

What even is semantic HTML?

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Hi :wave:

Frontend developer &
auditor

mindscreen.



**What is
semantic HTML?**

Welcome to my website

A little example.

Large and bold text

Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua. At vero eos et accusam et justo duo dolores et ea rebum.



```
1 <div class="font--bold font--xl">Welcome to my website</div>
2 <div class="font--regular font--sm">A little example.</div>
3 <div class="font--bold font--lg">Large and bold text</div>
4 <div class="font--regular font--sm">Lorem ipsum dolor sit amet,
  consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua. At vero eos et accusam et justo duo dolores et ea rebum.</div>
```



```
1  <h1>Welcome to my website</h1>
2  <p>A little example.</p>
3  <h2>Large and bold text</h2>
4  <p>Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed
    diam nonumy eirmod tempor invidunt ut labore et dolore magna al
    iquyam erat, sed diam voluptua. At vero eos et accusam et justo
    duo dolores et ea rebum.</p>
```

Welcome to my website

A little example.

Large and bold text

Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua. At vero eos et accusam et justo duo dolores et ea rebum.

Definition of “semantics”

“Semantics:

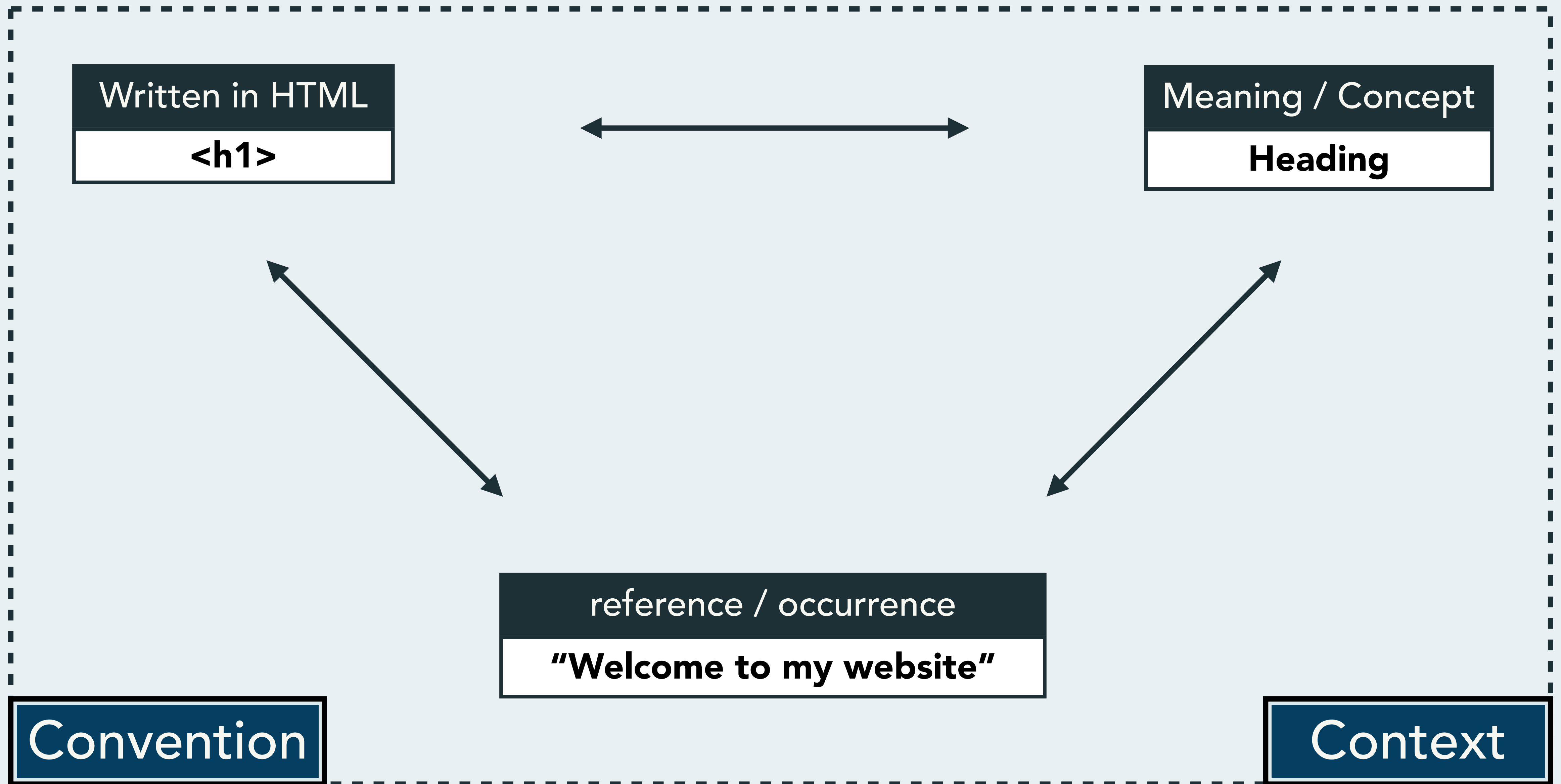
The meaning of
words, phrases or systems.”

— Oxford learner's dictionary

“Meaning:

The thing or idea
that a sound, word, sign, etc.
represents”

— Oxford learner's dictionary



Who (or what)
uses our HTML?

Who uses semantic HTML?

- Browsers
- People with assistive technology
- Search engine bots



```
1 <div class="font--bold font--xl">Welcome
2 <div class="font--regular font--sm">A lit
3 <div class="font--bold font--lg">Large an
4 <div class="font--regular font--sm">Lorem
```



```
1 <h1>Welcome to my website</h1>
2 <p>A little example.</p>
3 <h2>Large and bold text</h2>
4 <p>Lorem ipsum dolor sit amet, consetet
   diam nonumy eirmod tempor invidunt ut l
```

What constitutes meaning
in HTML?

Content: “Learning Outcomes”

- Manipulating files and folders.
- Naming best practices.
- Standard website folder structure.

You will learn how to manipulate files and folders. Furthermore, we will get to know naming best practices. Finally, you will learn the standard website folder structure.

— [mdn web docs: Learn, Getting Started Modules](#)

HTML elements



```
1  <ul>
2      <li>Manipulating files and folders.</li>
3      <li>Naming best practices.</li>
4      <li>Standard website folder structure.</li>
5  </ul>
```

HTML elements



```
1  <p>
2      You will learn how to manipulate files and folders.
3      Furthermore, we will get to know naming best practices.
4      Finally, you will learn the standard website folder structure.
5  </p>
```


HTML attributes



```
1 
```



```
1 <html lang="en-US">...</html>
```



```
1 <label for="name">Your name</label>  
2 <input type="text" name="name" id="name" required />
```

ARIA attributes



```
1 <button aria-label="Open menu" aria-expanded="false">  
2     <svg aria-hidden="true">...</svg>  
3 </button>
```



```
1 <div role="alert">  
2     <p>Your changes have been saved.</p>  
3 </div>
```

Microdata attributes



```
1 <div itemscope itemtype="https://schema.org/SoftwareApplication">
2   <span itemprop="name">Angry Birds</span> – REQUIRES
3   <span itemprop="operatingSystem">ANDROID</span><br />
4   <link
5     itemprop="applicationCategory"
6     href="https://schema.org/SoftwareApplication" />
7 </div>
```

— [mdn web docs: Using microdata in HTML](#)

The content has a meaning.

The HTML must adequately
represent that meaning.

Pitfalls

**...and how to
spot them**



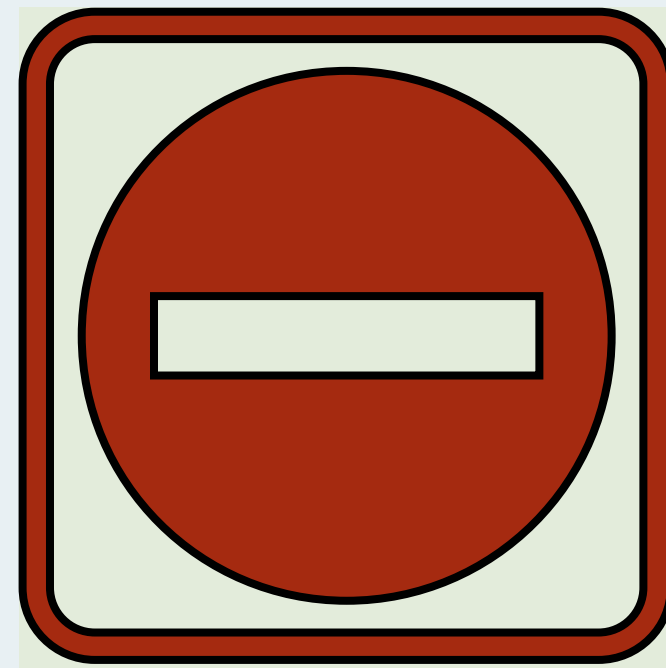
Pitfall N° 1:
Ignoring the
separation of concerns

Example

Break the meaning of HTML

Q: I have a CSS problem, what can I do?

A: Here's this trick with HTML!



Is there an equivalent to flex-row-reverse for grids? #1723

on May 6, 2020 · 7 comments · 8 replies

on Jan 24, 2023

...

Just add `dir="rtl"` to the tag, or `direction: rtl` to your css style source.



1



29



1

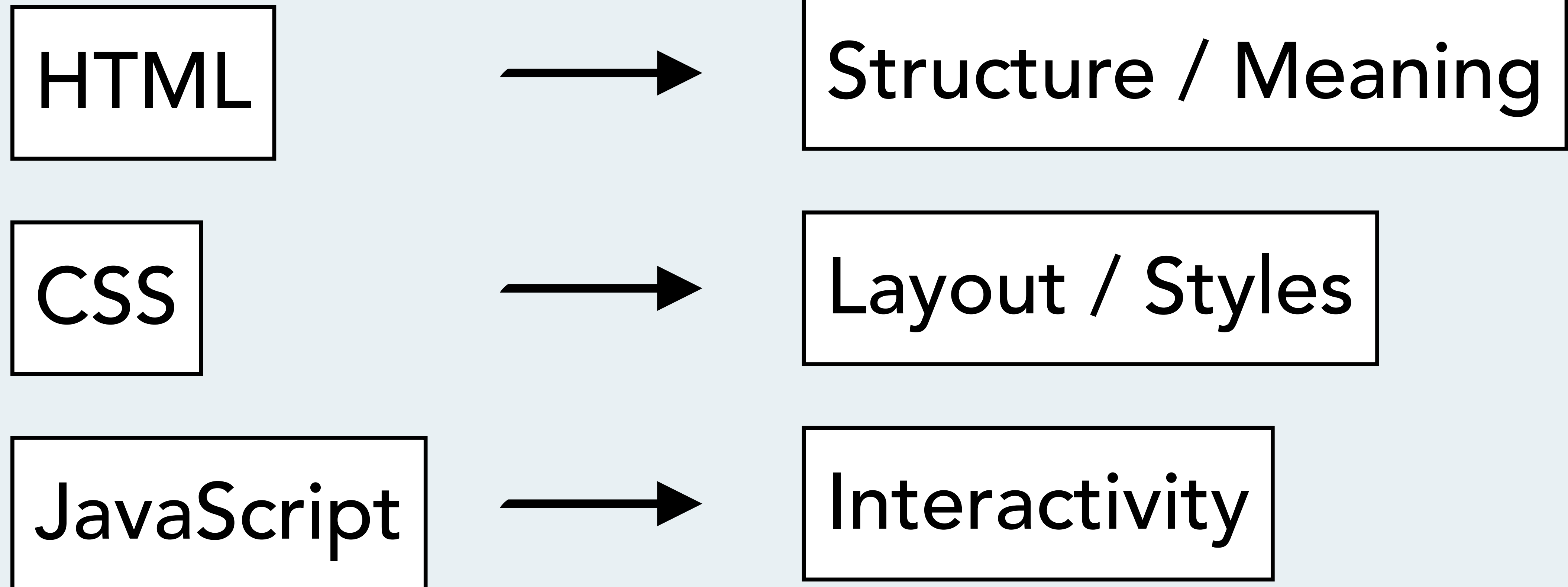
1 reply

on Mar 4, 2023

...

This is not a good solution at all. Never change the *reading direction* of something in CSS unless the actual language you are using will be read from right to left.

Separation of concerns



“Authors must not use elements, attributes, or attribute values for purposes other than their appropriate intended semantic purpose, as doing so prevents software from correctly processing the page.”

— HTML Specification: 3.2.1 Semantics

“It's always possible to change the look and feel of a given tag using CSS so, when using HTML, take the time to **focus on the meaning** rather than the appearance.”

— [mdn web docs: HTML Cheatsheet](#)

“[...] using CSS display properties to change table layout has a tendency to remove the underlying table semantics.”

— **Inclusive Components: Data Tables**

Example

Inappropriate interactivity



A card

Commodo ut laborum fugiat aliqua
eiusmod voluptate pariatur.

By Heydon Pickering



Another card instance

Cupidatat tempor sint mollit in
tempor ut fugiat excepteur laborum
labore.

By Heydon Pickering

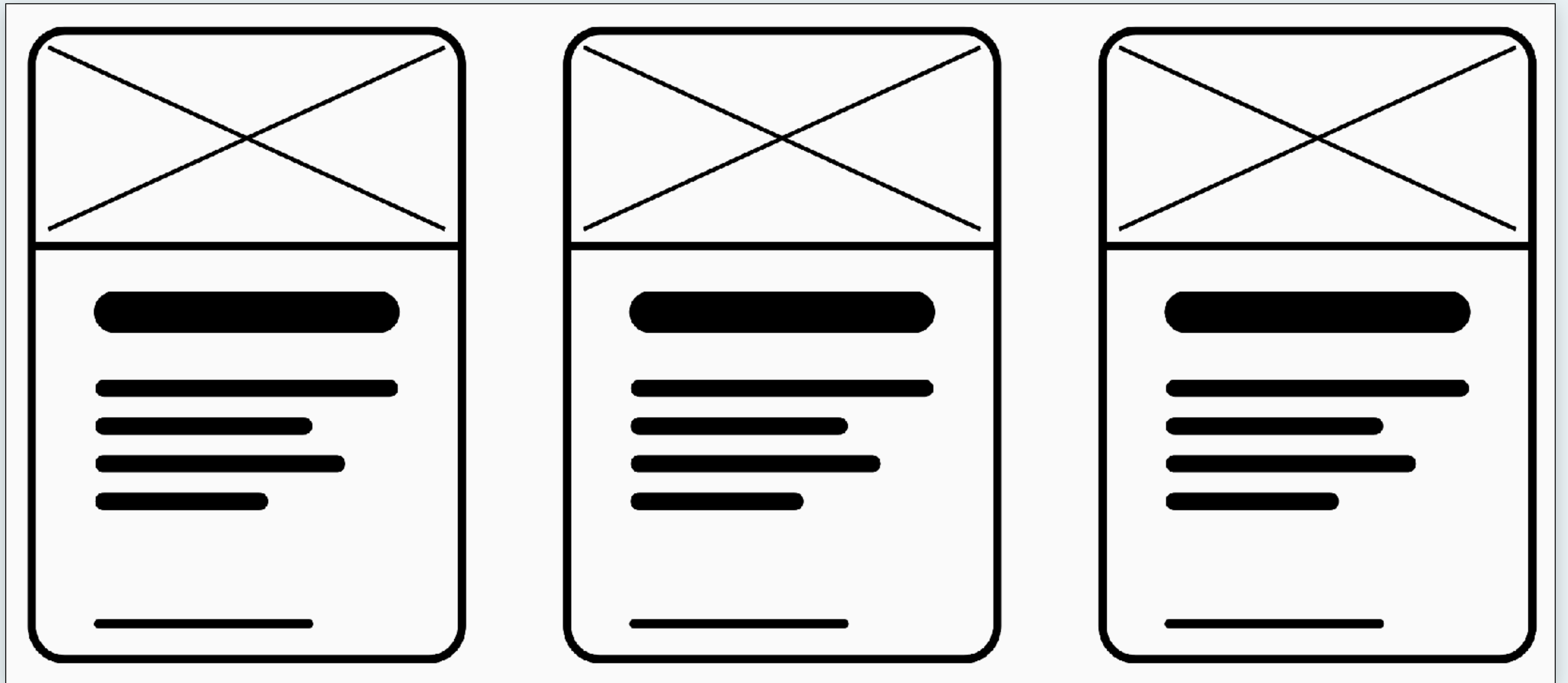


More card

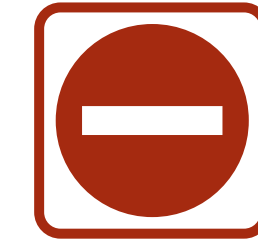
Eu dolore labore ad occaecat minim
in minim ad ea commodo
excepteur ullamco.

By Heydon Pickering

— Inclusive design: Cards



— Inclusive design: Cards



Bad example

```
1  <div class="teaser-card">
2  { <a href="#0">
3    <div class="teaser-card__img-wrapper">
4      
5    </div>
6    <div class="teaser-card__text-wrapper">
7      <h3>Heading</h3>
8      <p>Teaser text</p>
9    </div>
10  </a>
11 </div>
```



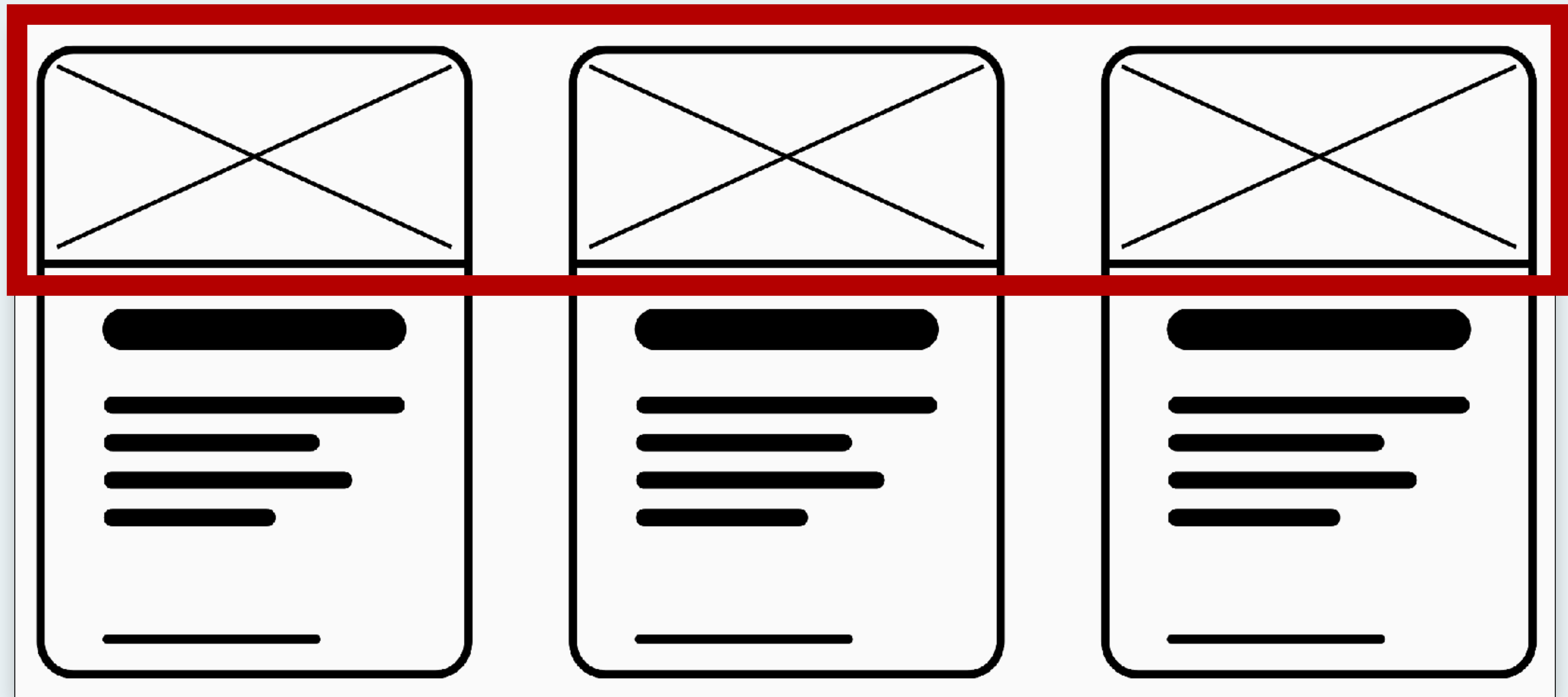

```
1  <div class="teaser-card">
2    <div class="teaser-card__text-wrapper">
3      <h3>
4        { <a href="#0">
5          Heading
6        </a>
7      </h3>
8      <p>Teaser text. Lorem ipsum.</p>
9    </div>
10   <div class="teaser-card__img-wrapper">
11     
12   </div>
13 </div>
```



```
1  <div class="teaser-card">
2    <div class="teaser-card text-wrapper">
3      <h3>
4        <a href="#0">
5          Heading
6        </a>
7      </h3>
8      <p>Teaser text. Lorem ipsum.</p>
9    </div>
10   <div class="teaser-card__img-wrapper">
11     
12   </div>
13 </div>
```



```
1  <div class="teaser-card">
2    <div class="teaser-card__text-wrapper">
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4        <a href="#0">
5          Heading
6        </a>
7      </h3>
8      <p>Teaser text. Lorem ipsum.</p>
9    </div>
10   <div class="teaser-card__img-wrapper">
11     
12   </div>
13 </div>
```



— Inclusive design: Cards



```
1  <div class="teaser-card">
2    <div class="teaser-card__text-wrapper">
3      <h3>
4        <a href="#0">
5          Heading
6        </a>
7      </h3>
8      <p>Teaser text. Lorem ipsum.</p>
9    </div>
10   <div class="teaser-card__img-wrapper">
11     
12   </div>
13 </div>
```


Summary: Cards

- Link element on meaningful label
- Clickable area with JS or CSS
- Place image after heading
- Bonus: group of cards is a list ``

```
1  <li class="card">
2    <div class="text">
3      <h2>
4        <a href="#0">Heading</a>
5      </h2>
6      <p>Description aka teaser text.</p>
7    </div>
8    <div class="img">
9      
11  </li>
```

Pitfall N^o 2:
Naming is hard

Example

Naming elements

Email by a client:

"We want to make a change in the header.

Please rearrange the layout of the image and the product name.

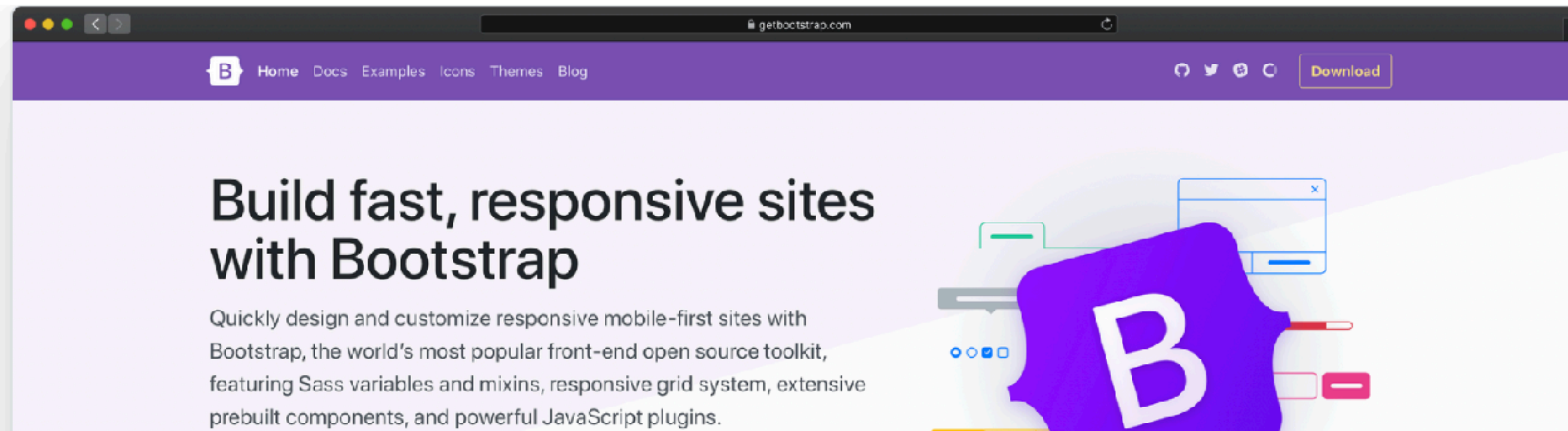
Also on some pages, we want to use a video instead of the image."

Centered screenshot

Quickly design and customize responsive mobile-first sites with Bootstrap, the world's most popular front-end open source toolkit, featuring Sass variables and mixins, responsive grid system, extensive prebuilt components, and powerful JavaScript plugins.

Primary button

Secondary

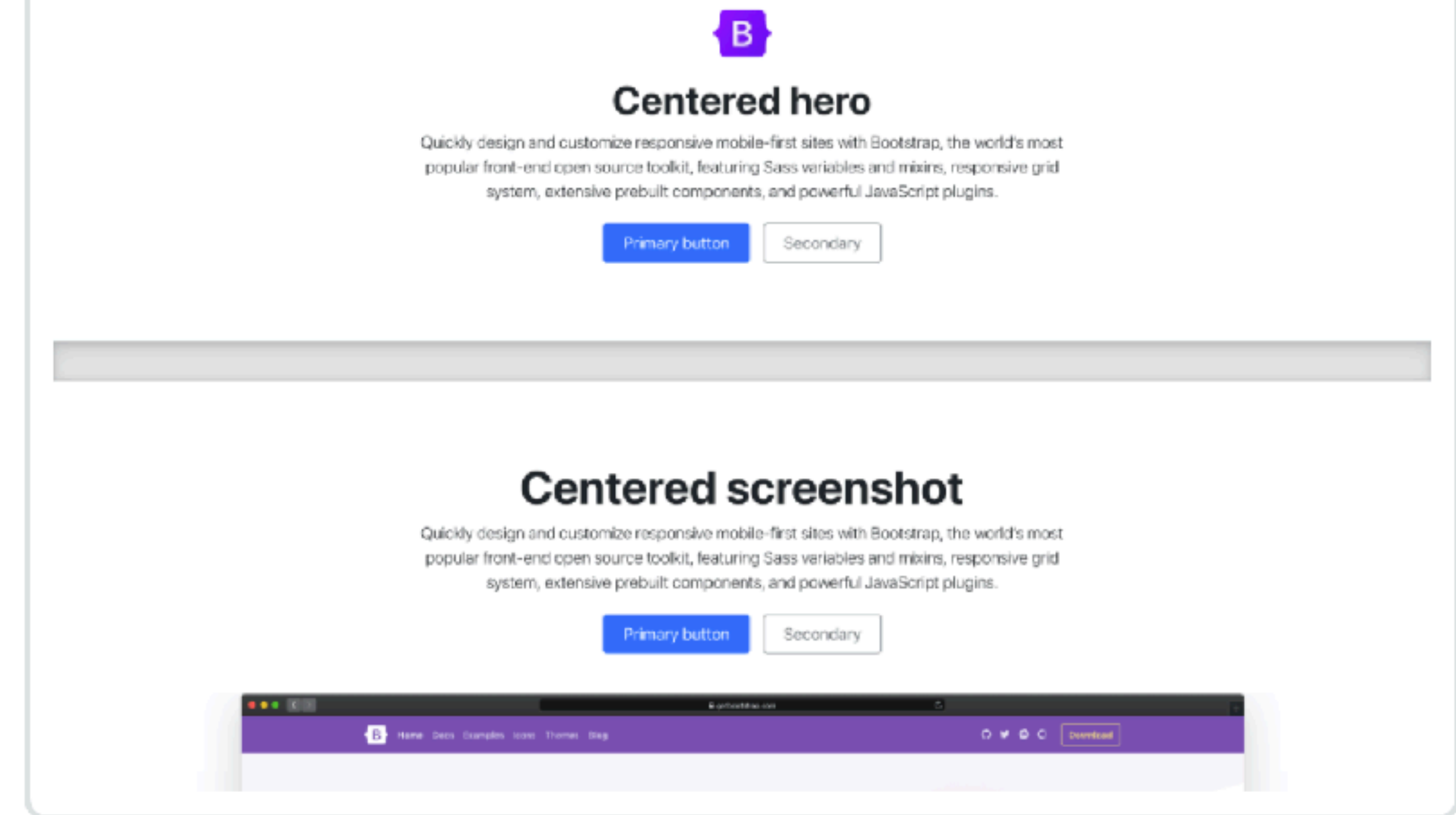


— Bootstrap Heroes

Hero

aka Stage

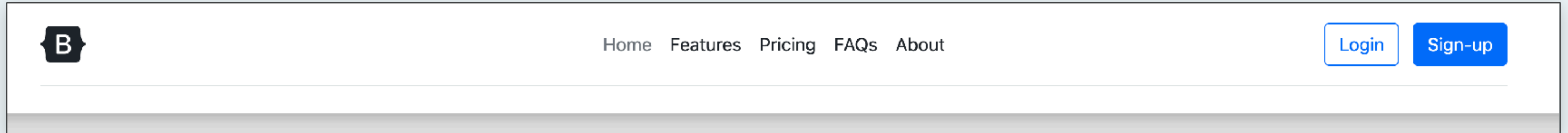
aka Banner



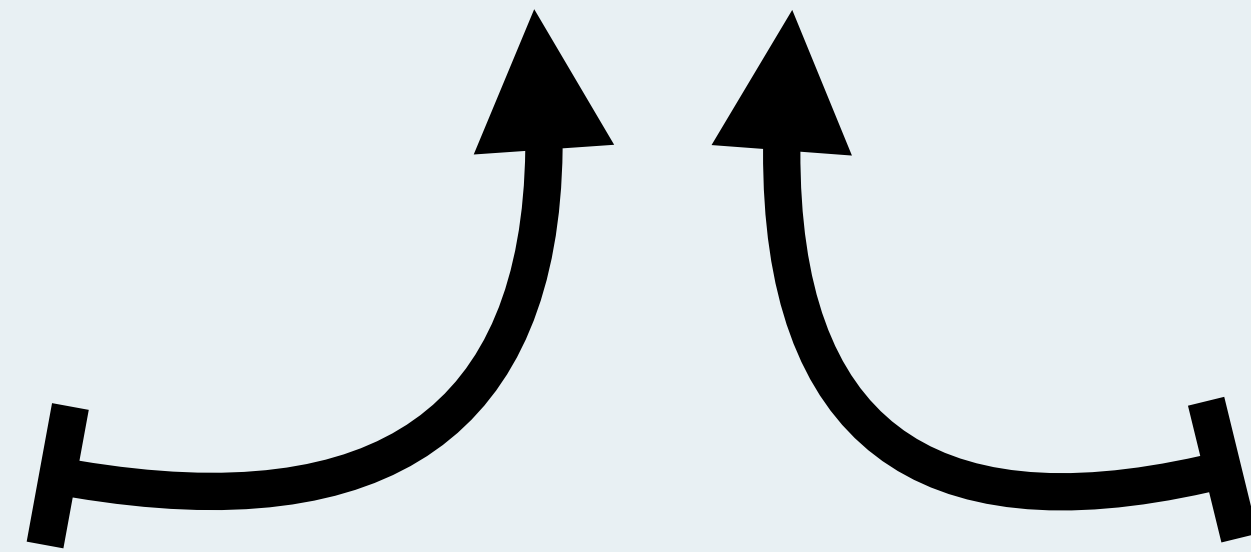
Heroes

Set the stage on your homepage with heroes that feature clear calls to action.

Header



Header



Element with a
role "banner"

Banner

Cookies on [name of service]

We use some essential cookies to make this service work.

We'd also like to use analytics cookies so we can understand how you use the service and make improvements.

Accept analytics cookies

Reject analytics cookies

Example: Basic ↕


Theme: Light (default) ↕


[Edit in CodePen](#)

[Open in new window](#)

[View RTL](#)

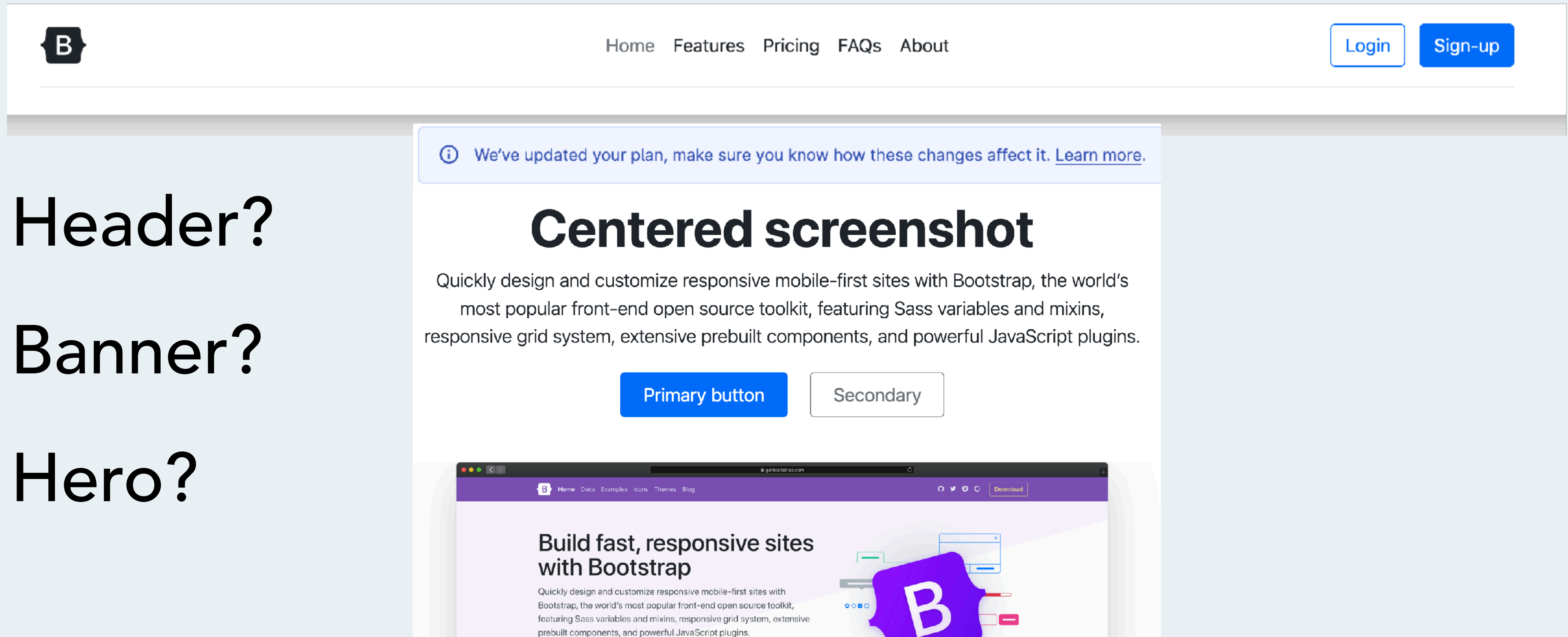
 We've updated your plan, make sure you know how these changes affect it. [Learn more.](#)

 We're experiencing an incident. Please see our [status page](#) for more details.

 Payment details missing. To stay on your current plan, [add payment details](#).

 Your order has been shipped and will arrive on May 27th. [Track order.](#)

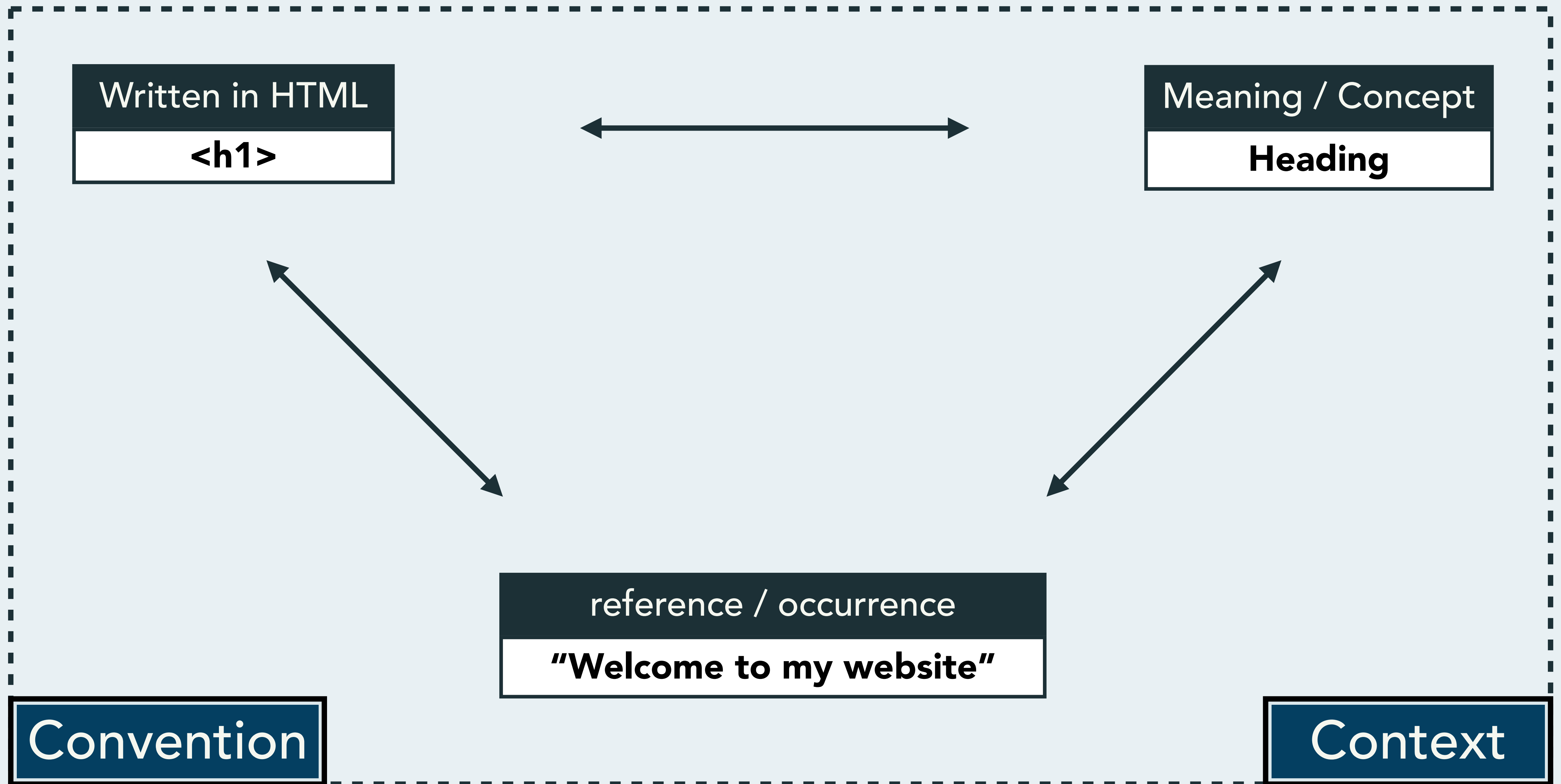
Many names



Header?

Banner?

Hero?



Semantic / Meaning / Concept

```
graph TD; A[Semantic / Meaning / Concept] --> B[Conventional definition]; A --> C[Cultural connotation]; A --> D[Personal association];
```

Conventional definition

Cultural connotation

Personal association

Example

Label and Name

Label and name

in HTML

- label = element
- name = attribute



```
1 <form action="#0">
2     <label for="email">Email</label>
3     <input type="email" name="email" id="email">
4 </form>
```

Label and name

in accessibility

- Attribute aria-label
- fixed term: "accessible name"
- Phrases such as
"labeling an element"

“The accessible name is the name of a user interface element.”

— WAI ARIA: 2. Important Terms

Accessible name



▼ Properties

name: "Menu"

role: "button"

▼ Properties

name: "Open menu"

role: "button"

```
<button>  
  Menu  
</button>
```

```
<button aria-label="Open menu">  
  Menu  
</button>
```

Label and name

in accessibility

- Attribute aria-label
- fixed term: "accessible name"
- Phrases such as
"labeling an element"

“[An aria-label] Defines a string value that labels the current element.”

— WAI ARIA: 6.7 Definitions of States and Properties

“label: a descriptive or
identifying word or phrase”

— Merriam Webster

Different groups of people

use different words

Different groups of people
mean different things

Semantic / Meaning / Concept

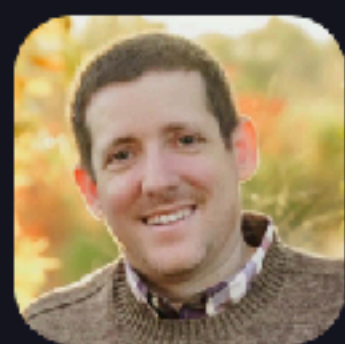
```
graph TD; A[Semantic / Meaning / Concept] --> B[Conventional definition]; A --> C[Cultural connotation]; A --> D[Personal association];
```

Conventional definition

Cultural connotation

Personal association

Pitfall N° 3:
Misinterpreting
the resources



Alvaro Montoro

[@alvaromontoro@front-end.social](#)

Today, I coded a `<search role="search">` tag. The search role is intrinsic, but I added it to provide semantics for older browsers as the tag is still relatively new.

The linter complained that `role="search"` was not really needed (technically correct) and suggested removing it, then copilot complained that `<search>` is not a standard HTML tag and suggested using `<div role="search">` instead.

And some people still wonder why semantic HTML is not more widespread.

[May 20, 2025, 02:28 AM](#) · 🌐

Check the resource

Can it be trusted?

Check the date

Old is not bad, but is it outdated?

Large Language Models

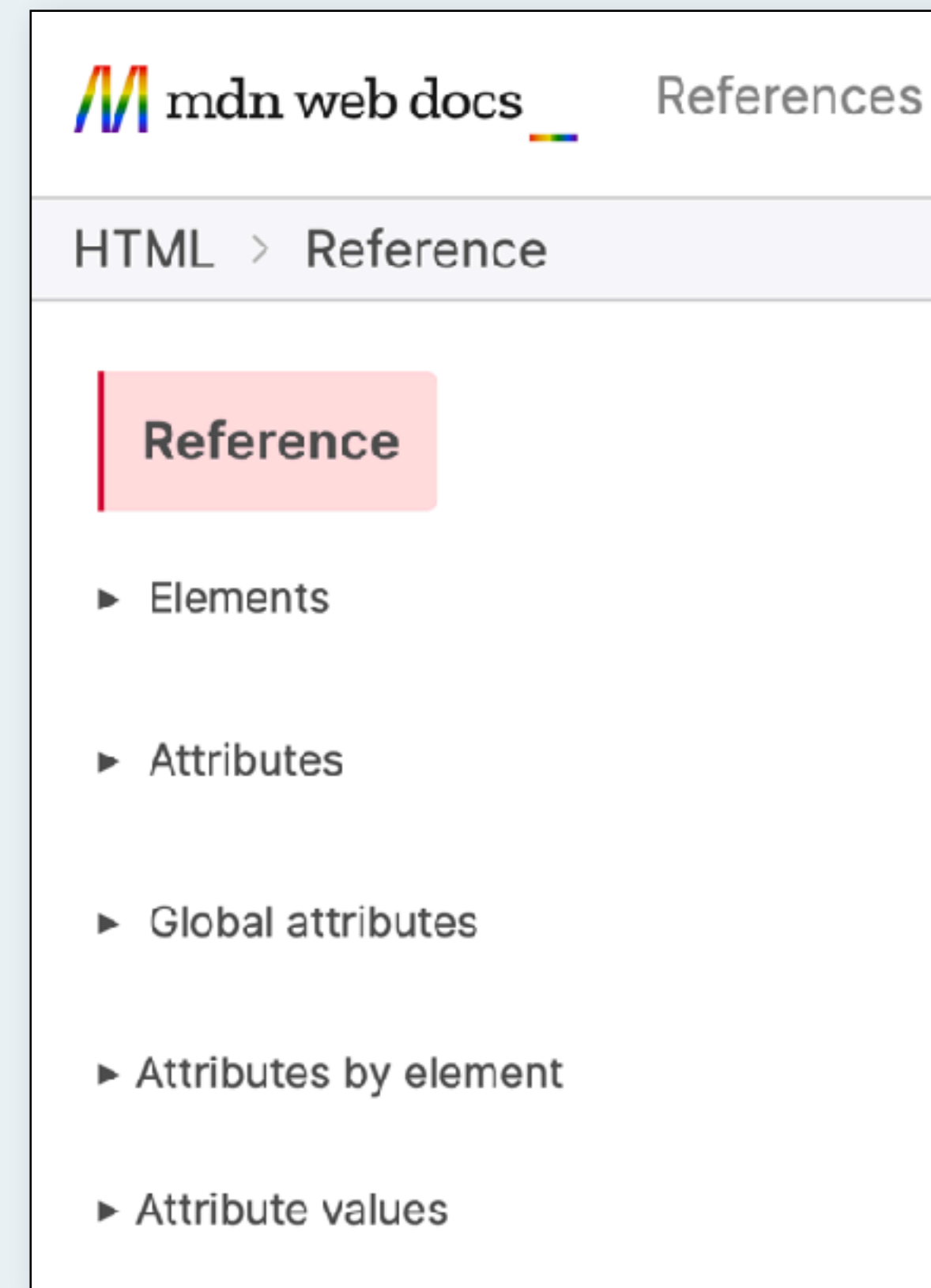
Does token prediction really help?

Resources for better HTML



MDN Web Docs

Read the [MDN HTML reference](#)



Frontend related resources

- [web.dev](#)
- [Smashing Magazine](#)
- [CSS Tricks](#)
- [HTMHell](#)
- [SelfHTML](#) (DE)

Accessibility professionals

- Adrian Roselli
- Eric Eggert
- Newsletter Accessibility Weekly
(in short: a11y weekly)
- Tetralogical
- Deque
- TPGi

Accessibility professionals

personal recommendations

- Sara Soueidan ([Blog sarasoueidan.com](https://sarasoueidan.com), Course "[Practical Accessibility](#)")
- Léonie Watson ([Blog tink.uk](https://tink.uk))
- Manuel Matuzović ([Blog matuzo.at](https://matuzo.at), Book "[Web Accessibility Cookbook](#)")
- Kevin Powell ([YouTube kevinpowell](https://www.youtube.com/channel/UC8X0neT8jWVpR1F0Y0Y0Y0Y))

Accessibility requirements

- ARIA Authoring Practices Guide (APG)
- BFIT Bund: Barrierefreie Gestaltung von User Interface-Elementen (DE)
- magenta11y

Specifications

HTML

- [HTML specification](#)

ARIA

- [Accessible Rich Internet Applications \(WAI-ARIA\) 1.2](#)
- [Using ARIA](#)
- [ARIA in HTML](#)

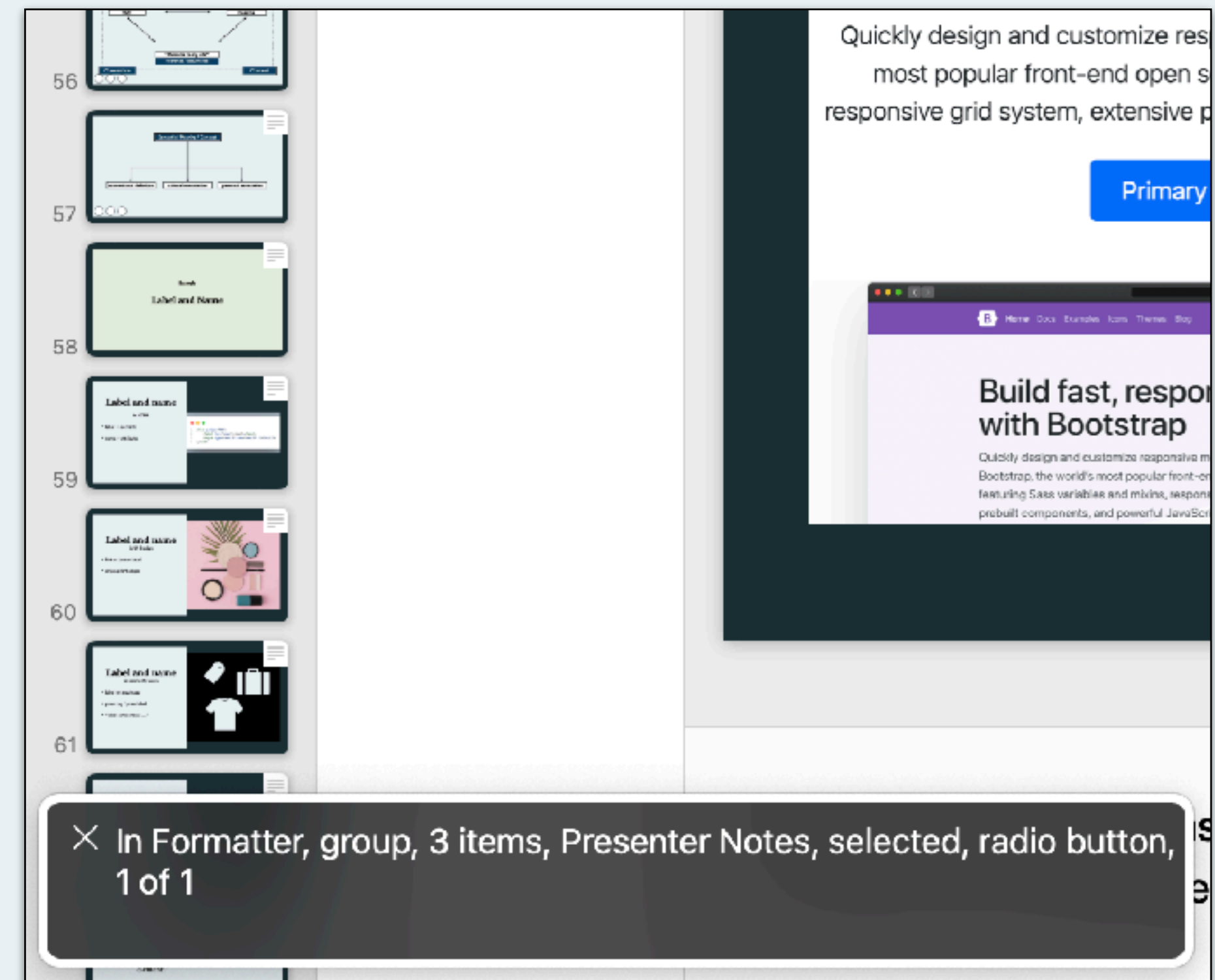
[Eric Bailey: What I Wish Someone Told Me When I Was Getting Into ARIA](#)

Is it ready to use?

- caniuse
- a11ysupport

How to use a screen reader

- Search YouTube for demos
- Search: "how to use a screen reader" or "screen reader demo"



How to use a screen reader

- Voice Over on macos & ios – pre-installed
- Talkback on Android – pre-installed
- Microsoft Narrator – pre-installed
- Orca on Linux – free and open source
- NVDA – free and open source
- JAWS – paid

Enhance your workflow

- Use a linter
- Check pages with axe-core
- Check pages by using only a keyboard

Summary



Semantic HTML

represents

the meaning of your content

Context – Convention

Connotations – Associations

Separation of concerns

HTML has defined semantics

"I don't know,
I will have to look that up"

Thank you!

Contact



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mindscreen.