

THE RULES OF ARIA

Hidde de Vries, 16-04-2018, The Hague

hiddedevries.nl

moz://a

Who are you?

And what's your favourite
HTML element?

What you'll need

What you'll need

Example code

github.com/hidde/workshop-aria-rules

What you'll need

Web browser with
accessibility tools

Firefox — Nightly Notes (61.0a1) — Mozilla

Firefox — Nightly Notes (61.0a1) +

Mozilla Corporation (US) https://www.mozilla.org/firefox/channel/desktop/

MDN » FIREFOX PRE-RELEASE DOWNLOADS

Firefox Nightly

See what landed recently in Firefox Nightly!

Release Notes tell you what's new in Firefox. As always, we welcome your [feedback](#). You can also [file a bug in Bugzilla](#) or see the [system requirements](#) of this release.

DESKTOP ANDROID IOS OTHER RELEASES

61.0a1

Firefox Nightly
March 12, 2018

Version 61.0a1, first offered to Nightly channel users on March 12, 2018

Firefox Nightly gets updated every day and as a consequence, the release notes for the Nightly channel are updated continuously to reflect features that have reached sufficient maturity to benefit from community feedback and bug reports. Features listed here may or may not make a final release of Firefox.

In addition to these release notes, you can follow ongoing development on our [@FirefoxNightly](#) Twitter account as well as read our [Nightly Blog](#).

<https://www.mozilla.org/firefox/channel/desktop/>

Background

Web accessibility is
about making your site
or app available for
more people

A photograph of a street scene. On the left, there's a large planter with green bushes. In the center, a sidewalk made of grey concrete pavers has a tactile paving strip running along its edge. This strip consists of raised, rectangular tiles. To the right of the sidewalk is a red brick-paved area. In the background, there are several buildings, including a red brick building on the far left and a white building on the right. A few cars are parked on the street, and some people are walking on the sidewalk.

Tactile paving



Elevator

Digital accessibility

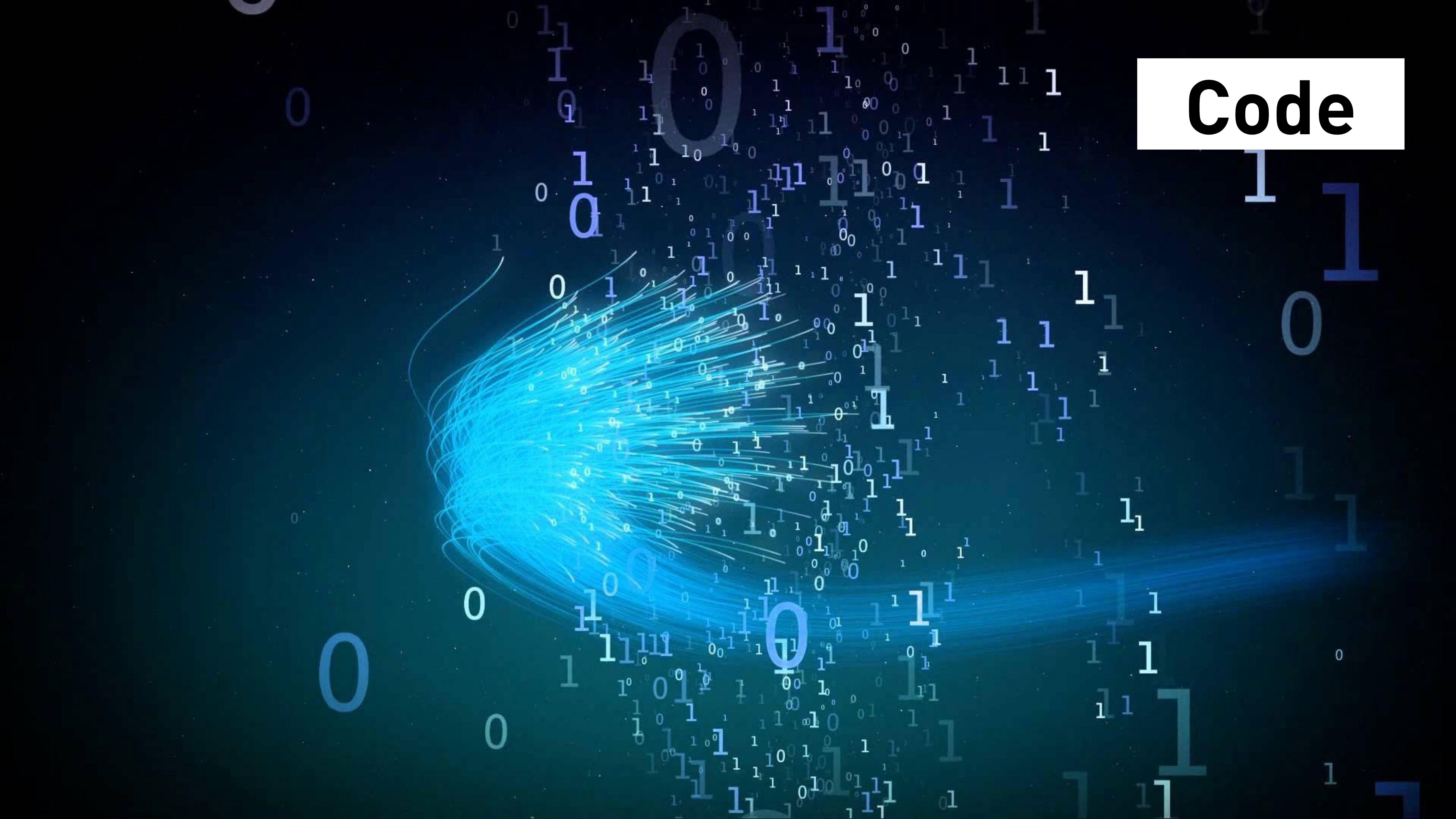
The background of the image consists of numerous overlapping circles of various sizes and colors, creating a vibrant and dynamic visual effect. The colors transition through a full spectrum, including red, orange, yellow, green, blue, and purple. The circles are semi-transparent, allowing the ones behind them to be visible, which adds depth to the composition.

Colour

Language

THE OXFORD
ENGLISH
DICTIONARY

IE OXFORD
ENGLISH
CTIONARY



Code

Code

Assistive Technologies (AT)



JAWS for Windows



text-to-speech
screen magnifiers
alternate pointing devices

HTML
CSS
JavaScript

HTML

describes what things are

CSS

describes what things look like

JavaScript

can change things



Tim Berners-Lee
Web Developer

THIS IS FOR EVERYONE

“This is for everyone”
is built into
web standards

Accessibility
is built into
web standards

Text FTW

selectable

copyable

screenreader-announcable

The web is mostly text

enlargeable

Google Translate-able

adaptable

braille convertible

The web lets us have
accessibility automatically



Producten online bestellen | [A](#) +

< > C https://www.ah.nl/producten

Q Producten Bonus Allerhande box Recepten Winkels A

	Aardappel, groente, fruit		Verse kant-en-klaar maaltijden, salades
	Zuivel, eieren		Bakkerij
	Wijn		Bier, sterke drank, aperitieven
	Pasta		



Ceci n'est pas une pipe.

“

And yet, could you stuff my pipe? No, it's just a representation, is it not? So if I had written on my picture ‘This is a pipe’, I'd have been lying!

René Magritte

Ceci n'est pas une pomme



< Tweets Detail ⬤

 Haanstra les
iet persé de
irators' 700

 **sheila sitalsing** @sheilasitalsing
Dit is al de achtste in de afgelopen week in de
@volkskrant. Wat is er gebeurd met per se?
pic.twitter.com/S0FukcRLDm

94 Likes 12 Retweets
21/08/2017 at 12:54 via Twitter for Android

← ↗ ❤️ ⬤ ⚙️

 **Wim Knol** @WimKnol
@sheilasitalsing @volkskrant 't Is een schande. Eén
troost: je hoeft het niet per se zo te spellen 7d

Ceci n'est pas
un texte

< Tweets Detail

 Haanstra le
iet persé de
rrorors' Zoo

 **sheila sitalsing** @sheilasitalsing
Dit is al de achtste in de afgelopen week in de
@volkskrant. Wat is er gebeurd met per se?
pic.twitter.com/S0FukcRLDm

94 Likes 12 Retweets

21/08/2017 at 12:54 via Twitter for Android



 **Wim Knol** @WimKnol

Yay, text!

Six ways to make your
website more accessible

1

Structure your
document

Have a sensible structure

Look at your page
with CSS turned off

h1

h2

h3

h4

h5

h6

Avoid skipping
heading levels



Headings are much more than a big bold title, they provide a solid structure to the webpage. Think of headings as an outline of your webpage.

<https://www.nomensa.com/blog/2017/how-structure-headings-web-accessibility>

People may consume your
page in a different way
than you anticipated

[Performance](#) > [Services data](#)

Services data

114 services

Transactions per year

1.56bn

total for [94 services out of 114](#)

Digital take-up

90.2%

weighted average for [70 services out of 114](#)

weighted average for [9 services out of 114](#)

Headings

- 1: Services data
- 2: Number of services
- 2: Filter services by keyword or department
- 2: Totals and averages for filtered services
- 3: Transactions per year
- 3: Annual cost
- 3: Cost per transaction
- 3: Digital take-up
- 3: User satisfaction
- 3: Completion rate
- 2: List of services
- 2: Services and information
- 2: Departments and policy
- 2: Support links

weighted average for [9 services out of 114](#)

Make it easy to
skip sections

Let users skip sections

```
1 <a href="#nav">To navigation</a>
2 <a href="#main">To main content</a>
```

Exercise 1

Make sure the page has
a sensible structure.



Use HTML tags as
they were designed

Look beyond
divs and spans

Save

<div>Save</div>

don't do this

Save

Save

don't do this

<a>

vs

<button>

`<a>` goes elsewhere

vs

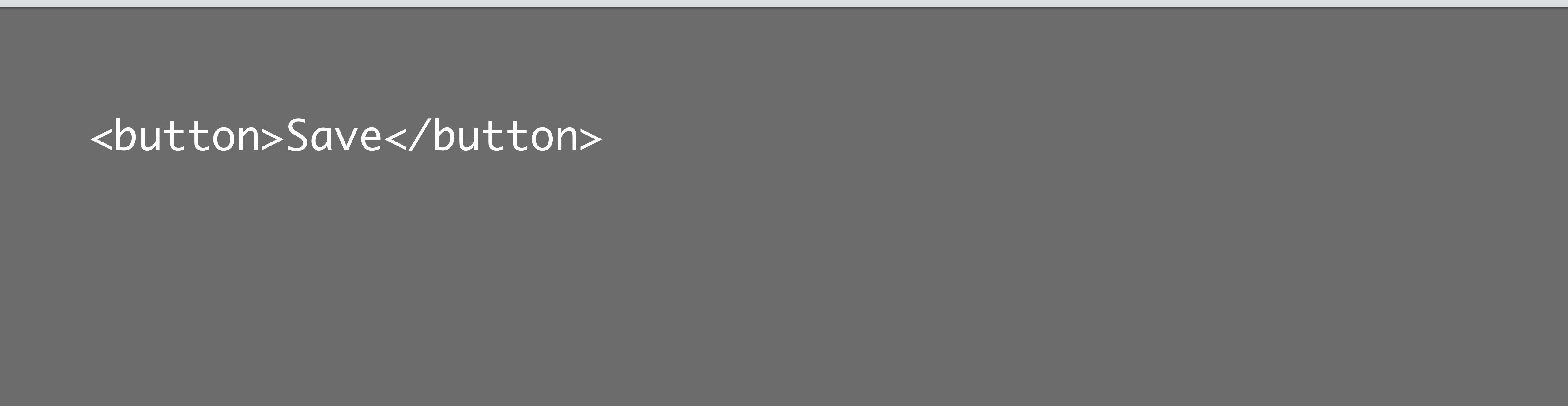
`<button>` does something

Save

< a href="#">Save</ a>

don't do this

If your href is empty,
`<a>` is likely not the
tag you should be using



Save

<button>Save</button>



Save

```
<button>Save</button>
```

Complementary benefits:

- * can be accessed with TAB
- * can be pressed with ENTER
- * is read out as 'button'
- * receives the correct cursor

<caption>

vs

<legend>

<caption> title of a table

vs

<legend> title of a group
of form fields

Financial results 2017

Fixed assets	210,000
Current Assets	4,532
Creditors	23,003
Capital and reserves	50,500

```
<table>
<caption>Financial results 2017</caption>
<tbody>...</tbody>
</table>
```

Personal information

Name:

Address:

City:

```
<form>
<fieldset>
  <legend>Personal information</legend> ...
</fieldset>
</form>
```

< i >

<i> change in tone
of voice
technical terms

(not for icons,
sorry Bootstrap)

Alex and Martina left for France in order to open a chambre d'hôte.



Alex and Martina left for France in order to open a *chambre d'hôtes*.

The term *box formatting context* is defined above.

<p>The term *box formatting context* is defined above.</p>

Check
the spec:

developers.whatwg.org



HTML: The Living Standard

Developer's Edition — Last Updated 18 September 2017

TABLE OF CONTENTS

- 1 [Introduction](#)
 - 1.1 [Is this HTML5?](#)
 - 1.2 [Background](#)
 - 1.3 [Audience](#)
 - 1.4 [Scope](#)
 - 1.5 [History](#)
 - 1.6 [Design notes](#)
 - 1.7 [HTML vs XML syntax](#)
 - 1.8 [Structure of this specification](#)

[Privacy concerns](#)
[Quick introduction to HTML](#)
[Performance requirements for authors](#)

- 1.12 [Suggested reading](#)

Search. Press ↵

If there isn't a suitable HTML tag,
`<div>` or `` are great

Exercise 2

**Improve the HTML tags
that are being used.**



Specify the language
of your content

```
<html lang="nl">
```


Alex and Martina left for France in order to open a chambre d'hôte.



Alex and Martina left for France in order to open a *chambre d'hôtes*.

Exercise 3

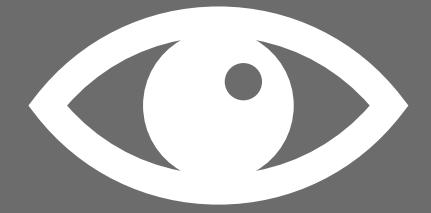
Make sure language is declared where appropriate.



Take care when
hiding content

If you are hiding content,
decide from which
people you want to hide

Users we could hide content from:



visual

e.g. those who can
see the page



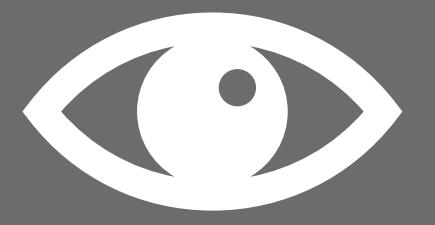
non-visual

e.g. users of screenreaders,
Google Translate, braille displays



all

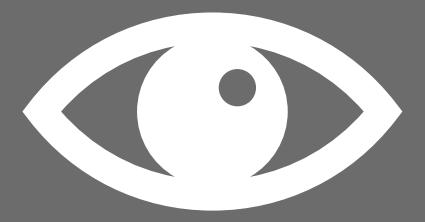
visual + non-visual



visual

e.g. those who can
see the page

Contextual cues to
supplement visual cues.

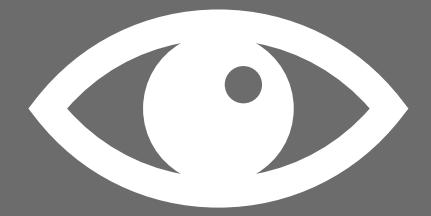


visual

e.g. those who can
see the page

“[visually hiding] can resolve some
of the tension between the
demands of accessibility and the
demands of visual design”

<http://webaim.org/techniques/css/invisiblecontent/>

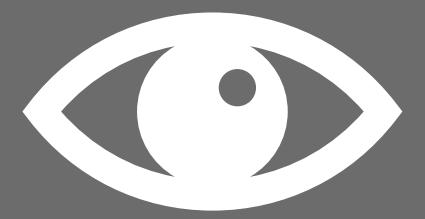


visual

e.g. those who can
see the page

```
<span class="visually-hidden">  
  Only show me to non-visual users  
</span>
```

```
.visually-hidden {  
  position: absolute;  
  left: -9999em;  
}
```



visual

e.g. those who can
see the page

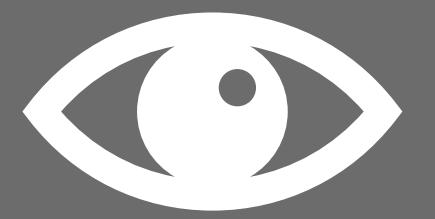
About us

Products

Projects

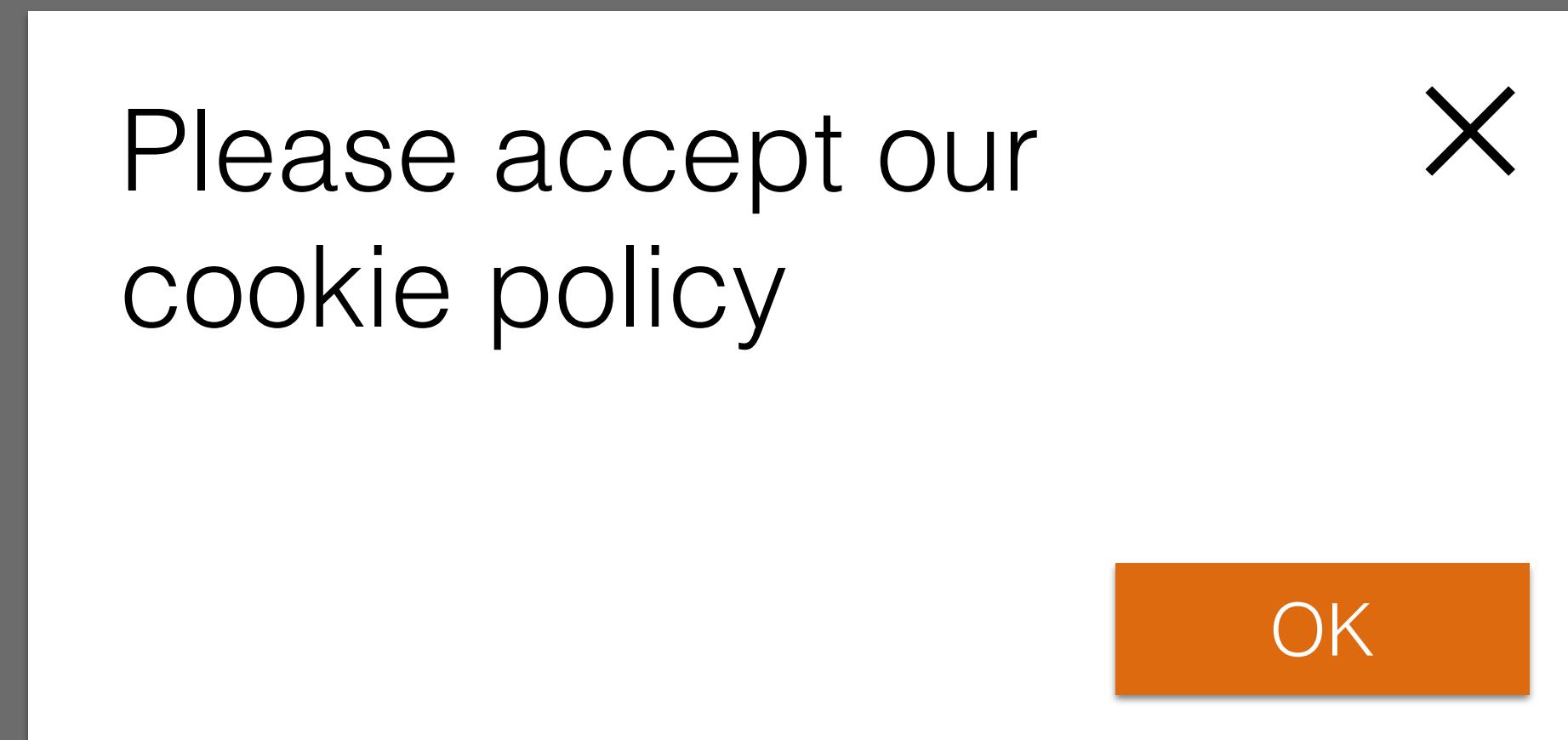
Contact

```
1 <nav>
2   ...<h2 class="visually-hidden">Navigation</h2>
3   ...<ul>
4     ...<li>About us</li>
5     ...<li>Products</li>
6     ...<li>Projects</li>
7     ...<li>Contact</li>
8   ...</ul>
9 </nav>
```



visual

e.g. those who can
see the page



```
1 <button type="button">Close</button>
```

Visual hiding gone wrong

Ik wil graag...

zorg declareren

rekeningnummer wijzigen

adres wijzigen

schade melden

verzekering opzeggen

Over Univé

over ons

actueel nieuws

vacatures

nieuwsbrief

blog

affiliate

Vind een Univé-winkel

Kom gerust bij ons langs.

Postcode / plaats



Klantenservice

Neem gerust contact met ons op.



You are currently on a link. To click this link, press Caps Lock-Space.

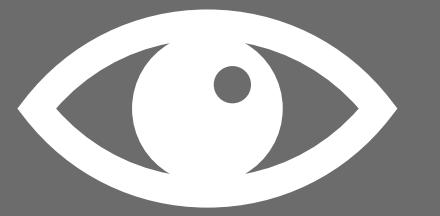
Suggested solution: add visually hidden text to button

Visual hiding gone wrong

Suggested solution: add visually hidden text to button

```
1 <button type="button">  
2 ...<span class="visually-hidden">Zoek</span>  
3 </button>
```

```
1 <input type="submit" value="Zoek">
```

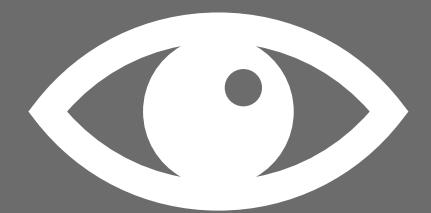


visual

e.g. those who can
see the page

First name *

```
1 <span class="required">required</span>
```



visual

e.g. those who can
see the page

```
<span class="visually-hidden">  
  Only show me to non-visual users  
</span>
```

```
.visually-hidden {  
  position: absolute;  
  clip: rect(1px, 1px, 1px, 1px);  
}
```



non-visual

e.g. users of screenreaders,
Google Translate, braille displays

Make content invisible
for users of assistive
technologies only.



non-visual

e.g. users of screenreaders,
Google Translate, braille displays

```
<span aria-hidden>  
  Only show me to visual users  
</span>
```

Note: do not use on focusable elements.



non-visual

e.g. users of screenreaders,
Google Translate, braille displays



Twitter



aria-hidden



all

visual + non-visual

If you want nobody to
see the content (yet).

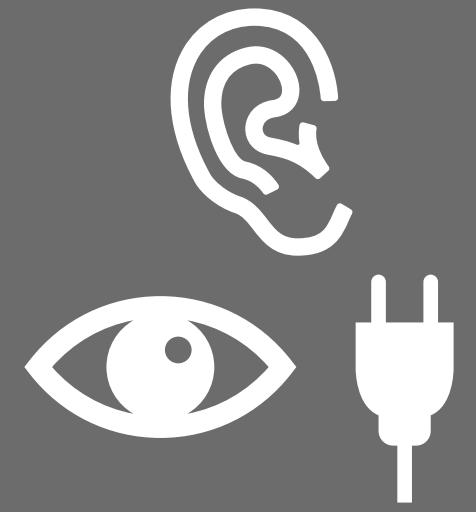


all

visual + non-visual

```
<div class="hidden">  
  I am invisible  
</div>
```

```
.hidden {  
  visibility: hidden;  
}
```



all

visual + non-visual

```
<div class="hidden">  
  I am invisible  
</div>
```

```
.hidden {  
  display: none;  
}
```



all

visual + non-visual

```
<div hidden>  
  I am invisible  
</div>
```

```
[hidden] {  
  display: none; /* UA default */  
}
```

[hidden] has great browser support

hidden attribute [- LS](#)

The **hidden** attribute may be applied to any element, and effectively hides elements similar to `display: none` in CSS.

Current aligned Usage relative Date relative Show all

IE	Edge *	Firefox	Chrome	Safari	Opera	iOS Safari *	Opera Mini *	Android Browser *	Chrome for Android	Samsung Internet
		45	49			9.2				
		52	57	9.1	43	9.3				
		14	53	58	10	44	10.2			4
11	15	54	59	10.1	45	10.3	all	56	59	5
	16	55	60	11	46	11				
		56	61	TP	47					
		57	62							

Notes Known issues (0) Resources (2) Feedback

The **hidden** state can be easily overridden with a CSS `display` property set to anything other than `none`.



all

visual + non-visual

Not exposed to AT
Not rendered
Invisible to text search

Exercise 4

**Improve hiding for
screen readers.**



Offer text alternatives

Images that are part of
the content

Would you get less
information if the image
wasn't there?

Would you get less information if the image wasn't there?

This message contains remote content. [Load Remote Content](#)

★ PostNL
Jouw Coolblue-pakket is onderweg
To: coolblue@hiddedevries.nl

Pakketje. Neem me mee. | Bekijk [hier](#) de webversie.
Coolblue. Alles voor een glimlach.

Voor 23.59 uur besteld, morgen **gratis** bezorgd [5 échte winkels](#)

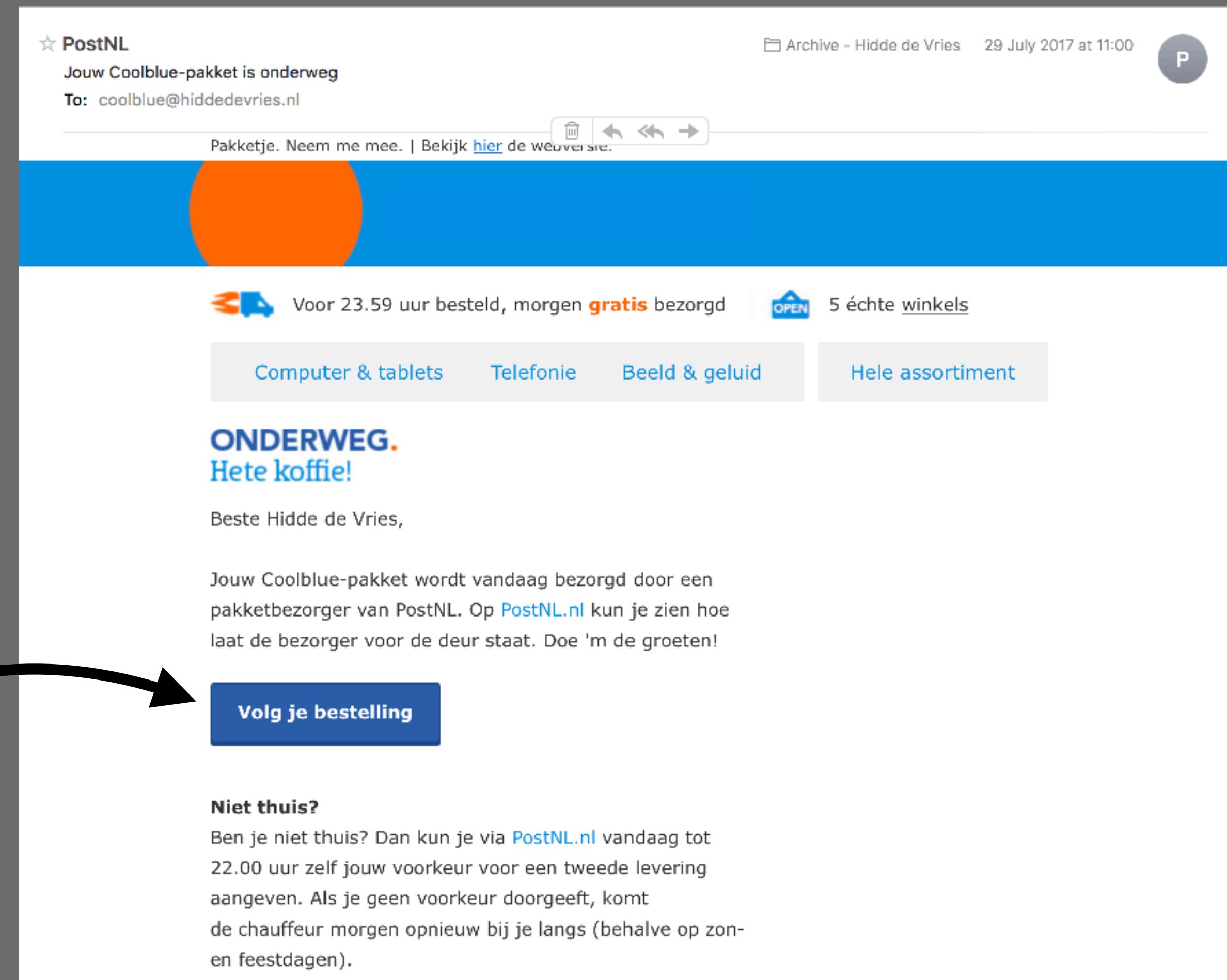
[Computer & tablets](#) [Telefonie](#) [Beeld & geluid](#) [Hele assortiment](#)

Beste Hidde de Vries,

Jouw Coolblue-pakket wordt vandaag bezorgd door een pakketbezorger van PostNL. Op [PostNL.nl](#) kun je zien hoe laat de bezorger voor de deur staat. Doe 'm de groeten!

[Niet thuis?](#)
Ben je niet thuis? Dan kun je via [PostNL.nl](#) vandaag tot 22.00 uur zelf jouw voorkeur voor een tweede levering aangeven. Als je geen voorkeur doorgeeft, komt de chauffeur morgen opnieuw bij je langs (behalve op zon-

Would you get less information if the image wasn't there?



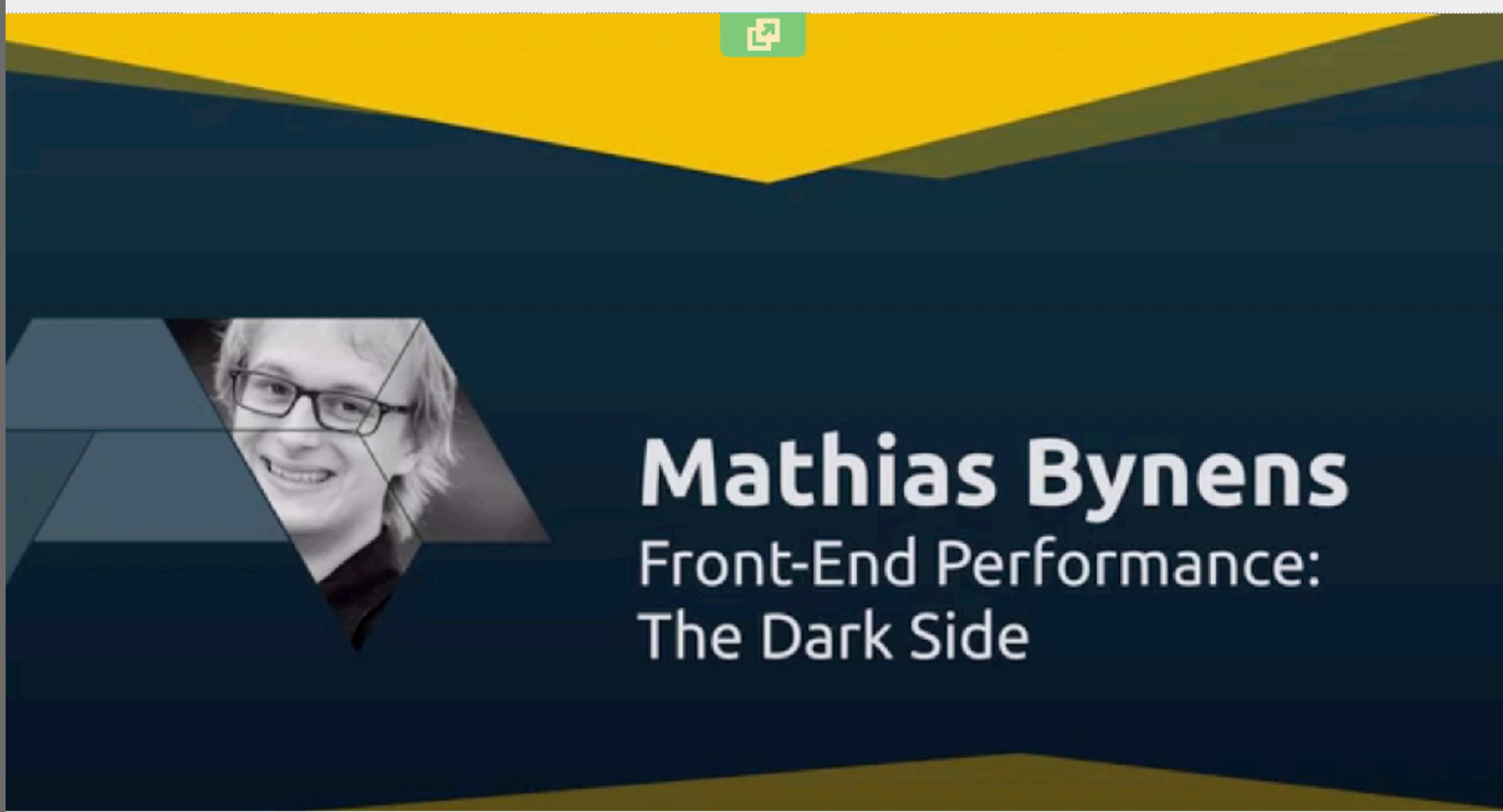
"Track your order"

```

```

Captions / transcriptions
with videos

Front-End Performance: The Dark Side by Mathias Bynens



*This is the third talk in [a set of three talks on Technical Performance](#) delivered on April 1, 2016 at
Fronteers Spring Conference in Amsterdam*

- * [Watch high quality video on Vimeo](#)
- * [Download audio \(MP3, 23MB\)](#)

In security-sensitive situations, performance can actually be a bug rather than a feature. This

```
<video src="lecture.mp4" controls>
  <track src="lecture.vtt"></track>
</video>
```

Transcriptions with audio
(e.g. podcasts)

The Good
The Bad
The Interesting

Robert Jan Verkade

in gesprek met Vasilis van Gemert



[Lees de transcriptie](#)

Robert Jan Verkade is samen met [Marrije Schaake](#) oprichter van ontwerpbureau Eend. Met Robert Jan hebben we het over het samenspel tussen de mensen die een website moeten gebruiken, de mensen die de website moeten beheren en de mensen die hem moeten maken. Die moeten allemaal blij zijn. Dit doet mij denken aan de definitie van kwaliteit die [Peter Bilak](#) hanteert voor een goed product. Hoe dat precies moet hangt natuurlijk van nogal veel factoren af: soort organisatie, budget, technische *legacy*.

“*Eerst zeggen we dit is allemaal niet zo heel goed. Dan bieden we oplossingen aan, en dan laten we daarna ook zien dat mensen er ineens stukken beter mee kunnen gaan werken. Dus dan bieden we toch nog weer hoop*

We hebben het ook over veranderen, dat dat moeilijk is. Voor personen, maar ook voor organisaties. En we vragen ons af hoe we als designers iets meer buiten onze bubbel kunnen komen. Dat is namelijk belangrijk: je moet begrijpen voor wie je ontwerpt, en dat er mensen zijn die écht anders dan jijzelf zijn. En we hebben het ook nog heel serieus over lol. En we moeten toch ook nog een beetje grinniken over een krankzinnig kunstwerk met QR-codes.

```
1 <audio·src="podcast.mp3"·controls></audio>
2 <a·href="#transcription">Transcription</a>
3 <h3·id="transcription">Transcription</h3>
4 <p><b>Person·1:</b>·Hello·and·welcome</p>
5 <p><b>Person·2</b>·Thanks!</p>
```

Avoid redundancy

follow us



Follow us

- Follow us on Facebook
- Follow us on Twitter
- Follow us on Instagram
- Follow us on LinkedIn
- Follow us on YouTube

follow us



Follow us

- Facebook
- Twitter
- Instagram
- LinkedIn
- YouTube

How to Design Great Alt Text: An Introduction

<https://www.deque.com/blog/great-alt-text-introduction/>

Takeaways

- Informative images vs decorative images
- Balance between providing too little information and information overload
- Always have alt text if image is in link or button, if image contains text or logos

Exercise 5

Add text alternatives where they are missing.



Manage your focus

Let us see where
the focus is



Prinsjesdag



© ANP

Actueel

Nieuwsberichten van de Rijksoverheid.

Regering

Welke ministers en staatssecretarissen vormen samen het kabinet? Wat doet het

Onderwerpen

Overzicht van alle onderwerpen waar de Rijksoverheid beleid voor maakt.

Documenten

Overzicht van publicaties van de Rijksoverheid, zoals Kamerbrieven en

Ministeries

Informatie over de ministeries en met welke onderwerpen ze zich bezighouden.

Doe mee

Denk en praat mee over het maken of uitvoeren van beleid.

Exercise 6

Make focus visible

On focus
management

<button>

<a href>

Interactive elements

<input>

<details>

<select>



Elements

Console

Sources

»



top



Filter

Default levels

> document.activeElement|

Move focus with
JavaScript

element.focus()

Trap focus in an element

Trap focus in an element

- Within a modal window
- Within a modal navigation
- In a full screen alert

Trap focus in
an element

```
modalWindow.show();  
modalWindow.trapFocus();
```

How to trap focus in element (1/2)

When user presses TAB

- If there is a next focusable child in this element, give it focus
- If this was the element's last focusable child, give focus to the first focusable child

How to trap focus in element (2/2)

When user presses SHIFT-TAB

- If there is a previous focusable child in this element, give it focus
- If this was the element's first focusable element, give focus to the last focusable element

Focusable
elements

Interactive elements +
elements with tabindex

Exercise 7

Show a modal overlay when user presses “Get a ticket”

1 Structure

2 Appropriate
HTML tags

3 lang

4 Take care when
hiding content

5 Text
alternatives

6 Focus

UNICA

ARIA 101

HTML semantics are
essential for accessibility

ARIA polyfills HTML semantics

It adds semantics for “Rich Internet Applications”

What sort of widget is this?

What is this thing in the page structure?

What's the state of this widget?

Will this part of the page be updated?

Roles, names, states

role = alert

role = link

role = button

role = checkbox

role = tab

role = radio

role = dialog

role = progressbar

role = slider

role = tooltip

1 <p>The Blue Book was dictated between
1933 and 1934, and contains certain themes unaddressed in
Wittgenstein's later works, including deliberations on
thinking as operating with signs. An early conception of
what would later become known as <a href="#language-games"
>language games is present in the text, which
represents the first period of Wittgenstein's thought
after 1932, a method of linguistic analysis which would
later become ordinary language philosophy.</p>

1 <p>The Blue Book was dictated between 1933 and 1934, and contains certain themes unaddressed in Wittgenstein's later works, including deliberations on thinking as operating with signs. An early conception of what would later become known as language games is present in the text, which represents the first period of Wittgenstein's thought after 1932, a method of linguistic analysis which would later become ordinary language philosophy.</p>

role = link

name = language games

state = n/a

When you send your
markup to the browser,
it generates two trees
(amongst others)

DOM tree

```
[endif]-->
<!--[if IE 8]><html class="no-js lt-ie10 lt-ie9" lang="nl"><![endif]-->
<!--[if (gt IE 8) & (!IEMobile)]><html class="no-js lt-ie10 ie9-desktop"
lang="nl"><![endif]-->
<!--[if (gt IE 8) & (IEMobile)]><html class="no-js lt-ie10 ie9-mobile"
lang="nl"><![endif]-->
<!--[if !IE]><!-->
<html class="js applicationcache audio canvas hashchange history postmessage
no-touchevents video cssanimations backgroundsize bgsizecover borderradius
boxsizing csscalc csscolumns csscolumns-width csscolumns-span csscolumns-fill
csscolumns-gap csscolumns-rule csscolumns-rulecolor csscolumns-rulestyle
csscolumns-rulewidth csscolumns-breakbefore csscolumns-breakafter csscolumns-
breakinside flexbox flexboxlegacy fontface cssgradients rgba csstransforms
csstransitions localstorage" lang="nl">
  ►#shadow-root (open)
    <!--<![endif]-->
  ►<head>...</head>
  ▼<body class="homepage cookiewall" data-comscore='{"name": "track.click.homepage"}' style="position: relative; margin-top: 474px;">
    ►<div id="npo_cc_notification" style="top: -474px;">...</div>
    ►<header id="nav" class="nav-wrapper">...</header>
    ▼<main id="content" role="main">
      ::before
      ... ▼<section id="topstories" class="js-topstories js-topstories-
interactive" data-comscore='{"nos_origin": "topstory"}'> == $0
        <h2 class="vh">Topstories</h2>
        ►<div class="topstories_wrapper topstories-twostories">...</div>
      </section>
      ►<div id="main">...</div>
      ►<section id="most_viewed_videos">...</section>
      ►<section id="editors_picks">...</section>
      ►<section id="nieuws_in_beeld">...</section>
      ►<section id="websites">...</section>
      ►<section id="categories">...</section>
      ::after
    </main>
```

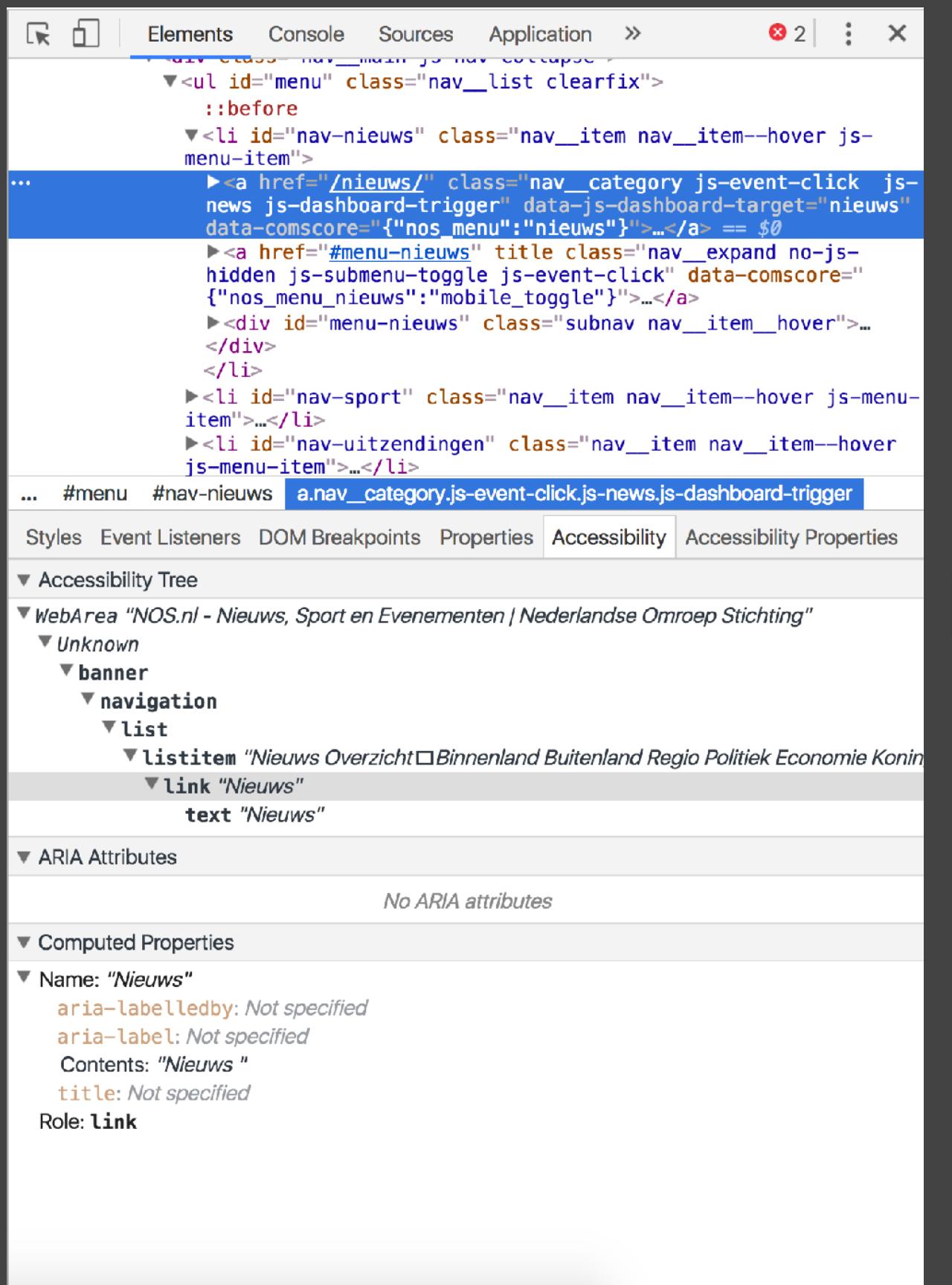
html body main#content

section#topstories.js-topstories.js-topstories-interactive

Accessibility tree

Role	Name	Properties
▶ listitem:	"Blog"	name: "Twitter (@mozilla)"
▶ listitem:	"Contact Us"	role: "link"
▼ listitem:	"Donate"	actions: [...]
statictext:	""	value: "https://twitter.com/mozilla/about/contribute"
▶ link:	"Donate"	DOMNode: a.twitter
▼ listitem:	"Contribute to this site"	description: ""
statictext:	""	help: ""
▶ link:	"Contribute to this site"	keyboardShortcut: ""
▼ listitem:	"Source code for this page"	childCount: 2
statictext:	""	indexInParent: 0
▶ link:	"Source code for this page"	states: [...]
▼ listitem:	"Twitter (@mozilla) Facebook (Mozilla) Instagram (@mozilla)"	attributes: {...}
statictext:	""	
▼ list:	""	
▼ listitem:	"Twitter (@mozilla)"	
▶ link:	"Twitter (@mozilla)"	
text leaf:	""	
▼ listitem:	"Facebook (Mozilla)"	
▶ link:	"Facebook (Mozilla)"	
text leaf:	""	
▼ listitem:	"Instagram (@mozilla)"	
text leaf:	""	
▼ section:	""	
▼ heading:	"Firefox"	
▶ link:	"Firefox"	
text leaf:	""	
▼ list:	""	
▼ listitem:	"Download Firefox"	
statictext:	""	
▶ link:	"Download Firefox"	
▶ listitem:	"Desktop"	
▶ listitem:	"Mobile"	

Accessibility tree



A screenshot of a browser's developer tools showing the Accessibility tree. The tree structure includes:

- Elements: Shows the overall page structure.
- Console: Shows developer console output.
- Sources: Shows the source code of the page.
- Application: Shows application-specific data like network requests.
- Accessibility Tree: Shows the detailed accessibility tree for the current view, including sections like WebArea, Unknown, banner, navigation, and ARIA Attributes.
- Computed Properties: Shows properties like Name, Role, and Aria-label.
- Styles: Shows CSS styles applied to elements.
- Event Listeners: Shows event listeners attached to elements.
- DOM Breakpoints: Shows where the DOM has been broken for debugging.
- Properties: Shows element properties.
- Accessibility: Shows accessibility-related properties.
- Accessibility Properties: Shows accessibility-specific properties.

The tree highlights specific elements like the navigation menu and its items, showing their roles and labels.

Platform APIs



Microsoft Active Accessibility
Microsoft User Interface Automation
MSAA



Mac OS X Accessibility Protocol



Linux/Unix Accessibility Toolkit
IAccessible2



JAWS for Windows

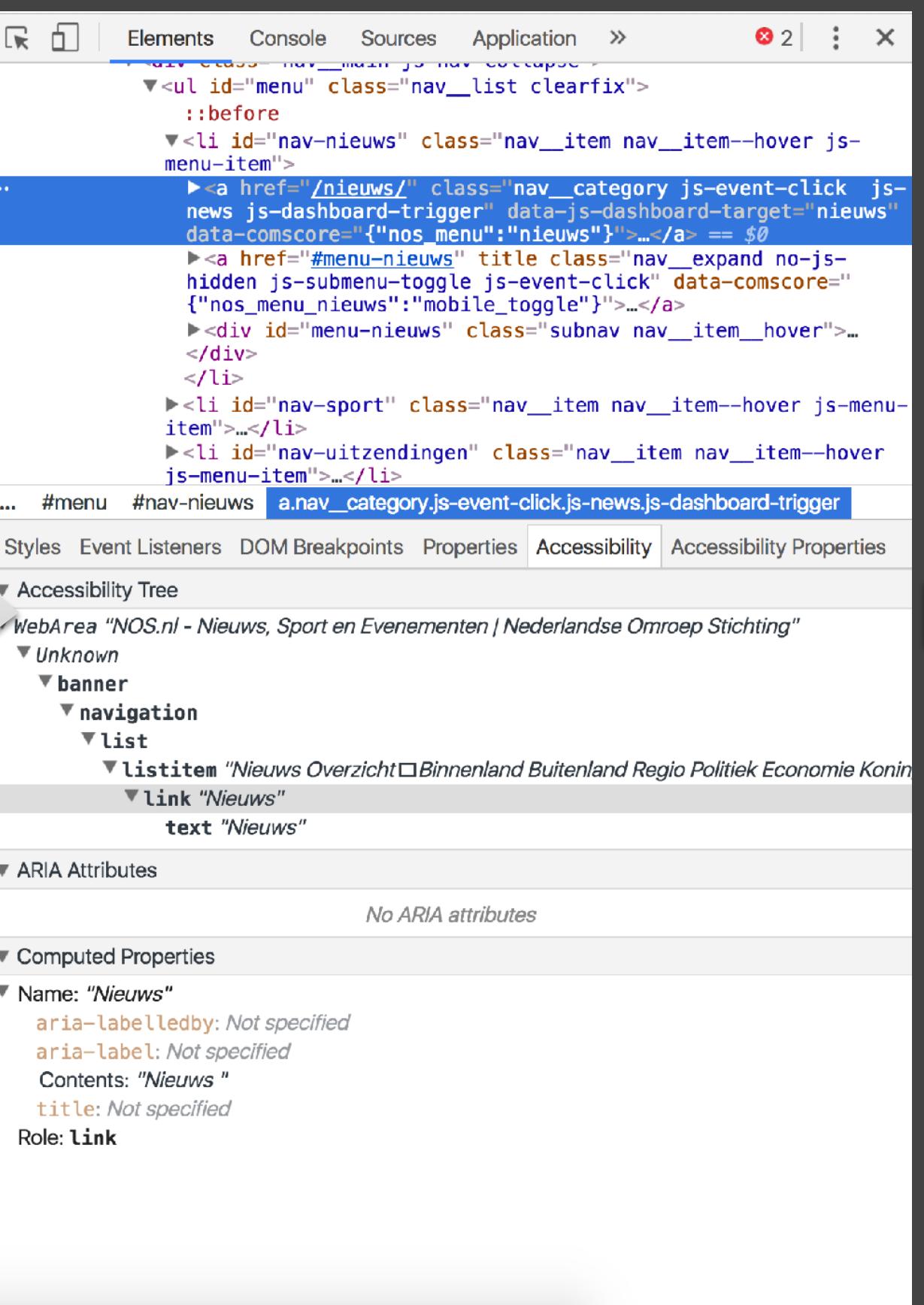
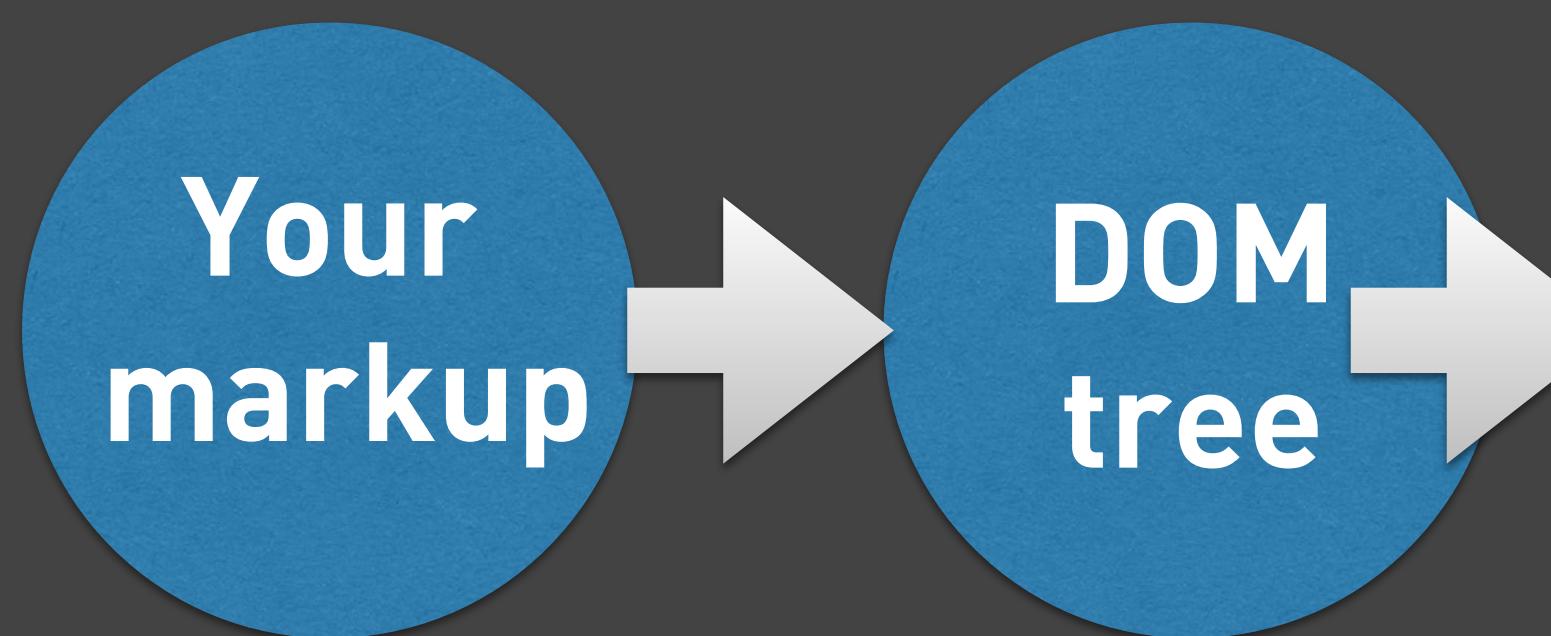


text-to-speech
screen magnifiers
alternate pointing devices



AT

Accessibility tree



Platform APIs



Microsoft Active Accessibility
Microsoft User Interface Automation
MSAA

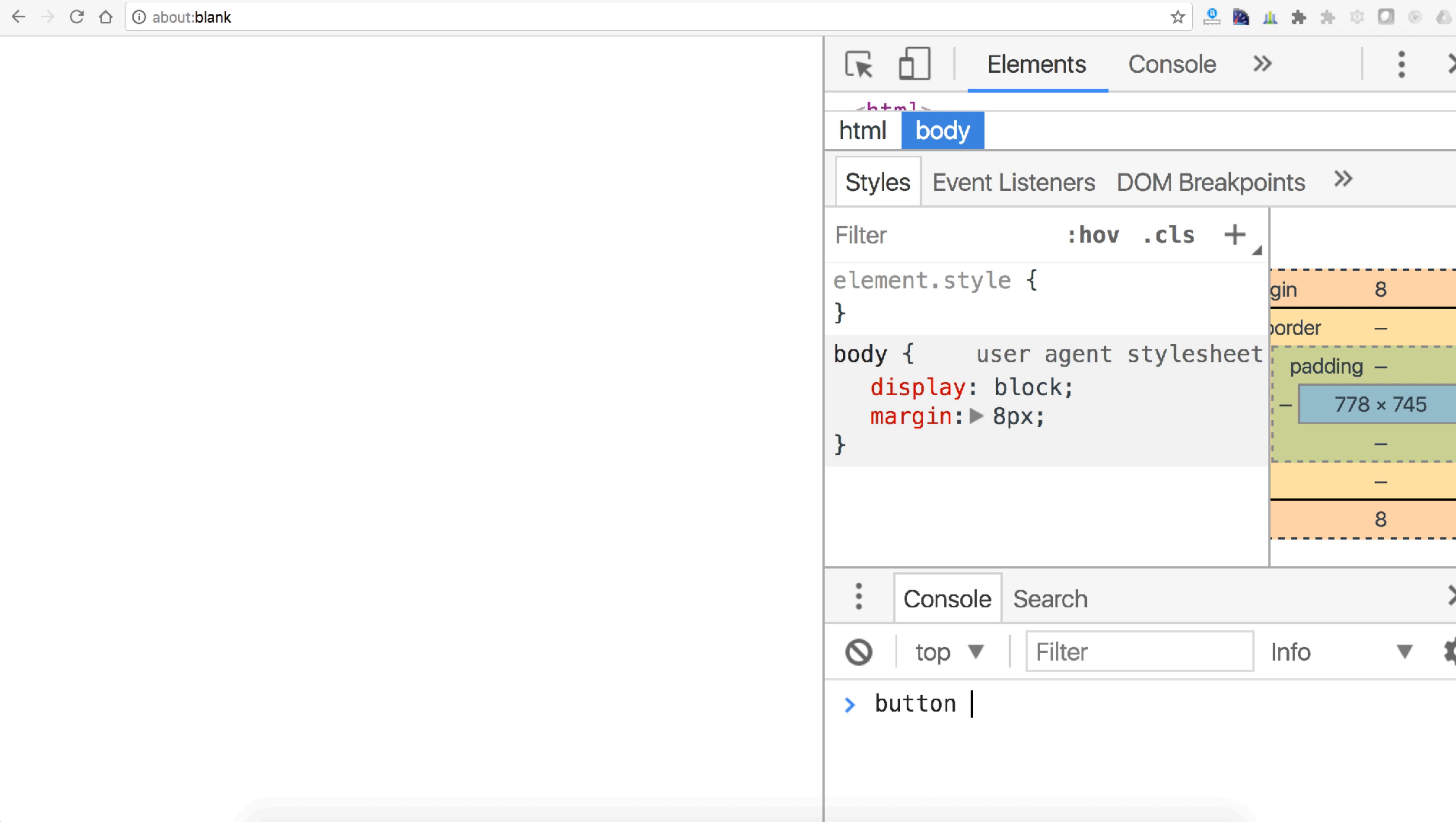


Mac OS X Accessibility Protocol



Linux/Unix Accessibility Toolkit
IAccessible2

alter



ARIA lets developers
control how their stuff ends
up in the accessibility tree

YES, we can use JavaScript
to make websites and apps
more accessible

No ARIA is better
than bad ARIA.

Standard HTML semantics

+ ARIA semantics for things that don't exist in HTML

“A role is a promise”

If you say something has a role of X, it's now
your responsibility to make it behave like an X.

ARIA as a cloak:
replaces semantics
(I.E. USE WITH CARE!)

Let's use some ARIA!

WAI-ARIA Authoring Practices (<https://www.w3.org/TR/wai-aria-practices-1.1/>)

The screenshot shows a web browser window with the title "WAI-ARIA Authoring Practices 1.1". The address bar displays the URL <https://www.w3.org/TR/wai-aria-practices-1.1/>. The page content is titled "WAI-ARIA Authoring Practices 1.1" and is identified as a "W3C Working Group Note 14 December 2017". A blue "W3C" logo is visible on the right. On the left, a vertical sidebar is labeled "W3C Working Group Note". The main content area contains links for different versions and editor information.

This version:
<https://www.w3.org/TR/2017/NOTE-wai-aria-practices-1.1-20171214/>

Latest published version:
<https://www.w3.org/TR/wai-aria-practices-1.1/>

Latest editor's draft:
<https://w3c.github.io/aria-practices/>

Previous version:
<https://www.w3.org/TR/2017/WD-wai-aria-practices-1.1-20170628/>

Editors:

Matt King, Facebook, mck@fb.com
James Nurthen, Oracle Corporation, james.nurthen@oracle.com
Michiel Bijl, Invited Expert
Michael Cooper, W3C, cooper@w3.org

Joseph Scheuhammer, Inclusive Design Research Centre, OCAD University (Previous Editor)
Lisa Pappas, SAS (Previous Editor)
Rich Schwerdtfeger, IBM Corporation (Previous Editor)

Copyright © 2015-2017 W3C® (MIT, ERCIM, Keio, Beihang). W3C liability, trademark and permissive document license rules apply.

ally.js
[\(https://a11yjs.io/\)](https://a11yjs.io/)

ally.js

ally.js *JavaScript library to help modern web applications with accessibility concerns by making accessibility simpler*

Search the docs

Home Getting Started API Tutorials Contributing Github Download

On this page

[What is ally.js?](#)
[Simple API](#)
[What is focusable?](#)
[Features](#)
[What people say](#)
[Supported by](#)

What is ally.js?

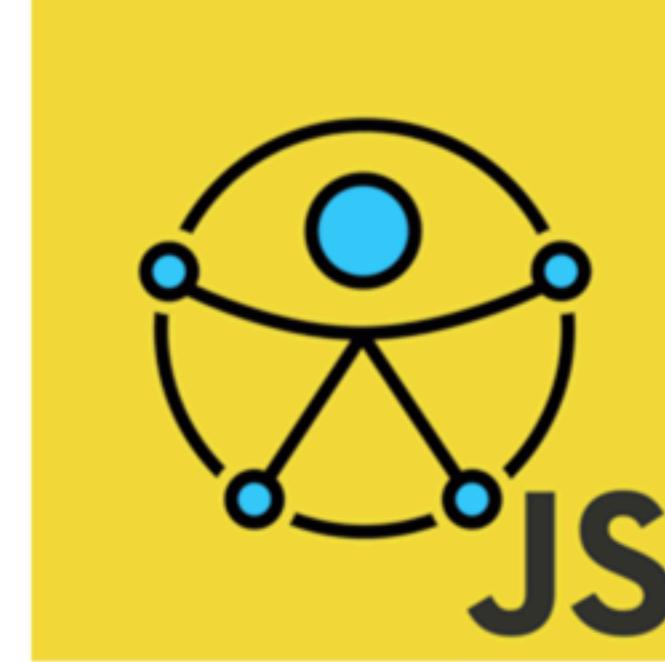
ally.js is a JavaScript library simplifying certain accessibility features, functions and behaviors. However, simply loading ally.js will not automagically make a web application accessible. The library provides certain standard functions the "web platform" should've provided itself, so JavaScript applications can be made accessible more easily.

ally.js has been tested on IE9+, Firefox, Chrome and Safari 9, as well as Mobile Chrome on Android 5.1 and Safari for iOS 9.

Simple API

How would you prevent elements outside of your modal dialog or menu from receiving focus?

```
<script src="path/to/ally.min.js"></script>
<script>
  ally.maintain.disabled({
    filter: '#my-dialog-element'
```



Collapsibles /
‘Accordion’

Header vs panel

aria-expanded

aria-controls

ENTER

Collapsibles

**Turn the FAQ section into
collapsibles**

(So that each question toggles an answer)

Tabs

Tab, tablist, tabpanel

← and → when focus
is on a tab

`role = tablist`

`role = tab`

`role = tabpanel`

aria-controls

aria-selected

aria-labelledby

Tabs

**Create tabs for the
sponsor opportunities**

(One tab for each package)

Sign-up for the
newsletter

Form errors

**On invalid form input, provide
error messages**

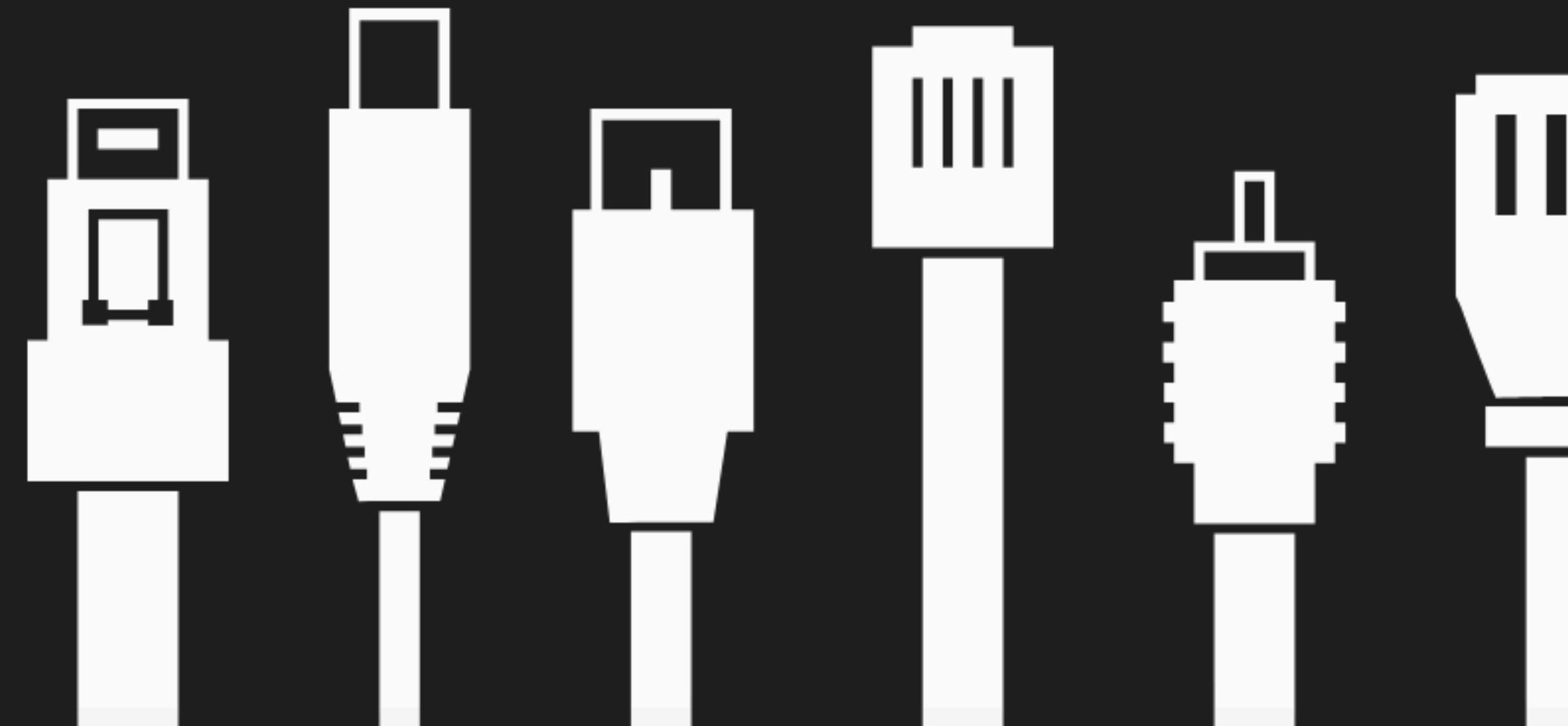
Test 1, test 2...

Some resources

Inclusive Components

A blog trying to be a pattern library. All about designing inclusive web interfaces, piece by piece.

Inclusive Components
[\(inclusive-components.design\)](http://inclusive-components.design)



WAI-ARIA Authoring Practices

(<https://www.w3.org/TR/wai-aria-practices/>)

W3C Working Draft

TABLE OF CONTENTS

- 1. Introduction
- 2. Design Patterns and Widgets
 - 2.1 Generally Applicable Keyboard Recommendations
 - 2.2 Accordion (Sections With Show/Hide Functionality)
 - 2.3 Alert
 - 2.4 Alert and Message Dialogs
 - 2.5 Breadcrumb
 - 2.6 Button
 - 2.7 Checkbox
 - 2.8 Combo Box
 - 2.9 Dialog (Modal)
 - 2.10 Dialog (Non-Modal)
 - 2.11 Disclosure (Show/Hide)
 - 2.12 Feed
 - 2.13 Grids : Interactive Tabular Data and Layout Containers
 - 2.14 Link
 - 2.15 Listbox
 - 2.16 Menu or Menu bar
 - 2.17 Menu Button
 - 2.18 Radio Group
 - 2.19 Slider
 - 2.20 Slider (Multi-Thumb)
 - 2.21 Spinbutton

WAI-ARIA Authoring Practices 1.1

W3C Working Draft 28 June 2017

This version: <https://www.w3.org/TR/2017/WD-wai-aria-practices-1.1-20170628/>

Latest published version: <https://www.w3.org/TR/wai-aria-practices-1.1/>

Latest editor's draft: <https://w3c.github.io/aria-practices/>

Previous version: <https://www.w3.org/TR/2016/WD-wai-aria-practices-1.1-20161214/>

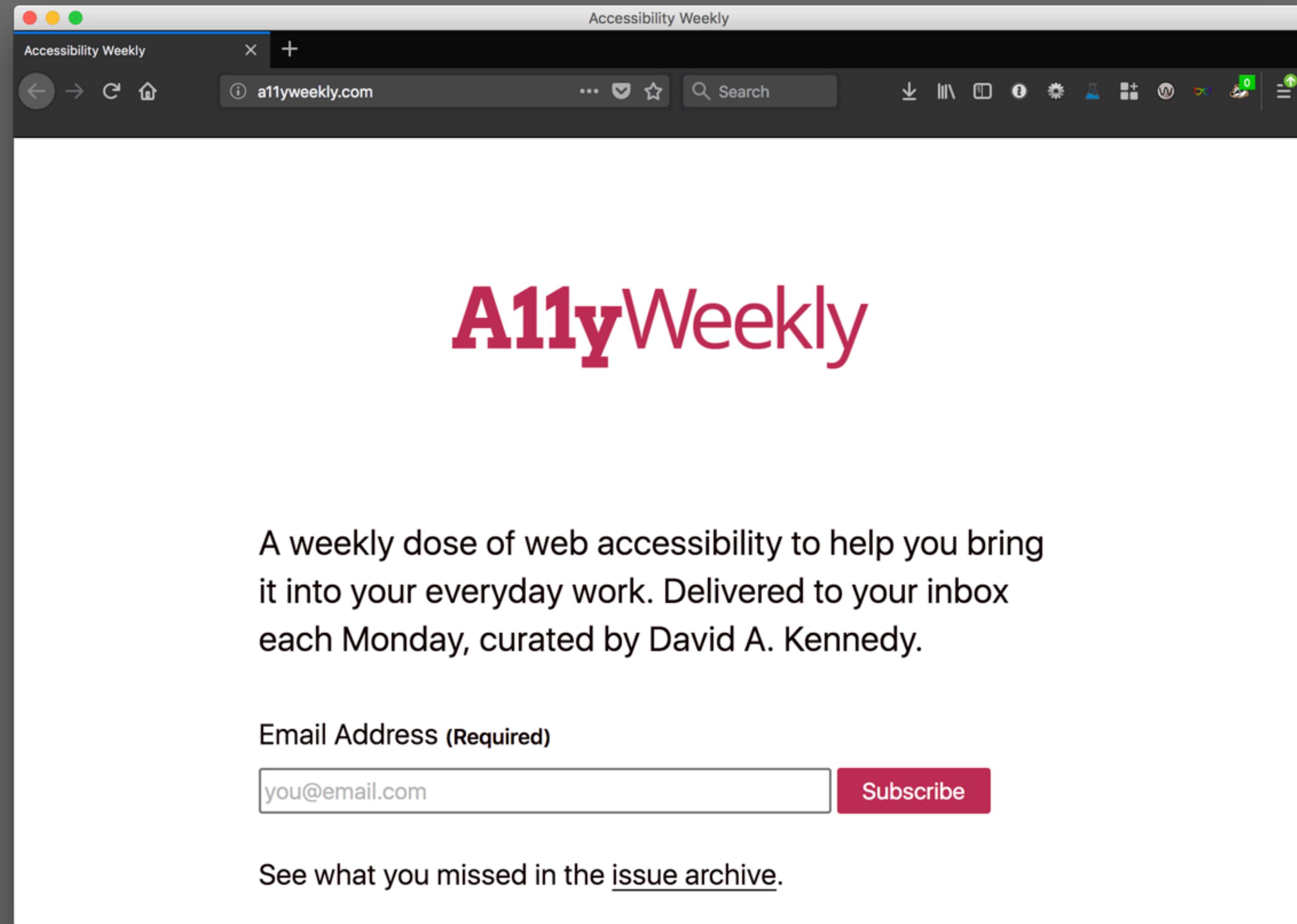
Editors:
Matt King, Facebook, mck@fb.com
James Nurthen, Oracle Corporation, james.nurthen@oracle.com
Michiel Bijl, Invited Expert
Michael Cooper, W3C, cooper@w3.org
Joseph Scheuhammer, Inclusive Design Research Centre, OCAD University (Previous Editor)
Lisa Pappas, SAS (Previous Editor)
Rich Schwerdtfeger, IBM Corporation (Previous Editor)

Copyright © 2015-2017 W3C® ([MIT](#), [ERCIM](#), [Keio](#), [Beihang](#)). W3C [liability](#), [trademark](#) and [permissive document license](#) rules apply.

Abstract

This document provides readers with an understanding of how to use [WAI-ARIA 1.1 \[WAI-ARIA\]](#) to create accessible rich internet applications. It describes considerations that might not be evident to most authors from the WAI-ARIA specification alone and recommends approaches to make widgets, navigation, and behaviors accessible using WAI-ARIA roles, states, and properties. This document is directed primarily to Web application developers, but the guidance is also useful for user agent and assistive technology developers.

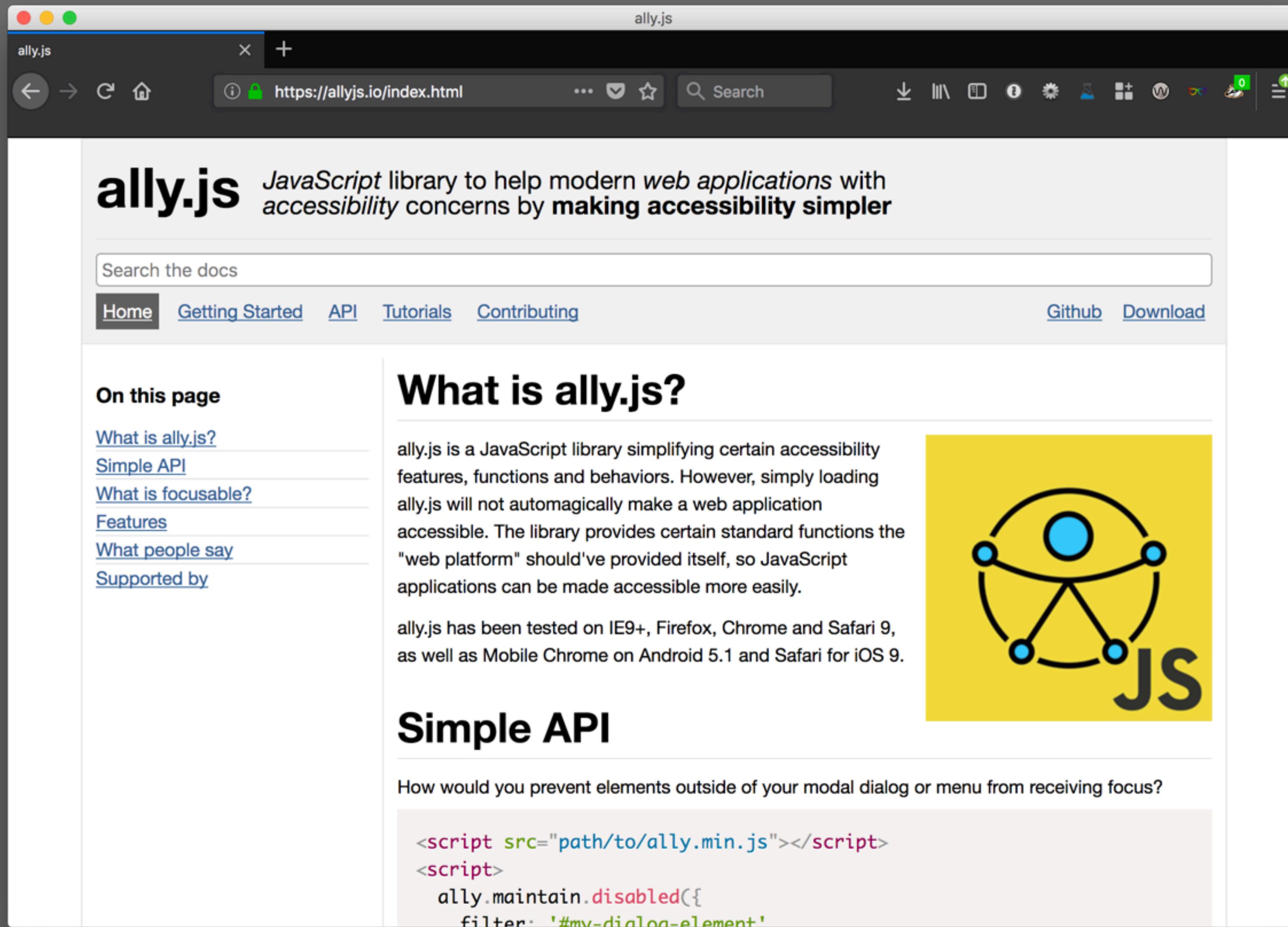
This document is part of the WAI-ARIA suite described in the [WAI-ARIA Overview](#).



A11y Weekly (a11yweekly.com)

ally.js

(<https://a11yjs.io/>)



The screenshot shows a web browser window with the title bar "ally.js". The address bar displays the URL "https://allyjs.io/index.html". The main content area of the browser shows the ally.js homepage. The page has a dark header with the "ally.js" logo and a subtext: "JavaScript library to help modern web applications with accessibility concerns by **making accessibility simpler**". Below the header is a search bar labeled "Search the docs" and a navigation menu with links to "Home", "Getting Started", "API", "Tutorials", "Contributing", "Github", and "Download". On the left side, there is a sidebar titled "On this page" with links to "What is ally.js?", "Simple API", "What is focusable?", "Features", "What people say", and "Supported by". The main content area features a large heading "What is ally.js?" followed by a detailed description of the library's purpose and supported platforms. It also includes a yellow graphic with a stylized eye and the letters "JS". Below this, there is a section titled "Simple API" with a code snippet and a question about preventing focus on modal dialog elements.

What is ally.js?

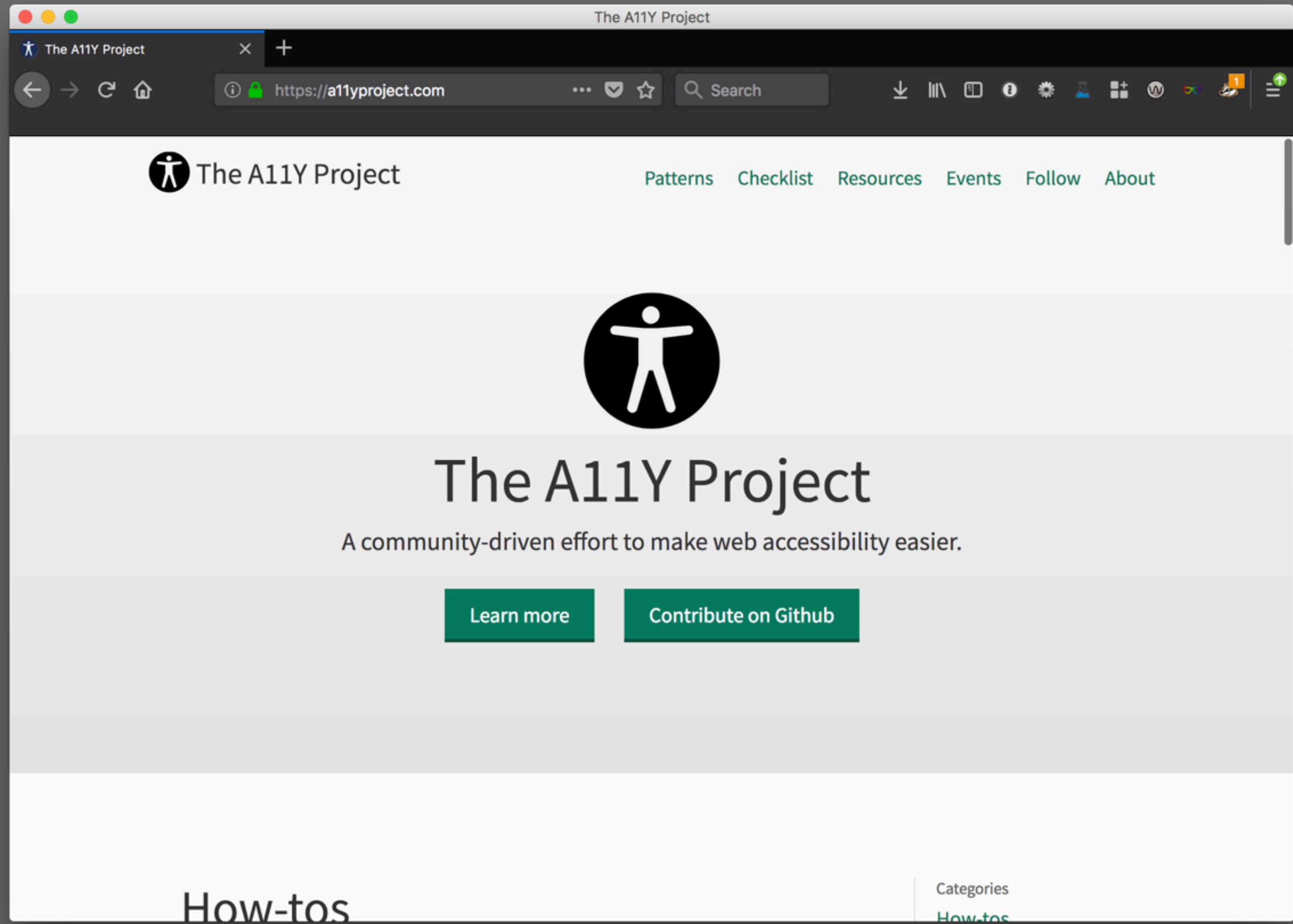
ally.js is a JavaScript library simplifying certain accessibility features, functions and behaviors. However, simply loading ally.js will not automagically make a web application accessible. The library provides certain standard functions the "web platform" should've provided itself, so JavaScript applications can be made accessible more easily.

ally.js has been tested on IE9+, Firefox, Chrome and Safari 9, as well as Mobile Chrome on Android 5.1 and Safari for iOS 9.

Simple API

How would you prevent elements outside of your modal dialog or menu from receiving focus?

```
<script src="path/to/ally.min.js"></script>
<script>
  ally.maintain.disabled({
    filter: '#my-dialog-element'
```



The A11y Project
[\(https://a11yproject.com/\)](https://a11yproject.com/)

aXe core

(<https://axe-core.org>)

The screenshot shows a web browser window titled "aXe Playground". The address bar displays the URL <https://www.axe-core.org/playground>. The main content area is titled "aXe Playground". On the left, there is a sidebar with the "Playground" menu item selected, along with links for "Integrations", "Documentation", "About", and "Community". The main content area contains a section titled "Experiment with aXe." with a text input field containing the HTML code: . Below this is a "SELECT AN EXAMPLE" button. Further down, there is a "Edit the HTML code:" section with a "CLEAR FIELD" button. At the bottom, there is a "CHANGE AXE OPTIONS" button and a message: "Click 'Analyze HTML' to see the results."

WebAIM: Web Accessibility In Mind

WebAIM: Web Accessibility In Mind X +

https://webaim.org

Search

Accessibility

WebAIM

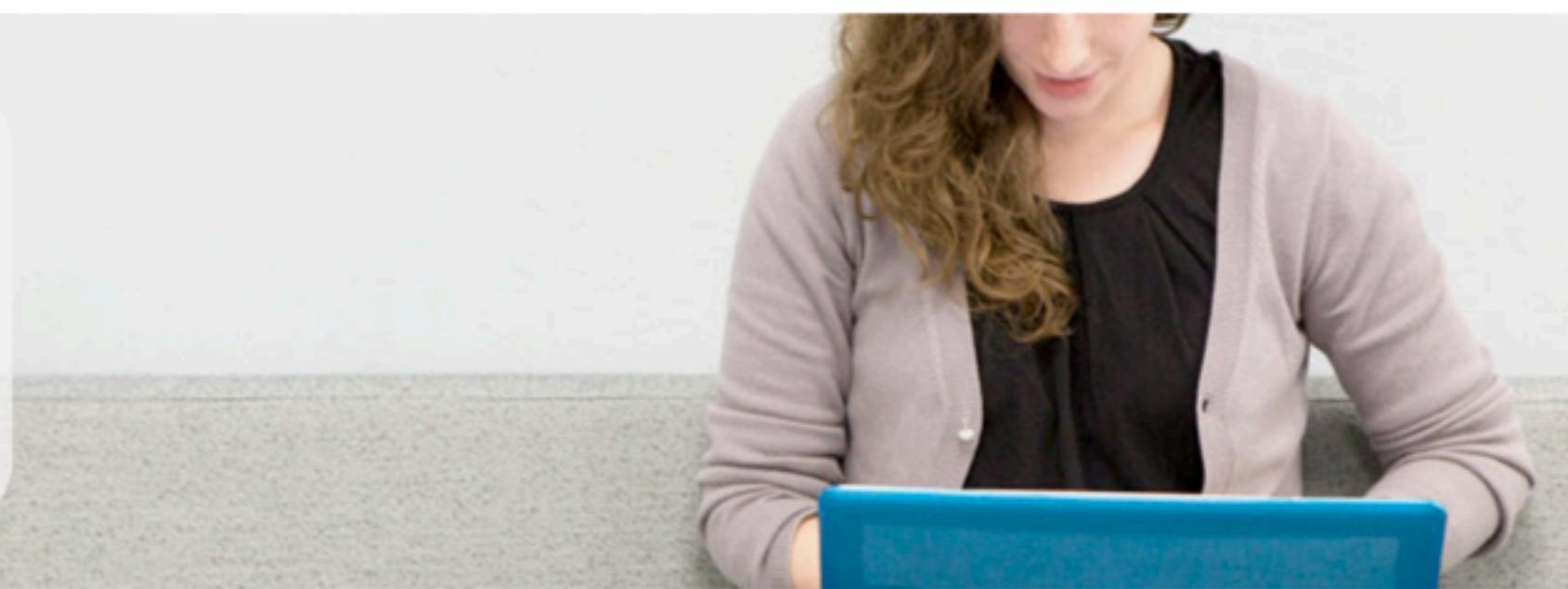
web accessibility in mind

services articles resources community

Search WebAIM

Introduction to Web Accessibility

WebAIM Training



We have web accessibility in mind

Our mission is to empower organizations to make their web content accessible to people with disabilities.

Accessibility Training 

Whether here in Utah or on-site at your organization, WebAIM can provide comprehensive training to fit your needs.

Accessible Site Certification 

As a respected third party accessibility expert, WebAIM can evaluate and certify your site to established web accessibility guidelines.

Community

[WebAIM Blog](#)

[Newsletter](#)

[E-mail Discussion List](#)

[Twitter](#)

Technical Assistance 

Need assistance implementing accessibility? WebAIM's expert staff can provide the

Evaluation and Reporting 

We can provide reports to help you know how accessible your site is and how to make it

Web accessibility in mind
(<https://webaim.org>)

THANKS!

For any questions, tweet me (@hdv)
or send an email (hidde@hiddedevries.nl).