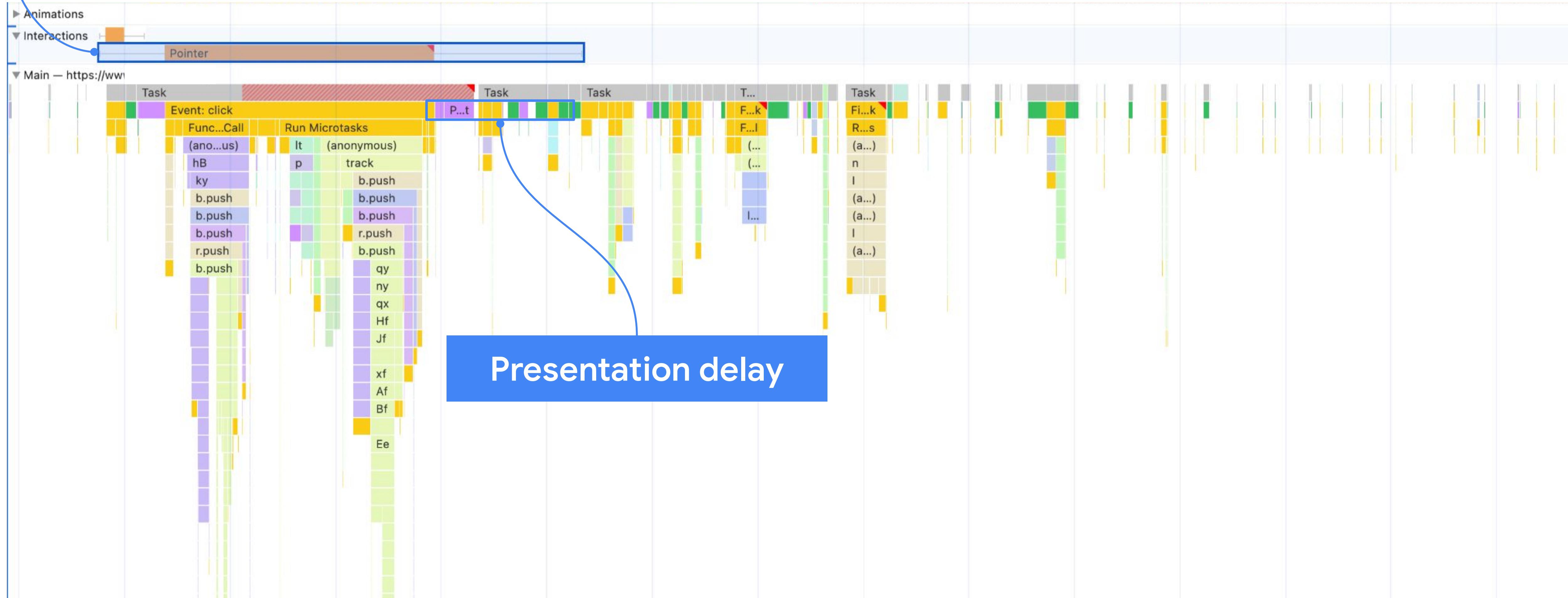
```
>
```

```
    ...
```

```
    </main>
```

```
</body>
```

110 ms

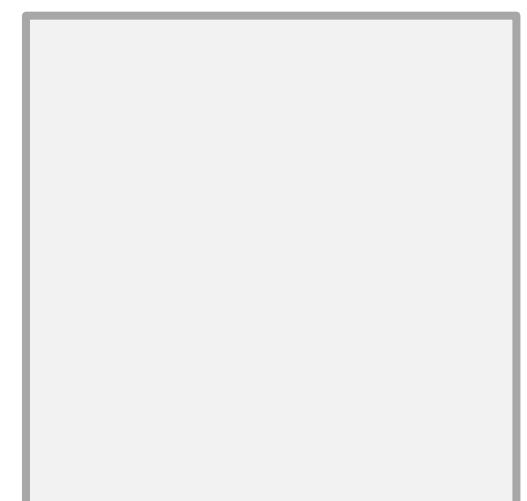
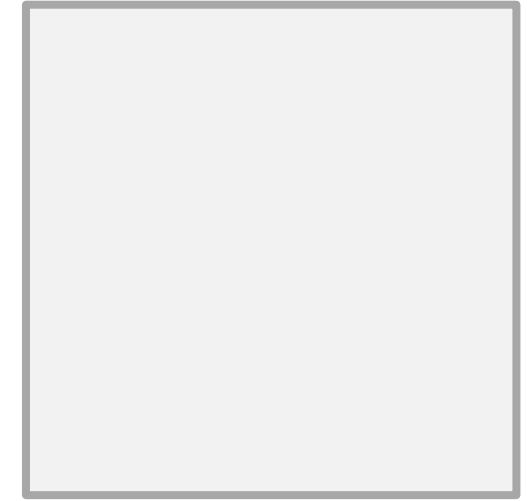
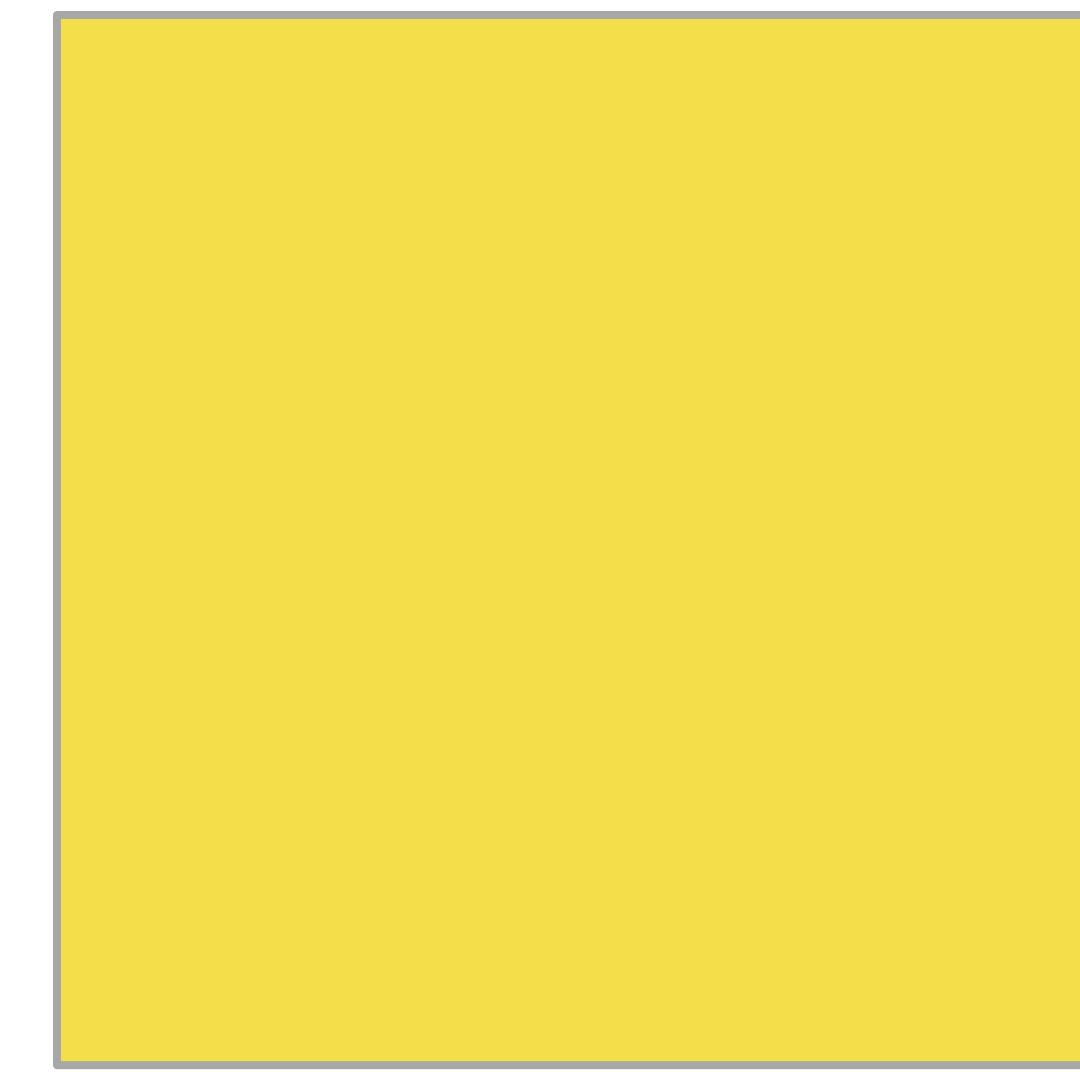


**Set custom properties close to where
you need them, if you need them**

And disable their inheritance if not required

Executing too much UI-related JavaScript at once

Landing page



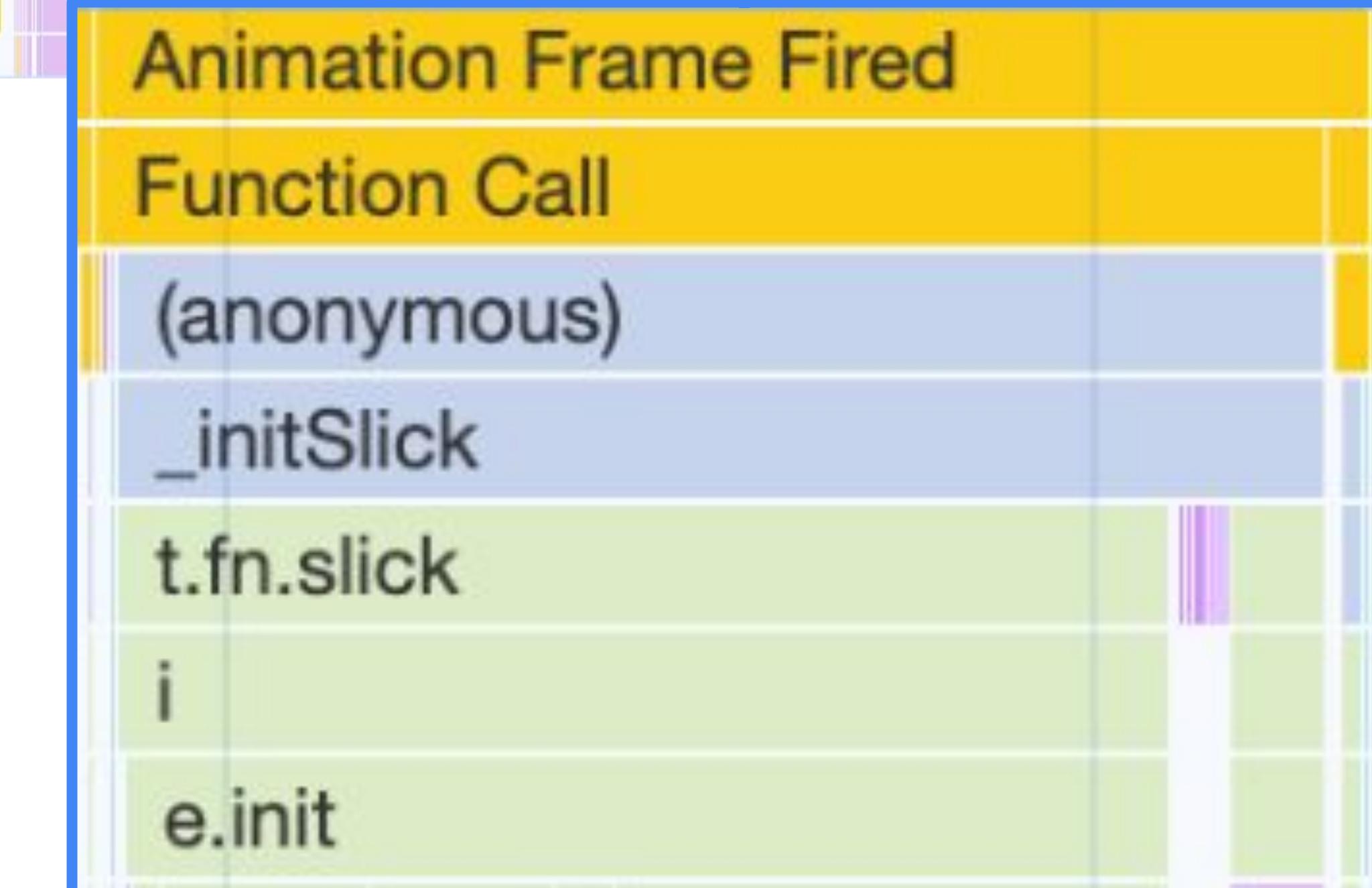
2 s

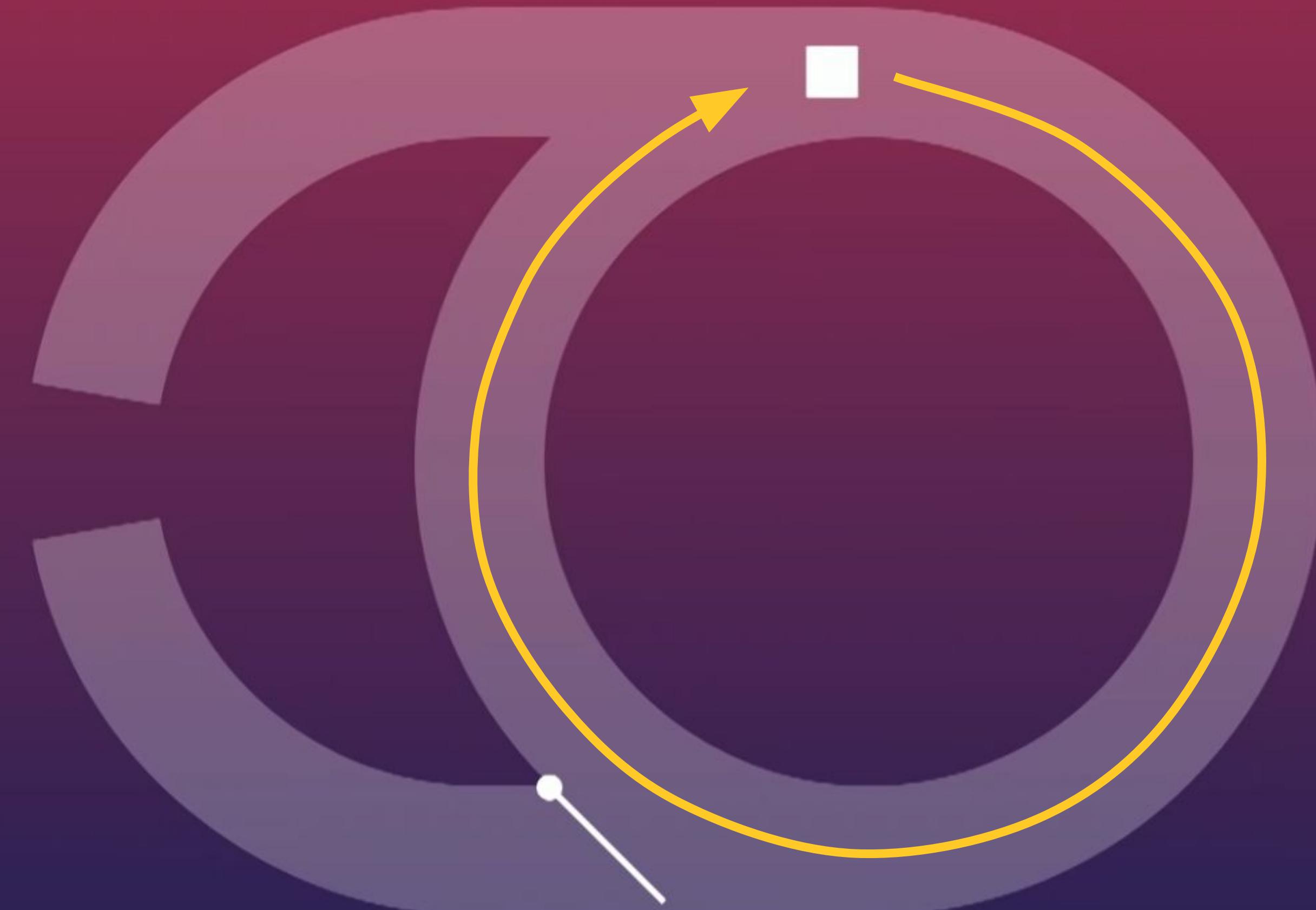


Landing page



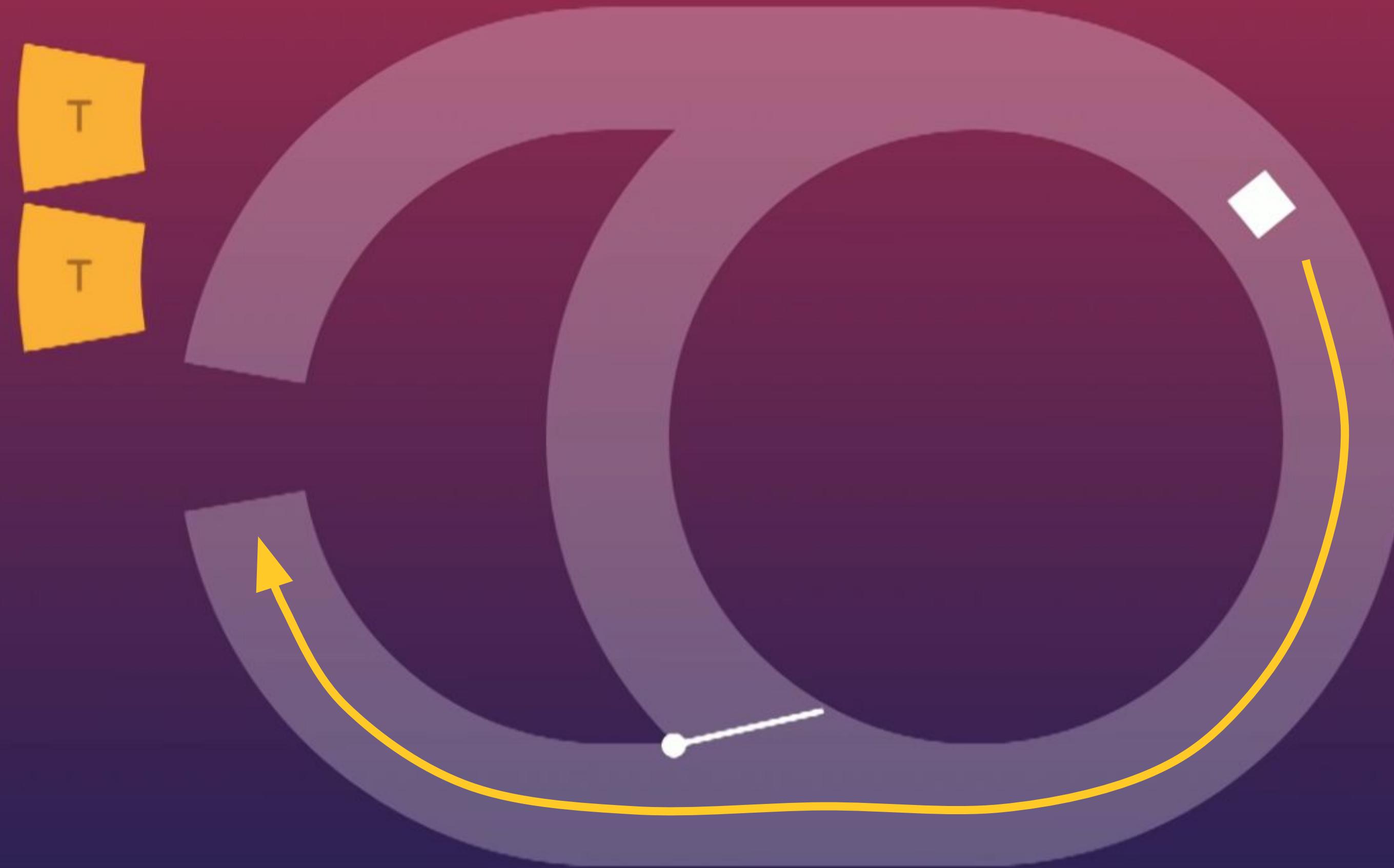
Task										C...
Ani...red	Animation...me Fired	Anim...ired	Animation Frame Fired	Animation...ame Fired	Animation Frame Fired					
Func...all	Function Call	Func...Call	Function Call							
(an...us)	(anonymous)	(ano...ous)	(anonymous)							
_initSlick	_initSlick	_initSlick	_initSlick	_initSlick	_initSlick	_initSlick	_initSlick	_initSlick	_initSlick	
t.fn.slick	t.fn.slick	t.fn.slick	t.fn.slick	t.fn.slick	t.fn.slick	t.fn.slick	t.fn.slick	t.fn.slick	t.fn.slick	
i	i	i	i	i	i	i	i	i	i	
e.init	e.init	e.init	e.init	e.init	e....on	e.init	e.init	e.init	e.init	
e.cn...sive	e.cn...sive	e...ve	e...ve	e.che...nsive	each	e.che...nsive	e.che...nsive	e.che...nsive	e.che...nsive	
e.refresh	e.refresh	e....h	e....h	e.refresh	each	e.refresh	e.refresh	e.refresh	e.refresh	
e.init	e.init	e.init	e.init	e.init	e....h	e.init	e.init	e.init	e.init	
e...	e...	e...	e...	e...	(an...s)	e...	e...	e...	e...	
i	i	i	i	i	value	i	i	i	i	





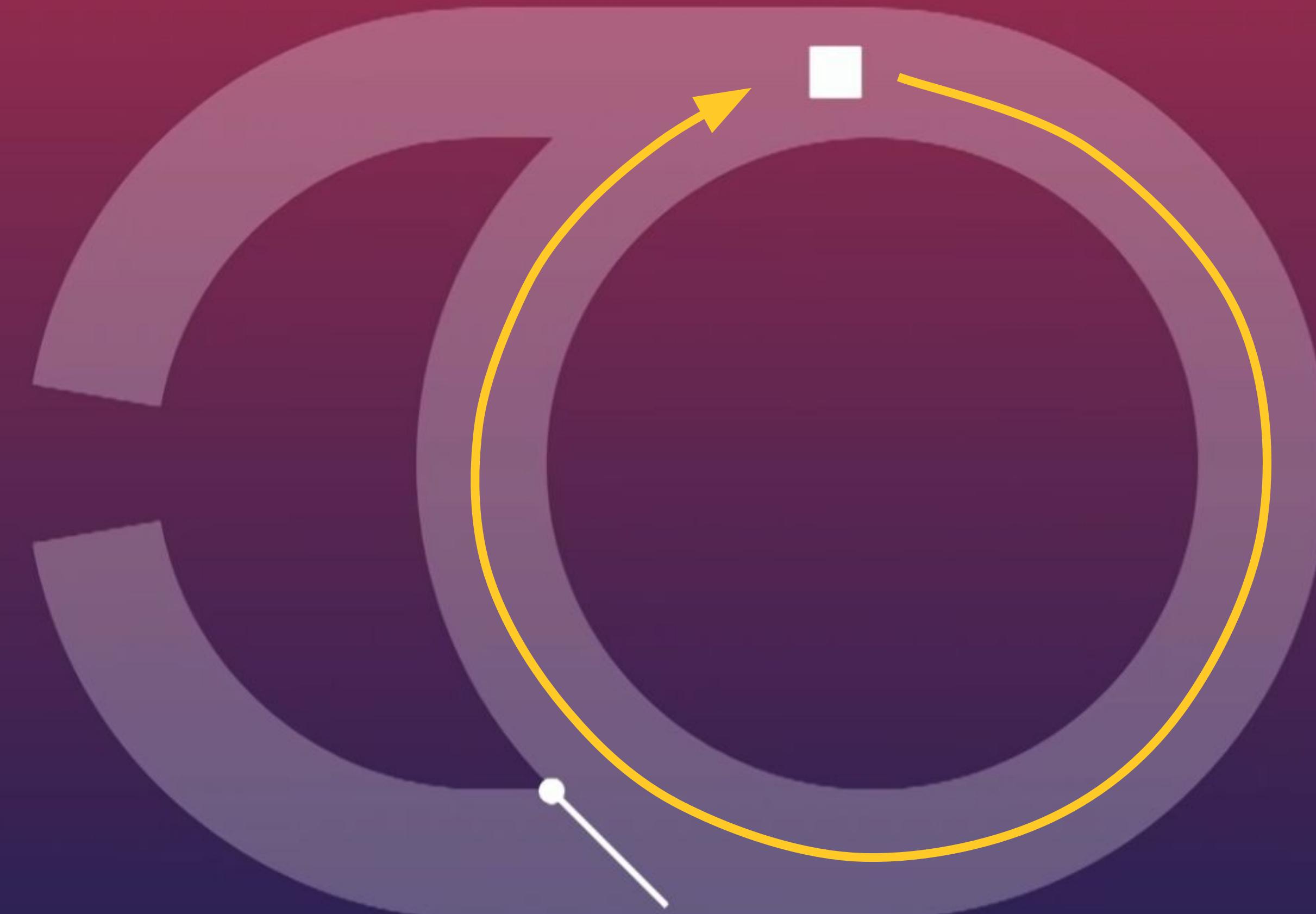
@jaffathecake

[Jake Archibald's talk "In the loop" video](#) or [Jake's talk, transposed](#)



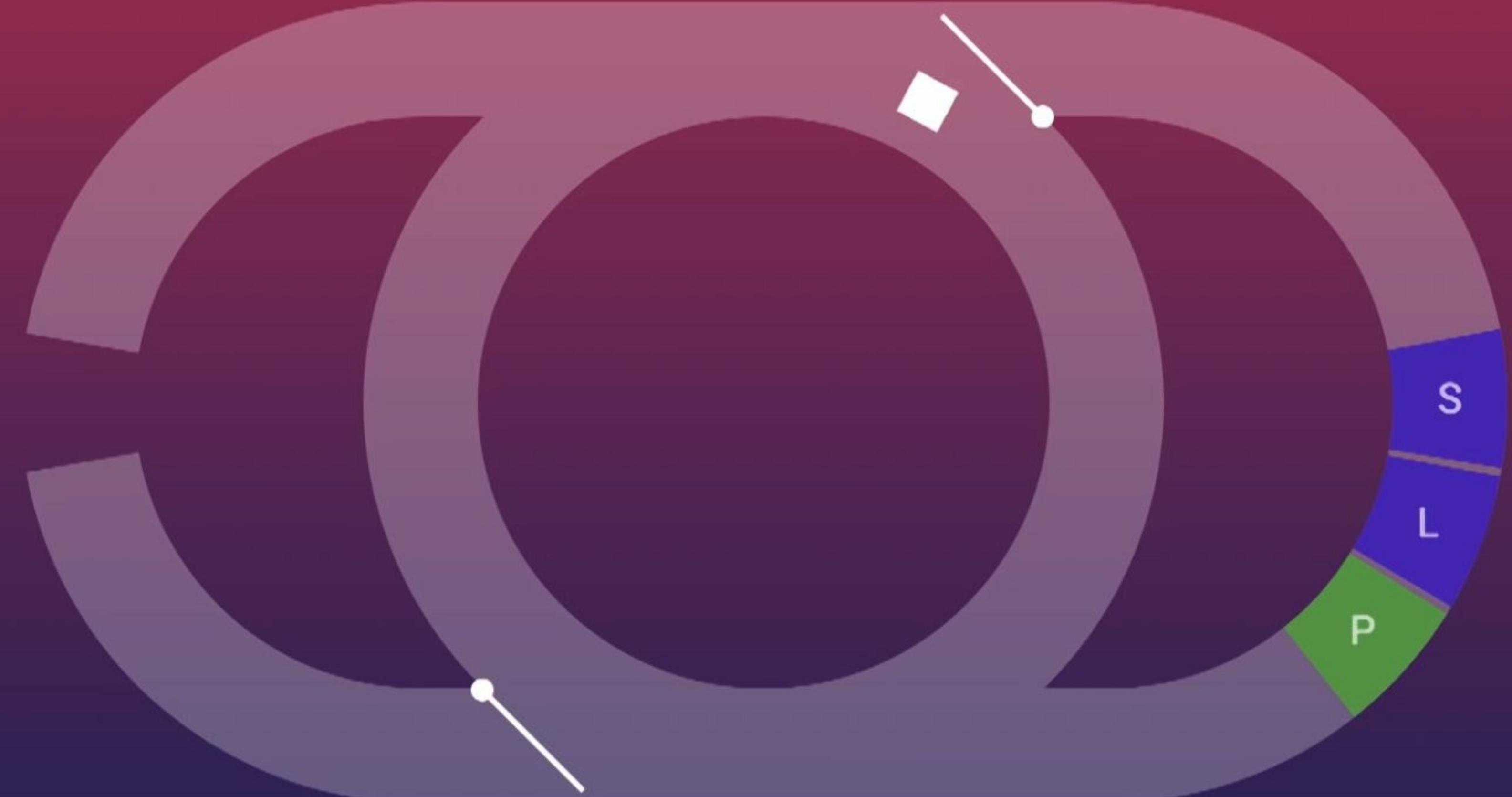
@jaffathecake

[Jake Archibald's talk "In the loop" video](#) or [Jake's talk, transposed](#)



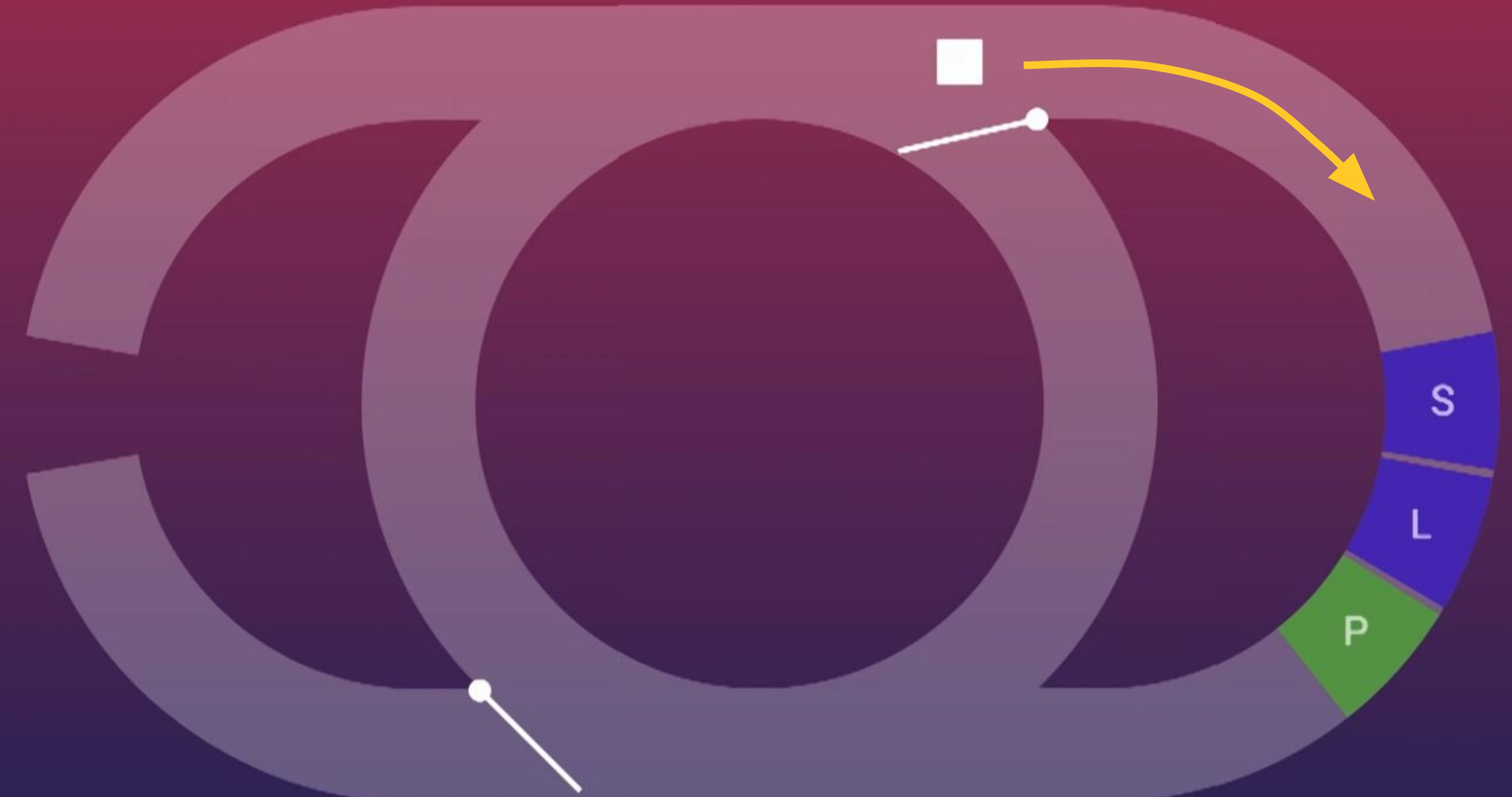
@jaffathecake

[Jake Archibald's talk "In the loop" video](#) or [Jake's talk, transposed](#)



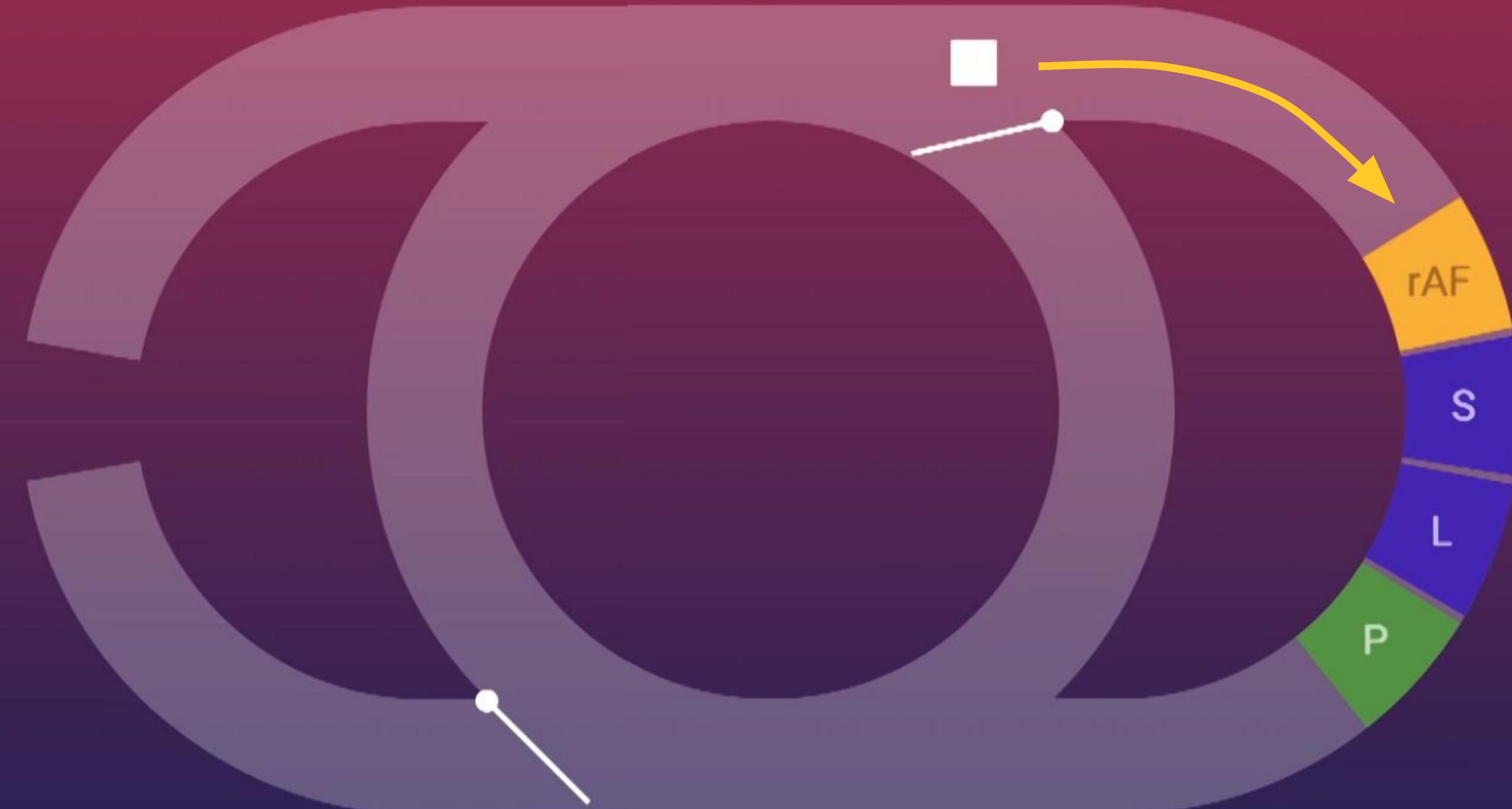
@jaffathecake

[Jake Archibald's talk "In the loop" video](#) or [Jake's talk, transposed](#)



@jaffathecake

[Jake Archibald's talk "In the loop" video](#) or [Jake's talk, transposed](#)

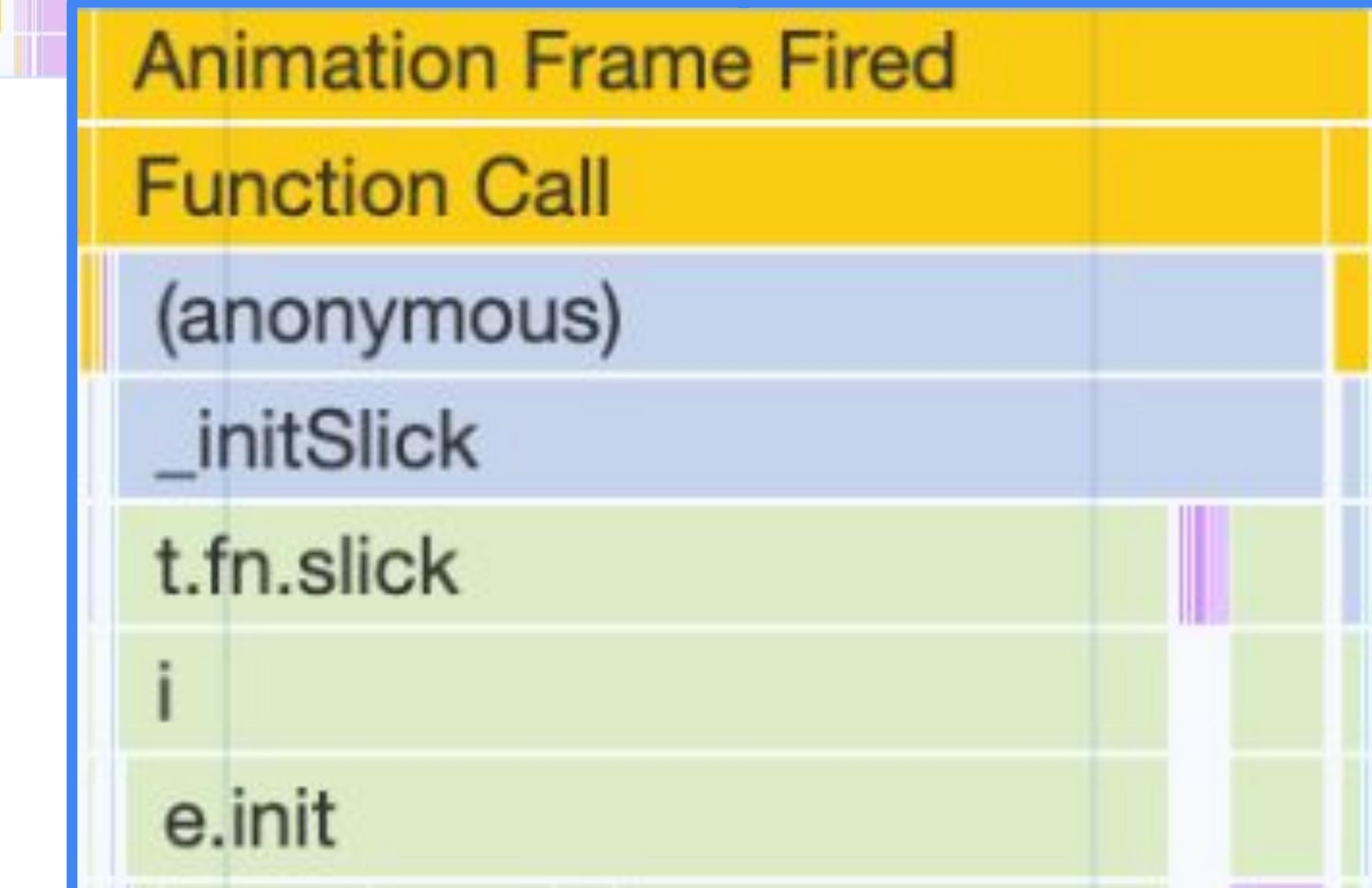


@jaffathecake

[Jake Archibald's talk "In the loop" video](#) or [Jake's talk, transposed](#)

**Don't use requestAnimationFrame()
for scheduling non-animation work**

Task										C...
Ani...red	Animation...me Fired	Anim...ired	Animation Frame Fired	Animation...ame Fired	Animation Frame Fired					
Func...all	Function Call	Func...Call	Function Call							
(an...us)	(anonymous)	(ano...ous)	(anonymous)							
_initSlick	_initSlick	_initSlick	_initSlick	_initSlick	_initSlick	_initSlick	_initSlick	_initSlick	_initSlick	
t.fn.slick	t.fn.slick	t.fn.slick	t.fn.slick	t.fn.slick	t.fn.slick	t.fn.slick	t.fn.slick	t.fn.slick	t.fn.slick	
i	i	i	i	i	i	i	i	i	i	
e.init	e.init	e.init	e.init	e.init	e....on	e.init	e.init	e.init	e.init	
e.cn...sive	e.cn...sive	e...ve	e...ve	e.che...nsive	each	e.che...nsive	e.che...nsive	e.che...nsive	e.che...nsive	
e.refresh	e.refresh	e....h	e....h	e.refresh	each	e.refresh	e.refresh	e.refresh	e.refresh	
e.init	e.init	e.init	e.init	e.init	e....h	e.init	e.init	e.init	e.init	
e...	e...	e...	e...	e...	(an...s)	e...	e...	e...	e...	
i	i	i	i	i	value	i	i	i	i	




```
const sliders = document.querySelectorAll(".my-slider");
const initializeSlider = async (slider) => {
};


```

```
const sliders = document.querySelectorAll(".my-slider");
const initializeSlider = async (slider) => {
};

const observer = new IntersectionObserver((entries, observer) => {
}) ;
```

```
const sliders = document.querySelectorAll(".my-slider");
const initializeSlider = async (slider) => {
};

const observer = new IntersectionObserver((entries, observer) => {
}) ;

sliders.forEach((slider) => {
    observer.observe(slider);
}) ;
```

```
const sliders = document.querySelectorAll(".my-slider");
const initializeSlider = async (slider) => {
  if (slider && !slider.classList.contains("slider-initialized")) {
    .
    .
    .
  }
};

const observer = new IntersectionObserver((entries, observer) => {
  .
  .
  .
}) ;

sliders.forEach((slider) => {
  observer.observe(slider);
}) ;
```

```
const sliders = document.querySelectorAll(".my-slider");
const initializeSlider = async (slider) => {
  if (slider && !slider.classList.contains("slider-initialized")) {
    await yieldToMain();
  }
};

const observer = new IntersectionObserver((entries, observer) => {
  ) );
  sliders.forEach((slider) => {
    observer.observe(slider);
  });
}
```

```
const sliders = document.querySelectorAll(".my-slider");
const initializeSlider = async (slider) => {
  if (slider && !slider.classList.contains("slider-initialized")) {
    await yieldToMain();
    new Swiper(slider, { /* Options */ });
  }
};

const observer = new IntersectionObserver((entries, observer) => {
  );
  sliders.forEach((slider) => {
    observer.observe(slider);
  });
}
```

```
const sliders = document.querySelectorAll(".my-slider");
const initializeSlider = async (slider) => {
  if (slider && !slider.classList.contains("slider-initialized")) {
    await yieldToMain();
    new Swiper(slider, { /* Options */ });
    slider.classList.add("slider-initialized");
  }
};

const observer = new IntersectionObserver((entries, observer) => {
  );
  sliders.forEach((slider) => {
    observer.observe(slider);
  });
});
```

```
const sliders = document.querySelectorAll(".my-slider");
const initializeSlider = async (slider) => {
  if (slider && !slider.classList.contains("slider-initialized")) {
    await yieldToMain();
    new Swiper(slider, { /* Options */ });
    slider.classList.add("slider-initialized");
  }
};

const observer = new IntersectionObserver((entries, observer) => {
  entries.forEach((entry) => {
    ...
  });
});

sliders.forEach((slider) => {
  observer.observe(slider);
});
```

```
const sliders = document.querySelectorAll(".my-slider");
const initializeSlider = async (slider) => {
  if (slider && !slider.classList.contains("slider-initialized")) {
    await yieldToMain();
    new Swiper(slider, { /* Options */ });
    slider.classList.add("slider-initialized");
  }
};

const observer = new IntersectionObserver((entries, observer) => {
  entries.forEach((entry) => {
    if (entry.isIntersecting) {
      }
    }
  );
});

sliders.forEach((slider) => {
  observer.observe(slider);
});
```

```
const sliders = document.querySelectorAll(".my-slider");
const initializeSlider = async (slider) => {
  if (slider && !slider.classList.contains("slider-initialized")) {
    await yieldToMain();
    new Swiper(slider, { /* Options */ });
    slider.classList.add("slider-initialized");
  }
};

const observer = new IntersectionObserver((entries, observer) => {
  entries.forEach((entry) => {
    if (entry.isIntersecting) {
      initializeSlider(entry.target)
    }
  });
});

sliders.forEach((slider) => {
  observer.observe(slider);
});
```

```
const sliders = document.querySelectorAll(".my-slider");
const initializeSlider = async (slider) => {
  if (slider && !slider.classList.contains("slider-initialized")) {
    await yieldToMain();
    new Swiper(slider, { /* Options */ });
    slider.classList.add("slider-initialized");
  }
};

const observer = new IntersectionObserver((entries, observer) => {
  entries.forEach((entry) => {
    if (entry.isIntersecting) {
      initializeSlider(entry.target)
        .then(() => { observer.unobserve(entry.target); })
    }
  });
});

sliders.forEach((slider) => {
  observer.observe(slider);
});
```

```
const sliders = document.querySelectorAll(".my-slider");
const initializeSlider = async (slider) => {
  if (slider && !slider.classList.contains("slider-initialized")) {
    await yieldToMain();
    new Swiper(slider, { /* Options */ });
    slider.classList.add("slider-initialized");
  }
};

const observer = new IntersectionObserver((entries, observer) => {
  entries.forEach((entry) => {
    if (entry.isIntersecting) {
      initializeSlider(entry.target)
        .then(() => { observer.unobserve(entry.target); })
        .catch(console.error);
    }
  });
});

sliders.forEach((slider) => {
  observer.observe(slider);
});
```

“Is this code really needed?”

A responsible developer

```
function filterStudies({ studies, filterByOrg = false, filterByCategory = false }) {
  return studies.filter(study => {
    if (filterByCategory) {
      return study.categories.some(category => category.id === filterByCategory);
    }
    if (filterByOrg) {
      return study.organizations.some(organization => organization.id === filterByOrg);
    }
    return true;
  });
}
```

scroll-snap-type

The `scroll-snap-type` [CSS](#) property sets how strictly snap points are enforced on the scroll container in case there is one.

Try it

CSS Demo: scroll-snap-type

RESET

`scroll-snap-type: none;`

`scroll-snap-type: x mandatory;`

`scroll-snap-type: x proximity;`

1

Scroll »

**Run only the Javascript code
that is currently needed**

And delay everything else

Conclusion

Wrapping up

Key things to remember

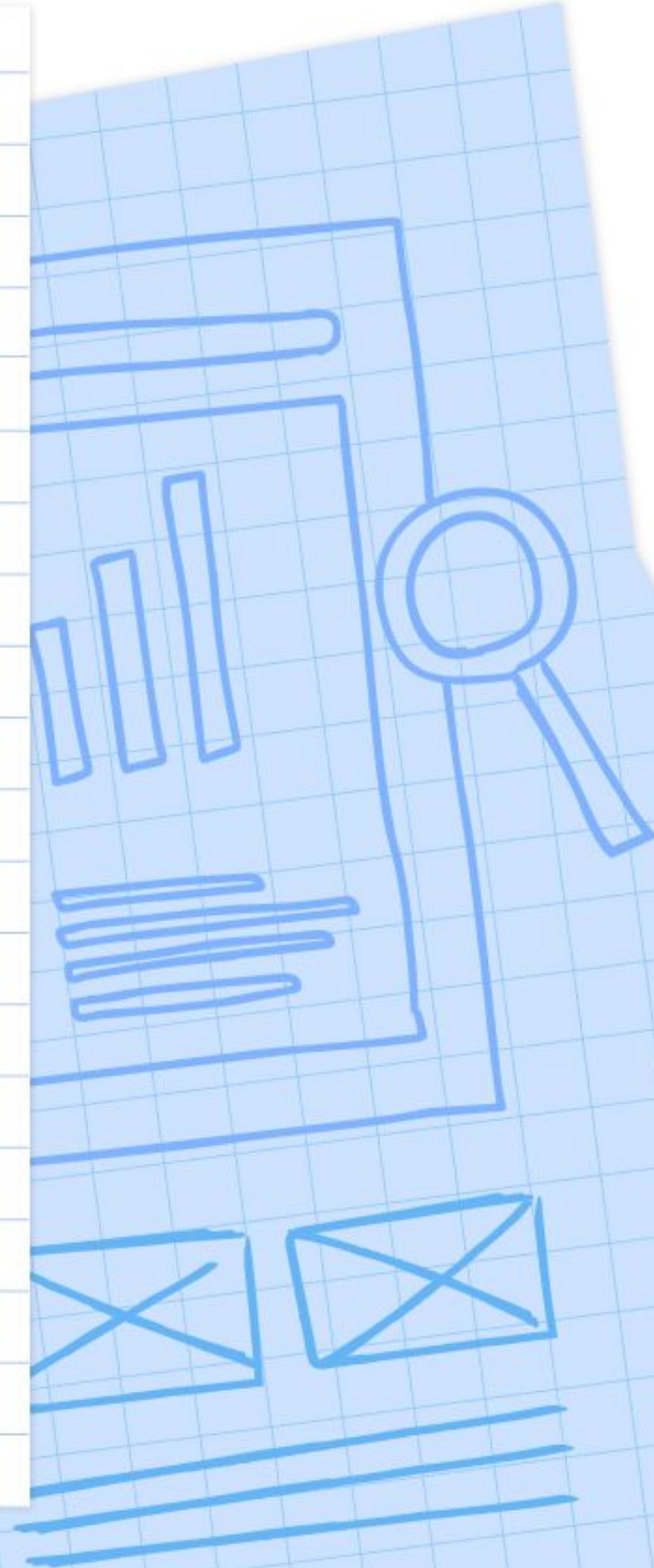
- ❑ Yield to the main thread before calling tracking functions
- ❑ Using custom CSS props? Set them close to where you need them
- ❑ Check requestAnimationFrame() is used only for scheduling animation work
- ❑ Delay all the Javascript code that is not *currently* needed

Thank you!

Questions?



1-minute feedback 🙏

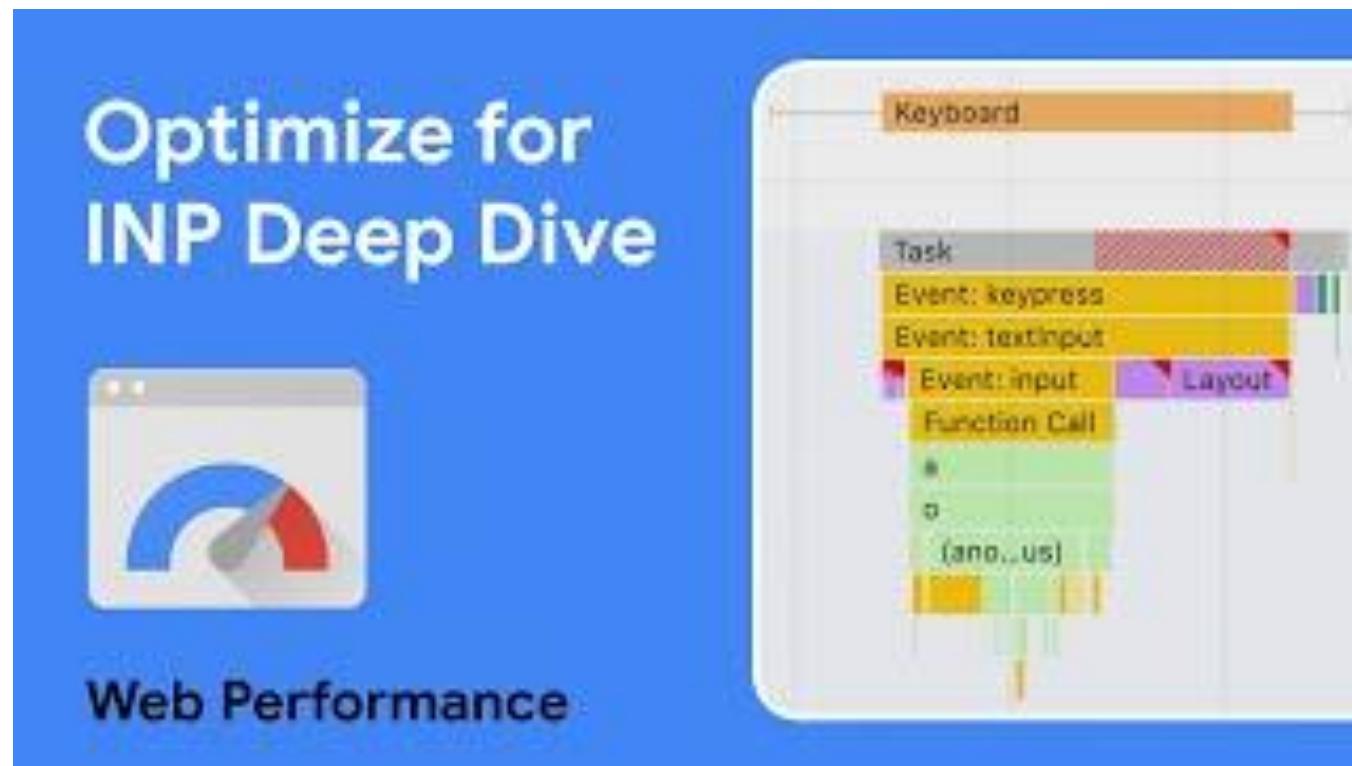




How to optimize INP - web.dev
<https://web.dev/explore/how-to-optimize-inp>



Optimizing INP for a React App & Performance Learnings - TK
<https://www.iamtk.co/optimizing-inp-for-a-react-app-and-performance-learnings>



Optimizing INP: A deep dive
Chrome for developers



Troubleshoot slow interactions
Jeremy Wagner



In the loop, JS Conf Asia
Jake Archibald

INP knowledge check

Heard of it today for
the first time

Know the basic
concepts of it

Know what it
measures exactly

Successfully
improved it 

