



CSS CONF

The path of bringing : focus-visible to WebKit

Manuel Rego

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About Me

- **Igalia** Web Platform Team
- **Web engines hacker** working on Chromium/Blink and Safari/WebKit
- **CSS Working Group** member since 2017



TOC

1. Introduction
2. Open Prioritization
3. Work Done
4. Next Steps

Introduction

The Problem

Click me!

```
:focus {  
  outline: none;  
}
```

The Problem

Click me!

```
:focus {  
  outline: none;  
}
```



The Solution

: focus - visible

Spec

The **`:focus-visible`** pseudo-class applies while an element matches the **`:focus`** pseudo-class and the user agent determines via heuristics **that the focus should be made evident** on the element.



While the `:focus` pseudo-class always matches the currently-focused element, **UAs only sometimes visibly indicate focus** (such as by drawing a "focus ring"), instead using a variety of heuristics to visibly indicate the focus only when it would be most helpful to the user. The `:focus-visible` pseudo-class matches a focused element in these situations only, **allowing authors to change the appearance of the focus indicator without changing when a focus indicator appears.**



Heuristics

*If the element which **supports keyboard input**, indicate focus.*



Basically any `<input>`,
`<textarea>` or
`contenteditable`
element.

This is a text area.

What happens with
`<select>` or
`<input type="date">`
on **mobile**?

13/11/2021 

*If the user **interacts with the page via keyboard**,
indicate focus.*



Everyone agrees here,
keyboard navigation
should always show a
focus ring.

foo

bar

baz

*If the user **interacts** with the page via a pointing device, do **not** indicate focus.*



This is the key part.

When you click on a

`<button>` or

`<div tabindex=0>` you

do **not want to see a focus ring**, only when you tab navigate.

foo

bar

baz

Default UA Stylesheet

*User agents should also use `:focus-visible` to specify the **default focus style**, so that authors using `:focus-visible` will not also need to disable the default `:focus` style.*



Lea Verou 
@LeaVerou



I'm gonna start blanket adding the following rule to all my stylesheets:

```
:focus:not(:focus-visible) {  
  outline: none }
```

Gets rid of the annoying outline for mouse users but preserves it for keyboard users, and is ignored by browsers that don't support `:focus-visible`.

10:12 pm · 28 Sep 2018 · Twitter Web Client

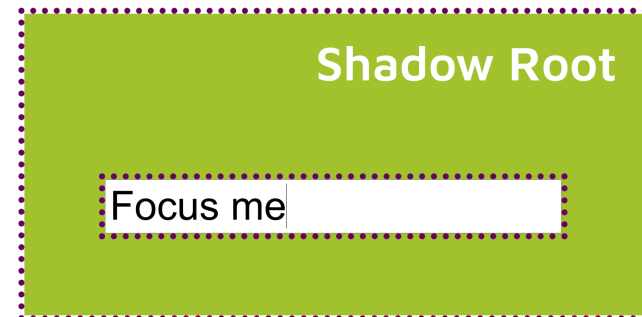
741 Retweets 51 Quote Tweets 3,704 Likes

<https://twitter.com/LeaVerou/status/104576827975366656>

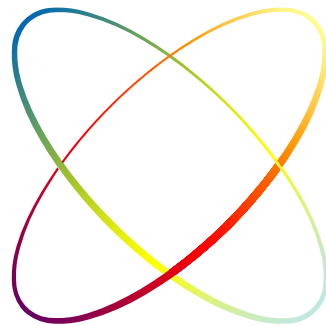
`:-internal-direct-focus`

WebKit uses `:-internal-direct-focus` in the default UA stylesheet (**not web exposed**).

It uses this to **avoid showing a double focus ring**, when you focus something in a Shadow DOM tree.



Open Prioritization



An experiment in crowd-funding prioritization of new feature implementations for web browsers.



<https://www.igalia.com/open-prioritization/>

:focus-visible

:focus-visible in WebKit/Safari

The *:focus-visible* pseudo-class matches only in heuristic cases where a native indicator would be shown, thus making it possible to have good style *and* retain good accessibility.

Status: Shipped by default in Chrome and Edge 86 in October 2020 : Planned for shipping by default in Firefox 85. *Being crowdfunded by Igalia as the Open Prioritization crowd choice.*



[Learn more +](#)

[Donate >](#)






















<https://opencollective.com/focus-visible-in-webkit>

75 Contributors

:focus-visible in WebKit is all of us

Our contributors 75

Thank you for supporting :focus-visible in WebKit.

 AMP Project Donation \$10,000 USD	 Kifr SpA Donation \$3,000 USD	 Tyler Wilcock Donation \$150 USD	 Dave Rupert Donation \$100 USD	 Rick Byers Donation \$100 USD	 Adrian Roselli Donation \$100 USD	 Dimitrios Gra... Donation \$50 USD
 Anonymous User Donation \$10,000 USD	 Daniel Ehrenberg Donation \$1,000 USD	 Hugo Locurcio Donation \$101 USD <small>**focus-visible:after { color: green; font- wel..."</small>	 Vadim Makeev Donation \$100 USD	 Yuhei Yasuda Donation \$100 USD	 Arturo Silva Donation \$60 USD	 Miriam Suzanne Donation \$50 USD
 sipgate GmbH Donation \$3,500 USD	 Leniolabs_ Donation \$1,000 USD	 Adam Argyle Donation \$100 USD	 Sergey Rubanov Donation \$100 USD	 Annie Sullivan Donation \$100 USD	 tomhodgins Donation \$50 USD	 Lajja Shah Donation \$50 USD

Work Done

Implementation

- From January to May 2021.
- Monthly reports on my blog:
<https://blogs.igalia.com/mrego/>.
- WebKit implementation ready behind a runtime flag (not shipped yet).
- Passing all tests, some slight differences depending on the platform.



Develop > Experimental Features > :focus-visible pseudo-class

WebKit

27 patches

The logo for WebKit, featuring the text "WebKit" in white, bold, sans-serif font centered within a blue rounded rectangle.

WebKit

27 patches

The logo for WPT (Web Platform Tests), featuring the text "WPT" in black, bold, sans-serif font centered within an orange rounded rectangle.

WPT

26 patches

WebKit

27 patches

WPT

26 patches

Chromium

9 patches

WebKit

27 patches

WPT

26 patches

Chromium

9 patches

Specs

3 patches

UA Stylesheet Status

! January 2021: Nobody was using `:focus-visible` in the default UA stylesheet.

✓ May 2021: Chromium and Firefox started using `:focus-visible` in the default UA stylesheet.

Web Platform Tests (WPT)

- The tests were not in a good shape.
- Fixed tests, added new tests, ended up with **~40 tests**.
- Tests use **WebDriver** (added missing bits in WebKit).

Path	 Chrome 97 Linux 20.04 d9da580 Nov 4, 2021	 Edge 97 Windows 10.0 d9da580 Nov 4, 2021	 Firefox 96 Linux 20.04 d9da580 Nov 4, 2021	 Safari 125 preview macOS 10.15 d9da580 Nov 4, 2021
focus-visible-001.html	2 / 2	2 / 2	2 / 2	1 / 2 
focus-visible-002.html	15 / 15	15 / 15	15 / 15 	1 / 15 
focus-visible-003.html	13 / 13	13 / 13	13 / 13	0 / 13 
focus-visible-004.html	11 / 11	11 / 11	11 / 11	0 / 11 
focus-visible-005.html	2 / 2	2 / 2	2 / 2 	1 / 2 
focus-visible-006.html	2 / 2	2 / 2	2 / 2	1 / 2 
focus-visible-007.html	2 / 2 	2 / 2	1 / 2 	1 / 2 

<https://wpt.fyi/results/css/selectors/>

Next Steps

Goal

Ship : **focus-visible** in WebKit (Safari)

Platform Conventions

- **Buttons are not click focusable** on Mac platforms.
- Thus buttons are not click focusable in Safari.
- Apple wants to be sure that `:focus-visible` changes are aligned with the platform conventions.

<https://webkit.org/b/22261> (2008)

Examples

- Apple engineers were reluctant to hide the focus ring on click on `<div tabindex=0>`.
- Perhaps one possibility would be to hide the focus ring on click on `<div tabindex=0 role=button>`.
- How this affects user interaction (e.g. scrolling with spacebar) if focus ring is not visible?

<https://github.com/WICG/focus-visible/issues/257>

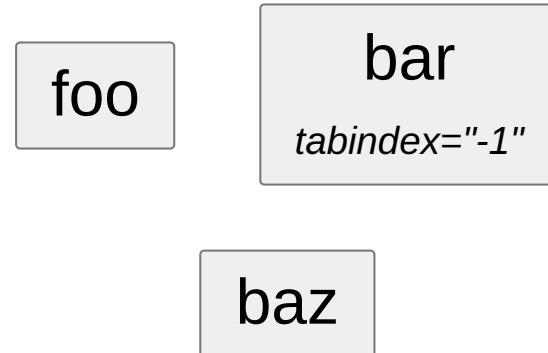
Status

- Apple showed interested on `:focus-visible` at the **WebKit Contributors Meeting** (Sep 2021).
- Conversations are still ongoing, latest updates have been positive.
- **Interoperability** might weight in.

Proposal?

- A **new HTML attribute** to identify an element that is **keyboard focusable but not mouse focusable**.
- This will allow to mimic Mac platform conventions regarding focus.

`tabindex="-1"` already
allows to make an
element **not keyboard
focusable**.



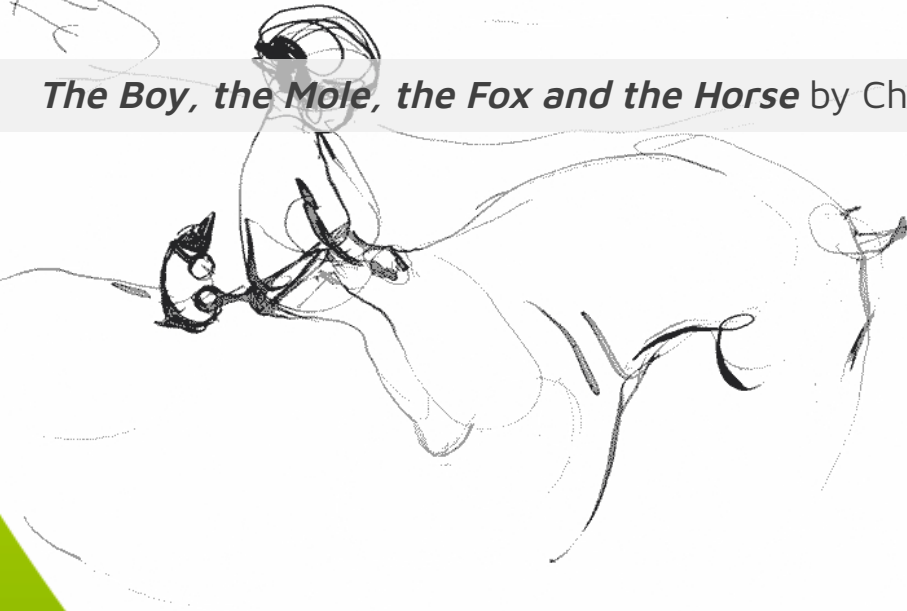
Today is not possible to make an element **keyboard focusable but not mouse focusable.**

button

We have such a long way to go," sighed the boy.

"Yes, but look how far we've come," said the horse.

The Boy, the Mole, the Fox and the Horse by Charlie Mackesy



Thanks!

Email: rego@igalia.com

Twitter: [@regocas](https://twitter.com/regocas)



