

# HOW POPOVERS ARE ABOUT TO BECOME A WHOLE LOT EASIER TO BUILD

Hidde de Vries

1 September 2023

Front Conference, Zurich



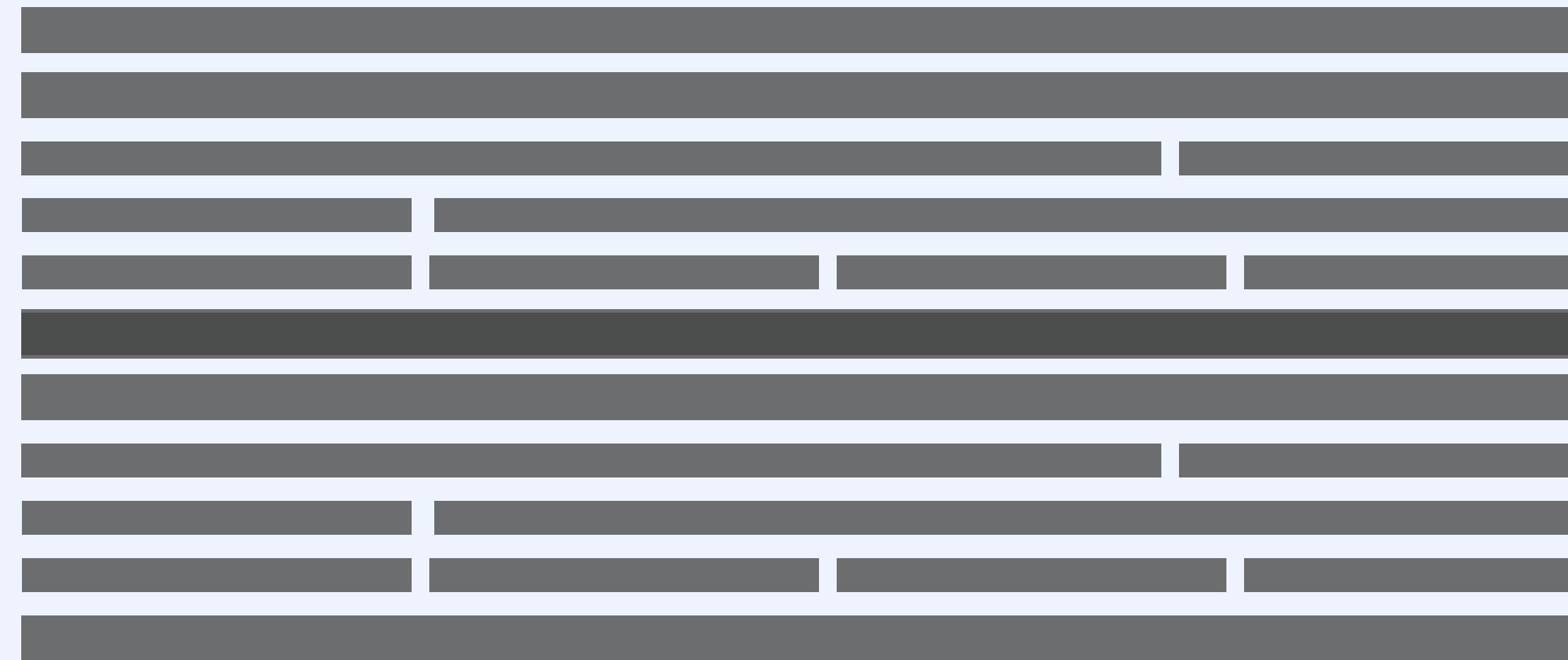
# **MODAL MISCHIEF & DIALOG DILEMMAS**

Hidde de Vries

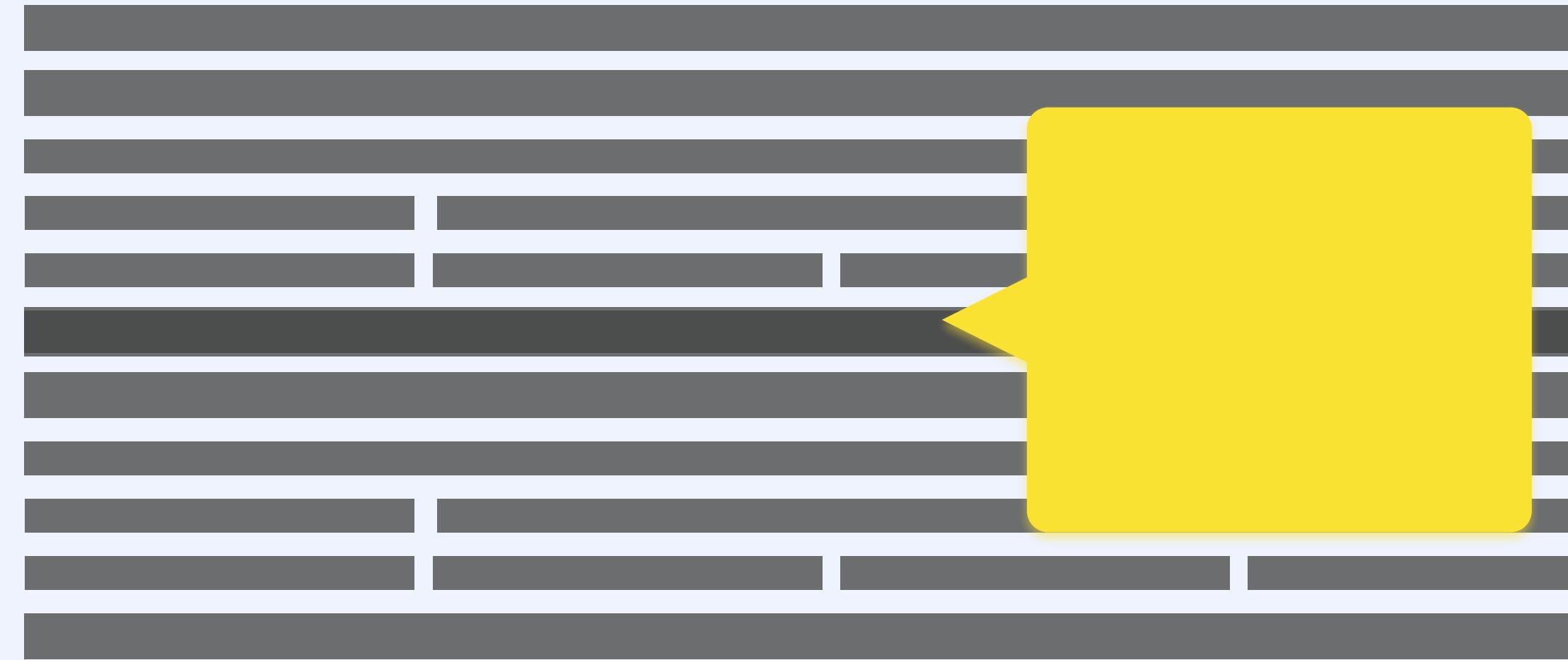
1 September 2023

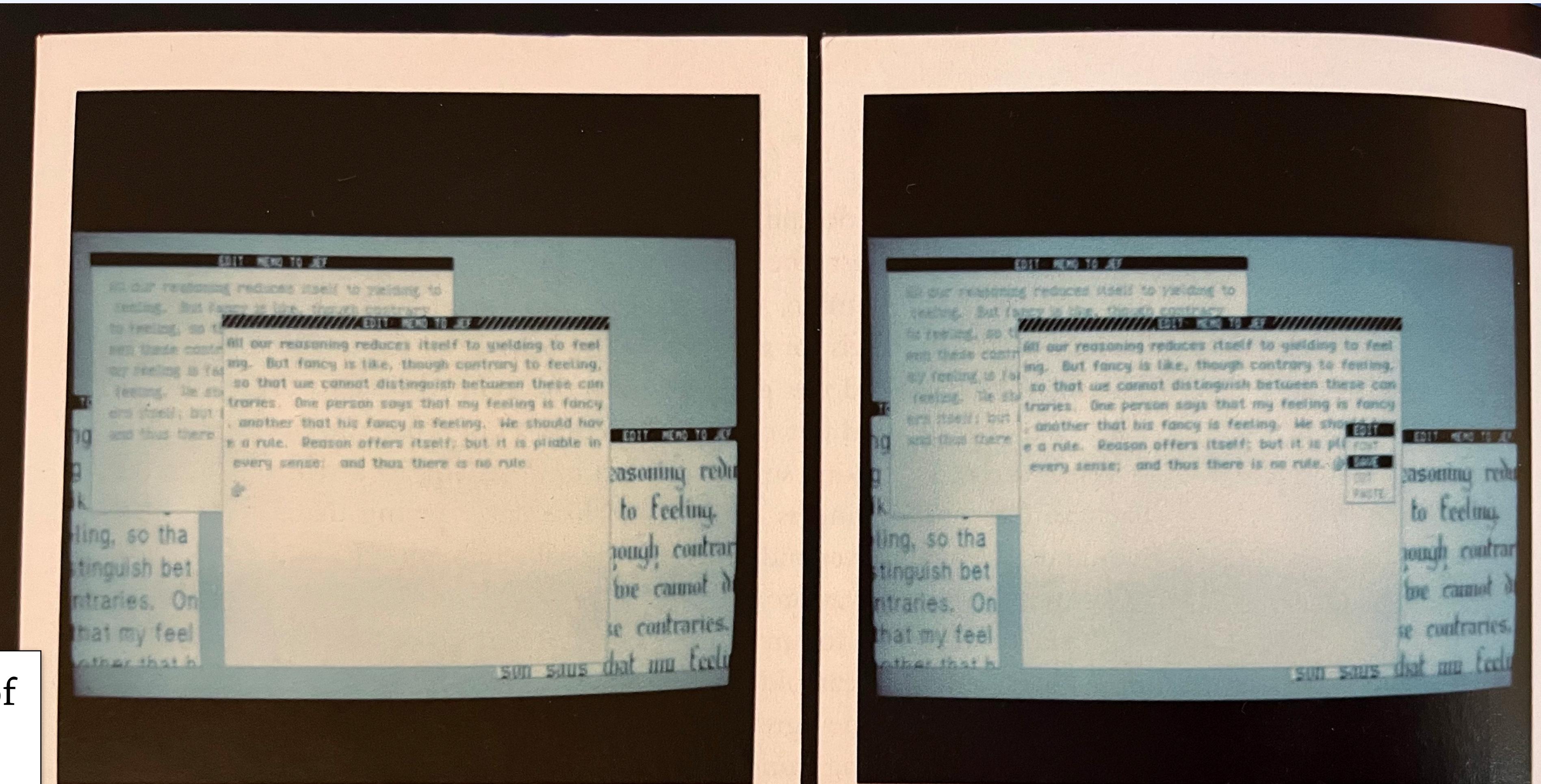
Front Conference, Zurich

In the beginning,  
content was linear...



Today, it can overlap  
in all sorts of ways





## Polaroids of development of overlapping window management

Photos: Bill Atkinson ("Mr User Interface" at Apple),  
from: *Designing interactions* by Bill Moggridge, 93.

windows

mouse  
& pop-up menu



THE BAD NEWS

MODALS ARE THE CRUTCH OF THE INARTICULATE DESIGNER AND DEVELOPER.



# <dialog>

HTML element · wide browser support · (as of recently) good accessibility support

# popover

New attribute / API in HTML · supported in Chrome stable / Safari Tech Preview / Firefox ( FLAG )

# <dialog>

HTML element with  
support and (as of recently) good  
accessibility support

**UI considerations**

**Semantics**

**Positioning**

New attribute / API in HTML, v1 supported in  
Chrome stable, coming to other browsers too

# HI, I'M HIDDE

developer relations + accessibility  
at NL Design System

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participant at Open UI CG

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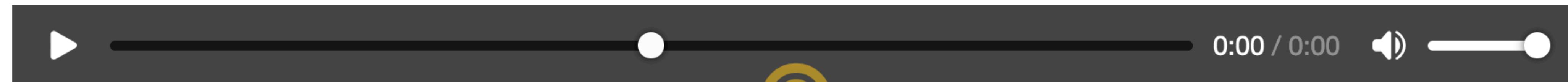
hidde.blog

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SUBSCRIBE



Jim the virtue of respecting nature and Earth. As a scientist, Mr Lovelock went on to develop Gaia theory, the idea that Earth is a single, complex, self-regulating system. Though initially rejected by life scientists, it became the main way many people conceive of the planet.

**Listen to this story.** Enjoy more audio and podcasts on [iOS](#) or [Android](#).



That is just one of his many contributions. In the 1960s he helped to look for life on other planets via the Soviet Union's Venera landers. In the atmosphere in the 1970s, he helped to identify the first man-made chemicals to damage the ozone layer. His nomination to Britain's Royal Society in 1980 was based on his work in chemistry and physics—all before he became famous. He is best known (it is named after Gaia).

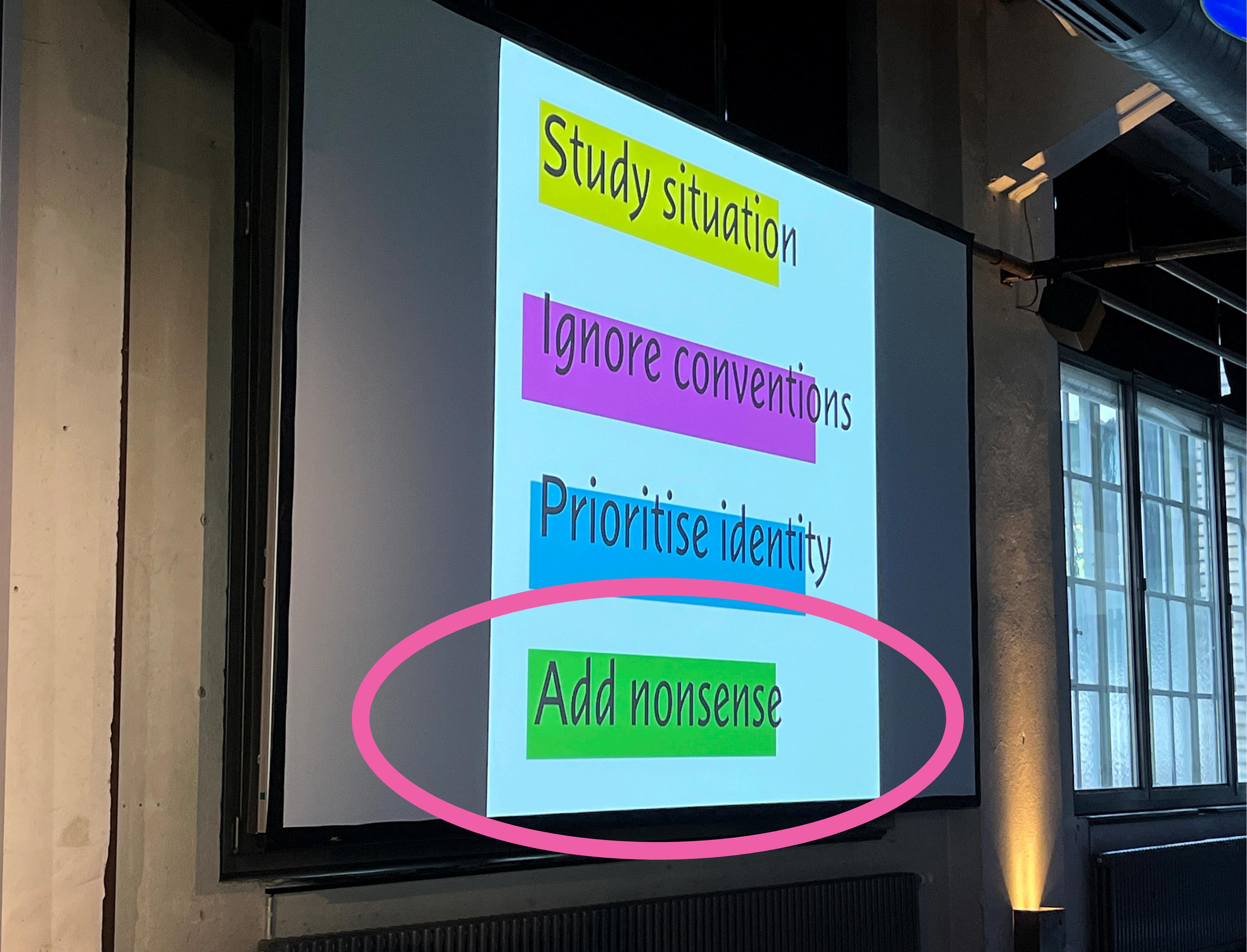
### Listen to this story ×

Save time by listening to our audio versions of our most popular articles as you multitask

OK

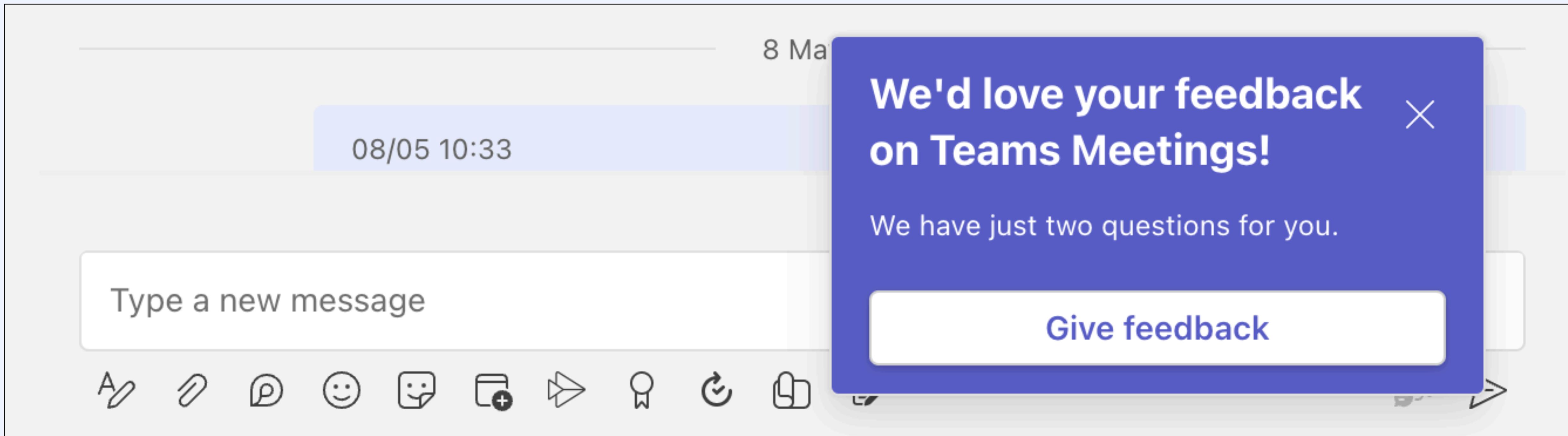
Lovelock honed a method to find and quantify CFCs in the atmosphere. He also worked on the harmful chemicals. He has written a book on the flora of work in biology, chemistry and physics—all before he became famous. He is best known (it is named after Gaia).

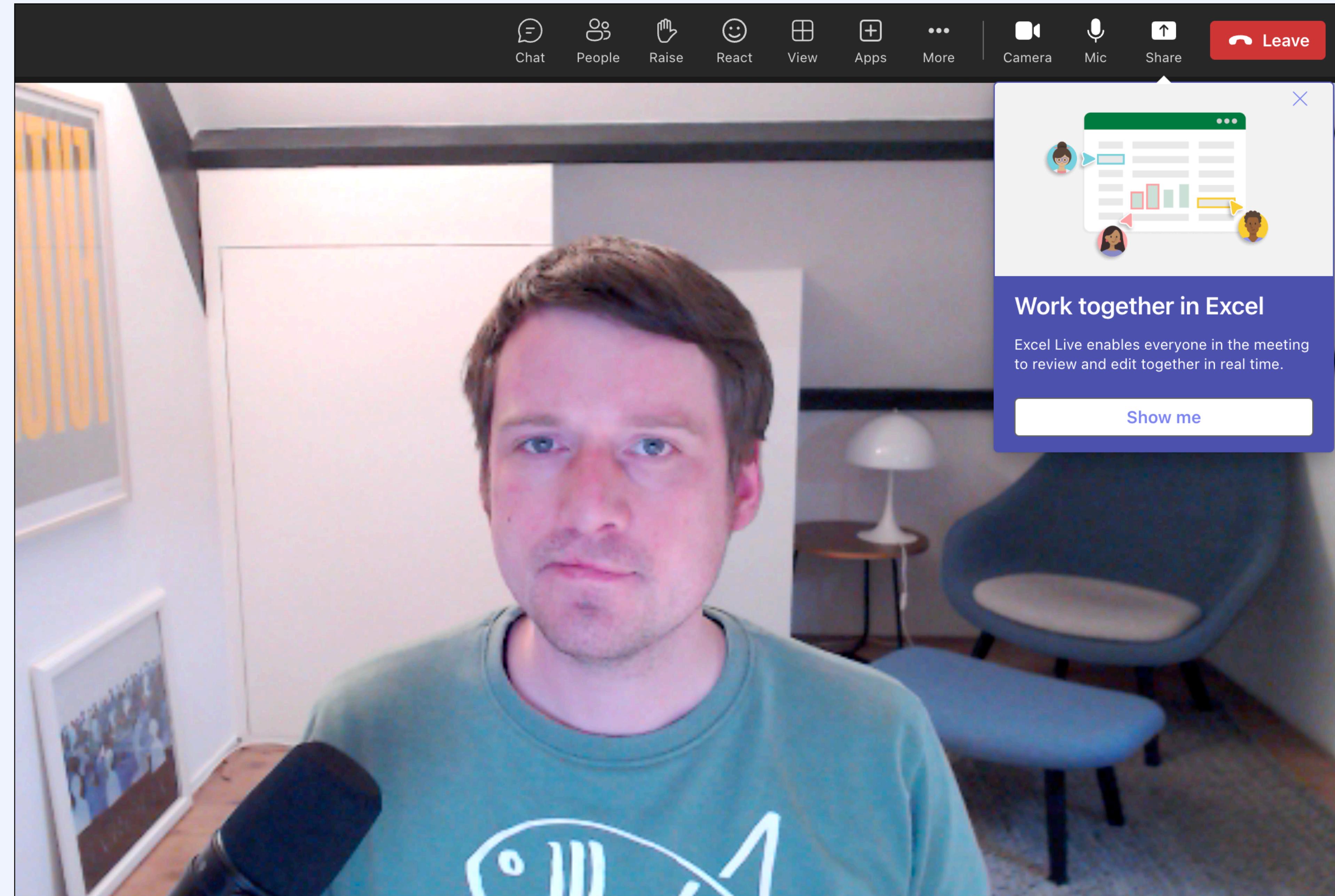
To coincide with his 100th birthday, he has published a slim book on artificial intelligence (AI), written with Bryan Appleyard, a journalist. It is mind-stretching stuff.



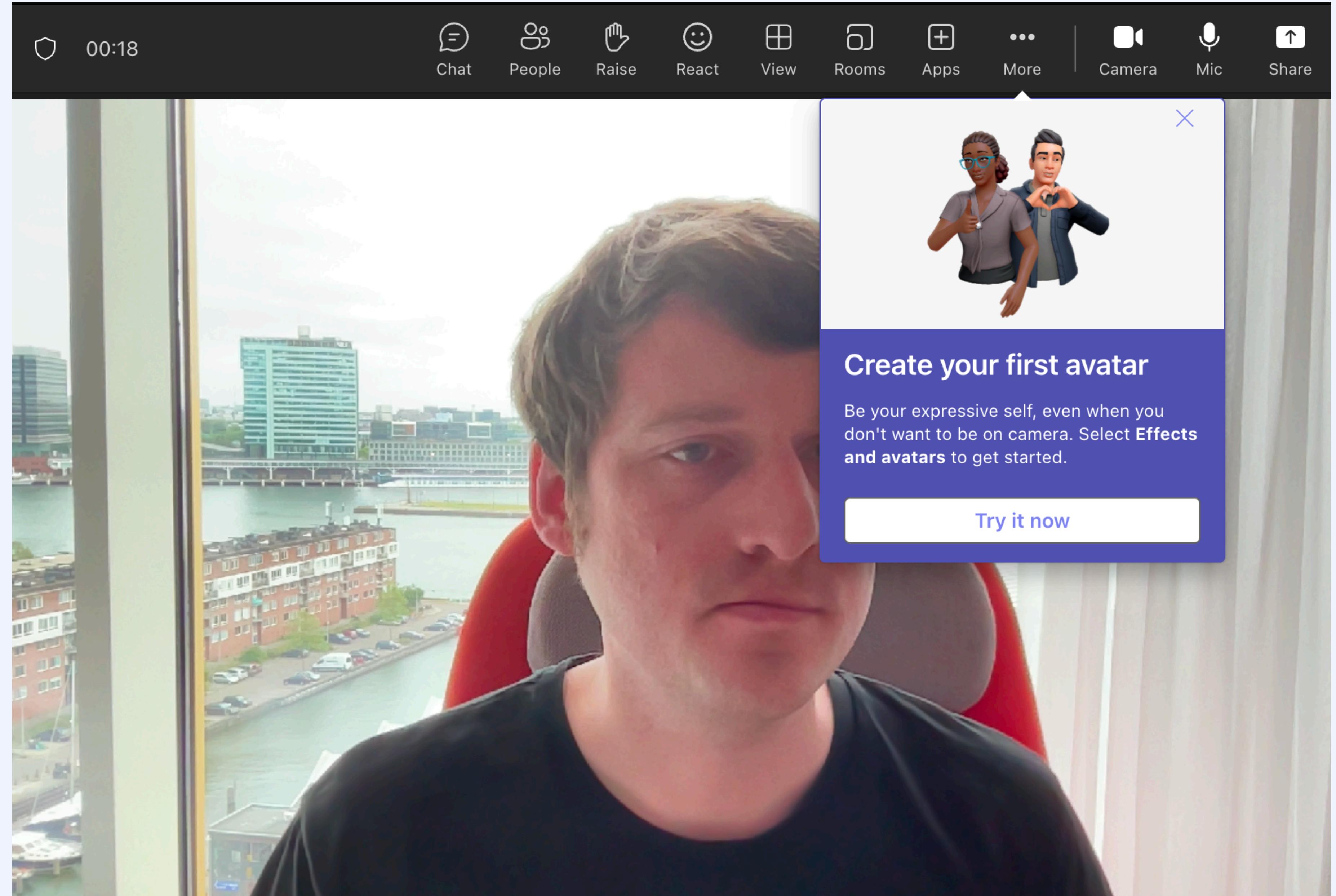
# Teams: a timed popover to ask for feedback

@hdv@front-end.social



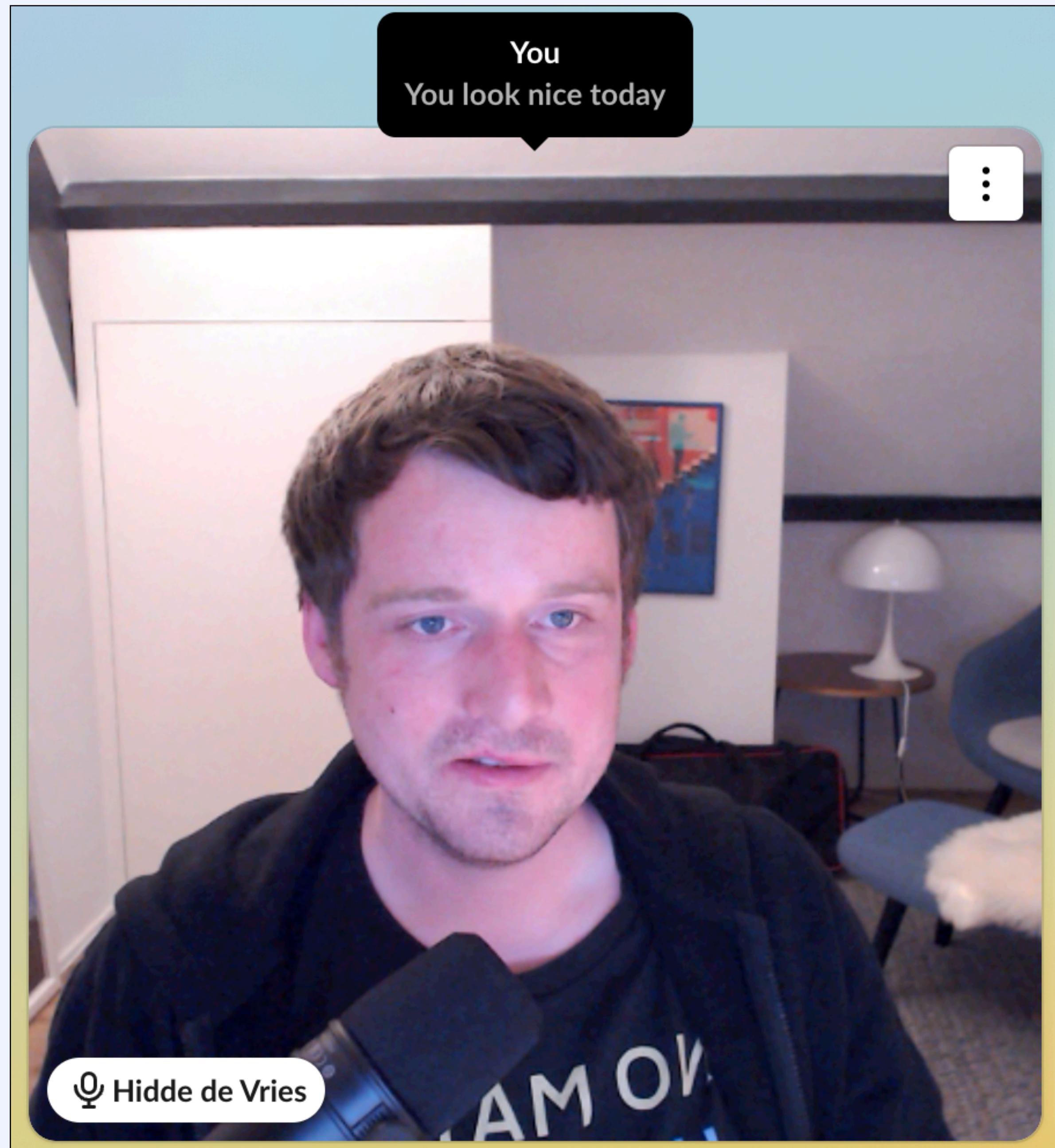


Teams: a  
popover to teach  
about an Excel  
integration



Teams: a  
popover to urge  
me to be my  
expressive self

Slack Huddles: a popover to tell the user they look nice today



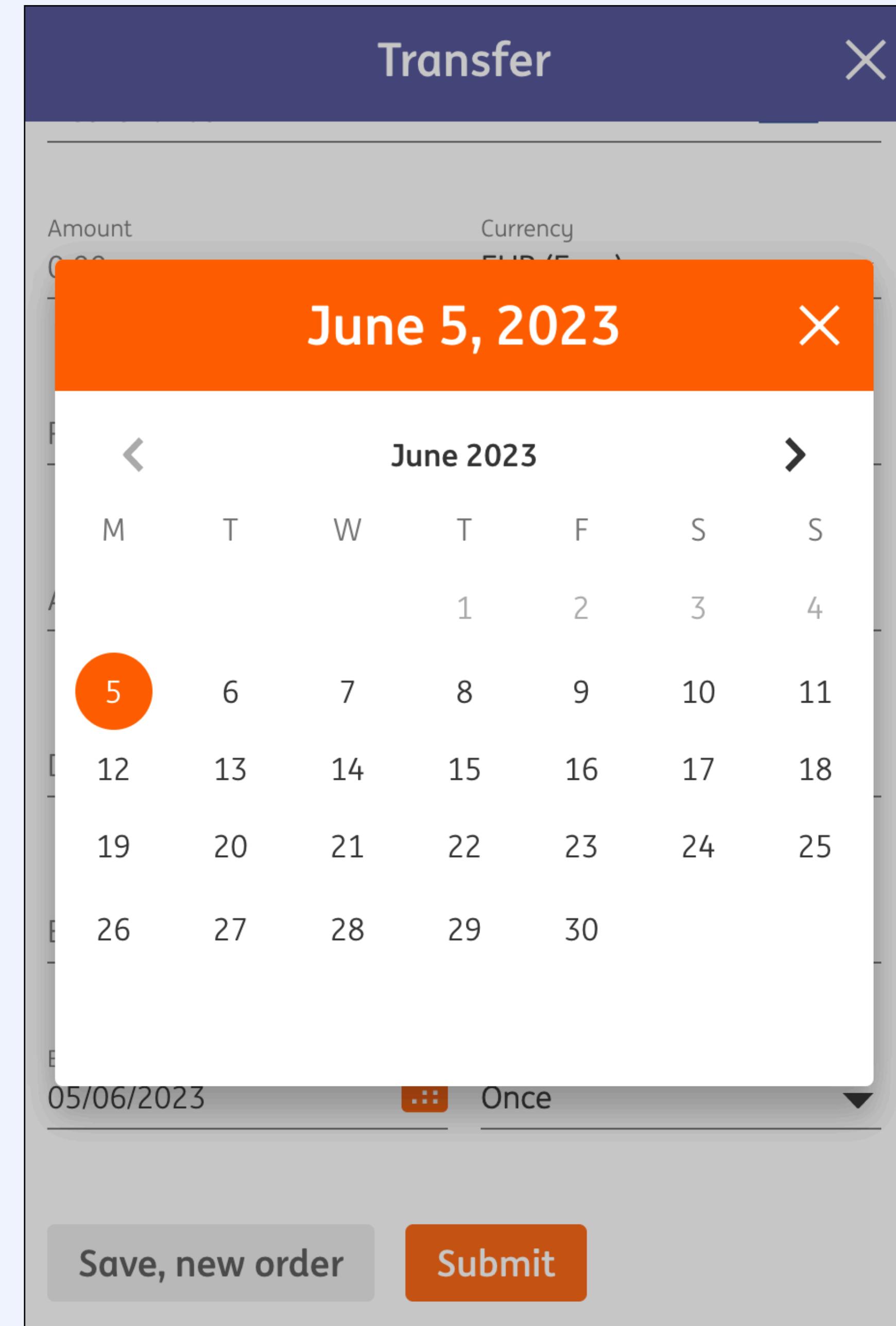
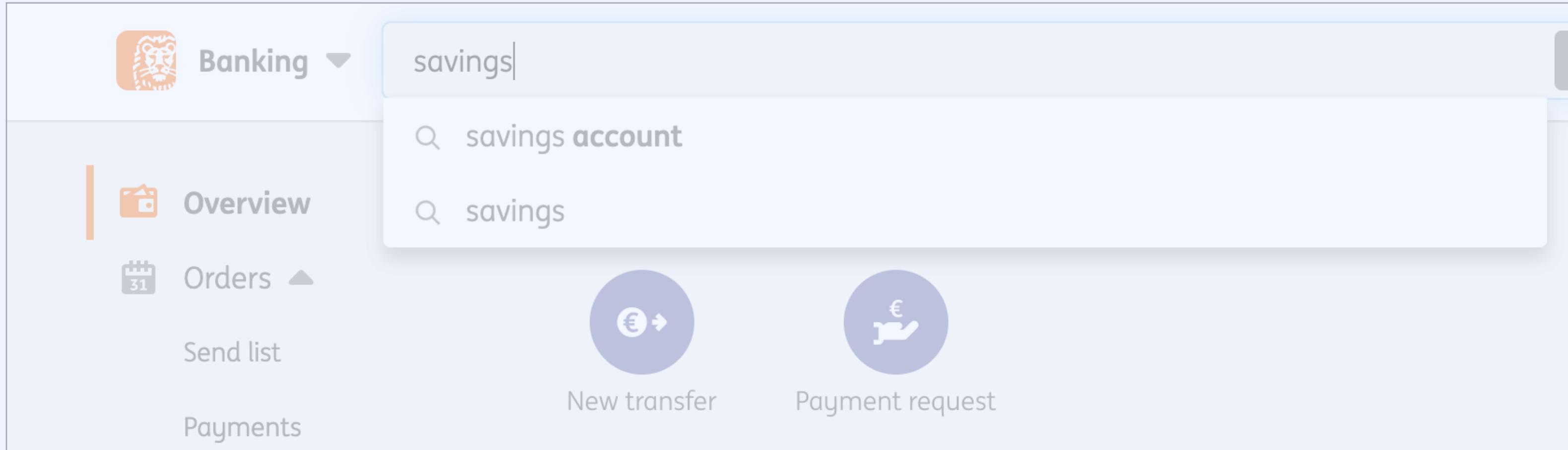
# Online banking: a popover to autocomplete search query

@hdv@front-end.social

The screenshot shows a web-based banking application. At the top left is a logo of a lion and the word "Banking". To the right is a search bar containing the text "savings" with a magnifying glass icon and a "Search" button. Further right are links for "Help", a user profile for "Hr H de Vries", and a "Log out" button. On the far left, there's a vertical sidebar with icons for "Overview" (document), "Orders" (calendar), "Send list", and "Payments". The main area has two large blue circular buttons: one for "New transfer" (with a euro symbol and arrow) and one for "Payment request" (with a hand holding a euro symbol). A search popover is open over the search bar, displaying two suggestions: "savings account" and "savings". The background of the page is light gray.

# Online banking: a popover to autocomplete search query

@hdv@front-end.social



Online banking: a  
popover to select  
a transfer date

# DIALOG

*What is it*

Additional window to  
your main window.

a.k.a. “descendant window” or  
“subwindow”

# DIALOG

*What is it*

Usually contains an  
**action or task** for  
the user, sometimes has  
**critical information**

# DIALOG

*What is it*

‘a “conversation”  
between the system  
and the user’

# DIALOG

*What is it  
(typically)*

- Do you want to continue,  
*yes or no*
- If you want to open a  
new file, what shall we do  
with your current file?
- How do you want to crop  
this image, where is the  
hot spot?

# <DIALOG>

*What is it*

HTML element to  
build dialogs

```
<dialog>... </dialog>
```

## **<DIALOG>**

*Open/close  
with script*

```
// show as modal  
element.showModal();
```

```
// show as non-modal  
element.show();
```

```
// dialog element  
<dialog>...</dialog>
```

comes with role,  
modal setting, close-  
on-Esc etc

```
// dialog element  
<dialog>...</dialog>
```

just the  
semantics, no  
behaviour

```
// an element with  
// dialog semantics  
<div role="dialog">... </div>
```

```
// dialog element  
<dialog>...</dialog>
```

```
// an element with  
// dialog semantics  
<div role="dialog">... </div>
```

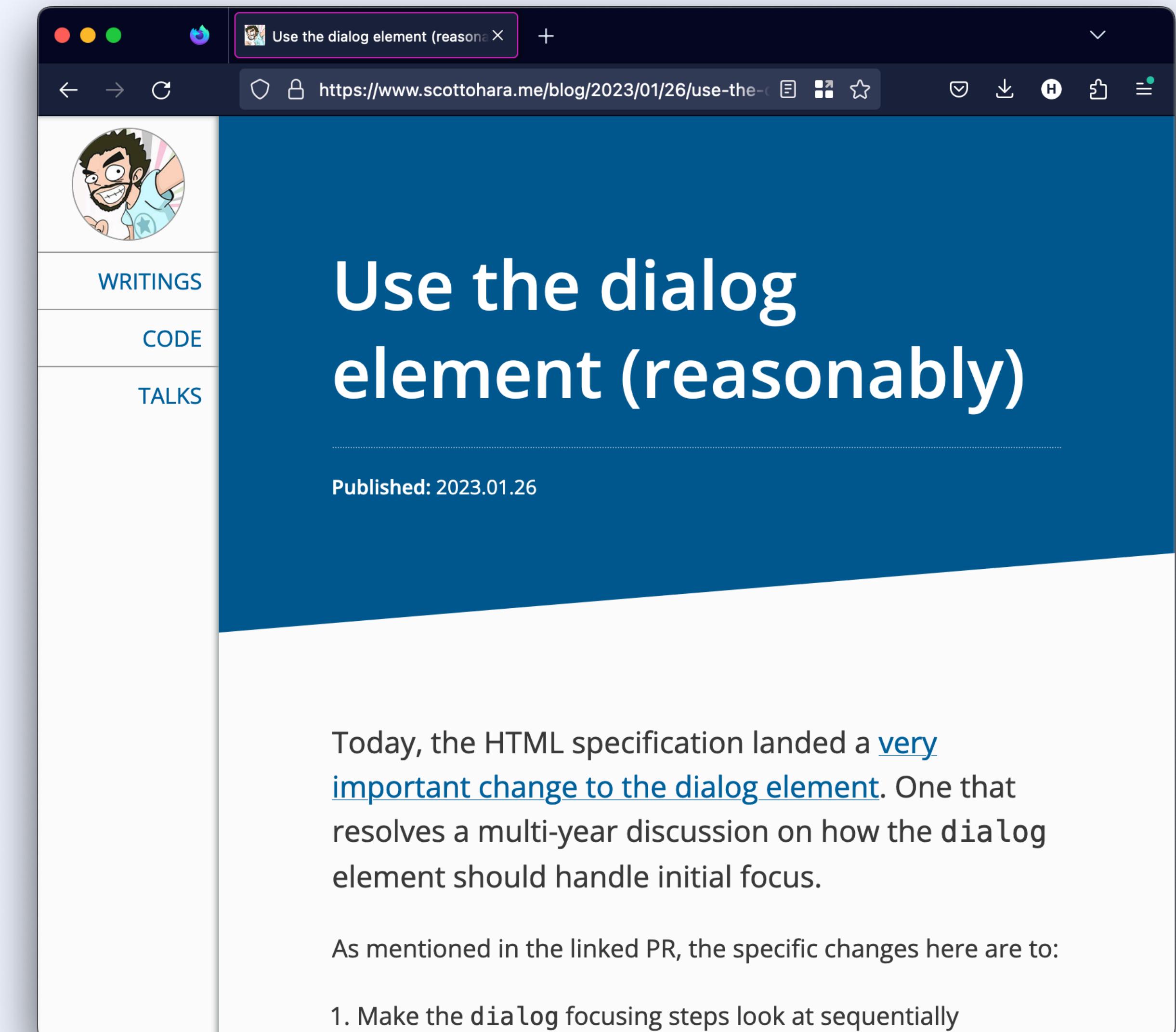
“dialog” just the word

## CURRENT STATUS: <DIALOG>



scottohara.me/blog/2023/01/26/use-the-dialog-element.html

# MORE ON USING <DIALOG> ACCESSIBLY



The screenshot shows a web browser window with a dark theme. The address bar displays the URL <https://www.scottohara.me/blog/2023/01/26/use-the-dialog-element.html>. The page content is a blog post with a blue header and a sidebar on the left.

**Use the dialog element (reasonably)**

Published: 2023.01.26

Today, the HTML specification landed a [very important change to the dialog element](#). One that resolves a multi-year discussion on how the dialog element should handle initial focus.

As mentioned in the linked PR, the specific changes here are to:

1. Make the dialog focusing steps look at sequentially

# POPOVER

*What is it*

a floating piece of UI  
with **supplemental** or  
**contextual** content

“non-modal dialog”

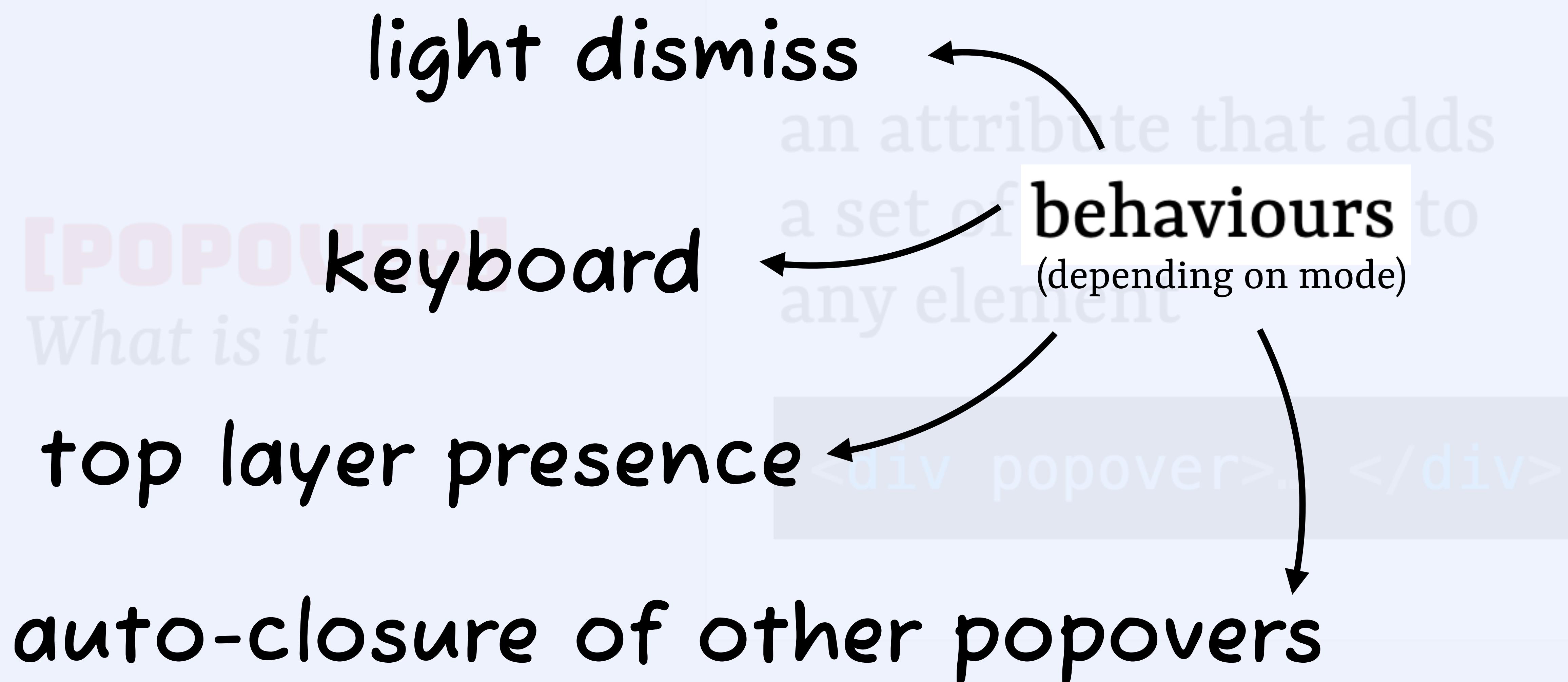
“transient content”

# [POPOVER]

*What is it*

an attribute that adds  
a set of behaviours to  
any element

```
<div popover>... </div>
```

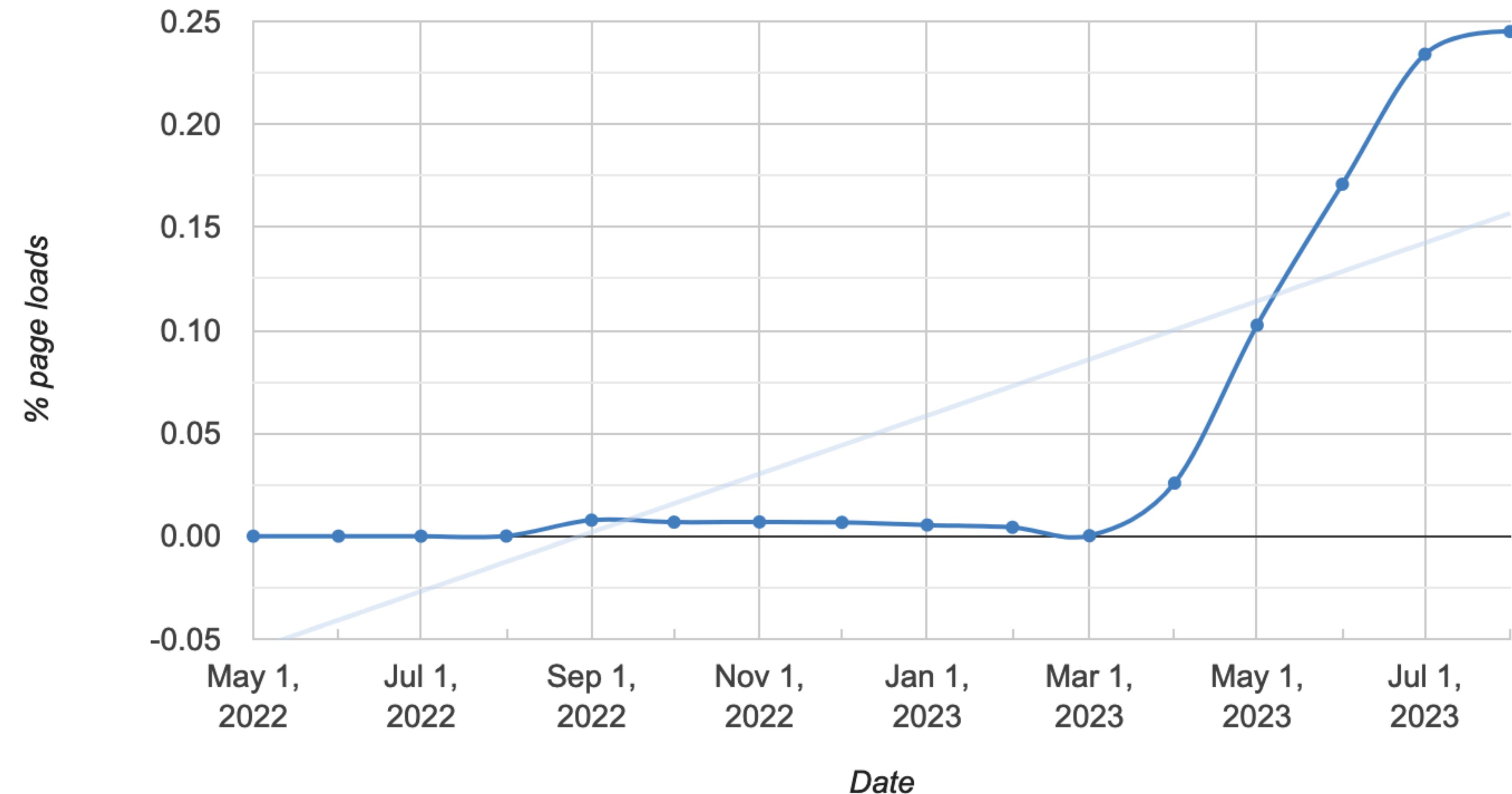


# [POPOVER]

*What is it*

For elements that are:

- on top of other page content
- not always visible (ephemeral, short-lived)
- usually displayed one at a time

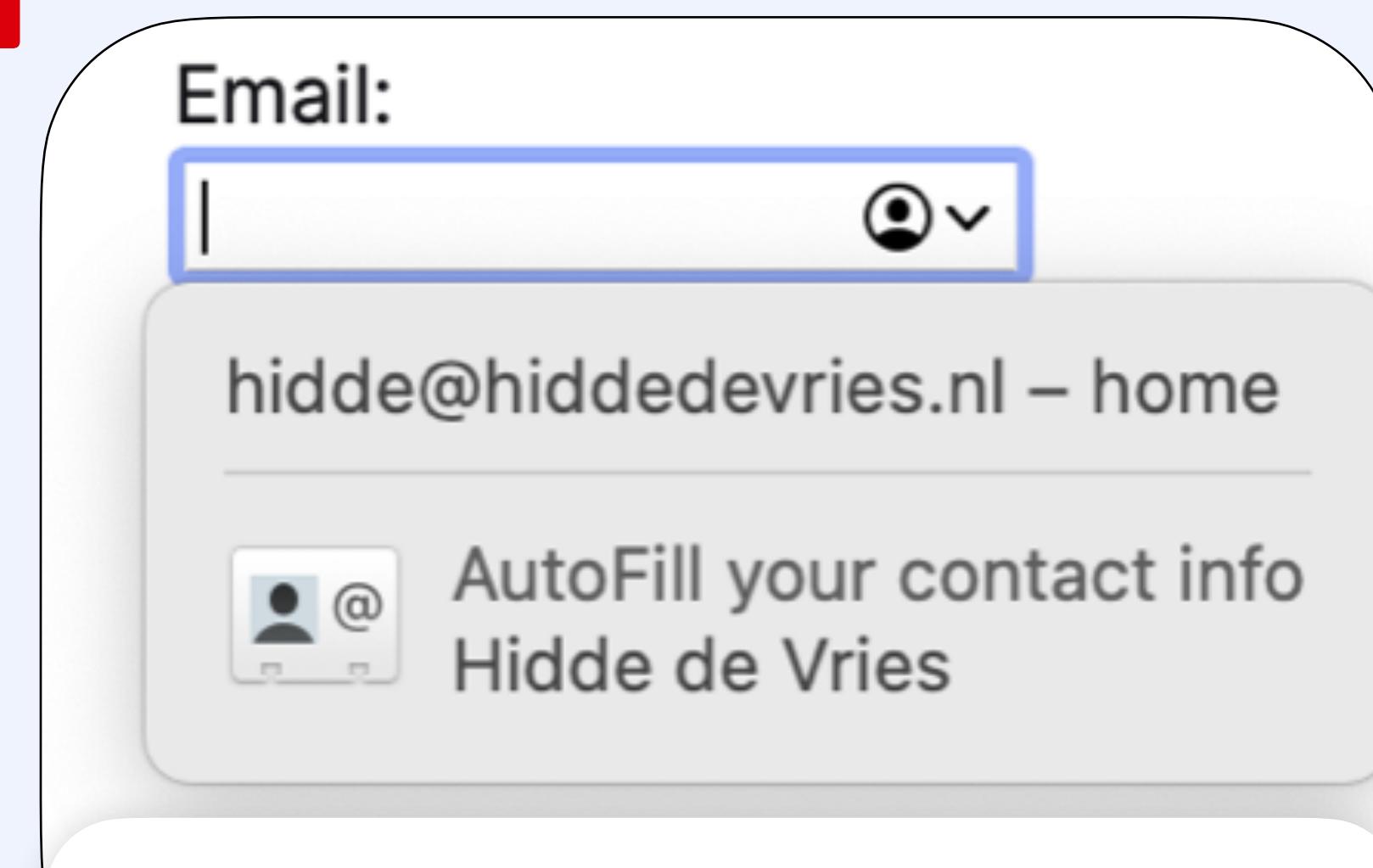


# [POPOVER]

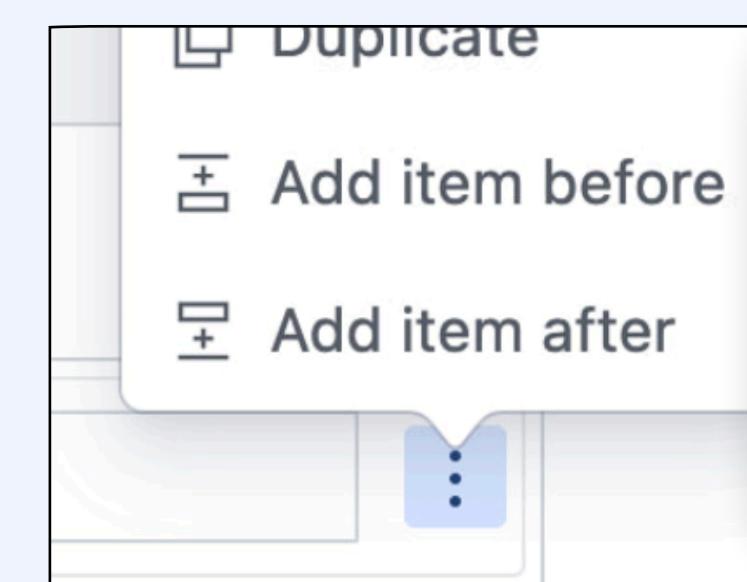
*Use cases*



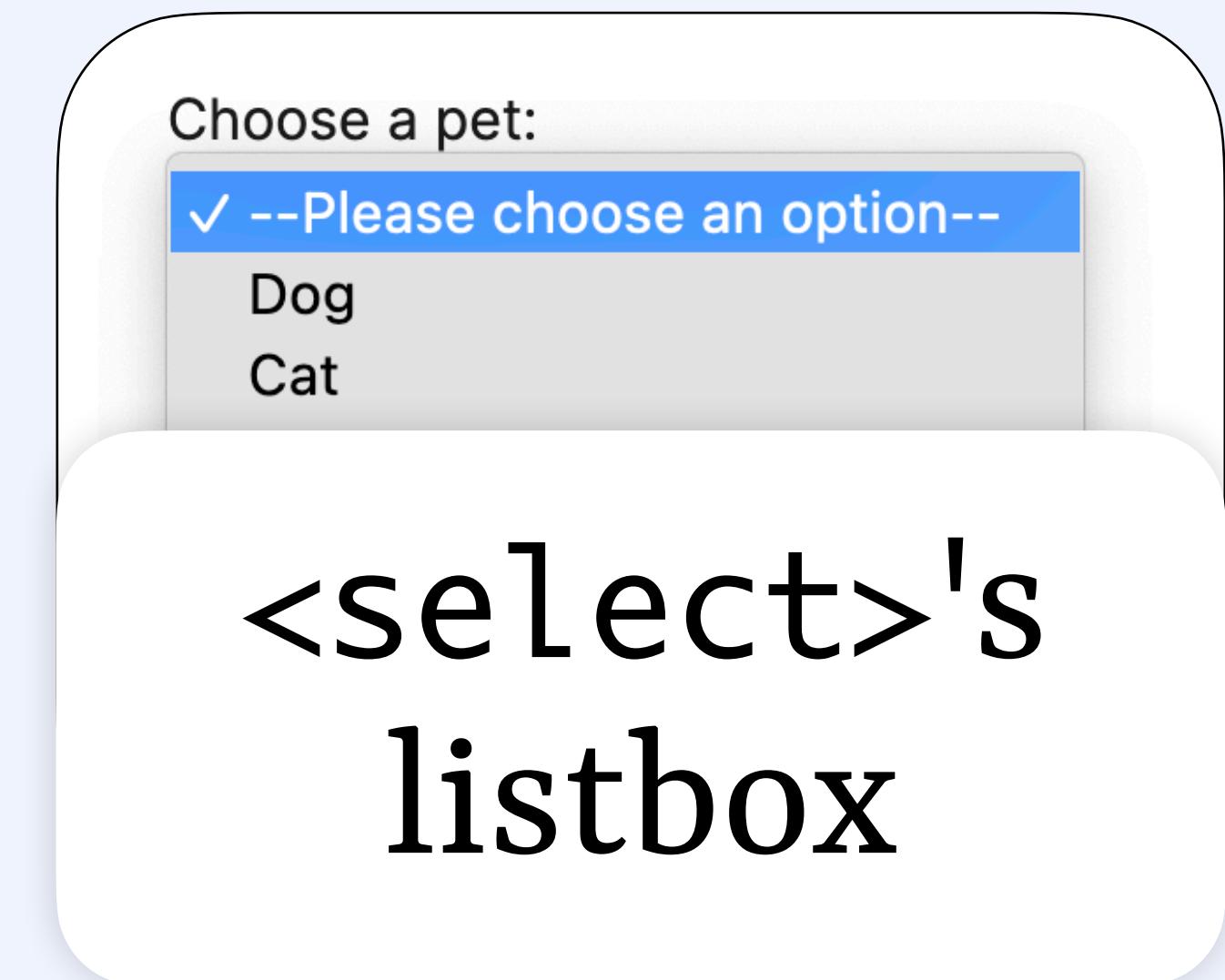
content  
pickers



form element  
suggestions

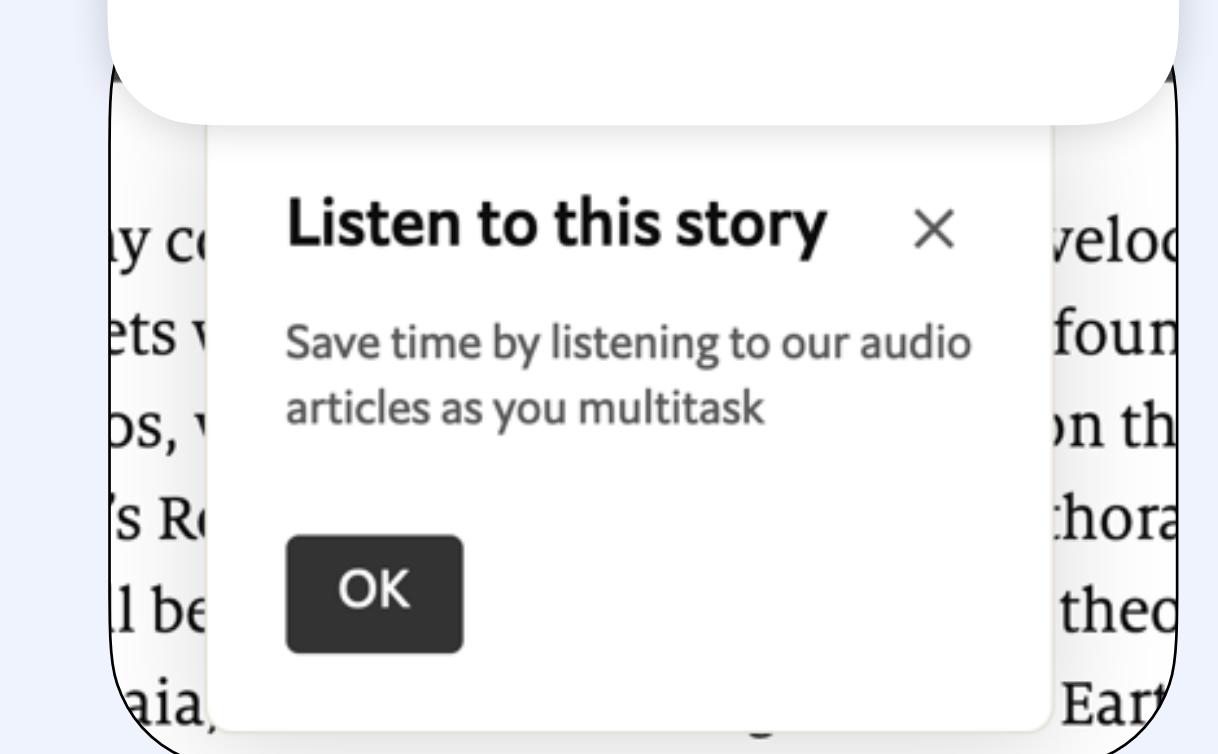


action  
menus



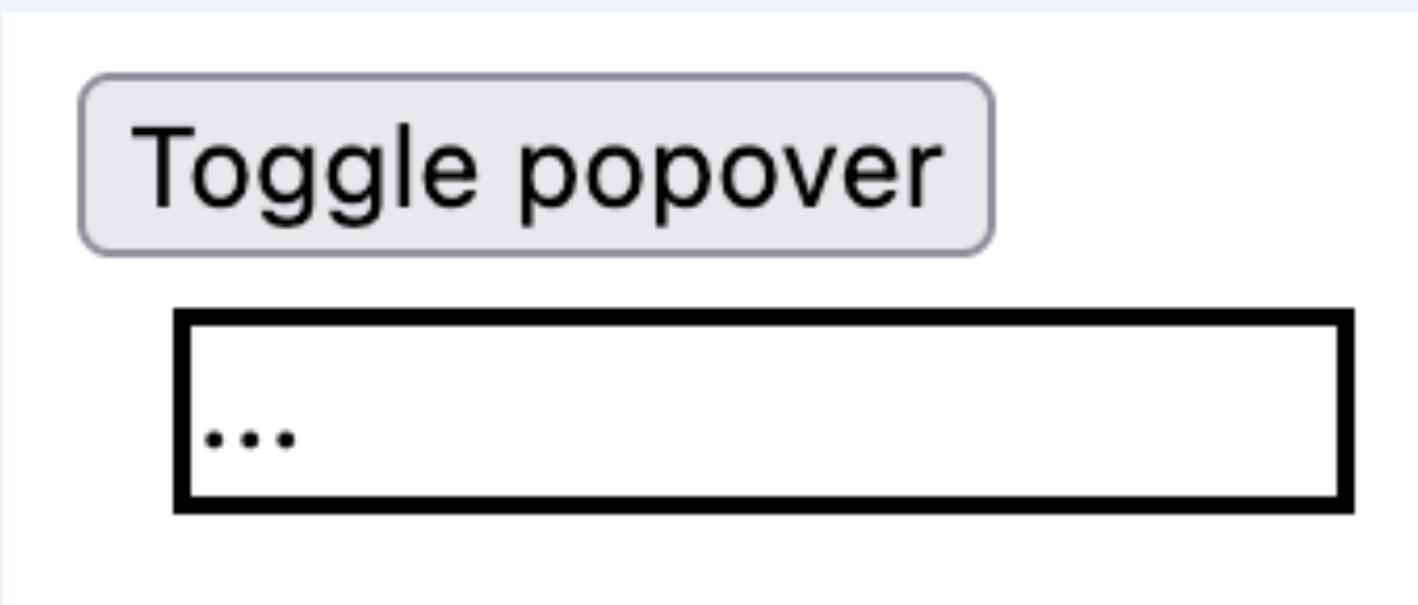
<select>'s  
listbox

teaching  
UI



# [POPOVER]

No *JavaScript*  
*required*

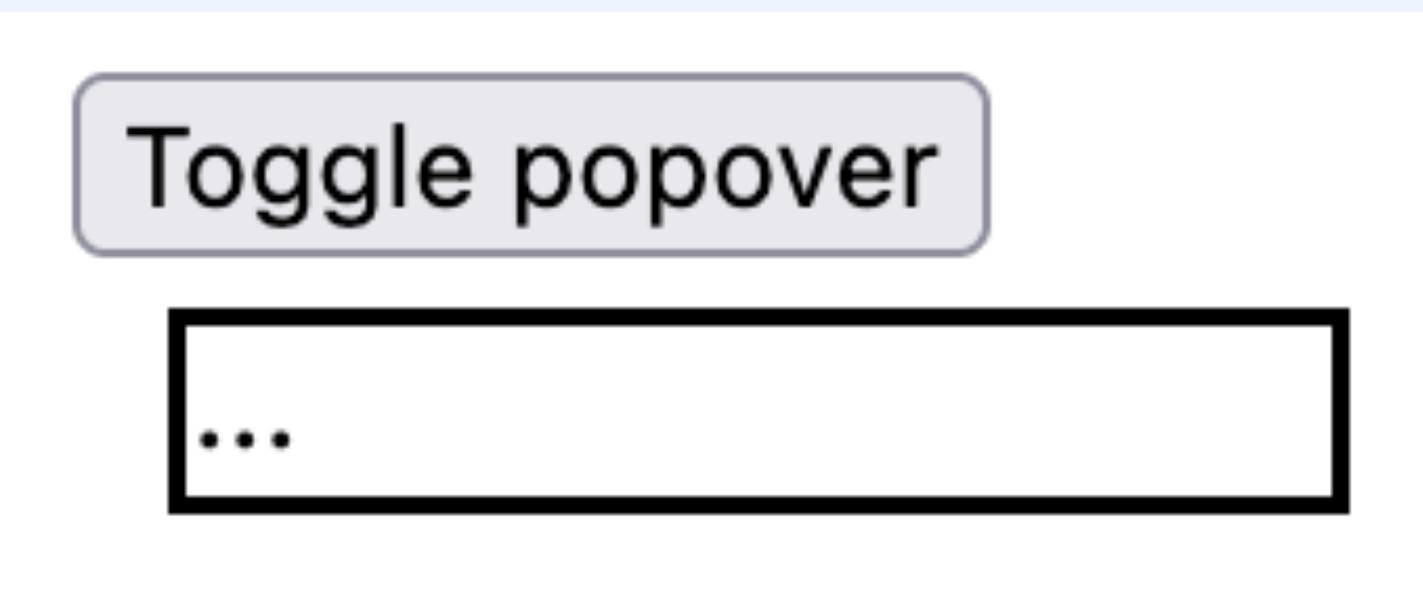


```
<button>  
  Toggle popover  
</button>
```

```
<div>  
  ...  
</div>
```

# [POPOVER]

No *JavaScript*  
*required*



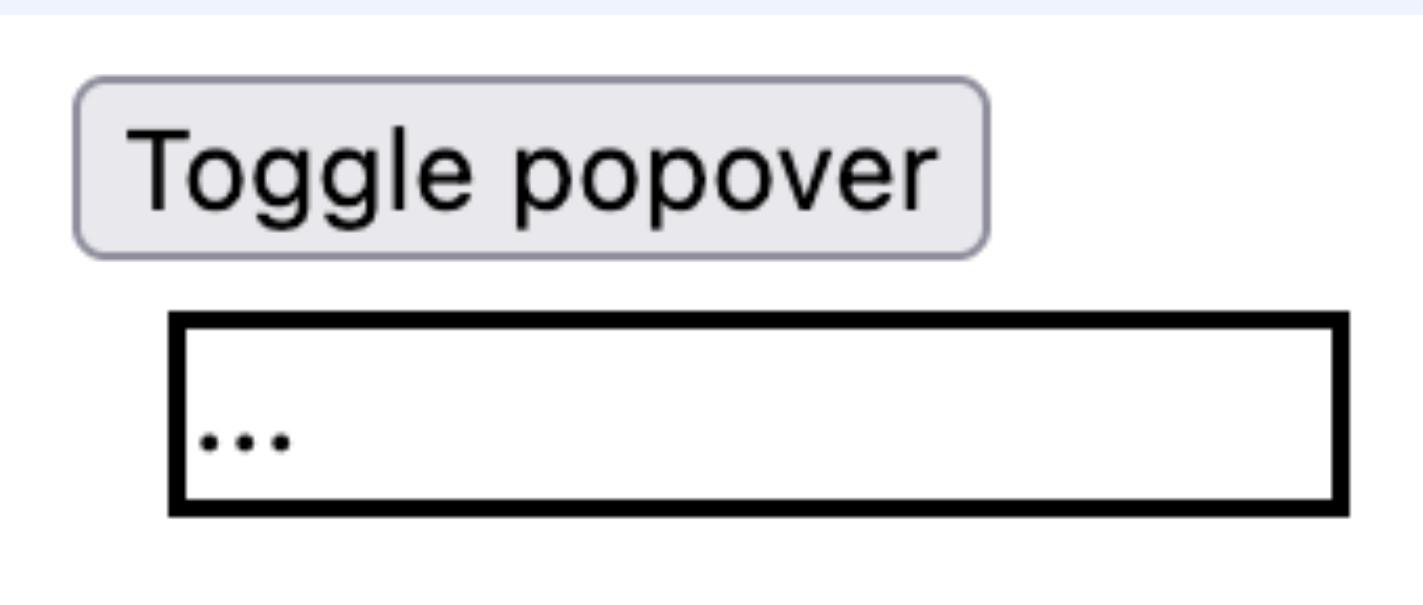
```
<button>
  Toggle popover
</button>

<div popover>
  ...
</div>
```

make it a  
popover

# [POPOVER]

No *JavaScript*  
*required*



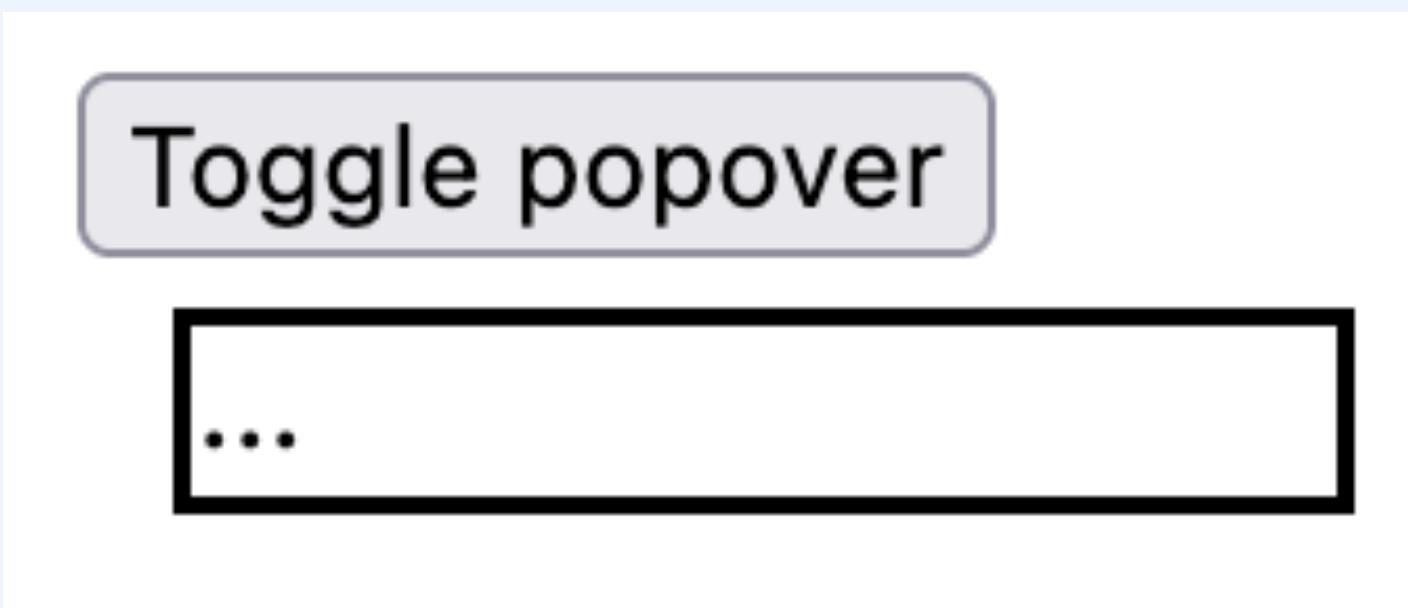
```
<button>  
  Toggle popover  
</button>
```

```
<div popover id="p">  
  ...  
</div>
```

add a  
unique ID

# [POPOVER]

No *JavaScript*  
*required*



point button to ID

```
<button popovertarget="p">  
  Toggle popover  
</button>  
  
<div popover id="p">  
  ...  
</div>
```

# OPENING DIALOGS (AND MORE) WITHOUT JS

[github.com/whatwg/html/issues/9625](https://github.com/whatwg/html/issues/9625)

The screenshot shows a web browser window with the GitHub URL <https://github.com/whatwg/html/issues/9625> in the address bar. The page title is "[Proposal] Invoker Buttons - allowing popover/dialog and more to be invoked without JS #9625". The issue is marked as "Open" by keithamus, who has made 14 comments. A recent comment from keithamus discusses the proposal's evolution from previous issues and introduces a new set of attributes for opening dialogs and popovers. The right sidebar displays the "Assignees" (No one assigned), "Labels" (accessibility, addition/proposal, needs implementer interest, topic: dialog, topic: events, topic: forms, topic: popover), and a search bar.

[Proposal] Invoker Buttons - allowing popover/dialog and more to be invoked without JS #9625

keithamus commented last week · edited

Following on from [#3567](#) and [#9456](#) where we tried to specify a way to open dialogs without JavaScript, @nt1m and @smaug---- raised concerns that the attribute was not extensible.

I've taken the feedback, and instead I'm proposing a new set of attributes that allow for opening dialogs and popovers, and also allow for extensibility for other interactions. I'll quote the summary:

Adding `invokertarget` and `invokeraction` attributes to `<button>` and `<input type="button">` / `<input type="reset">` elements would allow

New issue

Assignees

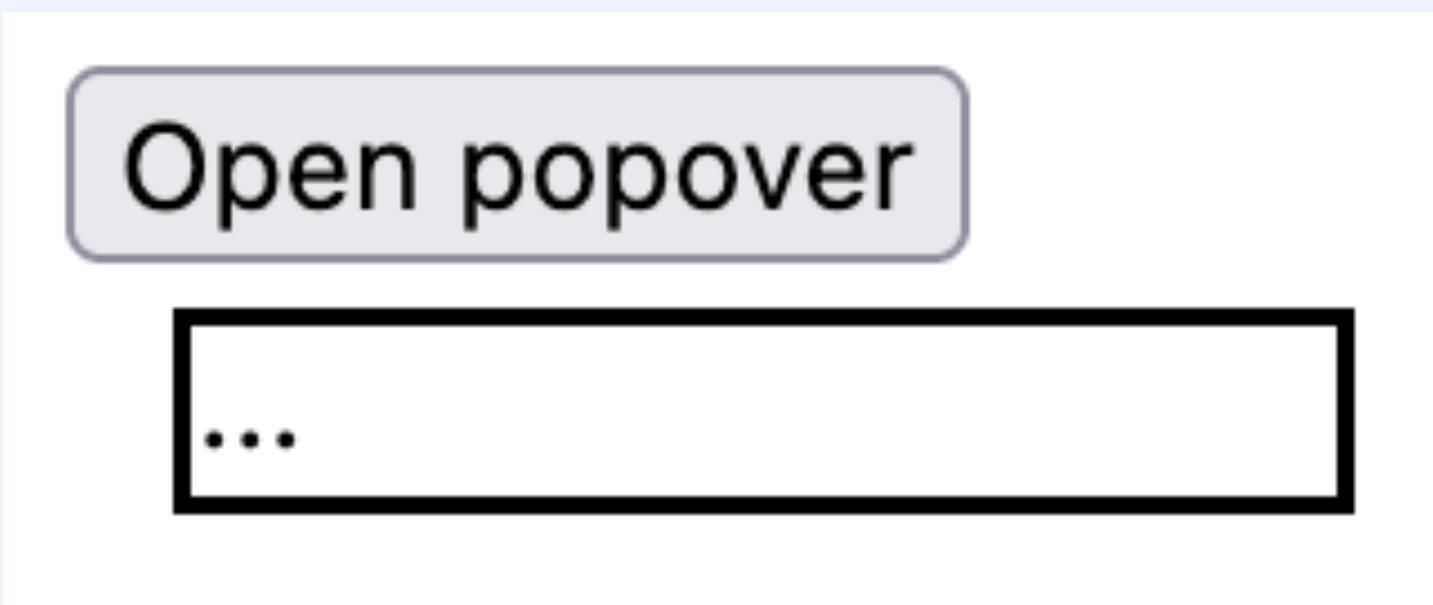
No one assigned

Labels

accessibility addition/proposal  
needs implementer interest topic: dialog  
topic: events topic: forms topic: popover

## [POPOVER]

*Can open, close  
or toggle*



```
<button popovertarget="p"  
popovertargetaction="show">  
  Open popover  
</button>
```

```
<div popover id="p">  
  ...  
</div>
```

## [POPOVER]

*Has auto and  
manual modes*

```
// Closes other popovers
// when opened; has
// light dismiss.
<div popover="auto">
...
</div>
```

## [POPOVER]

*Has auto and  
manual modes*

```
// Closes other popovers
// when opened; has
// light dismiss.
```

```
<div popover="auto">
```

...

```
</div>
```

```
// No closing of others,
// no light dismiss
```

```
<div popover="manual">
```

...

```
</div>
```

```
// show as popover  
element.showPopover();
```

## [POPOVER]

*Open/close  
with script*

## CURRENT STATUS: POPOVER ATTRIBUTE/API



in Chrome >114

Tech Preview >167,  
Safari 17 (fall 2023)

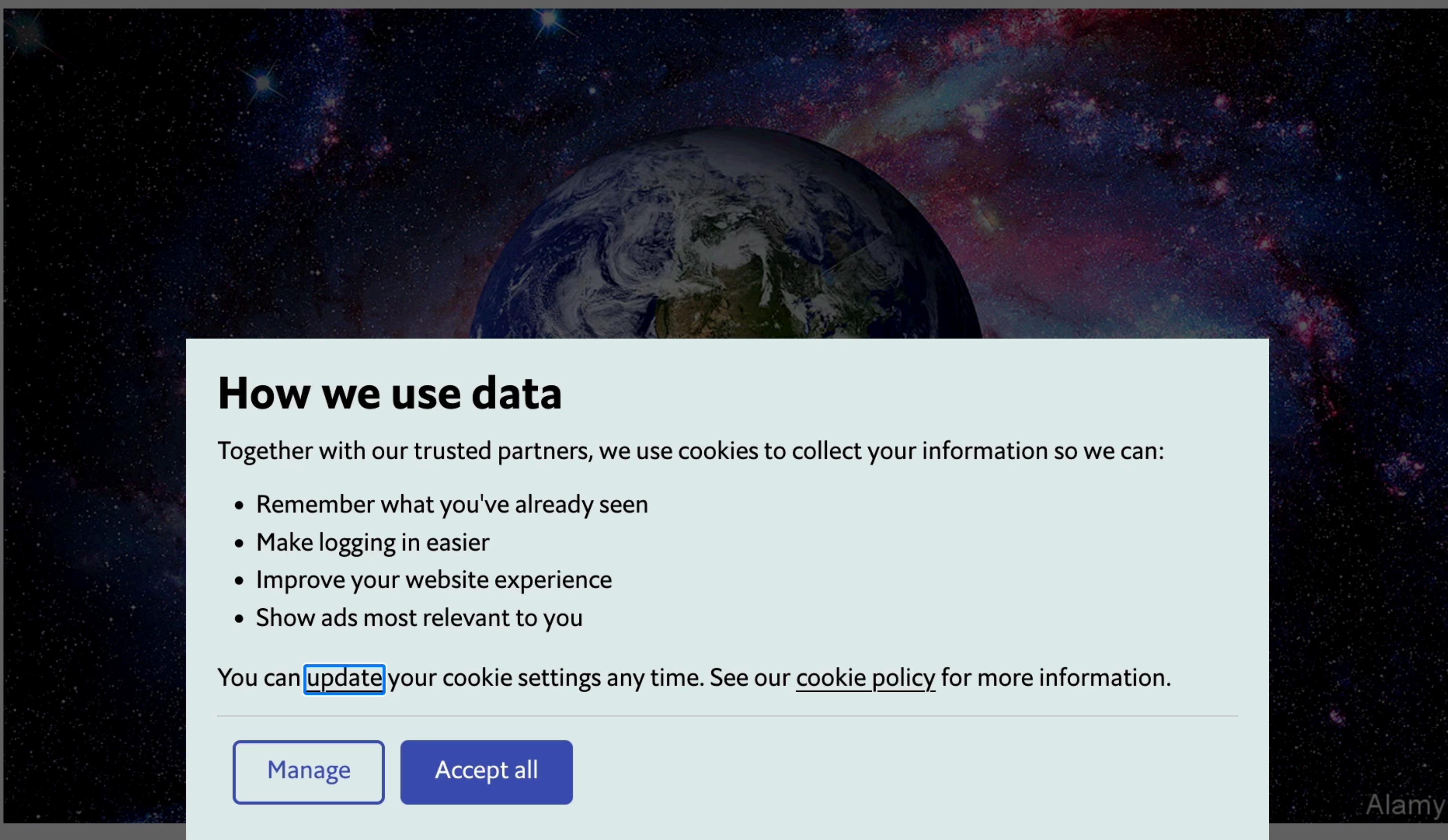
Firefox > 114

`dom.element.popover.enabled`



**HOW ARE  
THESE PATTERNS  
DIFFERENT?**

# **MODAL** VS **NON-MODAL**



Jul 25th 2019

 Share

**Novacene: The Coming Age of Hyperintelligence.** By James Lovelock with Bryan Appleyard. *The MIT Press*; 160 pages; \$22.95. *Allen Lane*; £14.99.

English

## MijnOverheid

Home

Berichtenbox

Lopende zaken

Identiteit

Financiën

Werk

Gezondheid

Wonen

Vervoer



H.A. de Vries

Uitloggen

### 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](#)

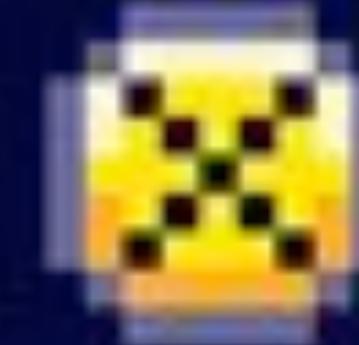
[Ja, verlengen](#)

n na uw overlijden wel of niet

[Ga naar Donorregister](#)



GAME OVER

Press   
to try again

The screenshot shows a mobile web page from The Economist. At the top, there are three buttons: 'Save' (with a bookmark icon), 'Share' (with a share icon, which is highlighted with a blue border), and 'Give' (with a gift icon). Below these buttons is a white rectangular popover menu titled 'Share'. The menu contains five items, each with an icon and text: 'Copy link' (with a clipboard icon), 'Share on Facebook' (with a Facebook icon), 'Share on Twitter' (with a Twitter icon), 'Share on WhatsApp' (with a WhatsApp icon), and 'Share on LinkedIn' (with a LinkedIn icon). The background of the page is light gray, and the main content area has a white background. The text visible in the background includes: 'RDS “flexible schedule” have an attract', 'andemic workplace full of motivated w', 'uctive and family-friendly way, and of', 'alented employees. But flexibility is in', 'ding on the type of job someone is in,' 'story. Enjoy more audio and podcasts on iOS or', and 'blue-collar worker in an industry that operates in shifts, for example,'.

**Image description**

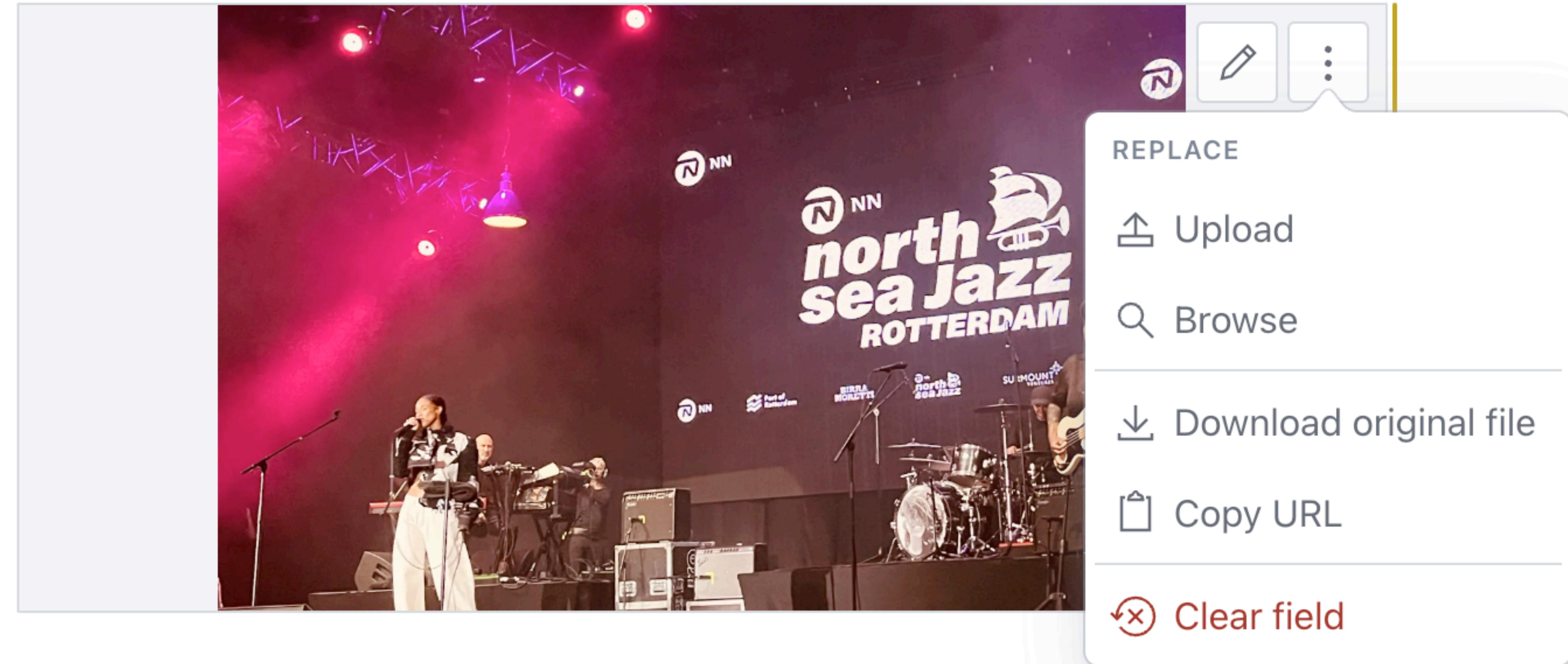
Pieter pot website with various Fritz kola beverages on sale

**Dismiss**

ALT pie + toe

Nog gemakkelijker verpakkingsvrij winkelen?

Main image



**Alternative text**

What's on this picture?

The screenshot shows a booking website interface with a non-modal chat widget. The chat is a white box on the left containing a user icon (Cati), a message from Cati ("Hi Hidde!"), and a question from the user ("What can I help you with today?"). The main page background is dark, showing a reception desk with staff and a 5-star rating banner. On the right, there's a "Create a team event" section, hotel and train booking tabs, a room selection dropdown, and a red-highlighted input field for check-in.

Cati

Hi Hidde!

What can I help you with today?

>Create a team event

Organize travel for a group

Hotels

Trains

1 room ▾

Check-in

My hotel

Making an element *modal* is a drastic measure, the user can do nothing else. Use it sparingly!

**MODAL** VS **NON-MODAL**

**LIGHT DISMISS** VS **EXPLICIT DISMISS**

New message: explicit dismiss

@hdv@front-end.social

The screenshot shows a Twitter compose screen. At the top, there's a navigation bar with 'Latest Tweets' on the left and 'Retweets' on the right. On the far left, there's a vertical sidebar with icons for Home, Notifications (1), Direct Messages, and Profile. The main area has a white background. In the top-left corner of the main area is a small circular profile picture of a man. Next to it is a blue button with the text 'Everyone' and a dropdown arrow. In the center of the screen, the text 'Explicit dismiss example' is displayed in a large, bold, black font. Below this, there's a section with a globe icon followed by the text 'Everyone can reply' in blue. At the bottom of the screen, there's a row of blue icons for attachments: a photo, a GIF, a list, a smiley face, a calendar, and a location pin. To the right of these icons are two light gray circular buttons: one with a refresh symbol and another with a plus sign. On the far right, there's a large blue button with the word 'Tweet' in white.

Latest Tweets

Retweets

Everyone

Explicit dismiss example

Everyone can reply

Tweet

# Font chooser: light dismiss

@hdv@front-end.social

The screenshot shows a Google Docs editor interface. At the top, there's a toolbar with icons for file operations like 'Light dismiss example' (document icon), 'File', 'Edit', 'View', 'Insert', 'Format', 'Tools', 'Extensions', and 'Help'. To the right of the toolbar are sharing options ('Share') and a user profile icon. Below the toolbar is a secondary toolbar with icons for back, forward, print, and various document formats. The main workspace contains a single line of text: 'Light dismiss|'. Above this text is a font selection dialog box. The dialog shows the font 'Arial' selected from a dropdown menu. It also includes a font size dropdown set to '26', bold ('B'), italic ('I'), underline ('U'), and strikethrough ('A') buttons. A horizontal scroll bar is visible at the bottom of the dialog. The background of the editor shows a grid with columns labeled 1 through 7 and rows labeled 1 through 4.

**MODAL** VS **NON-MODAL**

**LIGHT DISMISS** VS **EXPLICIT DISMISS**

**Z-INDEX** VS **TOP LAYER**

With z-index, you can stack elements on top of each other.

The element that is first in the DOM is painted first, each subsequent element on top of the previous and

With z-index, you can stack elements on top of each other.

The element that is first in the DOM is painted first, each subsequent element on top of the previous and

*z-index: 1;*

With z-index, you can stack elements on top of each other.

The element that is first in the DOM is painted first.

The element that is first in the DOM is painted first, each subsequent element on top of the previous one.

The element that is first in the DOM is painted first, each subsequent element on top of the previous and so on.

`z-index: 2;`

The *top layer* is above everything else, its own layer above the main document

[drafts.csswg.org/css-position-4/#top-layer](https://drafts.csswg.org/css-position-4/#top-layer)

The element that  
is first in the DOM  
is painted first.  
each subsequent  
element on top of  
the previous one.

The element that  
is first in the DOM  
is painted first,  
each subsequent  
element on top of  
the previous and

The *top layer* is above everything else, its own layer above the main document

[drafts.csswg.org/css-position-4/#top-layer](https://drafts.csswg.org/css-position-4/#top-layer)



# Layered based on order of top layer addition, not z-index

[drafts.csswg.org/css-position-4/#top-layer](https://drafts.csswg.org/css-position-4/#top-layer)

The element that  
is first in the DOM  
is painted **first**.

The element that  
is first in the DOM  
is painted first,  
each subsequent  
element on top of  
the previous and

top layer, top  
layer, top layer,  
top layer, top  
layer, top layer

# Layered based on order of top layer addition, not z-index

[drafts.csswg.org/css-position-4/#top-layer](https://drafts.csswg.org/css-position-4/#top-layer)

The element that  
is first in the DOM  
is painted first.

The element that  
is first in the DOM  
is painted first,  
each subsequent  
element on top  
of the previous one.

top layer, top  
layer, top layer,  
top layer, top  
layer

also top layer,  
also top layer,  
also top layer,  
also top layer,

**MODAL** VS **NON-MODAL**

**LIGHT DISMISS** VS **EXPLICIT DISMISS**

**Z-INDEX** VS **TOP LAYER**

**BACKDROP**

MijnOverheid

Home

Berichtenbox

Lopende zaken

Identiteit

Financiën

Werk

Gezondheid

Wonen

Vervoer

Onderwijs

Instellingen



English

H.A. de Vries

Uitloggen

Wilt u uw sessie verlengen?

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

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

Uitloggen

✓ Ja, verlengen

na uw overlijden wel of niet

Ga naar Donorregister

Mijn PGB

Het Persoonsgebonden budget (PGB) is een budget, waarmee mensen met een beperking hun eigen zorg kunnen inkopen. Met Mijn PGB regelt u digitaal persoonlijke zaken met de SVB Dienstverlening PGB. Zo kunt u onder andere digitaal declareren uw budgetoverzicht bekijken, documenten insturen en ziek- en

Sometimes elements have a backdrop.

Top layer elements have a built-in styleable backdrop (: :backdrop)

**MODAL** VS **NON-MODAL**

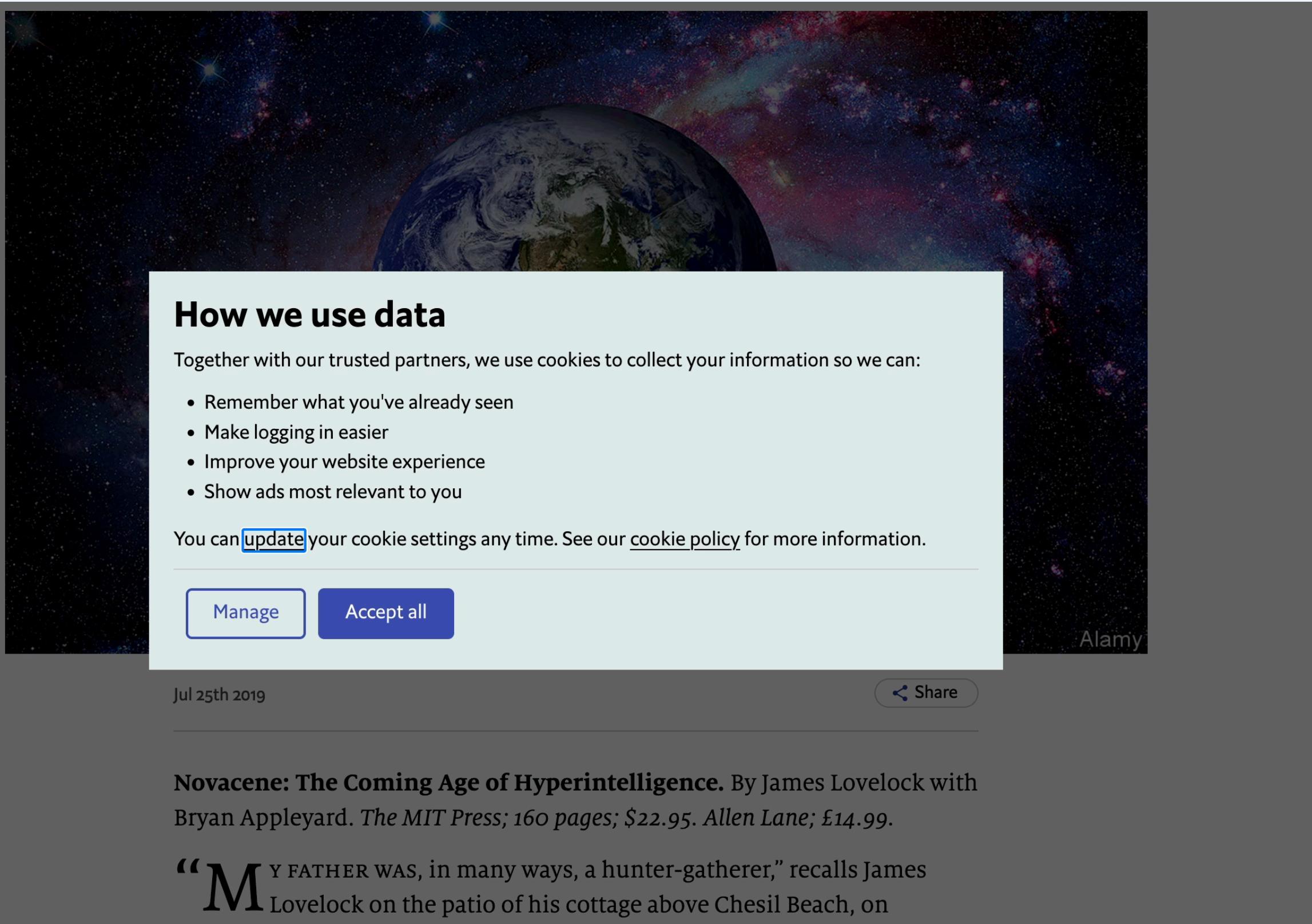
**LIGHT DISMISS** VS **EXPLICIT DISMISS**

**Z-INDEX** VS **TOP LAYER**

**BACKDROP**

**KEYBOARD FOCUS TRAP**

# KEYBOARD FOCUS TRAP



Sometimes you want to prevent users from exiting a component with their Tab key.

This is *always* temporary.

**MODAL** VS **NON-MODAL**

**LIGHT DISMISS** VS **EXPLICIT DISMISS**

**Z-INDEX** VS **TOP LAYER**

**BACKDROP**

**KEYBOARD FOCUS TRAP**

# MODAL VS NON-MODAL

<dialog> with  
showModal()

<dialog>  
with show()

popover

L1

SS

VS

EX

MISS

Z-INDEX

VS

TO

## BACKDROP

## KEYBOARD FOCUS TRAP

**MODAL** VS **NON-MODAL**

**LIGHT DISMISS** VS **EXPLICIT DISMISS**

`popover="auto"`

VS

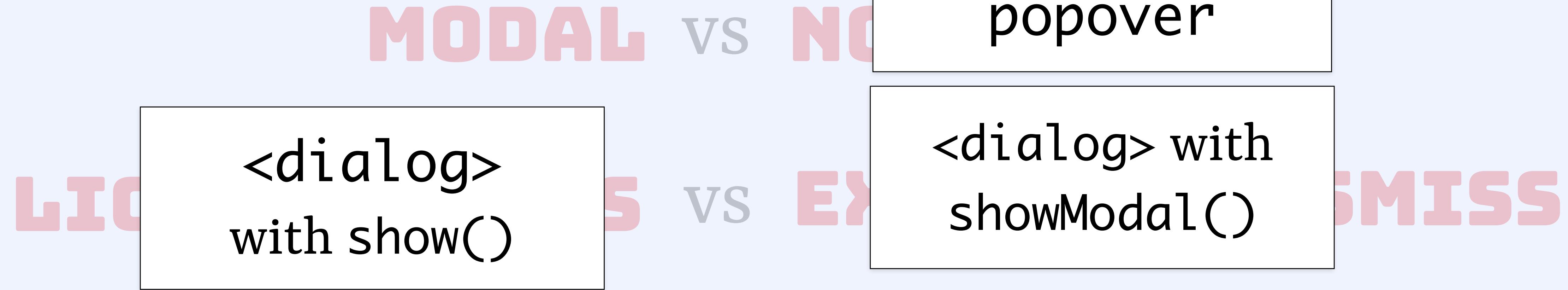
`popover="manual"`

**TOP LAYER**

`any <dialog>`

**BACKDROP**

**KEYBOARD FOCUS TRAP**



**Z-INDEX** vs **TOP LAYER**

**BACKDROP**

**KEYBOARD FOCUS TRAP**

**MODAL** VS **NON MODAL**

browser provided  
w/ ::backdrop

**LIGHT DISMISS** VS **EXPLICIT**

popover

consider if modal  
<dialog> not better

**Z-INDEX** VS **TOP POSITION**

<dialog> with  
showModal()

## BACKDROP

**KEYBOARD FOCUS TRAP**

**MODAL** VS **NON MODAL**

browser provided  
w/ ::backdrop

**LIGHT DISMISS** VS **EXPLICIT**

popover

consider if modal  
<dialog> not better

**Z-INDEX** VS **TOP POSITION**

<dialog> with  
showModal()

## BACKDROP

**KEYBOARD FOCUS TRAP**

**MODAL** VS **NON-MODAL**

**LIGHT DISMISS** VS **EXPLICIT DISMISS**

**Z-INDEX** VS **TOP**

browser provided

**BACKDROP**

<dialog> with  
showModal()

**KEYBOARD FOCUS TRAP**

# SEMANTICS

# “What is this thing?”

– philosophers





“What is this thing in  
this page/app?”

—web developers



<h1>

*heading*

<h1>

*heading*



Performance **BETA**

Services data Web traffic data Get a dashboard About Prototypes Blog

Performance > Services data

# Services data

114 services

Transactions per year

1.56bn

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

Digital take-up

90.2%

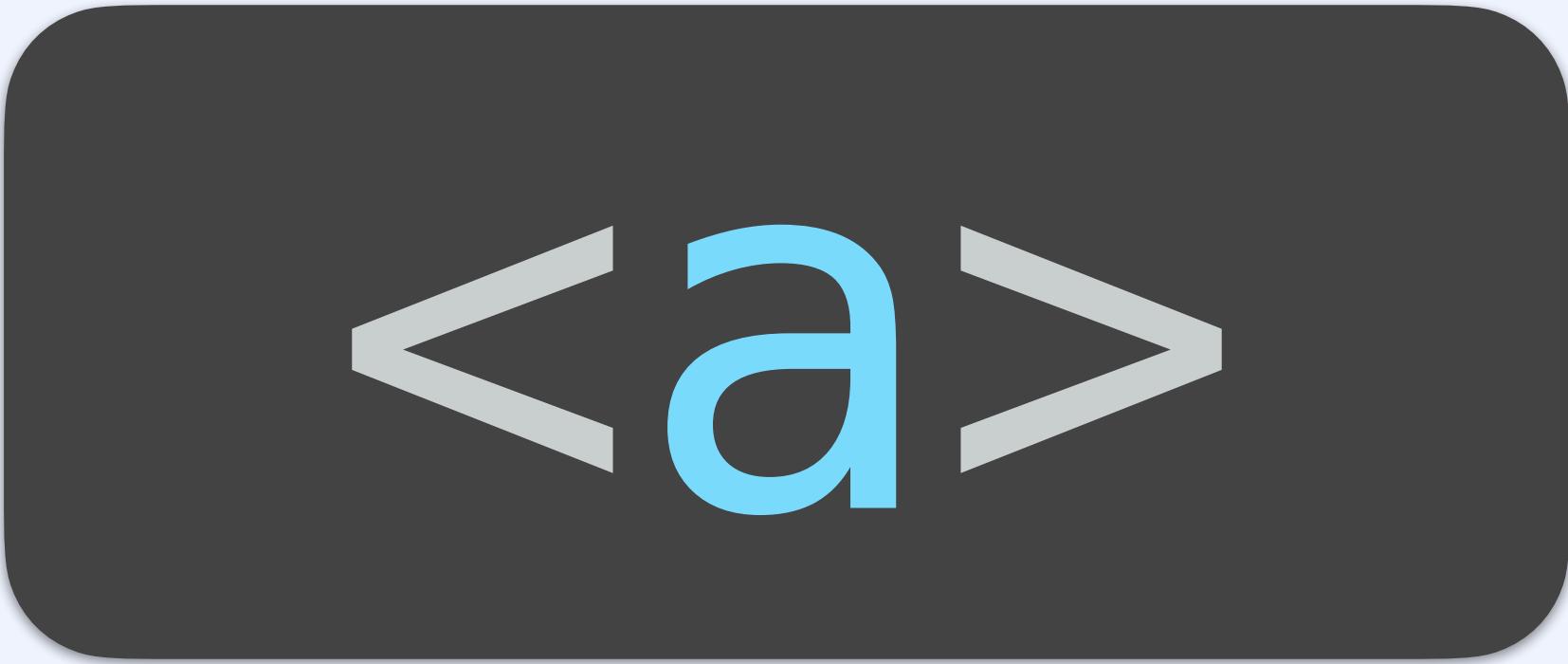
weighted average for [70 services out of 114](#)

## 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](#)

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



<a>

*link*



<li>

*list item*



<dialog>

*dialog*



<div>

[*no role*]

```
<div role="link">
```

*link*

```
<div popover>
```

*[no role]*

The popover attribute adds  
*behaviour, not semantics*

(you choose a role based on the situation)

For components that are like a smaller window / subwindow on top of the main page

# DIALOGS

<dialog> or  
role="dialog"

To Berlin

Return journey ⓘ  
Tue, 16. May 2023

Passengers, discounts & bicycles –

3 Adults

change ພົມບັນຍາ

Adults (15 years +)

female: - 2 +

male: - 1 +

Bicycles

- 0 +

overnight  
Night coaches and day coaches allow you to sleep safely and tight, and providing excellent service to make your journey as pleasant as possible. Depending on your preferred level of comfort, you can travel

Done >

# For components that are like a smaller window / subwindow on top of the main page

Listen to this story. Enjoy more audio and podcasts on [iOS](#) or [Android](#).



That is just one of his many contributions to science. In the 1970s, he began looking for life on other planets by studying the atmosphere. He helped to develop the first instruments to measure the concentration of greenhouse gases in the atmosphere in the 1970s, and he helped to identify the hole in the ozone layer over Antarctica. His nomination to Britain's Royal Society was based on his work in chemistry and physics—all because of his love of science. He is best known (it is named after Gaia, the ancient Greek goddess of the Earth).

**Listen to this story** ×

Save time by listening to our audio articles as you multitask

OK

Velock honed a method to find and quantified CFCs in the atmosphere. He has also conducted research on the harmful chemicals. He has spent thousands of hours of work in biology, chemistry, and physics—the theory for which he is best-known (it is named after Gaia, the ancient Greek goddess of the Earth).

Business Agents site In het Nederlands

Discover Travel information Customer service

Search Log in

⚠ Disruptions and maintenance (9)

Number 1 in the Netherlands Compare European train journeys

Great deals No hidden costs

24/7 NS service Reliable and personal

This summer to France?  
Book Thalys and TGV  
Our holiday tips

Top destinations



For components that let the user choose from a list, the listbox wraps the choices

# LISTBOX role="listbox"

The image displays two examples of listbox components. On the left, a dropdown menu titled "Categories" is shown, listing various topics. The option "Developers" is highlighted with a blue background. On the right, a multi-select dropdown for "Passenger 1" shows a list of age groups: Adult (26 - 59 years), Senior (65 years and older), Senior (60 - 64 years), Adult (26 - 59 years), Youth (16 - 25 years), Youth (15 years), Child (12 - 14 years), Child (6 - 11 years), and Child (4 or 5 years). The "Adult (26 - 59 years)" option is selected, indicated by a blue background and a checkmark icon.

**Categories**

- ✓ Select Category
- Accessibility
- Corporate
- Data
- Developers**
- Events
- Immersive Web
- Internationalization
- Privacy and Security
- Systems
- Testing
- Tools
- TPAC
- Training
- Tutorials
- Uncategorized

**Passenger 1**

- Adult (26 - 59 years)
- Senior (65 years and older)
- Senior (60 - 64 years)
- Adult (26 - 59 years)**
- Youth (16 - 25 years)
- Youth (15 years)
- Child (12 - 14 years)
- Child (6 - 11 years)
- Child (4 or 5 years)

**Passenger 2**

△ Disruption

✓ Number 1

Compare E

Transfer X

Country of the bank of the recipient

Netherlands



Amount

1,337.00

Currency

EUR (Euro)

USD (United States dollar)

Recipient's name

**LISTBOX**

role="listbox"

PLN (Polish złoty)

CHF (Swiss franc)

SEK (Swedish krona)

# LISTBOX

role="listbox"

A screenshot of a web application interface titled "Hidde's concerts & books". The main search bar contains the text "je". Below it, a "Manage contents" sidebar lists "Book" and "Concert" categories. A large pink bracket on the left side of the screenshot spans from the sidebar to the bottom of the listbox area, highlighting the entire list component. The list itself is titled "Best match" and contains four items:

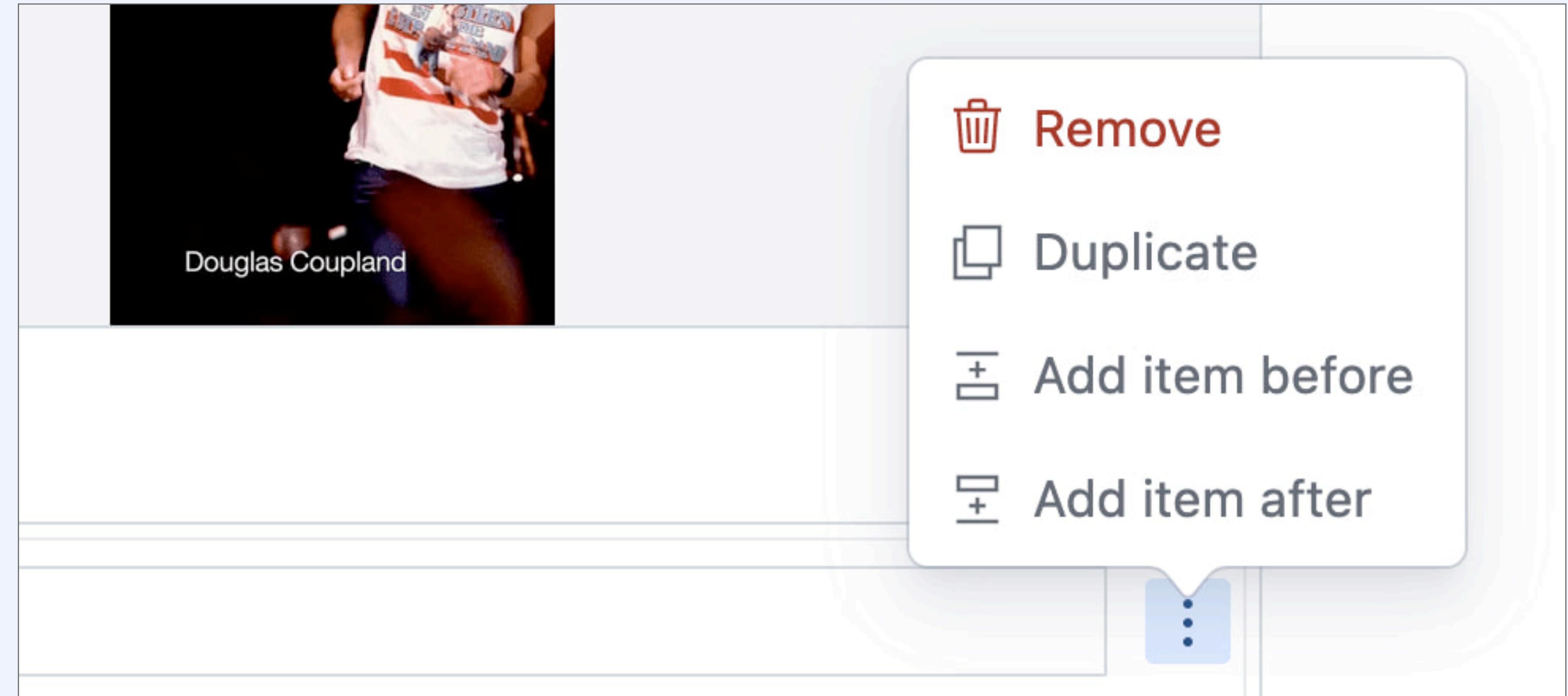
- Jeff Mills (ARTIST)
- Jeff Neve (ARTIST)
- De Jeugd van Tegenwoordig (ARTIST)
- Oscar Jerome (ARTIST)

The interface includes a "Clear filters" button and a "Add filter" section.

For components that offer the user a list of choices that are actions (like in an application).

# MENUS

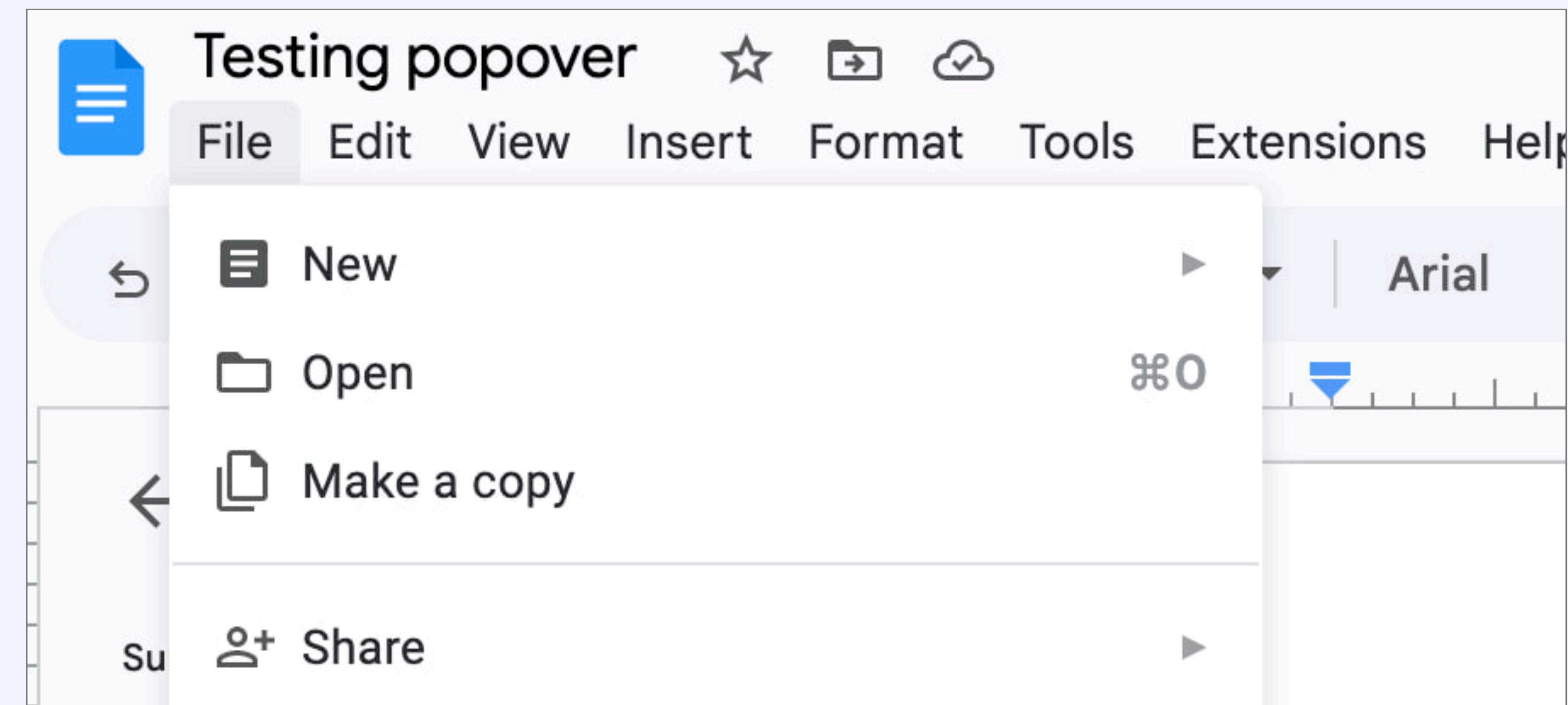
role="menu"



For components that offer the user a list of choices that are actions (like in an application).

# MENUS

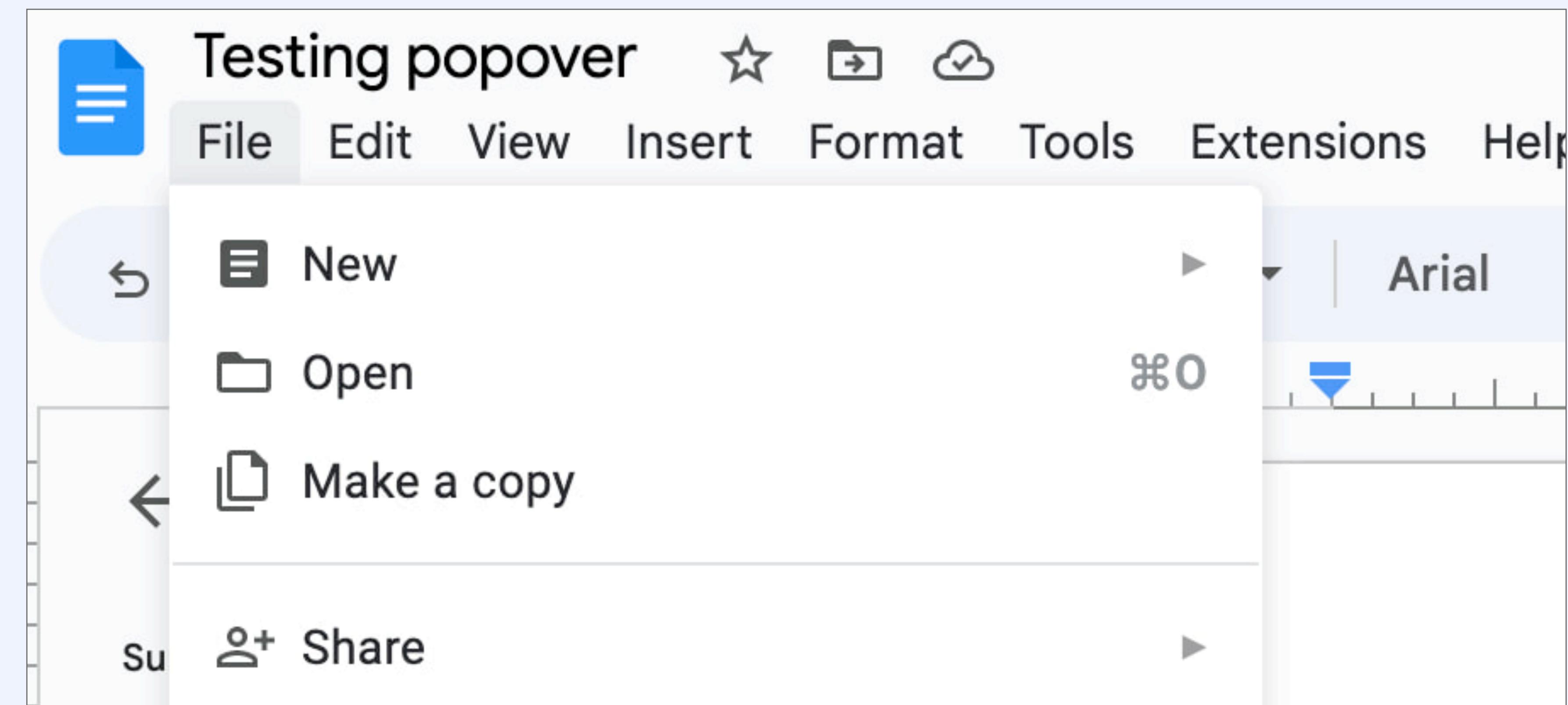
role="menu"



For components that offer the user a list of choices that are actions (like in an *application*).

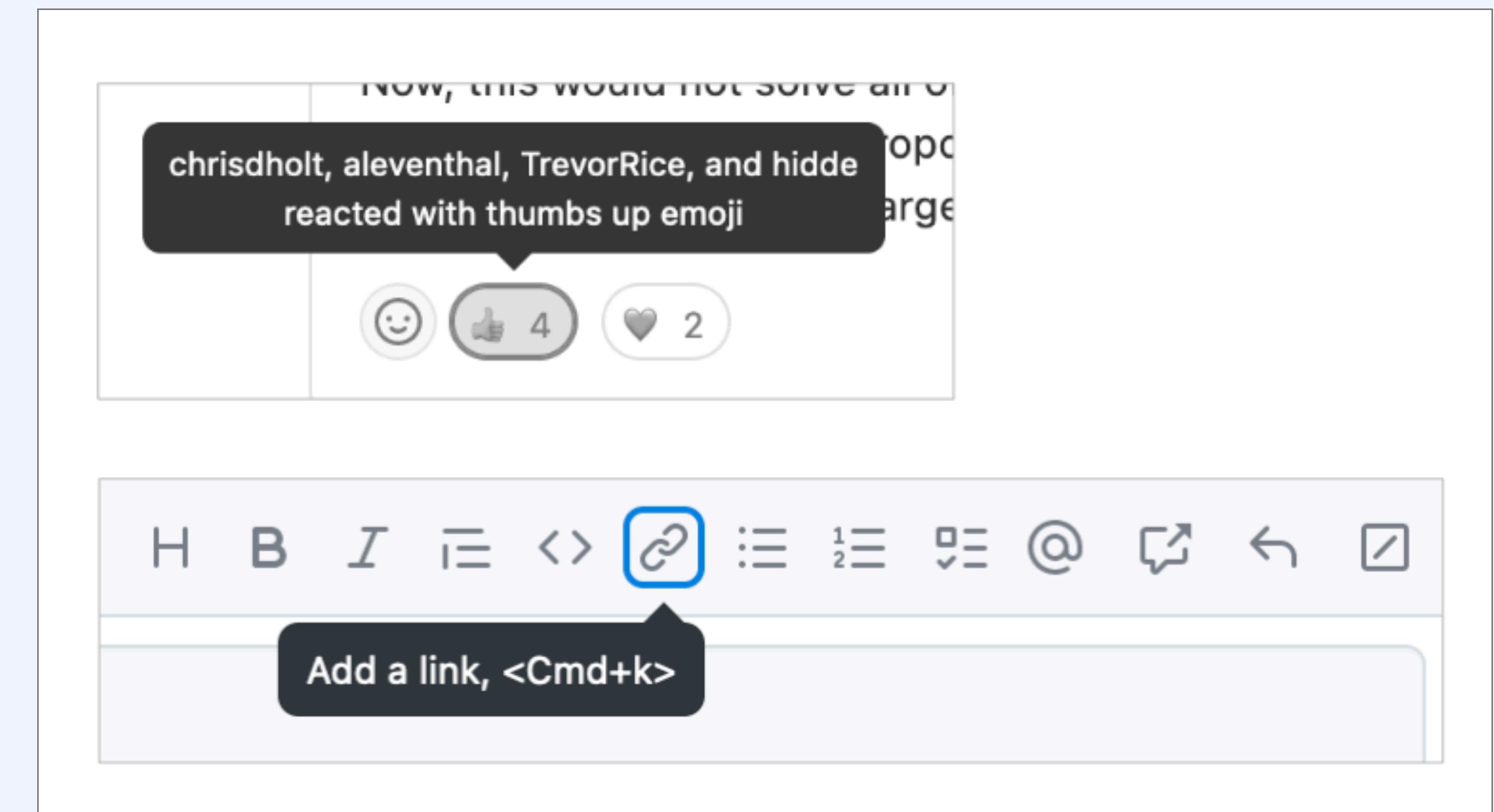
# MENUS

role="menu"



# Plain text suggestions

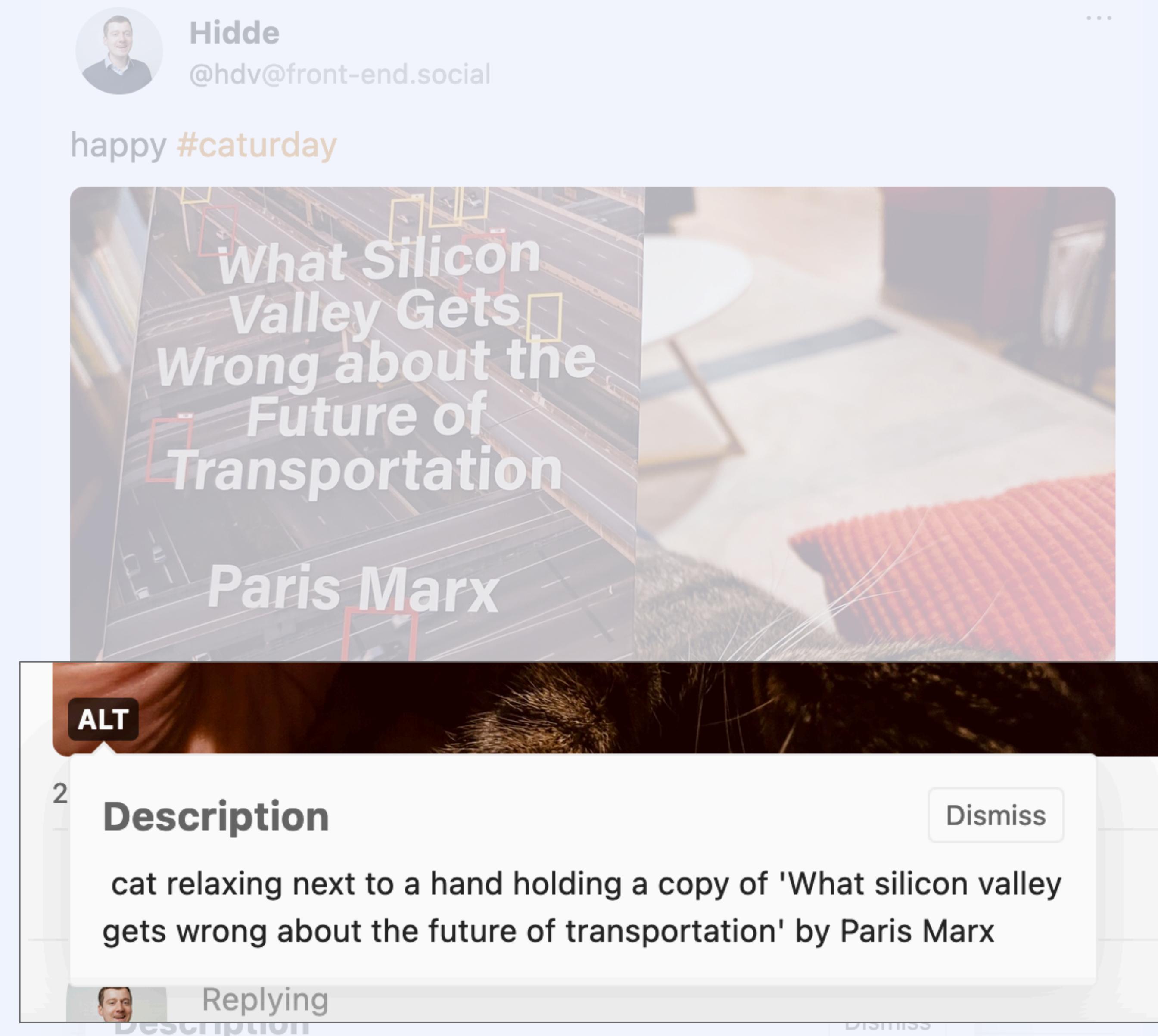
**TOOLTIPS**  
role="tooltip"



# TOOLTIPS

role="dialog"

## More than plain text, maybe better as togglertips



cat relaxing next to a hand holding a copy of 'What silicon valley gets wrong about the future of transportation' by Paris Marx

cat relaxing next to a hand holding a copy of 'What silicon valley gets wrong about the future of transportation' by Paris Marx

## DIALOGS

<dialog> or  
role="dialog"

## MENUS

role="menu"

## TOOLTIPS

role="tooltip"  
role="dialog"

# SEMANTICS

<dialog>

---

dialog (implicit)

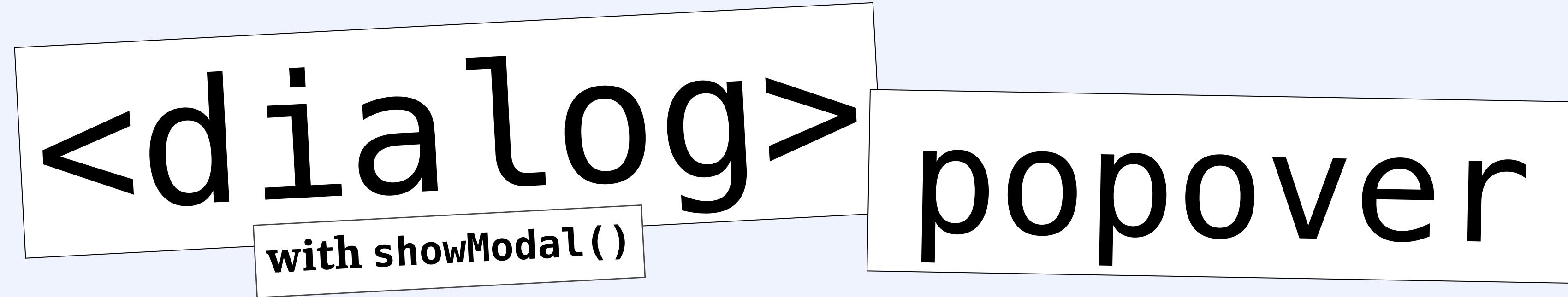
popover

---

it depends. You choose an apt role,  
could be **dialog**, **listbox**, **menu** or **tooltip**

---

# POSITIONING



Both are *centered*  
by default

log.hidde.blog

localhost

live music

(Work in progress) [Home](#)

**Froukje** in Zwolle ★★★★  
on 2023-05-05 at Park de Wezenlanden • Bevrijdingsfestival in Zwolle

**Spinvis** in Woerden ★★★★★  
on 2023-04-15 at Het Klooster

**EELS** in Amsterdam ★★★★  
on 2023-04-07 at AFAS Live

**Sef & het El Salvador Ensemble** in Rotterdam ★★★★★  
on 2023-03-10 at Lantaren Venster

**Roosbeef** in Groningen ★★★★★  
on 2023-03-05 at Vera

**Pink Floyd Project** in Leeuwarden UNRATED  
on 2022-12-17 at Neushoorn

**Oscar Jerome** in Rotterdam ★★★★  
on 2022-12-07 at BIRD

**The Bad Plus** in Rotterdam ★★★★  
on 2022-11-13 at Lantaren Venster

**Gurdjieff Ensemble** in Amsterdam ★★★★  
on 2022-11-04 at Muziekgebouw aan 't IJ

**Robert Glasper** in Antwerp ★★★  
on 2022-08-29 at De Roma

**Kassa Overall** in Rotterdam ★★★★★

**Gregory Porter** in Rotterdam ★★★★  
on 2022-07-08 at Ahoy • North Sea Jazz 2022

**Gary Bartz & Maisha** in Rotterdam ★★★★  
on 2022-07-08 at Ahoy • North Sea Jazz 2022

**Lianne La** in Rotterdam

localhost

live  
music

(Work in progress) [Home](#)

**Froukje** in Zwolle ★★★★  
on 2023-05-05 at Park de Wezenlanden •  
Bevrijdingsfestival in Zwolle



**EELS** in Amsterdam ★★★★  
on 2023-04-07 at AFAS Live



**Roosheef** in Groningen  


**Spinvis** in Woerden ★★★★★  
on 2023-04-15 at Het Klooster



**Sef & het El Salvador Ensemble** in Rotterdam ★★★★  
on 2023-03-10 at Lantaren Venster



**Pink Floyd Project** in Leeuwarden UNRATED  
on 2022-12-17 at Neushoorn



```
// concert-list.njk
<ol>
  {%- for concert in concerts %}
    <li>
      ...
    </li>
  {%- endfor %}
</ol>
```

The screenshot shows a web application for live music concert listings. The interface is dark-themed with white and light-colored text. At the top left is a logo for "HIDDEN LOGS live music". Below it, a message says "(Work in progress) [Home](#)". The main content area displays five concert entries:

- Froukje** in Zwolle ★★★★  
on 2023-05-05 at Park de Wezenlanden.  
Bevrijdingsfestival in Zwolle
- EELS** in Amsterdam ★★★★  
on 2023-04-07 at AFAS Live
- Roosheef** in Groningen
- Spinvis** in Woerden ★★★★★  
on 2023-04-15 at Het Klooster
- Sef & het El Salvador Ensemble** in Rotterdam  
on 2023-03-10 at Lantaren Venster
- Pink Floyd Project** in Leeuwarden UNRATED  
on 2022-12-17 at Neushoorn

```
// concert-list.njk
<ol>
  {% for concert in concerts %}
    <li>
      ...
      {% if concert.images %}
        <button
          type="button"
          data-dialogtarget="{{ dialogID }}"
          aria-label="Details for {{ concert.info }}"
          <svg aria-hidden="true" focusable="false">...</svg>
        </button>
      {% endif %}
    </li>
  {% endfor %}
</ol>
```

localhost

live music

(Work in progress) [Home](#)

**Froukje** in Zwolle ★★★★  
on 2023-05-05 at Park de Wezenlanden • Bevrijdingsfestival in Zwolle

**EELS** in Amsterdam ★★★★  
on 2023-04-07 at AFAS Live

**Roosheef** in Groningen

**Spinvis** in Woerden ★★★★★  
on 2023-04-15 at Het Klooster

**Sef & het El Salvador Ensemble** in Rotterdam ★★★★  
on 2023-03-10 at Lantaren Venster

**Pink Floyd Project** in Leeuwarden UNRATED  
on 2022-12-17 at Neushoorn

```
// concert-list.njk
<ol>
  {% for concert in concerts %}
    <li>
      ...
      {% if concert.images %}
        <button
          type="button"
          data-dialogtarget="{{ dialogID }}"
          aria-label="Details for {{ concert.info }}"
          <svg aria-hidden="true" focusable="false">...</svg>
        </button>
        <dialog id="{{ dialogID }}"
          aria-label="Details for {{ concert.info }}"
          <button
            type="button"
            data-dialogclose="{{ dialogID }}"
            aria-label="Close"
            <svg aria-hidden="true" focusable="false">...
          </button>
        ...
      </dialog>
      {% endif %}
    </li>
  {% endfor %}
</ol>
```

localhost

live music

(Work in progress) [Home](#)

Froukje in Zwolle ★★★★  
on 2023-05-05 at Park de Wezenlanden • Bevrijdingsfestival in Zwolle

EELS in Amsterdam ★★★★  
on 2023-04-07 at AFAS Live

Roosheef in Groningen

Spinvis in Woerden ★★★★★  
on 2023-04-15 at Het Klooster

Sef & het El Salvador Ensemble in Rotterdam ★★★★  
on 2023-03-10 at Lantaren Venster

Pink Floyd Project in Leeuwarden UNRATED  
on 2022-12-17 at Neushoorn

```
// concert-list.js
const dialogOpeners =
  document.querySelectorAll('[data-dialogtarget]');
```

The screenshot shows a web application for concert listings. The header includes a logo for "HIDDEN LOGS live music". Below the header, a link "(Work in progress) Home" is visible. The main content displays five concert entries:

- Froukje** in Zwolle ★★★★  
on 2023-05-05 at Park de Wezenlanden.  
Bevrijdfestival in Zwolle
- EELS** in Amsterdam ★★★★  
on 2023-04-07 at AFAS Live
- Roosheef** in Groningen
- Spinvis** in Woerden ★★★★★  
on 2023-04-15 at Het Klooster
- Sef & het El Salvador Ensemble** in Rotterdam  
on 2023-03-10 at Lantaren Venster
- Pink Floyd Project** in Leeuwarden UNRATED  
on 2022-12-17 at Neushoorn

```
// concert-list.js
const dialogOpeners =
  document.querySelectorAll('[data-dialogtarget]');

for (let i = 0; i < dialogOpeners.length; i++) {
  const opener = dialogOpeners[i];
  const correspondingDialog =
    document.querySelector(
      `#${opener.getAttribute('data-dialogtarget')}`);
}
```

localhost

live  
music

(Work in progress) [Home](#)

**Froukje** in Zwolle ★★★★  
on 2023-05-05 at Park de Wezenlanden.  
Bevrijdfestival in Zwolle

**EELS** in Amsterdam ★★★★  
on 2023-04-07 at AFAS Live

**Roosheef** in Groningen

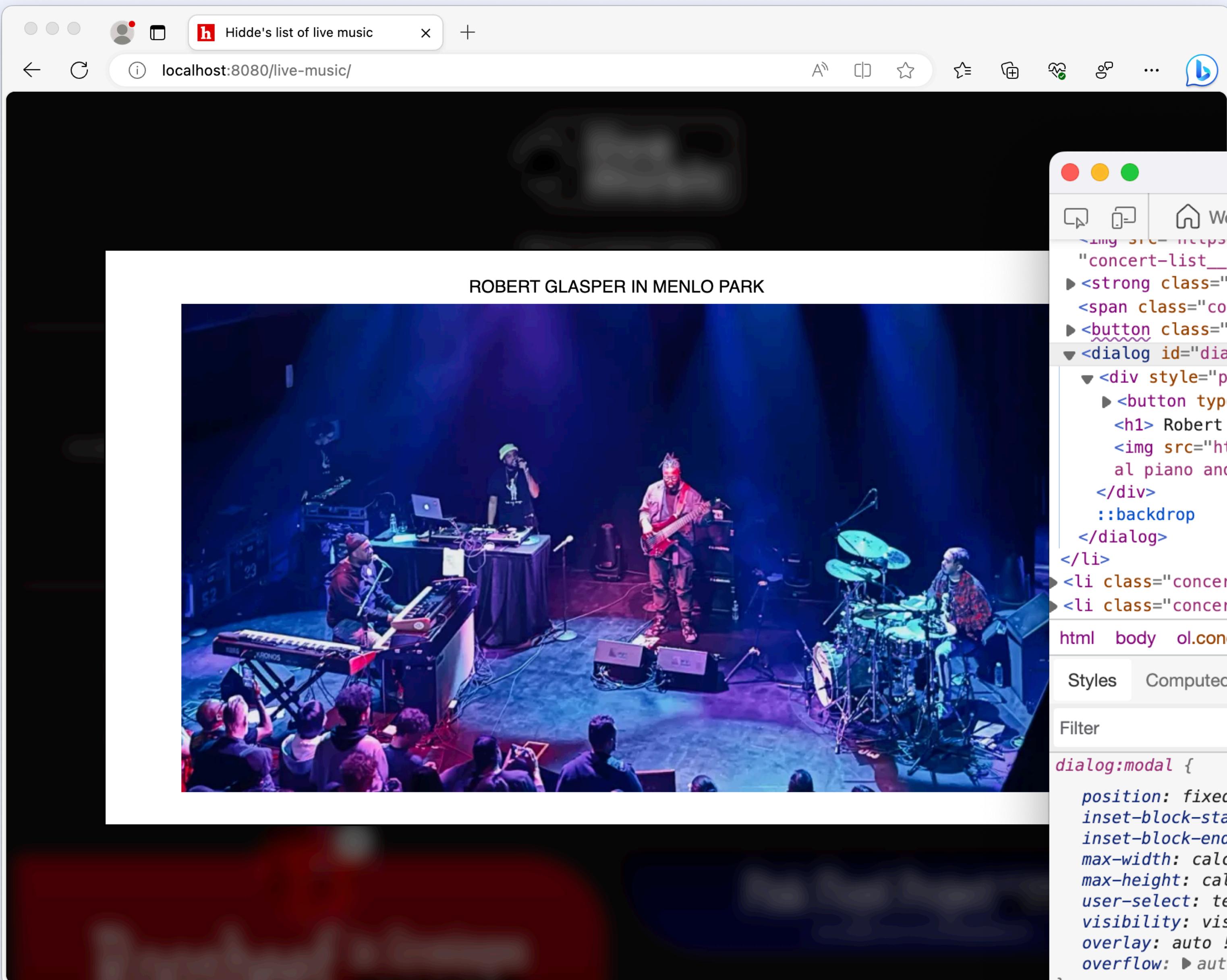
**Spinvis** in Woerden ★★★★★  
on 2023-04-15 at Het Klooster

**Sef & het El Salvador Ensemble** in Rotterdam ★★★★  
on 2023-03-10 at Lantaren Venster

**Pink Floyd Project** in Leeuwarden UNRATED  
on 2022-12-17 at Neushoorn

```
// concert-list.js
const dialogOpeners =
  document.querySelectorAll('[data-dialogtarget]');

for (let i = 0; i < dialogOpeners.length; i++) {
  const opener = dialogOpeners[i];
  const correspondingDialog =
    document.querySelector(
      `#${opener.getAttribute('data-dialogtarget')}`);
  opener.addEventListener('click', function() {
    correspondingDialog.showModal();
  });
}
```



DevTools - localhost:8080/live-music/

Elements

```
"concert-list__img">
  <strong class="concert-list__concert longname ">...</strong> flex
    <span class="concert-list__concert-meta2">on 2022-02-25 at The Guild Theatre</span>
  <button class="concert-list__dialog-opener" data-dialogtarget="dialog-2022-02-25-1410" aria-la
  <dialog id="dialog-2022-02-25-1410" style="padding: 0;" open> top-layer (1) == $0
    <div style="padding: 1em;">
      <button type="button" data-dialogclose="dialog-2022-02-25-1410" aria-label="Close">...
        <h1> Robert Glasper in Menlo Park </h1>
        
      ::backdrop
    </dialog>
  </li>
<li class="concert-list__item">...</li> flex
<li class="concert-list__item">...</li> flex
```

html body ol.concert-list li.concert-list\_\_item dialog#dialog-2022-02-25-1410

Styles Computed Layout Event Listeners DOM Breakpoints Properties Accessibility

Filter :hov .cls + ↻

**dialog:modal {**

*user agent stylesheet*

```
position: fixed;
inset-block-start: 0px;
inset-block-end: 0px;
max-width: calc((100% - 6px) - 2em);
max-height: calc((100% - 6px) - 2em);
user-select: text;
visibility: visible;
overlay: auto !important;
overflow: auto;
```

}

**dialog[open] {**

*user agent stylesheet*

```
display: block;
```

}

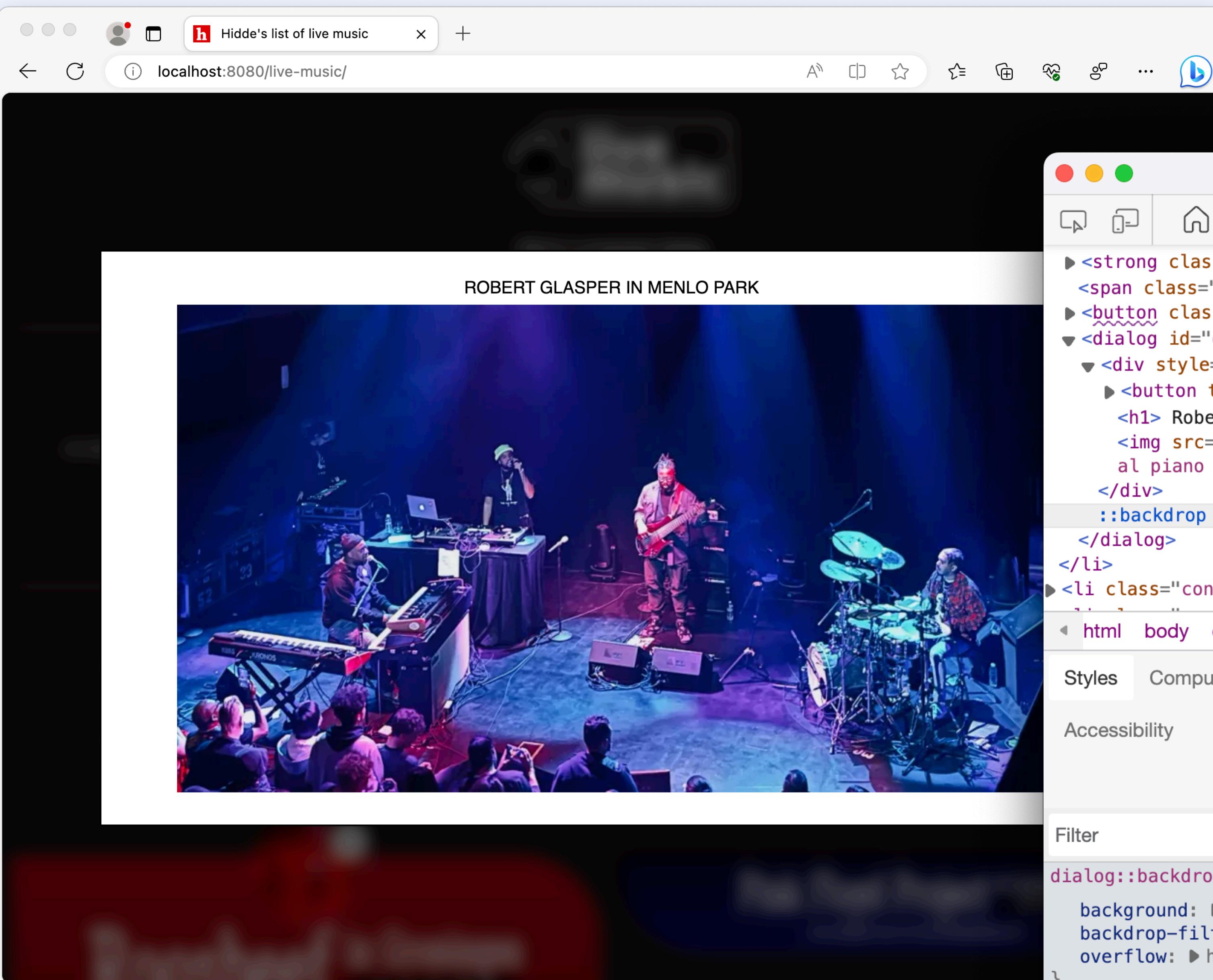
**dialog {**

*user agent stylesheet*

```
display: none;
```







DevTools - localhost:8080/live-music/

Elements

```
> <strong class="concert-list__concert longname">...</strong> flex
  <span class="concert-list__concert-meta2">on 2022-02-25 at The Guild Theatre</span>
  <button class="concert-list__dialog-opener" data-dialogtarget="dialog-2022-02-25-1410">...
  <dialog id="dialog-2022-02-25-1410" style="padding: 0;" open> top-layer (1)
    <div style="padding: 1em;">
      <button type="button" data-dialogclose="dialog-2022-02-25-1410" aria-label="Close">...
      <h1> Robert Glasper in Menlo Park </h1>
      
    </div>
    ::backdrop == $0
  </dialog>
</li>
<li class="concert-list__item">...</li> flex
  ...
  html body ol.concert-list li.concert-list__item dialog#dialog-2022-02-25-1410 ::backdrop
```

Styles Computed Layout Event Listeners DOM Breakpoints Properties

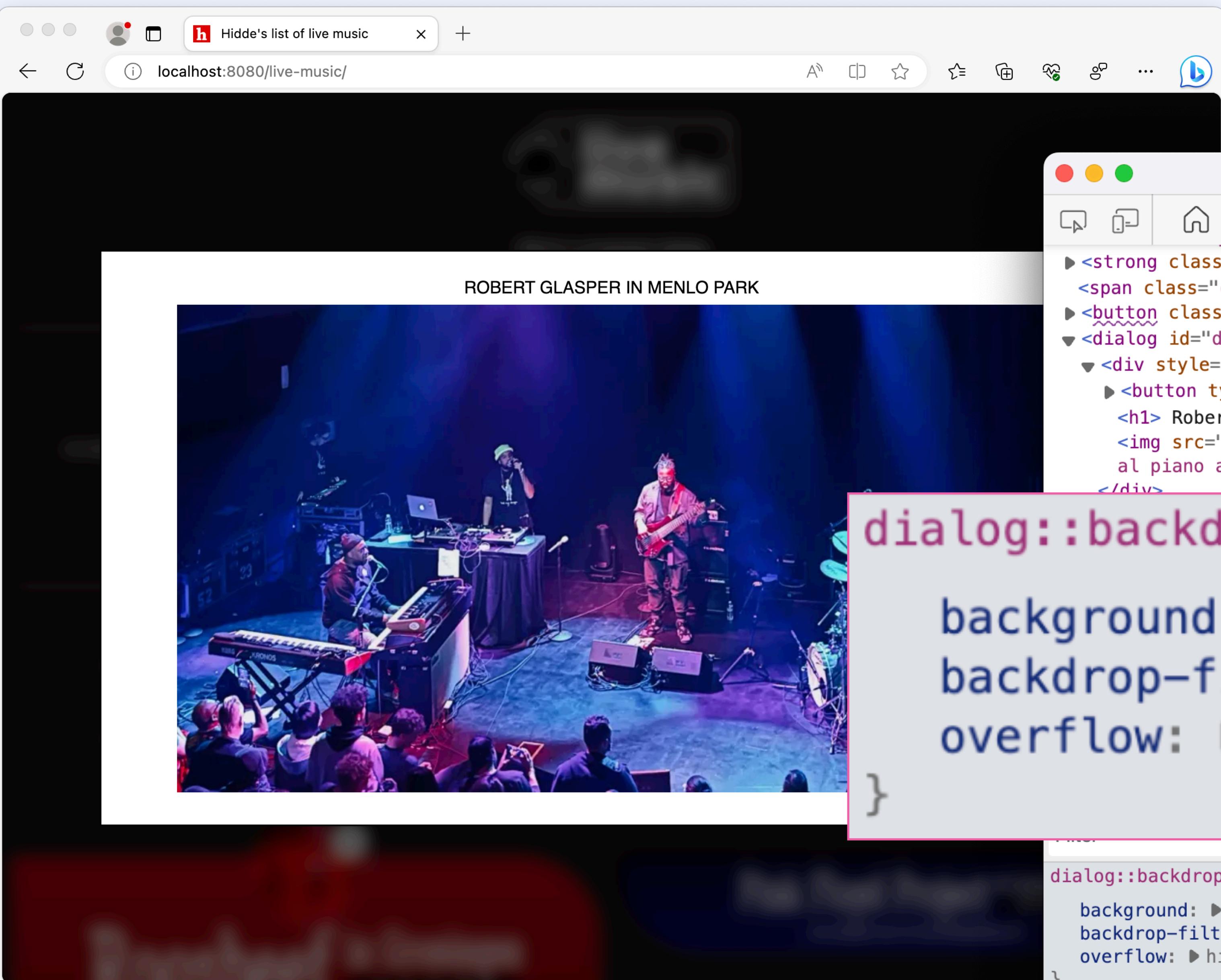
Accessibility

Filter :hov .cls + ↗ (index):52

```
dialog::backdrop {
  background: ▶ ■ rgba(0,0,0,0.6);
  backdrop-filter: blur(.5em);
  overflow: ▶ hidden;
}

dialog::backdrop {
  position: fixed;
  overlay: auto !important;
  inset: ▶ 0px;
  background: ▶ ■ rgba(0, 0, 0, 0.1);
```

user agent stylesheet



DevTools - localhost:8080/live-music/

Elements

```
> <strong class="concert-list__concert longname">...</strong> flex
  <span class="concert-list__concert-meta2">on 2022-02-25 at The Guild Theatre</span>
  <button class="concert-list__dialog-opener" data-dialogtarget="dialog-2022-02-25-1410">...
  <dialog id="dialog-2022-02-25-1410" style="padding: 0;" open> top-layer (1)
    <div style="padding: 1em;">
      <button type="button" data-dialogclose="dialog-2022-02-25-1410" aria-label="Close">...
      <h1> Robert Glasper in Menlo Park </h1>
      
    </div>
```

dialog::backdrop {

background: ▶ ■ rgba(0,0,0,0.6);

backdrop-filter: blur(.5em);

overflow: ▶ hidden;

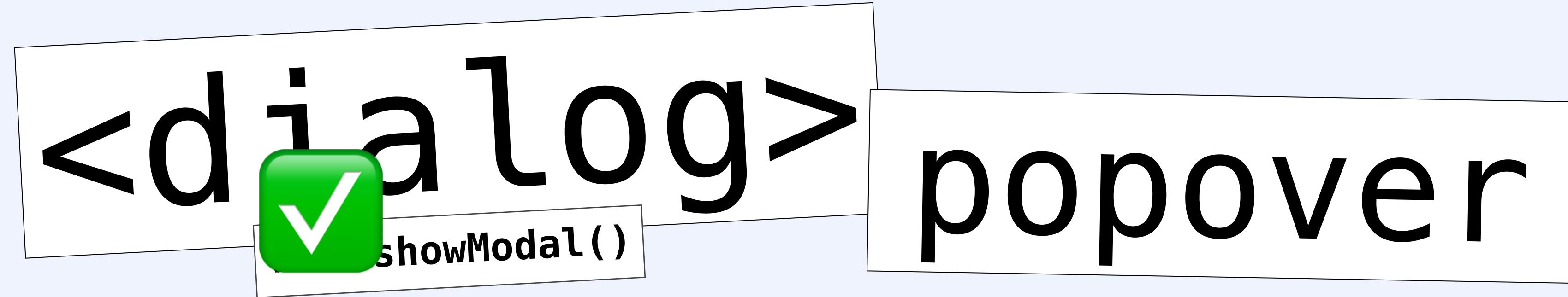
}

(index):52

```
dialog::backdrop {
  background: ▶ ■ rgba(0,0,0,0.6);
  backdrop-filter: blur(.5em);
  overflow: ▶ hidden;
}
```

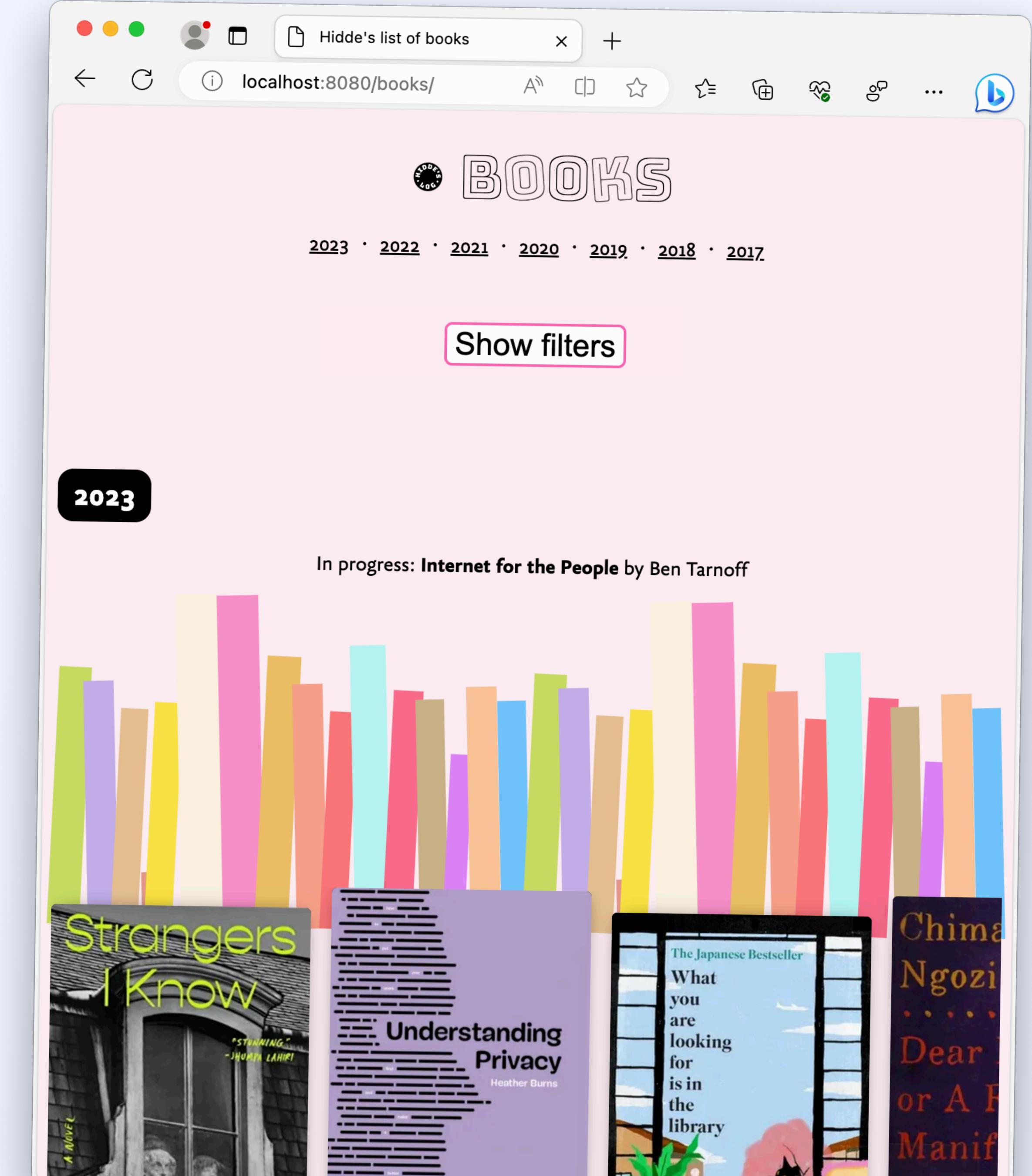
user agent stylesheet

```
dialog::backdrop {
  position: fixed;
  overlay: auto !important;
  inset: ▶ 0px;
  background: ▶ ■ rgba(0, 0, 0, 0.1);
```



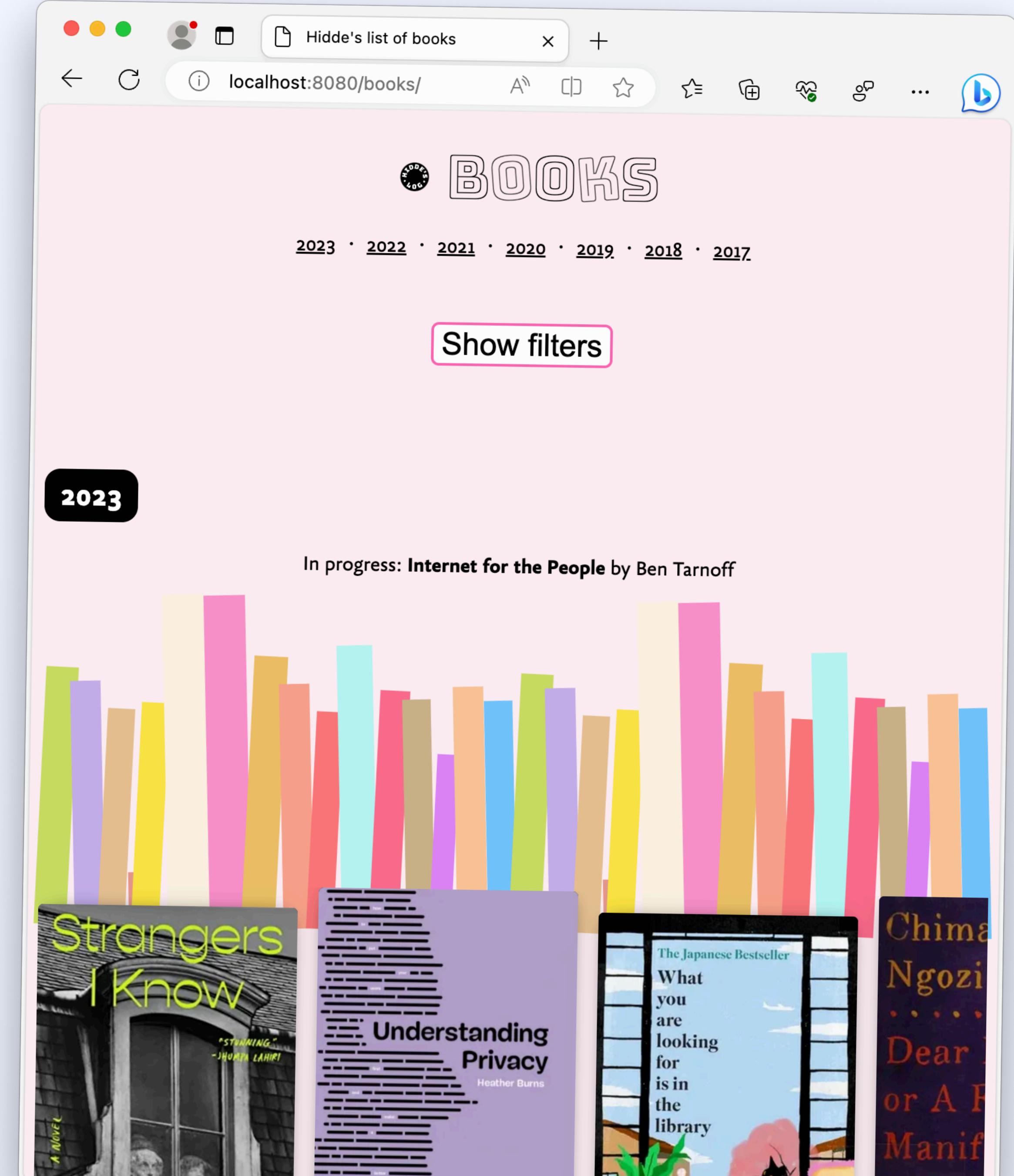
Both are *centered*  
by default

```
// book-list.njk
...
<button type="button" popovertarget="filters">
  Toggle filters
</button>
...
```



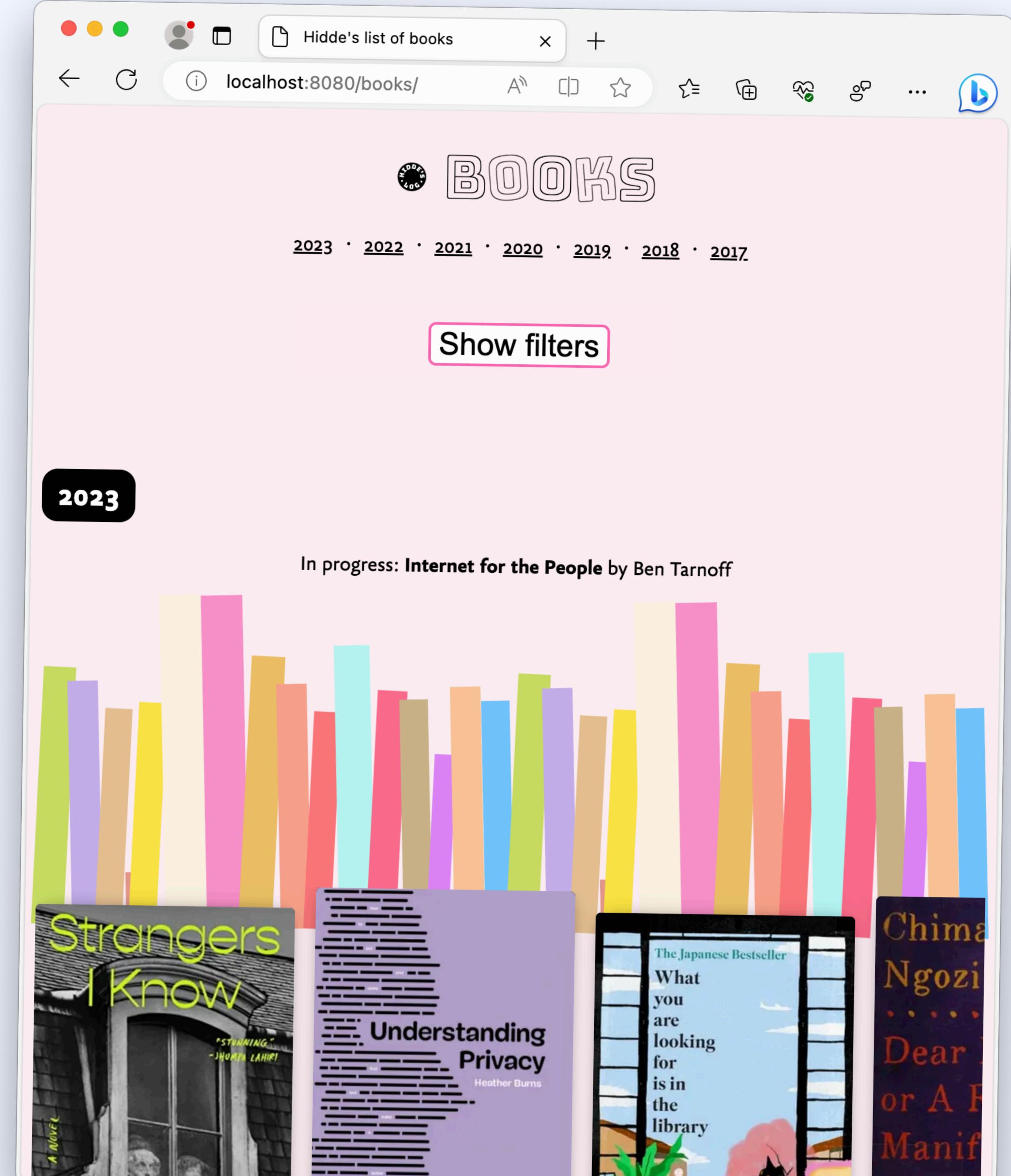
```
// book-list.njk
...
<button type="button" popovertarget="filters">
  Toggle filters
</button>

<div popover role="menu" id="filters">
  <button type="button">
    Show only Dutch authors
  </button>
  <button type="button">
    Show only books with blue covers
  </button>
  <button type="button">
    Show only books rated > 3 stars
  </button>
</div>
...
```



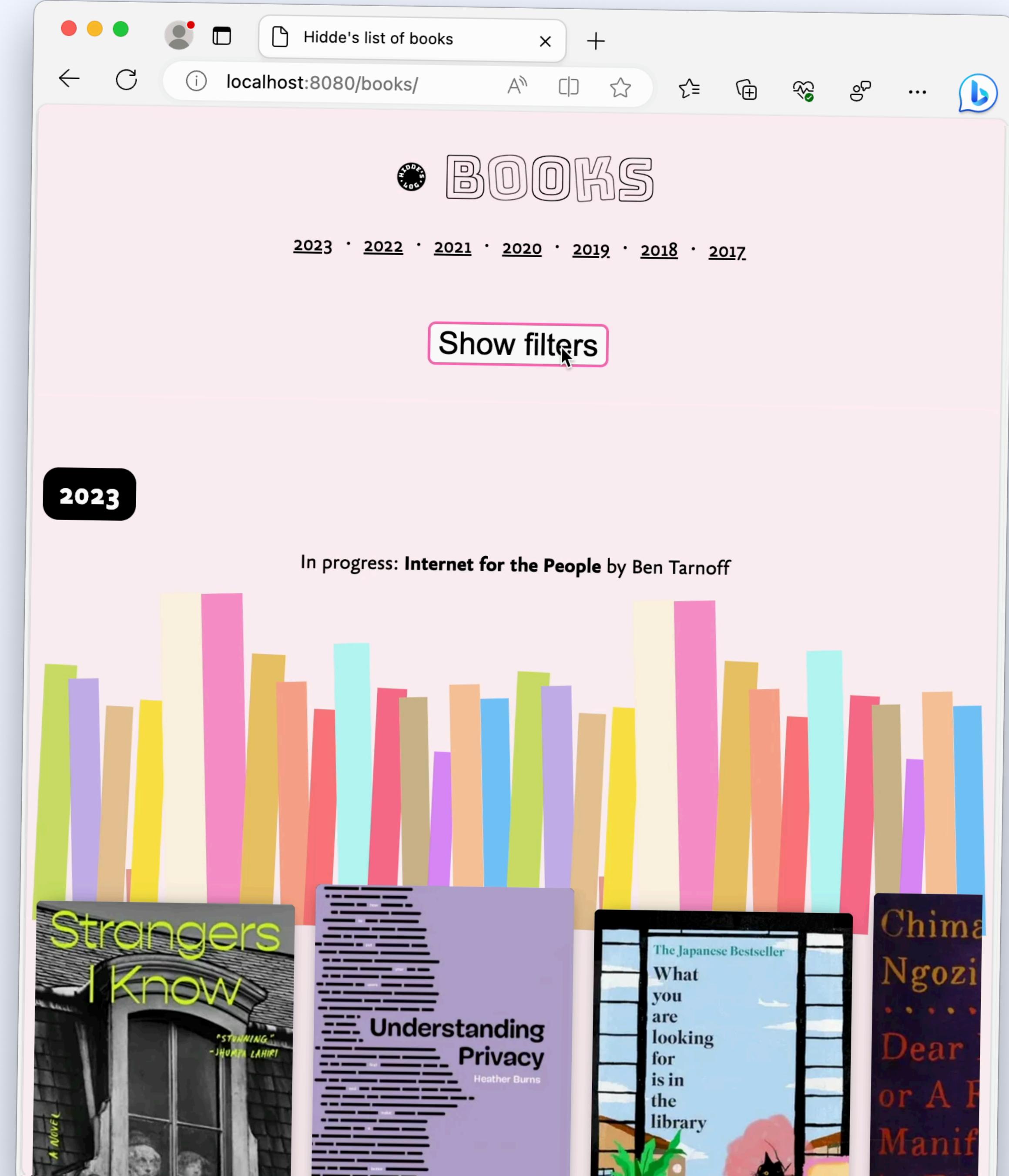
```
// book-list.njk
...
<button type="button" popovertarget="filters">
  Show filters
</button>

<div popover role="menu" id="filters">
  <button type="button" role="menuitem"
    autofocus>
    Show only Dutch authors
  </button>
  <button type="button" role="menuitem"
    tabindex="-1">
    Show only books with blue covers
  </button>
  <button type="button" role="menuitem"
    tabindex="-1">
    Show only books rated > 3 stars
  </button>
</div>
...
```



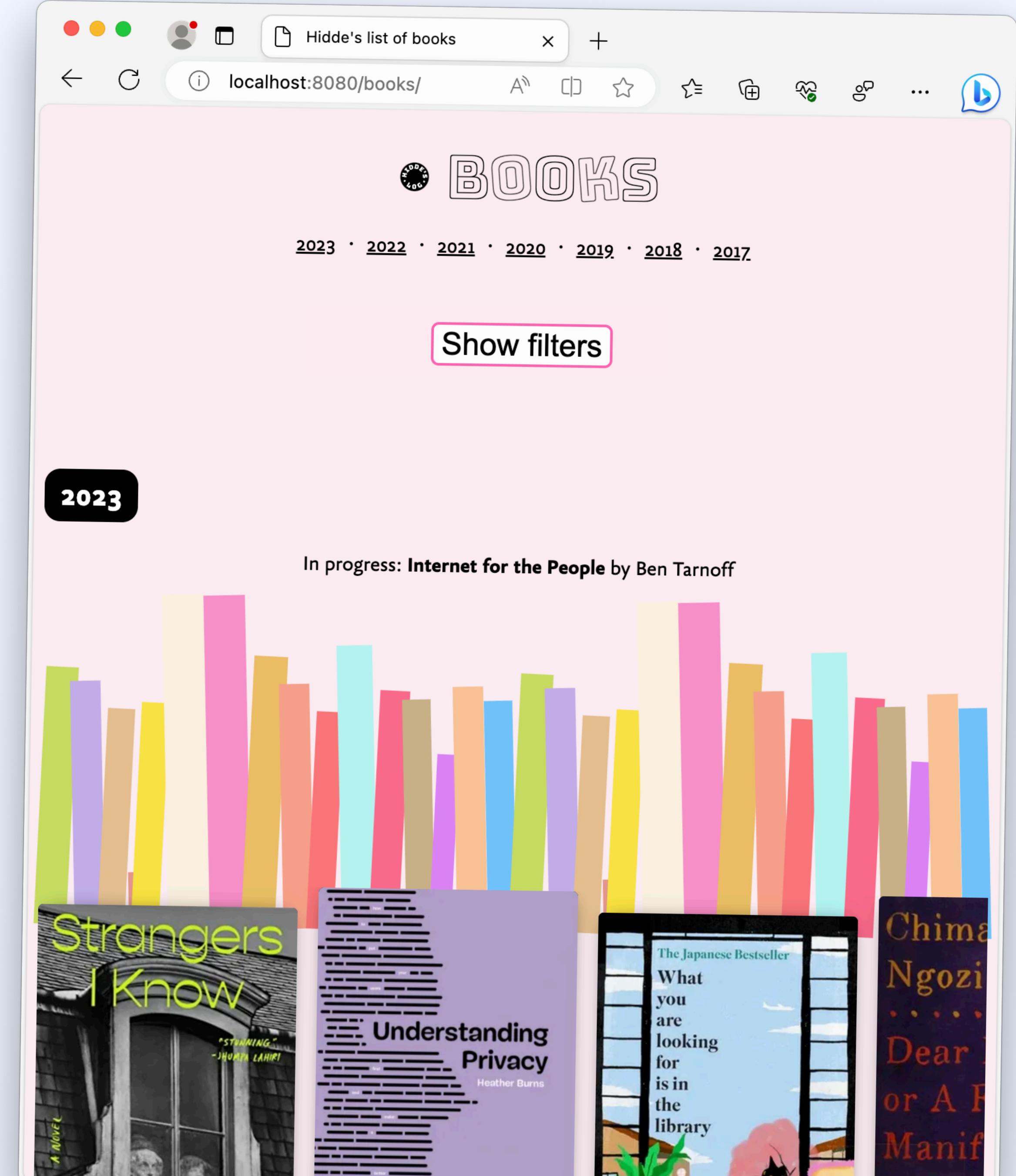
```
// book-list.njk
...
<button type="button" popovertarget="filters">
  Show filters
</button>

<div popover role="menu" id="filters">
  <button type="button" role="menuitem"
    autofocus>
    Show only Dutch authors
  </button>
  <button type="button" role="menuitem"
    tabindex="-1">
    Show only books with blue covers
  </button>
  <button type="button" role="menuitem"
    tabindex="-1">
    Show only books rated > 3 stars
  </button>
</div>
...
```



```
// book-list.njk
...
<button type="button" popovertarget="filters">
  Show filters
</button>

<div popover role="menu" id="filters">
  <button type="button" role="menuitem"
    autofocus>
    Show only Dutch authors
  </button>
  <button type="button" role="menuitem"
    tabindex="-1">
    Show only books with blue covers
  </button>
  <button type="button" role="menuitem"
    tabindex="-1">
    Show only books rated > 3 stars
  </button>
</div>
...
```



Elements

</> Elements

Home

Style

Lightbulb

Wi-Fi

+

...

?

> <style> ... </style>

<button type="button" popovertarget="filters"> Show filters </button>

> <div popover role="menu" id="filters"> ... </div> top-layer (1)

</div>

html body div div#filters

Styles Computed Layout Event Listeners DOM Breakpoints

Filter :hov .cls + ↗

element.style {

}

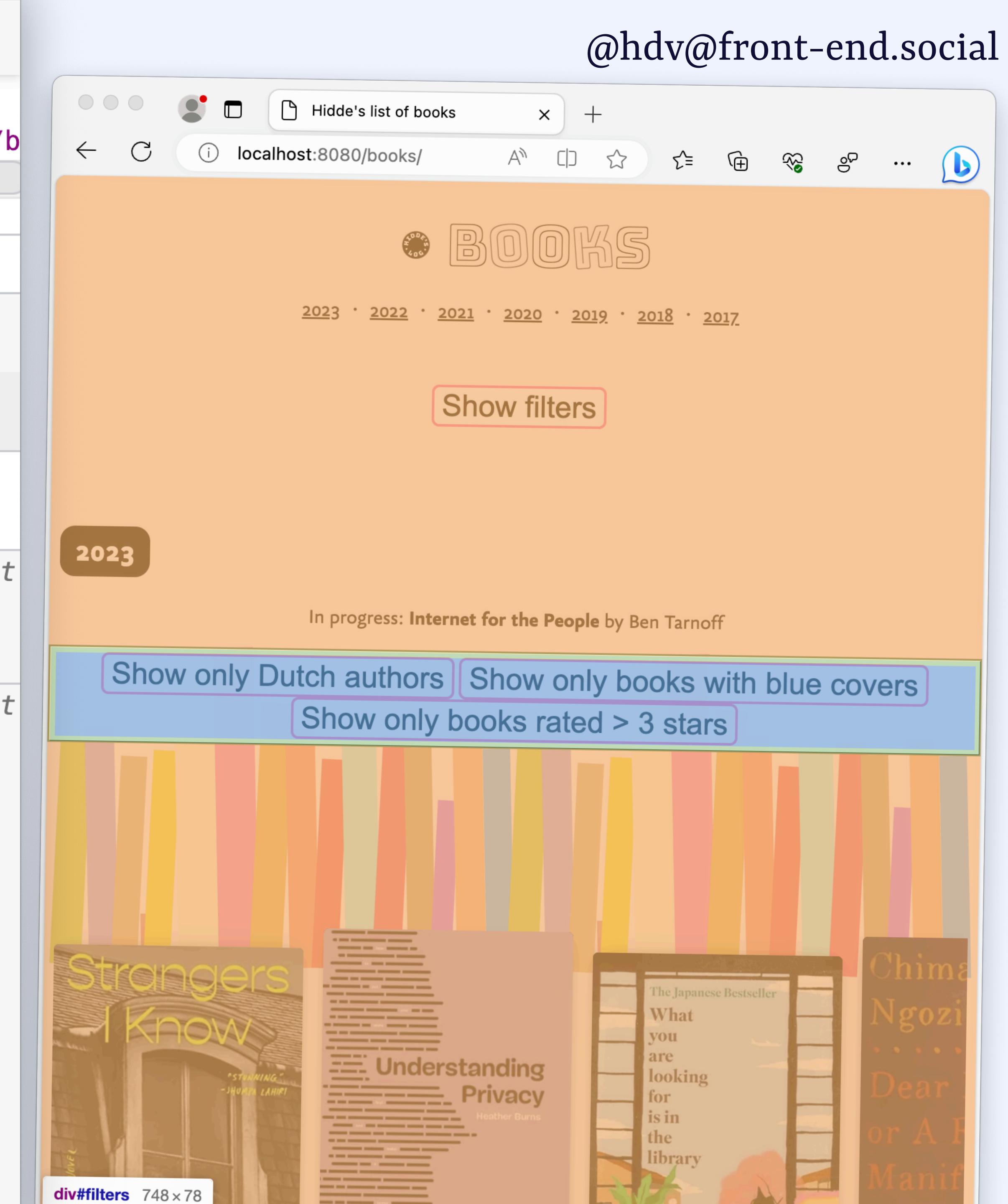
[popover]:popover-open:not(dialog) { user agent stylesheet

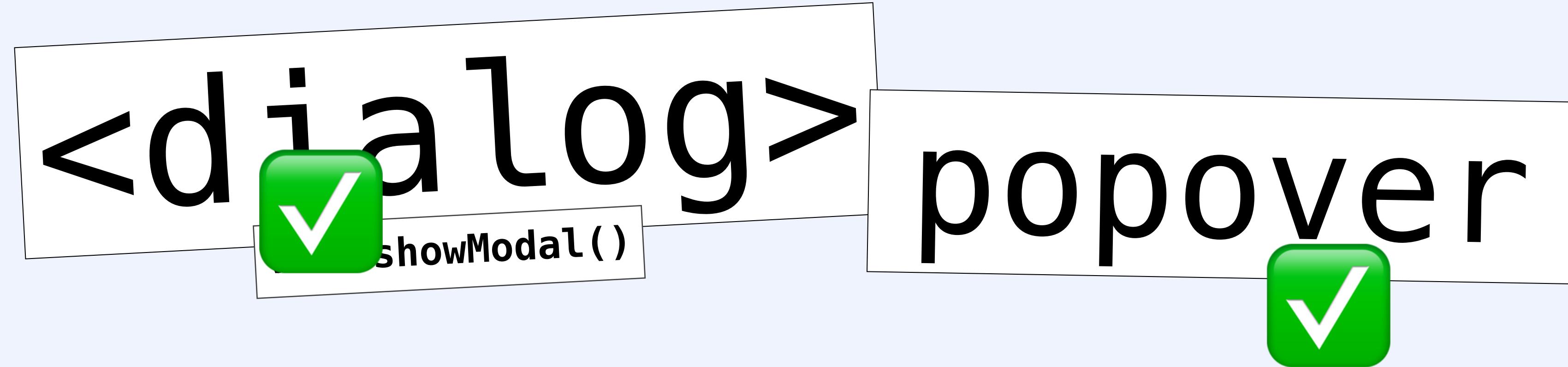
`overlay: auto !important;`

}

[popover] { user agent stylesheet

`position: fixed;`  
    `width: fit-content;`  
    `height: fit-content;`  
    `color: canvastext;`  
    `background-color: canvas;`  
    `inset: ▶ 0px;`  
    `margin: ▶ auto;`  
    `border-width: ▶ initial;`  
    `border-style: ▶ solid;`  
    `border-color: ▶ initial;`  
    `border-image: ▶ initial;`  
    `padding: ▶ 0.25em;`  
    `overflow: ▶ auto;`





Both are *centered*  
by default

# POPOVER POSITIONING

Option 1: calculate (yourself or with a library)

```
// book-list.njk
...
<script type="module">
  import { computePosition } from 'https://cdn.jsdelivr.net/npm/@floating-ui/dom@1.2.9/+esm';
</script>
```

...

# POPOVER POSITIONING

Option 1: calculate (yourself or with a library)

```
// book-list.njk
...
<script type="module">
  import { computePosition } from 'https://cdn.jsdelivr.net/npm/@floating-ui/dom@1.2.9/+esm';
  const popover = document.querySelector('[popover]');
</script>
...
```

# POPOVER POSITIONING

Option 1: calculate (yourself or with a library)

```
// book-list.njk
...
<script type="module">
  import { computePosition } from 'https://cdn.jsdelivr.net/npm/@floating-ui/dom@1.2.9/+esm';

  const popover = document.querySelector('[popover]');
  popover.addEventListener('toggle', function(e) {
    });
</script>
...
```

# POPOVER POSITIONING

Option 1: calculate (yourself or with a library)

```
// book-list.njk
...
<script type="module">
  import { computePosition } from 'https://cdn.jsdelivr.net/npm/@floating-ui/dom@1.2.9/+esm';

  const popover = document.querySelector('[popover]');

  popover.addEventListener('toggle', function(e) {
    const invoker = document.querySelector(`[popovertarget="${popover.getAttribute('id')}"]`);

    });
</script>
...
```

# POPOVER POSITIONING

Option 1: calculate (yourself or with a library)

```
// book-list.njk
...
<script type="module">
  import { computePosition } from 'https://cdn.jsdelivr.net/npm/@floating-ui/dom@1.2.9/+esm';

  const popover = document.querySelector('[popover]');

  popover.addEventListener('toggle', function(e) {
    const invoker = document.querySelector(`[popovertarget="${popover.getAttribute('id')}"]`);

    if (e(newState === 'open') {

    }
  });
</script>

...
```

# POPOVER POSITIONING

Option 1: calculate (yourself or with a library)

```
// book-list.njk
...
<script type="module">
  import { computePosition } from 'https://cdn.jsdelivr.net/npm/@floating-ui/dom@1.2.9/+esm';

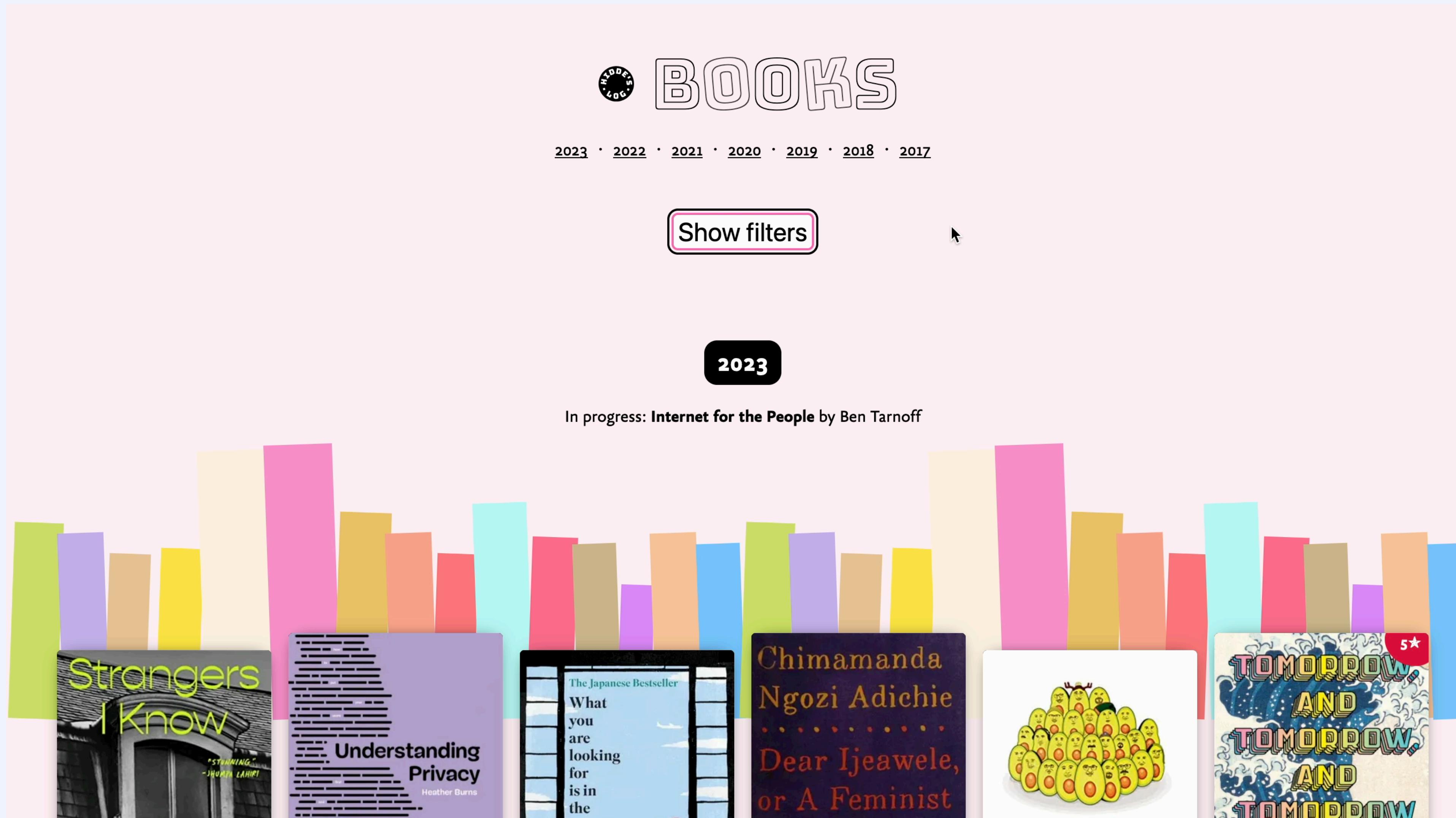
  const popover = document.querySelector('[popover]');

  popover.addEventListener('toggle', function(e) {
    const invoker = document.querySelector(`[popovertarget="${popover.getAttribute('id')}"`);

    if (e(newState === 'open') {
      computePosition(invoker, popover).then(({x, y}) => {
        Object.assign(popover.style, {
          left: `${x}px`,
          top: `${y}px`,
        });
      });
    }
  });
</script>
```

# POPOVER POSITIONING

Option 1: calculate (yourself or with a library)



# POPOVER POSITIONING

## Option 1: calculate (yourself or with a library)

The screenshot shows a web application interface for a book store. At the top left, there's a logo with the word "HODDE" and a circular icon. Next to it is a large, stylized word "BOOKS". Below the logo, there's a navigation bar with links for years from 2023 down to 2017. In the center, there's a button labeled "Show filters". To the right of the button, a black rounded rectangle contains the year "2023". Further down, a message says "In progress: Internet for the People by Ben Tarnoff". The main area features a grid of book covers. One book cover for "Dear Ijeawele, A Feminist Manifesto in 17 H忍不住" by Chimamanda Ngozi Adichie is highlighted with a pink background.

DevTools - localhost:8080/books/

Elements

```
<div popover role="menu" id="filters" style="position: fixed; width: fit-content; height: fit-content; color: canvastext; background-color: canvas; inset: 0px; margin: auto; border-width: initial; border-style: solid; border-color: initial; border-image: initial; padding: 0.25em; overflow: auto; user agent style">
```

Show filters

2023

In progress: Internet for the People by Ben Tarnoff

Chimamanda Ngozi Adichie  
Dear Ijeawele,

I did have to override the UA default for the popover's **margin** and **position**

# POPOVER POSITIONING

## Option 2: anchor positioning

The screenshot shows a web browser window with the title "CSS Anchor Positioning" and the subtitle "Editor's Draft, 17 May 2023". A vertical red bar on the left contains the text "W3C Editor's Draft". The main content area includes sections for "More details about this document", "This version", "Issue Tracking", "Editors", and "Suggest an Edit for this Spec". At the bottom, there is a copyright notice and a "Table of Contents" icon.

[drafts.csswg.org/css-anchor-position-1/](https://drafts.csswg.org/css-anchor-position-1/)

The screenshot shows a web browser window with the title "Future CSS: Anchor Positioning" and the author "Roman Komarov" with a timestamp "March 15, 2023". The main content starts with a large letter "A" and the text: "Anchor positioning might be one of the most exciting features coming to CSS. It is currently available under an experimental flag in Chrome Canary, and after playing with it for a bit, I couldn't stop myself from sharing what I found. In this article, I will show you some of my experiments." Below this, there is a section titled "The Disclaimers" with a note: "This article is quite long! Before we dive in, I want to mention a few disclaimers: 1. My testing only covers what is present in [Chrome Canary](#)'s experimental implementation<sup>1</sup>. There is no guarantee that if things change, I will come back and modify the examples to work with the new version of the specs/implementation. Each demo comes with a video recording, allowing you to see how things work even if you cannot access this version of Chrome right now. However, I highly encourage you to test things out yourself in your own environment, as the results may vary." A small note at the bottom right says "Version 113.0.5653.0 at the time of publishing."

[kizu.dev/anchor-positioning-experiments/](https://kizu.dev/anchor-positioning-experiments/)

# WRAPPING UP

# <dialog>

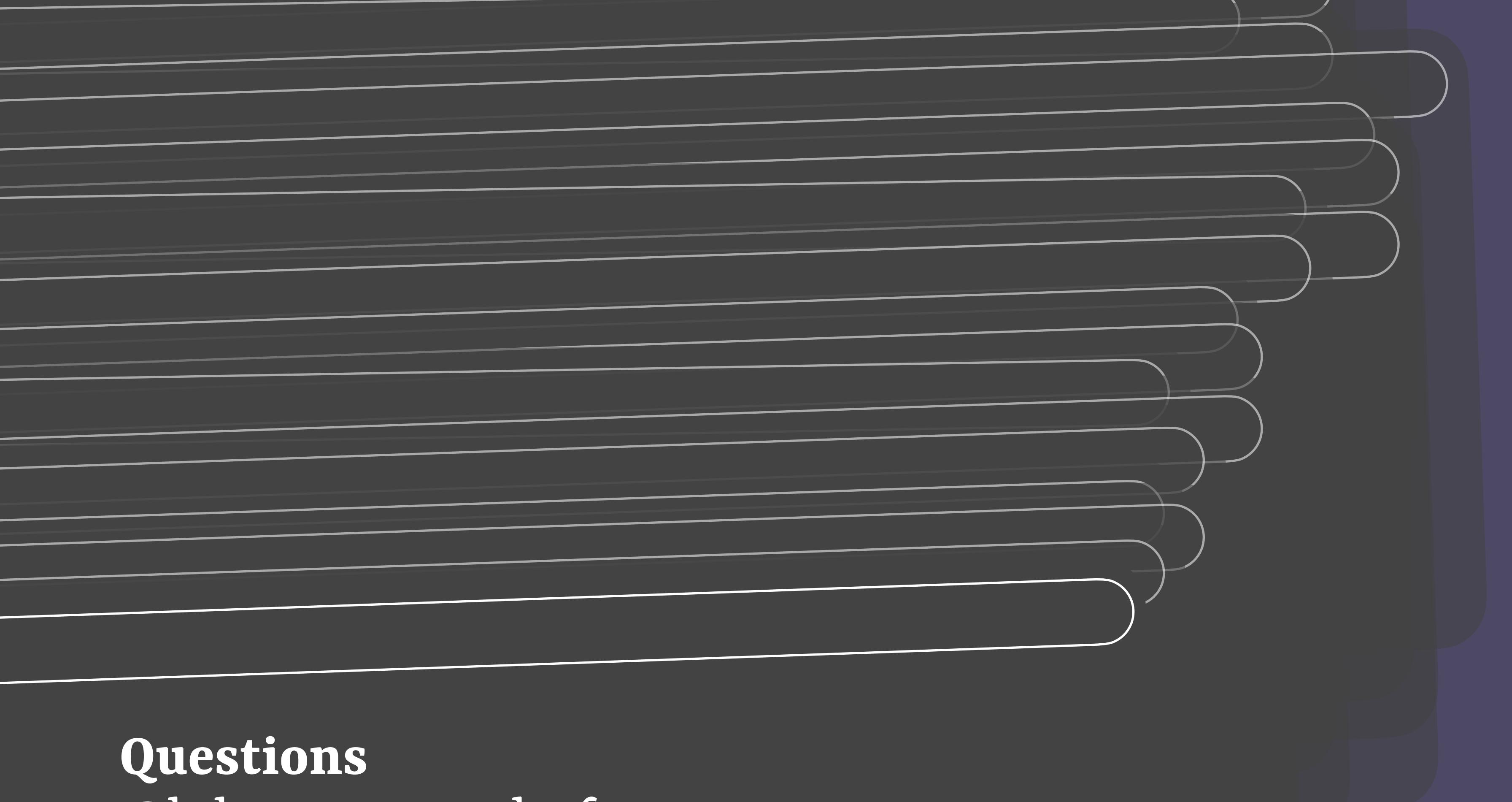
HTML element with  
support and (as of recently) good  
accessibility support

**UI considerations**

**Semantics**

**Positioning**

New attribute / API in HTML, v1 supported in  
Chrome stable, coming to other browsers too



# THANK YOU!

**Questions**

@hdv on most platforms

**Slides/resources**

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

**Thanks**

Scott O'Hara, Adrian Roselli, Jhey Tompkins