

# ARIA: THE GOOD PARTS

Hidde  
de Vries

24 October 2023  
WeAreDevelopers

@hdv in  
most places

# **ARIA, THE GOOD PARTS**

There must be good parts

Source: Manuel Matuzović

**ARIA ALONE WON'T  
MAKE MAKE YOUR  
APP ACCESSIBLE**



**BUT I'M SERIOUS...**

There must be good parts



★ ★ ★ ★ ★  
MIRROR ONLINE

★ ★ ★ ★ ★  
EMPIRE

★ ★ ★ ★ ★  
SUNDAY EXPRESS

★ ★ ★ ★ ★  
SKY MOVIES

★ ★ ★ ★ ★  
HEAT

★ ★ ★ ★ ★  
TOTAL FILM

★ ★ ★ ★ ★  
TIME OUT

★ ★ ★ ★ ★  
THE GUARDIAN

★ ★ ★ ★ ★  
GLAMOUR

★ ★ ★ ★ ★  
OAZED

★ ★ ★ ★ ★  
MTV

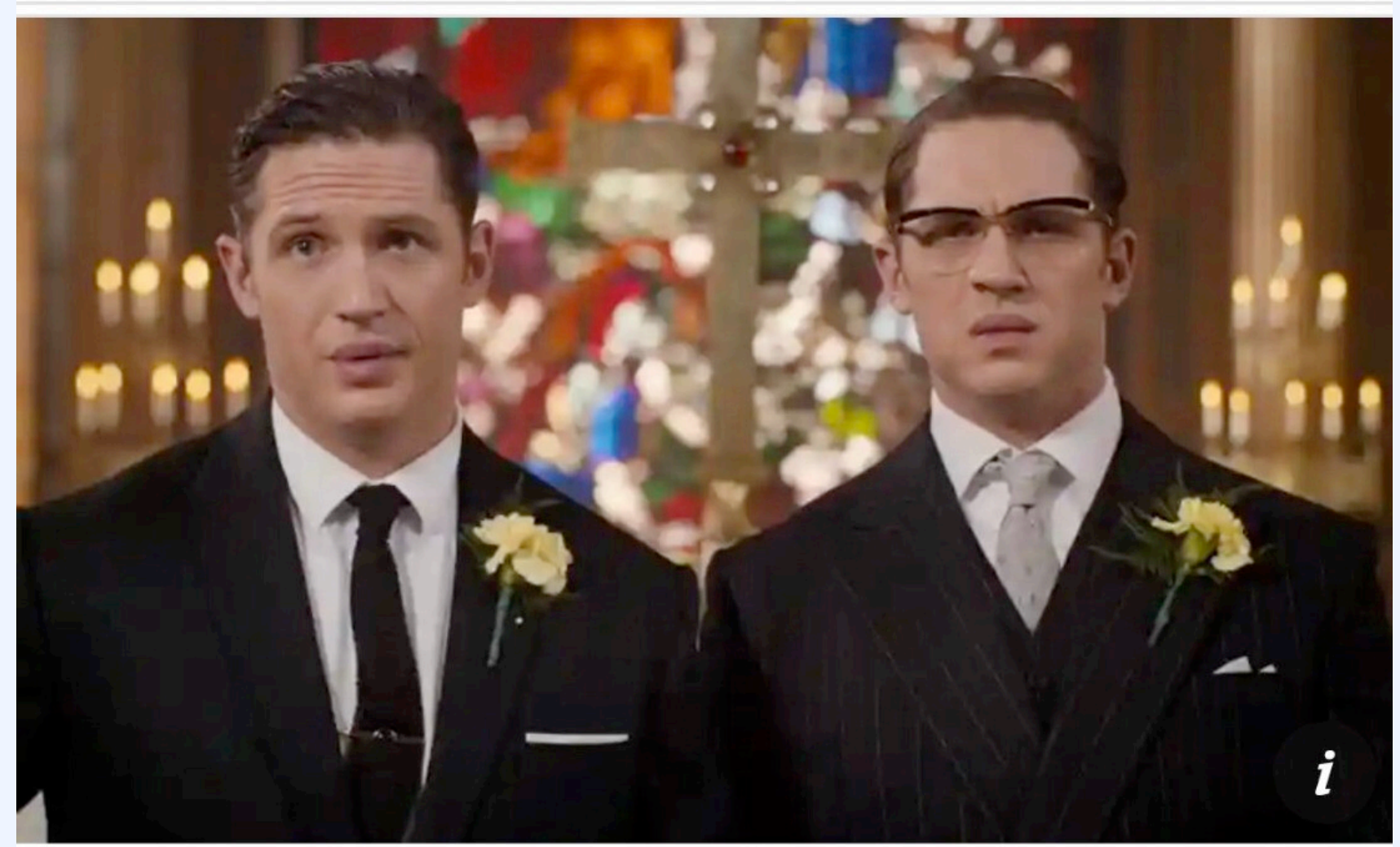
★ ★ ★ ★ ★  
ATTITUDE

**"UNMISSABLE...  
A BRITISH CLASSIC"**

HUFFINGTON POST BLOG

**LEGEND**

IN CINEMAS SEPT 9




First look review  
**Legend review - Tom Hardy on double duty in cartoonish Kays biopic**

★ ★ ☆ ☆ ☆

It's two thrags for the price of one actor and while flashes of brilliance emerge from his performance(s), Hardy is let down by disappointingly pedestrian surroundings

Shell Global Home Our strategy: Powering Progress Business customers Energy and Innovation Sustainability Investors Careers at Shell

Home > Inside Energy > Innovation, profit and purpose on the road to net zero



## Innovation, profit and purpose on the road to net zero

Sir Andrew Mackenzie became Chair of Shell in 2021. Here, he reflects on the challenges that face a world in transition, the importance of innovation – and the piece of advice he's glad he didn't take.

**By Melanie Cheary**  
on September 06, 2023

**As a highly regarded scientist and Chair of UK Research and Innovation, do you think there is enough investment in the right technology and is there enough innovation taking place to achieve net zero?**

ExxonMobil Who we are What we do News Investors Careers Global

# Continuing to support a net-zero future

The 2023 Advancing Climate Solutions Progress Report outlines our approach to help reduce greenhouse gas emissions in support of a net-zero future.

[Read more about the strategy](#)

ExxonMobil Global Outlook: Our view to 2050 | Delivering industrial solutions | ExxonMobil announces... of Denbury

bp

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- Energy economics >

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## Purpose

Reimagining energy for people and our planet

[Find out more](#)

## Strategy

Enabling us to pivot from being an international oil company to an integrated energy company

[Find out more](#)


## Transformation

Transforming bp to deliver secure, affordable, lower carbon energy

[Find out more](#)

# Net zero from ambition to action

### Net zero by 2050



"The world's carbon budget is finite and running out fast; we need a rapid transition to net zero"

**Bernard Looney, chief executive officer**

**1.  
WHAT  
AND  
WHY**

**2.  
THE  
GOOD  
PARTS**

**3.  
THE  
BAD  
PARTS**



# HI, I'M HIDDE

developer relations + accessibility  
at NL Design System

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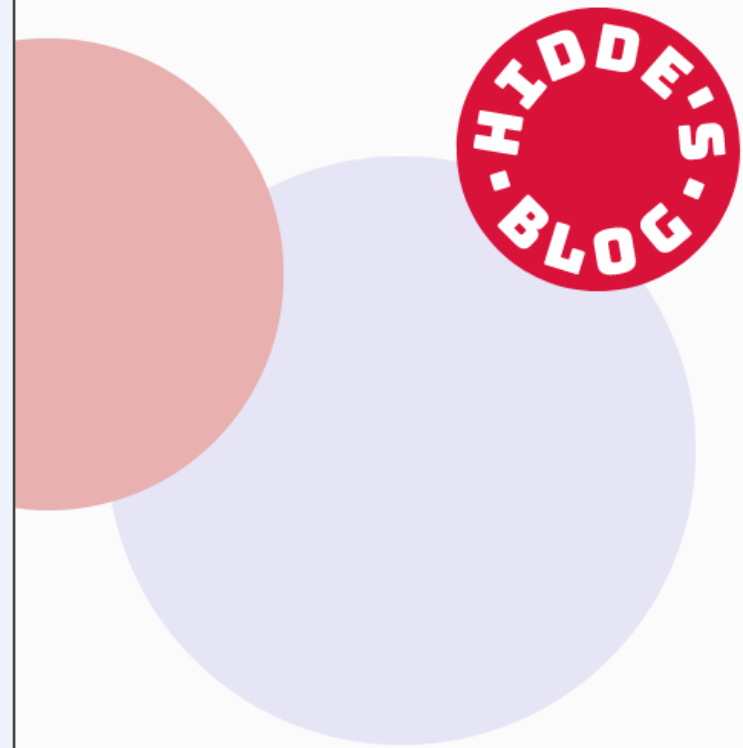
participant at Open UI CG / CSS WG

---

hidde.blog

LIKE &  
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# Blog

Posts about HTML, CSS, JavaScript, accessibility and browsers from the perspective of a curious front-end developer.

All 201 of them. For shorter writings, follow [@hdv@front-end.social](#) ([@hdv](#) [RSS](#)).

- books (10)
- events (44)
- front-end (25)
- industry (9)
- security (2)
- CSS (17)
- performance (1)
- Web Components (3)
- design systems (2)
- accessibility (38)
- elsewhere (3)
- personal (14)
- ethics (6)
- UX (1)
- ai (3)
- meta (5)
- primers (3)
- web platform (6)
- privacy (2)
- workflow (2)
- media (3)

▶ [RSS \(full\)](#)

▶ [Blog roll](#)

**My ideal accessible components resource is holistic, well tested and easy to use**

*on Wed Mar 08 2023*

To improve accessibility of the web as it is today, I feel we dearly need accessibility guidance that is holistic, well tested and easy to use

# THE WHAT AND WHY



**JUST ARIA WON'T  
MAKE MAKE YOUR  
APP ACCESSIBLE**

Source: James Catt

<https://jamescatt.ca/blog/2020/surfacing-accessibility-problems>

Web accessibility is about  
how **people** use the web.

(which is outside our control as developers)

# A LOT OF PEOPLE

https://en.wikipedia.org/wiki/Page\_zooming 240%

Article Talk Read Edit View history Search Wikipedia

## Page zooming

From Wikipedia, the free encyclopedia

This article **does not cite any sources**. Please help improve this article by adding citations to reliable sources. Unsourced material may be challenged and removed.

*Find sources: "Page zooming" – news · newspapers · books · scholar · JSTOR (December 2009) (Learn how and when to*

Zoom in  
on web  
pages

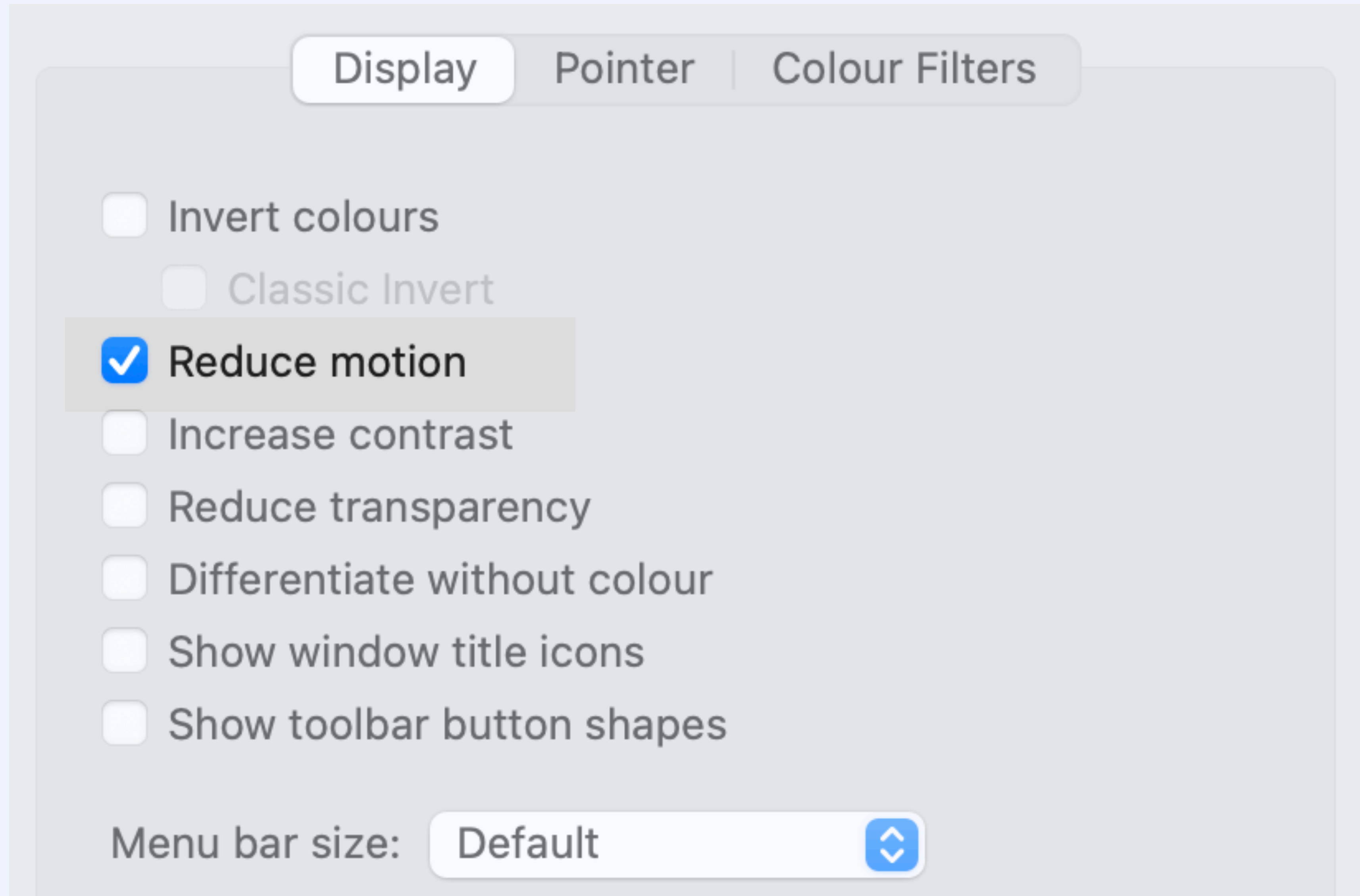
# A LOT OF PEOPLE

Use high contrast modes



# A LOT OF PEOPLE

Prefer  
reduced  
motion





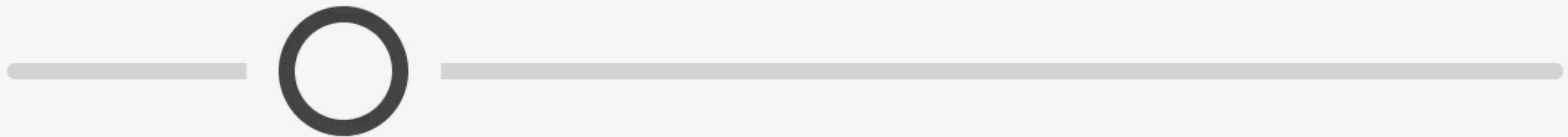
**A LOT OF PEOPLE**

Do not use a mouse



Cookies to buy

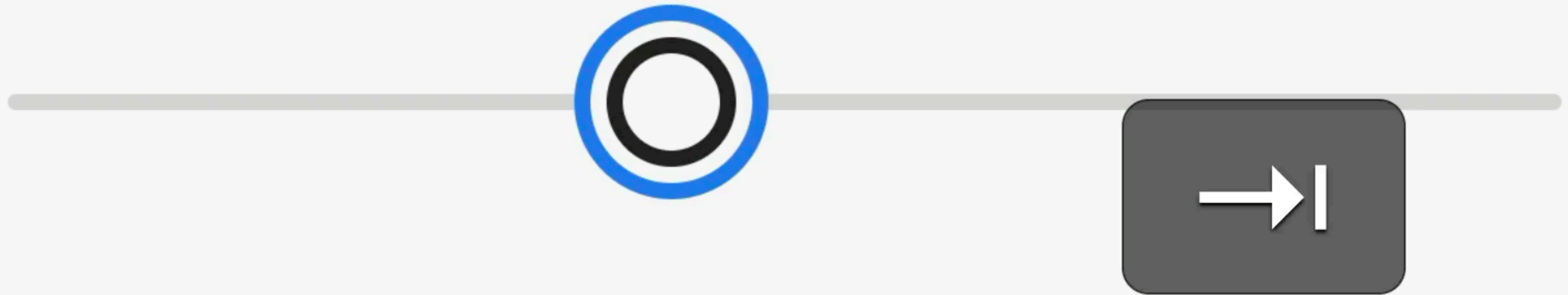
19



# Slider example from Adobe Spectrum

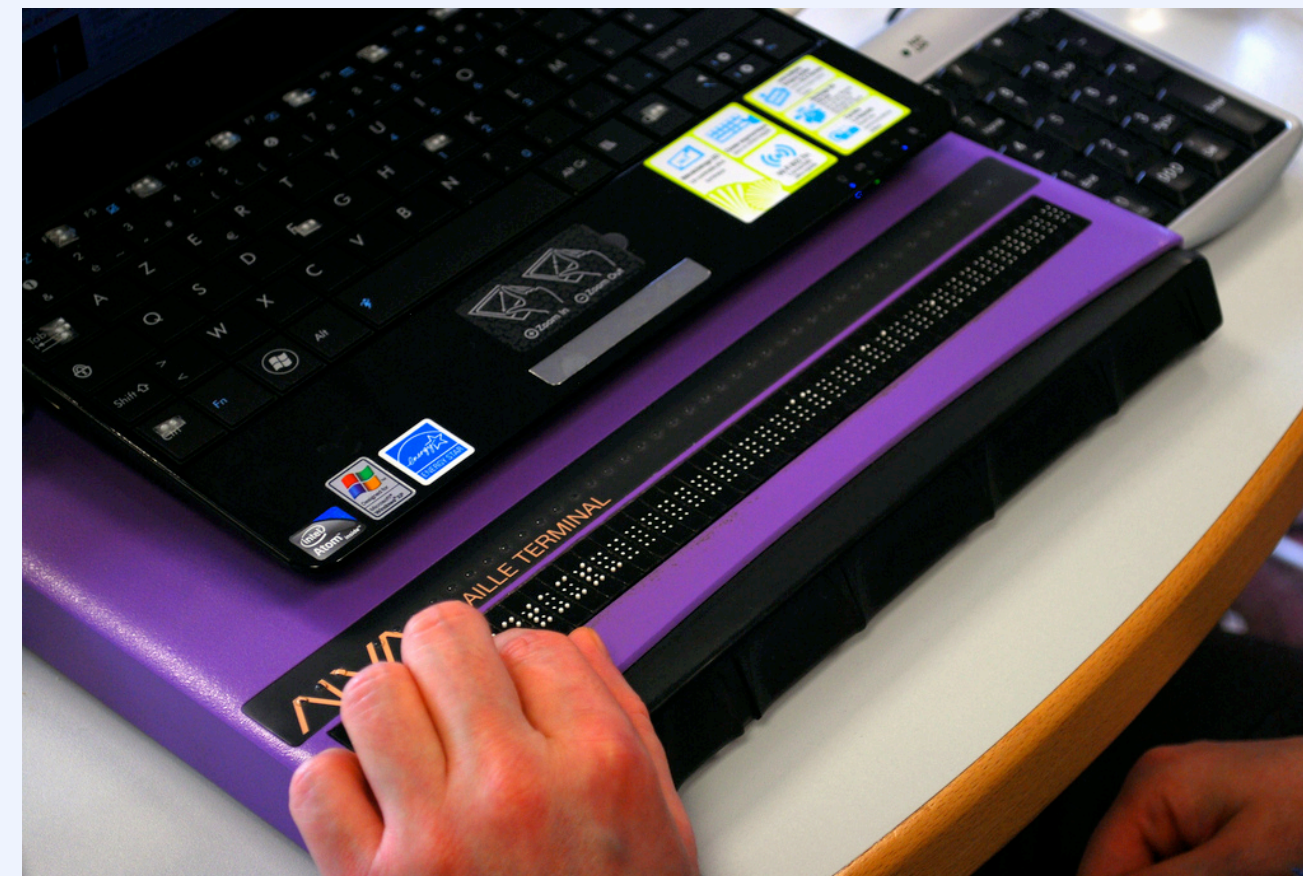
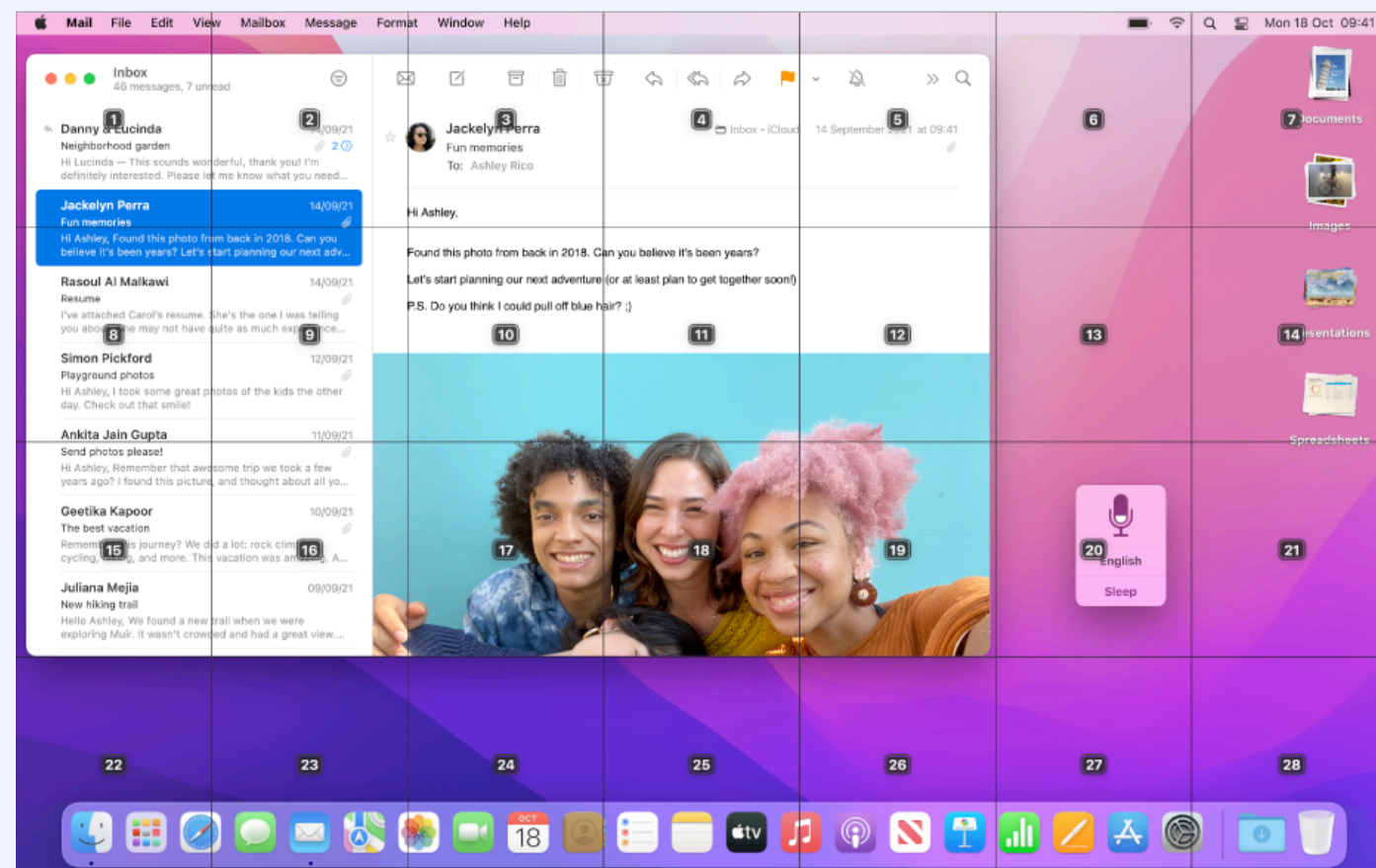
Cookies to buy

42



# A LOT OF PEOPLE

Use assistive technologies



Assistive technologies need  
to “understand” our site well  
to convey it

Jimmy Buffett | France abaya school ban | American families leaving the US for Europe | Final call for boarding passes? |  
Novak Djokovic at the US Open | Mohamed Al-Fayed

# Burning Man attendees unable to leave desert



Tens of thousands of festival goers told to conserve water and food after heavy rains leave them stranded in Nevada



In this Asian country, the young find dating so hard their parents are doing it for them

- South Korea needs more babies and workers. It's hoping foreign housekeepers will fix that

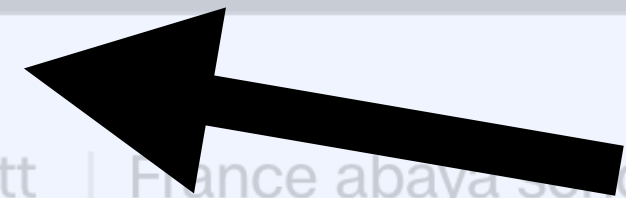


North Korea says it has simulated a nuclear missile attack to warn US of 'nuclear war danger'

World Cup kiss scandal hasn't damaged Spanish brand, prime minister says

Typhoon Haikui expected to make landfall in Taiwan Sunday afternoon

Dr. Fauci responds to study that says masks didn't work



**role: link**

**name: "World"**

Burning Man attendees  
unable to leave

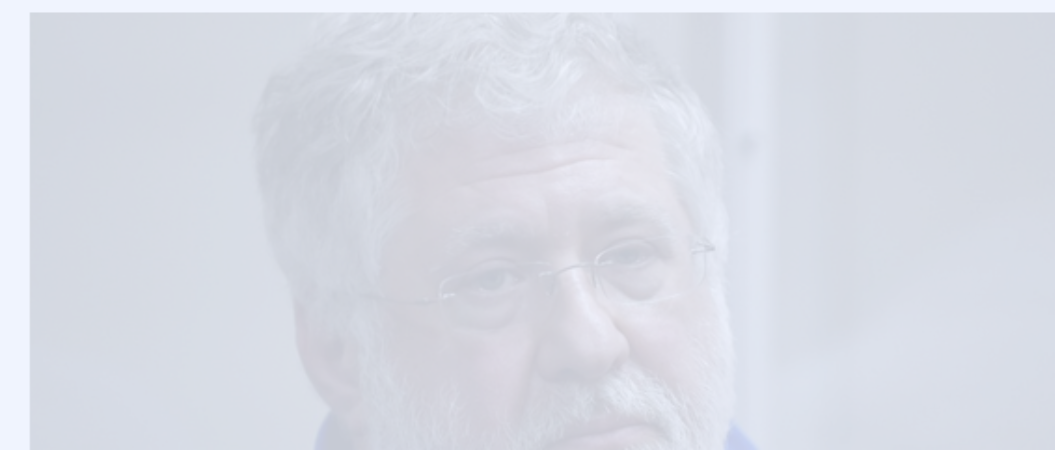


Tens of thousands of festival goers told to conserve water and food after heavy rains leave them stranded in Nevada



In this Asian country, the young find dating so hard their parents are doing it for them

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North Korea says it has simulated a nuclear missile attack to warn US of 'nuclear war danger'

World Cup kiss scandal hasn't damaged Spanish brand, prime minister says

Typhoon Haikui expected to make landfall in Taiwan Sunday afternoon

Dr. Fauci responds to study that says masks didn't work

**role: link**

**name: "US politics"**

Jimmy Buffett | France abaya school ban | Ar  
Novak Djok  
**Burning Man attendees  
unable to leave desert**



**Tens of thousands of festival goers told to conserve water and food after heavy rains leave them stranded in Nevada**



**In this Asian country, the young find dating so hard their parents are doing it for them**

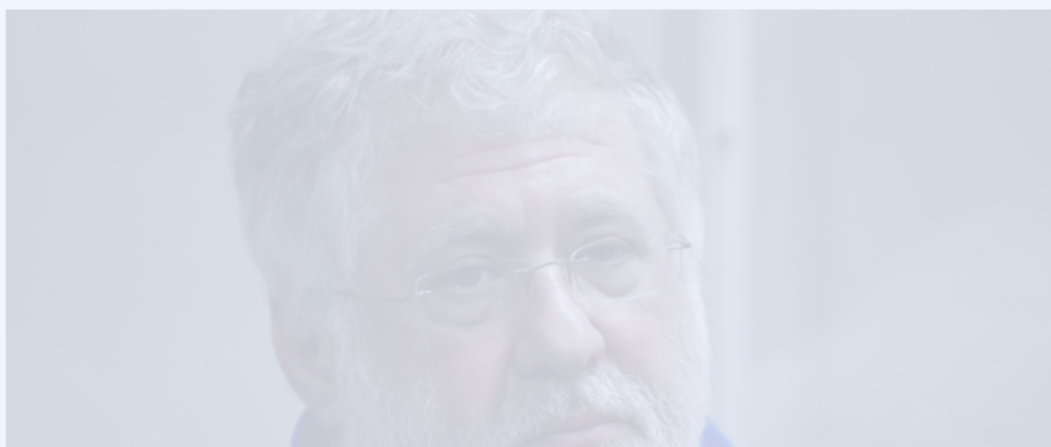
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**role: button**

**name: "Open menu"**



Tens of thousands of festival goers told to conserve water and food after heavy rains leave them stranded in Nevada



In this Asian country, the young find dating so hard their parents are doing it for them

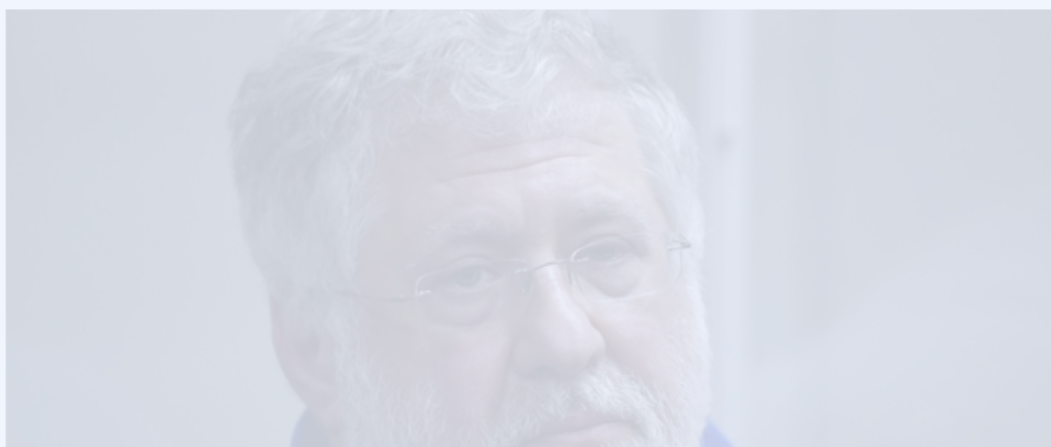
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Dr. Fauci responds to study that says masks didn't work

All websites expose “accessibility meta information”.

All websites expose “accessibility meta information”. A developer's choices can directly influence the quality of it.

With WAI-ARIA, you can **set**  
and **augment** accessibility meta  
information



With **WAI-ARIA**, you can **set**  
**and augment** accessibility meta  
information.

**With great power comes  
great responsibility.**



WAI-ARIA is an **ontology** for  
accessibility meta information

**defined/standardised  
naming structure**

WAI-ARIA is an **ontology** for  
accessibility meta information

**ROLES**

**STATES**

**PROPERTIES**

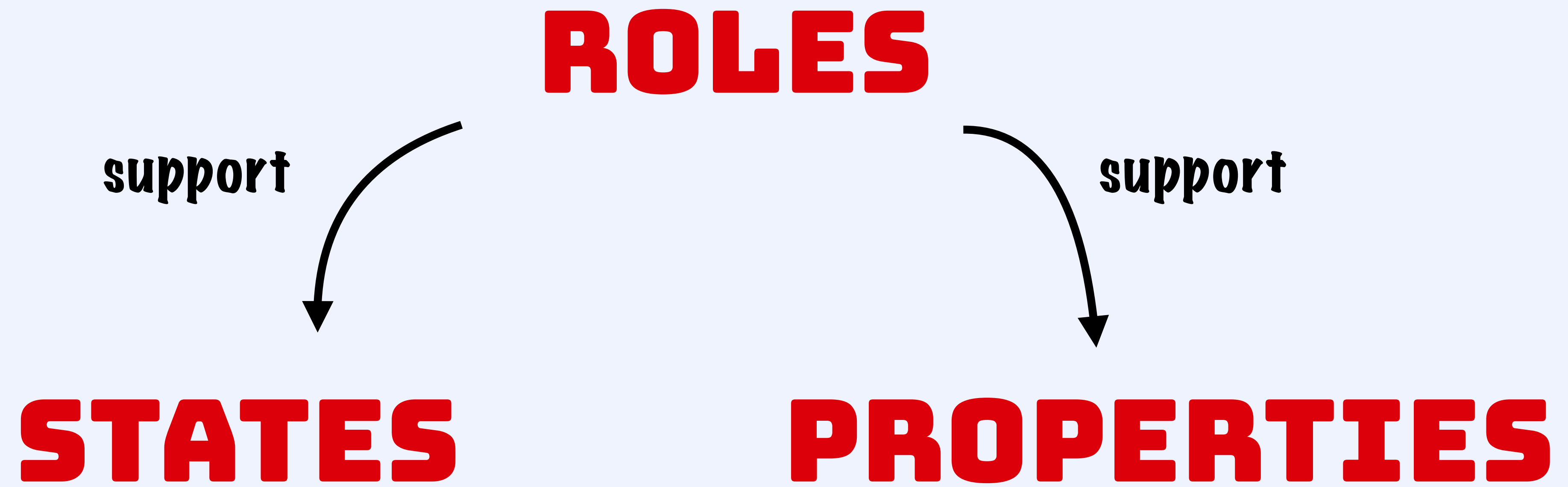


**ROLES**

**STATES**

**PROPERTIES**

**“semantics”  
– WAI-ARIA**



# **ROLES, STATES, PROPERTIES**

*in our HTML*

# **ROLES, STATES, PROPERTIES**

*in your HTML  
(or SVG, XML, JSX etc)*

# **ROLES, STATES, PROPERTIES**

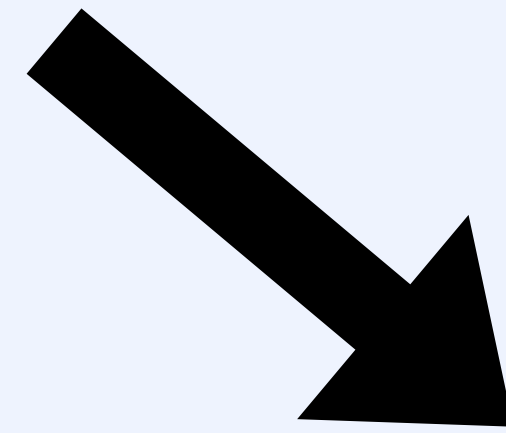
*in your HTML  
(or SVG, XML, JSX etc)  
(with or without ARIA attributes)*

# ROLES, STATES, PROPERTIES

*in our HTML  
(or SVG, XML, JSX etc)  
(with or without ARIA attributes)  
(sometimes impacted by our  
HTML and/or CSS)*

# ROLES, STATES, PROPERTIES

*in your HTML  
(or SVG, XML, JSX etc)  
(with or without ARIA attributes)  
(sometimes impacted by our  
HTML and/or CSS)*

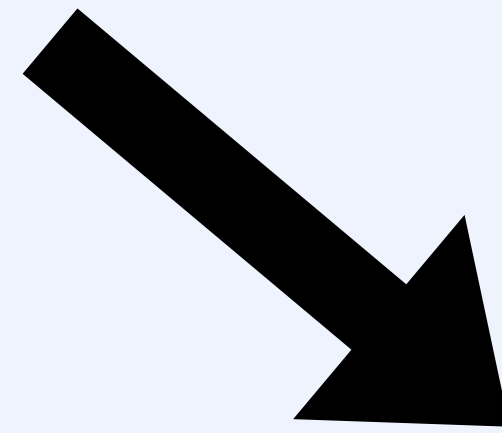


# INTERFACE AFFORDANCES

*in our user's screenreader  
(or switch, voice control etc)*

**ROLES, PROPERTIES,**  
**CODE OF YOUR WEBSITE**

*in your HTML  
(or SVG, XML, JSX etc)  
(with or without ARIA attributes)  
(sometimes impacted by your  
HTML and/or CSS)*

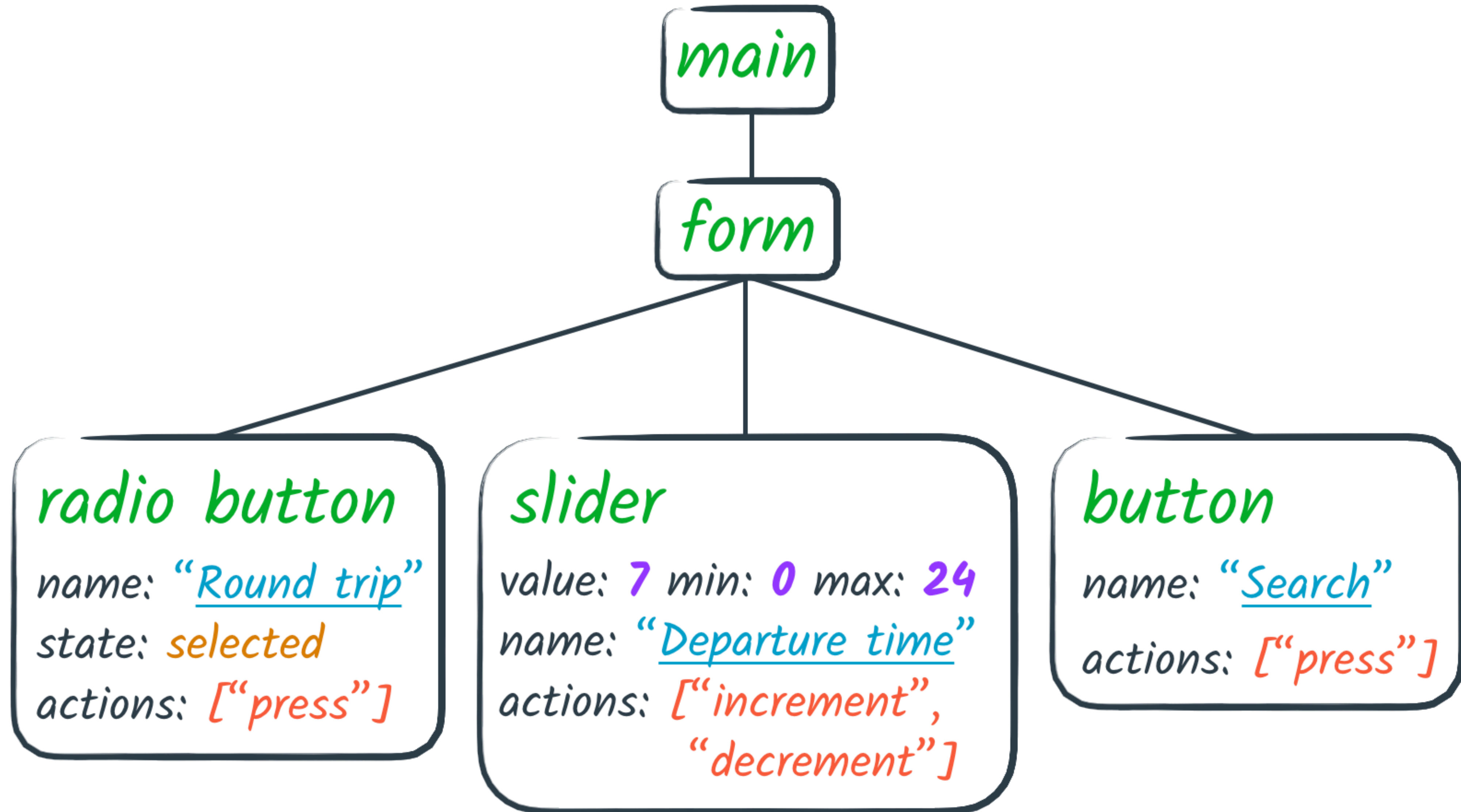


**IMPACTANCE**  
**USER'S UI**  
**ASSISTANCE**

*in our assistive screenreader  
(or switch, voice control etc)*



**THERE ARE A LOT OF  
DIFFERENT PEOPLE  
AND TOOLS**



7  
S  
an  
00189125V

- Français
- English
- Español
- Deutsch
- Italiano

Annulez ou refusez ici  
A96-06

Sélectionnez à l'aide du rouleau

Validez ou acceptez ici  
A96-05

# WHAT IS ARIA?

Ontology for accessibility  
meta information + way  
for devs to augment it

## WHAT IS ARIA?

Ontology for accessibility  
meta information + way  
for devs to augment it

## HOW DOES IT AFFECT USERS?

Their AT can be better informed  
about what's happening in site

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Personalisation for users with  
cognitive/learning disabilities

## WHAT IS ARIA?

Ontology for accessibility  
meta information + way  
for devs to augment it

## HOW DOES IT AFFECT USERS?

Their AT can be better informed  
about what's happening in site  
Personalisation for users with  
cognitive/learning disabilities

## WHY NOT ALL PARTS GOOD?

There's lots of nuance. That  
nuance is often ignored.

# THE GOOD PARTS



# ARIA CAN ONLY BENEFIT USERS WHEN...

...the properties are **well-supported**

# ARIA CAN ONLY BENEFIT USERS WHEN...

...the properties are **consistently supported**

# **ARIA CAN ONLY BENEFIT USERS WHEN...**

**...it's used alongside other accessibility  
requirements**

# ARIA CAN ONLY BENEFIT USERS WHEN...

...it's used alongside other accessibility  
requirements



```
<div role="button"></div>
```

# ARIA CAN ONLY BENEFIT USERS WHEN...

...it's used alongside other accessibility  
requirements

accessible names

Save

```
<div role="button">  
  Save  
</div>
```

# ARIA CAN ONLY BENEFIT USERS WHEN...

...it's used alongside other accessibility  
requirements

accessible names

color contrast



Save

```
<div role="button">  
  Save  
</div>
```

# ARIA CAN ONLY BENEFIT USERS WHEN...

...it's used alongside other accessibility  
requirements

accessible names

color contrast

focus indication



```
<div role="button">  
  Save  
</div>
```

# ARIA CAN ONLY BENEFIT USERS WHEN...

...it's used alongside other accessibility  
requirements

accessible names

color contrast

focus indication

keyboard support



```
<div role="button"  
tabindex="0">  
  Save  
</div>
```



# ARIA CAN ONLY BENEFIT USERS WHEN...

...it's used alongside other accessibility requirements

accessible names

color contrast

focus indication

keyboard support

zoom support



```
<div role="button"  
tabindex="0">  
  Save  
</div>
```

# ARIA CAN ONLY BENEFIT USERS WHEN...

...it's used alongside other accessibility requirements

accessible names

color contrast

focus indication

keyboard support

zoom support

High Contrast Mode support



```
<div role="button"
tabindex="0">
  Save
</div>
```

# THE GOOD PARTS

a.k.a. “adding these adds  
some value for end users”

# landmarks



STRONGER  
together



STRONGER  
together

registration

stage

toilets



```
<nav aria-labelledby="n">  
  <h2 id="n">On this Page</h2>  
  ...  
</nav>
```

```
<nav aria-labelledby="n">  
  <h2 id="n">On this Page</h2>  
  ...  
</nav>
```

```
<aside aria-labelledby="f">  
  <h2 id="f">Filters</h2>  
  ...  
</nav>
```



```
<nav aria-labelledby="n">
  <h2 id="n">On this Page</h2>
  ...
</nav>

<aside aria-labelledby="f">
  <h2 id="f">Filters</h2>
  ...
</nav>

/* other landmark elements
   are <header>, <footer>,
   <section>, <search>,
   <form> */
```

```
<nav aria-labelledby="n">
  <h2 id="n">On this Page</h2>
  ...
</nav>

<aside aria-labelledby="f">
  <h2 id="f">Filters</h2>
  ...
</nav>

/* other landmark elements
   are <header>, <footer>,
   <section>, <search>,
   <form> */
```

## landmarks: how?

- only the most important ones
- most useful when they are labelled
- they all have HTML elements

```
<nav aria-labelledby="n">  
  <h2 id="n">On this Page</h2>  
  ...  
</nav>
```

```
<aside aria-labelledby="f">  
  <h2 id="f">Filters</h2>  
  ...  
</nav>
```

```
/* other landmark elements  
are <header>, <footer>,  
<section>, <search>,  
<form> */
```

## landmarks: why?

- some users navigate by landmarks

aria-expanded

# aria-expanded

to say if tooltip opened or closed



**BIC/SWIFT codes are used to identify banks and financial institutions globally.**

aria-expanded to convey meta data is expanded

# HTML Accessibility API Mappings 1.0

W3C Working Draft 02 September 2023



▶ [More details about this document](#)

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## Abstract

HTML Accessibility API Mappings (HTML-AAM) defines how *user agents* map HTML [HTML] elements and attributes to platform *accessibility application programming interfaces (APIs)*. It leverages and extends the [Core Accessibility API Mappings 1.2](#) and the [Accessible Name and Description Computation 1.1](#) for use with the HTML host language. Documenting these mappings promotes interoperable exposure of roles, states,

aria-expanded how?

- only on elements that *toggle*
- the browser manages this for **popover** and **<details>/<summary>**

**BIC/SWIFT codes are used to identify banks and financial institutions globally.**

**HTML Accessibility API Mappings 1.0**  
W3C Working Draft 02 September 2023

W3C

▶ More details about this document

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**Abstract**

HTML Accessibility API Mappings (HTML-AAM) defines how *user agents* map HTML [HTML] elements and attributes to platform *accessibility application programming interfaces (APIs)*. It leverages and extends the *Core Accessibility API Mappings 1.2* and the *Accessible Name and Description Computation 1.1* for use with the HTML host language. Documenting these mappings promotes interoperable exposure of roles, states, properties, and events implemented by accessibility APIs and helps to ensure that this information appears in a manner consistent with author intent.

aria-expanded why?

- conveys visual state programmatically



BIC/SWIFT codes are used to identify banks and financial institutions globally.

W3C Working Draft

## HTML Accessibility API Mappings 1.0

W3C Working Draft 02 September 2023



► [More details about this document](#)

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### Abstract

HTML Accessibility API Mappings (HTML-AAM) defines how *user agents* map HTML [HTML] elements and attributes to platform *accessibility application programming interfaces (APIs)*. It leverages and extends the *Core Accessibility API Mappings 1.2* and the *Accessible Name and Description Computation 1.1* for use with the HTML host language. Documenting these mappings promotes interoperable exposure of roles, states, properties, and events implemented by accessibility APIs and helps to ensure that this information appears in a manner consistent with author intent.





aria-pressed

# aria-pressed to make a button to toggle mute



aria-pressed to make a button to toggle liked status

*Live* every moment,  
*Laugh* every day,  
*Love* beyond words.



Like



Comment



Repost



Send

aria-pressed how?

- toggle between true/false

*Live* every moment,

*Laugh* every day  
*Love* beyond words.



Like



Comment



Repost



Send

aria-pressed why?

- convey visual state programmatically

*Live* every moment,

*Laugh* every day  
*Love* beyond words.



Like



Comment



Repost



Send

aria-label/  
aria-labelledby

# aria-label / aria-labelledby to label stuff

The screenshot shows the top navigation bar of the Eurostar website. On the left is the Eurostar logo. On the right are links for 'Help', 'United Kingdom' (with a UK flag), and 'Hidde de Vries' (with a user icon). Below the navigation bar is a search bar with three main sections: 'From' (set to 'London St Pancras Int'l'), 'To' (with a double-headed arrow icon), and 'Date' (set to 'Tue 26 Sept'). There are also links for 'Add return' and '1 adult' (with a dropdown arrow). A yellow 'Search' button is on the right. Below the search bar are three links: 'Explore all trains', 'Find lowest fares', and 'Groups 10+'.

The hero banner features a stylized illustration of a white Eurostar train on a track, with wind turbines in the background. The background is a gradient of pink, purple, and blue. A green starburst graphic is on the right. A green button with a clock icon and the text 'Live train information >' is in the top right corner. The text 'See more of Europe with Eurostar' is at the bottom right.

# aria-label / aria-labelledby to label stuff

The image shows a screenshot of the Eurostar website's search interface. At the top left is the Eurostar logo. The top right contains links for 'Help', 'United Kingdom', and a user profile 'Hidde de Vries'. Below the logo is a navigation bar with 'Trains', 'Train + Hotel', and 'Hotels' as primary options, and 'Destinations', 'Travelling with Eurostar', 'Frequent travellers', and 'Manage booking' as secondary options. The search form is partially visible, with the 'From' field containing 'London St Pancras Int'l' and the 'To' field highlighted. A callout box points to the 'To' field, stating it has no visible label and needs a name. The background features a stylized illustration of a Eurostar train and wind turbines.

**eurostar**

Help United Kingdom Hidde de Vries

Trains Train + Hotel Hotels Destinations Travelling with Eurostar Frequent travellers Manage booking

London St Pancras Int'l To Search

Explore all trains

Information

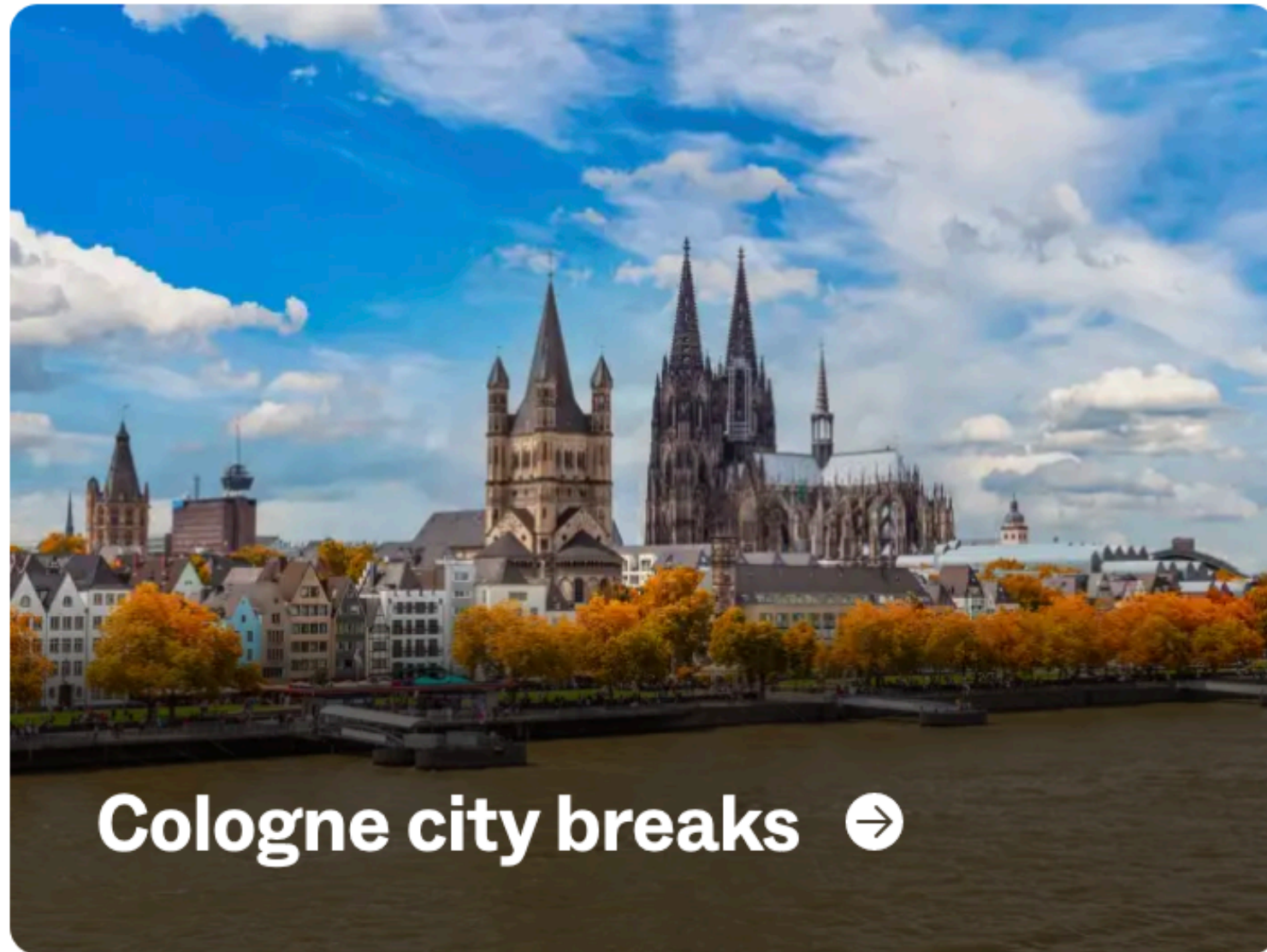
See more of Eurostar

has no visible label, needs name



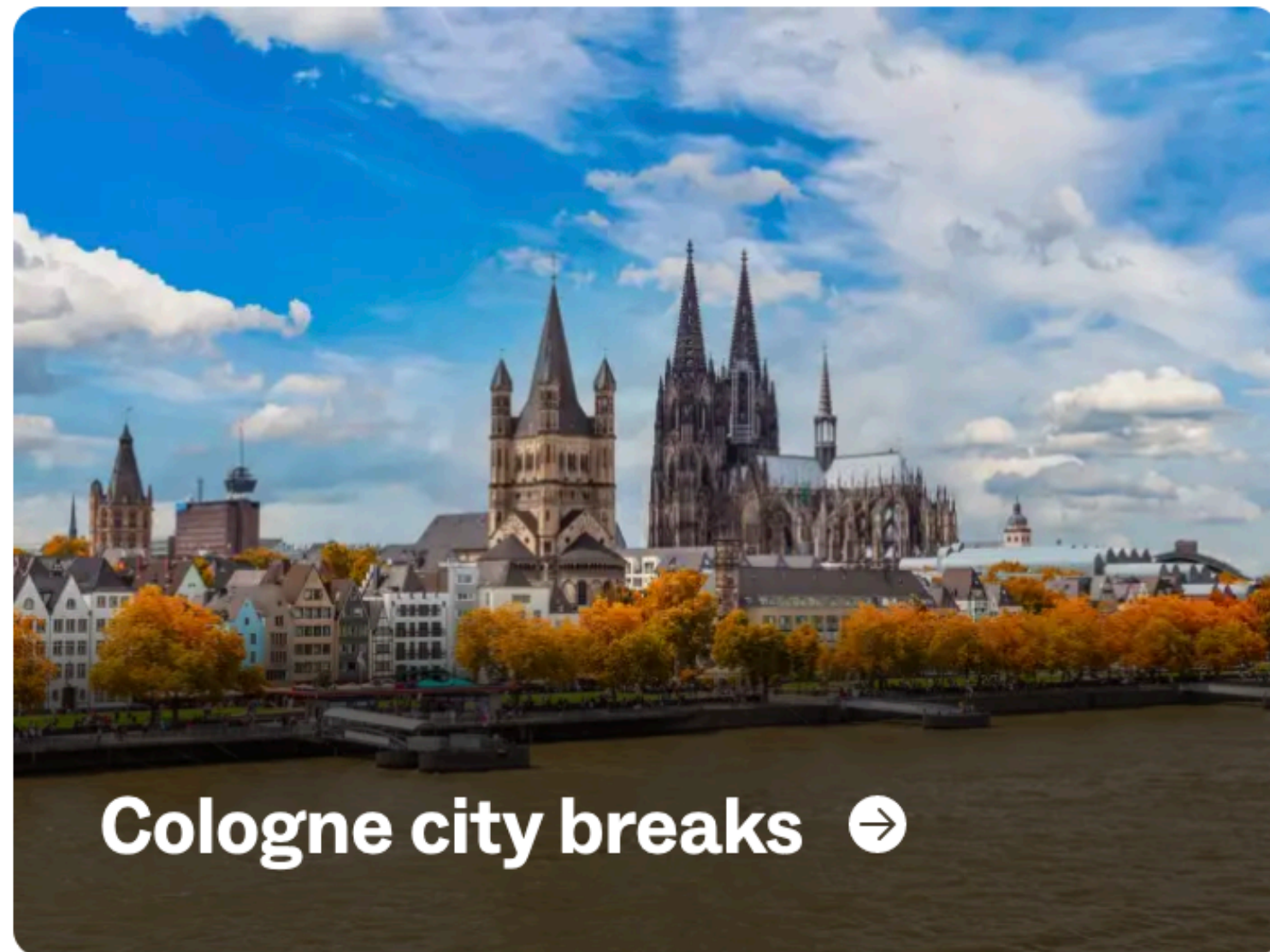
aria-label / aria-labelledby to label stuff

## Ideas for your next trip



# aria-label / aria-labelledby to label stuff

## Ideas for your next trip



Cologne city breaks →



Disneyland holidays →

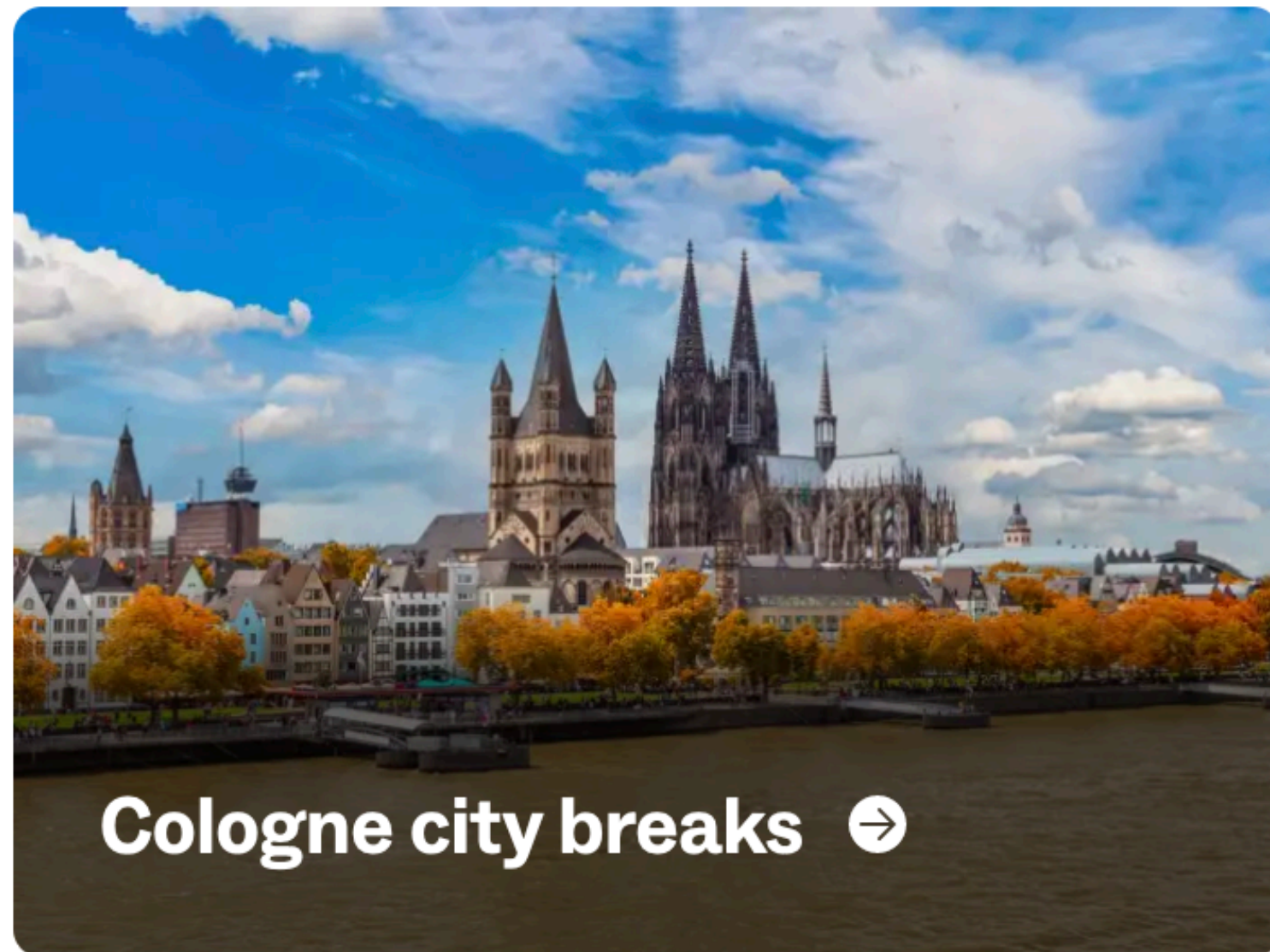


Beautiful Bruges →

```
<section>  
  <h2>Ideas for your next trip</h2>  
  ...  
</section>
```

# aria-label / aria-labelledby to label stuff

## Ideas for your next trip

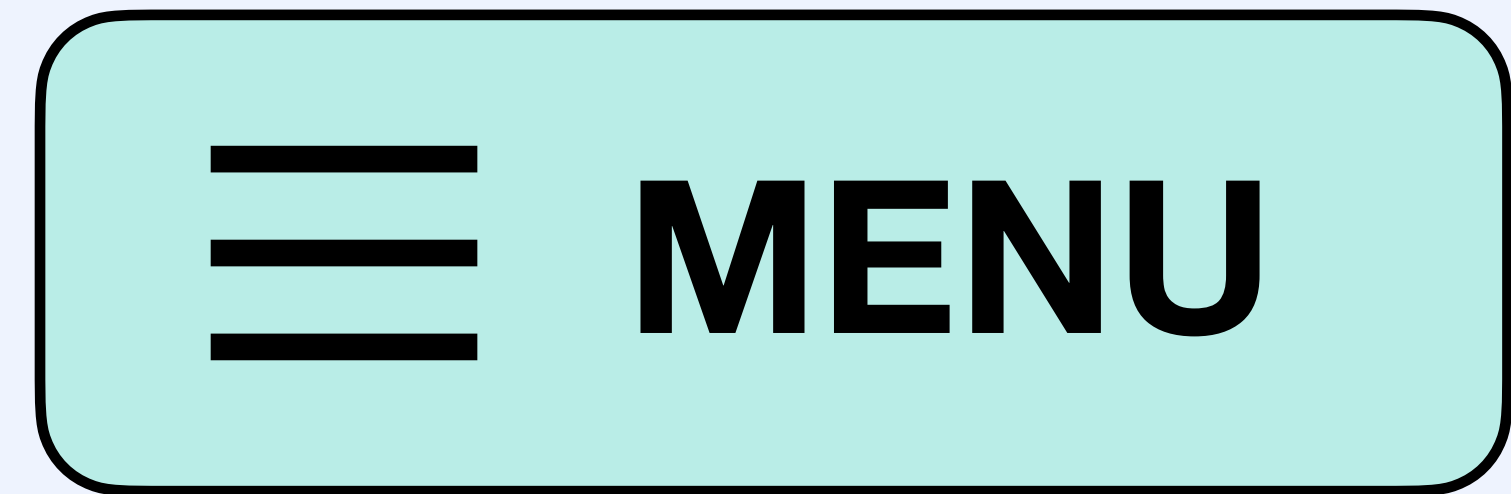


```
<section aria-labelledby="ideas">  
  <h2 id="ideas">Ideas for your next trip</h2>  
  ...  
</section>
```

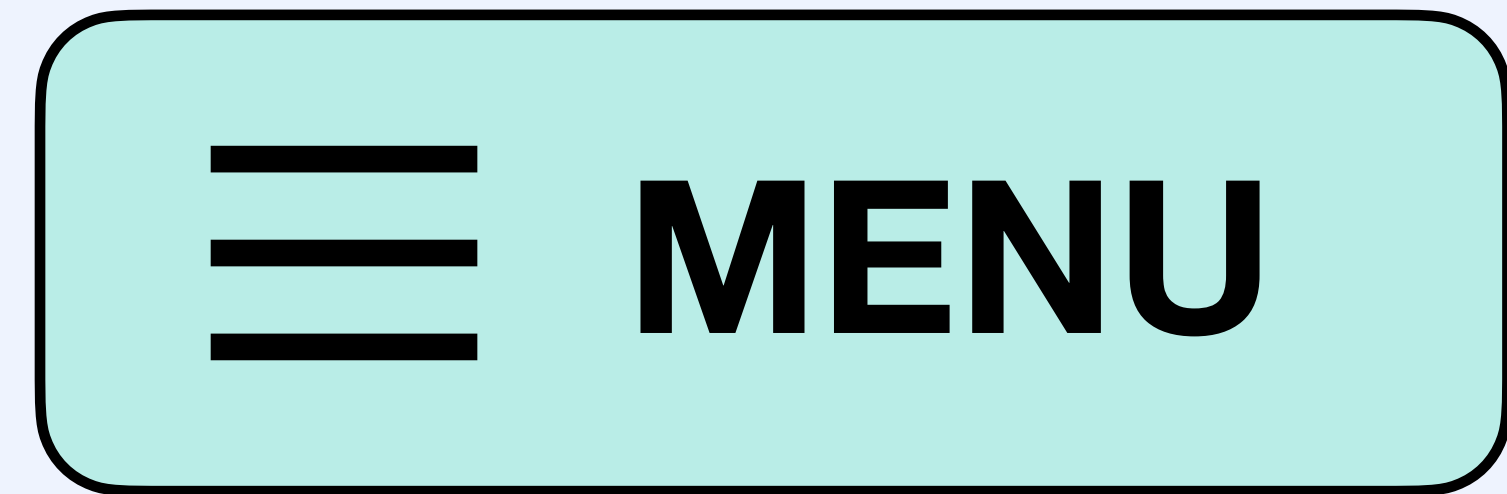
## ARIA labels how?

- when we've ran out of other labeling techniques
- use unique, to the point names
- avoid difference in ARIA label and visual label

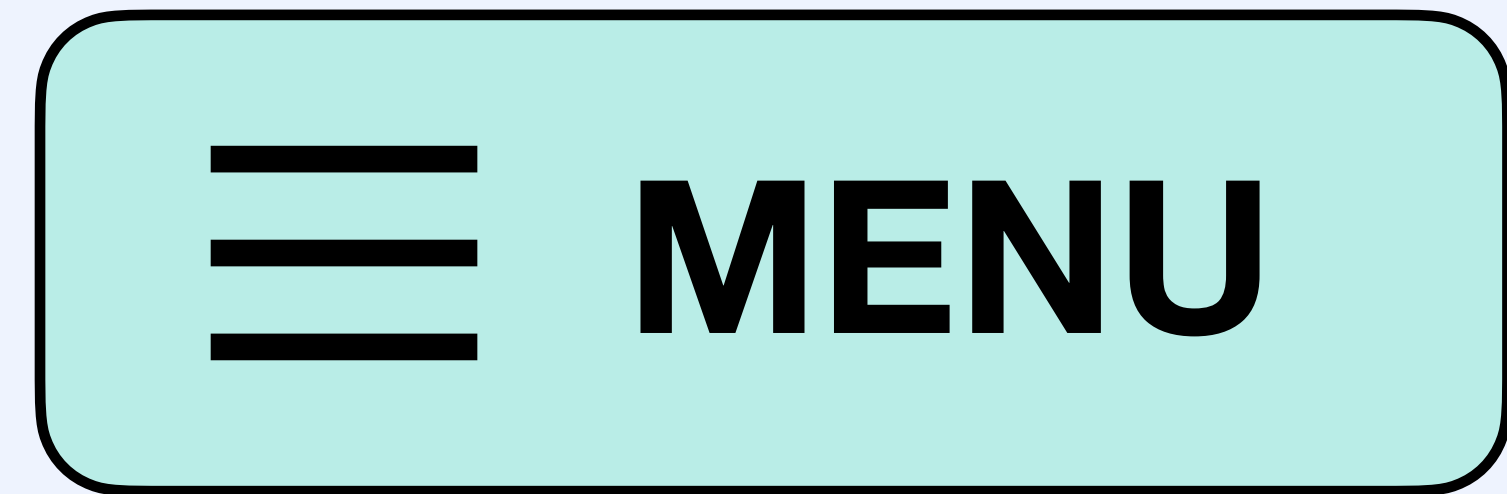
```
<button type="button">  
  <svg>...</svg>  
  MENU  
</button>
```



```
<button  
  type="button"  
  aria-label=  
    "Open hamburger thingy">  
  <svg>...</svg>  
  MENU  
</button>
```



```
<button  
  type="button"  
  aria-label=  
    "Open hamburger thingy">  
  <svg>...</svg>  
  MENU  
</button>
```



**mismatch between aria-label  
and visual fails "Label In Name"**



**Eric Eggert**

@yatil@yatil.social



Is there a good overview on the ARIA roles that overwrite their contents when aria-label is used (button, a,...) and those who do not (nav, region,...)? I looked into the ARIA standard, but didn't find it.

12 September 2023 at 11:30:13 · 🌐

[elk.zone/yatil.social/@yatil/111051473778282684](https://elk.zone/yatil.social/@yatil/111051473778282684)



## ARIA labels why?

- because users can navigate much more easily if things have (unique + useful) names

aria-describedby

# aria-describedby to relate error message to field(set)

National Insurance number

It's on your National Insurance card, benefit letter, payslip or P60. For example, 'QQ 12 34 56 C'.

**Enter a National Insurance number in the correct format**

*with field*

**When was your passport issued?**

For example, 27 3 2007

**The date your passport was issued must be in the past**

Day

Month

Year

*with fieldset*

**aria-current**

# aria-current

<p>Home Products <b>About us</b> Contact</p>	
<p><u>Home</u> / <u>About us</u> / Team</p>	<p>◀ previous 1 <b>2</b> 3 next ▶</p>

# aria-current why?

The diagram illustrates the use of `aria-current` in a navigation menu and pagination. It is divided into two main sections.

**Navigation Menu:** A horizontal bar contains four items: "Home", "Products", "About us", and "Contact". The "About us" item is highlighted with a white background, indicating it is the current page.

**Breadcrumbs:** Below the menu, a breadcrumb trail shows "Home / About us / Team". The "About us" link is underlined, indicating it is the current page.

**Pagination:** A pagination control shows a "previous" button, three page numbers (1, 2, 3), and a "next" button. The number "2" is highlighted with a black background, indicating it is the current page.

makes visual state  
programmatically  
available

# aria-current why?



makes visual state programmatically available

better than visually hidden “(current)” (i18n, standardised)

# aria-current why?



makes visual state programmatically available

better than visually hidden “(current)” (i18n, standardised)

well supported



aria-live

# aria-live

for session time out warnings

@hdv@front-end.social

English



## MijnOverheid

H.A. de Vries

[Uitloggen](#)

- Home
- Berichtenbox
- Lopende zaken
- Identiteit
- Financiën
- Werk
- Gezondheid**
- Wonen

### Wilt u uw sessie verlengen?

Uw sessie is mogelijk verlopen. Als u te lang niks hebt gedaan, wordt u uit veiligheidsoverwegingen uitgelogd.

Kies "Ja" om uw sessie te verlengen, mogelijk moet u dan opnieuw inloggen.

[Uitloggen](#)

[Ja, verlengen](#)

n na uw overlijden wel of niet

[Ga naar Donorregister](#)



**105,79 excl. VAT**

128,-

**Delivered tomorrow**

Compare to other products



**Tefal OptiGrill Elite GC7508**

470 reviews

Removable plates | 4 sandwiches | Included plates ribbed

**165,29 excl. VAT**

200,-

**Delivered tomorrow**

Compare to other products



**Sage the BBQ and Press**

14 reviews

Removable plates | 4 sandwiches | Included plates Ribbed, Smooth

**154,55 excl. VAT**

187,-



aria-live  
for successful shopping  
cart additions

## aria-live how?

- with aria-live
  - or we can use an `<output>` element for a name-able polite region that mostly works

## aria-live pitfalls?

- don't focus the live region
- don't trigger announcements multiple times, too much is annoying

## aria-live why?

- status updates and warnings are often clearly marked **visually**, live regions add it **programmatically**

aria-hidden

## aria-hidden how?

- not on focusable elements!
- avoid confusing sighted screenreader users



# aria-hidden why?

- to remove redundant content from AT (this is likely rare)

aria-hidden is not the  
same as role=presentation  
(which only removes  
default role)

landmarks, aria-expanded, aria-pressed  
aria-label/aria-labelledby, aria-describedby,  
aria-current, aria-live, aria-hidden

landmarks, aria-expanded, aria-pressed  
aria-label/aria-labelledby, ariadescribedby,  
aria-current, aria-live, aria-hidden

vs

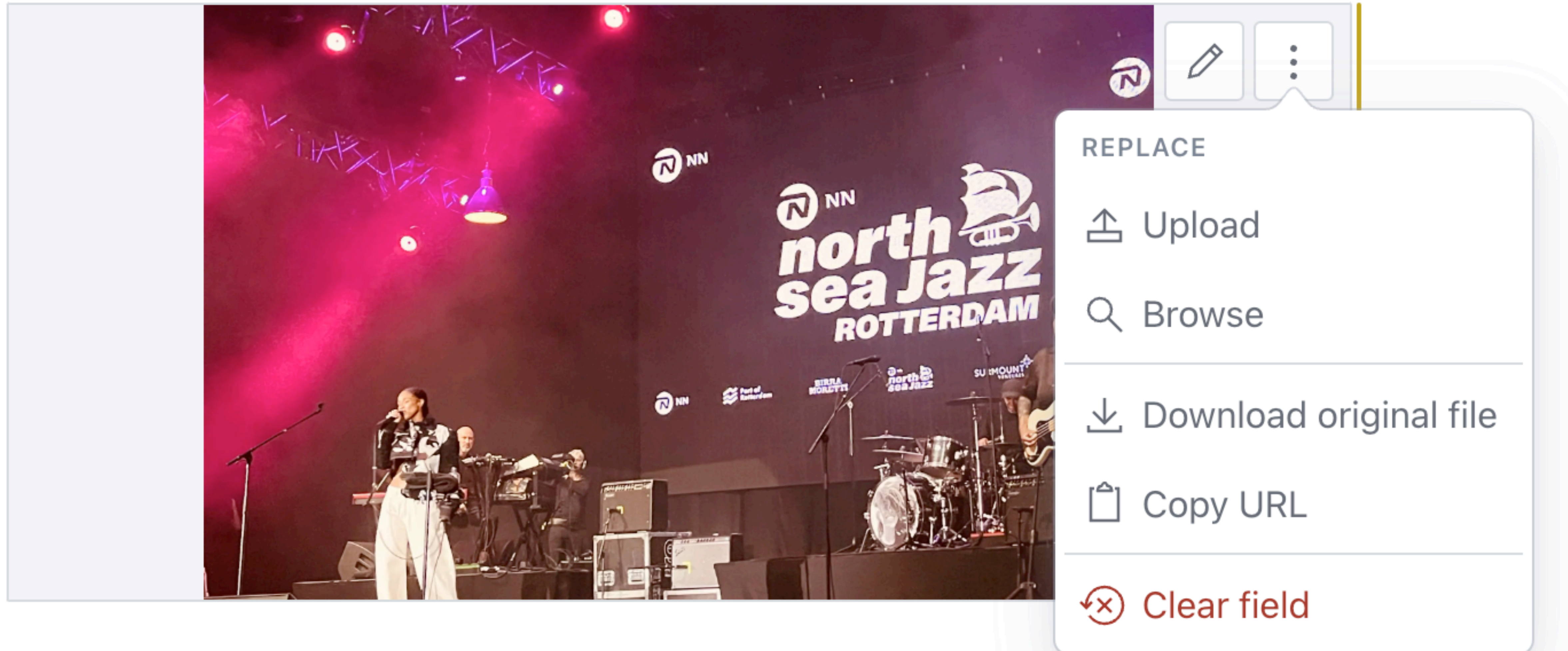
more complex widgets

**“TALK TO YOUR  
KIDS ABOUT ARIA  
BEFORE IT'S TOO  
LATE.”**

—*Sarah Higley*

[sarahmhigley.com/writing/roles-and-relationships/](https://sarahmhigley.com/writing/roles-and-relationships/)

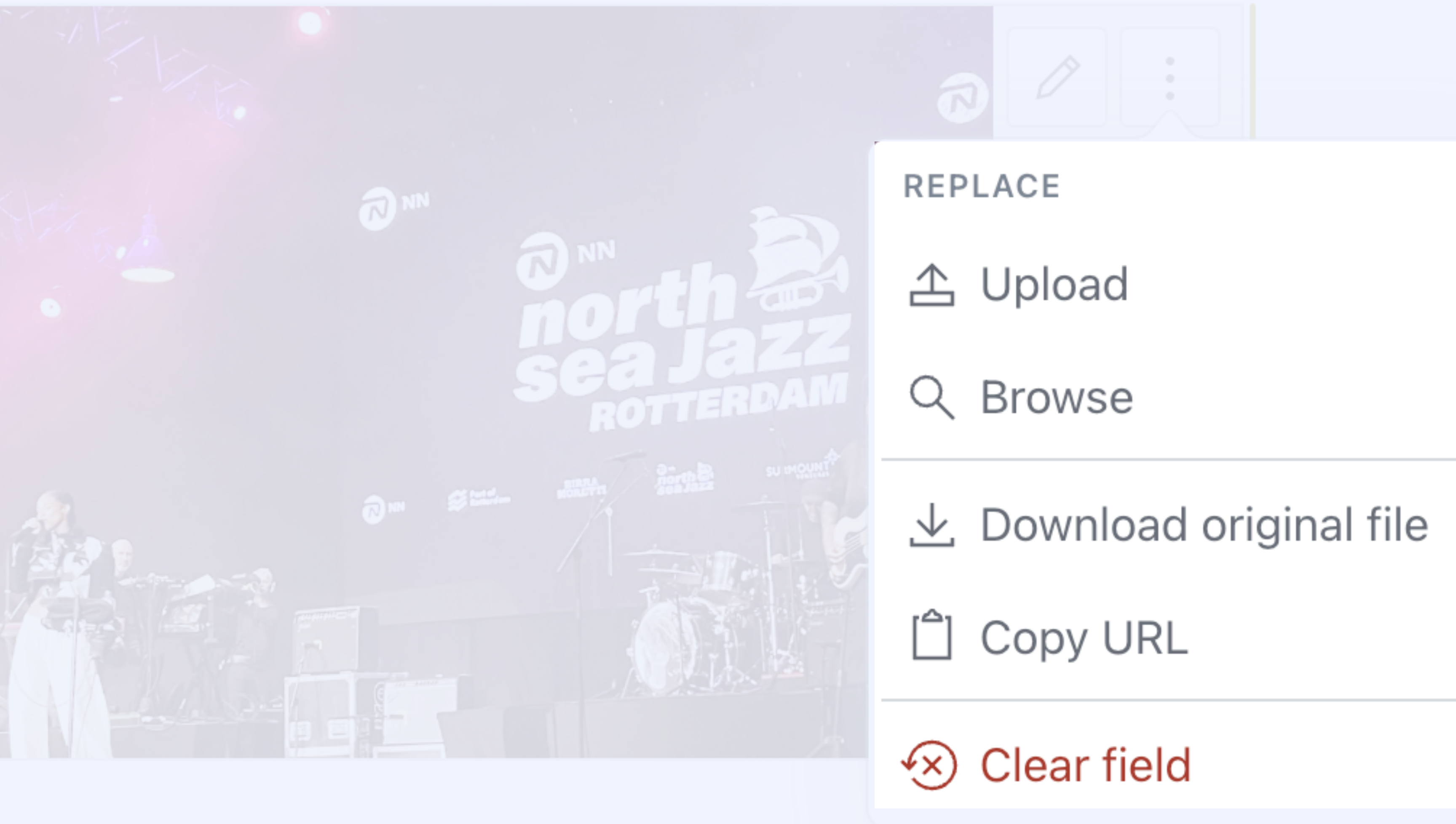
# menu to build menus (not navigations)



## Alternative text

What's on this picture?

**menu** to build menus (*not navigations*)



**role=menu**

**menu** to build menus (*not navigations*)

**role=menuitem** |

REPLACE

📁 Upload

🔍 Browse

⬇️ Download original file

📄 Copy URL

🗑️ Clear field

**role=menu**



**menu** to build menus (*not navigations*)

**role=menuitem** |

**roving tabindex**

REPLACE

📁 Upload

🔍 Browse

⬇️ Download original file

📄 Copy URL

🗑️ Clear field

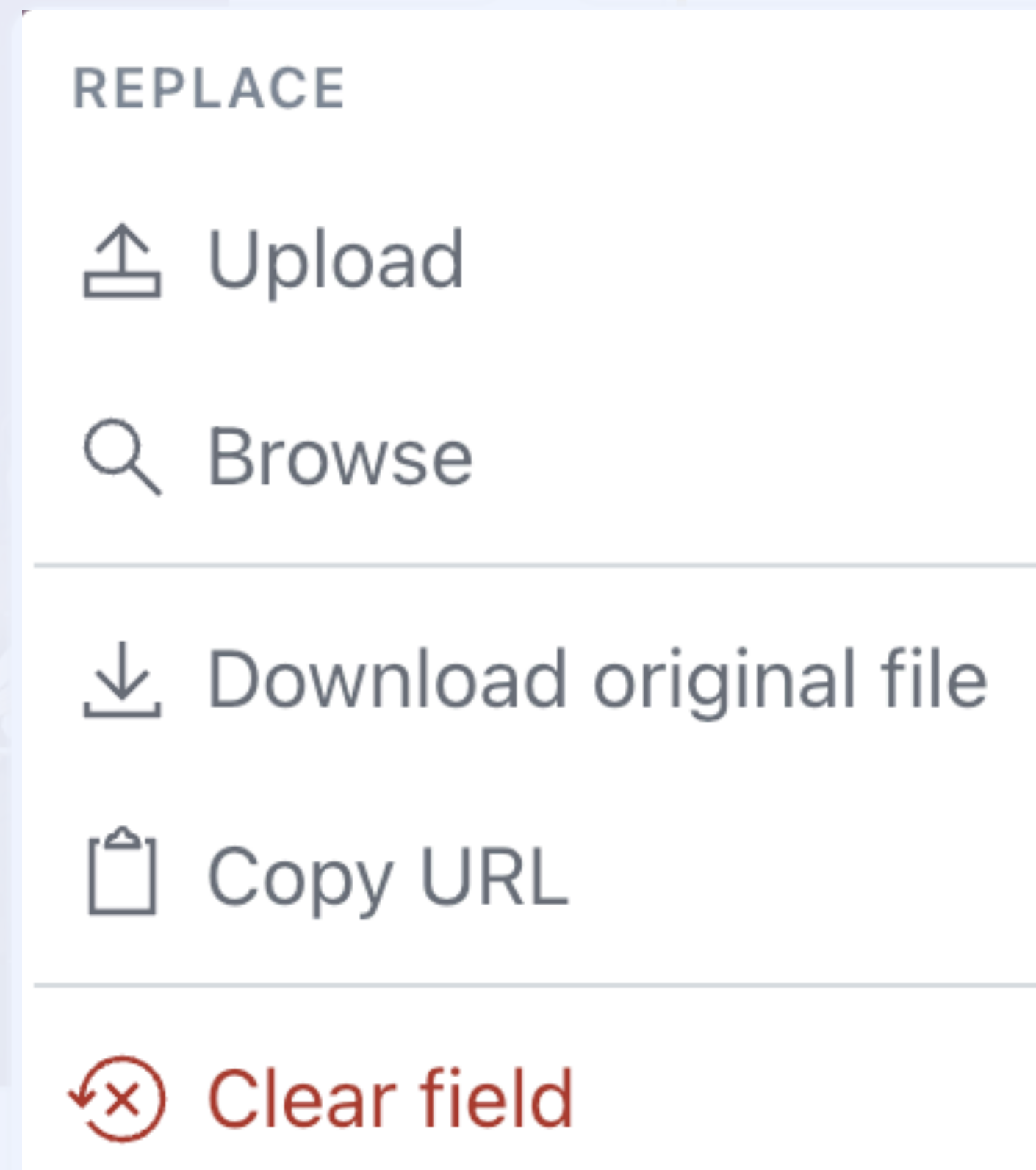
**role=menu**

**menu** to build menus (*not navigations*)

**role=menuitem** |

**roving tabindex**

**usable with  
arrow keys**



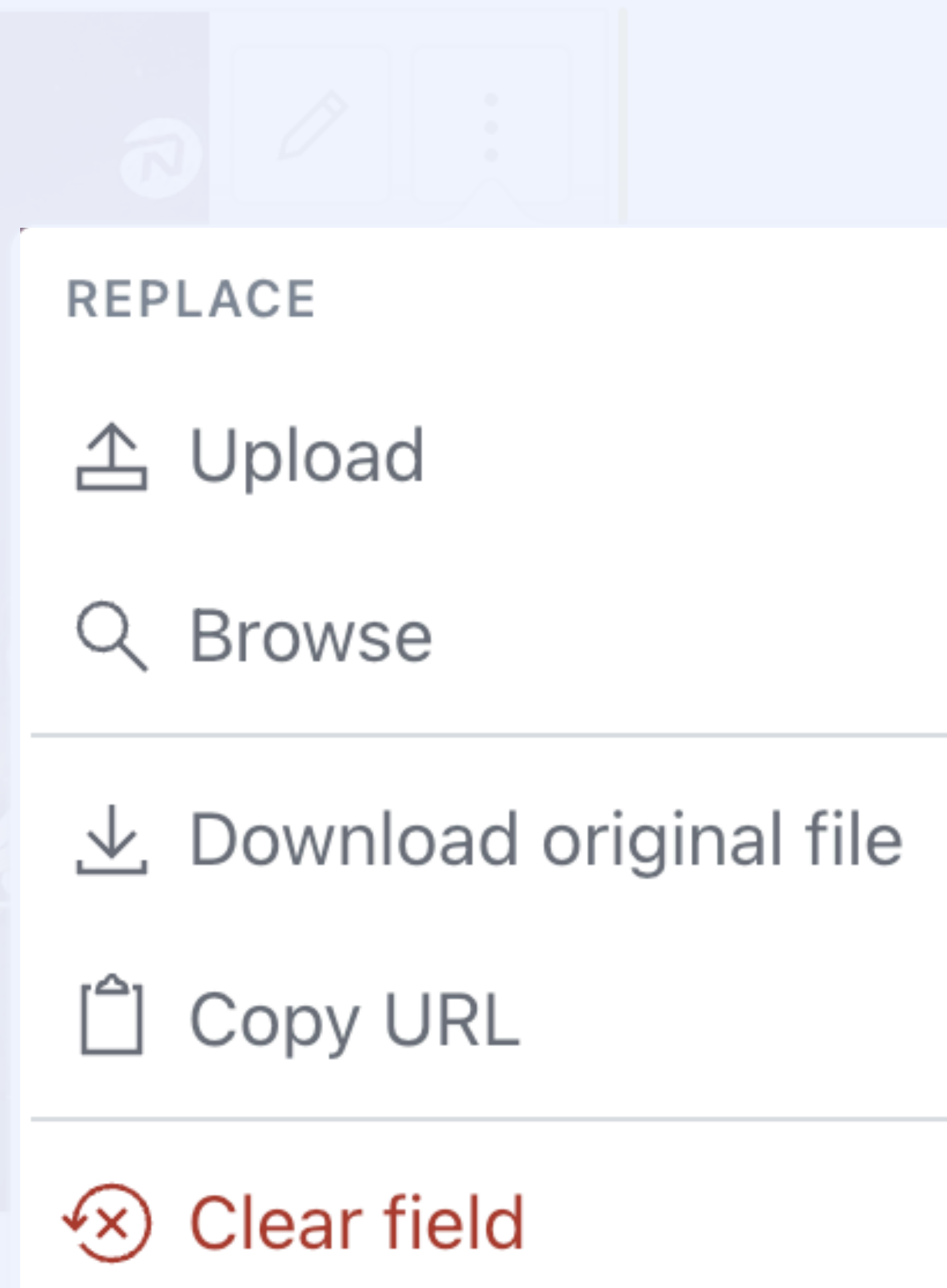
**role=menu**

**menu** to build menus (*not navigations*)

**role=menuitem** |

**roving tabindex**

**usable with  
arrow keys, Escape,  
Enter, Home, End, Tab,  
Space & all printable chars**



**role=menu**

**menu** to build menus (*not navigations*)

It's a **navigation** if the user navigates somewhere (it has links)

It's a **menu** if the user picks an action (it has buttons). Use with care.

# THE BAD PARTS

~~THE BAD  
PARTS~~

THE COMMON  
PITFALLS

standards guidance pitfalls

These are standards:

WCAG

WAI-ARIA

ATAG

UAAG

These are “not normative”:

ARIA Authoring Practices

COGA Guidance

Understanding docs

Techniques



These are standards:

WCAG

WAI

ATA

UAAG

Docs on using  
specific standards,  
*not* docs on best  
accessibility

These are “not normative”:

ARIA Authoring Practices

COGA Guidance

Understanding docs

Techniques

These are standards:

WCAG

WCAG

WCAG

WCAG

Extra context with  
WCAG, not  
required for  
conformance

These are “not normative”:

ARIA Authoring Practices

COGA Guidance

Understanding docs

Techniques

These are standards:

WCAG

WAI

ATAG

UAAG

How to best use  
ARIA if you want to  
solve it with ARIA

These are “not normative”:

ARIA Authoring Practices

COGA Guidance

Understanding docs

Techniques

Web accessibility is about  
how **people** use the web.

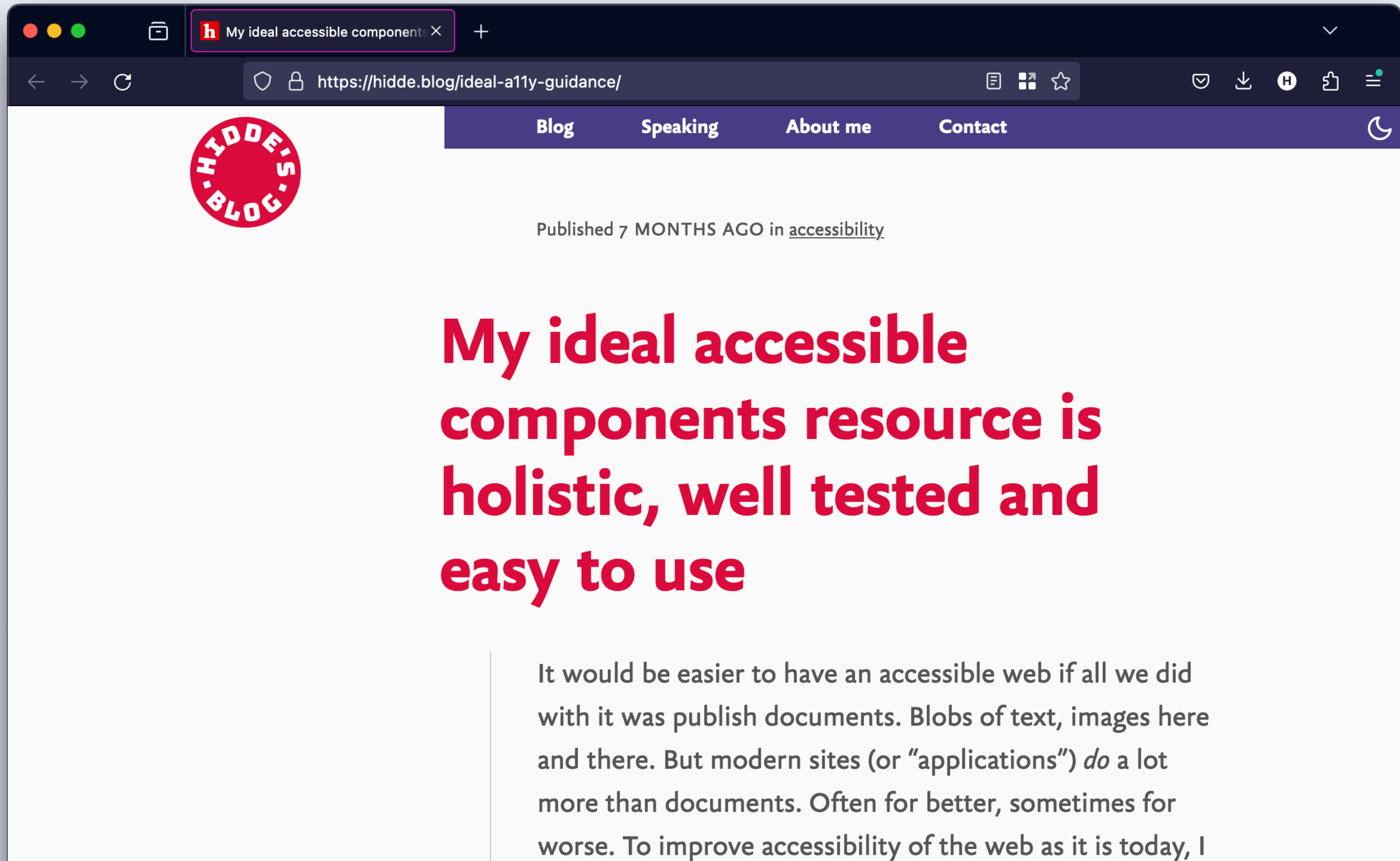
Web accessibility is about  
how **people** use the web.

Websites impact this  
through code

Web accessibility is about  
how **people** use the web.

Websites impact this  
through code:

HTML, CSS, SVG, WAI-ARIA, JavaScript



The screenshot shows a web browser window with a dark theme. The address bar displays the URL `https://hidde.blog/ideal-a11y-guidance/`. The browser's tab bar shows a single tab titled "My ideal accessible components". The website's navigation menu includes "Blog", "Speaking", "About me", and "Contact". A red circular logo for "HIDDE'S BLOG" is visible in the top left corner. The main content area features a large red heading: "My ideal accessible components resource is holistic, well tested and easy to use". Below the heading, a paragraph of text is partially visible, starting with "It would be easier to have an accessible web if all we did with it was publish documents. Blobs of text, images here and there. But modern sites (or 'applications') do a lot more than documents. Often for better, sometimes for worse. To improve accessibility of the web as it is today, I



Published 7 MONTHS AGO in [accessibility](#)

# My ideal accessible components resource is holistic, well tested and easy to use

It would be easier to have an accessible web if all we did with it was publish documents. Blobs of text, images here and there. But modern sites (or "applications") *do* a lot more than documents. Often for better, sometimes for worse. To improve accessibility of the web as it is today, I

# website pitfalls



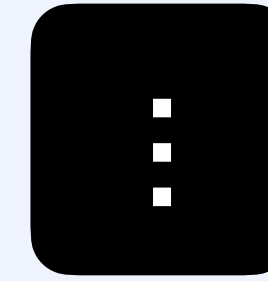
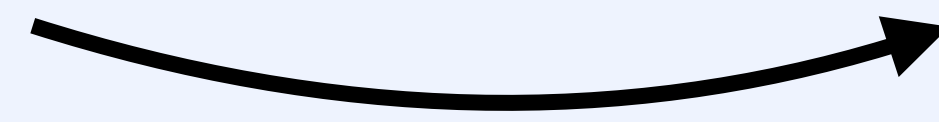
# HTML VS ARIA

More and more HTML elements provide accessibility meta information so that we don't need to add ARIA to our HTML

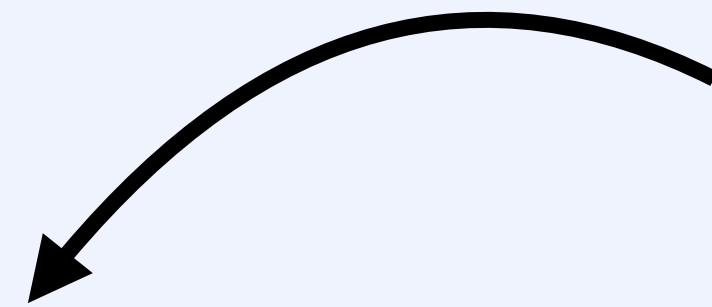
# STATE <-> UI CONFLICTS

When state attributes aren't updated or wrong on page load

**menu is not actually  
opened / expanded**



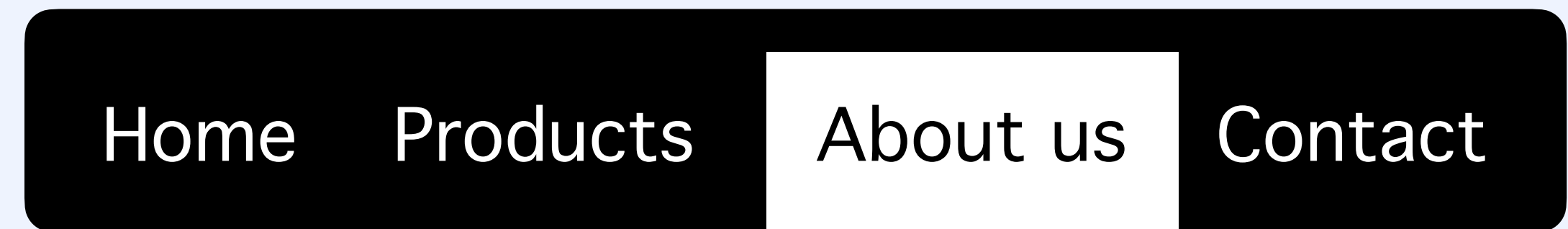
**but DOM says it is open**



```
<button aria-expanded="true">  
  Open menu  
</div>
```

```
<nav>
  <ul>
    <li>
      <a href="/">Home</a>
    </li>
    <li>
      <a href="/" aria-
current="page">Products</a>
    </li>
    <li>
      <a href="/">About us</a>
    </li>
    <li>
      <a href="/">Contact</a>
    </li>
  </ul>
</nav>
```

current page is **About us**



but **DOM** says it is **"Products"**

# DISAPPEARING FOCUS

When an element disappears, focus should go to a **logical** element

# DISAPPEARING FOCUS

When an element disappears, focus should go to a **logical** element



BIC/SWIFT codes are used to identify banks and financial institutions globally.

# DISAPPEARING FOCUS

When an element disappears, focus should go to a **logical** element



BIC/SWIFT codes are used to identify banks and financial institutions globally.

OK

# DISAPPEARING FOCUS

When an element disappears, focus should go to a **logical** element



BIC/SWIFT codes are used to identify banks and financial institutions globally.

OK



# DISAPPEARING FOCUS

When an element disappears, focus should go to a **logical** element



# SCREENREADER INSTRUCTIONS

Don't write a message to screenreader users in labels/descriptions

[adrianroselli.com/2019/10/stop-giving-control-hints-to-screen-readers.html](https://adrianroselli.com/2019/10/stop-giving-control-hints-to-screen-readers.html)

```
<button aria-label="hi if you are on a screenreader  
  this is a special message for you">  
  Open dialog  
</div>
```

**role=application**

stops screenreader from  
intercepting shortcut keys

almost never appropriate

can in cases create barriers and  
a confusing user experience

**[marcozehe.de/if-you-use-the-wai-aria-role-application-please-do-so-wisely](https://marcozehe.de/if-you-use-the-wai-aria-role-application-please-do-so-wisely)**

**[tink.uk/using-the-aria-application-role](https://tink.uk/using-the-aria-application-role)**

aria-roledescription

no auto-translation

can easily increase verbosity

can make things very confusing  
if we remove role info

Upload photo

Elements [navigation icons]

but... Badges [navigation icons]

```
<html>  
  <head></head>  
  <body>  
    <button type="button">Upload photo  
  </button> = $0  
  </body>  
</html>
```

web content



# aria-relevant

The screenshot shows a web browser window displaying a GitHub issue page. The browser's address bar shows the URL `https://github.com/w3c/aria/issues/712`. The page header includes the GitHub logo, the repository name `w3c / aria`, and navigation icons for search, repository actions, and user profile. Below the header, there are tabs for `Code`, `Issues` (with a count of 353), `Pull requests` (with a count of 33), `Discussions`, and `Actions`. The main content area features the issue title `aria-relevant: find real-world use cases, consider deprecating it #712` and a `New issue` button. Below the title, it indicates the issue is `Open` and was created by `aleventhal` on `Apr 9, 2018` with `17 comments`. A comment from `aleventhal` is visible, asking for examples of the attribute being used in shipping software and expressing concerns about its theoretical purpose. The right sidebar shows the `Assignees` section with `jnurthen` assigned, and the `Labels` section with `needinfo` applied.

# OTHER PARTS

## aria-controls

no consensus on how it is supposed to be conveyed to screenreader users

JAWS exposes it but it is off by default, hidden deep in config

*however... this could be used for AT to help users jump into a controlled element?*



## aria-owns

support (inconsistent; missing in iOS/macOS + VoiceOver)

complex as there are many ways owner or child could be invalid, ways to create cycles or multiple owners

*however... it could be useful for AT to know about relationships?*

# TAKEAWAYS

# TAKEAWAYS

ARIA adds semantics, but not behaviour

Incorrect use is often worse than no use

Going the ARIA route can yield *subtle* bugs in support or consistency of support

There are a couple of things that are safe to use and helpful to end users

**THANK  
YOU!**

**Questions**

@hdv on most platforms

**Slides/resources**

[talks.hiddedevries.nl](https://talks.hiddedevries.nl)

**Thanks**

Eric Eggert, Jules Ernst, Mu-An Chiou, Patrick H. Lauke,  
Lotte Bijl, James Scholes, Katherine Badger, Scott O'Hara

# THANK YOU!

## Sources

WAI-ARIA 1.2

Sarah Higley, *Roles and relationships*

Scott O'Hara, *output: HTML's native live region element*

Jon Whiting, *To ARIA! The Cause of, and Solution to, All Our Accessibility Problems*

Re: role=application

Léonie Watson, *Using the ARIA application role*

Re: aria-owns

Aaron Leventhal, *How Blink implements aria-owns*

*Webkit bug: aria-owns doesn't reorder accessibility tree*