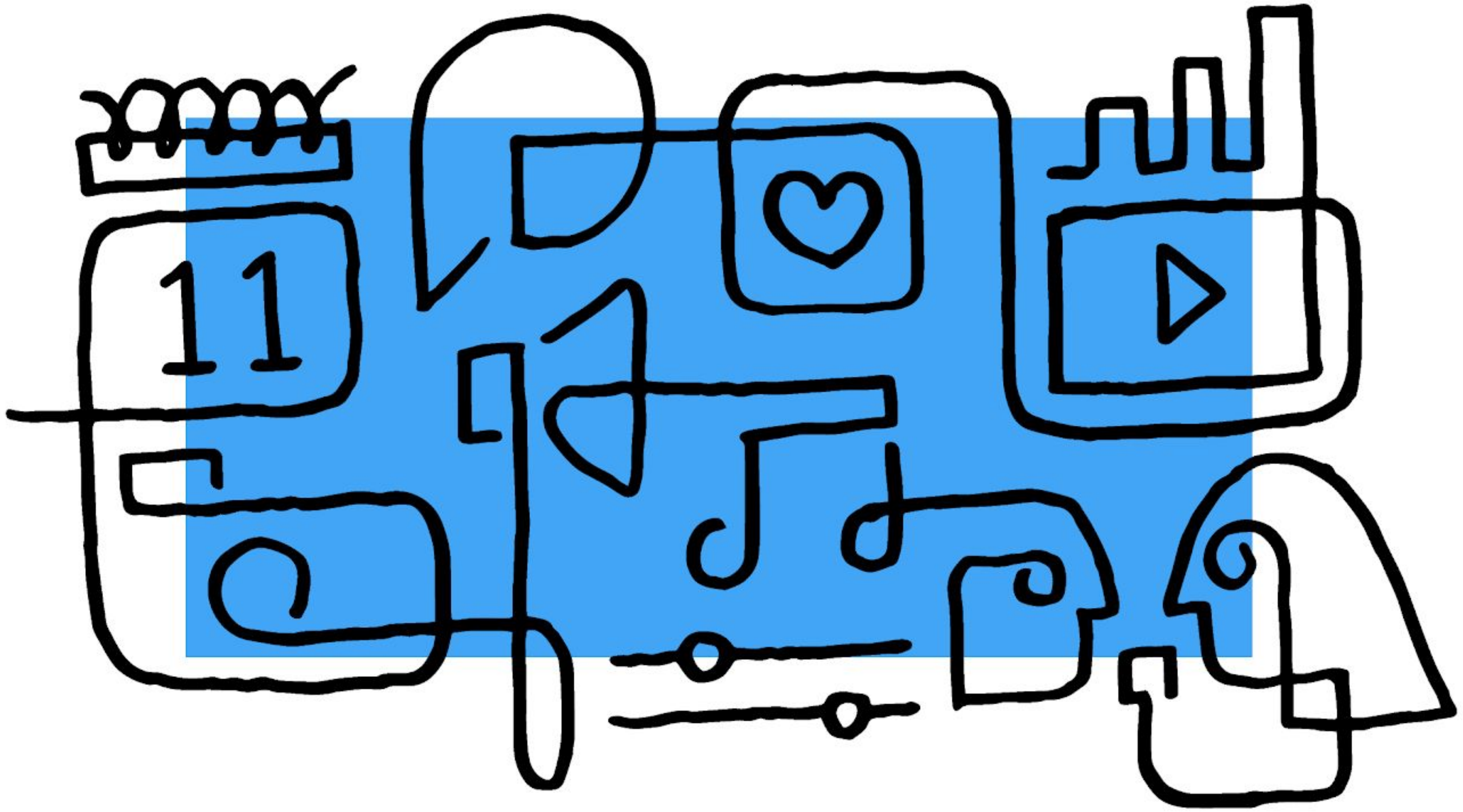


chrome dev summit 2019

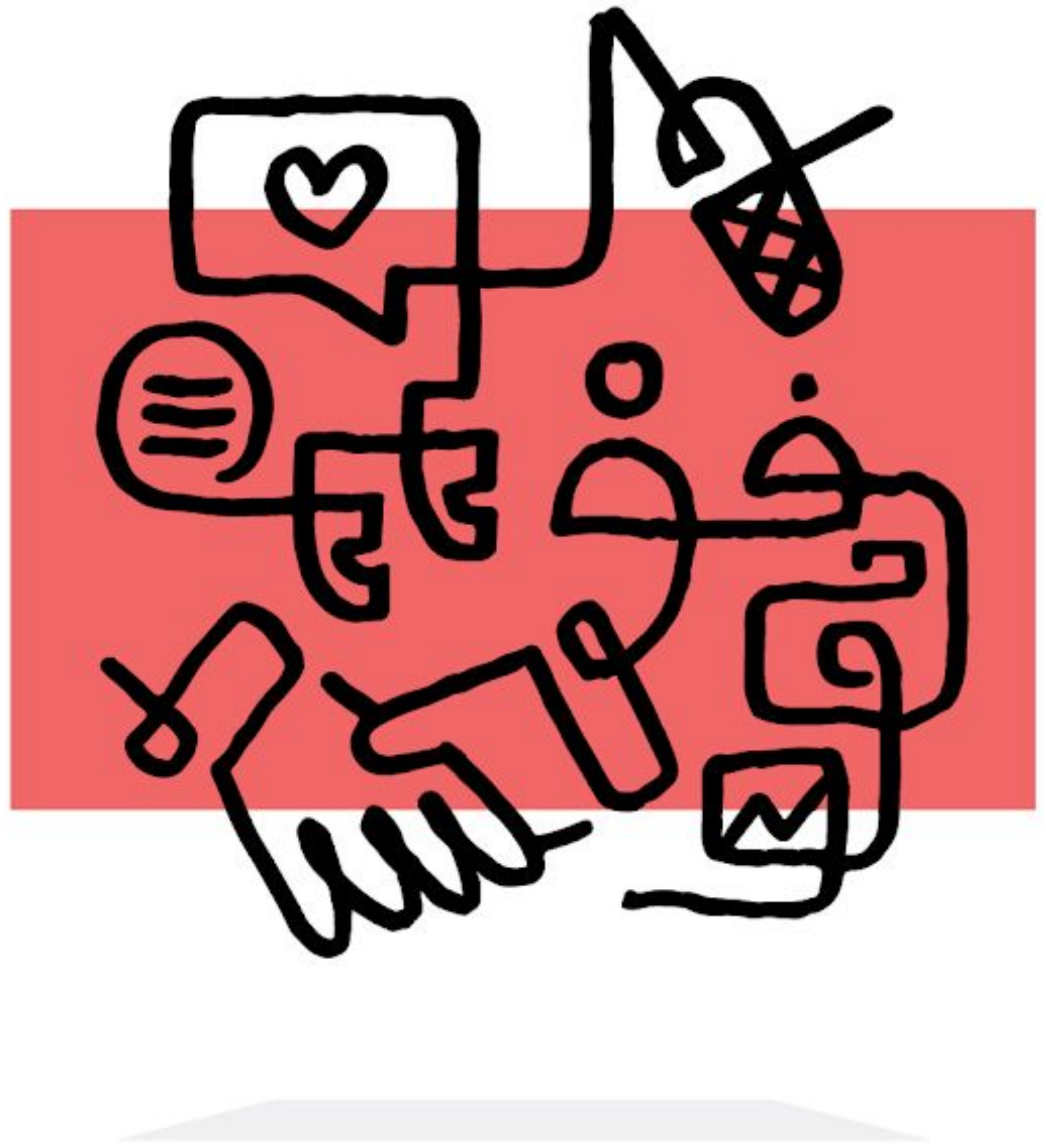
november 11–12

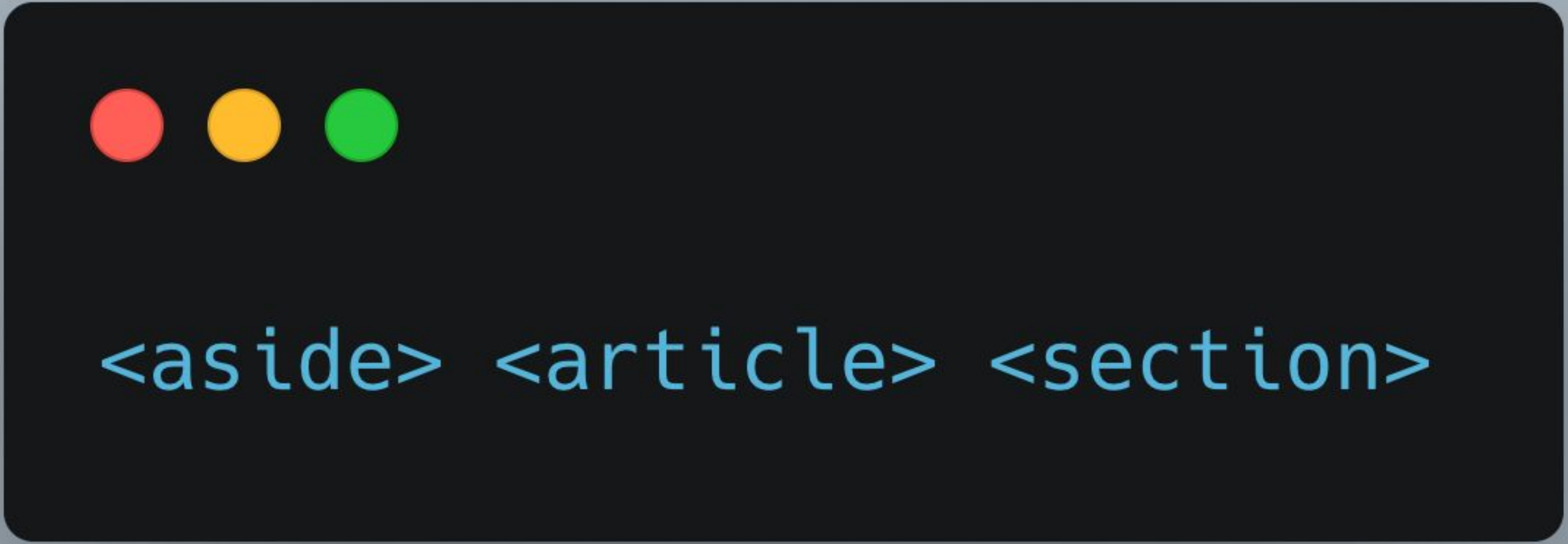
Yerba Buena Center for the Arts
San Francisco, California, USA

HTML isn't done

Nicole Sullivan
PM for Google Chrome
@stubbornella

Greg Whitworth
PM for Microsoft Edge
@gregwhitworth





```
<aside> <article> <section>
```

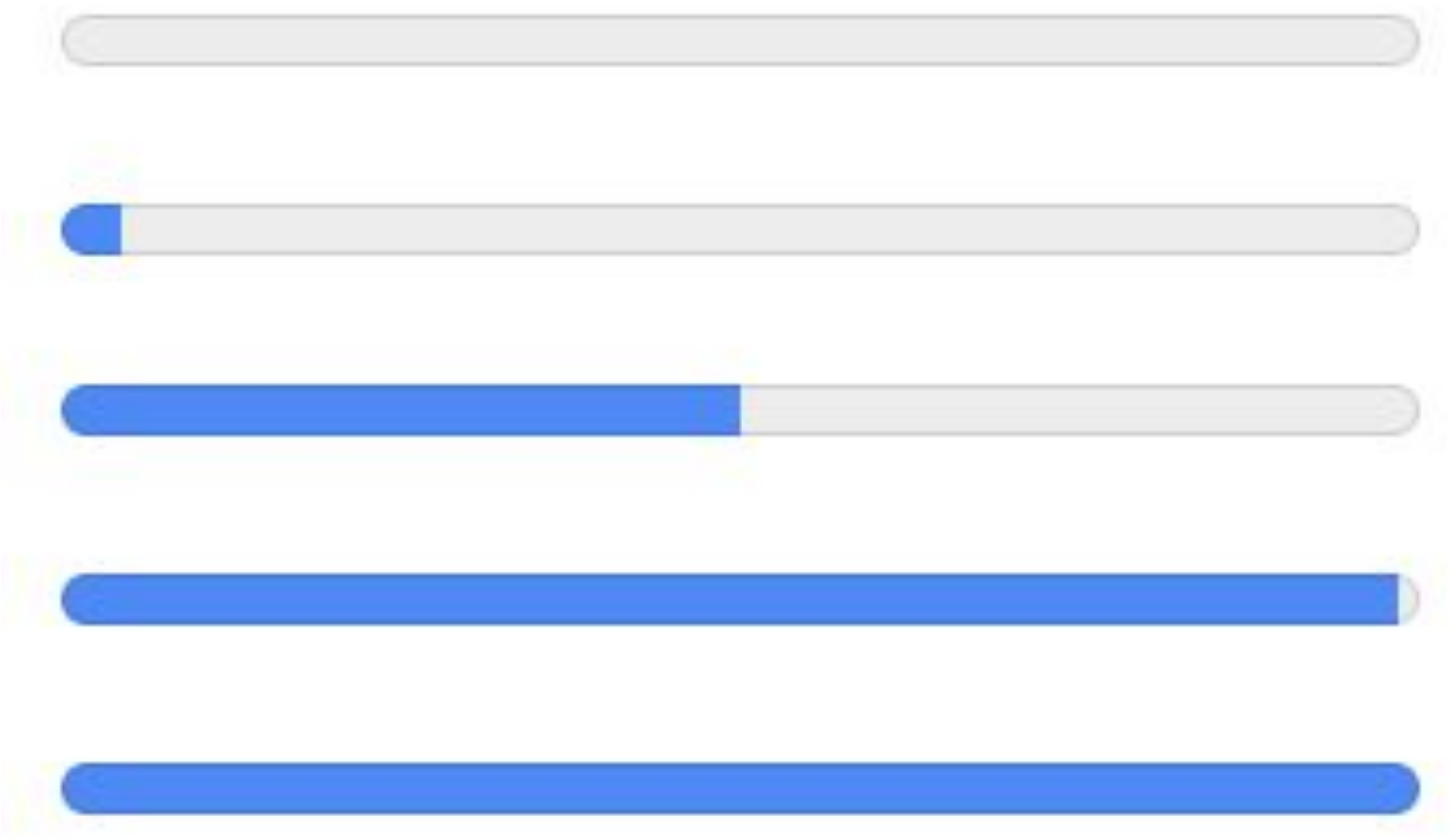
Edge & Chrome form control collaboration

1. **Accessibility, Touch, & Visual Refresh**
2. Stylability
3. Extending functionality
4. New components!

Buh-bye 1990s gradients!

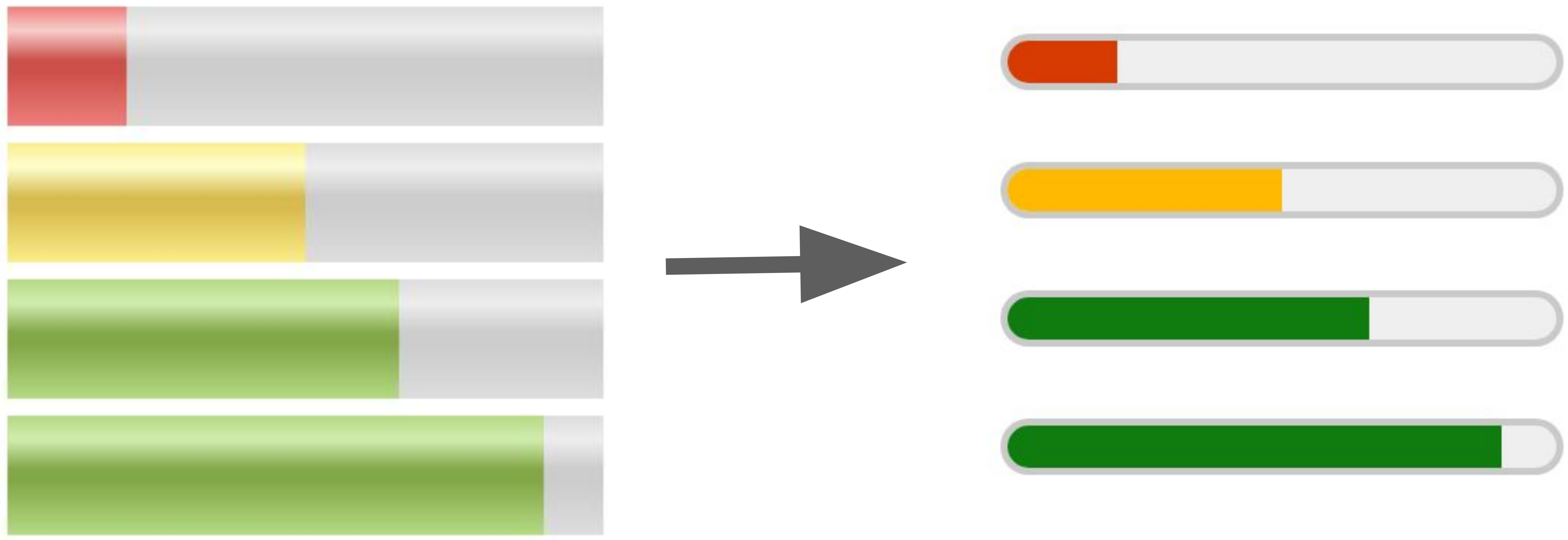
Visual Refresh & Accessibility upgrade

A starting point for deeper changes!



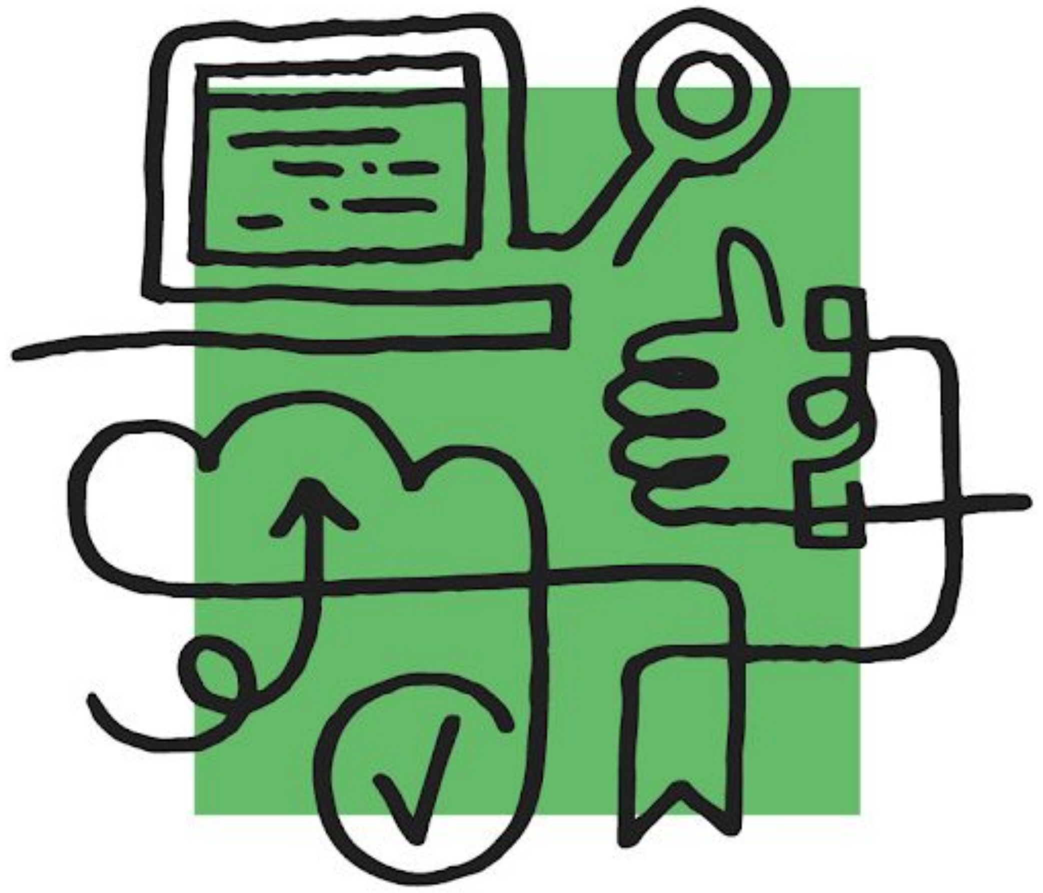
The <progress> element was already fairly modern

The <meter> before & after

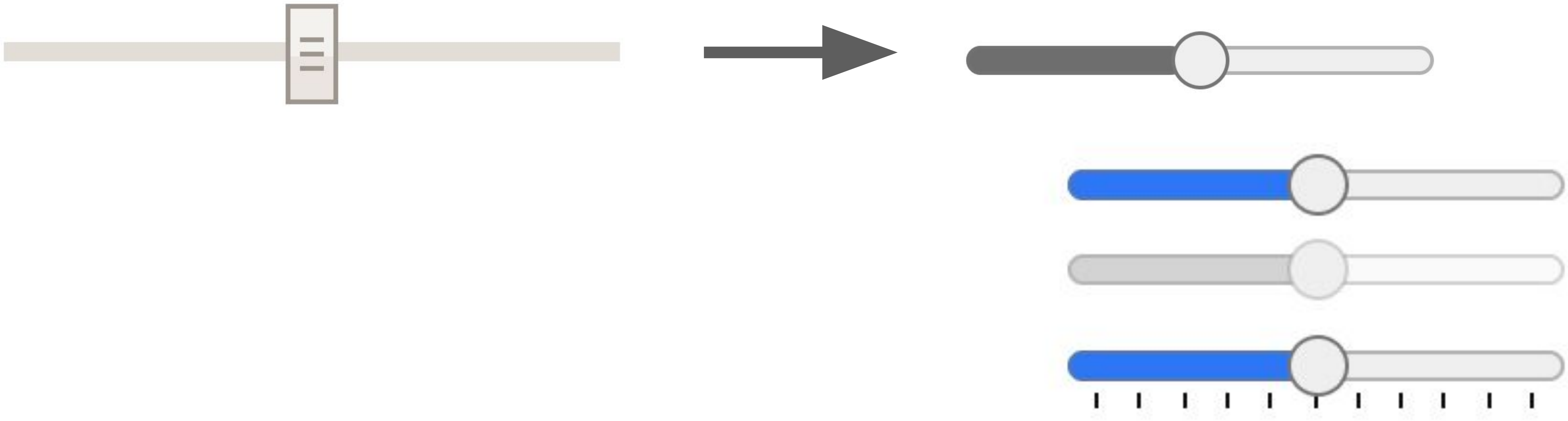


You are going to want to check these out. Enable the **Web Platform Controls update UI** flag.

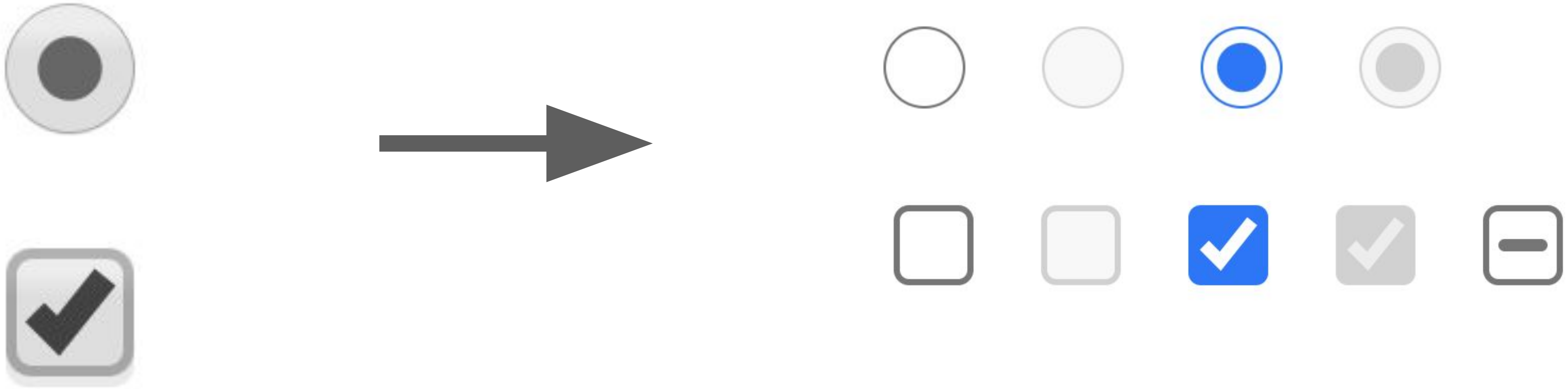
about://flags



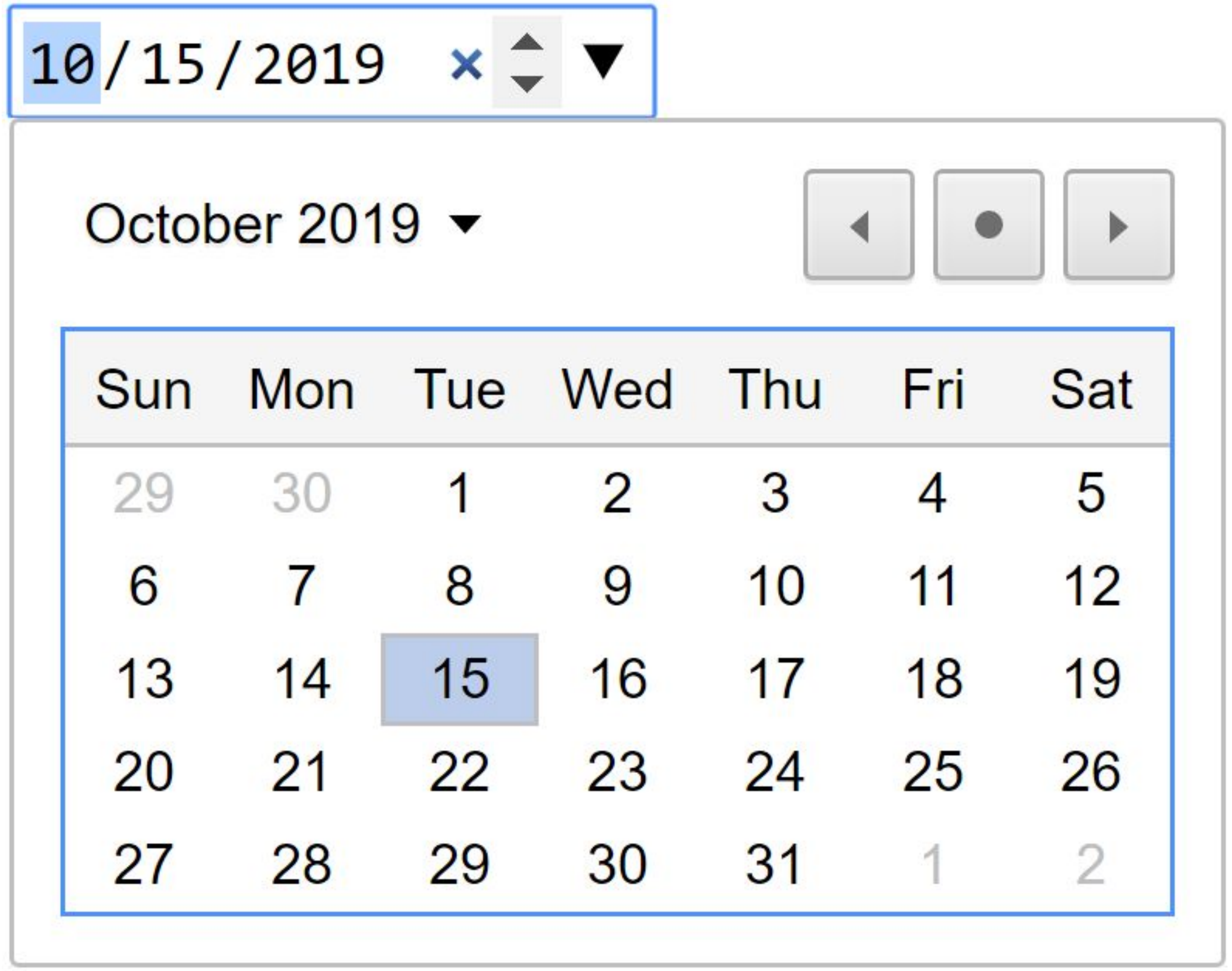
The <range> also needed some love.



<checkbox> and <radio> are the workhorses of the web



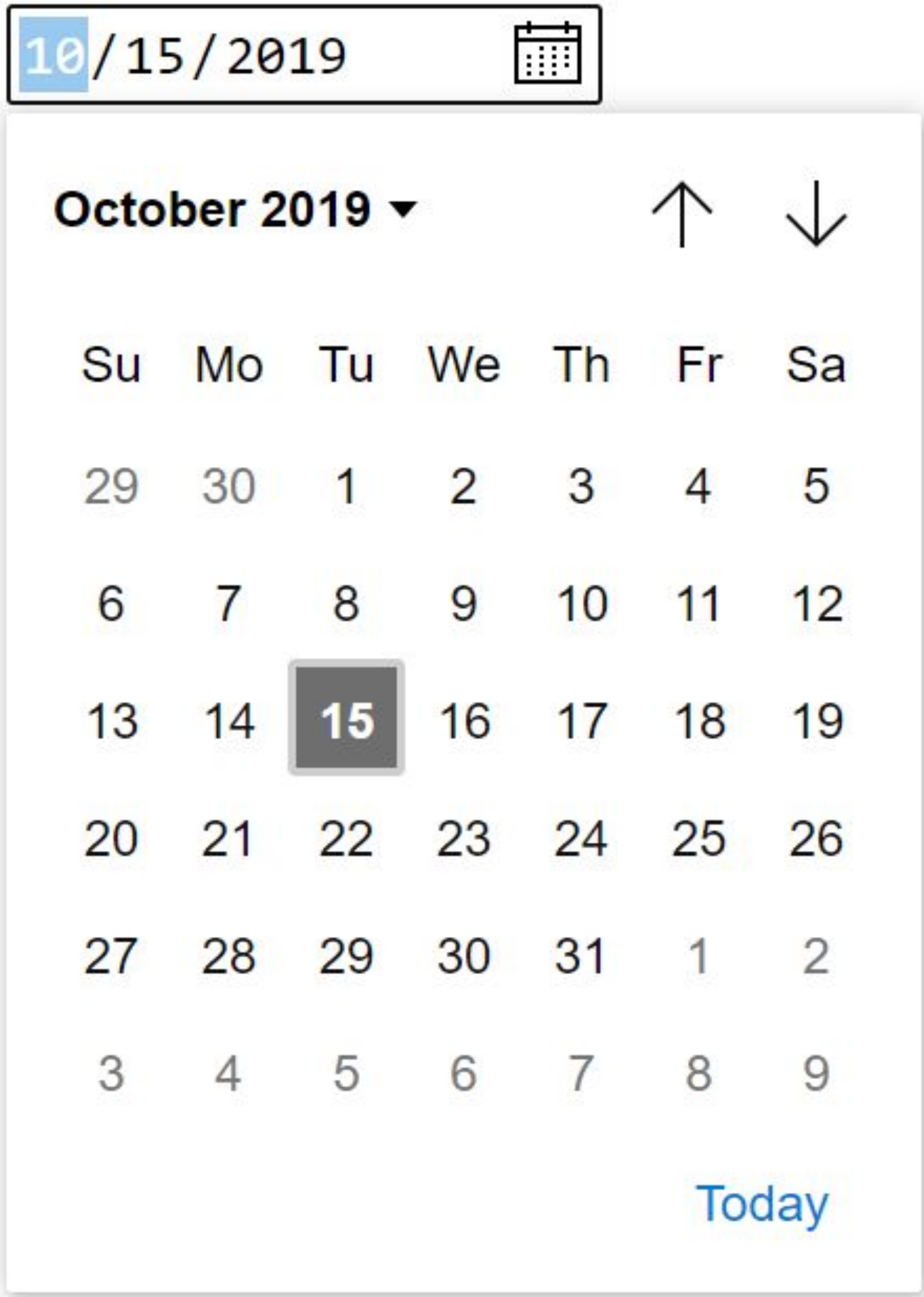
Date



10/15/2019

October 2019

Sun	Mon	Tue	Wed	Thu	Fri	Sat
29	30	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	31	1	2

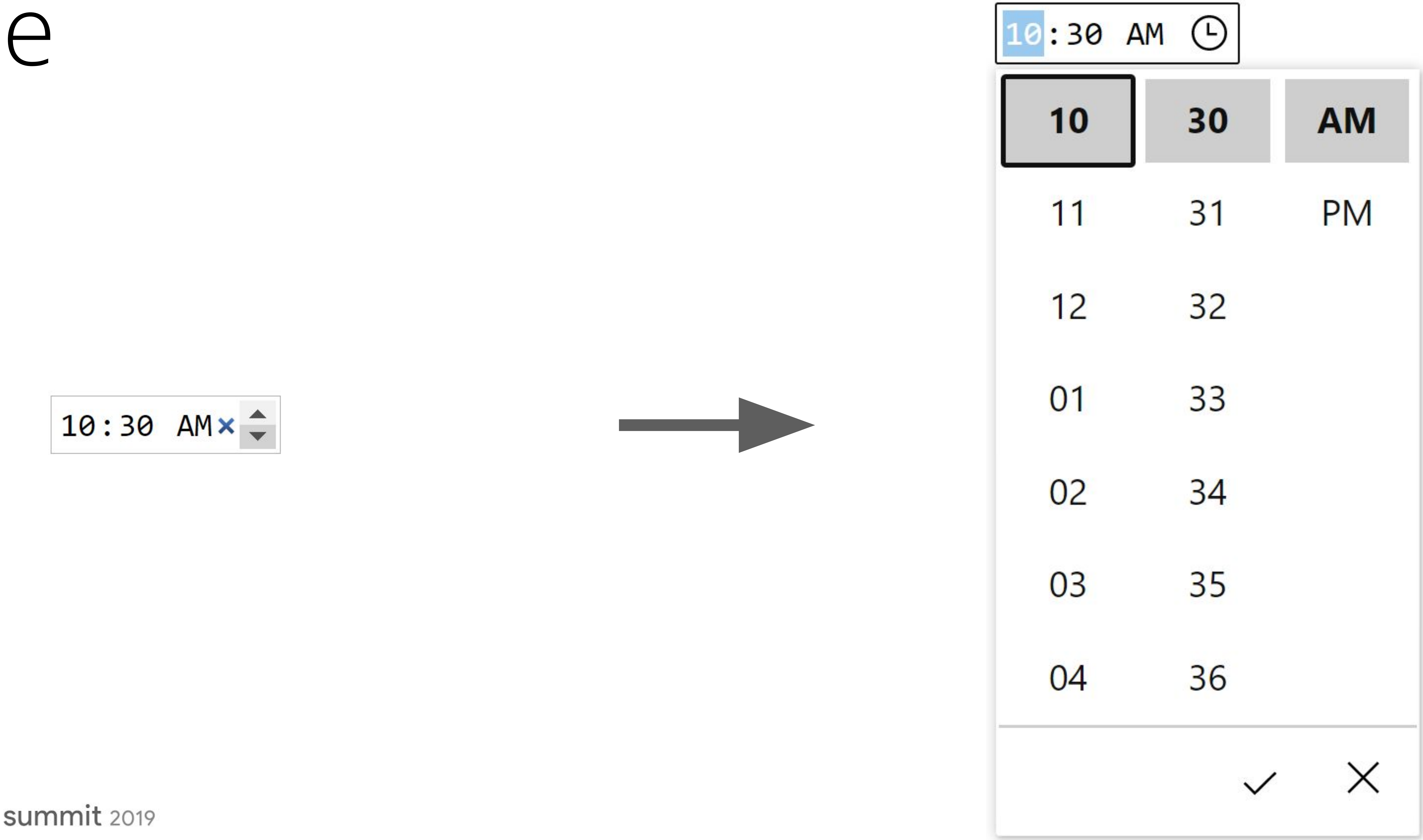


10/15/2019

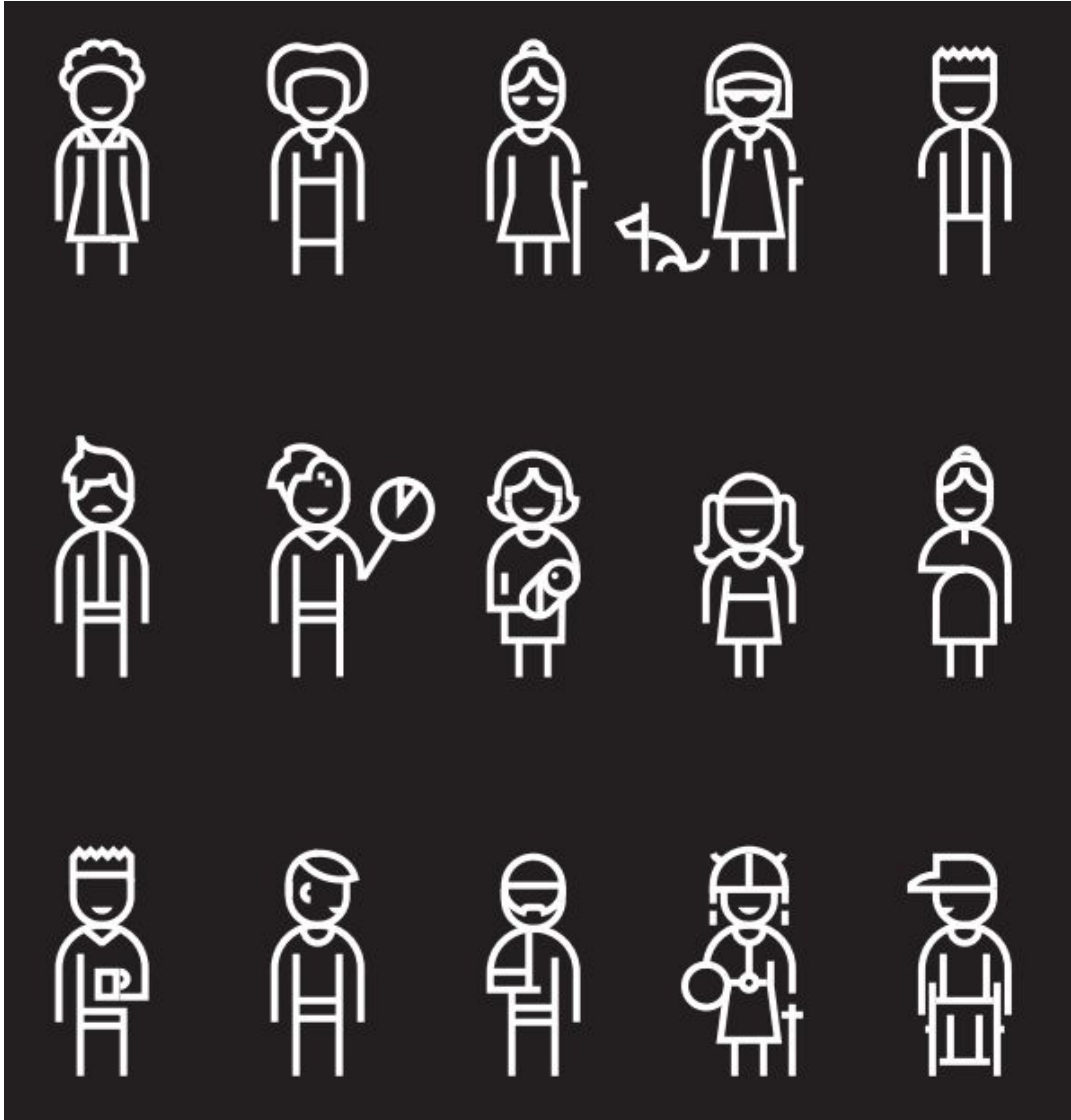
October 2019

Su	Mo	Tu	We	Th	Fr	Sa
29	30	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	31	1	2
3	4	5	6	7	8	9

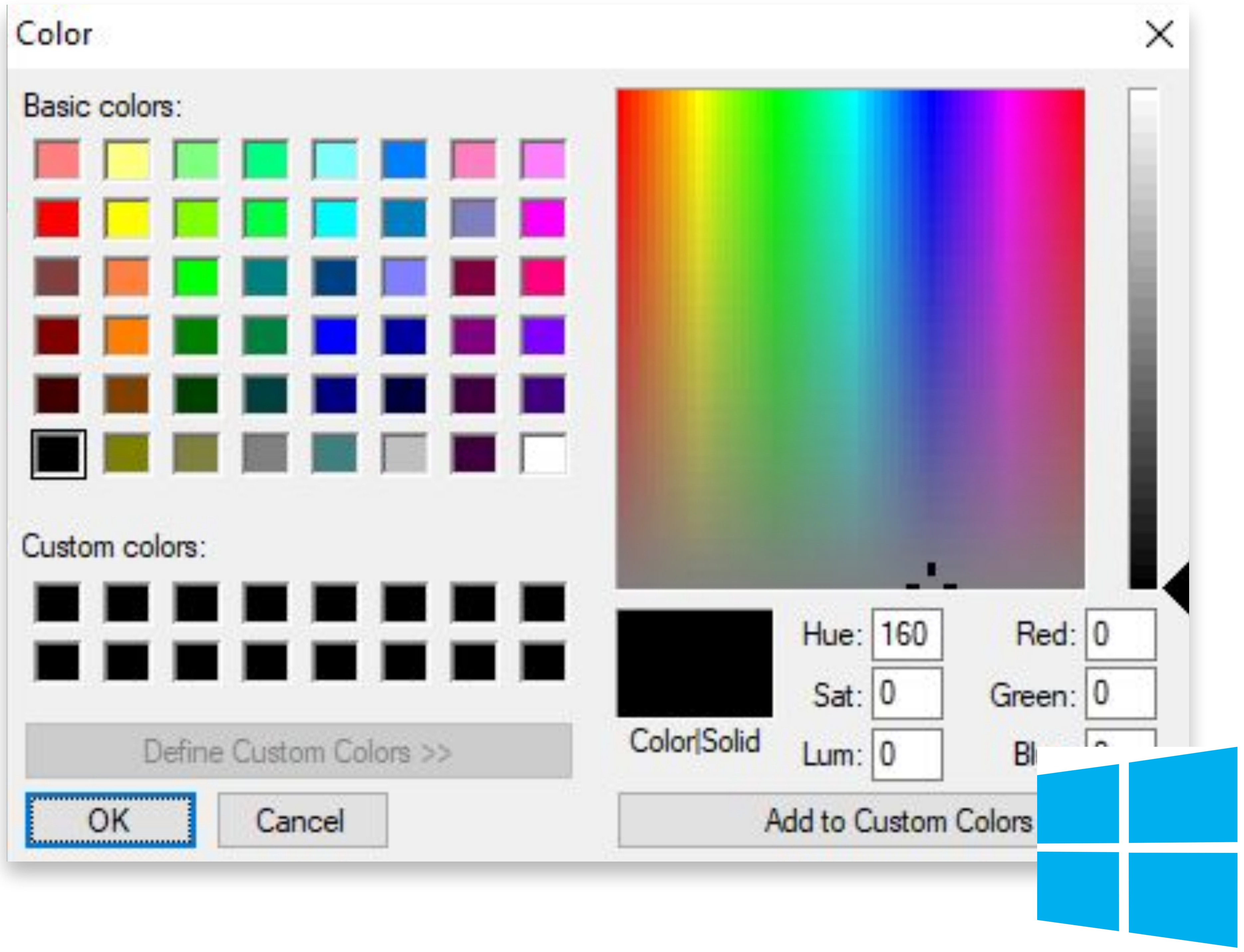
Time



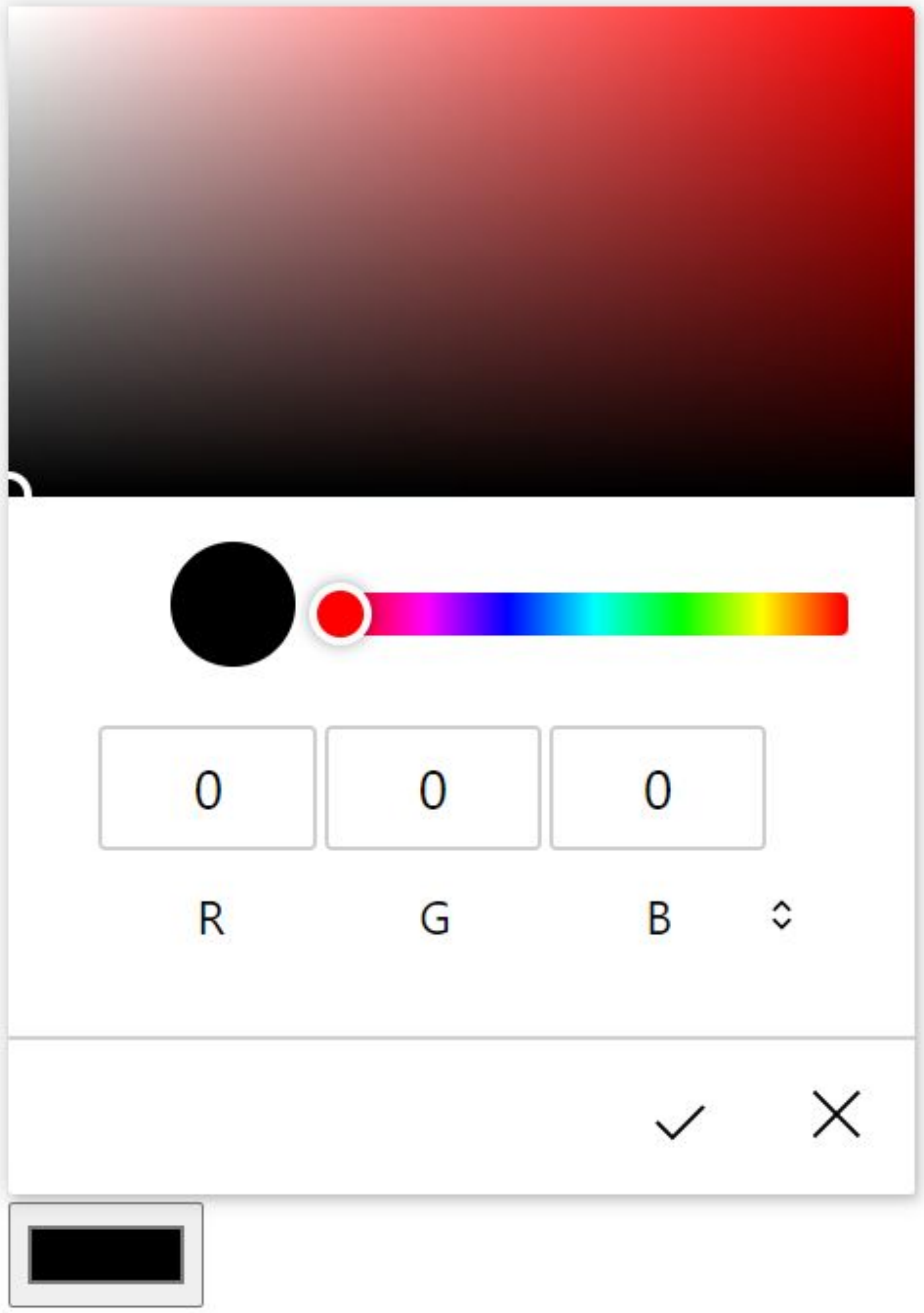
Using inclusive design from the start



Color picker & keyboard navigation

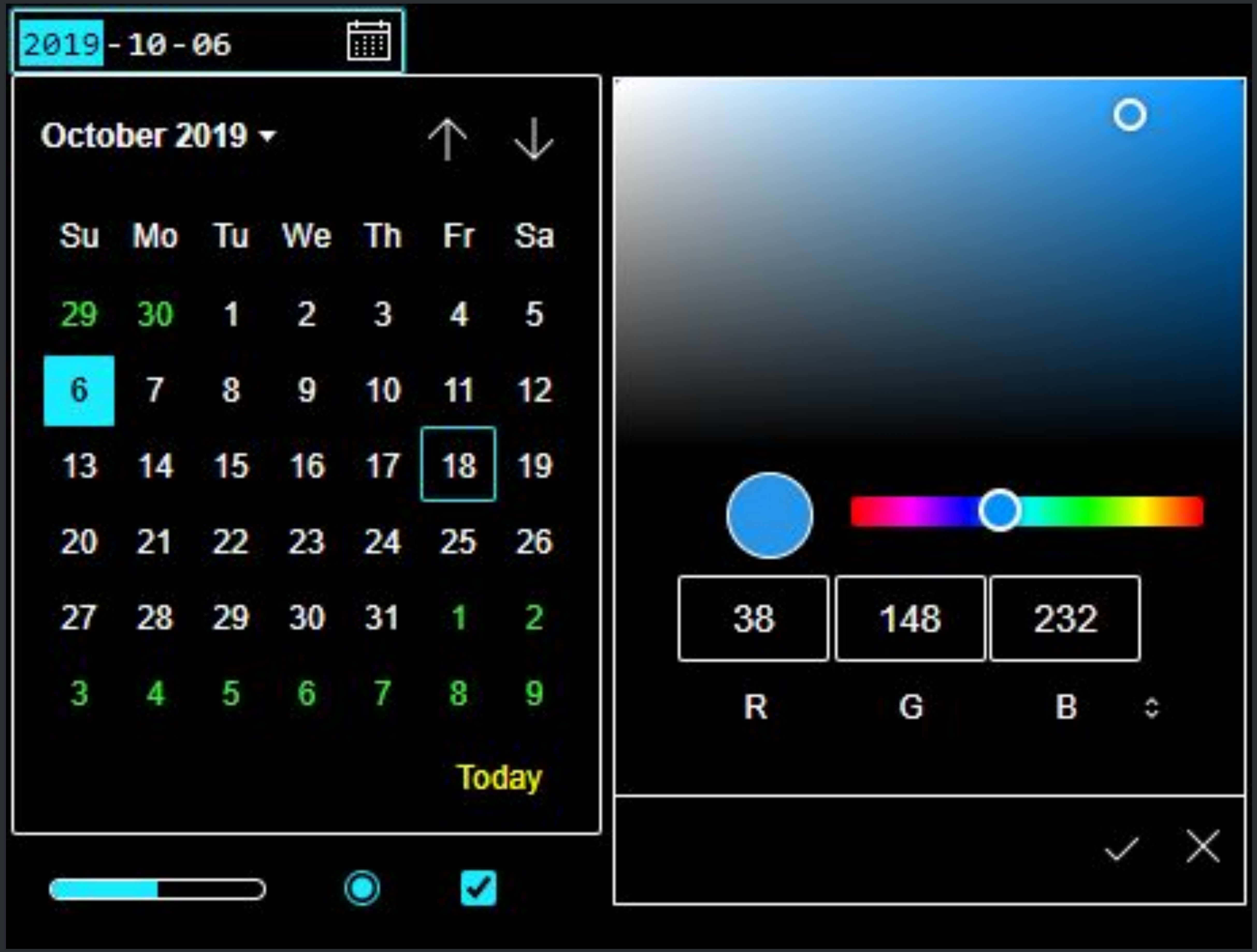


Hue: 160
Sat: 0
Lum: 0
Red: 0
Green: 0
Bl



0	0	0
R	G	B

High contrast mode on Windows



2019-10-06

October 2019

Su	Mo	Tu	We	Th	Fr	Sa
29	30	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	31	1	2
3	4	5	6	7	8	9

Today

R	G	B
38	148	232

```
@media (forced-colors: active)
```

forced-color-adjust: auto | none

36 a11y commits to improve form controls

🎉

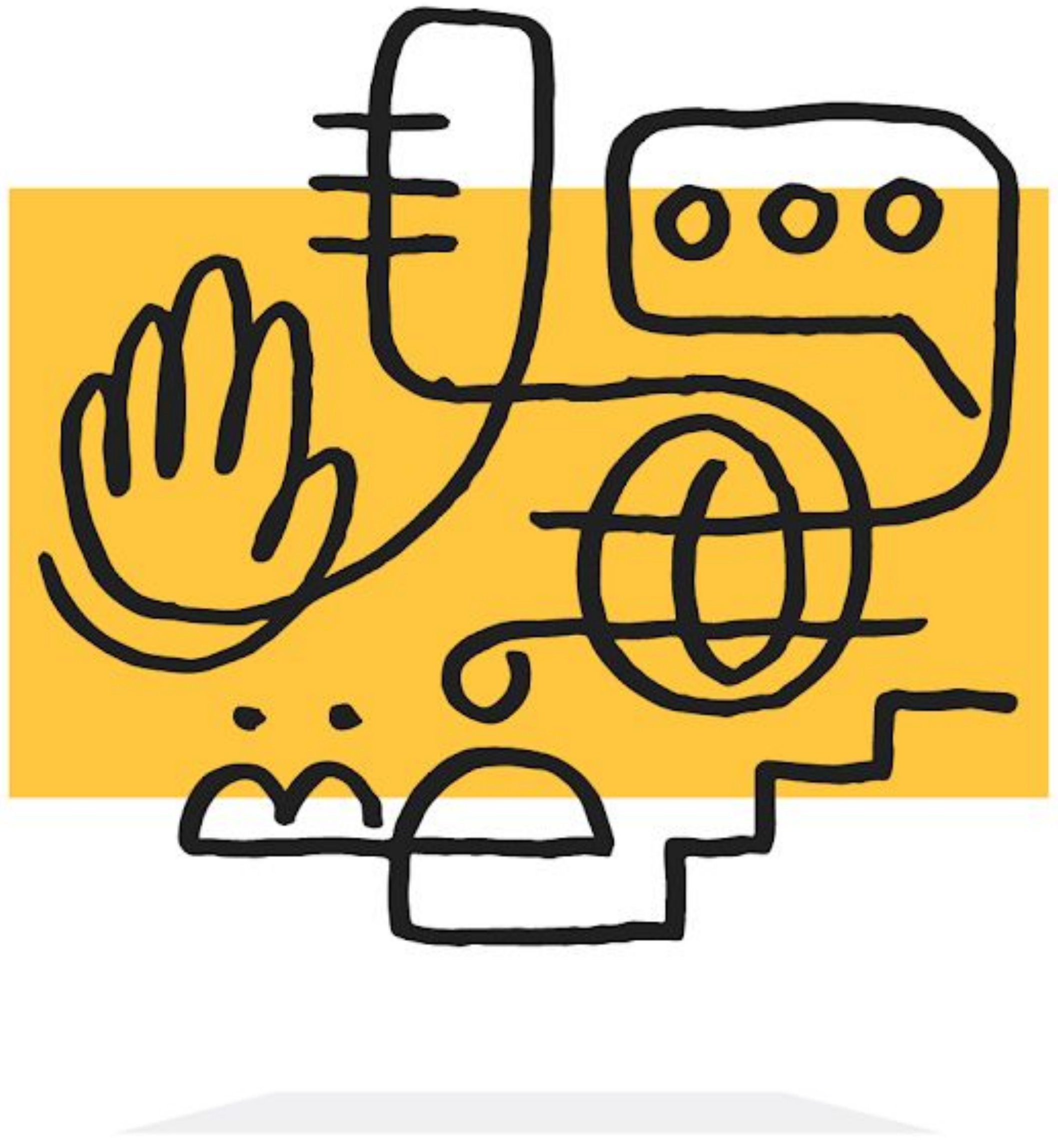
Edge & Chrome form control collaboration

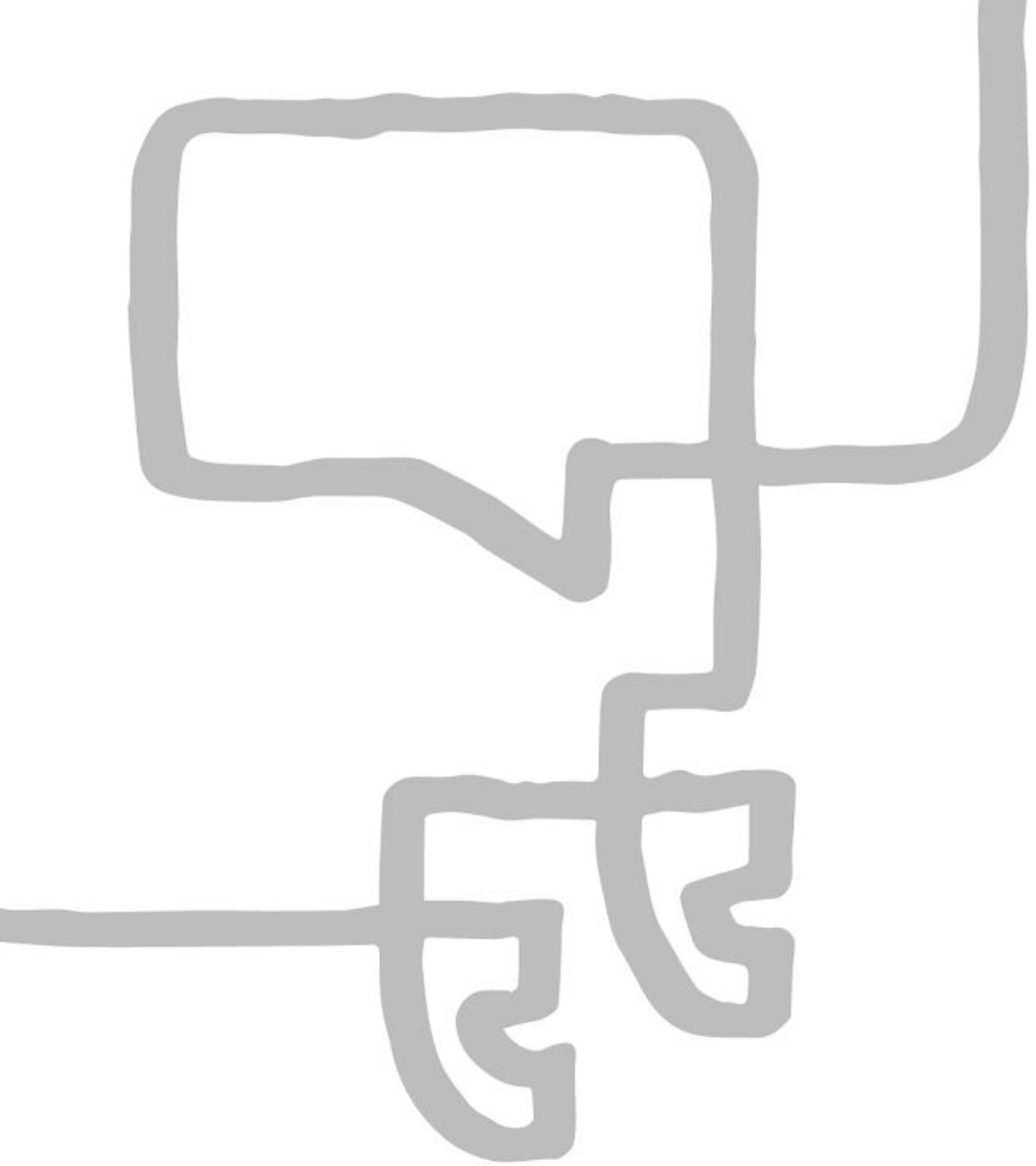
1. Accessibility, Touch, & Visual Refresh
2. **Stylability**
3. Extending functionality
4. New components!

We want to build things web developers will use

Currently form elements are
not used as much as they could be.

We wanted to understand why?





“Right now it is often easier to build form components **from scratch**…than it is to **modify the style** of the form controls themselves”

– Web Developer

Why not just create form elements from scratch?

- Duplication of effort
- Effort it takes to build your own
- Cross browser compat - even if you make it perfect on one browser, it’ll be weird on another.
- Accessibility often suffers

Why not just create form elements from scratch?

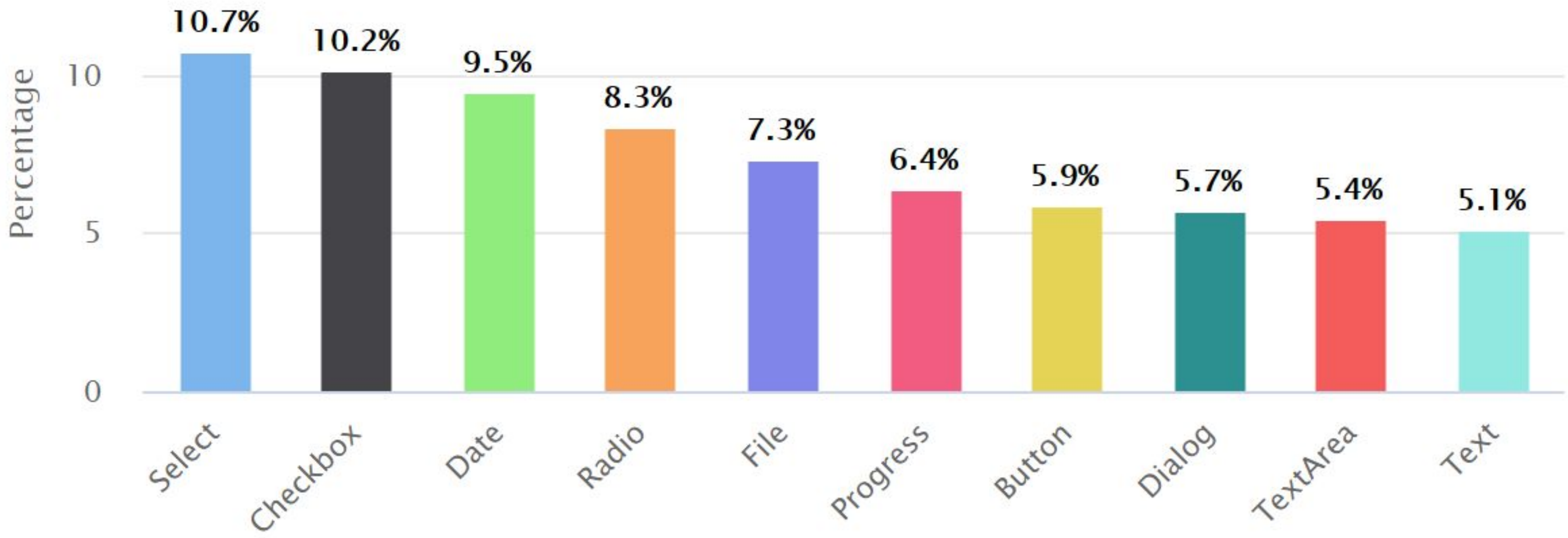
- Duplication of effort
- Effort it takes to build your own
- Cross browser compat - even if you make it perfect on one browser, it'll be weird on another.
- Accessibility often suffers

Why not just create form elements from scratch?

- Duplication of effort
- Effort it takes to build your own
- Cross browser compat - even if you make it perfect on one browser, it’ll be weird on another.
- Accessibility often suffers

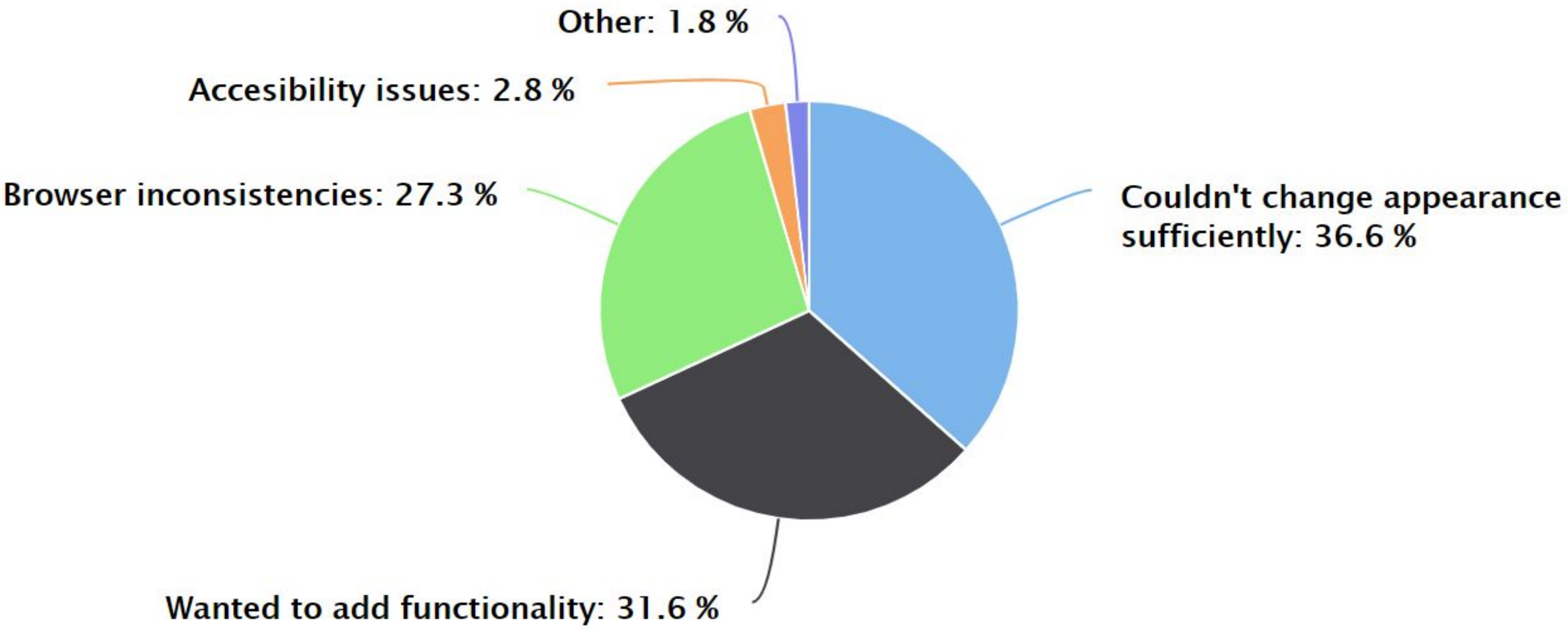
We wanted to understand why form elements are recreated?

Top 10 form controls re-created by web developers



Source: gwhitworth.com

Why do web developers recreate form controls?



We heard you.

This is why we’ll focus on stylabilty next

`select checkbox radio`

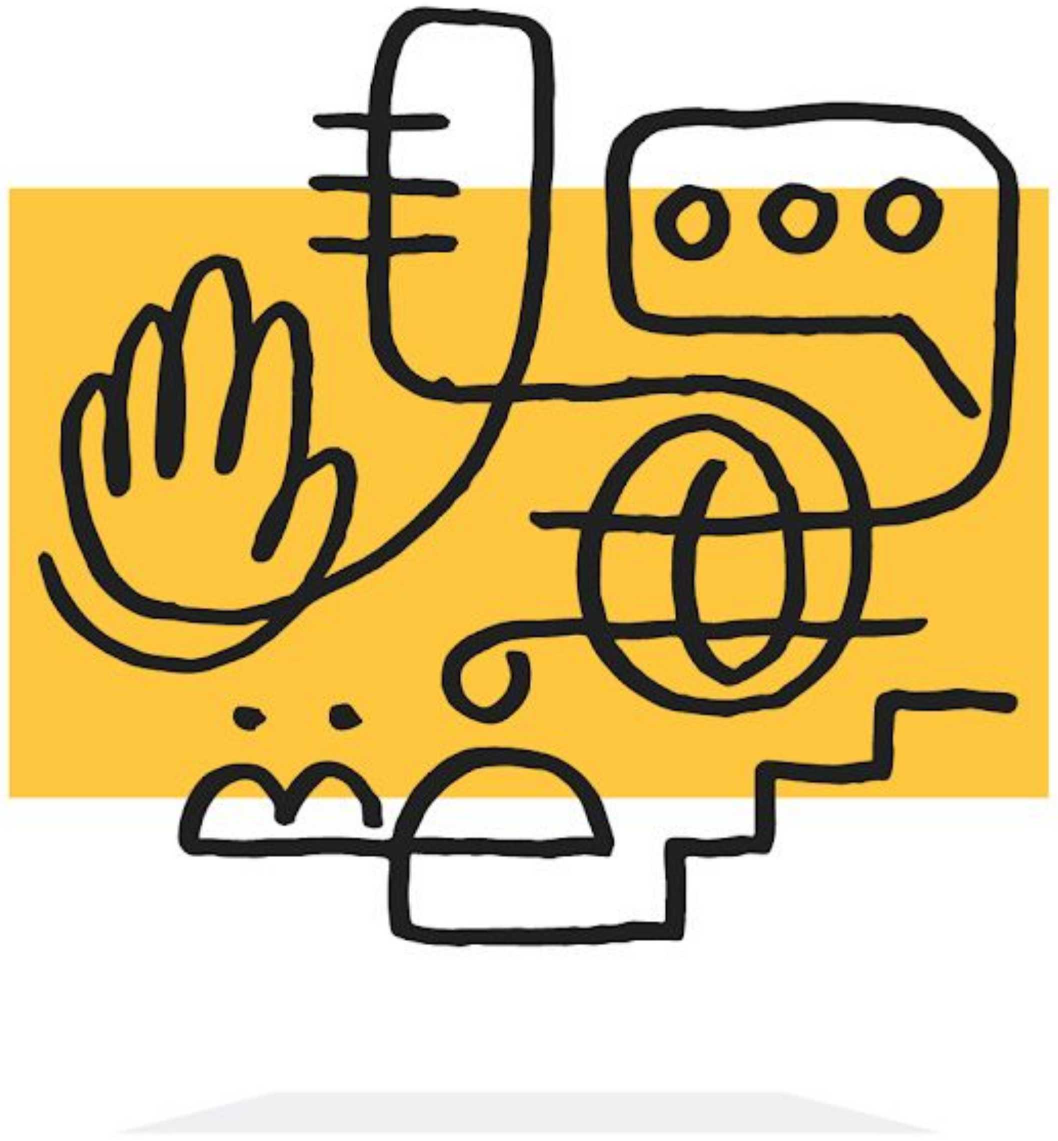
Edge & Chrome form control collaboration

1. Accessibility, Touch, & Visual Refresh
2. Stylability
3. **Extending functionality**
4. New components!

Normalized values are painful for frameworks.

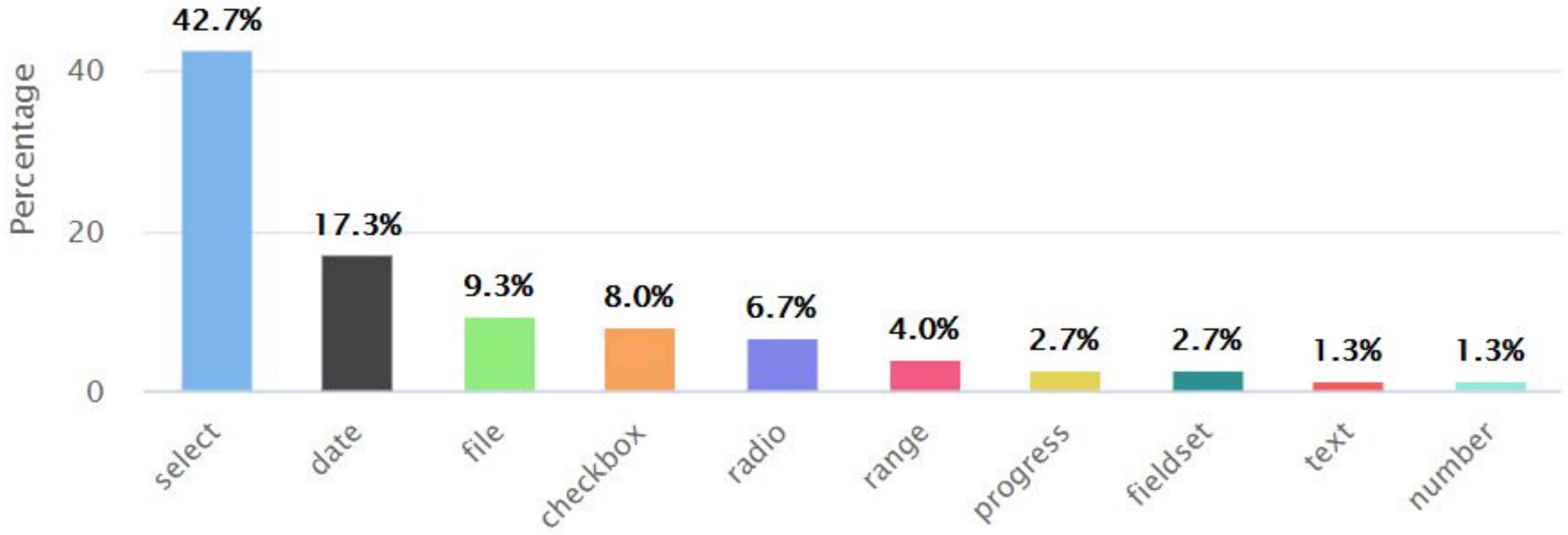
We got a bunch of codepens from the React DOM team

3. != 3



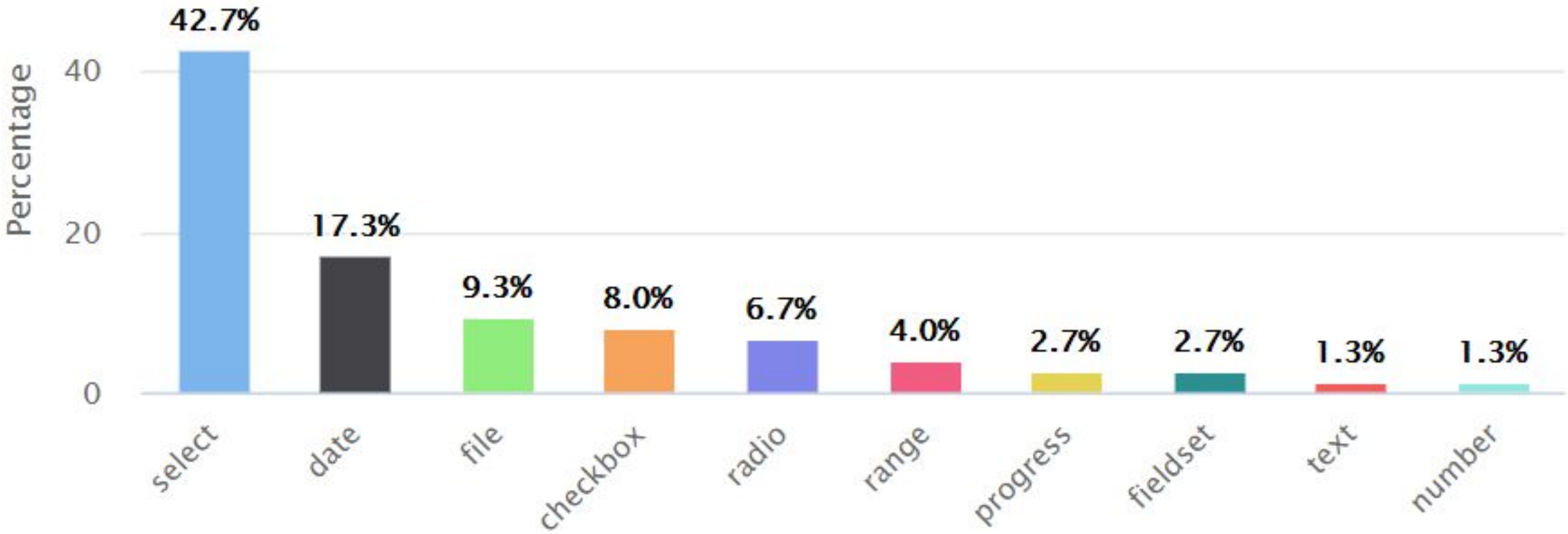
Which form elements give you the most frustration?

You kinda hate the **select** element



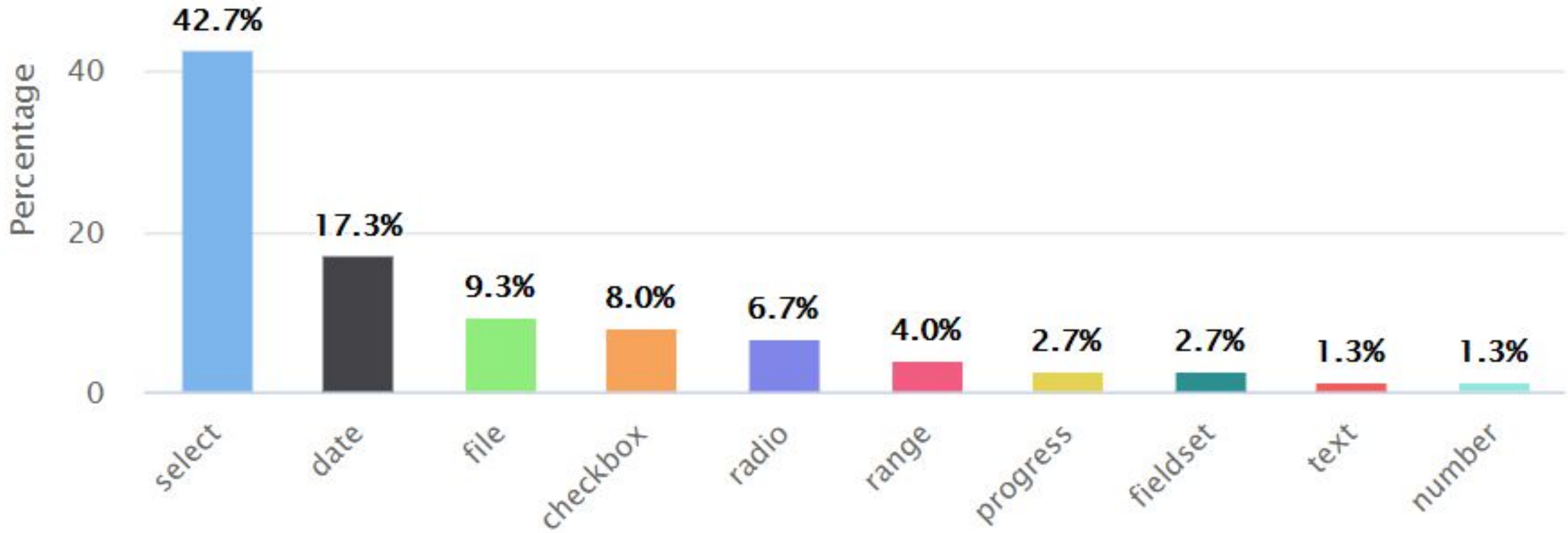
Source: gwhitworth.com

And the **date** picker



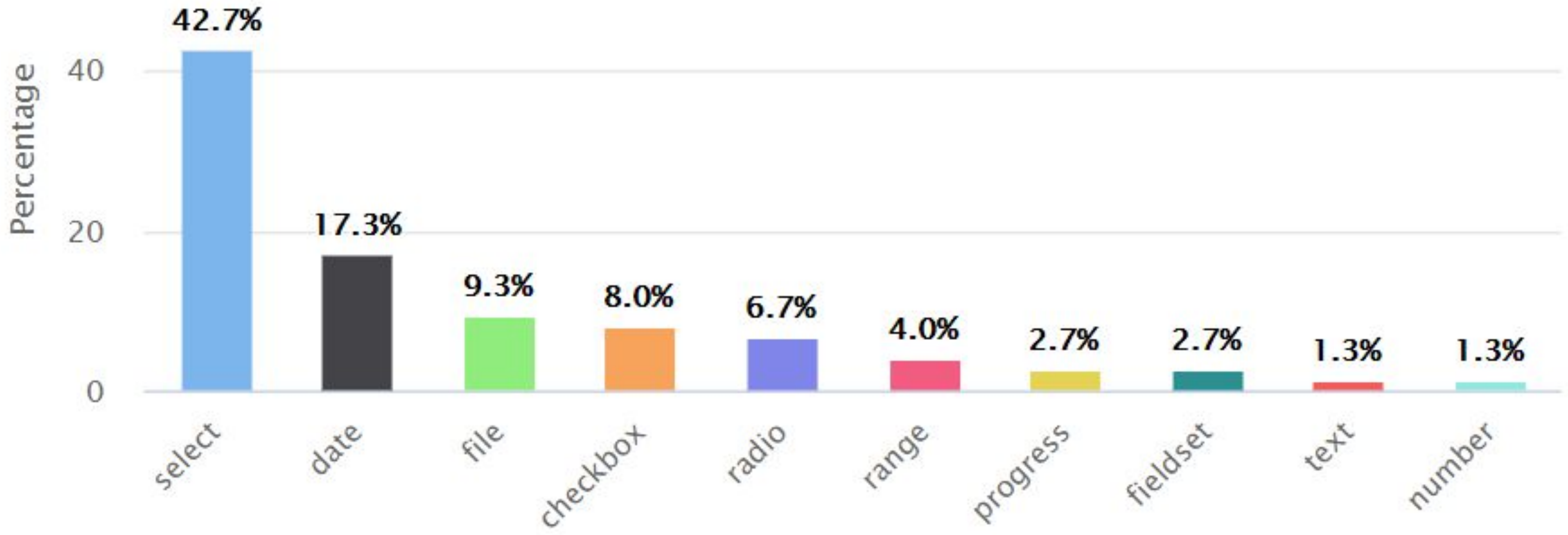
Source: gwhitworth.com

And **file**



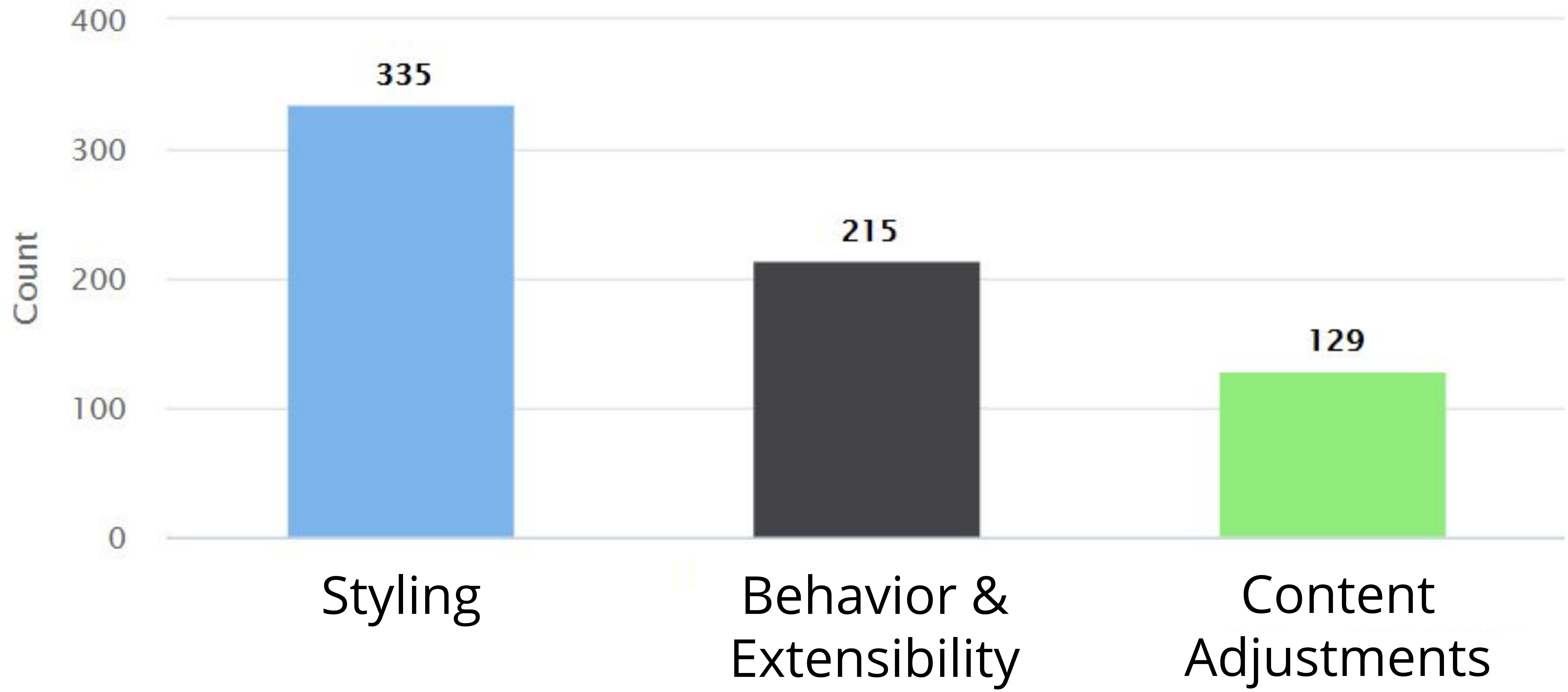
Source: gwhitworth.com

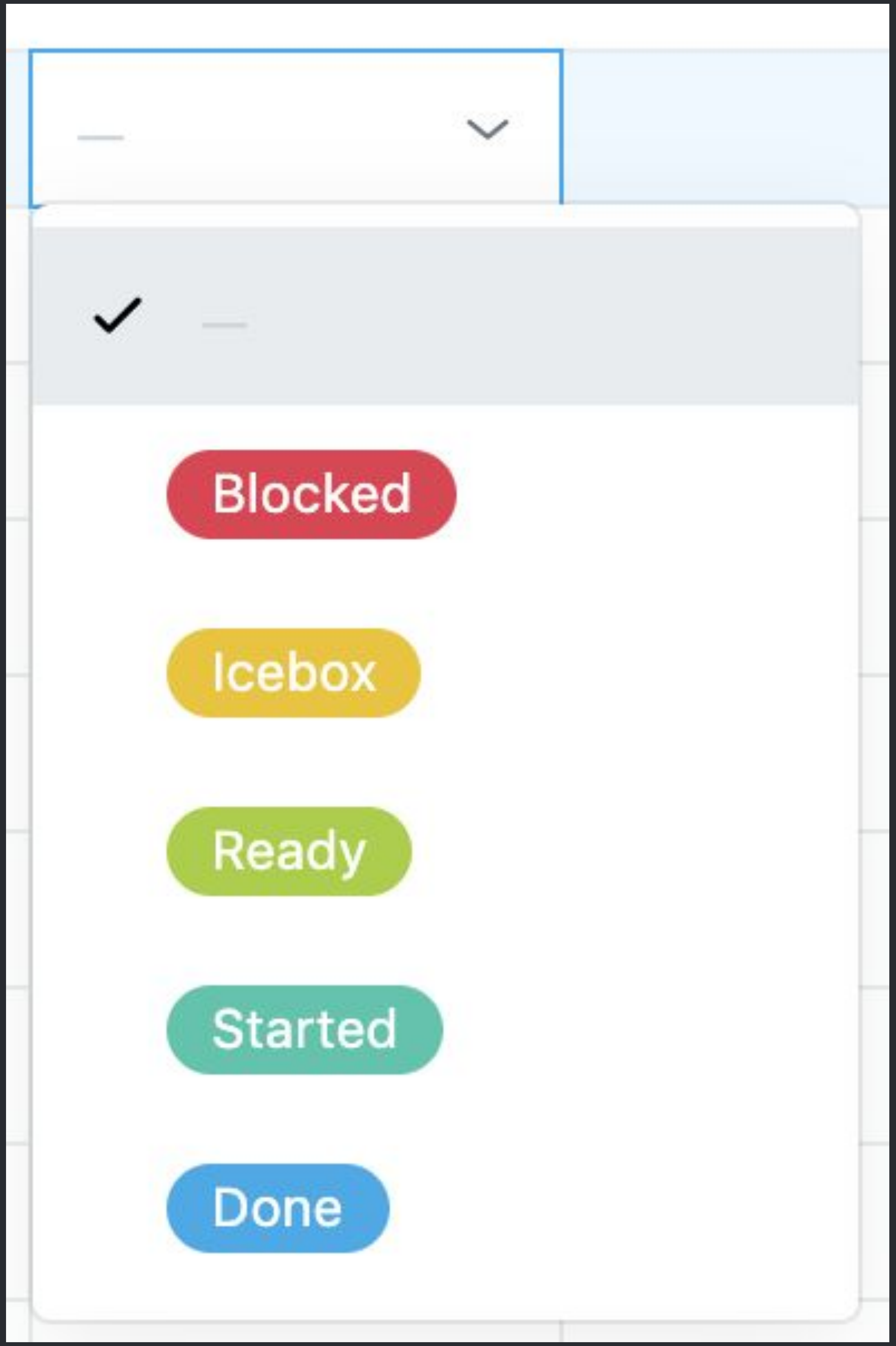
And the **checkbox** and **radio** elements



Source: gwhitworth.com

What really gets your goat about **select**?



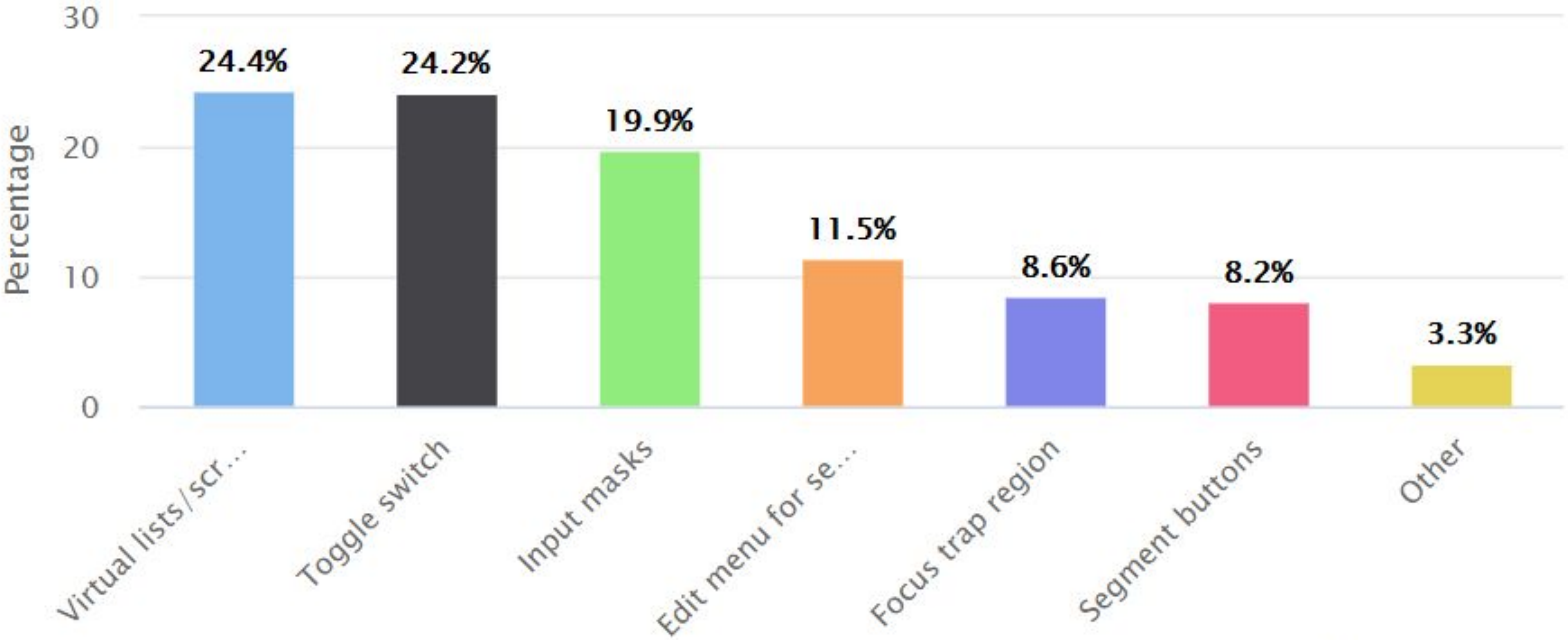


Next generation <select>

Edge & Chrome form control collaboration

1. Accessibility, Touch, & Visual Refresh
2. Stylability
3. Extending functionality
4. **New components!**

Most requested native controls:
<virtual-list> & <toggle-switch>

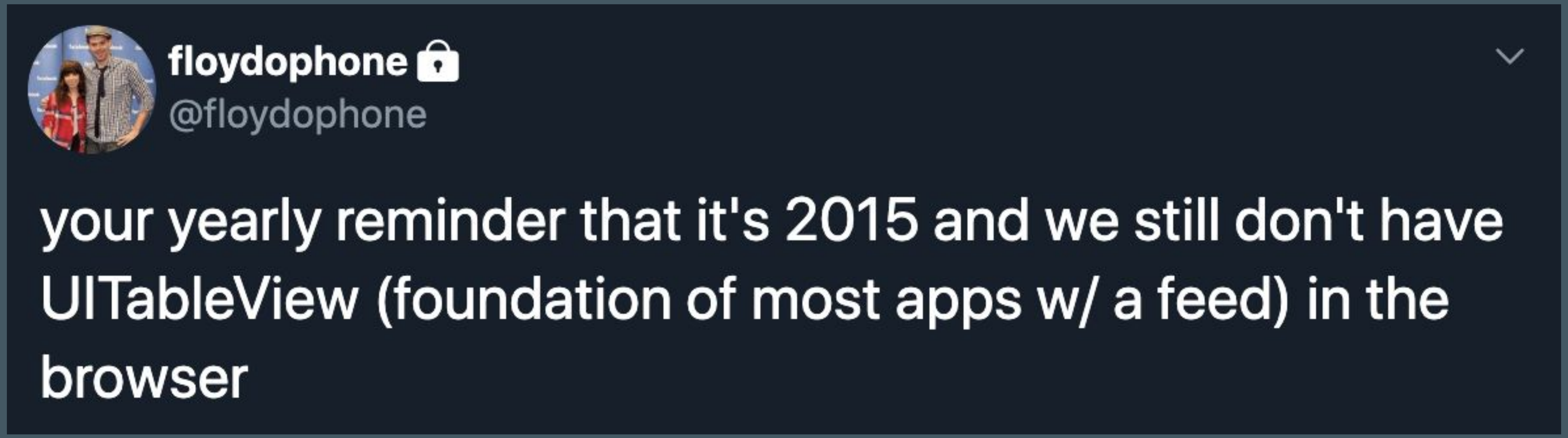


Source: gwhitworth.com

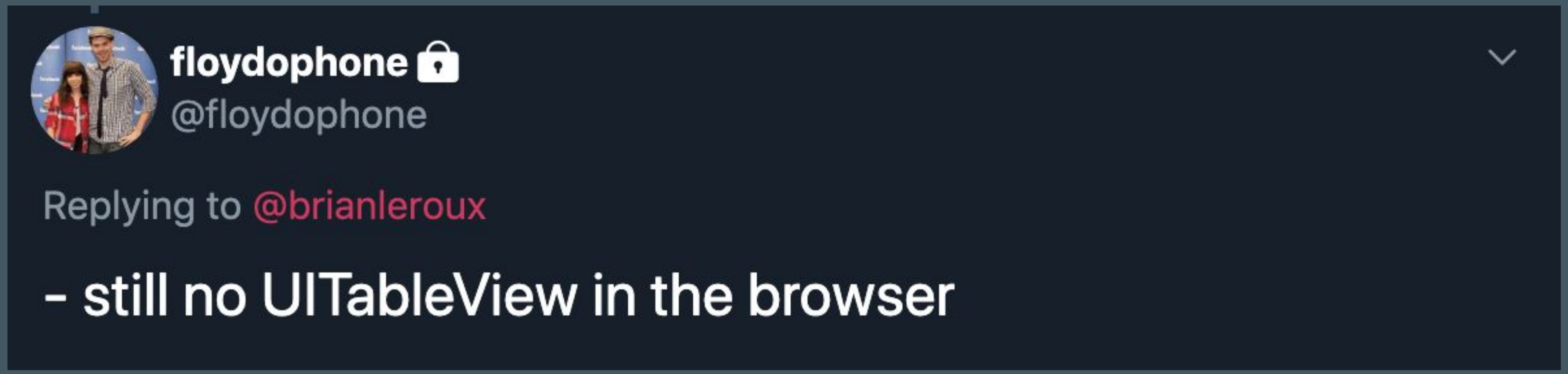
Virtual scrollers

The most requested new component

Pete Hunt reminds us to build a virtual list... every year... since 2015

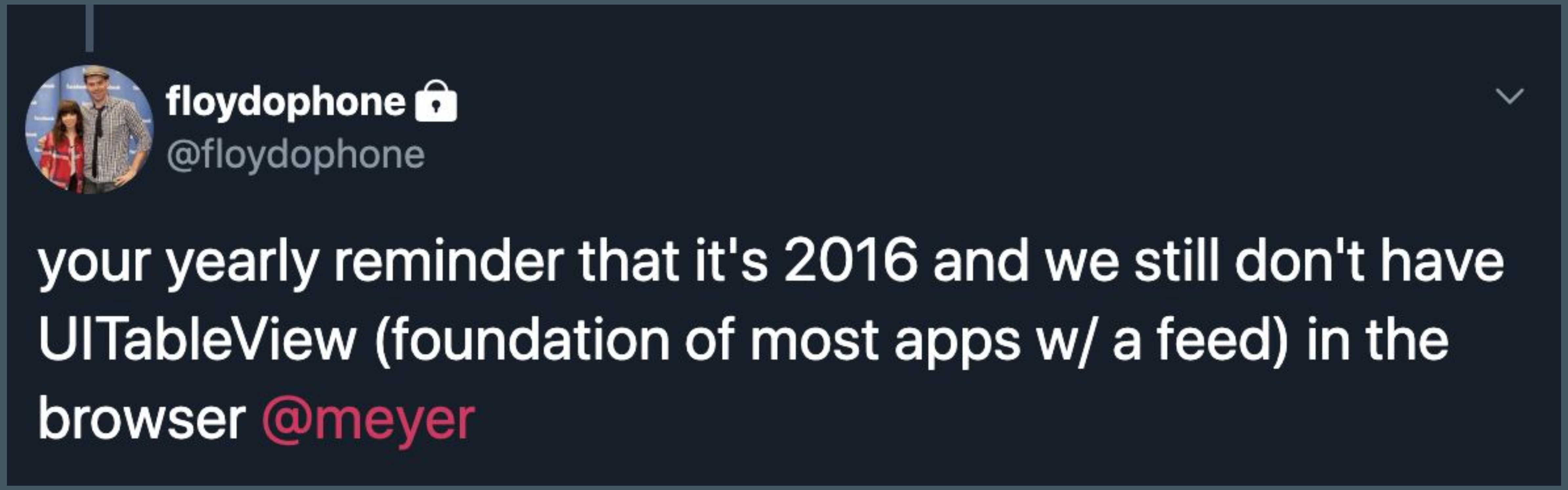

floydophone
@floydophone

your yearly reminder that it's 2015 and we still don't have UITableView (foundation of most apps w/ a feed) in the browser

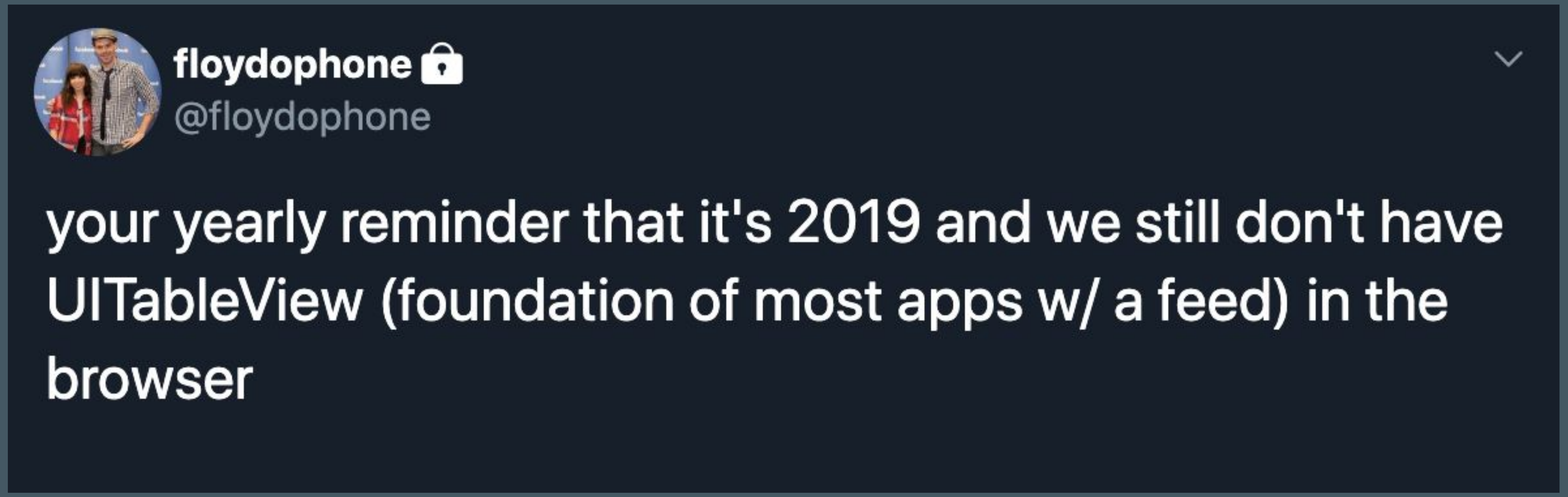

floydophone
@floydophone

Replying to @brianleroux

- still no UITableView in the browser


floydophone
@floydophone

your yearly reminder that it's 2016 and we still don't have UITableView (foundation of most apps w/ a feed) in the browser @meyer

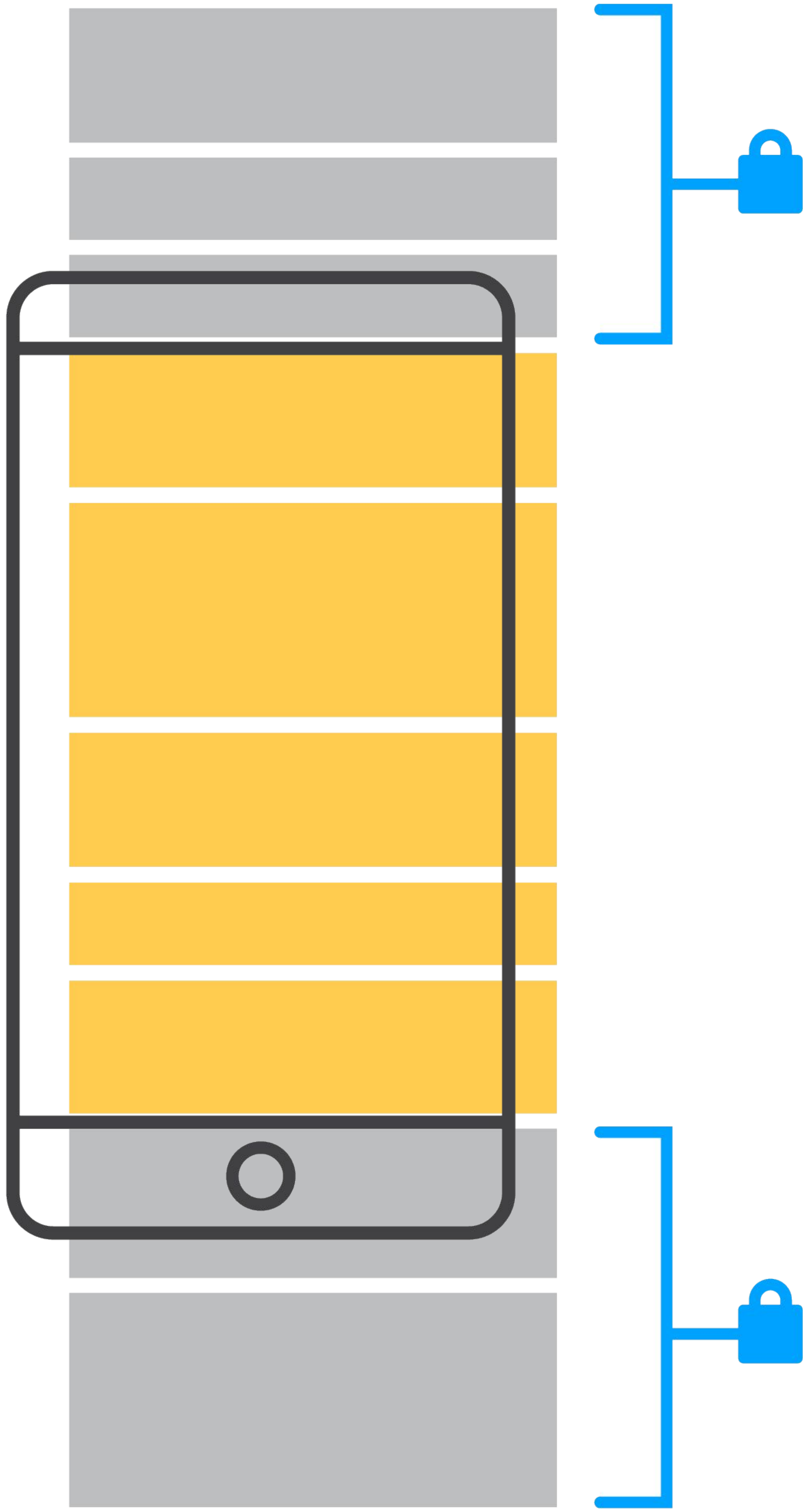

floydophone
@floydophone

your yearly reminder that it's 2019 and we still don't have UITableView (foundation of most apps w/ a feed) in the browser

Virtual Scrolling Primitive: Display Locking

Available in Origin Trial

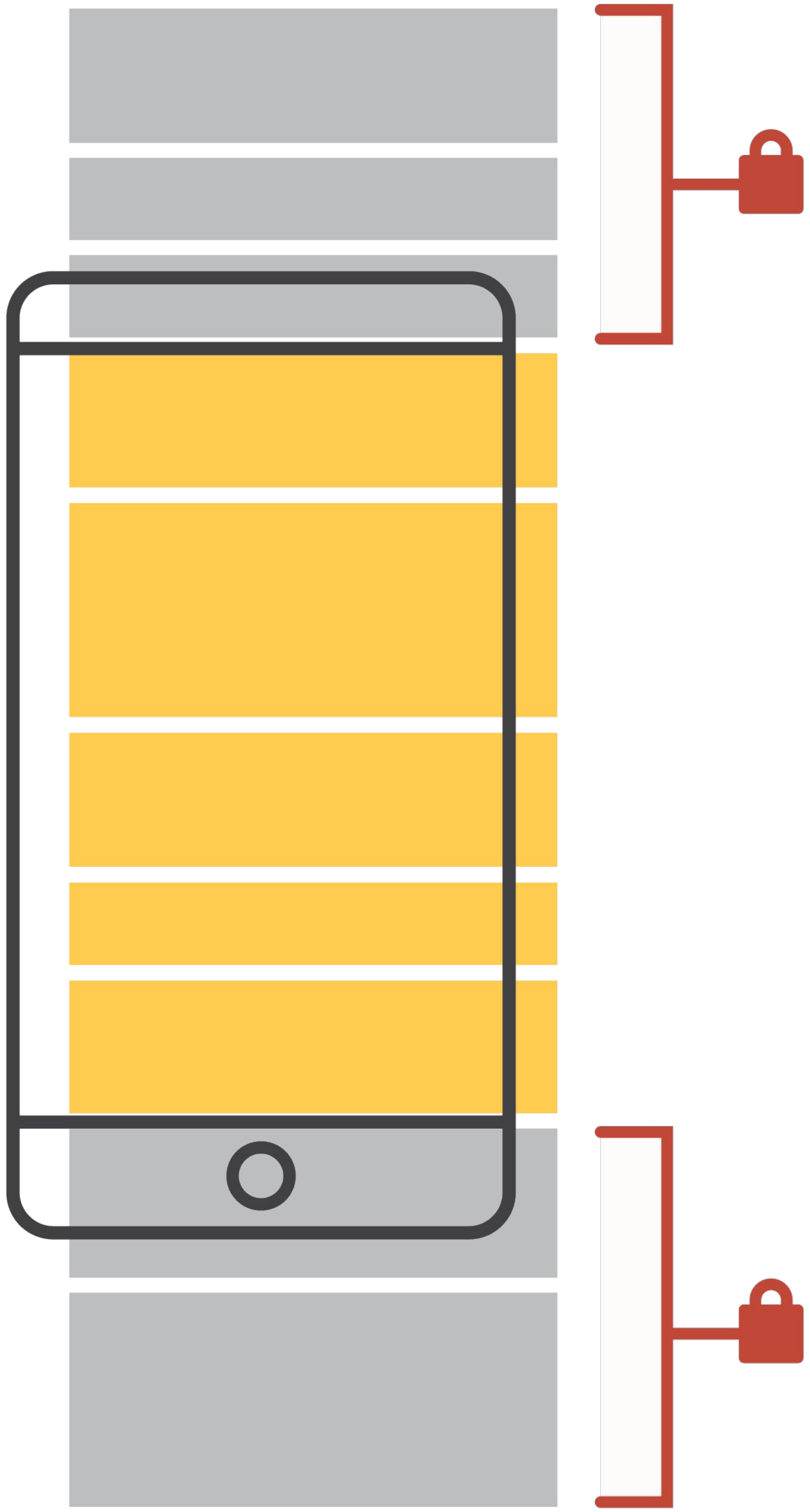
- Batched rendering updates
- Find-in-page works
- Better a11y



Virtual Scrolling Primitive:
Display Locking

Available in Origin Trial

- Batched rendering updates
- Find-in-page works
- Better a11y



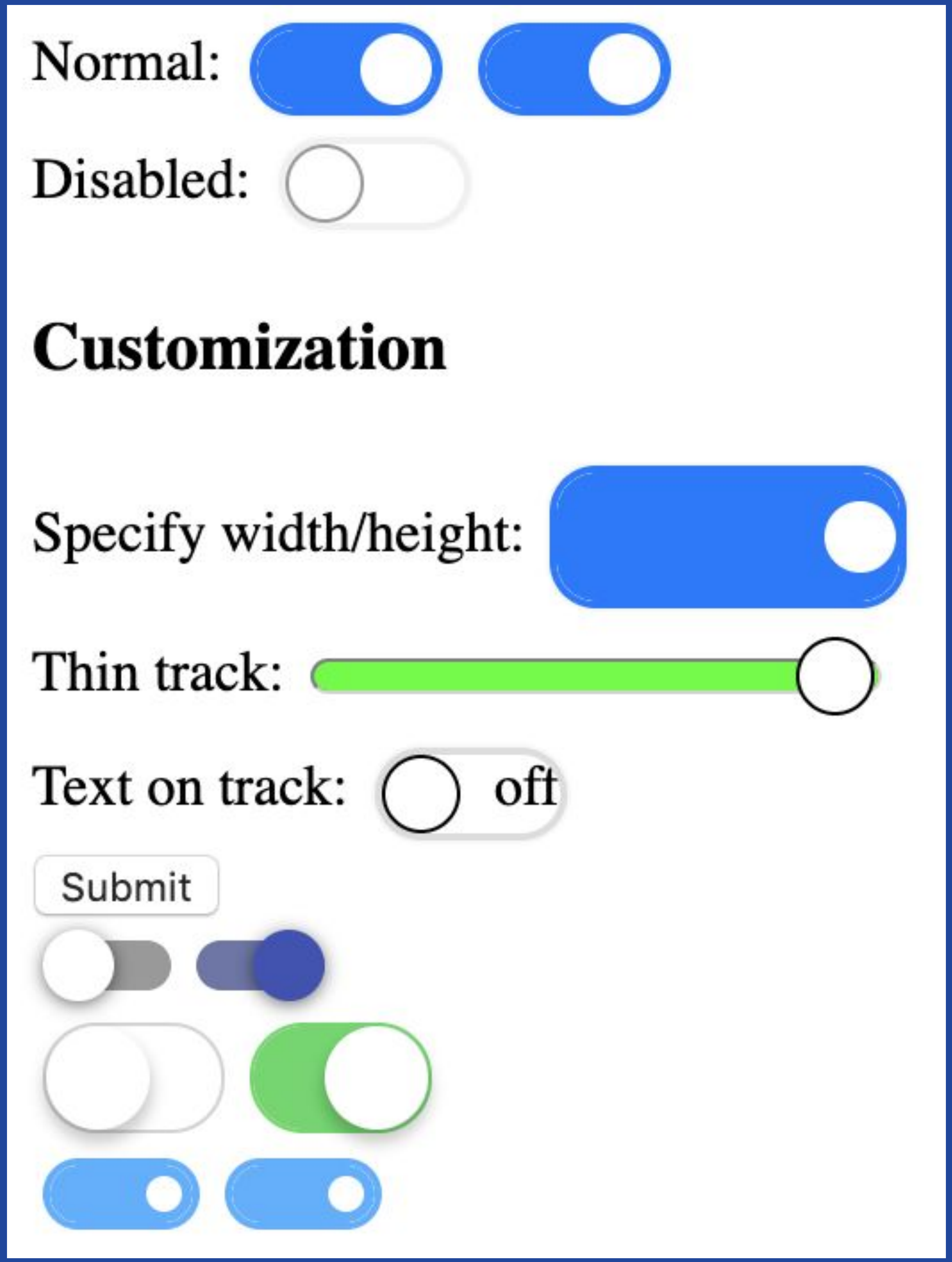
Toggle Switch

Allows developers to semantically express the off/on state.

Toggle Switch

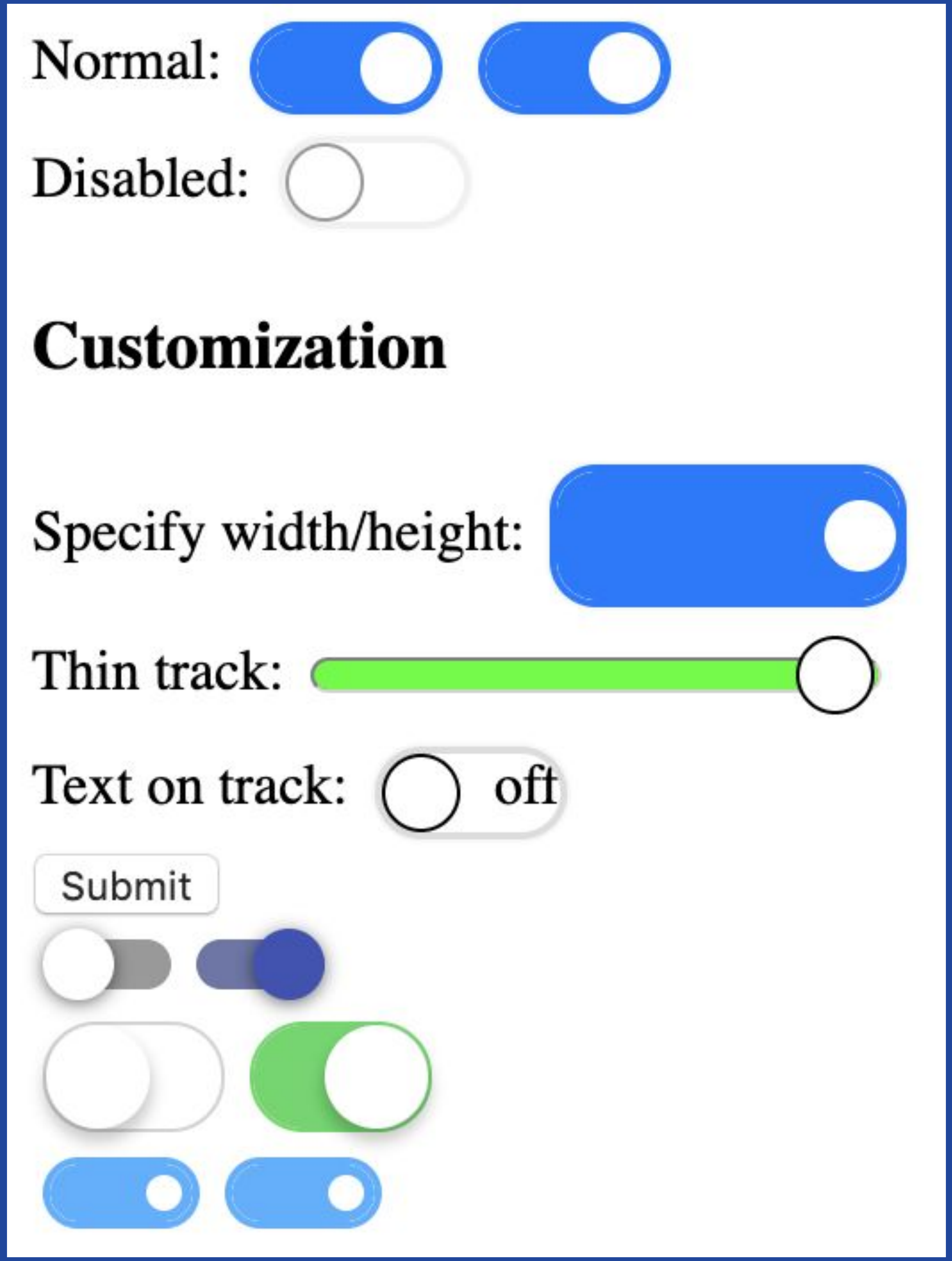
Updating Chromium's default controls

- We started with a ton of research into how other design systems handle toggle behavior.
- We coded a prototype. Please try it!
- And we used it to drive out new low level APIs and better a11y.



Three low level APIs & improvements

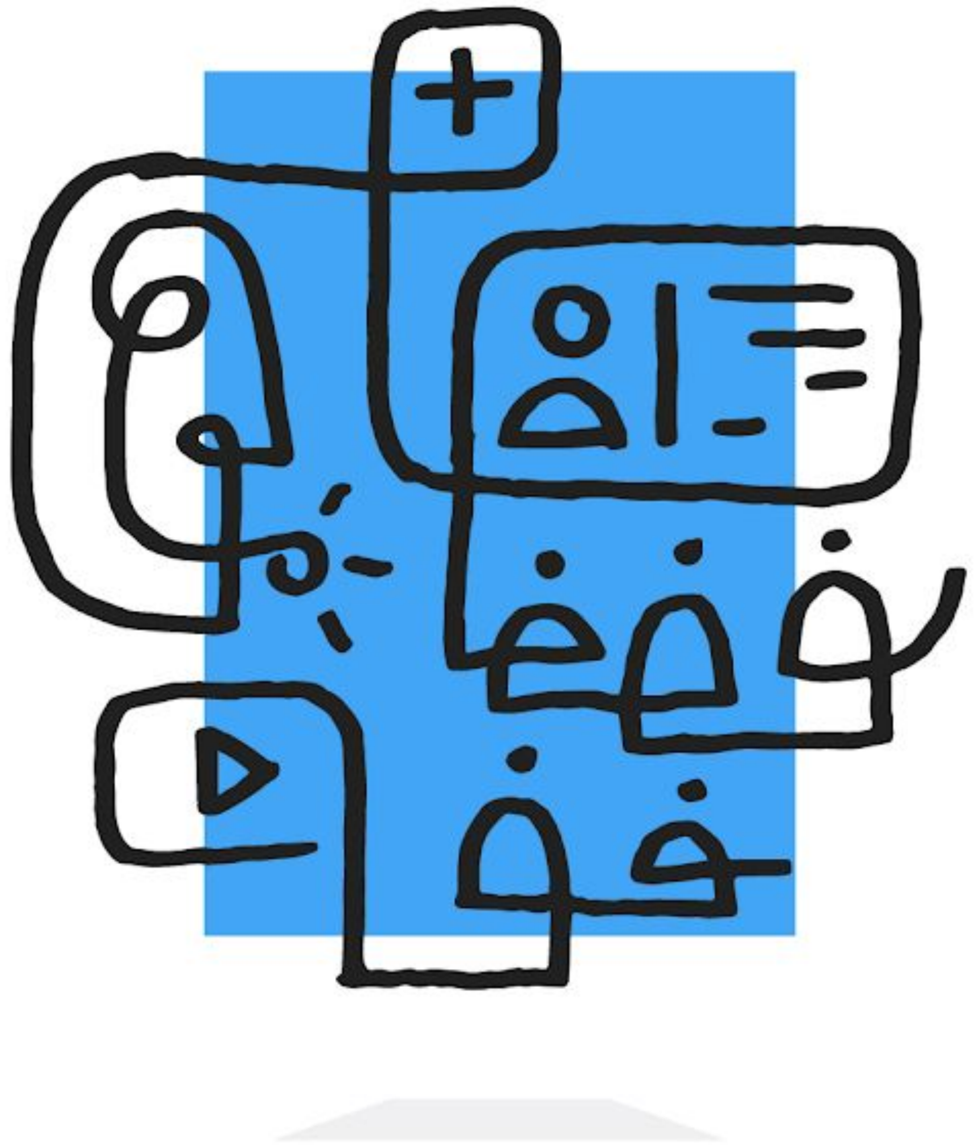
- Form-associated custom elements
- Custom element a11y
- Focusable custom elements



Edge & Chrome form control collaboration

1. Accessibility, Touch, & Visual Refresh
2. Stylability
3. Extending functionality
4. New components!

Please help, we'd love for you to get involved.



Please help,
we’d love for you
to get involved.

ionic
Linked in
FAST DNA
T
Office
ember
React

slack

URL
#HTMLisNotDone

W3C :WICG

wicg.io

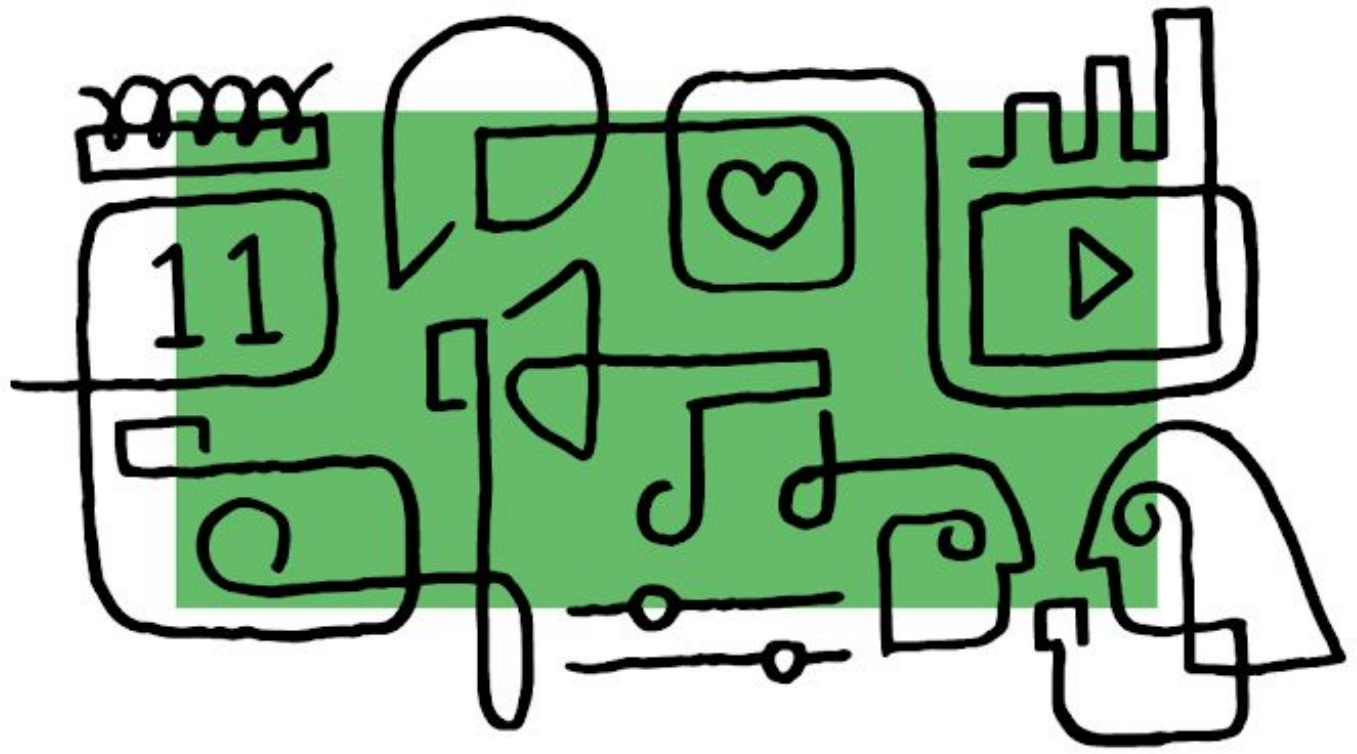
Open UI

open-ui.org

https://bugs.chromium.org

Thank you!

chrome dev summit 2019



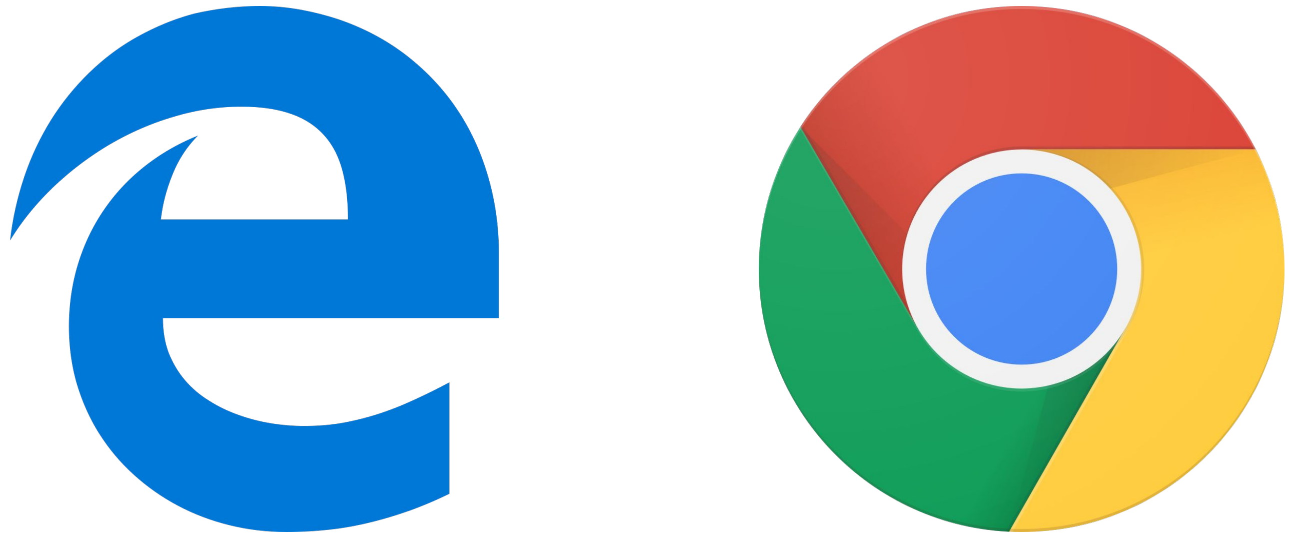
Nicole Sullivan
@stubbornella

Greg Whitworth
@gregwhitworth

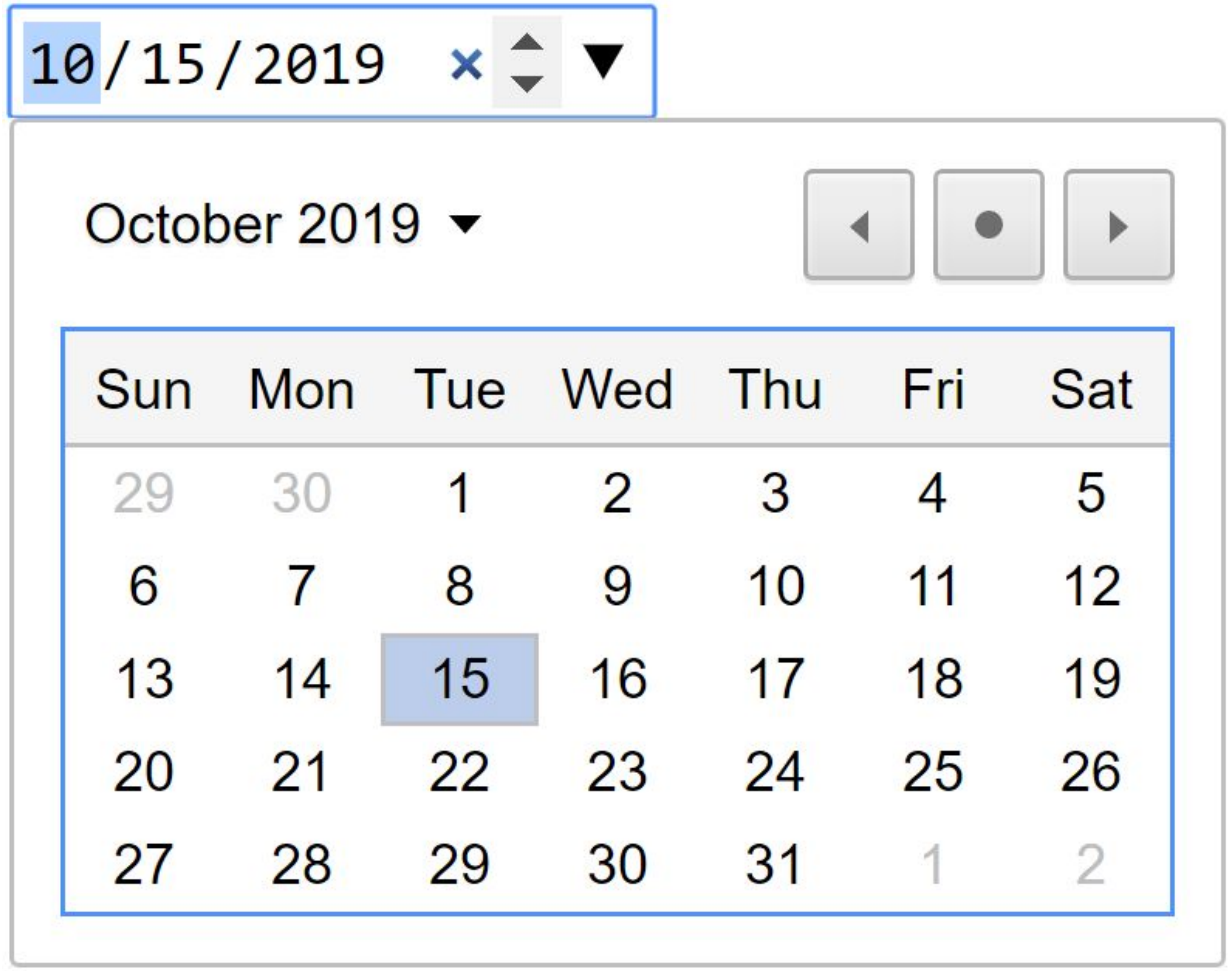
Controls Refresh

Updating Chromium’s default controls

- Modern Appearance
- Touch friendly
- Accessible



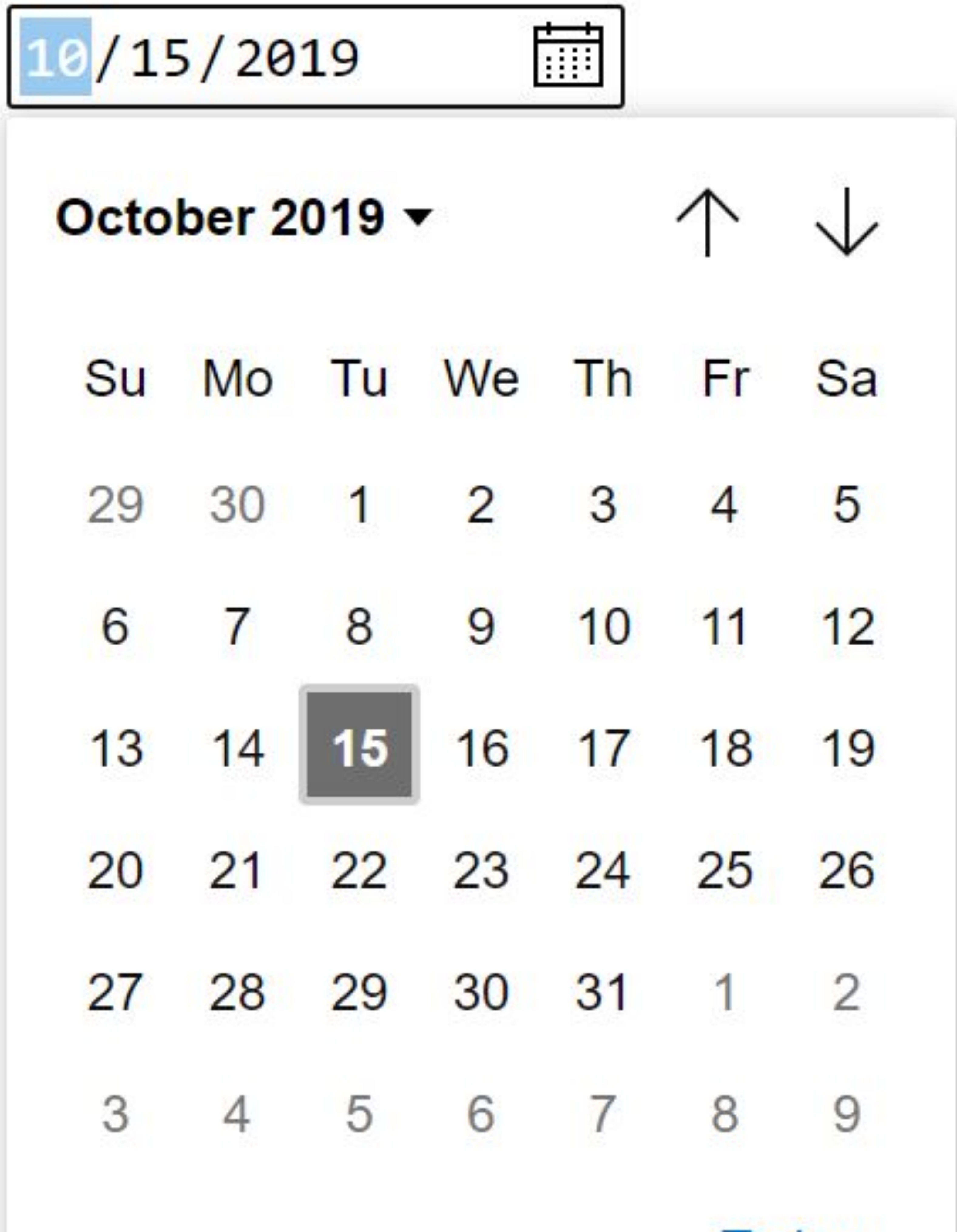
Collaborating



10/15/2019 × ▲▼ ▼

October 2019 ▼ ◀ ● ▶

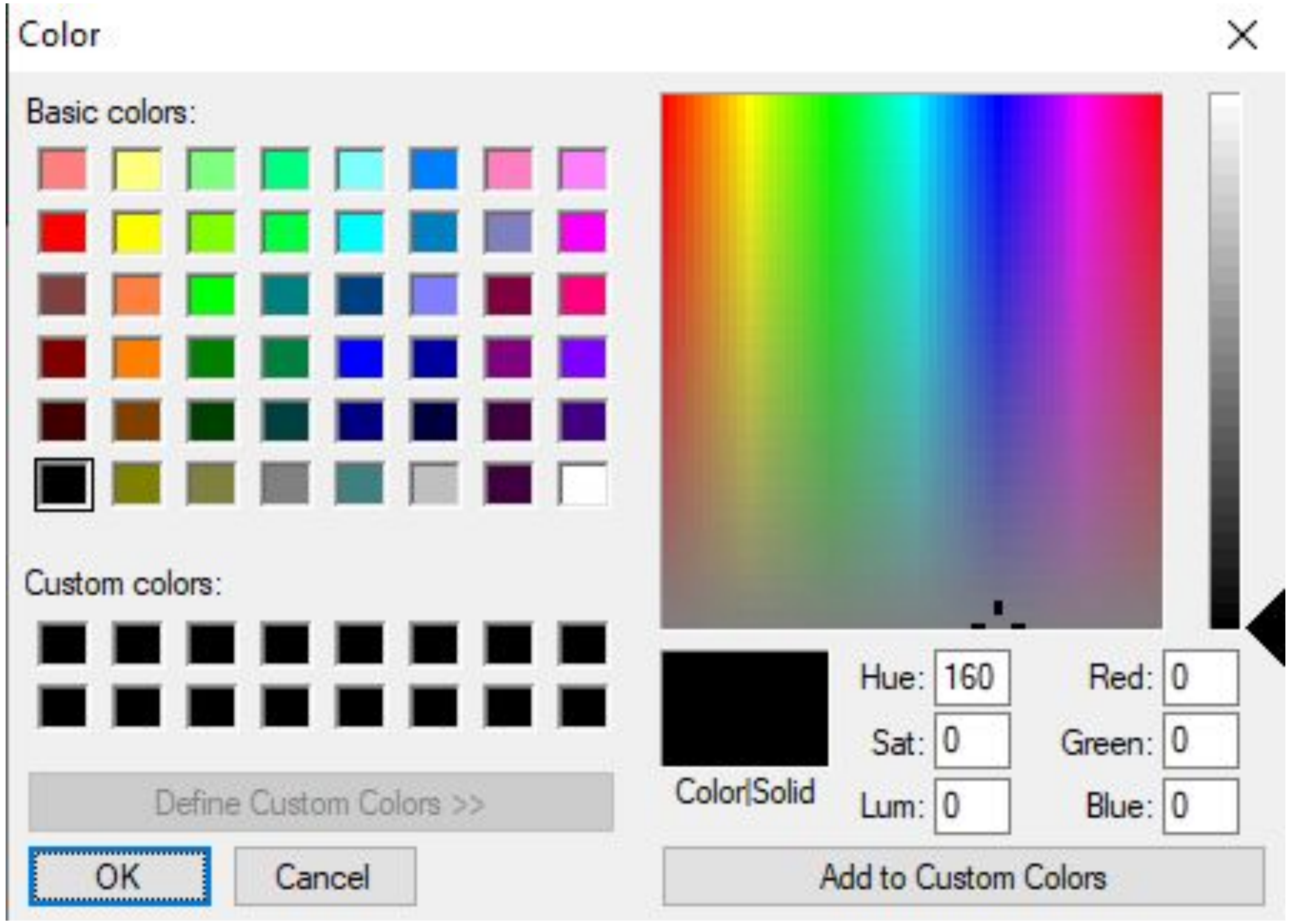
Sun	Mon	Tue	Wed	Thu	Fri	Sat
29	30	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	1	2



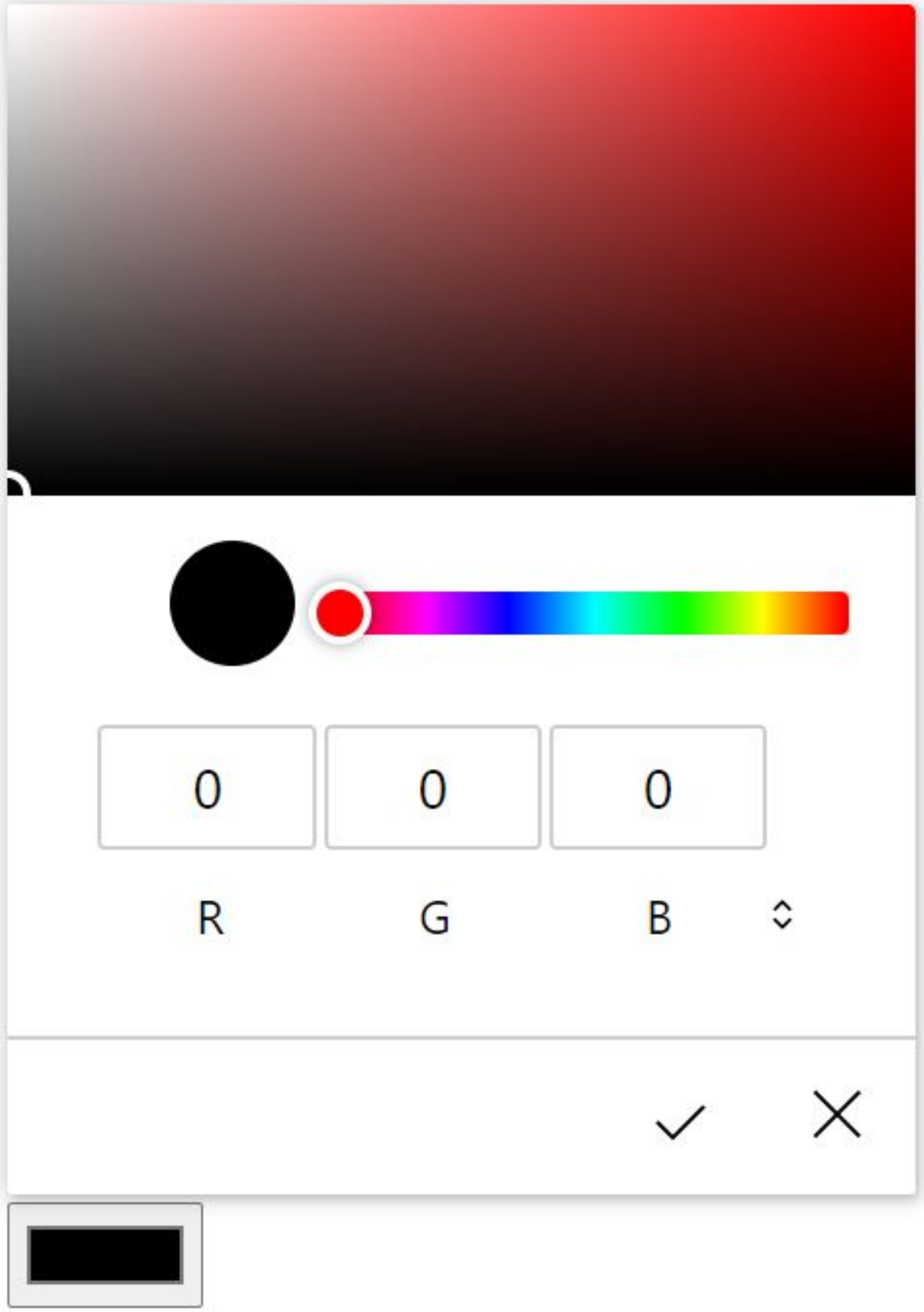
10/15/2019

October 2019 ▼ ↑ ↓

Su	Mo	Tu	We	Th	Fr	Sa
29	30	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	31	1	2
3	4	5	6	7	8	9



Hue: 160
Sat: 0
Lum: 0
Red: 0
Green: 0
Blue: 0



R: 0
G: 0
B: 0

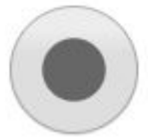
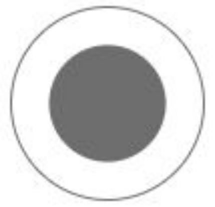
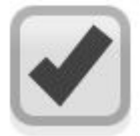
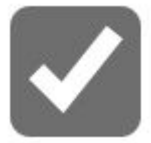
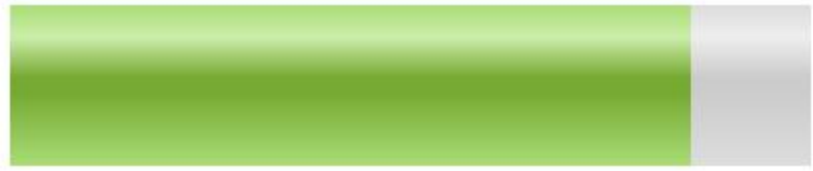
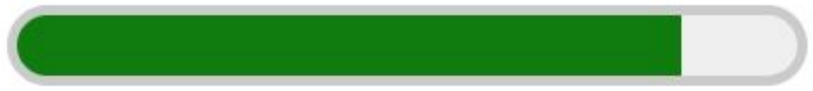
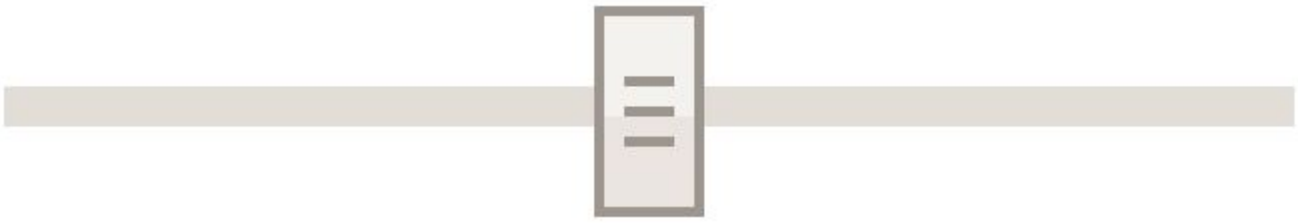
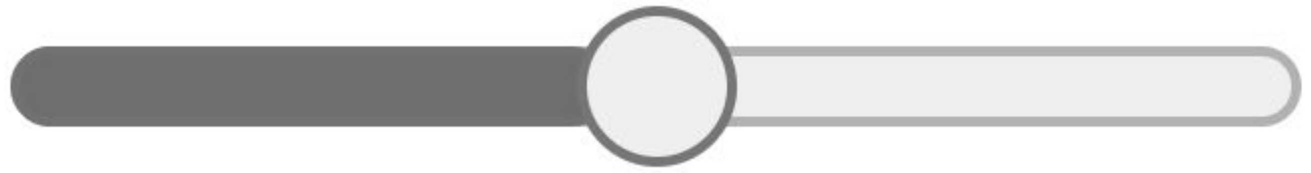
Opportunities found

Is this worth it?

Is improving the controls & components story worth the investment?

- Appearance
- Frequency of bringing/building your own
- Effort it takes to build your own
- Cross browser

New components. Huzzah!

	Current	Upcoming
Radio		
Checkbox		
Meter		
Range		

TRY OUT display-lock and std-switch CTA

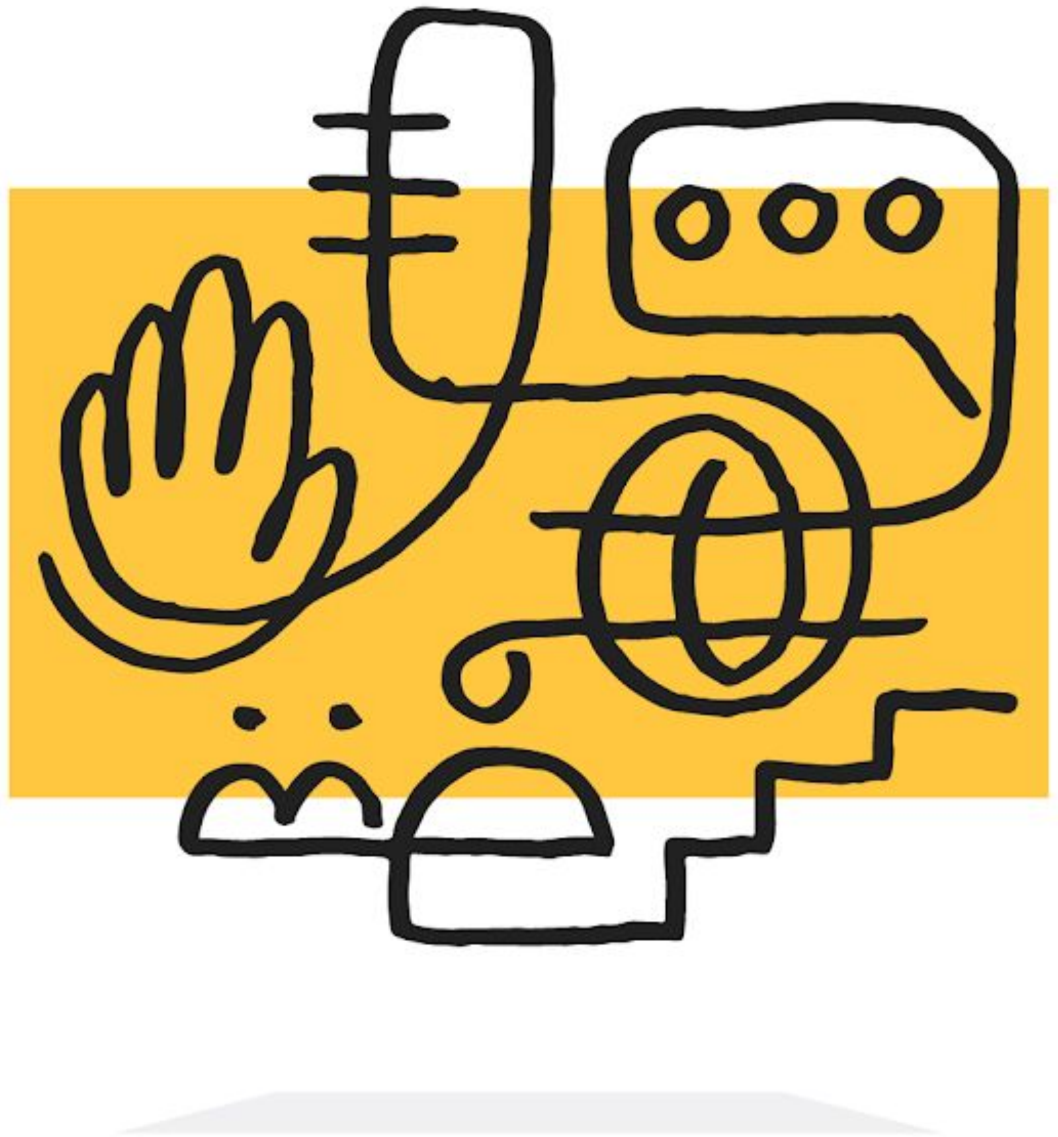
We want your help

Fast

Slow

While building virtual scrolling we realized we had a missing platform primitive: **Display locking**

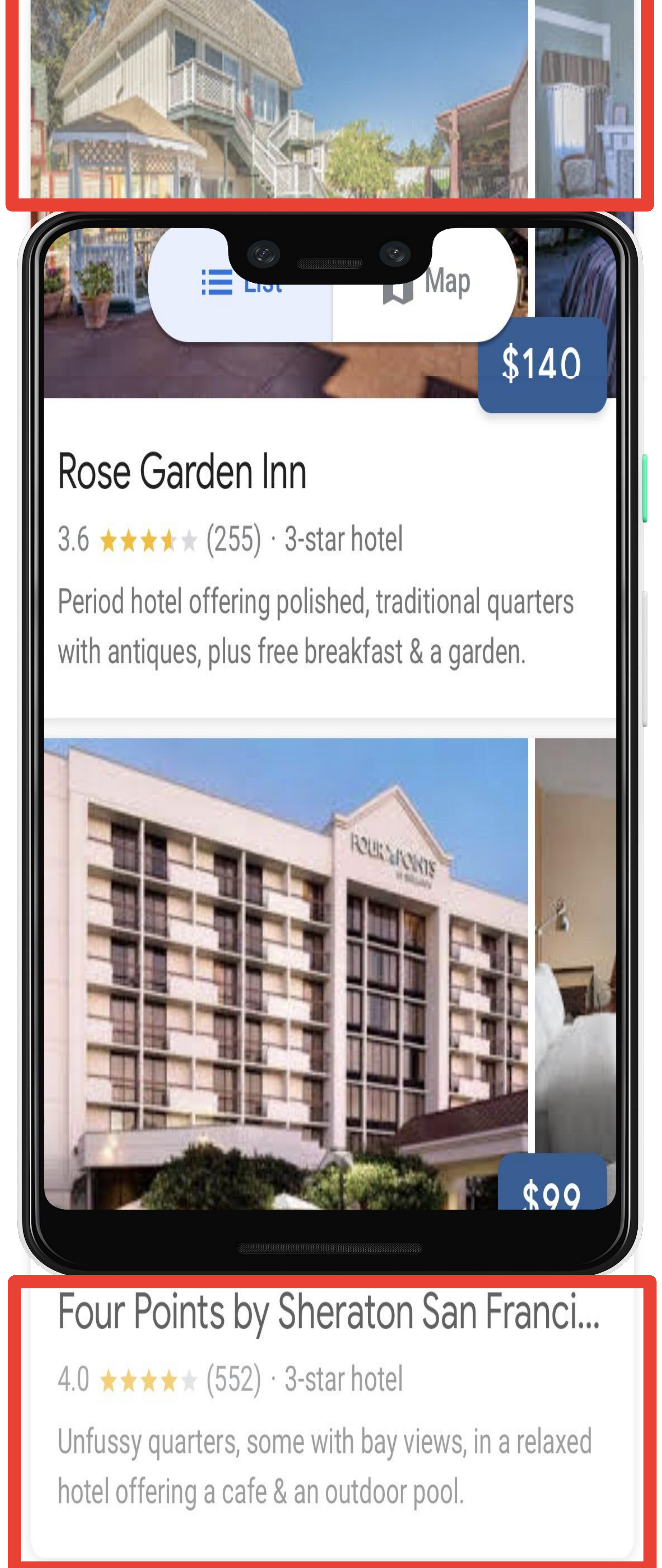
Folks couldn’t use find in page with regular virtual scrollers because the content isn’t really in the DOM.



Off-screen content can be locked

- Locked DOM can be manipulated by JavaScript and the browser knows it doesn’t have to render it this frame.

- More content in the DOM means user agent features like find in page can work.



Rose Garden Inn

3.6 ★★★★☆ (255) · 3-star hotel

Period hotel offering polished, traditional quarters with antiques, plus free breakfast & a garden.

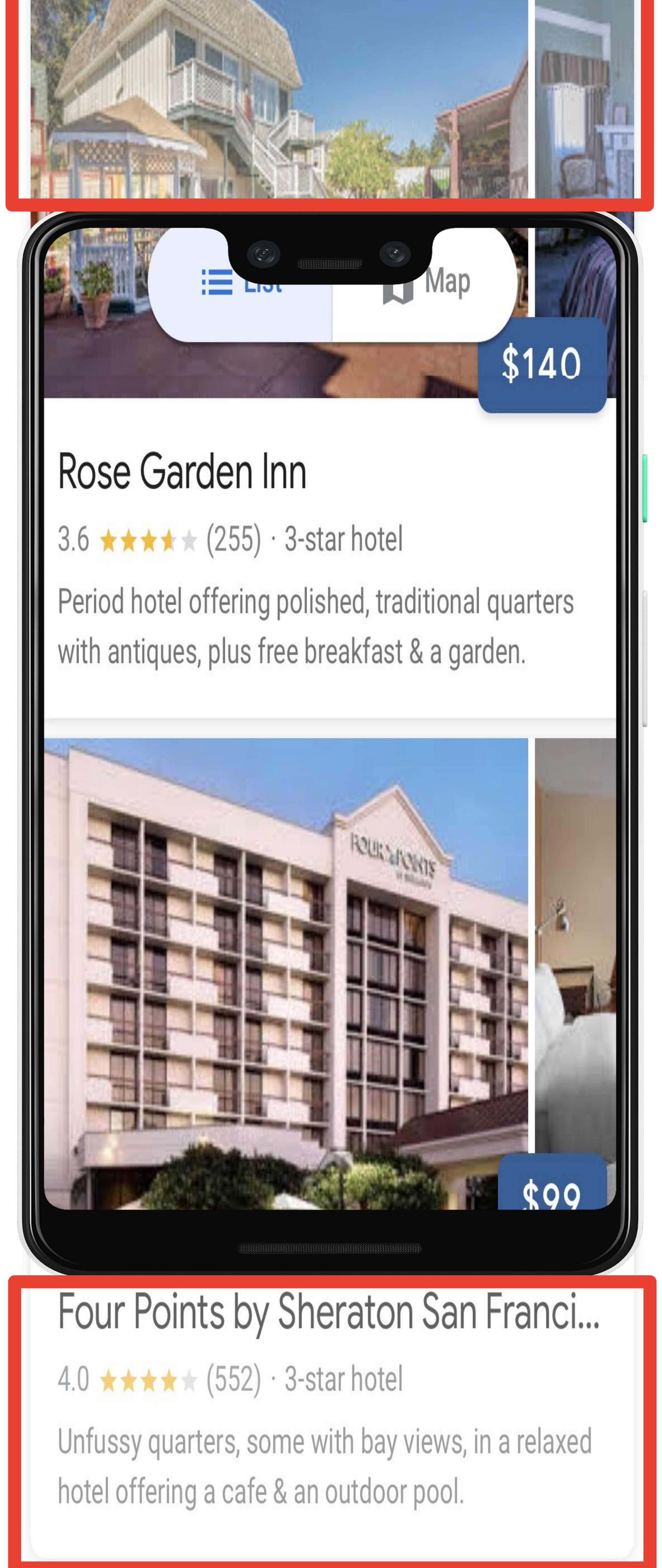
Four Points by Sheraton San Franci...

4.0 ★★★★☆ (552) · 3-star hotel

Unfussy quarters, some with bay views, in a relaxed hotel offering a cafe & an outdoor pool.

Off-screen content can be locked

- Motivate Locked DOM can be manipulated by JavaScript and the browser knows it doesn't have to render it this frame.
- More content in the DOM means user agent features like find in page can work.



Rose Garden Inn

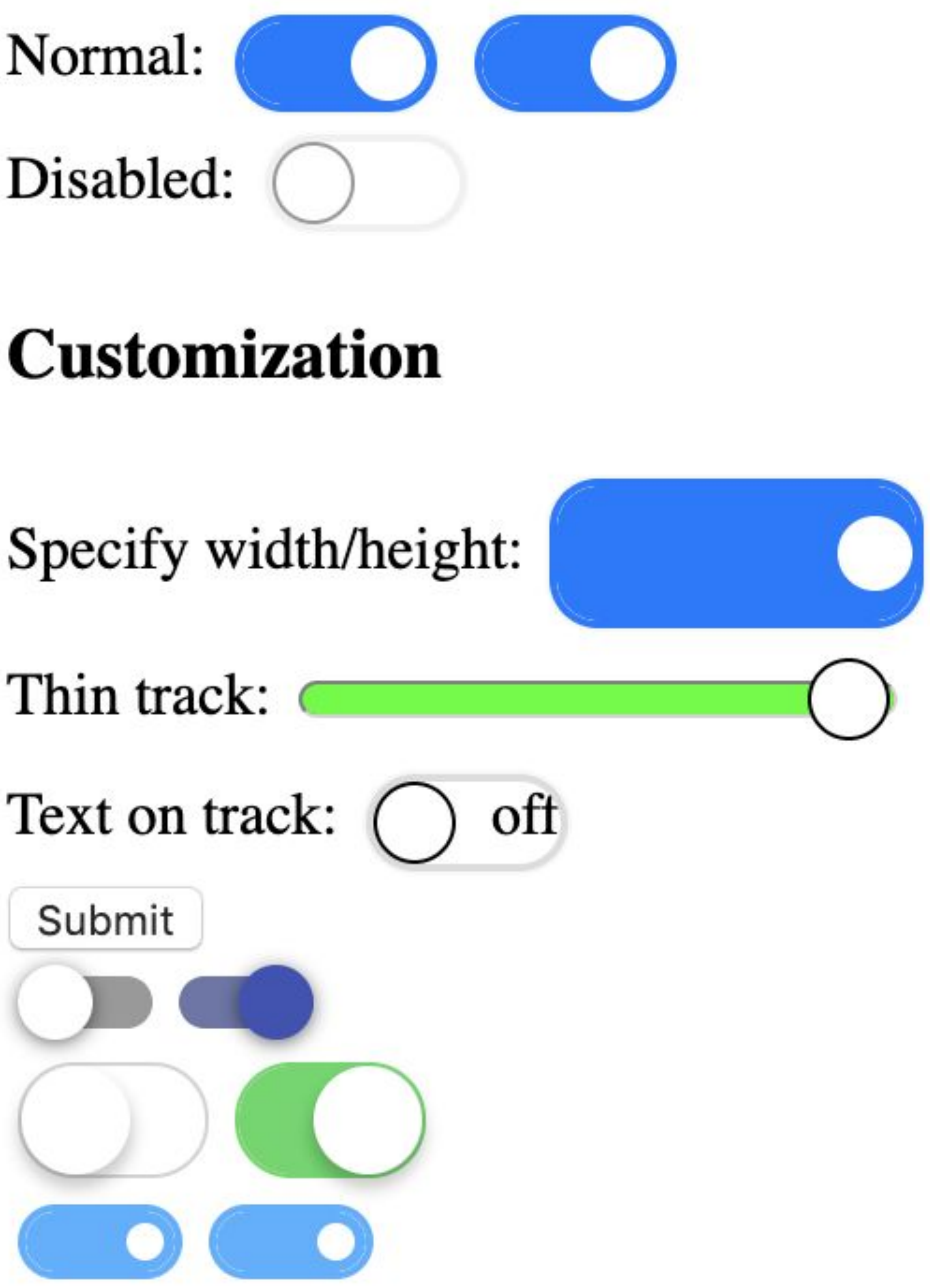
3.6 ★★★★☆ (255) · 3-star hotel

Period hotel offering polished, traditional quarters with antiques, plus free breakfast & a garden.

Four Points by Sheraton San Franci...

4.0 ★★★★☆ (552) · 3-star hotel

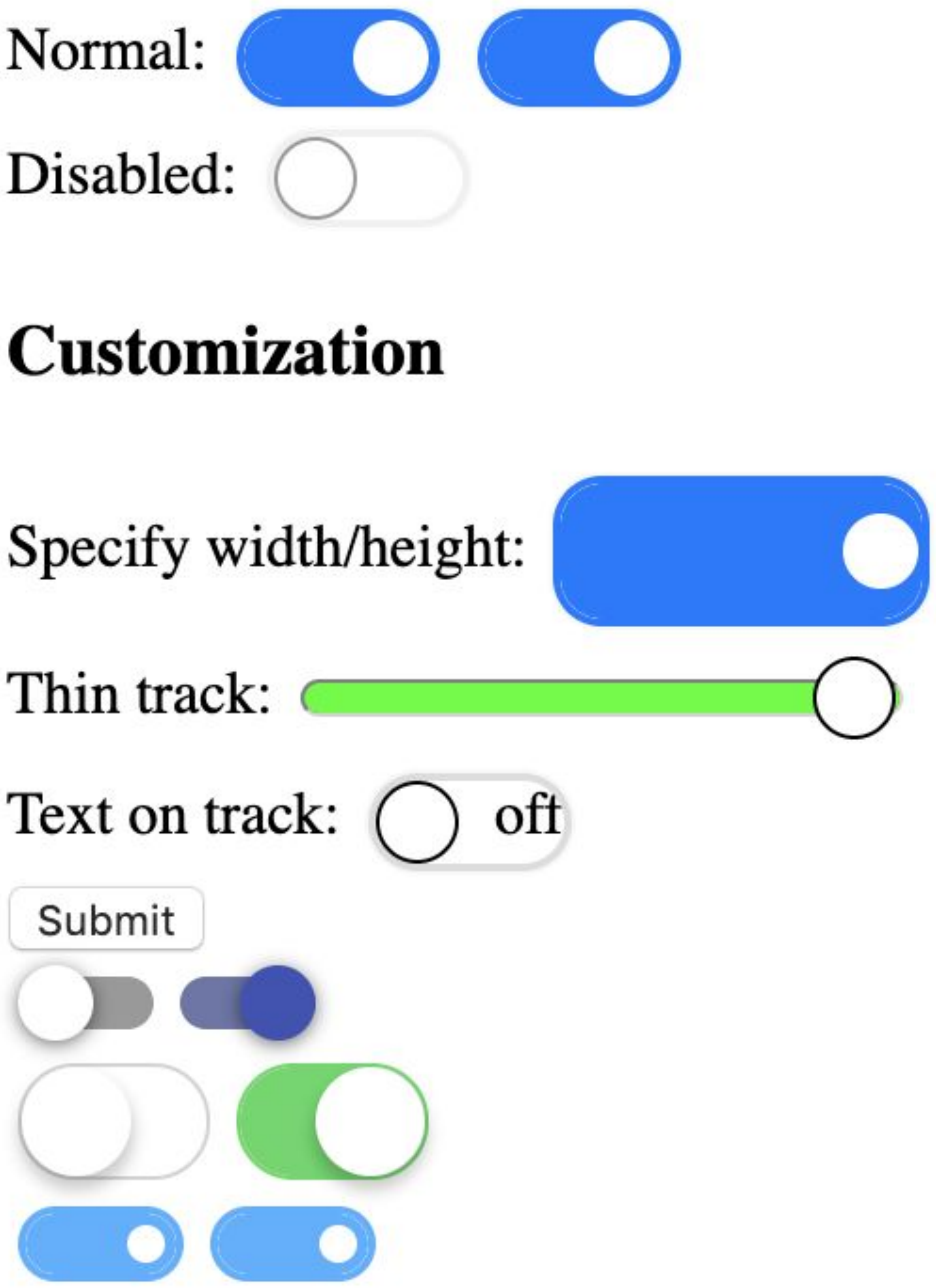
Unfussy quarters, some with bay views, in a relaxed hotel offering a cafe & an outdoor pool.



Toggle Switch

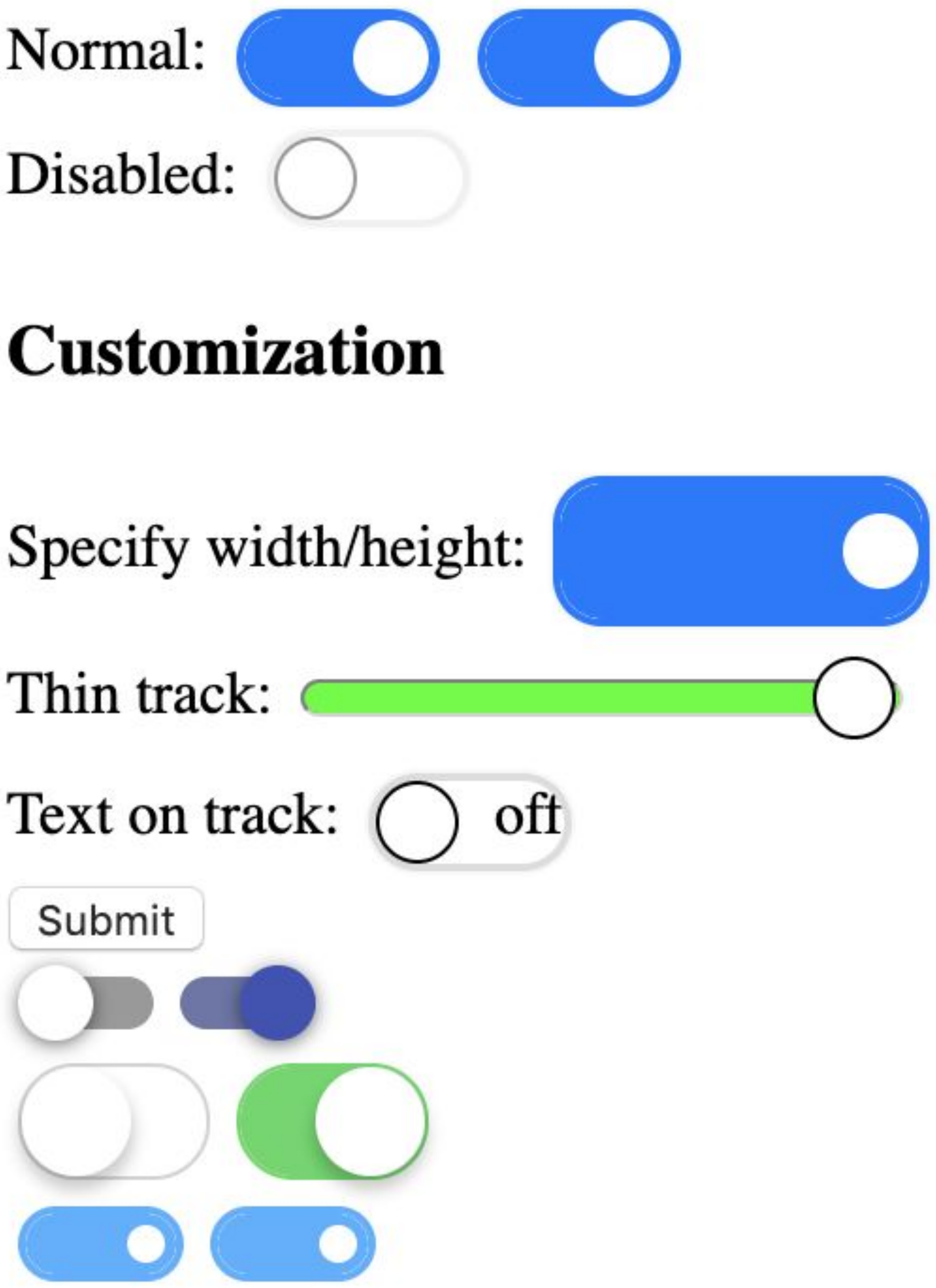
Updating Chromium's default controls

- We started with a ton of research into how other design systems handle toggle behavior.
- We coded a prototype. Please try it!
- And we used it to drive out new low level APIs and better a11y.



Three low level APIs

- Form-associated custom elements
- Custom element a11y
- Focusable custom elements

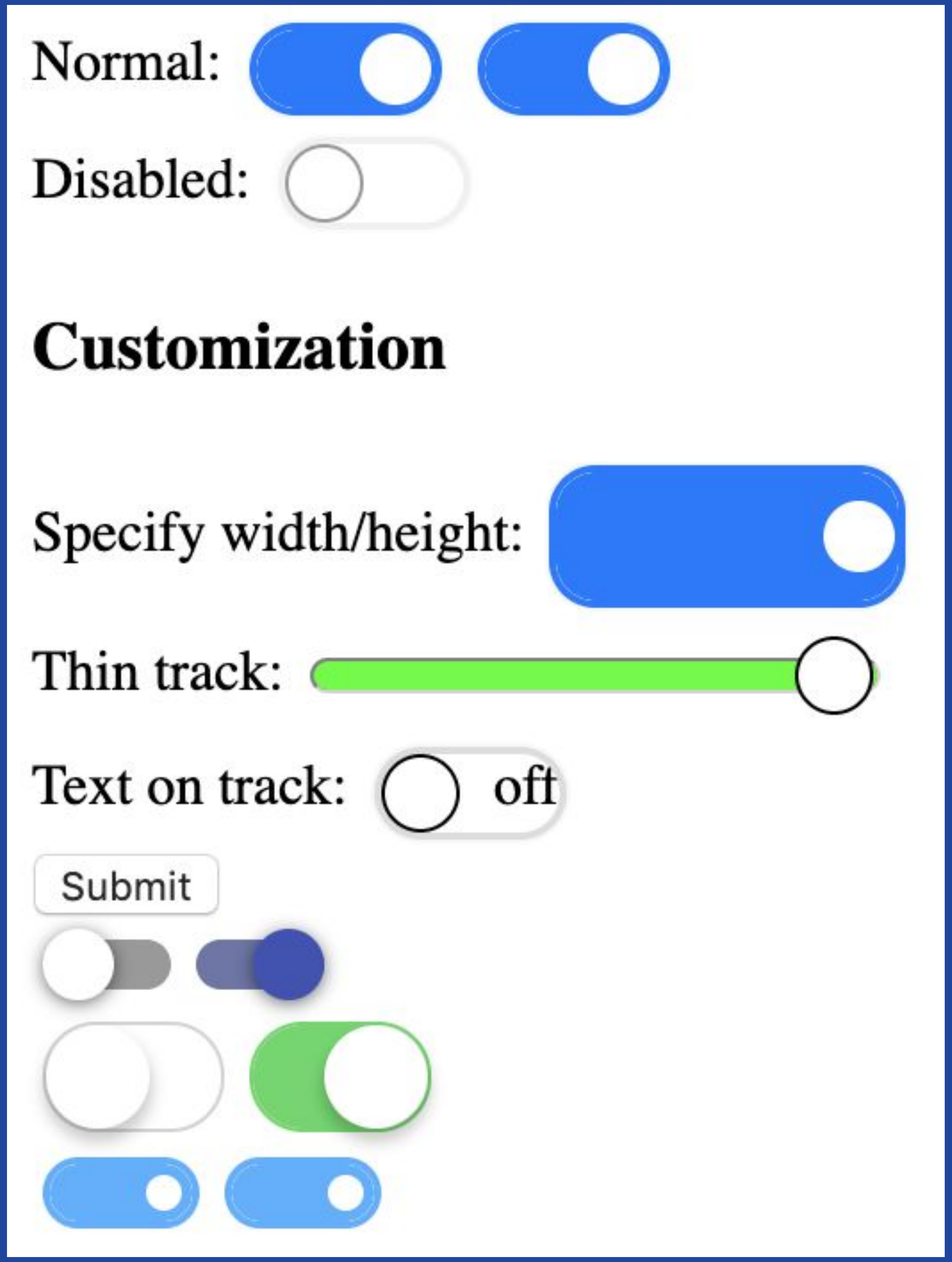


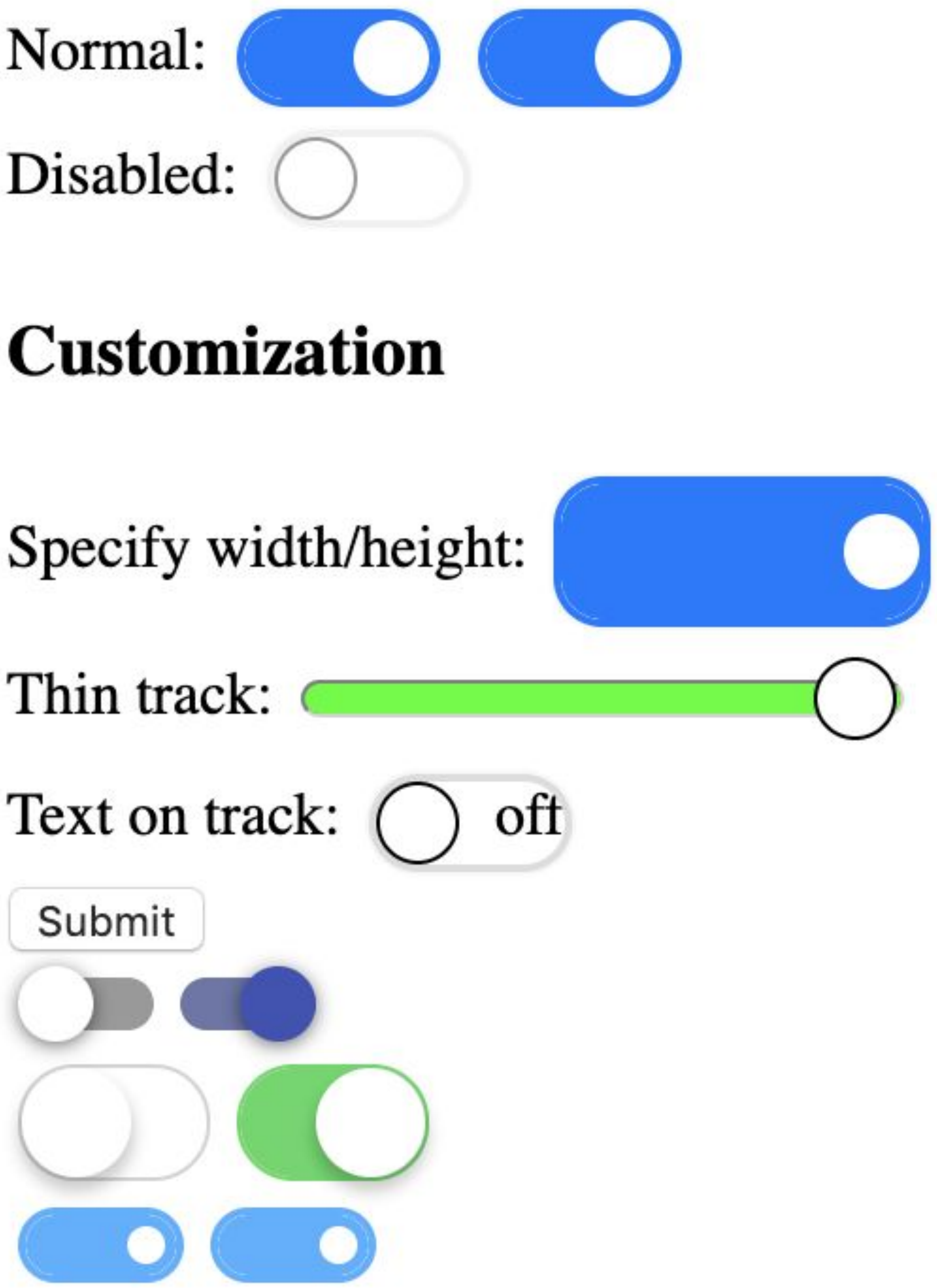
Custom element a11y

- Motivate adding this API

Custom element a11y

- Motivate adding this API





Focusable custom elements

- Motivate adding this API