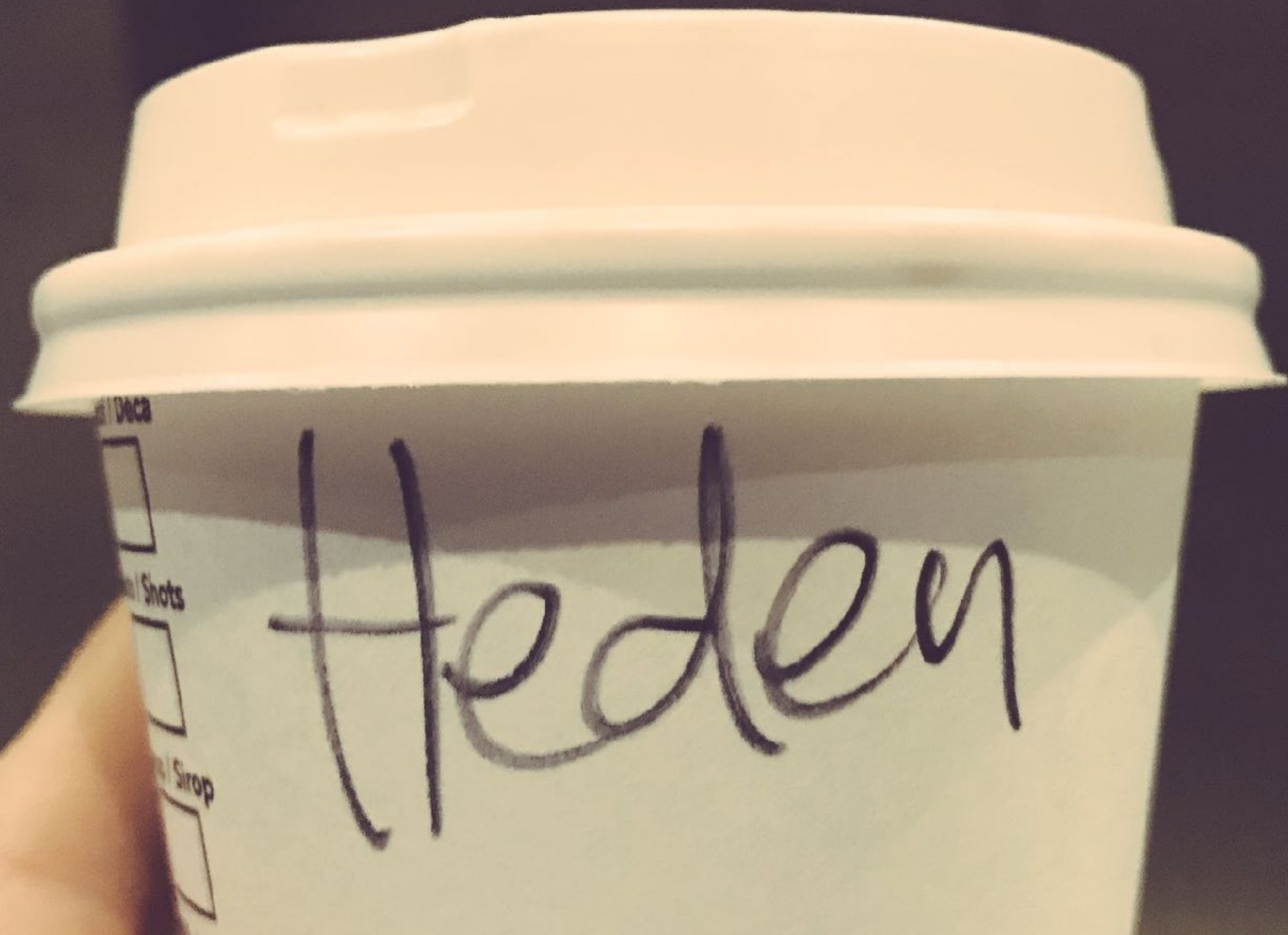


# Hiding content

*Hidde de Vries / @hdv / Fronteers Jam Session, Amsterdam / 05-10-2017*

**My name is Hidde**





Heden

Deca

Shots

Siroop



**Hiding  
content**

**This is actually an  
accessibility talk**



# Tactile paving





# Elevator





# Colour





**Language**

THE OXFORD

ENGLISH

DICTIONARY

THE OXFORD

ENGLISH

DICTIONARY



The background is a dark blue gradient filled with floating binary digits (0s and 1s) in various sizes and colors (white, light blue, and dark blue). A prominent feature is a dense, glowing blue cloud of fine lines and dots on the left side, which tapers into a horizontal beam of light extending towards the right. The word 'Code' is displayed in a white box in the upper right corner.

**Code**



When you send your  
markup to the browser,  
it generates two trees

(amongst others)



# DOM tree

```
Elements Console Sources Network >>
[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 bgsizcover 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

```
...
  ▶<a href="/nieuws/" class="nav__category js-event-click js-
news js-dashboard-trigger" data-js-dashboard-target="nieuws"
data-comscore="{\"nos_menu\":\"nieuws\"}>...</a> == $0
  ▶<a href=\"#menu-nieuws\" title class=\"nav__expand no-js-
hidden js-submenu-toggle js-event-click\" data-comscore=
{\"nos_menu_nieuws\":\"mobile_toggle\"}>...</a>
  ▶<div id=\"menu-nieuws\" class=\"subnav nav__item_hover\">...
  </div>
  </li>
  ▶<li id=\"nav-sport\" class=\"nav__item nav__item--hover js-menu-
item\">...</li>
  ▶<li id=\"nav-uitzendingen\" class=\"nav__item nav__item--hover
js-menu-item\">...</li>
... #menu #nav-nieuws a.nav__category.js-event-click.js-news.js-dashboard-trigger
```

Styles Event Listeners DOM Breakpoints Properties Accessibility Accessibility Properties

## ▼ Accessibility Tree

### ▼ WebArea "NOS.nl - Nieuws, Sport en Evenementen | Nederlandse Omroep Stichting"

#### ▼ Unknown

#### ▼ banner

#### ▼ navigation

#### ▼ list

#### ▼ listitem "Nieuws Overzicht □ Binnenland Buitenland Regio Politiek Economie Konin

#### ▼ link "Nieuws"

text "Nieuws"

## ▼ ARIA Attributes

No ARIA attributes

## ▼ Computed Properties

### ▼ Name: "Nieuws"

aria-labelledby: Not specified

aria-label: Not specified

Contents: "Nieuws "

title: Not specified

Role: **Link**



role = alert

role = link

role = button

role = checkbox

role = tab

role = radio

role = dialog

role = progressbar

role = slider

role = tooltip

**Roles**



hidden

open

expanded

checked

pressed

selected

hidden

open

expanded

checked

States



“skip to content”

“open menu”

“first name”

“table of contents”

“about us”

“show more”

“click here”

“go to next photo”

“skip to content”

“open menu”

Labels



# People use AT, assistive technologies.

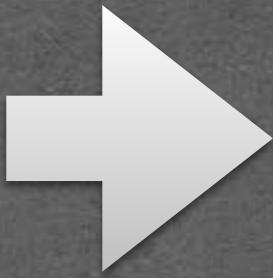
Examples: braille terminals, screenreaders  
speech input software, alternate input devices





# Accessibility tree

```
... #menu #nav-nieuws a.nav_category.js-event-click.js-news.js-dashboard-trigger
  Styles Event Listeners DOM Breakpoints Properties Accessibility Accessibility Properties
  ▼ Accessibility Tree
  ▼ WebArea "NOS.nl - Nieuws, Sport en Evenementen | Nederlandse Omroep Stichting"
    ▼ Unknown
      ▼ banner
        ▼ navigation
          ▼ list
            ▼ listitem "Nieuws Overzicht"
              ▼ link "Nieuws"
                text "Nieuws"
  ▼ ARIA Attributes
    No ARIA attributes
  ▼ Computed Properties
  ▼ Name: "Nieuws"
    aria-labelledby: Not specified
    aria-label: Not specified
    Contents: "Nieuws"
    title: Not specified
    Role: Link
```



# Platform APIs



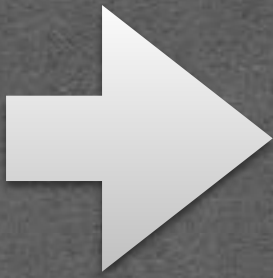
Microsoft Active Accessibility  
Microsoft User Interface Automation  
MSAA



Mac OS X Accessibility Protocol



Linux/Unix Accessibility Toolkit  
IAccessible2



# AT



braille  
text-to-speech  
screen magnifiers  
alternate pointing devices



Your  
markup

DOM  
tree

## Accessibility tree

```
<ul id="menu" class="nav_list clearfix">
  ::before
  <li id="nav-nieuws" class="nav_item nav_item--hover js-menu-item">
    <a href="/nieuws/" class="nav_category js-event-click js-news js-dashboard-trigger" data-js-dashboard-target="nieuws" data-comscore="{"nos_menu":"nieuws"}">...</a> == $0
    <a href="#menu-nieuws" title class="nav_expand no-js-hidden js-submenu-toggle js-event-click" data-comscore="{"nos_menu_nieuws":"mobile_toggle"}">...</a>
    <div id="menu-nieuws" class="subnav nav_item_hover">...
  </li>
  <li id="nav-sport" class="nav_item nav_item--hover js-menu-item">...</li>
  <li id="nav-uitzendingen" class="nav_item nav_item--hover js-menu-item">...</li>
</ul>
```

... #menu #nav-nieuws a.nav\_category.js-event-click.js-news.js-dashboard-trigger

▼ Accessibility Tree

WebArea "NOS.nl - Nieuws, Sport en Evenementen | Nederlandse Omroep Stichting"

▼ Unknown

▼ banner

▼ navigation

▼ list

▼ listitem "Nieuws Overzicht" □ Binnenland Buitenland Regio Politiek Economie Koninkrijk

▼ link "Nieuws"

text "Nieuws"

▼ ARIA Attributes

No ARIA attributes

▼ Computed Properties

▼ Name: "Nieuws"

aria-labelledby: Not specified

aria-label: Not specified

Contents: "Nieuws"

title: Not specified

Role: link

## Platform APIs



Microsoft Active Accessibility  
Microsoft User Interface Automation  
MSAA



Mac OS X Accessibility Protocol



Linux/Unix Accessibility Toolkit  
IAccessible2



**Hiding  
content**

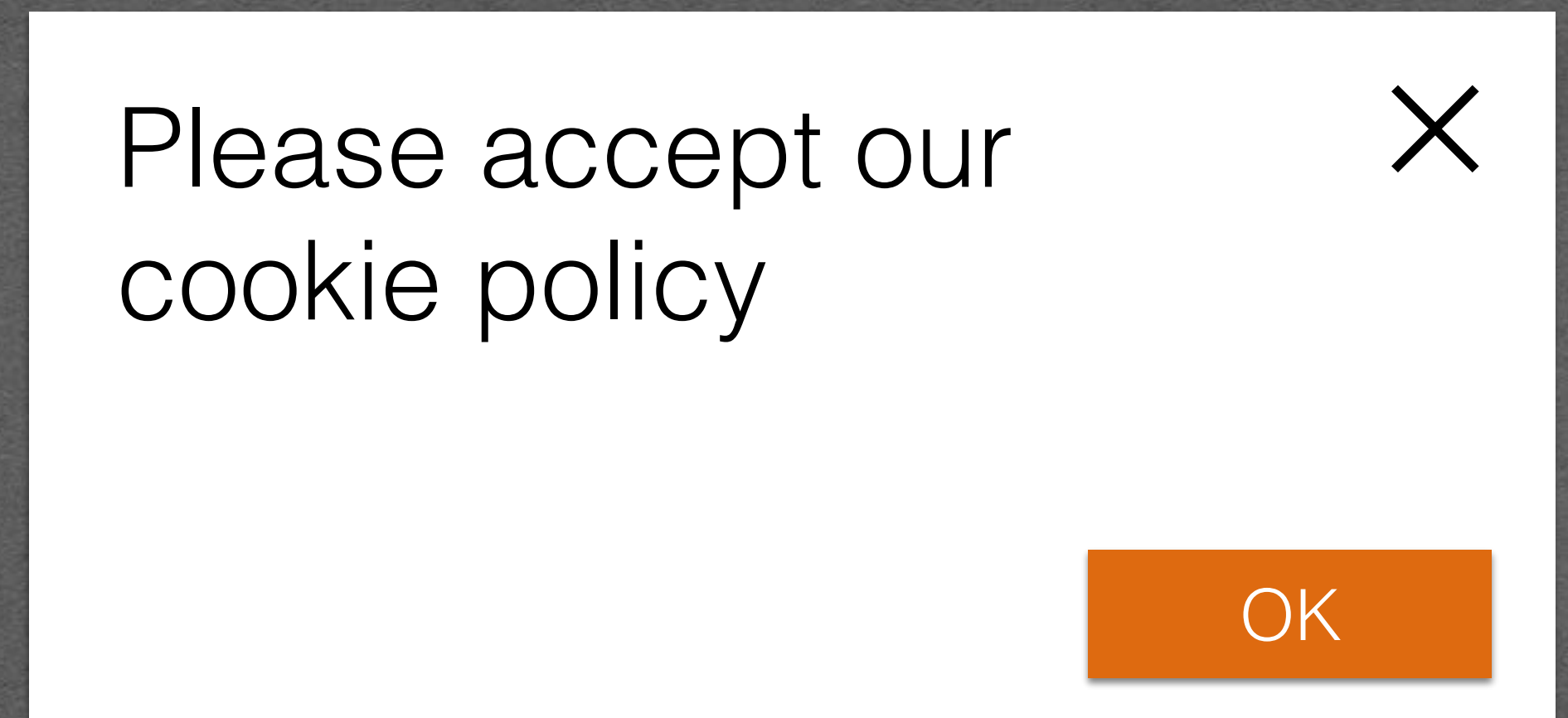


Hiding from screen  
*“visually hidden”*



EXAMPLE

# Icon button



1

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



EXAMPLE

# Required indicator

First name \*

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



```
position: absolute;  
left: -9999em;
```



about:blank

about:blank

click here

Elements

Console

>>

⋮

✕

▼<body>

...<button style=""

htmlbodybutton

Styles

Event Listeners

Accessibility

>>

Filter

:hov.cls+

element.style {

}

input[type="button"] {

align-items: flex-start;

text-align: center;

cursor: default;

color: buttontext;

background-color: buttonface;

box-sizing: border-box;

padding: 2px 6px 3px;

border-width: 2px;

border-style: outset;

margin: -

border: -

padding: 2

650 × 136

3

-

-

Filter

Show all

align-i...fl

backgro...

border-...

border-...no



Hiding from AT



EXAMPLE

A decorative icon



**Cars**



## EXAMPLE

# Repeating text that hinders AT users

### **We opened a new office**

With the great opening party that took place yesterday, it is now official: our new office in Utrecht is open!

[Read more](#)

### **We'll be at the trade show**

The trade show is taking place next week and we will be presenting interesting new stuff. Visit our booth!

[Read more](#)

### **Our company won a prize**

We are very proud to announce that we were nominated for an amazing prize and that we have actually won it, too.

[Read more](#)



## EXAMPLE

Repeating text  
that hinders AT users

Read more

Read more

Read more



aria-hidden



```
<div aria-hidden></div>
```



If you find you have to  
use `aria-hidden`, this may  
indicate there's something  
wrong with the page



## EXAMPLE

# Repeating text that hinders AT users

### **We opened a new office**

With the great opening party that took place yesterday, it is now official: our new office in Utrecht is open!

[Read more](#)

### **We'll be at the trade show**

The trade show is taking place next week and we will be presenting interesting new stuff. Visit our booth!

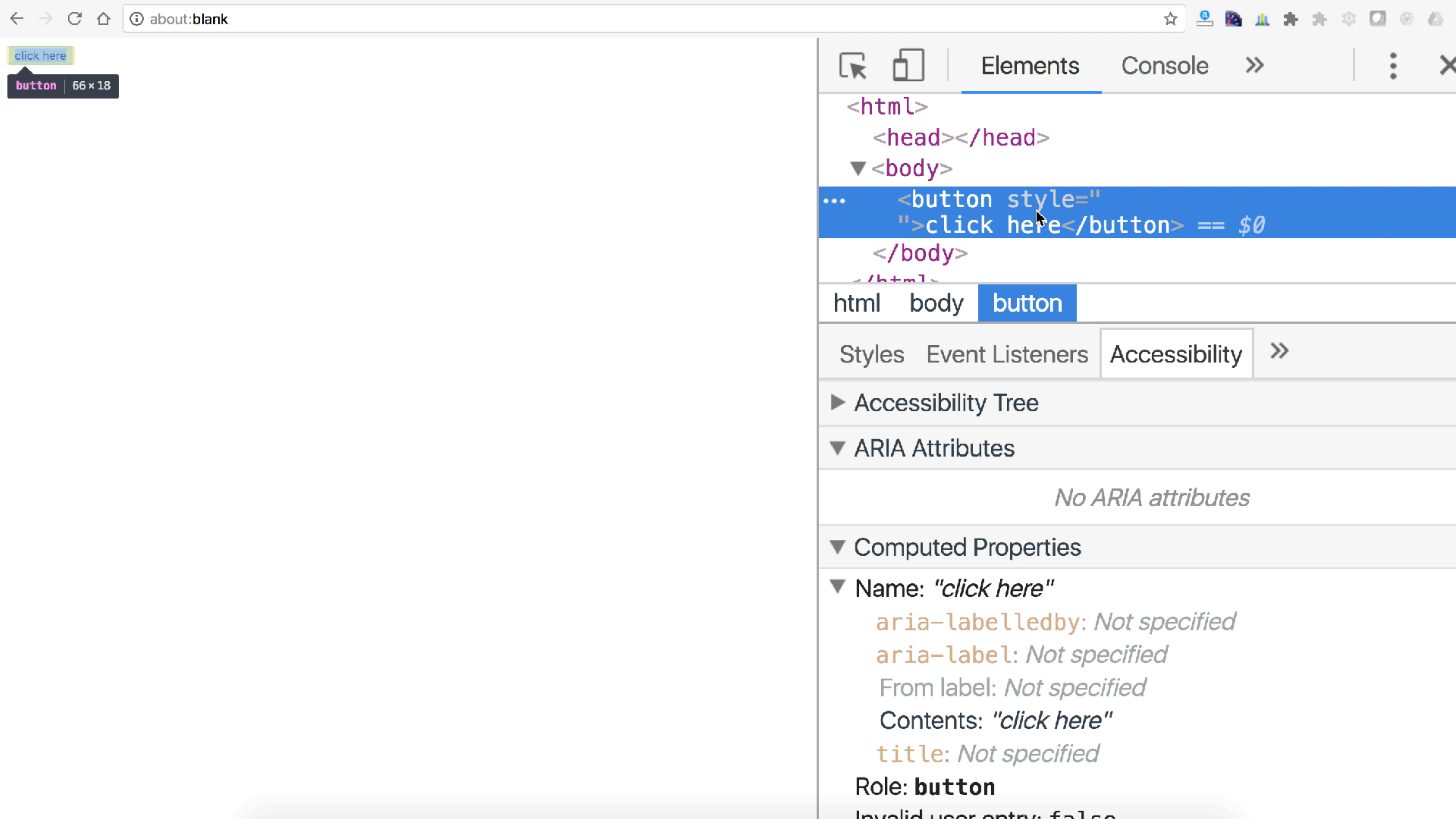
[Read more](#)

### **Our company won a prize**

We are very proud to announce that we were nominated for an amazing prize and that we have actually won it, too.

[Read more](#)





about:blank

click here

button66 × 18

Elements

Console

>>

⋮

✕

<html>

<head></head>

▼ <body>

...   <button style=""

">click here</button> == \$0

</body>

</html>

html

body

button

Styles

Event Listeners

Accessibility

>>

▶ Accessibility Tree

▼ ARIA Attributes

No ARIA attributes

▼ Computed Properties

▼ Name: "click here"

aria-labelledby: Not specified

aria-label: Not specified

From label: Not specified

Contents: "click here"

title: Not specified

Role: button

Invalid user entry: false



Hiding from everything



## EXAMPLE

A modal panel that  
is not currently shown

Perhaps the most heavily-repeated pattern in JavaScript-based page manipulation is showing and hiding content. Tabbed interfaces. Collapsible elements. Accordion widgets. It crops up nearly everywhere. In and of itself, this pattern is not bad. People realize how important the hiding mechanism is to your content and screen reader accessibility. JavaScript-based interfaces don't fully control the user experience when you begin working with animation libraries like jQuery or Scriptaculous, the hiding mechanism is typically dictated by the library, leaving you little control over the accessibility of your

**Are you sure?**

NO

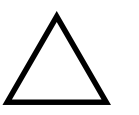
YES



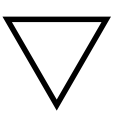
## EXAMPLE

A tab control that  
is closed

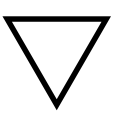
1. Personal details



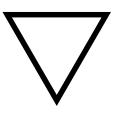
2. Your application



3. Agreement



4. Summary





`display: none;`



hidden



```
<div hidden></div>
```



## # hidden attribute - LS

Netherlands 97.85%

Global 97.19%

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**.

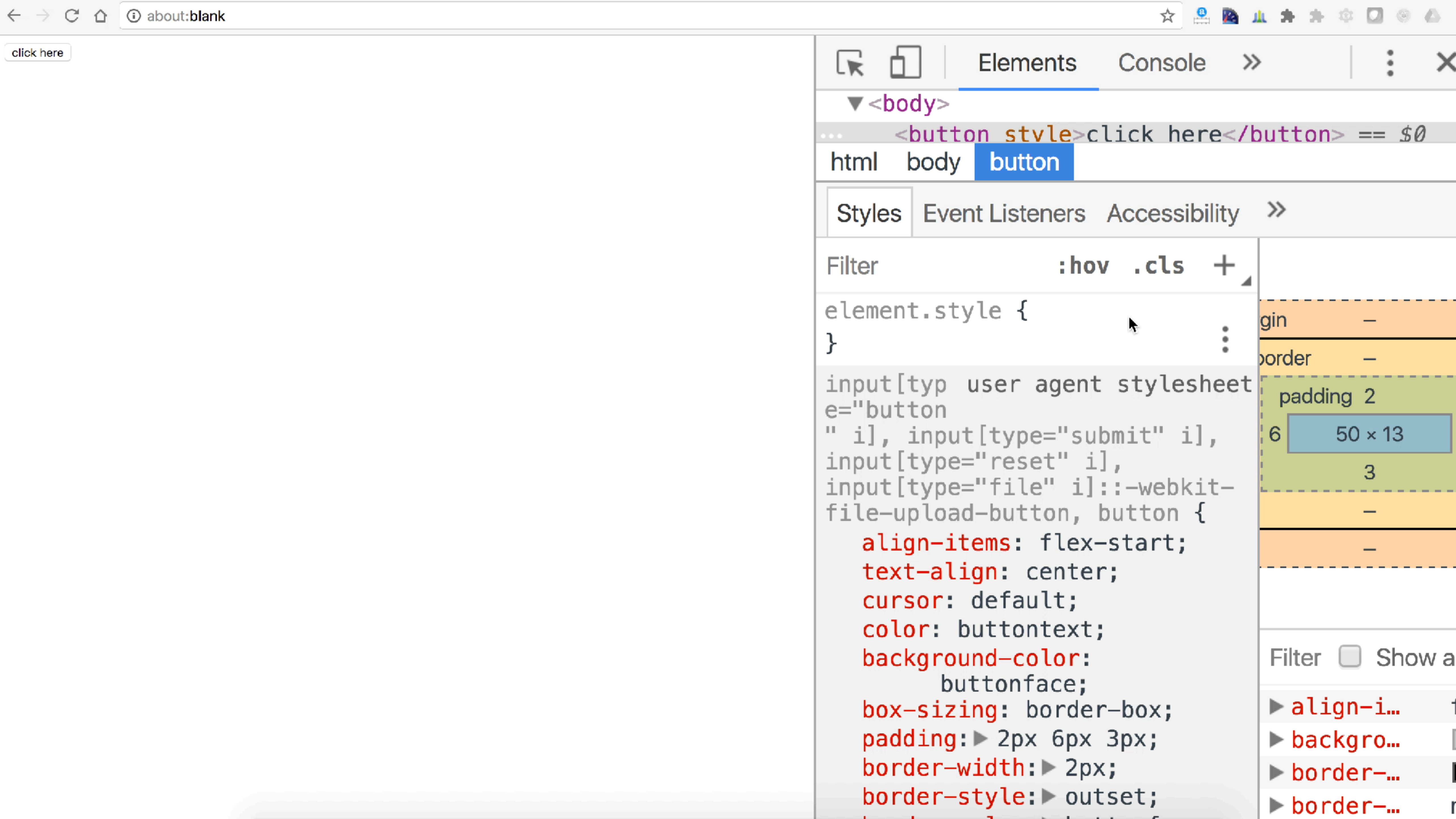
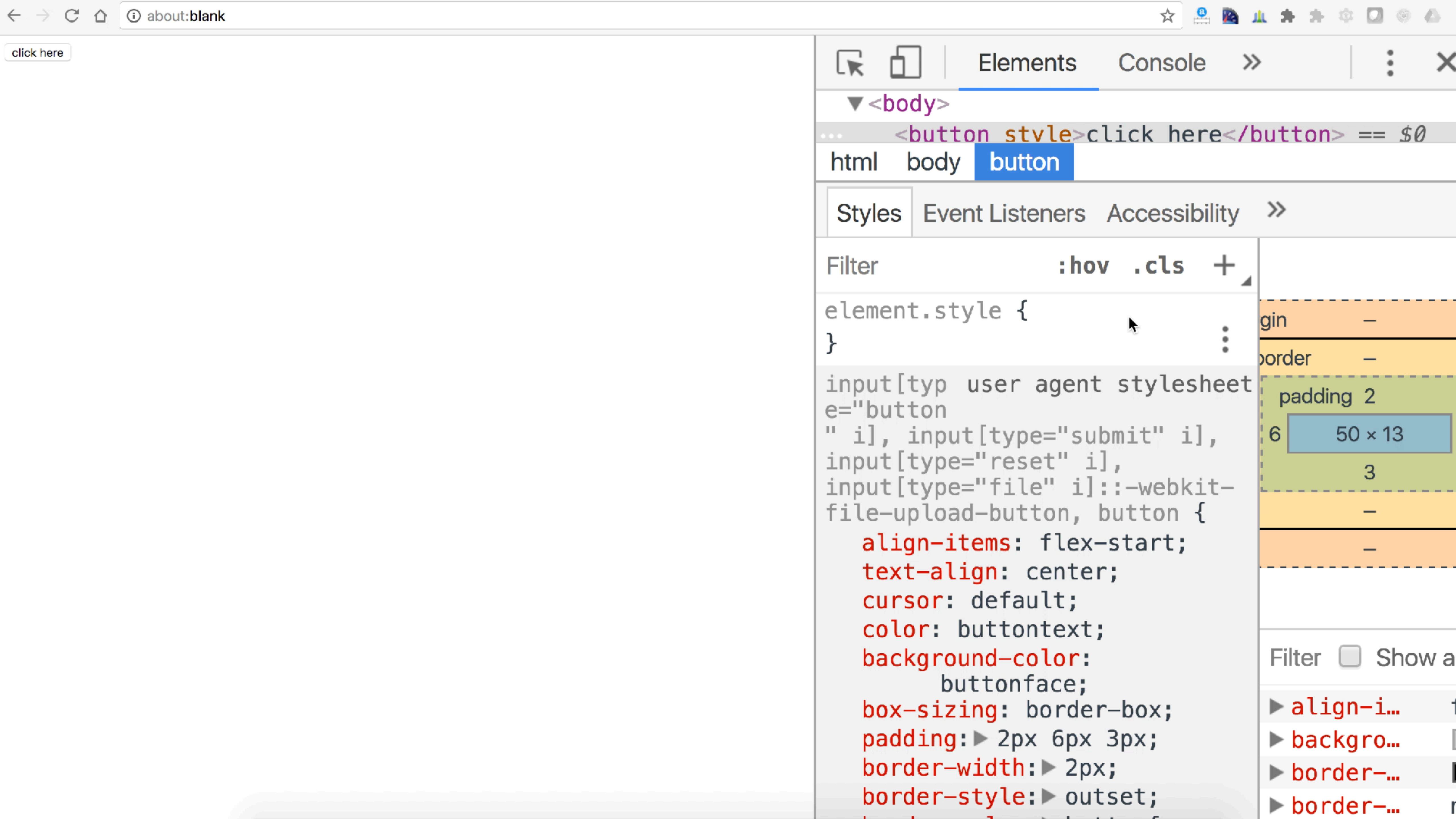


Not exposed by a11y tree

Not rendered

Invisible to text search







Inert



# inert

<https://github.com/WICG/inert>

<https://html.spec.whatwg.org/multipage/interaction.html#inert>



Makes the element and  
its entire subtree *inert*:  
visible, but unusable



No pointer events.

No focus.

Invisible to text search.

Impossible to select.



## EXAMPLE

# Rest of the page while modal is open

(“<dialog> without <dialog>” – [Hixie](#))

Perhaps the most heavily-repeated pattern in JavaScript-based page manipulation is showing and hiding content. Tabbed interfaces. Collapsible elements. Accordion widgets. It crops up nearly everywhere. In and of itself, this pattern is not bad. People realize how poor the default hiding mechanism is, so they hide your content from screen readers. JavaScript-based, you can fully control the behavior when you begin working with animation libraries like jQuery or Scriptaculous, the hiding mechanism is typically dictated by the library, leaving you little control over the accessibility of your

**Are you sure?**

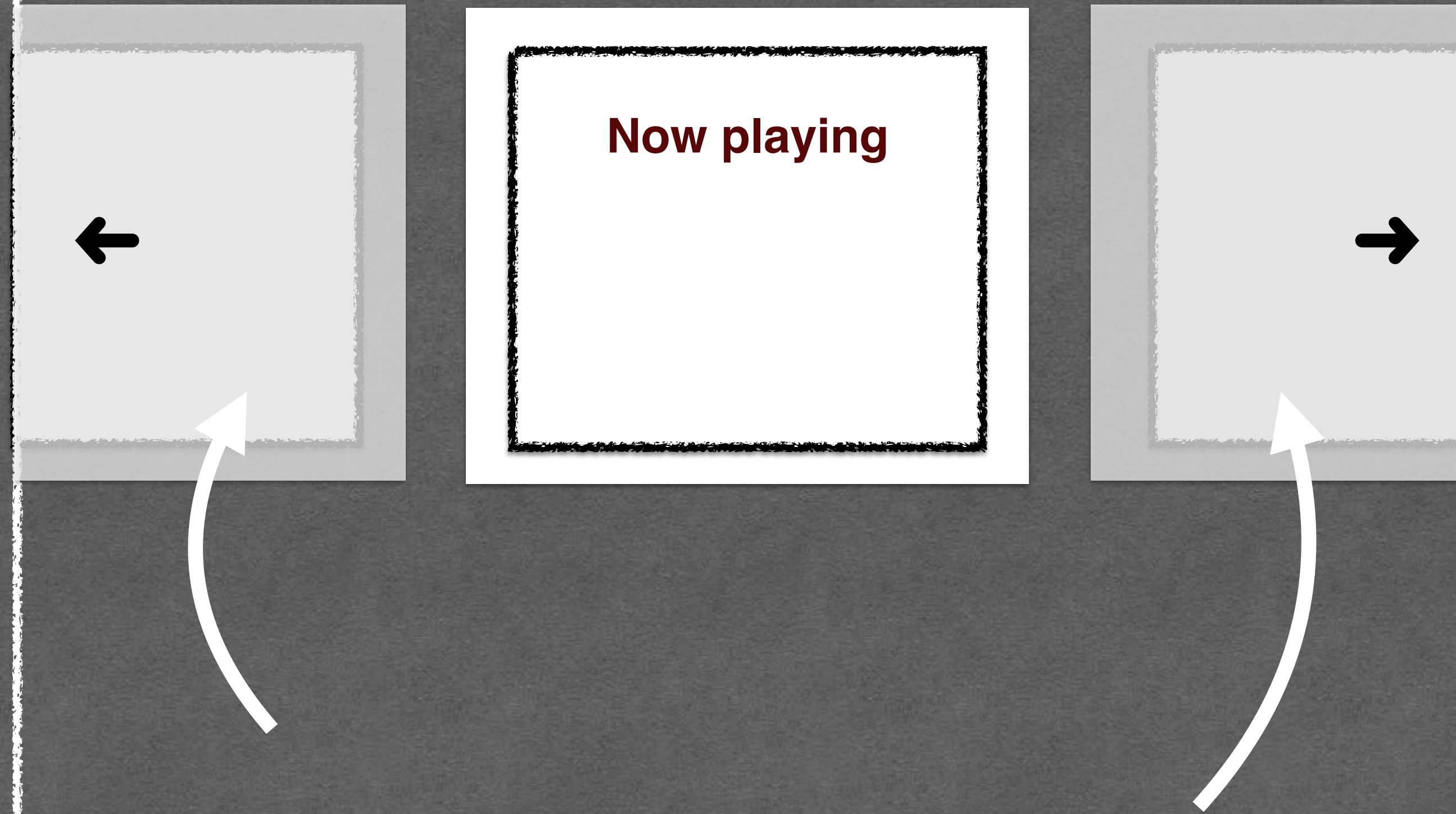
NO

YES



EXAMPLE

Non current  
carousel items





## EXAMPLE

‘Shipping address’  
section when ‘Same  
as billing address’ is  
checked

### Billing address

Street \*

Postal code \*

City \*

### Shipping address



Same as billing address

Street \*

Postal code \*

City \*



# Hiding content

From screen

From AT

From everything

Inert

**Accessible to:**

✓ AT users

✗ sighted users

**Accessible to:**

✗ AT users

✓ sighted users

**Accessible to:**

✗ AT users

✗ sighted users

**Visible,  
but not  
usable**

\* Note that there are a lot of different ATs, and they are not all for users with sight impairments



# Further reading

<http://www.scotthara.me/blog/2017/04/14/inclusively-hidden.html>

<https://github.com/alice/inert>

<https://allyjs.io/tutorials/hiding-elements.html>

<https://hiddedevries.nl/en/blog/2017-04-11-on-hiding-content>

<https://www.w3.org/TR/html-aam-1.0/>



# **Thanks for listening.**

**Tweet/email any questions/comments!**

***@hdv / hidde@hiddedevries.nl***



