

YOUR CMS IS AN ACCESSIBILITY ASSISTANT

Hidde de Vries, 9 November 2022, IAAP-EU, online

HI, I'M HIDDE

occassional blogger +
accessibility specialist +
developer relations

hidde.blog
sanity.io





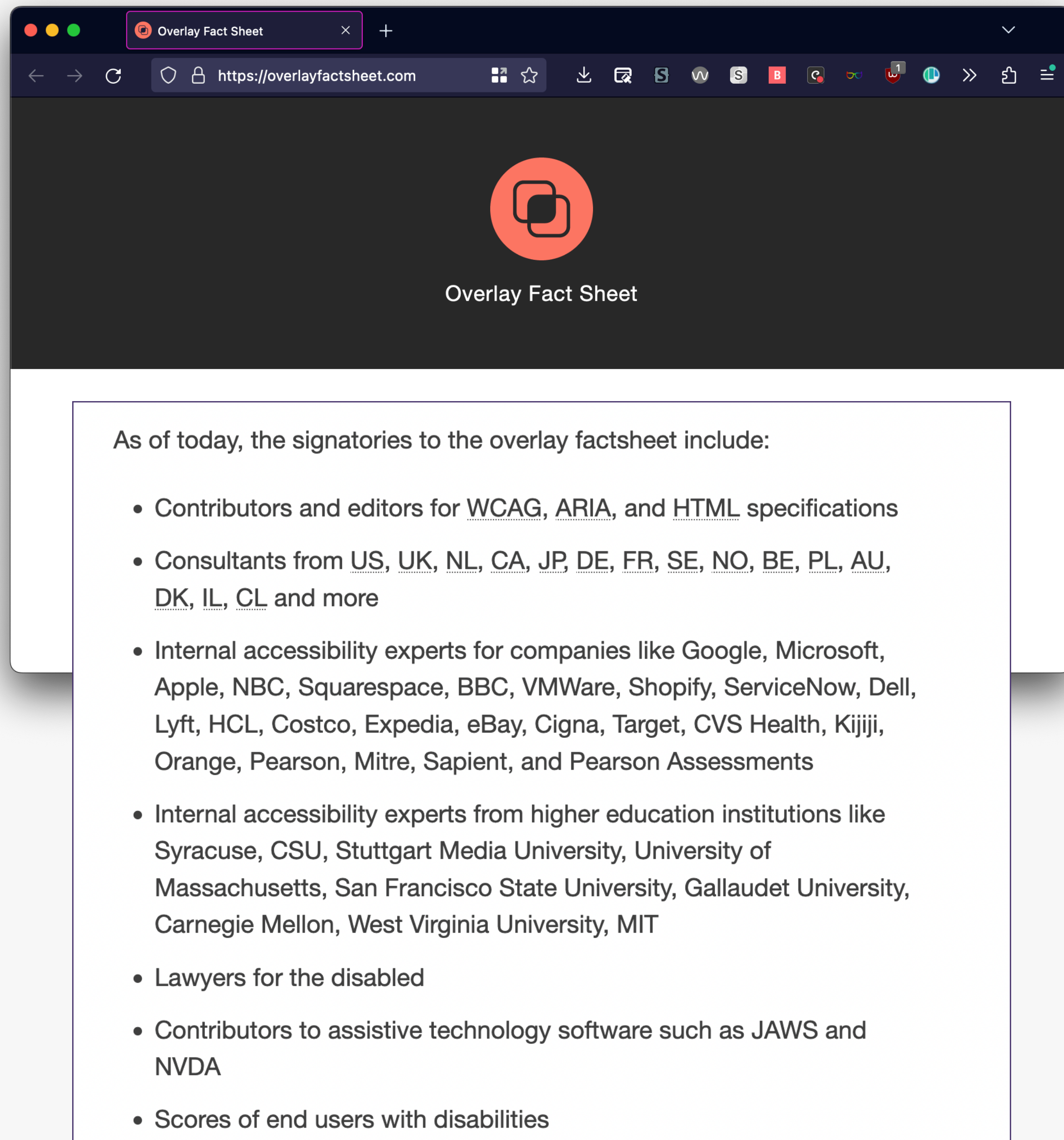
SANITY.IO

Platform for managing
structured content

**“WHY ISN'T
ACCESSIBILITY
EASIER?”**

—a befriended web developer

BUILT-IN ACCESSIBILITY



OVERLAYS *don't use*

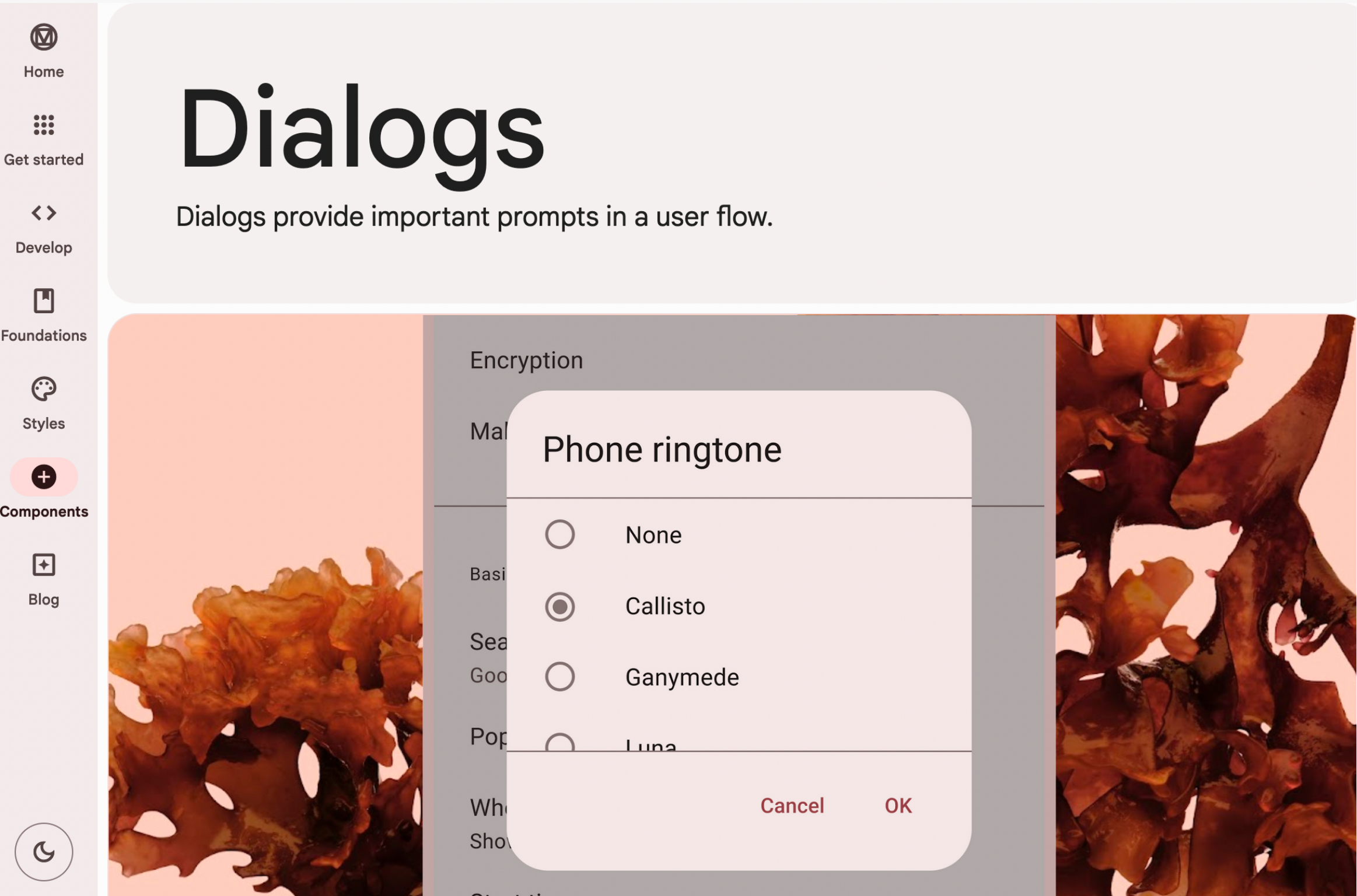
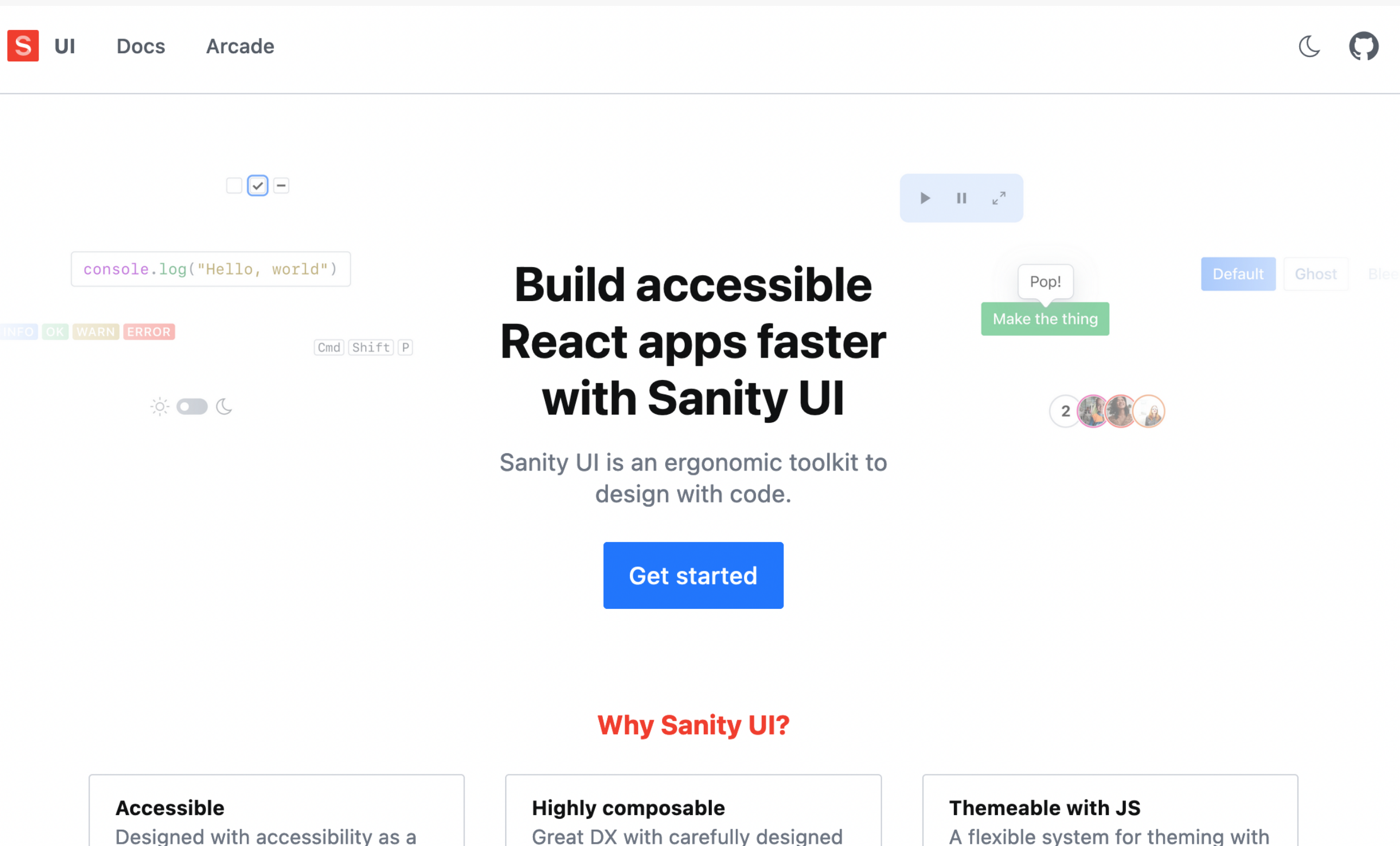
Promise to fix accessibility in content automatically, but “ineffectiveness of overlays is something that has broad agreement among accessibility practitioners”

<https://overlayfactsheet.com>

DESIGN SYSTEMS

With components, we can make accessibility reusable and repeatable

Sanity UI, Material UI



DESIGN SYSTEMS

With components, we can make accessibility reusable and repeatable

DOCUMENT

Do's, don'ts, gotchas

Heading

Inline

KBD

Label

Popover

Radio

Select

Spinner

Stack


Switch

Text

TextArea

TextInput


Tooltip

Properties 

`as?: React.ElementType | keyof JSX.IntrinsicElements`

`size?: number | number[]`

`weight?: string`

Accessibility considerations 

Many users of assistive technologies use headings as a way to navigate ("navigate by heading" functionality). Tools like screenreaders can display a list of headings, which is [a bit like a table of contents](#).

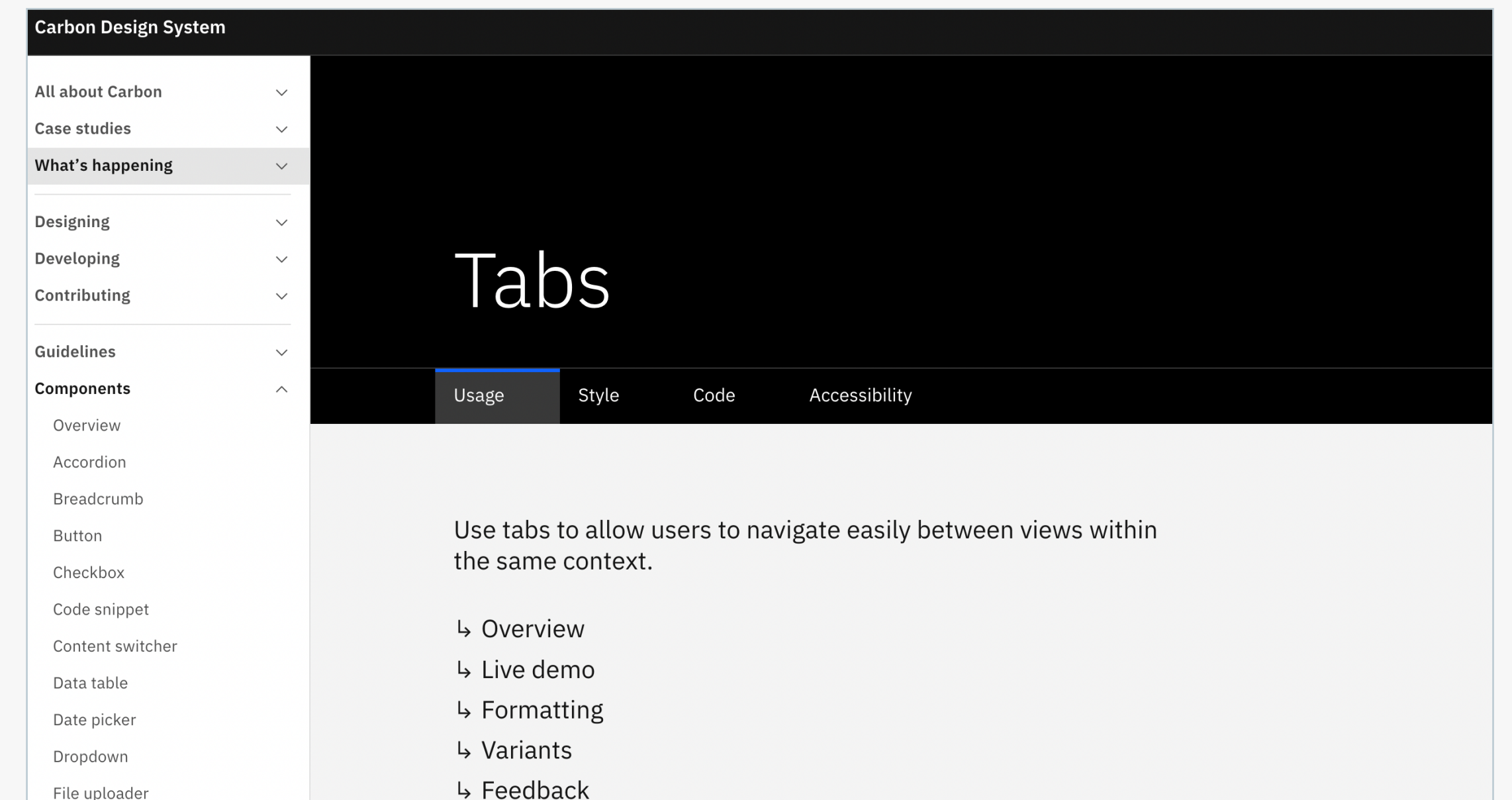
For this reason, use the `as` property with a level whenever your heading is something users might want to navigate to. This ensures your heading can be recognised as a heading.

DESIGN SYSTEMS

With components, we can make accessibility reusable and repeatable

COMPLEX COMPONENTS

For reuse in across front-end

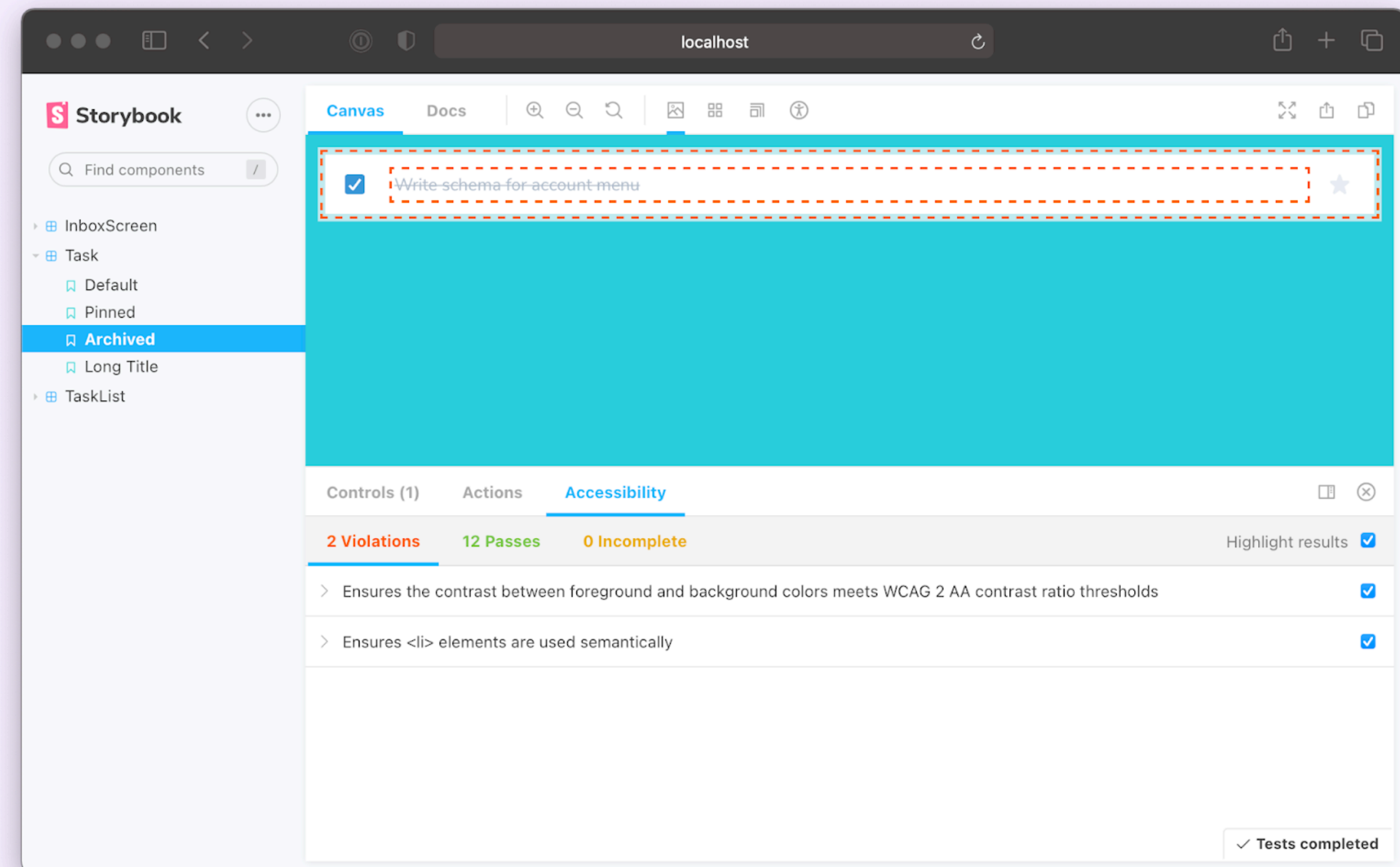


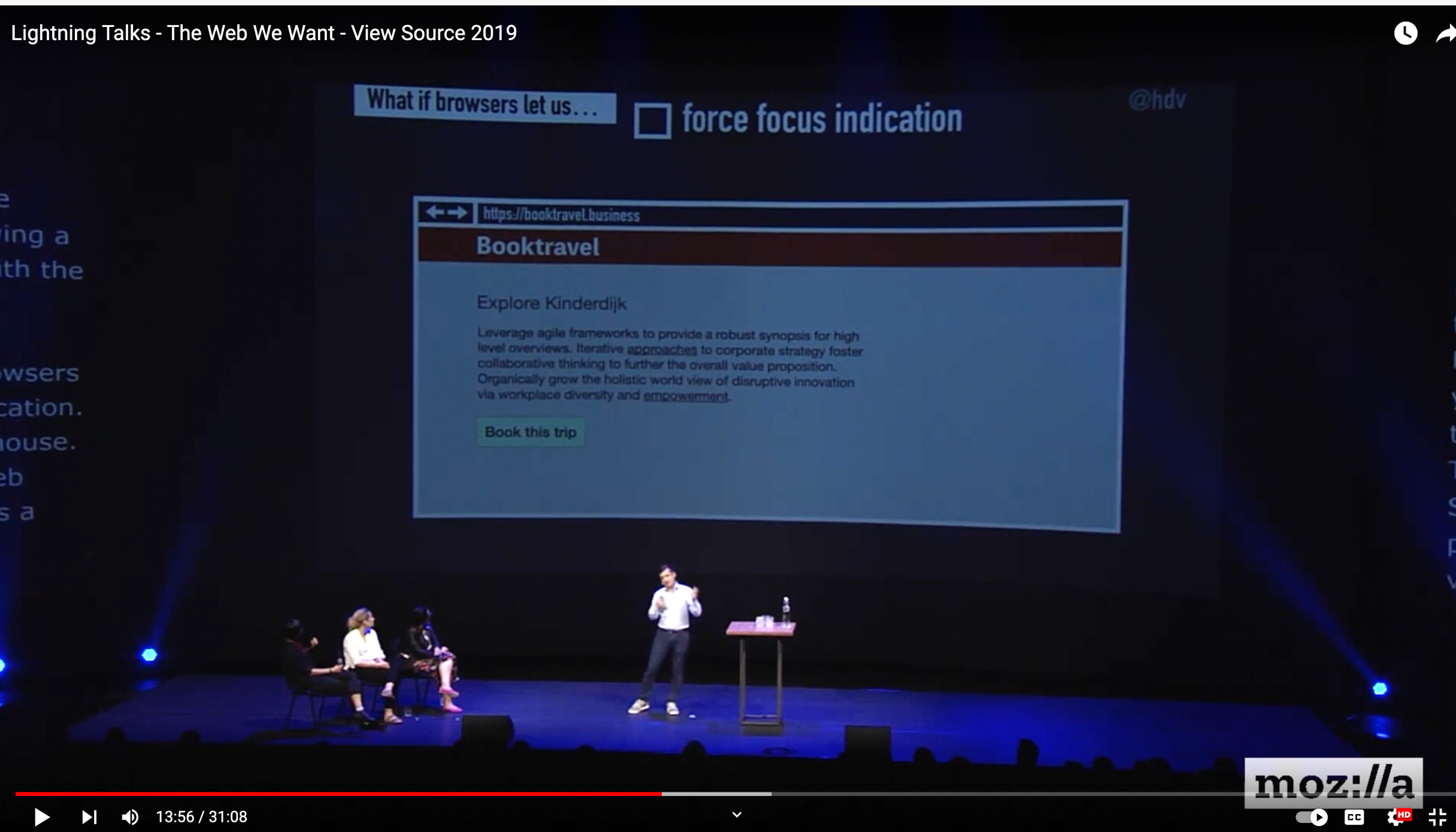
DESIGN SYSTEMS

With components, we can make accessibility reusable and repeatable

TESTS PER COMPONENT

With tools like Storyblok





BROWSERS

Could fix a small subset of accessibility issues in content automatically for end users

<https://talks.hiddedevries.nl/KKW74X/could-browsers-fix-more-accessibility-problems-automatically>



Untruncate text



Force colour contrast



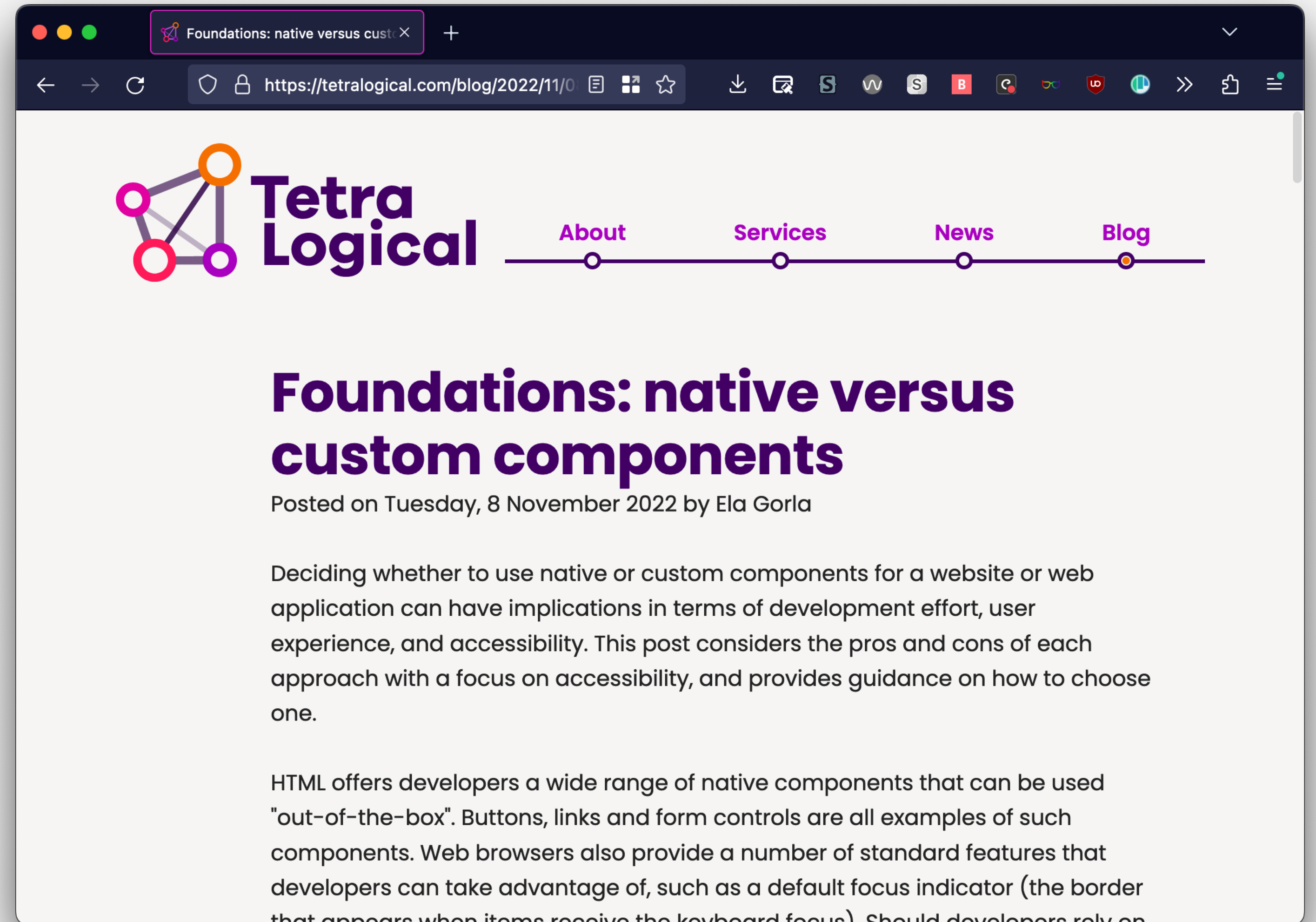
Force focus indication



Suppress autoplay of gifs and videos

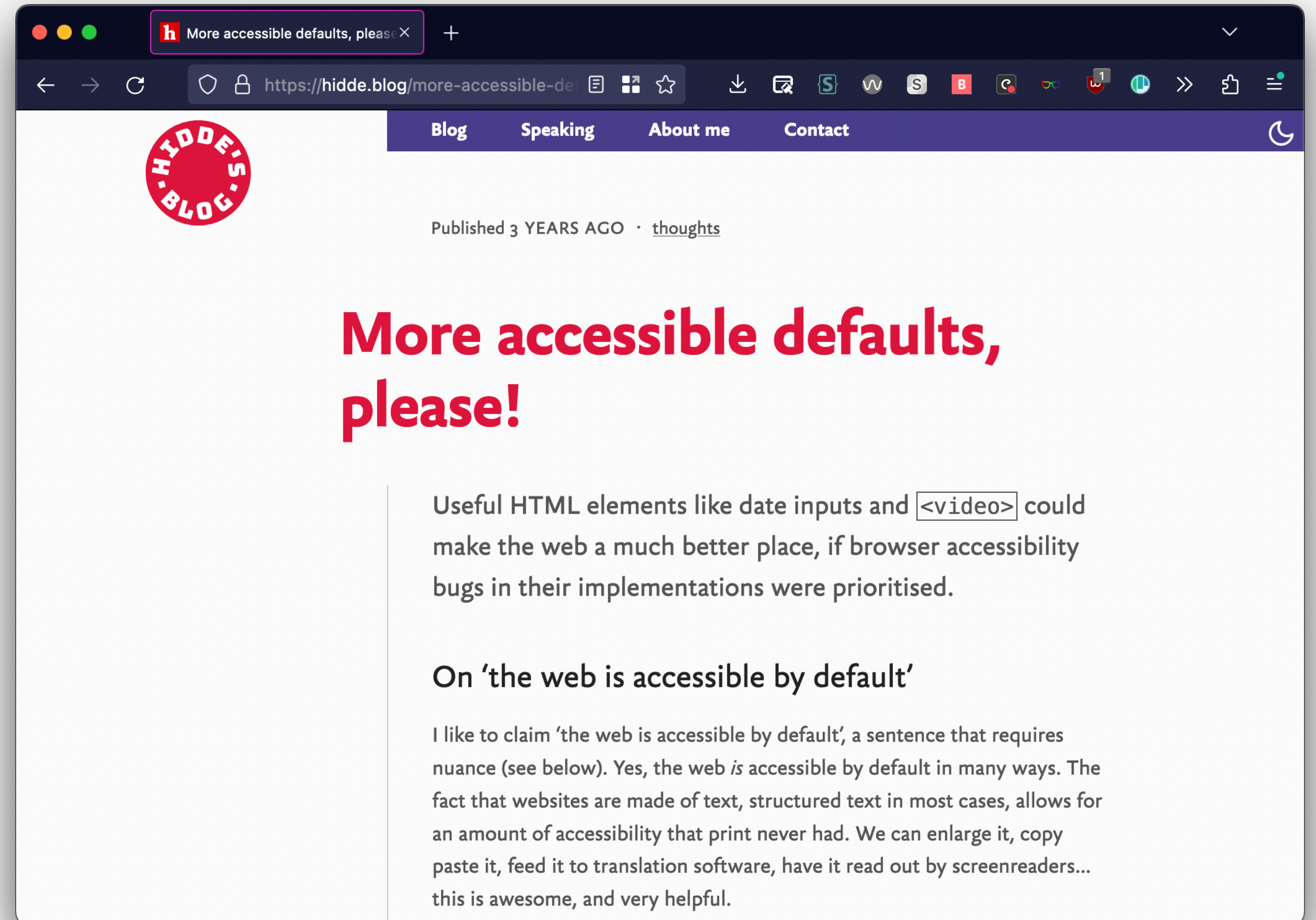
HTML

Could offer more
accessibility-by-default
components



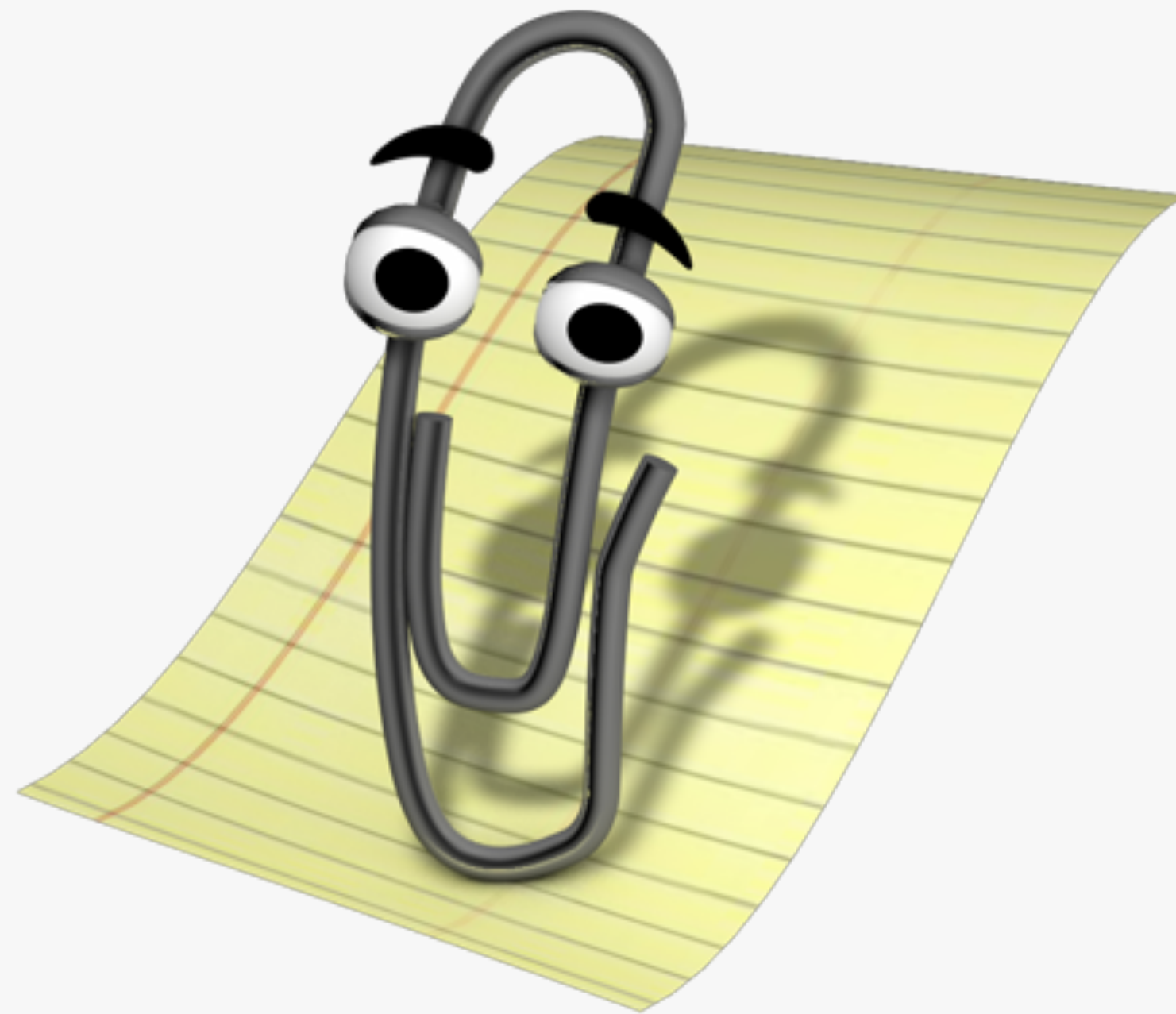
HTML

Could offer more
accessibility-by-default
components



CMS

Could help with accessibility
in the authoring process



CMSES AND THEIR ACCESSIBILITY

Assessing CMS accessibility

WCAG

For web
content

ATAG

For tools that make
web content

Accessibility Conformance Report for Sanity Studio (September 2022)

Evaluated by

Hidde de Vries (Sanity.io)

Commissioned by

Sanity.io

Target

WCAG 2.1, Level AA

Date

September 14, 2022 (based on August review)

Executive summary

This report gives an overview of the accessibility of Sanity Studio. An accessible web application is one that has no barriers for users with disabilities. This isn't a clear “yes” or “no”, but more a question of how well it works for a wide range of users.

To guide our assessment, we have used the Success Criteria of the [Web Content Accessibility Guidelines, version 2.1](#), scoped to Level A + AA. This leaves us with a total of 50 Success Criteria. Worldwide, this scope is the most commonly used and required.

Sanity Studio meets 36 out of 50 of the Success Criteria that are in scope. In this report, you'll find which criteria are not met, and what the accessibility barriers are that caused them to be marked as “not met”.

WE DID A REVIEW

To find out where we have / could remove barriers

WHY WCAG?

- Studio makes no “web content”
- WCAG-EM exists
- WCAG maps better to VPAT
- ATAG still full of useful advice

The screenshot shows a web browser window with a dark theme. The address bar displays the URL <https://www.sanity.io/blog/sanity-accessibility-conformance-review>. The browser's tab bar shows a single tab titled "Conducting an Accessibility Review". The Sanity.io website header is visible, featuring the logo and navigation links: Platform, Solutions, Resources, Enterprise, and Pricing. On the right side of the header, there are links for "Contact sales", "Log in", and a blue "Get started" button. The main content area of the page features a large, dark blue graphic with the text "Towards a more accessible CMS" in yellow. Below this graphic, the article title "What we learned from our first accessibility conformance review" is displayed in a large, bold, black font. The article is dated "PUBLISHED NOVEMBER 8TH 2022". A short summary of the article is provided: "An accessible web means people with disabilities cannot only consume content, but also create content. This is what we learned from a first accessibility review of Sanity Studio." The author's name, "Hidde de Vries", is shown next to a small circular profile picture, with a subtitle identifying him as a "Developer Relations Specialist at Sanity.io". At the bottom of the page, a "PAGE CONTENT" section lists the topics covered in the article: "Why accessibility matters", "Accessibility review process and considerations", and "WCAG or ATAG?".

Conducting an Accessibility Review

https://www.sanity.io/blog/sanity-accessibility-conformance-review


SANITY Platform Solutions Resources Enterprise Pricing

Contact sales Log in Get started

PUBLISHED NOVEMBER 8TH 2022

What we learned from our first accessibility conformance review

An accessible web means people with disabilities cannot only consume content, but also create content. This is what we learned from a first accessibility review of Sanity Studio.

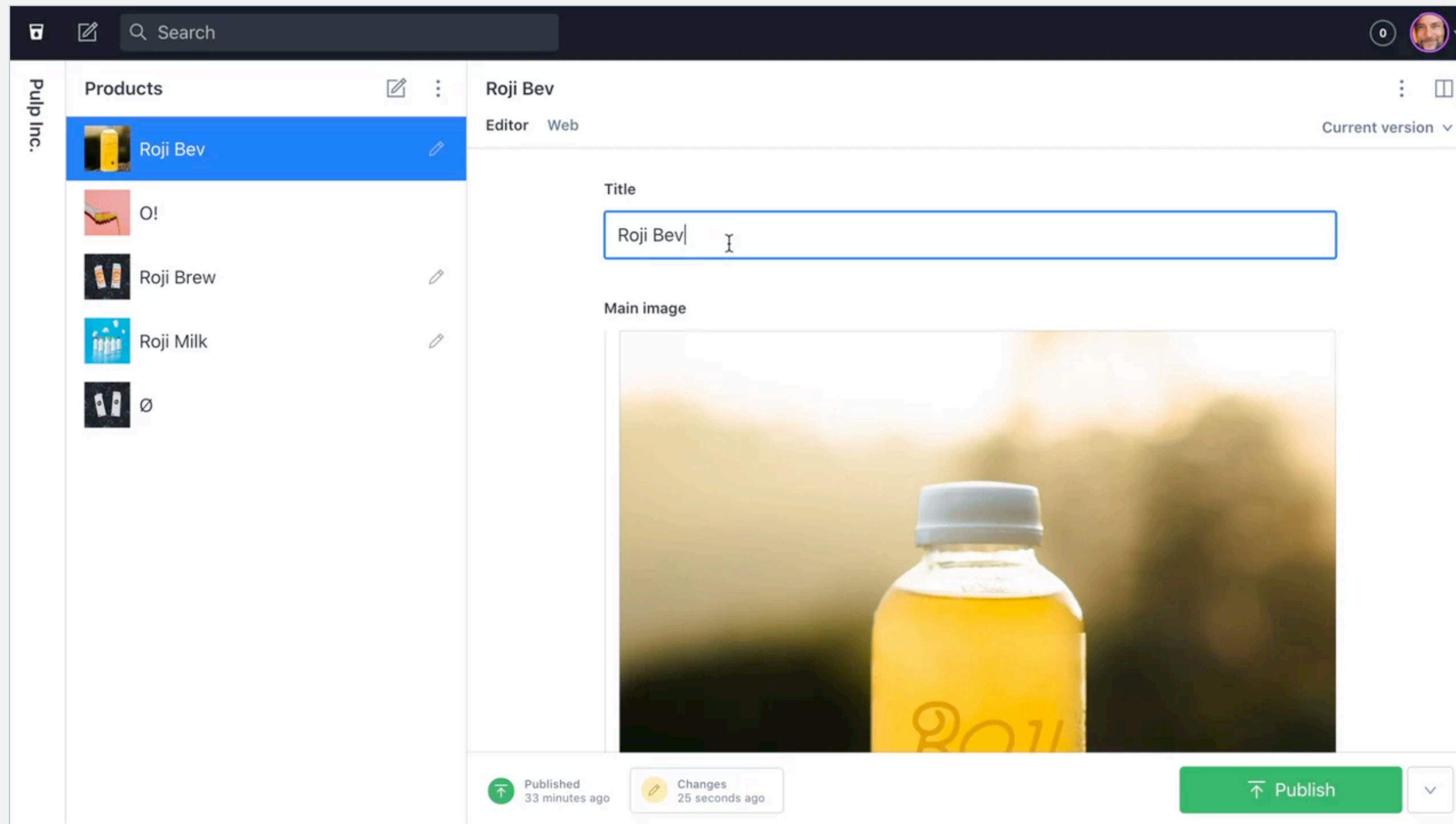
 Hidde de Vries
Hidde is a Developer Relations Specialist at Sanity.io

Towards a more accessible CMS

Web accessibility is about ensuring that everyone can consume content, but just as much about that everyone can create content. Last quarter, we did an [accessibility conformance review](#) of Sanity Studio, our content editing tool, to find out what we can improve. In this post, we'll talk about how we did that, relevant accessibility standards, the role of design systems, and what accessibility means in a real-time

PAGE CONTENT

- Why accessibility matters
- Accessibility review process and considerations
- WCAG or ATAG?



CHALLENGES

- Accounting for customisability
- Scope / target
- Usability beyond WCAG, like real time collaboration

Assessing CMS accessibility

WCAG

For web
content

ATAG

For tools that make
web content

ATAG

PART A: EDITING EXPERIENCE



PART B: OUTPUT

```
head>
<meta charset="UTF-8"/>
<title>Content management system - Wikipedia</title>
<script>document.documentElement.className="client-js";RLCONF={"wgBreakFrames":!1,"wgS
ikipedia articles with GND identifiers","Content management systems","Information sy
xt.globalCssJs.user.styles":"ready","site.styles":"ready","noscript":"ready","user.s
mv.bootstrap.autostart","ext.popups","ext.visualEditor.desktopArticleTarget.init","e
<script>(RLQ=window.RLQ||[]).push(function(){mw.loader.implement("user.tokens@tffin",f
;});</script>
<link rel="stylesheet" href="/w/load.php?lang=en&modules=ext.cite.styles%7Cext.uls
<script async="" src="/w/load.php?lang=en&modules=startup&only=scripts&rav
<meta name="ResourceLoaderDynamicStyles" content="" />
<link rel="stylesheet" href="/w/load.php?lang=en&modules=site.styles&only=styl
<meta name="generator" content="MediaWiki 1.35.0-wmf.18"/>
<meta name="referrer" content="origin"/>
<meta name="referrer" content="origin-when-crossorigin"/>
<meta name="referrer" content="origin-when-cross-origin"/>
<link rel="alternate" href="android-app://org.wikipedia/http/en.m.wikipedia.org/wiki/
<link rel="alternate" type="application/x-wiki" title="Edit this page" href="/w/index
<link rel="edit" title="Edit this page" href="/w/index.php?title=Content management s
<link rel="apple-touch-icon" href="/static/apple-touch/wikipedia.png"/>
<link rel="shortcut icon" href="/static/favicon/wikipedia.ico"/>
<link rel="search" type="application/opensearchdescription+xml" href="/w/opensearch de
<link rel="EditURI" type="application/rsd+xml" href="//en.wikipedia.org/w/api.php?act
<link rel="license" href="//creativecommons.org/licenses/by-sa/3.0/" />
<link rel="canonical" href="https://en.wikipedia.org/wiki/Content_management_system"/>
<link rel="dns-prefetch" href="//login.wikimedia.org"/>
<link rel="dns-prefetch" href="//meta.wikimedia.org" />
<!--[if lt IE 9]><script src="/w/resources/lib/html5shiv/html5shiv.js"></script><![en
/head>
<body class="mediawiki ltr sitedir-ltr mw-hide-empty-elt ns-0 ns-subject mw-editable
<div id="mw-page-base" class="noprint"></div>
<div id="mw-head-base" class="noprint"></div>
<div id="content" class="mw-body" role="main">
  <a id="top"></a>
  <div id="siteNotice" class="mw-body-content"><!-- CentralNotice --></div>
  <div class="mw-indicators mw-body-content">
</div>
  <h1 id="firstHeading" class="firstHeading" lang="en">Content management system</h1>
```

Photo left: Austin Public Library (Flickr), photo right: source of Wikipedia page for “Content Management System”

ATAG

PART A: EDITING EXPERIENCE

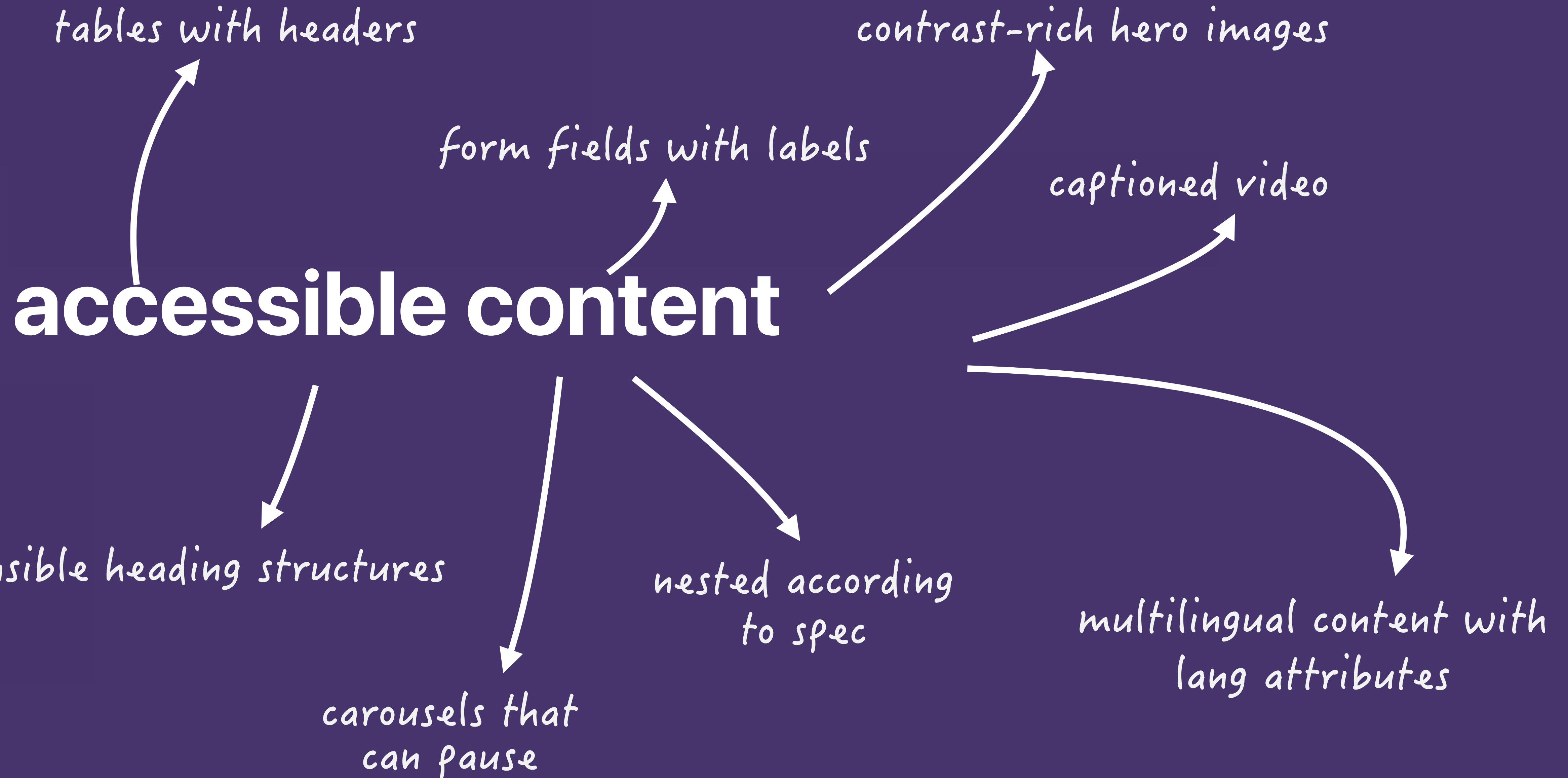


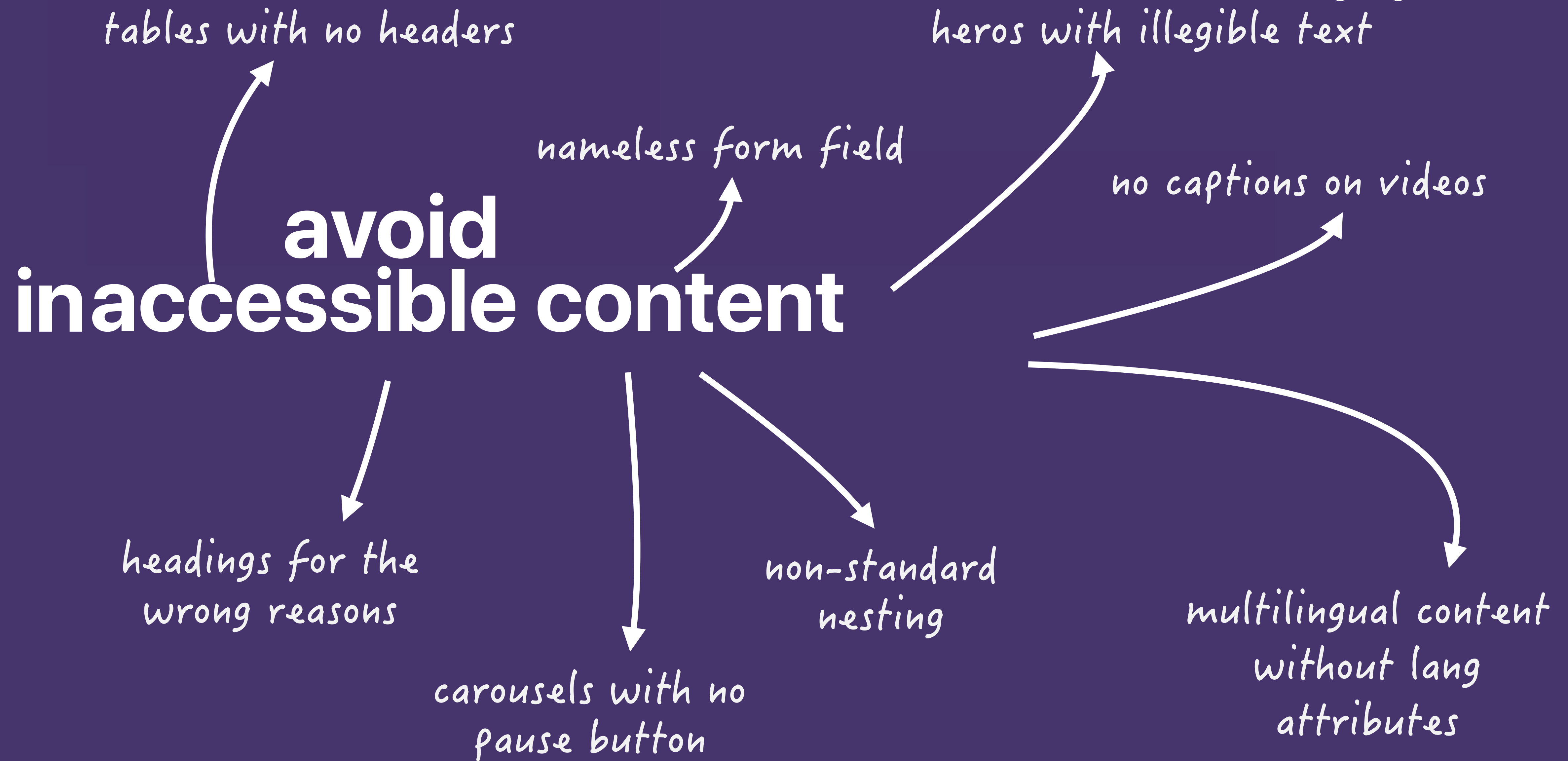
PART B: OUTPUT

```
head>
eta charset="UTF-8"/>
title>Content management system - Wikipedia</title>
script>document.documentElement.className="client-js";RLCONF={"wgBreakFrames":!1,"wgS
ikipedia articles with GND identifiers","Content management systems","Information sy
xt.globalCssJs.user.styles":"ready","site.styles":"ready","noscript":"ready","user.s
mv.bootstrap.autostart","ext.popups","ext.visualEditor.desktopArticleTarget.init","e
cript>(RLQ=window.RLQ|[]).push(function(){mw.loader.implement("user.tokens@tffin",f
;});</script>
link rel="stylesheet" href="/w/load.php?lang=en&modules=ext.cite.styles%7Cext.uls
cript async="" src="/w/load.php?lang=en&modules=startup&only=scripts&raw
eta name="ResourceLoaderDynamicStyles" content=""/>
link rel="stylesheet" href="/w/load.php?lang=en&modules=site.styles&only=styl
eta name="generator" content="MediaWiki 1.35.0-wmf.18"/>
eta name="referrer" content="origin"/>
eta name="referrer" content="origin-when-crossorigin"/>
eta name="referrer" content="origin-when-cross-origin"/>
link rel="alternate" href="android-app://org.wikipedia/http/en.m.wikipedia.org/wiki/
link rel="alternate" type="application/x-wiki" title="Edit this page" href="/w/index
link rel="edit" title="Edit this page" href="/w/index.php?title=Content_management_sy
link rel="apple-touch-icon" href="/static/apple-touch/wikipedia.png"/>
link rel="shortcut icon" href="/static/favicon/wikipedia.ico"/>
link rel="search" type="application/opensearchdescription+xml" href="/w/opensearch_de
link rel="EditURI" type="application/rsd+xml" href="//en.wikipedia.org/w/api.php?act
link rel="license" href="//creativecommons.org/licenses/by-sa/3.0/" />
link rel="canonical" href="https://en.wikipedia.org/wiki/Content_management_system"/>
link rel="dns-prefetch" href="//login.wikimedia.org"/>
link rel="dns-prefetch" href="//meta.wikimedia.org" />
!--[if lt IE 9]><script src="/w/resources/lib/html5shiv/html5shiv.js"></script><![en
/head>
body class="mediawiki ltr sitedir-ltr mw-hide-empty-elt ns-0 ns-subject mw-editable
div id="mw-page-base" class="noprint"></div>
div id="mw-head-base" class="noprint"></div>
div id="content" class="mw-body" role="main">
<a id="top"></a>
<div id="siteNotice" class="mw-body-content"><!-- CentralNotice --></div>
<div class="mw-indicators mw-body-content">
/div>
<div id="firstHeading" class="firstHeading" lang="en">Content management system</h1>
```


PART B OF ATAG

**“Support the production of
accessible content”**





*Few CMSes have these features,
so let's ask*

**DOES IT HAVE THE FEATURE,
OR IS IT TRIVIAL TO ADD?**

	A	AA	Total			A	AA	Total	
Perceivable	8	9	16		Perceivable	8	9	16	
Operable	10	3	13		Operable	10	3	13	
Understandable	2	1	3		Understandable	2	1	3	

B.1.1.2

WHEN CONTENT IS GENERATED,
IT IS ACCESSIBLE

- nested according to HTML spec
- no empty links

	A	AA	Total			A	AA	Total	
Perceivable	8	9	16		Perceivable	8	9	16	
Operable	10	3	13		Operable	10	3	13	
Understandable	2	1	3		Understandable	2	1	3	

B.1.1.2

**WHEN CONTENT IS GENERATED,
THERE IS A PROMPT FOR
REQUIRED INFORMATION**

- caption for a table
- alt text for images in a carousel
- labels for form fields

	A	AA	Total			A	AA	Total	
Perceivable	8	9	16		Perceivable	8	9	16	
Operable	10	3	13		Operable	10	3	13	
Understandable	2	1	3		Understandable	2	1	3	

B.1.1.2

WHEN CONTENT IS GENERATED,
THERE ARE AUTOMATED
ACCESSIBILITY CHECKS

	A	AA	Total			A	AA	Total	
Perceivable	8	9	16		Perceivable	8	9	16	
Operable	10	3	13		Operable	10	3	13	
Understandable	2	1	3		Understandable	2	1	3	

B.1.1.2

WHEN CONTENT IS GENERATED,
MANUAL CHECKS ARE SUGGESTED

- check if heading structure makes sense
- verify if centrally managed image alternatives apply in this use case


```
<ul><li>List item</li></ul>
```

B.2.1.1

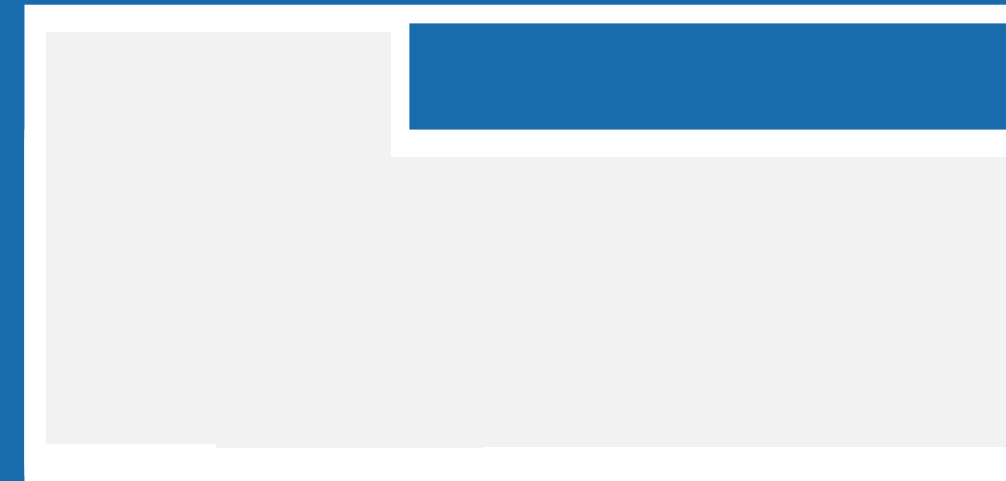
ALLOWS FOR CREATING ACCESSIBLE CONTENT

- for each image field, there is an alt text field
- for each video player field, there is a captions upload button

- ☐ SEO friendly
- ☐ Multilingual
- ☒ Accessible
- ☐ Custom colors

B.2.4.1


HAVE ACCESSIBLE TEMPLATES FOR COMMON USE CASES



B.2.5.1

PROVIDE ACCESSIBLE UI COMPONENTS

“pre-authored content”



lorem ipsum dolor sit

B.3.1.1

WARN ABOUT COLOUR CONTRAST ISSUES



lorem ipsum dolor sit

B.3.1.1

WARN ABOUT COLOUR CONTRAST ISSUES



lorem ipsum dolor sit



Not enough contrast
Use a background color, larger
text or a bolder font.

B.3.1.1

WARN ABOUT COLOUR CONTRAST ISSUES

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

B.3.1.1

**ADD A SPELLCHECKER
TO CONTENT FIELDS**

Swbmit


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

B.3.1.1

**ADD A SPELLCHECKER
TO CONTENT FIELDS**



Submit

Did you know that the average attention span for a website visitor has dropped from 12 seconds to around 7 seconds in the last six years? That's roughly how long it takes the average person to read that last sentence. You have to grab someone's attention.

Very Long Sentence

This sentence is very long. Consider rewriting it to be shorter or splitting it into smaller sentences.

The trick is to be as concise as possible. Don't make your reader work to get to the point! Use short sentences. Sentences which drone on and on and try to say too much and you risk losing your readers lose interest part way through like this one. Avoid complex words where simple alternatives work just as well. And that is where Readable comes in - Readable helps you take control of your content.

The app highlights lengthy, complex sentences and common errors; if you see a yellow sentence, shorten or split it. If you see a red highlight, your sentence is so dense and complicated that your readers will get lost trying to follow its meandering, splitting logic — try editing this sentence to remove the red

B.3.1.1

REPORT READABILITY LEVELS

B.4.2.1

PROVIDE ACCESSIBLE EXAMPLES

CMSES AS ACCESSIBILITY ASSISTANTS

It looks like you're writing a letter.

Would you like help?

- ☒ Get help with writing the letter
- ☒ Just type the letter without help
- ☐ Don't show me this tip again



Errors

A typical page with accessibility or usability errors.

The sample text below is from [Wikipedia: Bear](#).



[Learn more about Bears on Wikipedia](#) ➤

Bears are carnivoran mammals of the family Ursidae. They are classified as caniforms, or doglike carnivorans. Although only eight species of bears are extant, they are widespread, appearing in a wide variety of habitats throughout the Northern Hemisphere and partially in the Southern Hemisphere. Bears are found on the continents of North America, South America, Europe, and Asia. Common characteristics of modern bears include large bodies with stocky legs, long snouts, small rounded ears, shaggy hair, plantigrade paws with five nonretractile claws, and short tails.

While the polar bear is mostly carnivorous, and the giant panda feeds almost entirely on bamboo, the remaining six species are omnivorous with varied diets. With the exception of courting individuals and mothers with their young, bears are typically solitary animals - [learn more](#). They may be diurnal or nocturnal and have an excellent sense of smell. Despite their heavy build and awkward gait, they are adept runners, climbers, and swimmers.

Etymology

The English word "bear" comes from Old English bera and belongs to a family of names for the bear in Germanic languages, such as Swedish björn also used as a first name. This form is conventionally said to be related to a Proto-Indo-European word for "brown", so that "bear" would mean "the brown one".[1][2] However, Ringe notes that while this etymology is semantically plausible, a word meaning "brown" of this form cannot be found in

Checks in
Jooa11y,
for Joomla
(based on
Sa11y)



Home

The power of the web is its universality

This page simulates what an *author* would experience if they were logged in to a site with Editoria11y installed: a toggle automatically appears in the lower-right-hand corner of the page with issue information. Normally it is an innocuous little checkmark; since there were critical issues detected on this page it has gone red and received an issue count.

1 Explore the tins

Issues	Outline	Alt Text	?	–	×
22 issues detected.		« Previous	First »		

Checks in Editoria11y v2, for Drupal (Based on Sa11y)



STRUCTURED CONTENT

A.k.a. no HTML in the database



Load JSON from an URL



SHARE

[Get started with GROQ](#) [Spec](#) [GitHub](#)

```
▼ [
▼ {
  "id": "1",
  "firstname": "Wilhelm Conrad",
  "surname": "Röntgen",
  "born": "1845-03-27",
  "died": "1923-02-10",
  "bornCountry": "Prussia (now
Germany)",
  "bornCountryCode": "DE",
  "bornCity": "Lennep (now
Remscheid)",
  "diedCountry": "Germany",
  "diedCountryCode": "DE",
  "diedCity": "Munich",
  "gender": "male",
  "prizes": [
  {
    "year": "1901",
    "category": "physics",
    "share": "1",
    "motivation": "\"in
recognition of the extraordinary
services he has rendered by the
```

*|

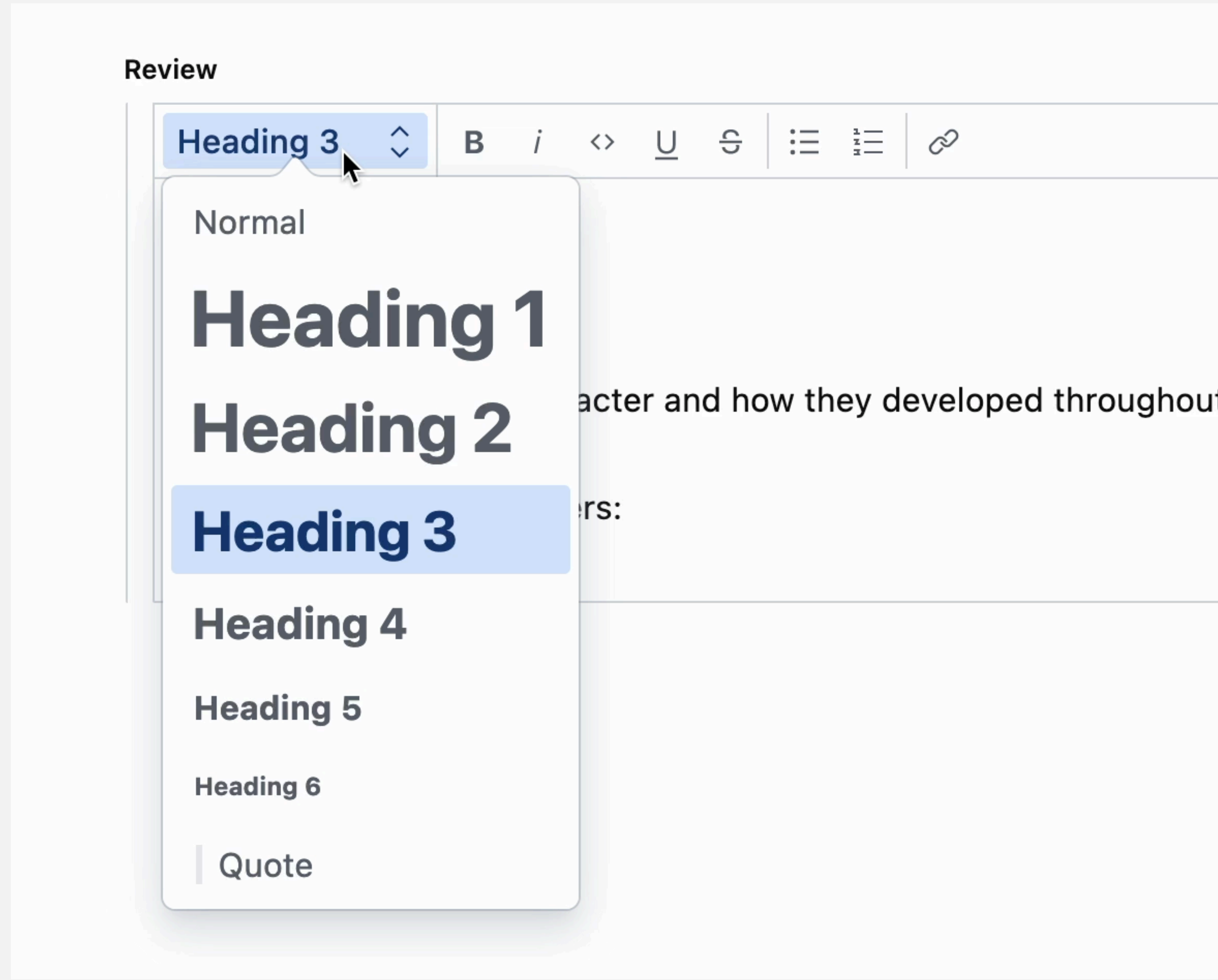
PARAMETERS



```
▼ [
▼ {
  "id": "1",
  "firstname": "Wilhelm Conrad",
  "surname": "Röntgen",
  "born": "1845-03-27",
  "died": "1923-02-10",
  "bornCountry": "Prussia (now
Germany)",
  "bornCountryCode": "DE",
  "bornCity": "Lennep (now
Remscheid)",
  "diedCountry": "Germany",
  "diedCountryCode": "DE",
  "diedCity": "Munich",
  "gender": "male",
  "prizes": [
  {
    "year": "1901",
    "category": "physics",
    "share": "1",
    "motivation": "\"in
recognition of the extraordinary
services he has rendered by the
```


WYSIWYM

What you see
is what you mean



WYSIWYM

Content as data

```
{
  "_createdAt": "2022-06-15T08:56:43Z",
  "_id": "drafts.d228e6f4-8bac-4308-8594-017644b947ba",
  "_rev": "j9sf54-qce-ggx-p2r-9215tp845",
  "_type": "book",
  "_updatedAt": "2022-11-08T10:47:51.706Z",
  "content": [
    {
      "_key": "e262fe1222ce",
      "_type": "block",
      "children": [
        {
          "_key": "cefad41247d1",
          "_type": "span",
          "marks": [],
          "text": "It was a fantastic book!"
        }
      ],
      "markDefs": [],
      "style": "normal"
    },
    {
      "_key": "3ff4ffd7ea38",
      "_type": "block",
      "markDefs": [],
      "style": "normal",
      "children": [

```

WYSIWYM

Validations in JavaScript

```
function noFakeLists(options = {}) {  
  return function (blocks) {  
    const regex = options.regex || /^\\s*[-*+—]/  
    const fakeListBlocks =  
      (blocks || []).  
        .filter(  
          block =>  
            block._type === 'block' &&  
            block.children.some(  
              blockPart =>  
                blockPart._type === 'span' &&  
                regex.test(blockPart.text)  
            )  
        )  
        .map((block, index) => [{ _key: block._key }]  
          || [index]) || []  
  
    return (  
      fakeListBlocks.length === 0 || {  
        message:  
          options.message ||  
          'This looks like a list, but it is  
          plain text. Use the bulleted list option.',  
        paths: fakeListBlocks,  
      })  
    )  
  }  
}
```




Content

Books



Norwegian wood



Norwegian wood



Current version

Book title

Norwegian wood

Review

Normal



B

i



U



It was a fantastic book!

Details

Really liked the main character and how they developed throughout the book.

I also liked these characters:

- Alice
- Bob

<https://github.com/hidde/porta11y>



Jun 15



53s



Publish



MORE VALIDATIONS WHILE YOU CREATE CONTENT

- Do headings have hierarchy?
- Are links empty?
- Does link that only contains image have non-empty alternative?

...

PREVIEWS

If you can customise
previews, you can
preview accessibility
(or lack thereof)

WIKIPEDIA

Encyclopedia

content

ments

article

Wikipedia

store

Wikipedia

y portal

anges

age

here

anges

ages

t link

mation

tem

age

rt

ook

as PDF

version

jects

Commons

s

Assistive technology

From Wikipedia, the free encyclopedia
(Redirected from [Assistive technologies](#))

Assistive technology is an [umbrella term](#) that includes assistive, adaptive, and rehabilitative devices for [people with disabilities](#) while also including the process used in selecting, locating, and using them. People who have disabilities often have difficulty performing [activities of daily living](#) (ADLs) independently, or even with assistance. ADLs are self-care activities that include toileting, mobility (ambulation), eating, bathing, dressing and grooming.

Headings

1: Assistive technology

2: Contents

2: Adaptive Technology [edit]

2: Mobility impairments [edit]

3: Wheelchairs [edit]

3: Transfer devices [edit]

3: Walkers [edit]

3: Prosthesis [edit]

2: Visual impairments [edit]

3: Screen readers [edit]

3: Braille and braille embossers [edit]

3: Refreshable braille display [edit]

3: Desktop video magnifier [edit]


3: Screen magnification software [edit]

3: Large-print and tactile keyboards [edit]

4 Personal emergency response systems

5 Accessibility software

6 Hearing impairments



aring aid

"reduce ins

Geodesic cabin

Editor Web Preview Colorblind Text to speech

Ended at

e.g. 2019-12-06 08:49

Select

Main image



Upload

Select

Edit

Remove

Geodesic cabin

Editor Web Preview Colorblind Text to speech

Select a filter:

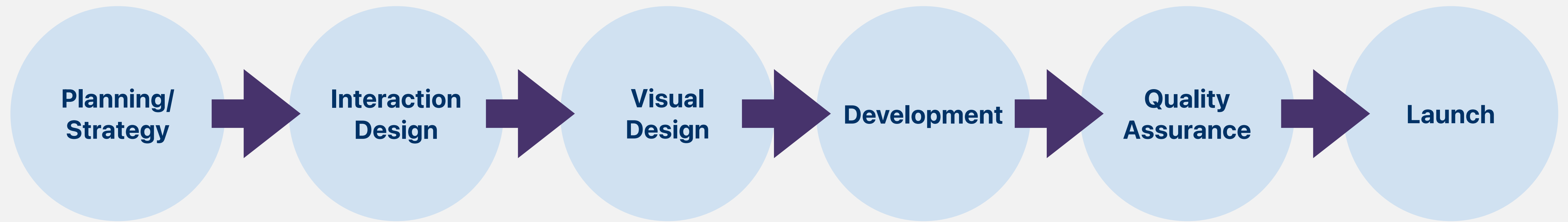
Achromatopsia

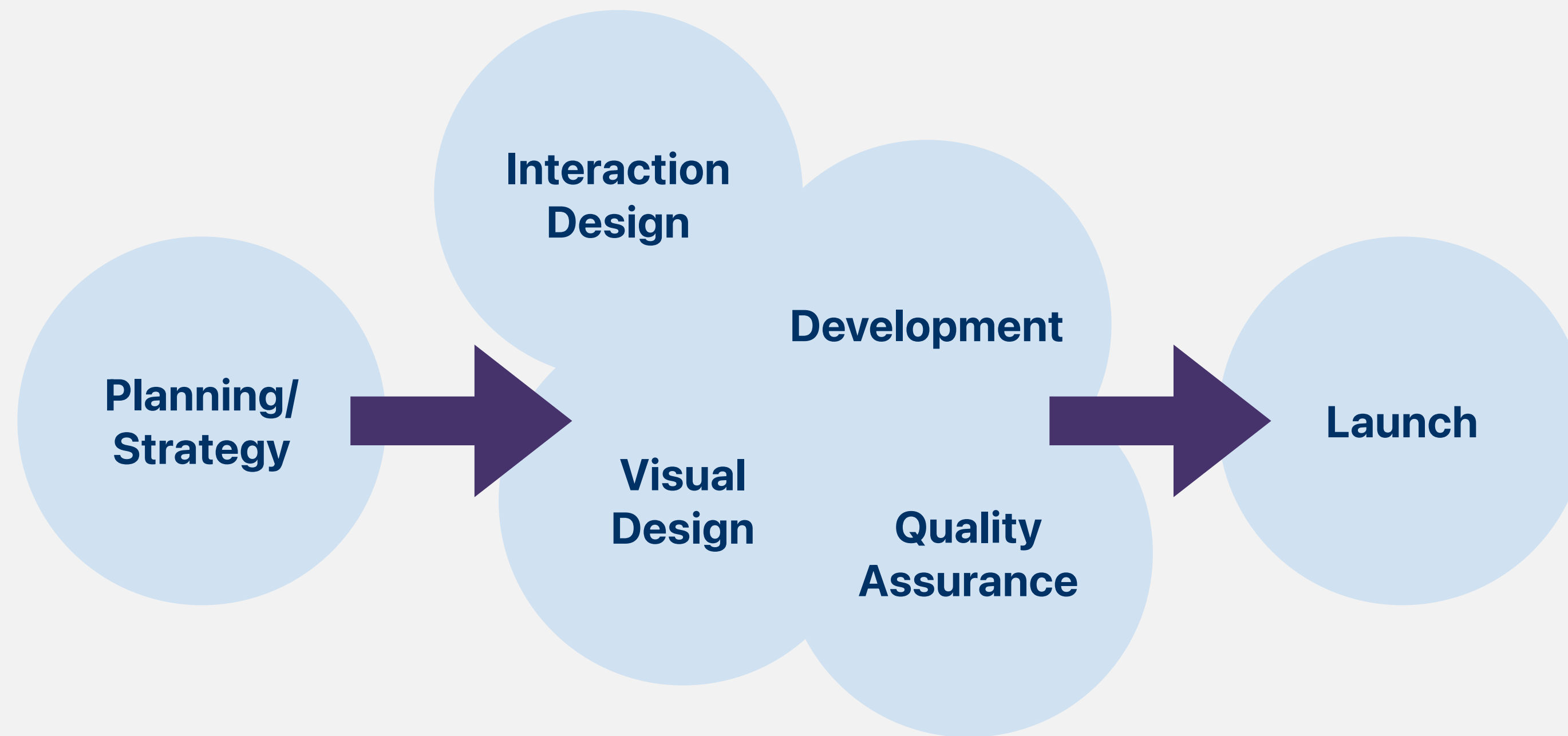
Our new portfolio

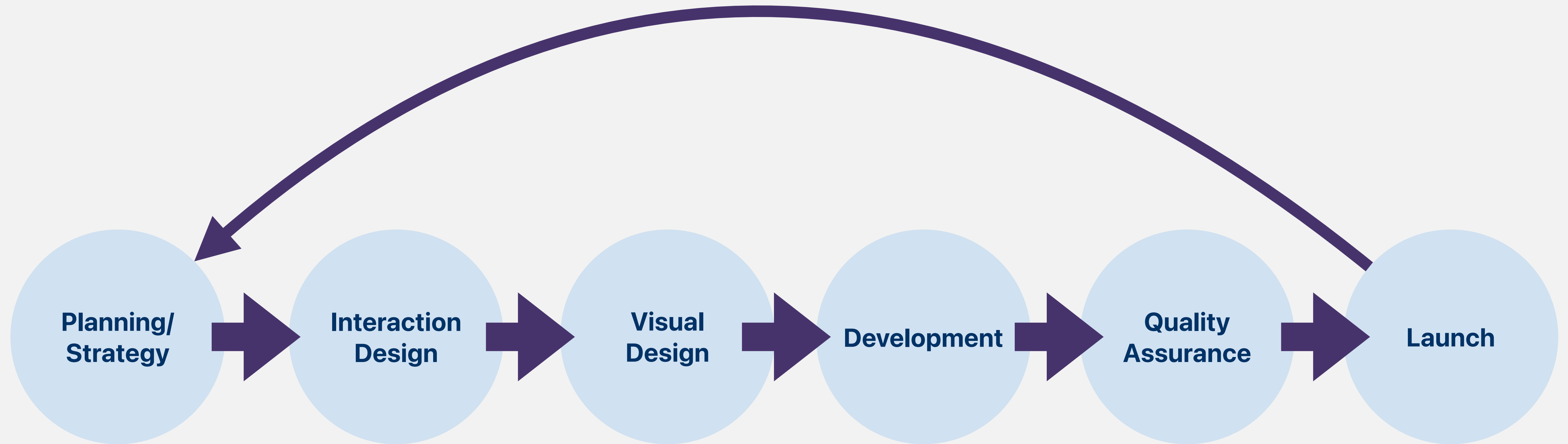
Archive

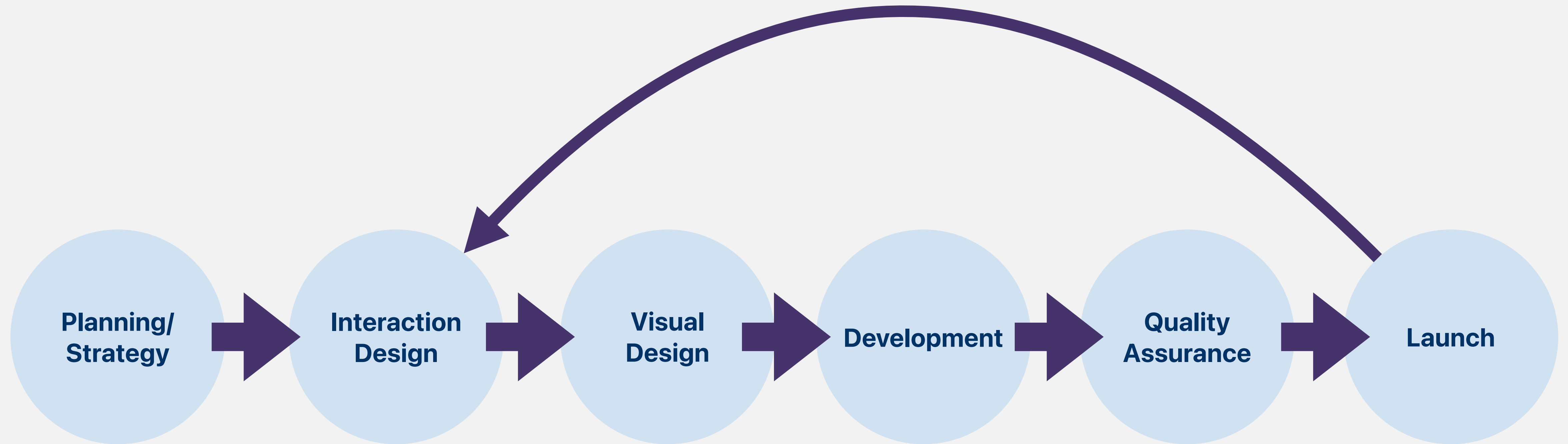


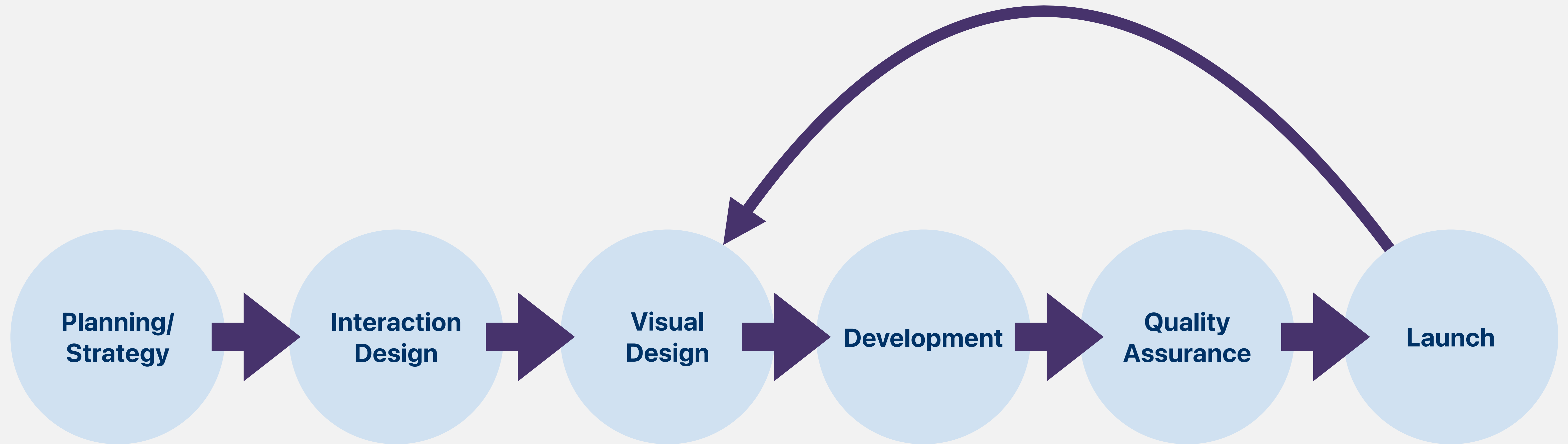
ACCESSIBILITY AT EVERY STEP

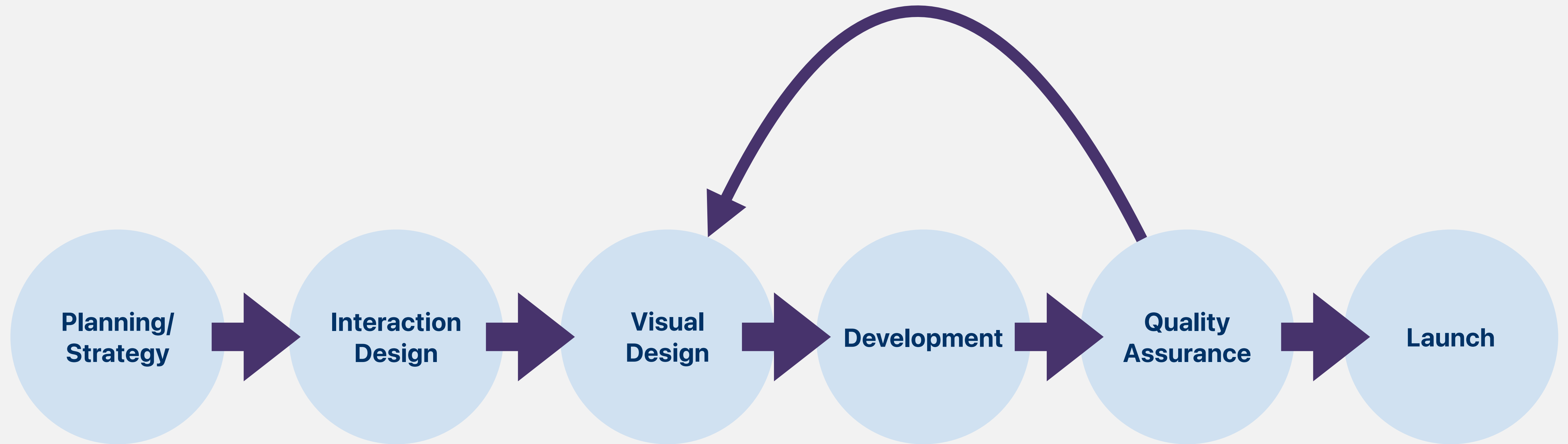


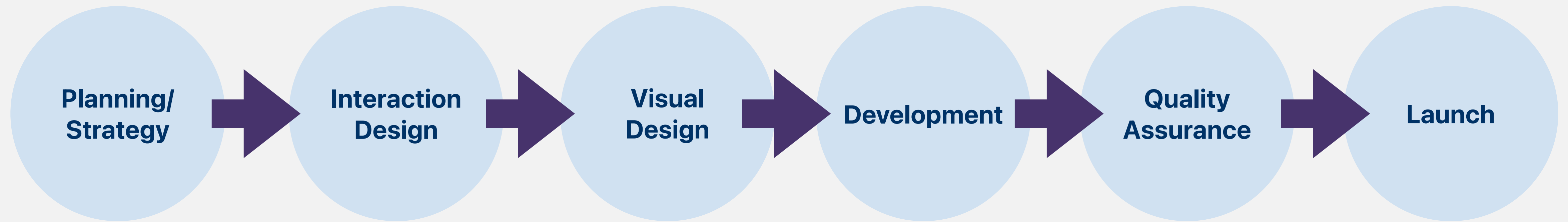


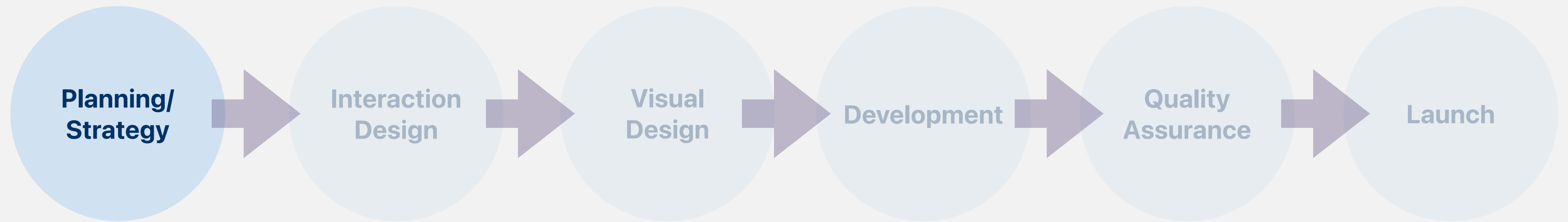




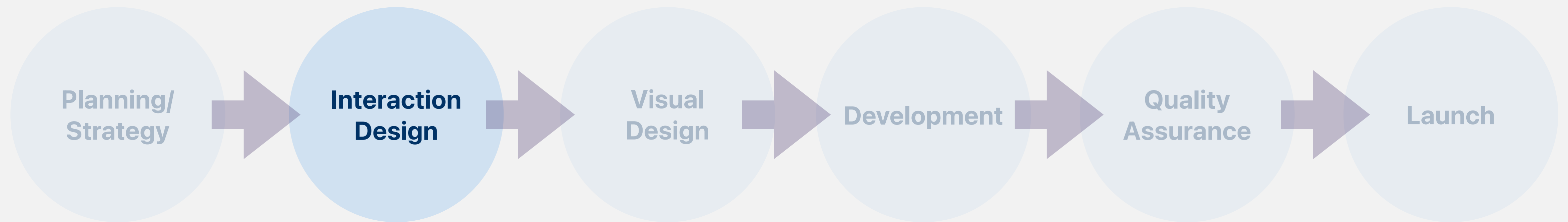






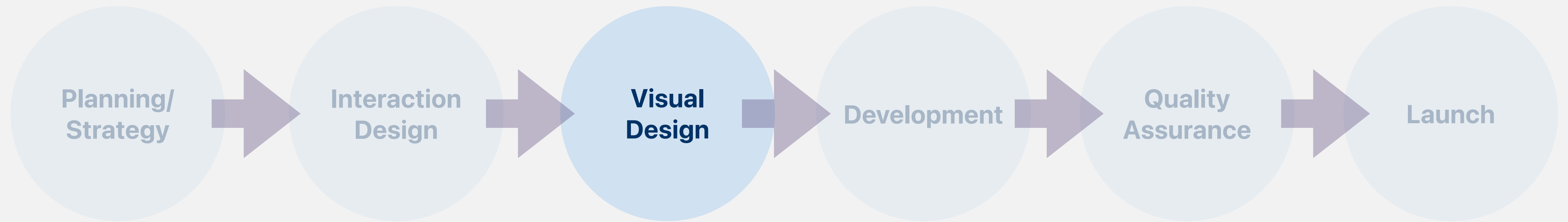


**Choose an authoring tool
that supports accessibility**



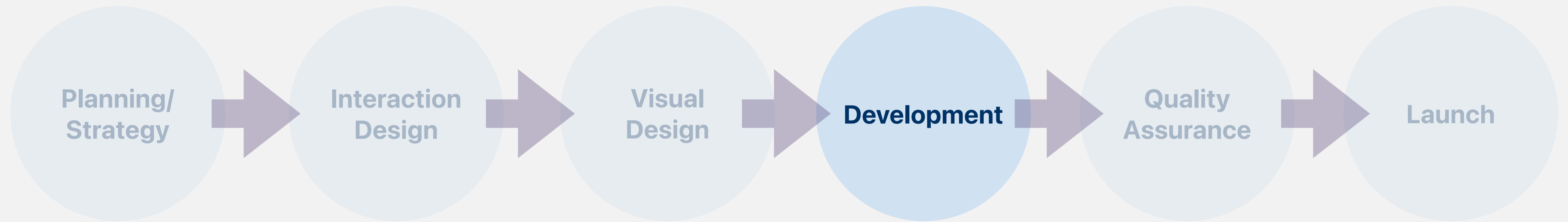
**Document all accessibility
aspects of the UI**

**Test authoring with
users with disabilities**



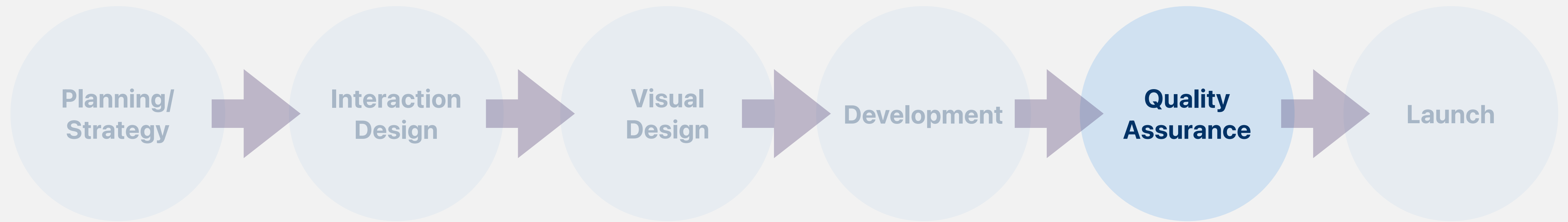
**Set constraints for customising
colour combinations (for contrast)**

**Provide accessible examples, like
large enough touch targets**

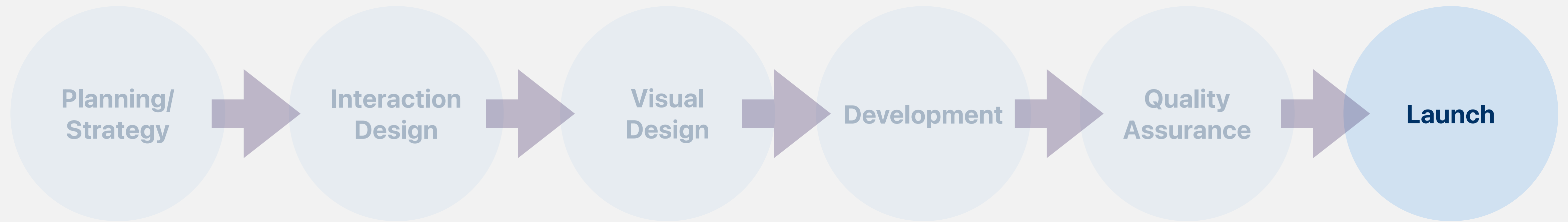


**Pick themes with
accessibility support**

**Pick plugins with
accessibility support**



**Embed automated
accessibility tests
in the authoring process**



CONCLUSION

CONCLUSION

- Accessibility can't be automated and not everything has an easy fix, *but* there are issues we could build into design systems, browsers and CMSes
- Use a CMS that can be set up to work as an accessibility assistant for your content editors
- Custom validations and previews can be powerful tools
- Accessibility is easier when you do it earlier

THANKS!

- slides are on talks.hiddedevries.nl,
will share on @hdv / @hdv@front-end.social
- questions: now or on hidde@sanity.io