

# Implementation

LESSON 07

2025



# Where are we in the course?

## LESSON 01

Intro

## LESSON 02

Standards

## LESSON 03

Keyboard

## LESSON 04

Screen readers

## LESSON 05

Product & UX

## LESSON 06

Visual design &  
Content

## LESSON 07

Implementation

## LESSON 08

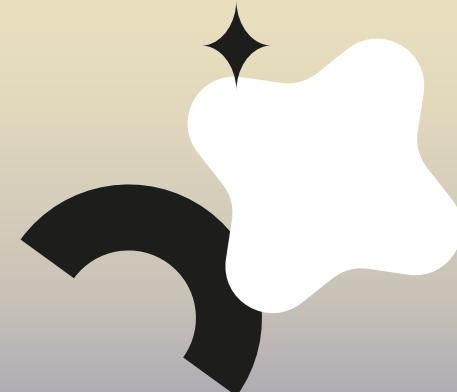
Audit A to Z

## LESSON 09

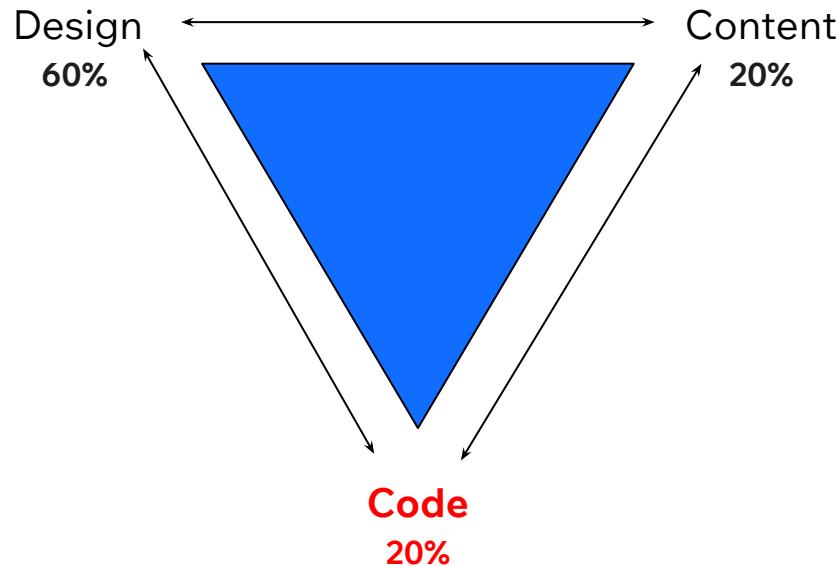
Summary &  
Evaluation

# AGENDA

1. Meta data
2. Text content
3. Text alternative
4. Document structure
5. Layout and order
6. Interactive elements
7. ARIA
8. Mobile

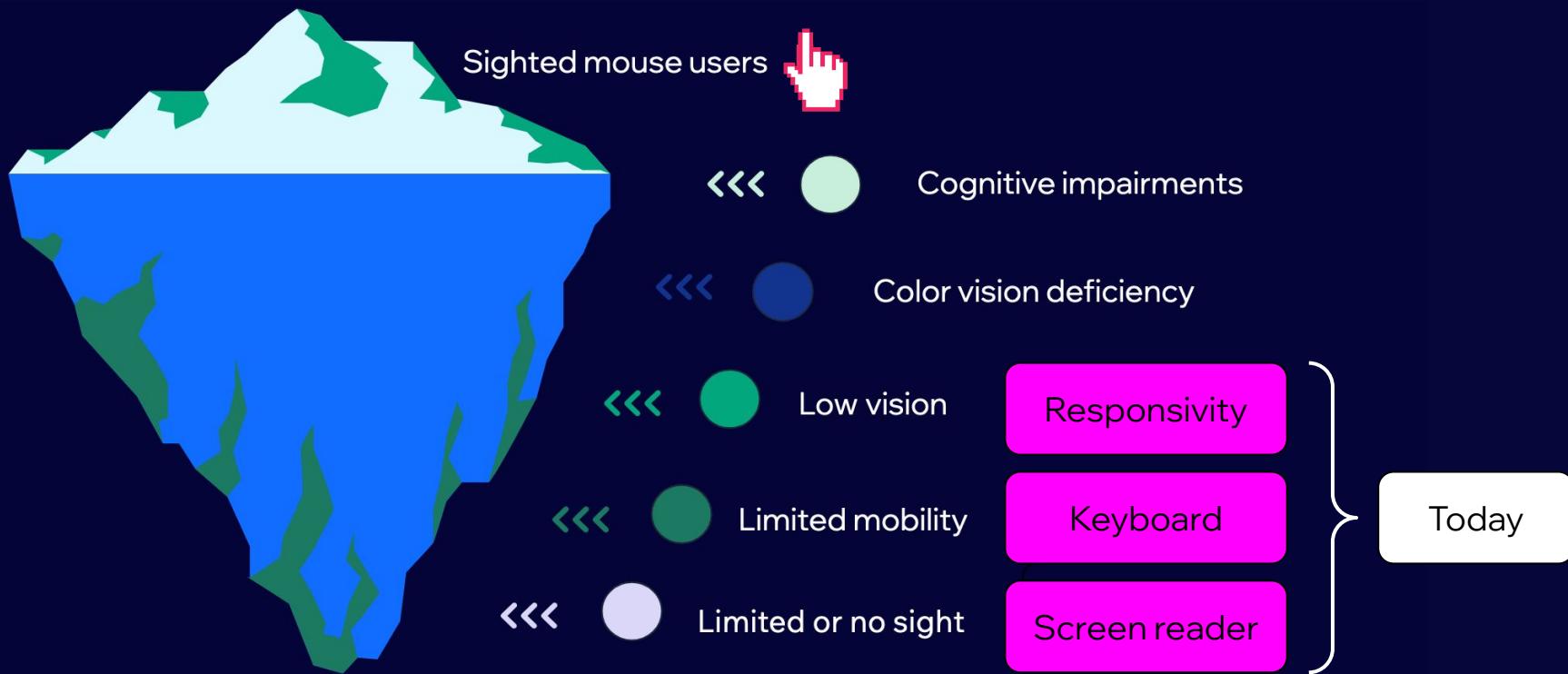


# The accessibility triad



WCAG\* = Web Content Accessibility Guidelines (86 in total)

# Challenge - Accessibility is invisible

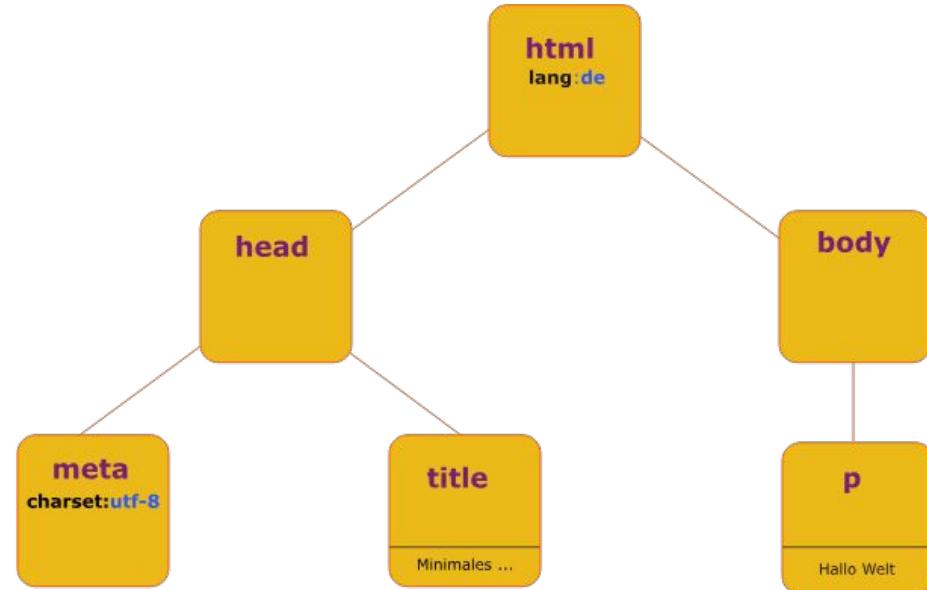


CHAPTER 01

# Metadata

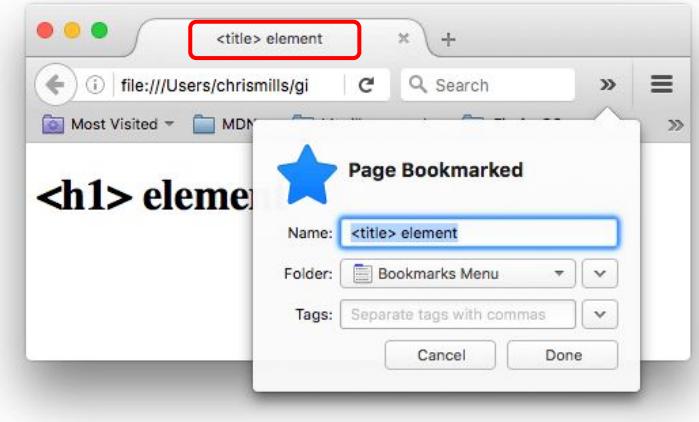
# HTML document

- The <html> element
  - Wraps all the content on the page. It is sometimes known as the **root element**.
- The <head> element
  - A container for everything you want to include on the HTML page, that **isn't the page content** the visitors will see.
- The <body> element
  - Contains all **the content that displays on the page**, including text, images, videos, etc.



# HTML <head> - <title> tag

Web pages have titles that describe the topic or purpose of the page



```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="utf-8" />
    <title>Machine Learning Workshop</title>
    <meta name="viewport" content="width=device-width" />
  </head>
  <body>

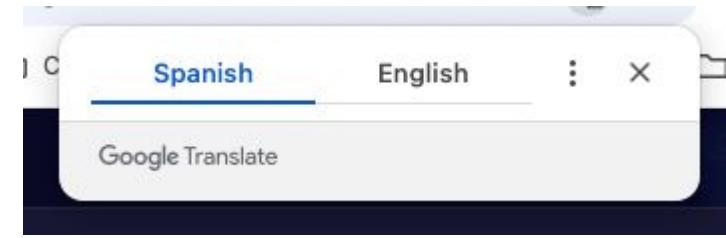
  </body>
</html>
```

# <html> lang attribute

Setting the **primary language** of a document

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="utf-8" />
    <title>Machine Learning Workshop</title>
    <meta name="viewport" content="width=device-width" />
  </head>
  <body>

  </body>
</html>
```



In Wix

Settings > Language & Region

## Language & Region

Choose the language and regional format people see on your site.

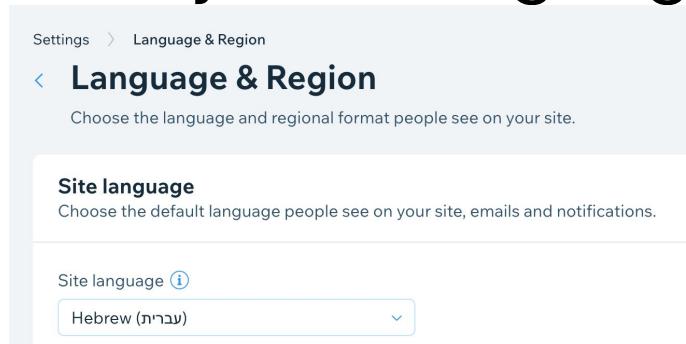
### Site language

Choose the default language people see on your site, emails and notifications.

Site language (i)

Hebrew (עברית)

# What's affected by Site language at Wix



A screenshot of the Wix 'Language & Region' settings page. At the top, it says 'Settings > Language & Region'. Below that is the title 'Language & Region' with a back arrow. A sub-section titled 'Site language' is shown, with the instruction 'Choose the default language people see on your site, emails and notifications.' A dropdown menu labeled 'Site language ⓘ' shows 'Hebrew (עברית)' as the selected option. Two red arrows point from the bottom of the slide towards the code snippets below, indicating that the 'lang' attribute in the HTML is affected by this setting.

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="utf-8" />
    <title>Machine Learning Workshop</title>
    <meta name="viewport" content="width=device-width" />
  </head>
  <body>

  </body>
</html>
```

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="utf-8" />
    <title>Machine Learning Workshop</title>
    <meta name="viewport" content="width=device-width" />
  </head>
  <body>

  </body>
</html>
```

# Why use the language attribute?

Here are a few of the ways that language information is useful at the moment:

1. Styling pages
2. Font selection
3. Search
4. Spelling and grammar checkers
5. [Translation](#)
6. Text to speech or braille
7. Parsers and scripts

Read more about the benefits of [using the language attribute](#)

# Wix Login/Sign up

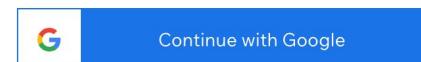
## Log In

Don't have an account? [Sign Up](#)

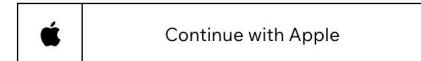
Email

[Forgot Email?](#)

[Continue with Email >](#)



or



[Continue with SSO](#)

[Terms of Use](#) [Privacy Policy](#)

This site is protected by reCAPTCHA Enterprise. [Google's Privacy Policy](#) and [Terms of Service](#) apply.

CHAPTER 02

# Text

# Visible & Invisible text

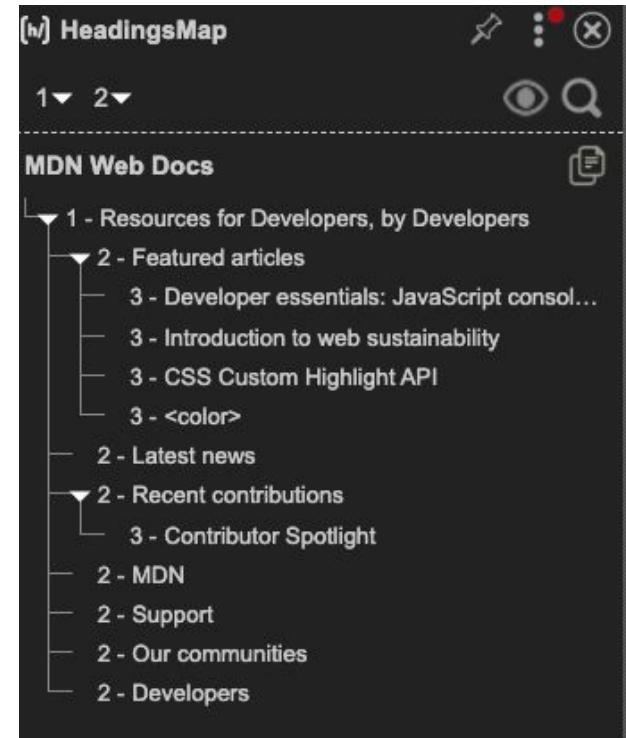
- <h1>Hello</h1>
  - <p>Welcome to my site.</p>
  - <button>Submit</button>
- 
- aria-label="Close"
  - alt="Company logo"
  - <span class="sr-only">New notifications</span>
  - <label for="email">Email address</label>
  - SVG: role="img" aria-label="Fireworks illustration"

# Headings

Six levels of semantic headings

<h1><h2><h3><h4><h5><h6>

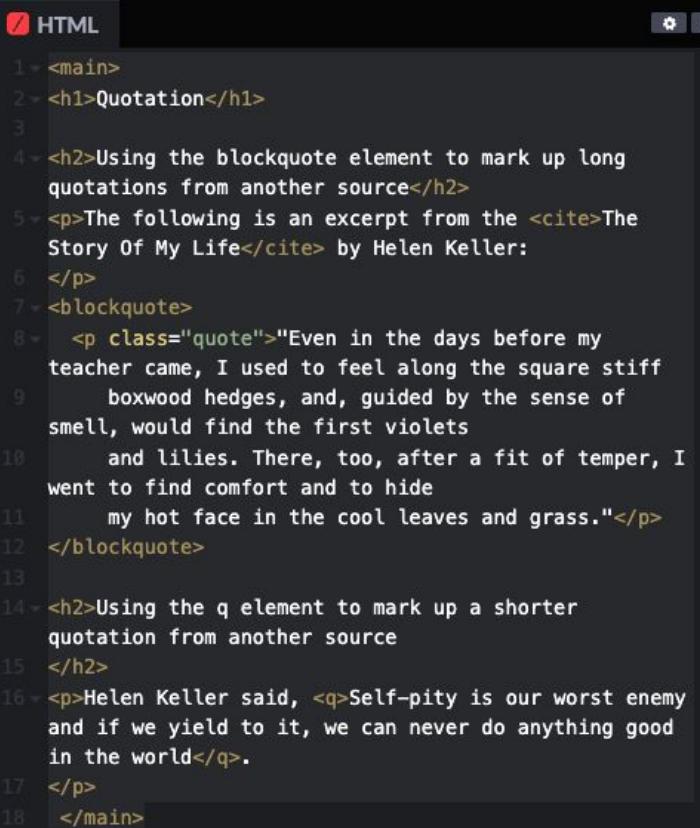
Semantic headings make it easy for screen reader users to **skim the content quickly.**



# Headings in Mobile apps

# Quotations

<blockquote>  
<q>  
cite attribute



The screenshot shows a code editor window with the title bar "HTML". The code is a snippet from a larger document:

```
1 <main>
2   <h1>Quotation</h1>
3
4   <h2>Using the blockquote element to mark up long
      quotations from another source</h2>
5   <p>The following is an excerpt from the <cite>The
      Story Of My Life</cite> by Helen Keller:
6   </p>
7   <blockquote>
8     <p class="quote">"Even in the days before my
        teacher came, I used to feel along the square stiff
        boxwood hedges, and, guided by the sense of
        smell, would find the first violets
        and lilies. There, too, after a fit of temper, I
        went to find comfort and to hide
        my hot face in the cool leaves and grass."</p>
9   </blockquote>
10
11  <h2>Using the q element to mark up a shorter
      quotation from another source
12  </h2>
13  <p>Helen Keller said, <q>Self-pity is our worst enemy
      and if we yield to it, we can never do anything good
      in the world</q>.
14  </p>
15  </main>
```

## Quotation

### Using the **blockquote** element to mark up long quotations from another source

The following is an excerpt from the *The Story Of My Life* by Helen Keller:

"Even in the days before my teacher came, I used to feel along the square stiff boxwood hedges, and, guided by the sense of smell, would find the first violets and lilies. There, too, after a fit of temper, I went to find comfort and to hide my hot face in the cool leaves and grass."

### Using the **q** element to mark up a shorter quotation from another source

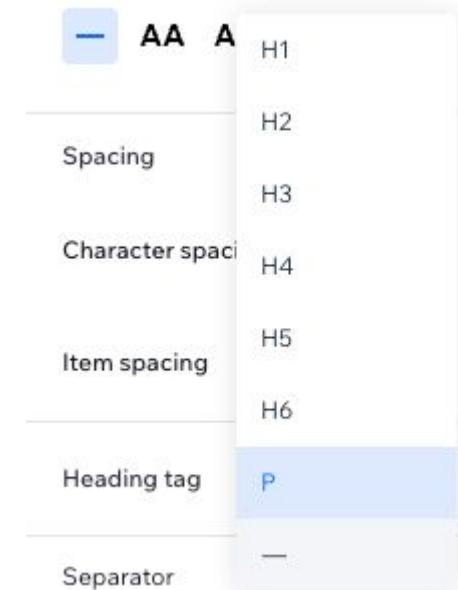
Helen Keller said, "Self-pity is our worst enemy and if we yield to it, we can never do anything good in the world".

[Quotation codepen](#)

# Other

## Text formatting

1. Paragraph
  - o <p>
2. Emphasys
  - o <strong>, <em>
3. Deletion
  - o <del>
4. Abbreviation
  - o <abbr>
5. Code
  - o <code>
6. Line break
  - o <br>
7. Horizontal break
  - o <hr>



# The title attribute

Can help to supplement information

Abbreviation <abbr>

## § 1.1 Accessibility APIs

Application Programming Interfaces

Accessibility APIs make it possible to communicate accessibility information about user interfaces to assistive technologies. This information includes:

1. Descriptive properties (role, name, value, position, etc.)
2. Transient states (pressed, focused, etc.)
3. Events (text changed, button was clicked, checkbox was toggled)

The screenshot shows the Chrome DevTools Accessibility panel. At the top, there's a navigation bar with tabs like Elements, Console, Sources, Network, Performance, Memory, Application, Security, Lighthouse, and Styles. The Accessibility tab is selected. Below the navigation bar, the DOM tree is displayed, showing a section with an **<abbr title="Application Programming Interfaces">APIs</abbr>**. A red box highlights this element. To the right of the DOM tree, the Computed Properties panel is open, showing details for the **Name**, **aria-labelledby**, **aria-label**, **title**, and **Role** properties. The **title** property is explicitly set to "Application Programming Interfaces". Another red box highlights this row in the Computed Properties table.

Computed Properties
Name: "Application Programming Interfaces" aria-labelledby: Not specified aria-label: Not specified title: "Application Programming Interfaces" Role: Abbr

# Language of parts demo

```
1 <h1>The <code>lang</code> attribute</h1>
2
3 <h2>Language definition set to english</h2>
4 <ul lang="en" class="container">
5   <li>1, 2, 3, 4, 5, 6, 7, 8, 9</p>
6   <li>bonjour</p>
7   <li>Wunderbar</p>
8   <li>hello world</p>
9   <li>Me gustas tu</p>
10  <li dir="rtl">ישראלי!

נम</p>
11  <li>繁體中文</p>
12 </ul>
13
14 <h2>Language definition set to hebrew</h2>
15 <ul lang="he" class="container">
16   <li>1, 2, 3, 4, 5, 6, 7, 8, 9</p>
17   <li>bonjour</p>
18   <li>Wunderbar</p>
19   <li>hello world</p>
20   <li>Me gustas tu</p>
21   <li dir="rtl">ישראלי!

נמ</p>
22  <li>繁體中文</p>
23 </ul>
24
25
26
27
28
29
30
31
32
33


```

## The lang attribute

### Language definition set to english

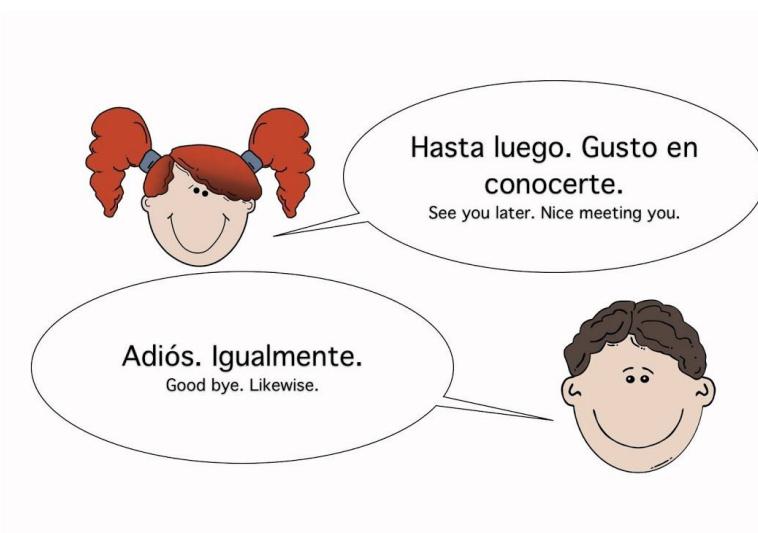
- 1, 2, 3, 4, 5, 6, 7, 8, 9
- bonjour
- Wunderbar
- hello world
- Me gustas tu
- עם ישראלי ח!י
- 繁體中文

### Language definition set to hebrew

- 1, 2, 3, 4, 5, 6, 7, 8, 9
- bonjour
- Wunderbar
- hello world
- Me gustas tu
- עם ישראלי ח!י
- 繁體中文

[Codepen demo](#)

# Setting the language of part of the document



**עבודות תלת מימד**  
**My 3D work**  
Daniel Birger

Two photographs of 3D work. The left photo shows a wooden table with a white sheet of paper featuring a black 3D hole model, a yellow tape measure, and a pencil. The right photo shows a yellow grid-based board with several small 3D cubes arranged on it, forming a pattern.

# Now possible with Velo!

The screenshot shows the Wix Velo editor interface. At the top, there's a toolbar with "Edit Text", "Generate Text with AI", and other icons. Below the toolbar, a text element is selected, displaying the Hebrew text "עבודות תלת מימד" and the English text "My 3D work". The text is enclosed in a blue rectangular border with handles for resizing. In the bottom left corner of the editor, there's a status bar with "עמוד הבית" and an info icon. On the right side of the editor, there's a "Code in Wix" button. Below the editor, a code editor window displays the following Velo script:

```
1 // Velo API Reference: https://www.wix.com/velo/reference/api-overview/introduction
2
3 $w.onReady(function () {
4
5     $w('#text5').accessibility.lang = 'en';
6
7});
```

# Screen readers only content

The content is only “visible” to screen reader users

Class name: **sr-only**, visually-hidden

Add visually hidden text for links - “opens in a new tab” 

[LEARN MORE](#)

```
<div>
  <div>
    <div>
      <div><h4>Learn more</h4><span class="sr-only">about visually hidden text</span></div>
    </div>
  </div>
</div>
```

# Screen readers only content (visually hidden)

Use these technique judiciously!

Keep in mind that **many screen reader users have some vision**, what they see and what they hear should typically be in harmony. In general, screen reader-only content should be reserved **for information is apparent visually but not apparent to blind screen reader users.**

```
.sr-only {  
    border: 0 !important;  
    clip: rect(1px, 1px, 1px, 1px) !important;  
    -webkit-clip-path: inset(50%) !important;  
    clip-path: inset(50%) !important;  
    height: 1px !important;  
    overflow: hidden !important;  
    padding: 0 !important;  
    position: absolute !important;  
    width: 1px !important;  
    white-space: nowrap !important;  
}
```

visually hidden class WebAIM

# Screen reader only content



Fresh Market

Home Shop About Contact  

Home / Shop / Bananas  Prev | Next 

Bananas  
SKU: 0004  
~~9.99 ₪~~ 5.99 ₪

Quantity

Add to Cart Buy Now

Which element on this page has a visual representation (not a textual one)

The original price before the sale is represented with a strikethrough

# Screen reader only content

The screenshot shows a product page for 'Bananas' on a Wix website. The product image is a bunch of ripe yellow bananas. To the right, the product details are listed: 'Bananas' SKU: 0004. Below the product image is a price box showing '9.99' crossed out and '5.99' underneath. A quantity input field shows '1'. At the bottom are two buttons: 'Add to Cart' and 'Buy Now'. A callout arrow points from the bananas image to the bottom of the page, where a box highlights the following code:

```
<span data-hook="formatted-secondary-price" class="_19Hjy"> 9.99 </span>
<span class="sr-only" data-hook="sr-formatted-secondary-price">Regular Price</span> = $0
```

To explain to the user what the crossed out number is, the Stores team added screen reader only content which says “Regular Price”.

CHAPTER 03

# Text alternative

# Non-text content

**All non-text content that is presented to the user has a [text alternative](#) that serves the equivalent purpose.**

- Media - video, audio, images (img, svg)
- Form controls (input elements, icon buttons)
- Using color or other visual cues
- Captcha
- iframe

# Images

# Images and SVGs

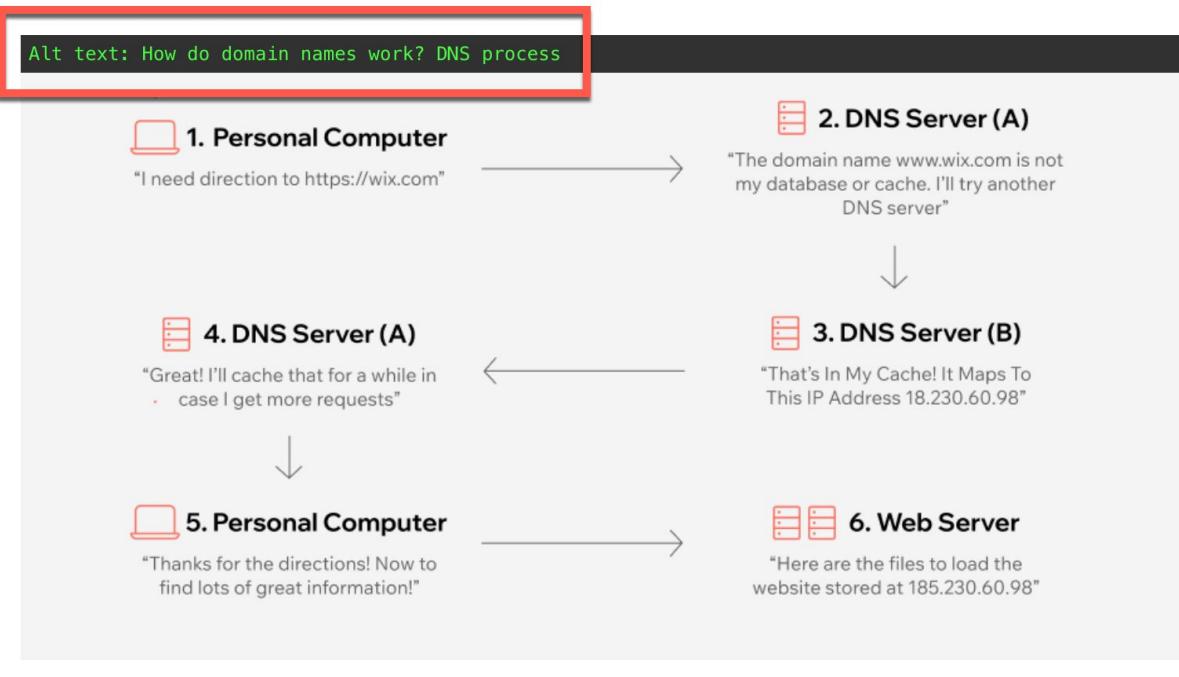
- **Decorative images**, such as background gradients on buttons or background images on sections of content or the full page, are presentational and should be applied with CSS, or hidden in other ways.
- **Meaningful images and icons**, that add context to a document, are considered as important information and should have an alternative text.
- Complex images - graphs, infographics - should have an alternative

# How to decide on a good alternative text?

Think about how you would describe it to your friend over the phone, if at all.

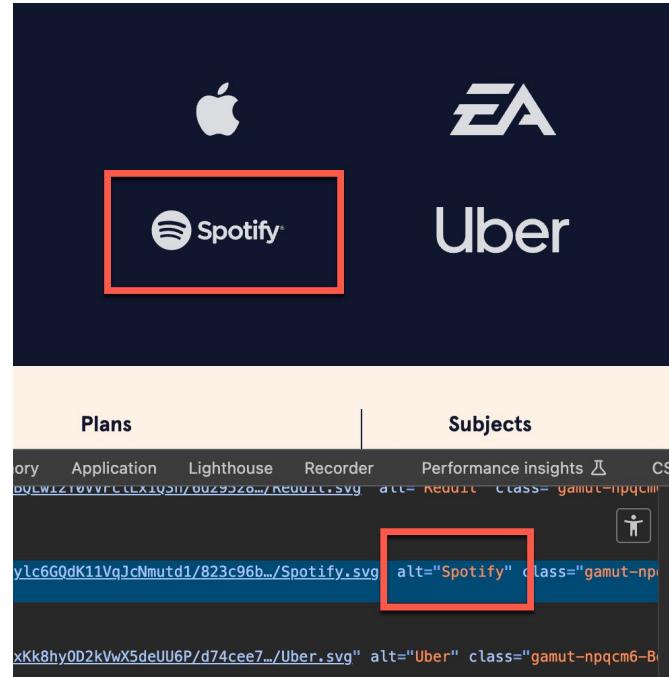


# Images of text



```

        </li>
        ▶ <li class="gamut-1efsrtw-Box ebnwbv90">..</li>
        ▶ <li class="gamut-1efsrtw-Box ebnwbv90">..</li>
    </ul>
</div>
</div>
</main>
</div>
<footer class="gamut-1y7hb43 e1xir4o10" role="contentinfo">
    
```



# Informative image





The Atlantic

Sign In

A Popular Latest Newsletters

Elements Console Sources Network Performance Memory Application Lighthouse Recorder Performance insights CSS overview Adblock Plus >>

ArticleHero\_root\_3w/KV ArticleHero\_articleStandard\_2tcoV data-event-module="hero"

ArticleHero\_defaultArticleLockup\_vB81z> </div>

ArticleLeadArt\_root\_nRSLU>

ArticleLeadFigure\_root\_Bj81R ArticleLeadFigure\_standard\_20Izv>

ArticleLeadFigure\_media\_RinpW data-flatplan-lead\_figure\_media="true"



0123 456 7890

0123 456 7891

Example

Code

```
<p>
   0123 456 7890
</p>
<p>
   0123 456 7891
</p>
```

# Figcaption - a visible description

Every company circles around leadership. And every department is interconnected. This is especially true for design, engineering, research, sales, and marketing. Image by Paul Adams. ([Large preview](#))

```

<figure class="break-out article__image">
  ...
  <a href="https://www.intercom.com/blog/the-end-of-navel-gazing/"> == $0
    <img loading="lazy" decoding="async" fetchpriority="low" width="800" height="420" alt="Circle diagram with leadership in the middle and different functions around it, such as support, research, design, and so on"/>
      ...
      <!-- Not visible text -->
      https://res.cloudinary.com/indysigner/image/fetch/f_auto,q_80/w_400_rtrc...
      https://res.cloudinary.com/indysigner/image/fetch/f_auto,q_80/w_800_rtrc...
      https://res.cloudinary.com/indysigner/image/fetch/f_auto,q_80/w_120_rtrc...
      https://res.cloudinary.com/indysigner/image/fetch/f_auto,q_80/w_160_rtrc...
      https://res.cloudinary.com/indysigner/image/fetch/f_auto,q_80/w_200_rtrc...
      https://res.cloudinary.com/indysigner/image/fetch/f_auto,q_80/w_400_rtrc...
      alt="Circle diagram with leadership in the middle and different functions around it, such as support, research, design, and so on"/>
    </img>
  </a>
  <caption class="op-vertical-bottom">
    ...
    <!-- Not visible text -->
    Every company circles around leadership. And every department is interconnected. This is especially true for design, engineering, research, sales, and marketing. Image by Paul Adams. ("Large preview")
    </caption>
  </figure>

```

**Not visible text**

**Visible text**

The description can be very useful for sighted users

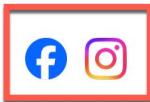
# Decorative image

WIX

```

```

Hidden from the accessibility tree



# Boost your sales with Facebook & Instagram Ads

- ✓ Reach the right audience for your business
  - ✓ Run multiple ad campaigns to see what works best
  - ✓ Gain valuable insights for each campaign with Wix Analytics

```
1_Box---justifyContent-6-middle" style="flex: 1 0%; --wds_1_96_1_Box-gap: 0;">> flex
  ▼<div class="wds_1_96_1_Box__root wds_1_96_1_Box---direction-10--horizontal tjb6jA" style="border: 1px solid red; padding: 10px; margin-bottom: 10px;">
    ▼<div class="wds_1_96_1_Box__root wds_1_96_1_Box---direction-8--vertical" style="margin: auto; border: 1px solid red; padding: 10px;">
      1_Box-gap: 0;">> flex
      ▼<div data-hook="welcome.title-logo" class="wds_1_96_1_Box__root wds_1_96_1_Box---direction-8--vertical" style="margin: auto; border: 1px solid red; padding: 10px;">
        <img width="auto" height="36px" class="wds_1_96_1_Image__root wds_1_96_1_Image---transparent" alt="Facebook logo" style="width: 100%; height: 100%;"/>
        <img width="auto" height="36px" class="wds_1_96_1_Image__root wds_1_96_1_Image---transparent" alt="Parastorage logo" style="width: 100%; height: 100%;"/>
      
```

Don't do this common mistake - "space" is not an empty string:

```
<img src="" alt=" " >
```



```
Elements Console Sources Network Performance Memory Application


::before
  <p>
     == $0
    " Off-duty guide dogs often wear a bell. Its ring helps the blind owner
      track of the dog's location"
  </p>


```

# Decorative image as a background image

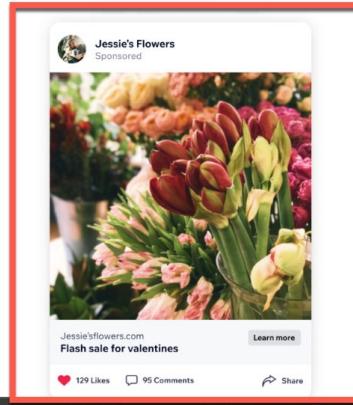


## Boost your sales with Facebook & Instagram Ads

- ✓ Reach the right audience for your business
- ✓ Run multiple ad campaigns to see what works best
- ✓ Gain valuable insights for each campaign with Wix Analytics

[Start Advertising](#)

By clicking "Start Advertising", you agree to the  
[Wix Marketing Tools Terms of Service](#), [Meta Terms of Use](#), and



Sources Network Performance Memory Application Lighthouse Recorder Performance insights CSS overview Adblock Plus axe DevTools >> 43 ▲ 23 ■ 6 ⚙️ X

```
><div class="wds_1_96_1_Box__root wds_1_96_1_Box---direction-10-horizontal" style="margin-left: 1_Box-gap: 0;"></div> flex
<div class="wds_1_96_1_Box__root wds_1_96_1_Box---direction-10-horizontal wds_1_96_1_Box--1_96_1_Box---justifyContent-6-middle" style="flex: 1 1 0%; --wds_1_96_1_Box-gap: 0; ><div class="wds_1_96_1_Box__root wds_1_96_1_Box---direction-10-horizontal tJb6ja" style="flex: 1 1 0%; --wds_1_96_1_Box-gap: 0; ><div data-hook="welcome.right.image" class="wds_1_96_1_Box__root wds_1_96_1_Box---direction-10-horizontal" style="height: 80%; flex: 1 1 0%; --wds_1_96_1_Box-gap: 0; ></div> flex
</div>
</div>
</div>
```

-justifyContent-6-middle div.wds\_1\_96\_1\_Box\_\_root.wds\_1\_96\_1\_Box---direction-10-horizontal.nXZGdp >

Styles Computed Accessibility Event Listeners Landmarks Layout DOM Breakpoints >>

Filter :hov .cls + 🎨 🔍

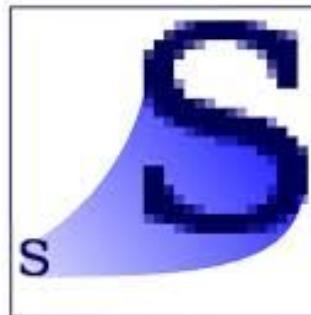
```
.nXZGdp {
    background-image: url(/media/welcome-bg.f5515358.png);
    background-position: center;
    background-repeat: no-repeat;
    background-size: contain;
}

.wds_1_96_1_Box__root {
    display: flex;
    gap: var(--wds_1_96_1_Box-gap);
}
```

637.chunk.min.css:1 pa-facebook\_k.min.css:1

# SVG - scalable vector graphic

SVGs images are **scalable** and therefore **more accessible** to people with low vision that need to zoom-in to see the content.



Raster  
GIF, JPEG, PNG



Vector  
SVG

Small PNG image:	Small SVG image:
A small, square image of a tiger's head, rendered in a low-resolution pixelated style. The image is framed by a purple border.	A small, square image of a tiger's head, rendered in a high-resolution smooth style. The image is framed by a purple border.
Enlarged PNG image:	Enlarged SVG image:
A large, square image of a tiger's head, rendered in a low-resolution pixelated style. The image is framed by a purple border.	A large, square image of a tiger's head, rendered in a high-resolution smooth style. The image is framed by a purple border.

# SVG image in html

1. <img> if meaningful + alt
2. <svg> element
3. Background image in CSS

```
.main-header {  
  background: url(logo.svg) no-repeat top left;  
  background-size: contain;  
}
```

```

```

## HTML

```
<svg viewBox="0 0 20 10" xmlns="http://www.w3.org/2000/svg">  
  <circle cx="5" cy="5" r="4">  
    <title>I'm a circle</title>  
  </circle>  
  
  <rect x="11" y="1" width="8" height="8">  
    <title>I'm a square</title>  
  </rect>  
</svg>
```

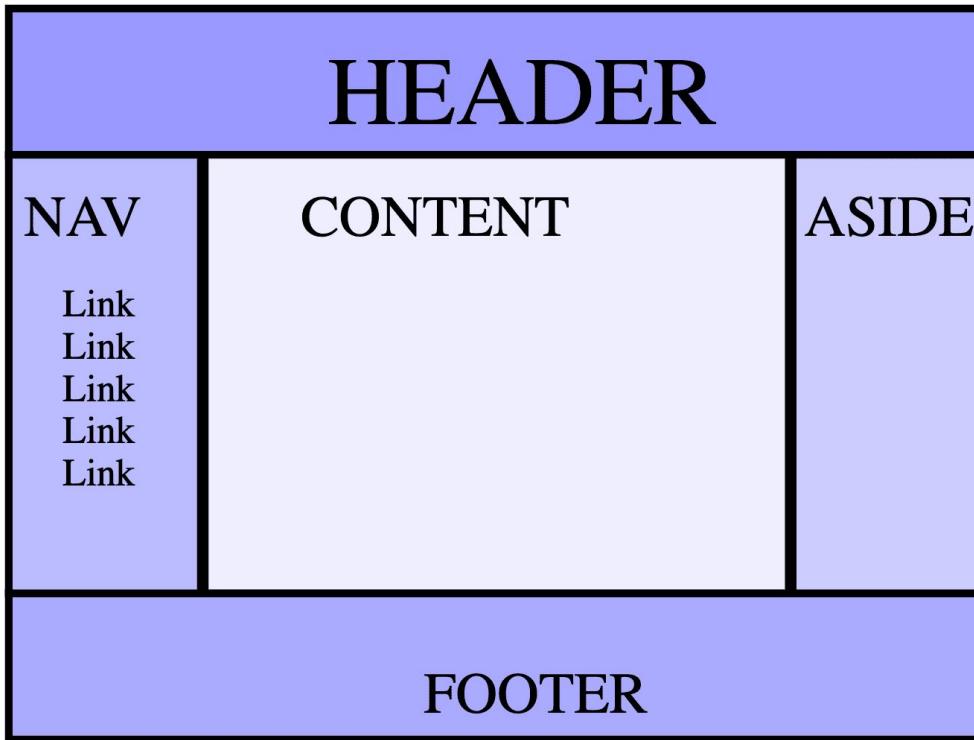
# <svg> element in HTML

1. Can be informative and therefore needs accessible name
2. There is **no “alt” attribute**
3. The **<title> element** provides a short-text description for the SVG, and is not rendered as part of the graphics.
4. Screen readers the accessible name should be set **using ARIA**.

CHAPTER 04

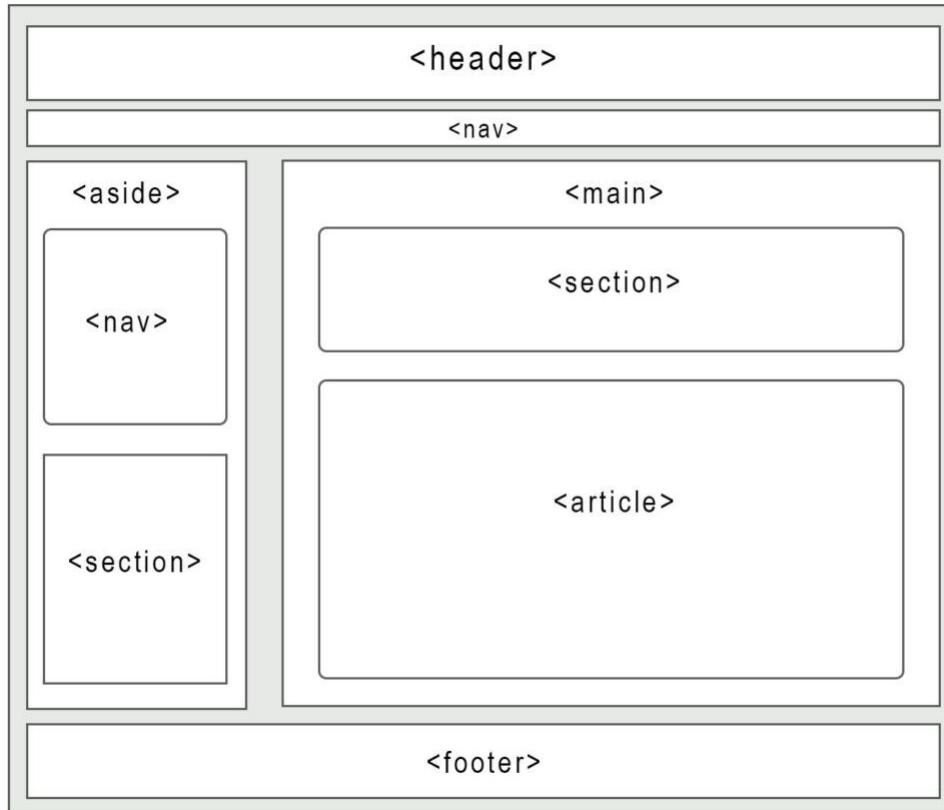
# Document structure

# Document outline



Document outline refers to **non-text elements** which are used to outline the main **page regions**, also known as **landmarks**

# Landmarks semantics



Using HTML landmark roles to improve accessibility

# Landmarks Blog

**WIX** | This website was built on Wix. Create yours today. [Get Started](#)

[top of page \(Region\)](#)

[Banner](#)

Home | Blog | Site (Navigation)

Log In

[Blog \(Navigation\)](#)

[Main](#)

All Posts Content Creation Marketing A11y

## All Posts



**Blog feed (Region)**

 Alon Fridman Waisbard  
Dec 2, 2024 · 1 min read

**Accessibility is fun**

Accessibility is an essential aspect of design and technology that ensures everyone, including people with disabilities, can access and...

26 views 0 comments 2 



 Dec 2, 2024 · 2 min read

<https://alonw4.wixsite.com/blog-new-scoring/blog>

# Landmarks Careers

**Content information**

WIX CAREERS	COMMUNITY	WIX PRODUCTS	COMPANY	SUPPORT
<a href="#">Site (Navigation)</a>	<a href="#">Site (Navigation)</a>	<a href="#">Site (Navigation)</a>	<a href="#">Site (Navigation)</a>	<a href="#">Site (Navigation)</a>
Locations Early Talent Life at Wix The Wix Way How We Hire About	Wix Playground Wix UX	Wix SEO Wix Logo Maker Wix Blog Wix eCommerce Wix Bookings Wix Restaurants Wix App Market Domains Business Email Web Hosting Enterprise Website Design Professional Tools Web Accessibility	Press Room Investor Relations Wix Capital Terms of Use Privacy Policy Privacy Accessibility Statement	Wix Learn

# Landmarks best practice

- Use sparingly for important regions on the page
- For more granular navigation use headings.

Landmarks Chrome Extension

# Landmarks semantics

<header> - one per page

Usually includes the logo and main navigation

<nav>

Identifies content as navigation

<main> - one per page

Identifies the main content of the document

<footer> - one per page

Contains the site information you want on every page

<article>

Represents self-contained section of content

<aside>

Represents content that is not related to the page content

<section>

**Isn't a landmark unless it has an accessible name**

should be used sparingly

<form>

**Isn't a landmark unless it has an accessible name**

<search> new

# Wrongly nesting HTML elements

WRONG!

```
<main>  
  ...  
<main>  
  ...  
</main>  
</main>
```

# <search> landmark

```
<search>
  <label for=s>Site</label>
  <input type=search id=s>
  <button>Go!</button>
</search>
```

```
<search>
  <form action="search.php">
    <label for="query">Find an article</label>
    <input id="query" name="q" type="search">
    <button type="submit">Go!</button>
  </form>
</search>
```

# Form structure

Structural elements:

1. <form>
2. <fieldset><legend>
  - <fieldset> element is a way to create groups of form controls that share the same purpose.

## Your details

First name

Last name

Email

Phone

## Emergency contact details

First Name

Last Name

Email

Phone

Submit

# <form>

1. The HTML <form> element identifies a document landmark containing interactive controls for submitting information.
2. It's strictly **forbidden to nest a form inside another form**
3. Nested in a <form> you'll find all the interactive (and non-interactive) form controls that make up that form.
4. A form can be exposed as a landmark if it has a name (with ARIA)

# HTML nesting

<legend> serves as a group label and MUST be a direct child of the <fieldset> element.

```
<fieldset>
  <div>
    <legend>Legend</legend>
  </div>

  <input type="radio" id="l" name="shirt1">
  <label for="l">Large</label>

  <input type="radio" id="m" name="shirt1">
  <label for="m">Medium</label>

</fieldset>
```



# Lists

```
1 <main>
2
3 <h1>Lists</h1>
4
5 <h2>Ordered list – The 10 commandments</h2>
6 <ol>
7 <li>You shall have no other gods before Me.</li>
8 <li>You shall not make idols.</li>
9 <li>You shall not take the name of the LORD your God in vain.</li>
10 <li>Remember the Sabbath day, to keep it holy.</li>
11 <li>Honor your father and your mother.</li>
12 <li>You shall not murder.</li>
13 <li>You shall not commit adultery.</li>
14 <li>You shall not steal.</li>
15 <li>You shall not bear false witness against your neighbor.</li>
16 <li>You shall not covet.</li>
17 </ol>
18
19 <h2>Unordered list – grocery</h2>
20 <ul>
21 <li>Tomatos</li>
22 <li>Potatoes</li>
23 <li>Milk</li>
24 <li>Cornflakes</li>
25 <li>Apples</li>
26 </ul>
27
28 <h2>Description list</h2>
29 <dl>
30 <dt>HTML</dt>
31 <dd>Hyper Text Markup language</dd>
32 <dt>CSS</dt>
33 <dd>Cascading Style Sheets</dd>
34 </dl>
35 </main>
```

## Lists

### Ordered list - The 10 commandments

1. You shall have no other gods before Me.
2. You shall not make idols.
3. You shall not take the name of the LORD your God in vain.
4. Remember the Sabbath day, to keep it holy.
5. Honor your father and your mother.
6. You shall not murder.
7. You shall not commit adultery.
8. You shall not steal.
9. You shall not bear false witness against your neighbor.
10. You shall not covet.

### Unordered list - grocery

- Tomatos
- Potatoes
- Milk
- Cornflakes
- Apples

### Description list

HTML      Hyper Text Markup language  
CSS      Cascading Style Sheets

Lists codepen

# Lists

- <ul> - unordered list
- <ol> - ordered list
- <dl> - definition list
- <li> - list item

Note:

The list item must be a **direct child** of the list

```
<ul>
  <li>List item 1</li>
  <div>Div item</div>
  <li>List item 2</li>
  <span>Div item</span>
  <div>Div item</div>
</ul>
```

# More lists on the web

## Navigation - a list of links

The screenshot shows the top navigation bar of the Wix website. On the left is the Wix logo with a red 'List with 7 items' badge. To the right are several dropdown menus: 'Creation' (with a red box around it), 'Business', 'Resources', 'Pricing', and 'Support'. A vertical line separates these from the right side, which contains 'Wix Studio' and 'Enterprise'.

### Nested lists

The screenshot shows a section titled 'HTML — Structuring the web'. It contains a list of items:

- ▶ Introduction to HTML
- ▶ Multimedia and embedding
- ▼ HTML tables
  - HTML tables List with 4 items
  - HTML table basics
  - HTML table advanced features and accessibility
  - Structuring planet data

### Items/cards/repeater

The screenshot shows a collection of website preview cards, likely generated by a repeater or card component. Each card displays a thumbnail, the title, the URL, and a 'More' button. A red box highlights the first card, which is for a site named 'Sign Market'.

Card Preview	Title	URL	Status
	Sign Market	<a href="https://elli-patrick...">https://elli-patrick...</a>	Made with WIX STUDIO
	Signmarket	<a href="https://elli-patrick...">https://elli-patrick...</a>	Premium
	Heading 1		
	Signmarket	<a href="https://elli-patrick...">https://elli-patrick...</a>	Premium
	Flori-new	<a href="https://www.floristr...">https://www.floristr...</a>	Premium
	REJOY	<a href="https://ronast.wixsit...">https://ronast.wixsit...</a>	
	daniel-bday		Not published
	kira		Not published
	Signmarket	<a href="https://elli-patrick...">https://elli-patrick...</a>	Premium

List with 9 items

# Table

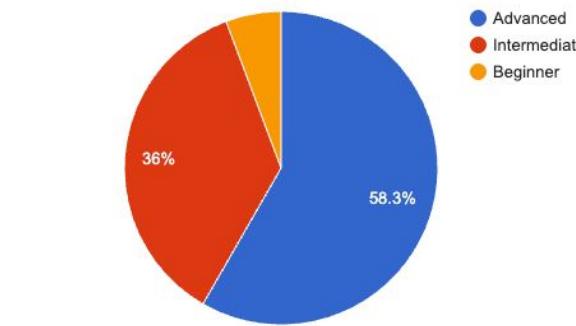
HTML <table> element is used for display 2 dimensional data with rows and columns

Visually looks like a table, but  
semantically not implemented as one.

## Wix Studio plan

When implemented correctly, HTML  
tables are handled well by accessibility  
tools such as screen readers.

## Screen Reader User Survey by WebAIM



Please rate your screen reader proficiency.

Response	# of respondents	% of respondents
Advanced	888	58.3%
Intermediate	548	36.0%
Beginner	87	5.7%

# Table

<caption> - name your table

<tr> - table row

<th> - table header cells

adding table headers makes tables more accessible by associating each header with all the data in the same row or column.

<td> - regular table cell

```
<table>
  <caption>
    Dinosaurs in the Jurassic period
  </caption>
  ...
</table>
```

CHAPTER 05

# Layout and order

# Content order change in CSS

The screenshot shows a browser developer tools interface, specifically the Wix ARC Toolkit, overlaid on a blog post page from <https://alonw4.wixsite.com/blog-new-scoring/post/accessibility-is-fun>.

The blog post header includes the author's profile picture, name (Alon Fridman Waisbard), date (Dec 2, 2024), and a 1-minute read indicator.

## Accessibility is fun

Updated: Dec 24, 2024

The developer tools interface features a top navigation bar with tabs: ARC Toolkit, Sources, Network, Performance, Memory, Application, and Recorder. The ARC Toolkit tab is selected.

The left panel displays the DOM tree:

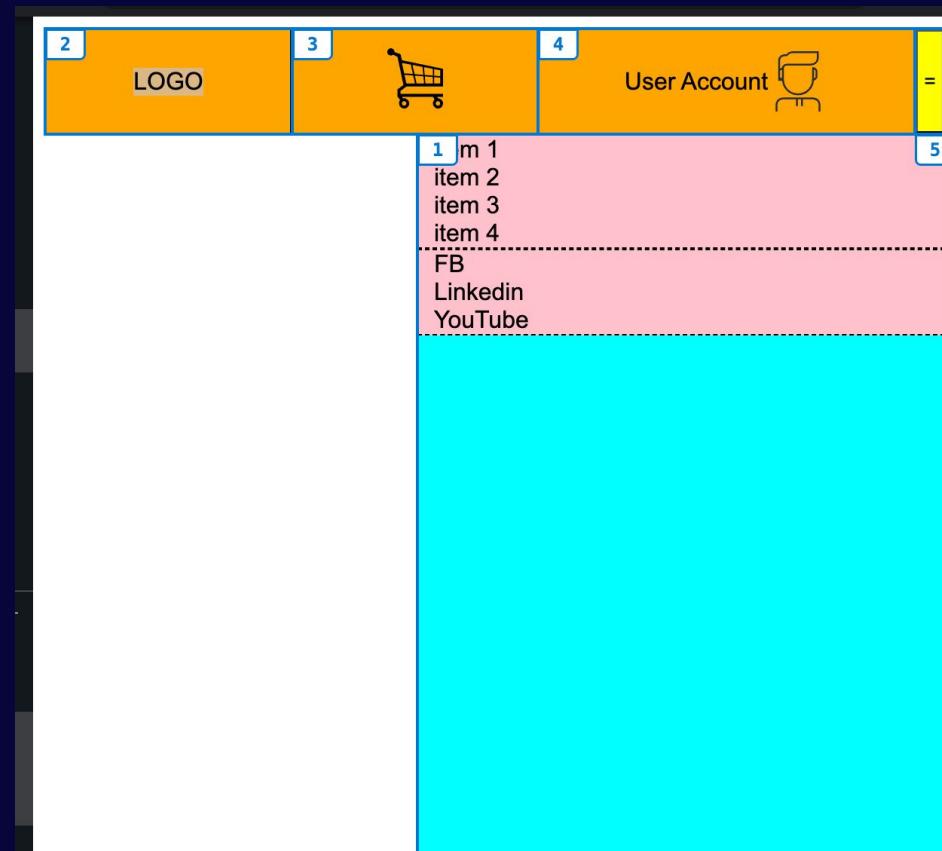
```
<div class="EcwjNF">
  <article class="tgMH9T" data-hook="post"> flex
    <header class="PhCafd"> flex
      <div class="PKQ95p"> flex
        <div class="MbPQSQ" style="flex: 1;"> == $0
          <div class="apmiGT" data-hook="post-title">...</div>
          <div class="a5JqMF">...</div> flex
        </div>
        <p class="NfKpG_">...</p>
      </div>
    </header>
  </article>
</div>
```

The right panel shows the Styles tab of the developer tools, listing the CSS rules applied to the page, including:

```
.MbPQSQ {
  display: flex; flex-direction: column-reverse; gap: var(--section-spacer-1);}
```

# Can CSS affect the reading order?

Changing visual order with CSS may create a mismatch between what sighted users see and what screen reader or keyboard users experience which is an accessibility issue.



# Fixed units

loyalty

View po...

## Recorder

Styles    Computed    Accessibility    Event Listener

Filter

```
element.style {
```

```
#comp-m5b1fcir {
```

```
    width: 160px;
```

```
    height: 42px;
```

```
}
```

```
*
```

```
line-height: 1.5 !important;  
letter-spacing: 0.12em !important;  
word-spacing: 0.16em !important;
```

```
}
```

<https://elli-patrick.wixsite.com/loyalty-scoring/loyalty>

# Responsive layout

Use relative units  
for font sizes (rem)

The screenshot shows a browser's developer tools with the element inspector open. A red arrow points from the text "Use relative units for font sizes (rem)" to the "body" element in the DOM tree. Another red box highlights the "font-size: 10px;" declaration in the CSS styles panel.

```
<html lang="en">
  <script src="https://browser.sentry-cdn.com/7.120.2/bundle.tracing.es5.min.js" crossorigin="anonymous"></script>
  <script>...</script>
  <script src="chrome-extension://nodbgninamgckmjddalkppejihhkiae/handlers.js"></script>
  <head>...</head>
  <body class="..."><!--pageHtmlEmbeds.bodyStart start-->
    <script type="text/javascript">...</script>
    <!--pageHtmlEmbeds.bodyStart start-->
    <script type="wix/htmlEmbeds" id="pageHtmlEmbeds.bodyStart start"></script>
    <script type="wix/htmlEmbeds" id="pageHtmlEmbeds.bodyStart end"></script>
```

html body

Styles Computed Accessibility Event Listeners Landmarks Layout DOM Breakpoints Properties

Filter :hover .cls + ↻

```
element.style { }
body {
  overflow-x: auto;
  overflow-y: scroll;
}
body, html {
  height: 100%;
}
body {
  --scrollbar-width: 0px;
  font-family: Arial, Helvetica, sans-serif;
  font-size: 10px; }
```

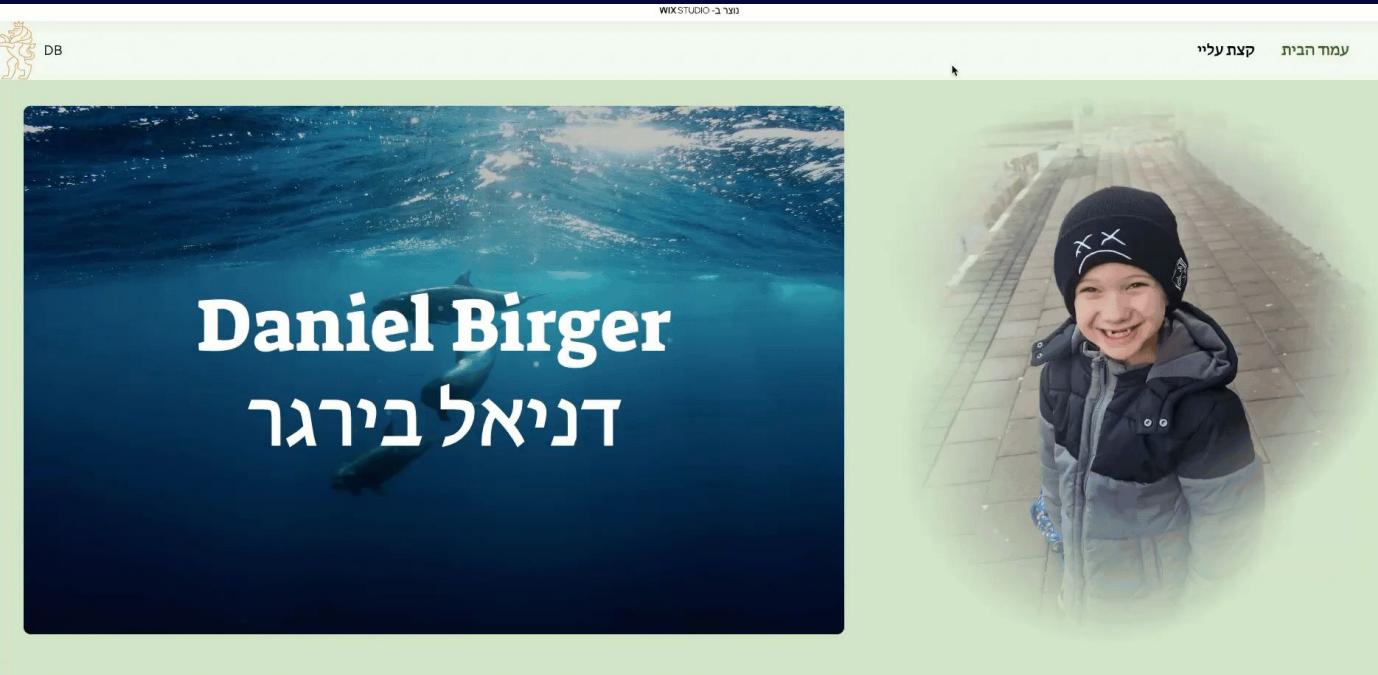
blank-1:93

blank-1:93

blank-1:93

# Zoom in the browser (cmd +)

Viewport units don't always respect user settings, such as zoom levels or custom font sizes



# Hiding content from all users

## CSS

1. display: none
2. visibility: hidden

## HTML

1. Hidden attribute in HTML
2. [new] inert attribute - [Inert Attribute \(MDN\)](#)

## JS

Remove the element entirely from the DOM

# Hiding content visually

**The content is still available keyboard and screen reader**

CSS properties that don't hide the content from all users:

1. height: 0
2. opacity: 0
3. clip property
4. Positioning outside of viewport

# CSS affects accessibility

**People can use content on site in different screens, text preferences and colors**

1. Hiding content (display, visibility)
2. Layouting with CSS
  - o Make sure the DOM order is correct
3. Responsivity
  - o Support zoom, orientation, text spacing
  - o Avoid using fixed units
  - o Beware of setting fixed height
4. Use background-image for decorative images
5. User preference media queries
  - o prefers-reduce-motion
  - o prefers-colors-scheme
6. :hover - make sure it works with keyboard and mobile
  - o Pair with :focus or :focus-within



## The “inert” global attribute

1. Prevents the click event from being fired when the user clicks on the element.
2. Prevents the focus event from being raised by preventing the element from gaining focus.
3. Hides the element and its content from assistive technologies by excluding them from the accessibility tree.

CHAPTER 06

# Interactive elements

Answer in our #slack channel

# How do mouse interactions differ from keyboard interactions?

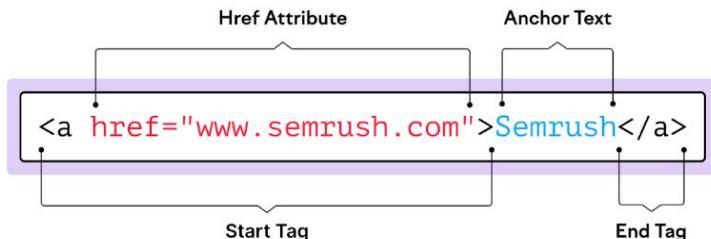
	Mouse (one click away)	Keyboard (can be many tabs away)
<b>Navigation</b>	<ol style="list-style-type: none"><li>1. The cursor can reach anywhere</li><li>2. There is no specific order</li><li>3. The cursor is always visible</li></ol>	<ol style="list-style-type: none"><li>1. Can focus only on specific elements</li><li>2. There is an order</li><li>3. The focus needs to be visible</li></ol>
<b>Operation</b>	Click or Hover any element on the screen (including text, images and containers)	If the implementation is correct - there are many interaction modes and many keys combinations
<b>Focus management</b>	Not required (visual scroll)	Sometimes required
<b>Implementation</b>	Easy	Complex for custom elements
<b>Hiding/showing</b>	Anything works	Need to use specific styles in CSS
<b>Speed</b>	Quick	Quicker when keyboard shortcuts are available
<b>Semantics</b>	Not required	Implies operability

# HTML and links

Links are a fundamental aspect of the Web

**"Hypertext" refers to links that connect web pages to one another**, either within a single website or between websites.

By uploading content to the Internet and linking it to pages created by other people, **you become an active participant in the World Wide Web.**





WIX

# Links

**Links are the backbone of the internet and what makes the Web a web**  
The first web page contained 25 links.

## World Wide Web

The WorldWideWeb (W3) is a wide-area [hypermedia](#) information retrieval initiative aiming to give universal access to a large universe of documents.

Everything there is online about W3 is linked directly or indirectly to this document, including an [executive summary](#) of the project, [Mailing lists](#) , [Policy](#) , November's [W3 news](#) , [Frequently Asked Questions](#) .

### What's out there?

Pointers to the world's online information, [subjects](#) , [W3 servers](#), etc.

### Help

on the browser you are using

### Software Products

A list of W3 project components and their current state. (e.g. [Line Mode](#) ,[X11 Viola](#) ,[NeXTStep](#) ,[Servers](#) ,[Tools](#) ,[Mail robot](#) ,[Library](#) )

### Technical

Details of protocols, formats, program internals etc

### Bibliography

Paper documentation on W3 and references.

### People

A list of some people involved in the project.

### History

A summary of the history of the project.

### How can I help ?

If you would like to support the web..

### Getting code

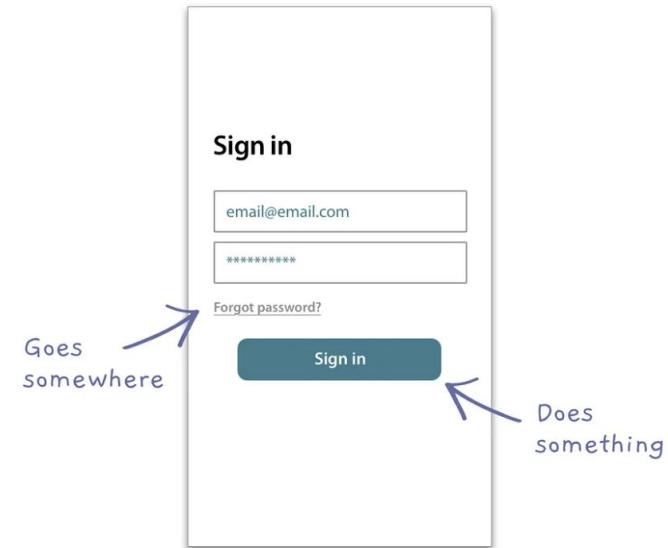
Getting the code by [anonymous FTP](#) , etc.

# Links

```
<a href="https://machinelearningworkshop.com">Machine Learning Workshop</a>
<a href="#teachers">Our teachers</a>
<a href="https://machinelearningworkshop.com#teachers">MLW teachers</a>
<a href="mailto:hal9000@machinelearningworkshop.com">Email Hal</a>
<a href="tel:8005551212">Call Hal</a>
```

# Button vs. Link

1. **Links go somewhere while buttons do something.**
2. They have **different roles**
  - Assistive technologies announce them differently.
3. They have **different user expectations**
  - In terms of the design and operability.
4. They have **different states** and allowed properties
  - A link cannot be natively disabled.
5. When adding a click event to a native button or link, it is translated by the browser to the appropriate keyboard events. **No additional Javascript is required.**



# Links

- The <a> anchor tag, along with the “href” attribute, create a **hyperlink**.
- Providing the address of the hyperlink is what turns the <a> into a link with an **implicit role of link**, which can receive keyboard focus and be operated using the “Enter” key.
- Links are used for navigation and **take the user to a new location, changing the URL:**
  - Other pages within a site or other sites
  - A new location within the current page
  - Download files (use the “download” attribute)
  - Send an email or call someone
- Links can be opened in a new tab using the **“target” attribute**.
- **Link states:** link, visited, hover, focus, active
- The **link label** should clearly identify the **link target**

# Button

```
<button>  
  Do Something  
</button>
```

- A button is activated by a user with a mouse, keyboard, finger, voice command, or other assistive technology. Once activated, it **performs an action** and **the label of the button should make this action clear**.
- A button is an interactive element with an **implicit role of button**
- A button receives keyboard focus and is operated using both the “Enter” and the “Spacebar” key.
- A button is a form element (“submit” button), and requires Javascript to do anything outside of a form.
- Button states: enabled, disabled, active, hover, focus

# Buttons

The screenshot shows the Wix website interface. At the top, there's a navigation bar with the Wix logo, a search icon, and a red-bordered 'Log In' button. To its right is a blue 'Get Started' button. Below the search icon is a red-bordered 'Resources' dropdown menu. The main content area features a large heading 'FAQs' above a list of three questions, each preceded by a red-bordered '+' sign. The first question is 'Is it easy to build a website?'. A mouse cursor is hovering over the second question, 'What types of websites can you build on Wix?'. A third question, 'How do I create a website?', is also visible. To the right of the main content, a 'Sign in to Wix with Google' modal is open, showing a profile picture of 'Elizabeth Patrick (e11i)' and the email 'elizabethp@wix.com'. A red-bordered 'Continue as Elizabeth' button is at the bottom of the modal.

WIX

Creation ▾ Business ▾ Resources ▾

Pricing Support | Wix Studio Enterprise

FAQs

Is it easy to build a website?

What types of websites can you build on Wix?

How do I create a website?

Log In

Get Started

Sign in to Wix with Google

Elizabeth Patrick (e11i)  
elizabethp@wix.com

Continue as Elizabeth

# Links

The screenshot shows the Wix homepage with several links highlighted by red boxes:

- The "WIX" logo in the top left corner.
- The "Log In" button in the top right corner.
- The "Get Started" button in the top right corner.
- The "Skip to Main Content" button in the main content area.
- The "Sell online" link under the "eCommerce" heading.
- The "Create Your eCommerce Site →" and "Learn How →" buttons under the "eCommerce" heading.
- The "Create Your Own Blog →" and "Learn How →" buttons in the sidebar.
- The "Wix logo, homepage" link in the developer tools' element inspector.

The developer tools' element inspector at the bottom shows the following tree structure:

```
button "Skip to Main Content" focusable: true focused: true
  ↓ ignored
  ↓ ignored
  ↓ generic
    ↓ generic
      ↓ ignored
        ↓ link "Wix logo, homepage" focusable: true
      ↓ navigation
        ↓ generic
          ↓ generic
```

A red arrow points from the "Wix logo, homepage" link in the element inspector towards the "Wix logo" in the top left corner of the page.

# Link vs. button

```
<style>
  button {
    all: unset;
  }
</style>

<button
  type="button"
  onClick={...} >
  Click me
</button>
```

But there's **one** more  
nuance to know

Should you use a button  
tag or an anchor tag for  
clickable elements?

# Form controls



# <label>

1. The <label> element is the formal way to define a label for an HTML form control.
2. A screen reader will read out the label when the user is focused on the form input if it is **programmatically connected**.
  - o There are two ways to connect the label with the control:

## Nesting

```
<label>Your name
  <input type="text" name="name">
</label>
```

## “for” attr.

```
<label for="full_name">Your name</label>
<input type="text" id="full_name" name="name">
```

# Did you know? Labels are clickable, too!

1. An advantage of properly setting up labels is that you can click or tap the label to activate the corresponding control.
2. This **increases the hit size** for mouse users and improves usability.

**Form - E2E case study**

Final design

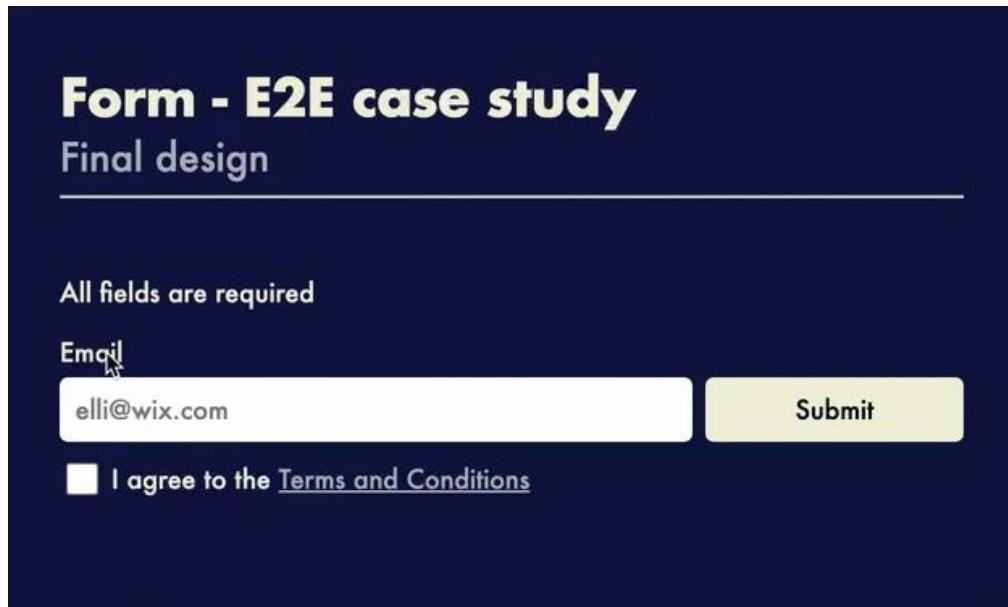
---

All fields are required

Email

Submit

I agree to the [Terms and Conditions](#)



# Basic native form controls

<input>

<textarea> - for long text

<select>

<button>

Submit buttons

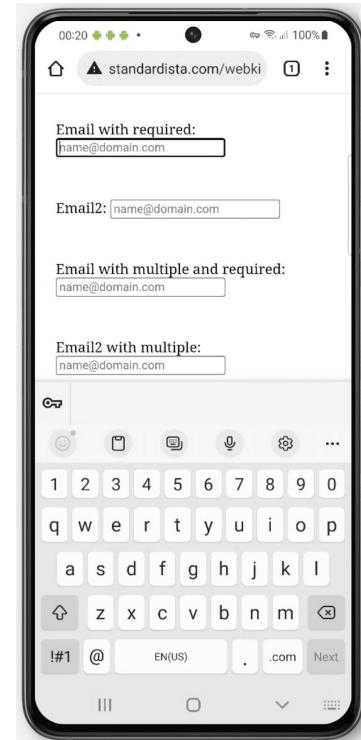
```
<input type="submit" value="Submit Form">
<button type="submit">Submit Form</button>
```

# Form input

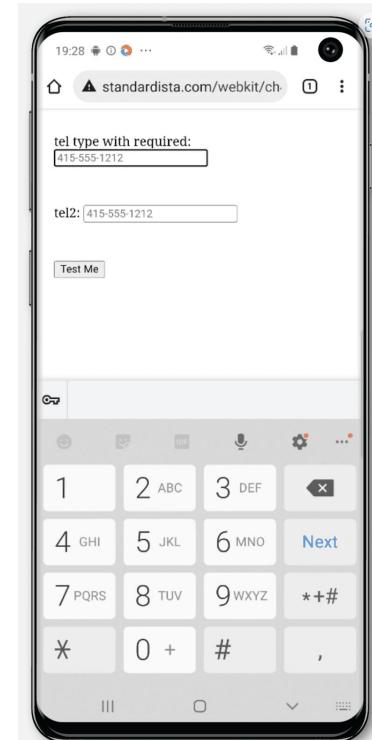
## There are 22 input types

1. Text input: <input type="text">
2. Password input: <input type="password">
3. Radio: <input type="radio">
4. Checkbox: <input type="checkbox">
5. Range input: <input type="range">
6. Search input: <input type="search">
7. Phone input: <input type="tel">
8. URL input: <input type="url">
9. File input: <input type="file">
10. Hidden input: <input type="hidden">
11. Date input: <input type="date">
12. Color input: <input type="color">
13. Image input: <input type="image">
14. Time input: <input type="time">

<input type="email">



<input type="tel">

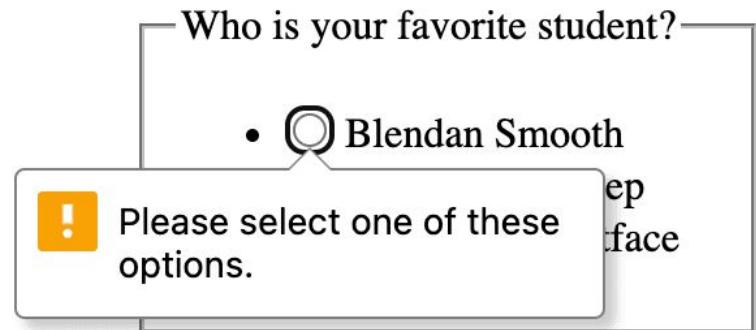


<input> types (MDN)

# Forms HTML validation and submission

Client-side validation is possible without JavaScript

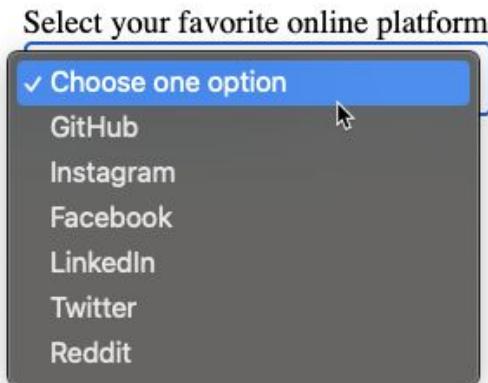
- “required” attribute
  - Enables requiring the user to select form controls or enter a value.
- “pattern” attribute
  - Defines a specific criteria that the value must match to be valid.
- “autocomplete” attribute
  - Should be used to enable faster form completion and improve accessibility.



WCAG Reference: [Identify Input Purpose \(1.3.5 Level AA\)](#)

# Form controls - single selection

Select dropdown: <select>



Radio group: <input type="radio">

A screenshot of a radio group form. The question "Who is your favorite person in a11y team?" is displayed in a black-bordered box. Below it is a list of four names, each preceded by an empty radio button: Nir, Neil, Alon, and Elli.

|                       |      |
|-----------------------|------|
| <input type="radio"/> | Nir  |
| <input type="radio"/> | Neil |
| <input type="radio"/> | Alon |
| <input type="radio"/> | Elli |

<select>: The HTML Select element

# Form controls - multi selection

Checkbox: <input type="checkbox">

## Your goal as a champion

- Make the web better
- Be a better professional
- Meet like minded people
- Become an a11y ally

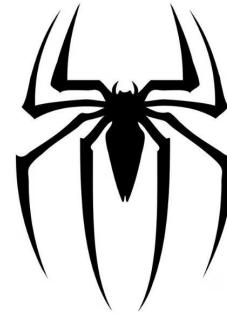
**Submit my choices**

Multiple selection

CHAPTER 07

# WAI-ARIA

Now that you  
learned HTML  
**you are qualified**  
to learn ARIA



"WITH GREAT POWER  
COMES GREAT  
RESPONSIBILITY."

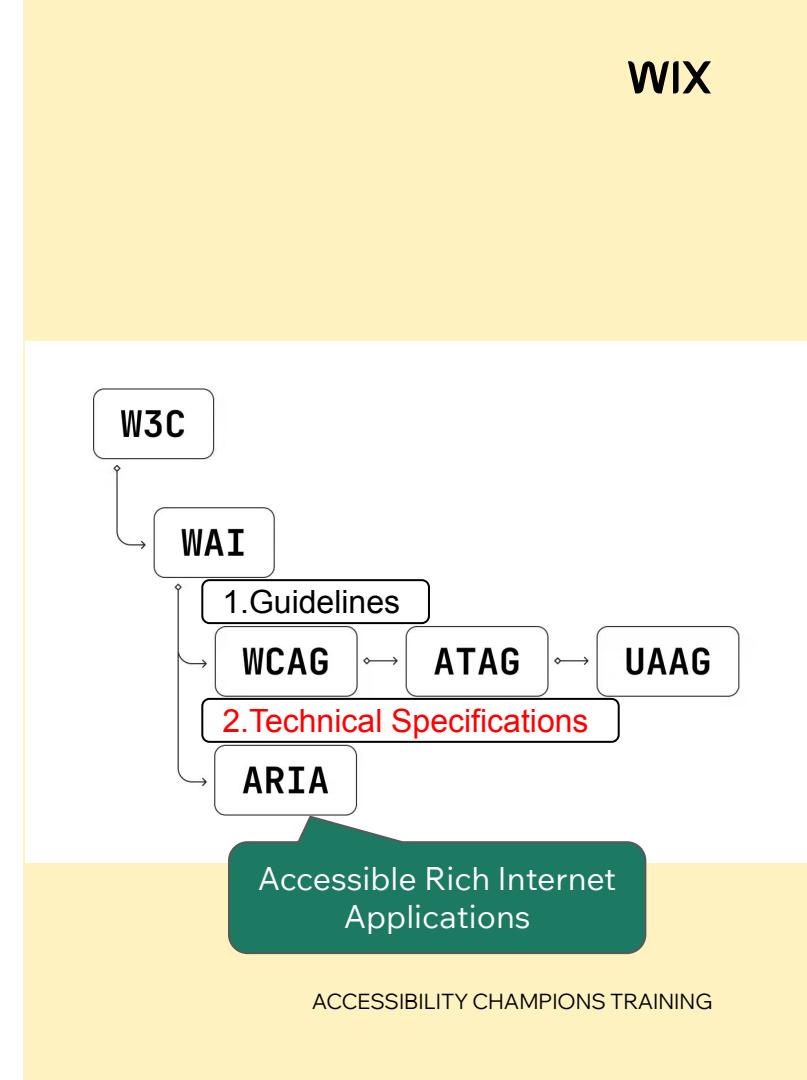
Ben Parker

# ARIA

ARIA is a Web Standard that defines a set of attributes that **enhance** accessibility.

👉 ARIA is not only `aria-*` attributes but also `role` attributes.

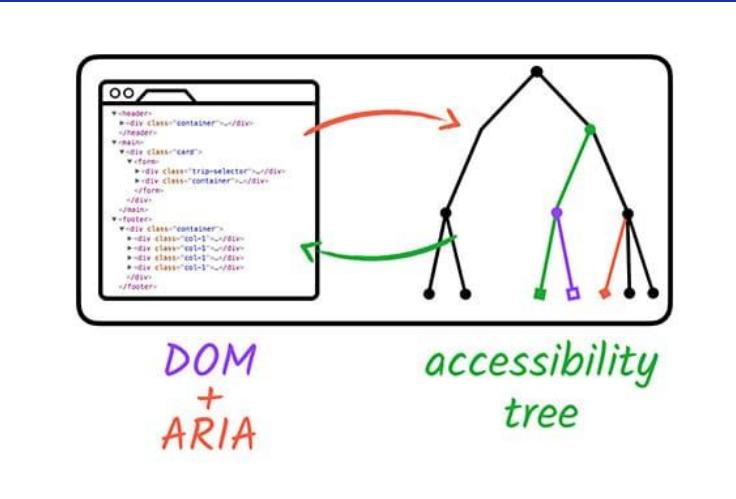
## Using ARIA: Roles, states, and properties



# Relevant Assistive Tech

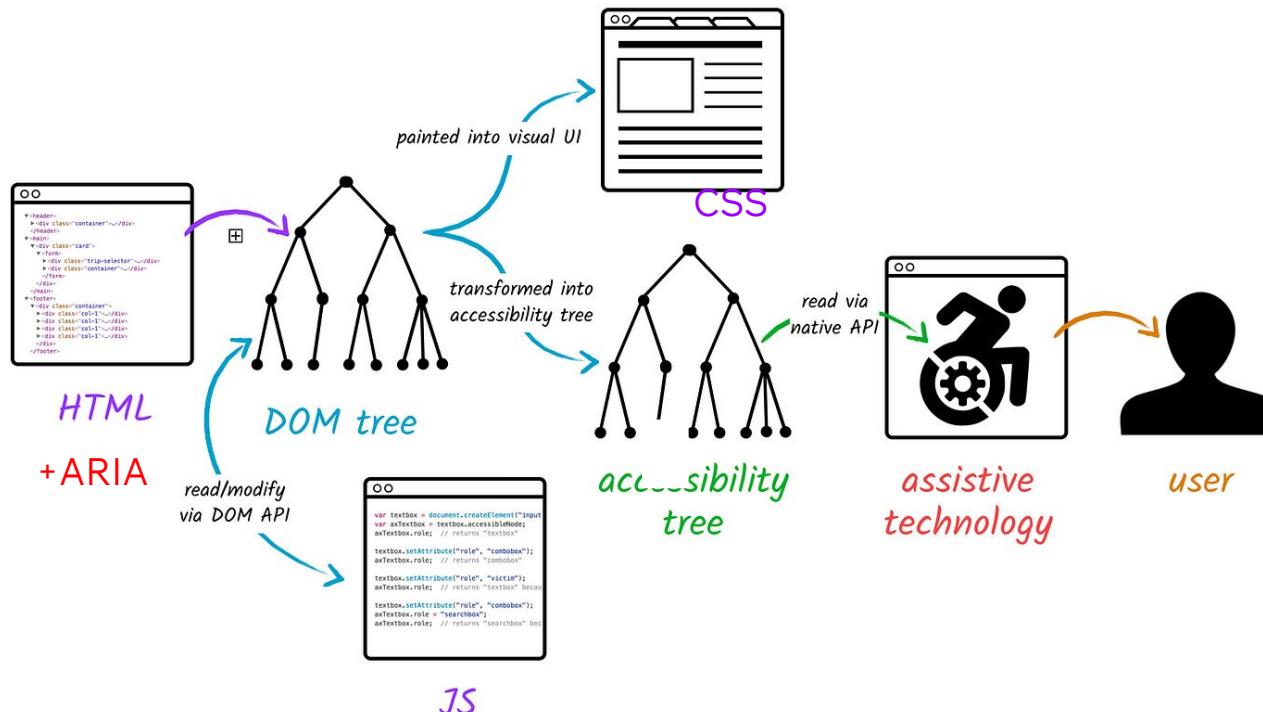
**ATs\*** that interact with the accessibility tree,  
which is constructed only from meaningful  
elements and text

1. Screen reader
2. Braille displays
3. Voice control



\*AT = Assistive Technology

# The full accessibility tree



Full accessibility tree in Chrome DevTools

# What is affected by ARIA?

## ARIA affects:

1. Semantics (role, name, state)
2. Accessibility tree

## ARIA does NOT affect:

1. Functionality
2. Design
3. SEO

# To use or not to use?



# The 5 rules of ARIA

1. Rule #1
  - Don't use ARIA
2. Rule #2
  - Do not change native semantics
3. Rule #3
  - All interactive ARIA controls must be usable with the keyboard.
4. Rule #4
  - Interactive controls must have proper semantics and cannot be hidden.
5. Rule #5
  - All interactive elements must have an accessible name.



Using ARIA

# Rule #1



\*If you don't have to

← Tweet Open app

Peter van Grieken - Frijns  
@petervangrieken ...

If you don't know HTML, you shouldn't use ARIA.

1:18 PM · Aug 10, 2022 · Twitter Web App

26 Retweets 6 Quote Tweets 108 Likes

Comment Reply Like Share

# But why?

Home pages with ARIA had over  
**twice as many errors** (~57%) than  
pages without ARIA (~27%)



ARIA - Read Me First

ARIA, the good parts

If HTML and ARIA don't allow it, it's probably a bad idea

WIX

## Markup from hell

The screenshot shows the Wix Studio interface with the 'Client Experience' section selected in the sidebar. A red callout box with the text 'What is this? A link? A button? Both? None of them?' points to the 'Client Experience' item. The browser's developer tools are open, displaying the accessibility tree for the selected element. The tree shows the following structure:

```
>li class="wds_1_104_2_SidebarItemNext_listItem" aria-level="1" data-hook="giza-sidebar-item-link-311b4868-78bb-4807-9793-0d41c6b61d9">...</li><li class="wds_1_104_2_SidebarItemNext_listItem" aria-level="1" data-hook="giza-sidebar-item-link-5b817f81-4c77-4594-9075-2dbc30b5zf0">...</li><li class="wds_1_104_2_SidebarItemNext_listItem" aria-level="1" data-hook="giza-sidebar-item-link-99020dc8-6d8d-4b36-b5c4-323248b3f07">...</li><div data-hook="giza-sidebar-item-separator" data-skin="light" class="wds_1_104_2_SidebarDividerNext_root" aria-hidden="true">...</div><li class="wds_1_104_2_SidebarSubMenuNext_root wds_1_104_2_SidebarSubMenuNext--skin-5-light" aria-level="1" data-hook="giza-sidebar-item-sub-menu-0636ec6b-40e3-4466-a452-fd783ae9b392" data-open="true" data-quick-nav-open="false"><div data-hook="giza-sidebar-item-sub-menu-0636ec6b-40e3-4466-a452-fd783ae9b392/submenu-popover" data-content-hook="popover-content-giza-sidebar-item-sub-menu-0636ec6b-40e3-4466-a452-fd783ae9b392/submenu-popover-0" class="wds_1_104_2_Popover_root wds_1_104_2_Popover--skin-5-light wds_1_104_2_SidebarSubMenuNext_navigationPopoverRoot" data-zindex="3000"><div class="wds_1_104_2_Popover_element" data-hook="popover-element"><div class="wds_1_104_2_SidebarItemNext_tooltipWrapper" tabindex="0"><div data-content-hook="popover-content-0" class="wds_1_104_2_Popover_root wds_1_104_2_Popover--skin-4-dark wds_1_104_2_Tooltip_root wds_1_104_2_Tooltip--size-6-medium wds_1_104_2_SidebarItemNext_tooltip" data-zindex="6000" data-size="medium"><div class="wds_1_104_2_Popover_element" data-hook="popover-element"><a tabindex="-1" class="wds_1_104_2_SidebarItemNext_root wds_1_104_2_SidebarItemNext--selected wds_1_104_2_SidebarItemNext--skin-5-light wds_1_104_2_SidebarItemNext--level-1-1 wds_1_104_2_SidebarItemNext--legacy wds_1_104_2_SidebarSubMenuNext_subMenu wds_1_104_2_SidebarSubMenuNext--selected wds_1_104_2_SidebarSubMenuNext--animation-7-opening" data-hook="giza-sidebar-item-sub-menu-0636ec6b-40e3-4466-a452-fd783ae9b392/sidebar-item" type="button" role="button" href="/studio/client-feedback/referralInfo=sidebar" data-selected="false" data-text-size="small" data-skin="light" aria-expanded="true" data-sidebar-entry-id="0636ec6b-40e3-4466-a452-fd783ae9b392" referrer="sidebar">flex == $0</a></div><div class="wds_1_104_2_SidebarItemNext_textWrapper"><div><div data-hook="fadeStyles"><div data-hook="moveStyles"><div data-hook="scaleStyles"><div data-hook="toggleStyles"><span data-hook="sidebarSectionItemTitle" data-mask="false" class="wds_1_104_2_Text_root wds_1_104_2_Text--size-5-small wds_1_104_2_Text--secondary wds_1_104_2_Text--skin-8-standard wds_1_104_2_Text--weight-6-normal wds_1_104_2_Text--list-style-9-checkmark wds_1_104_2_SidebarItemNext_text" data-size="small" data-secondary="true" data-list-style="checkmark">Client Experience</span></div></div></div></div></div>
```

The right-hand panel of the developer tools displays the Accessibility Tree, showing the node for the 'Client Experience' link with the following details:

- Name:** "Client Experience"
- Role:** button
- aria-labelledby:** Not specified
- aria-label:** Not specified
- Contents:** "Client Experience"
- title:** Not specified
- Role:** button
- Focusable:** true
- Focused:** true
- Expanded:** true

A red arrow points from the 'Client Experience' item in the sidebar to the 'Client Experience' node in the accessibility tree. A yellow smiley face icon is located in the bottom right corner.

# When to use ARIA



# Accessible name and description

# Accessible name and description

## Name

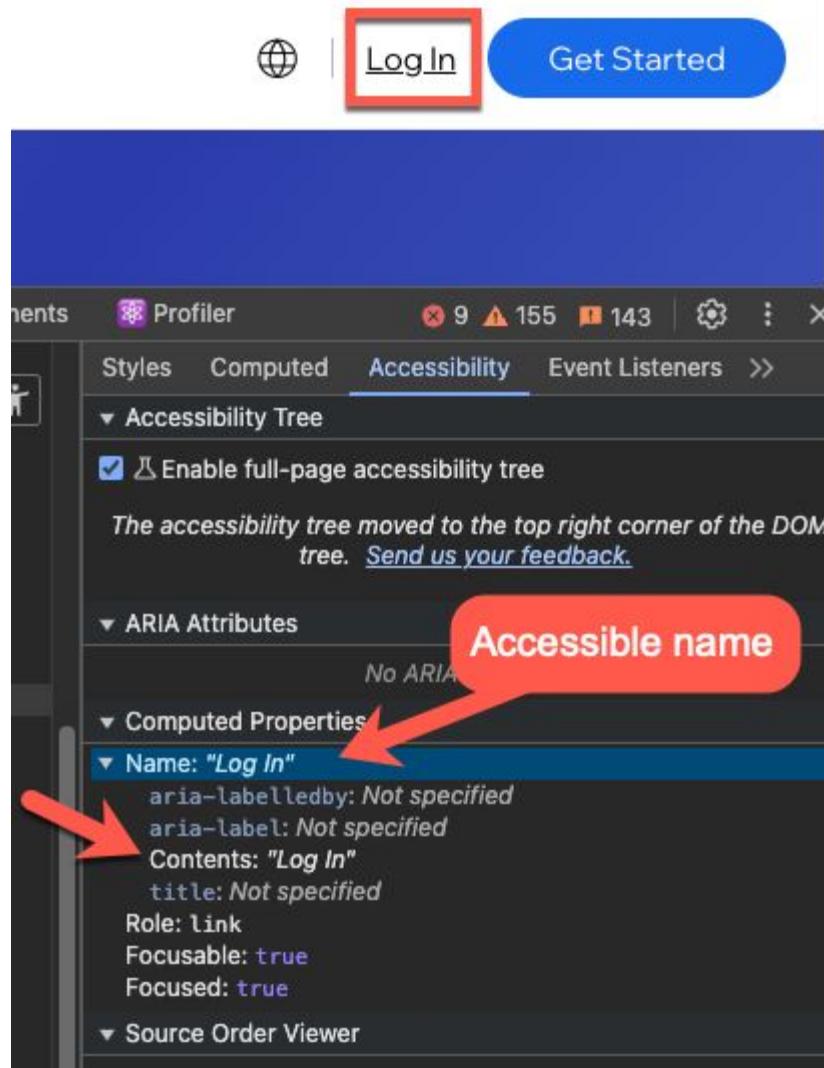
- aria-label
- aria-labelledby

## Description

- aria-describedby

What is an accessible name? (TPGI)

Accessible name calculation (W3C)



# Accessible name

- The value of the accessible name may be derived from **visible or invisible content**, or a combination of both.
- An element can have more than one label.
- The **UX Writer** should decide on the name.

## Accessible name calculation

1. aria-labelledby
2. aria-label
3. <label> (forms)
4. Contents (live text) The best!
5. <title> (svg)
6. alt (in image)
7. placeholder (forms)\*
8. title (the browser's tooltip)\*

Override the visible text

\*should not be used as the name due to usability and screen reader compatibility.

# aria-label

If there is no content that can be referenced, aria-label should be used

Short and not include the role or the state:

Don't

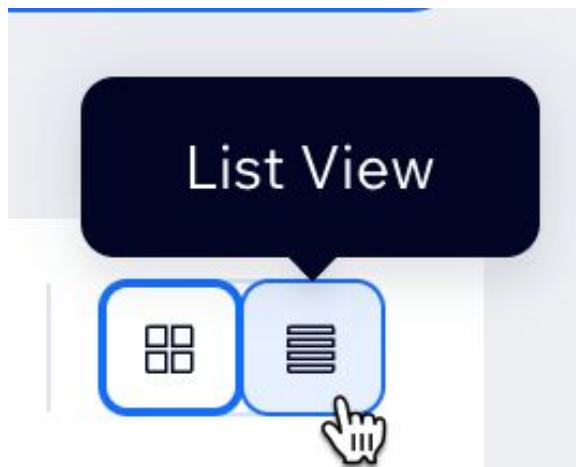
```
<button aria-label="show more button not expanded">
```

Do

```
<button aria-label="show more" aria-expanded="false">
```

# aria-labelledby

- Should be used when the label is visible on the screen
- **Can reference multiple elements** (the ids should be separated with space)



## aria-labelledby

```
<div id="mens" hidden>  
  Men's T-Shirts  
</div>  
<button id="shopmens"  
       aria-labelledby="mens shopmens">  
  Shop Now  
</button>
```



# aria-describedby

A description in addition to the name which can be longer

Can reference multiple elements

All fields are required

Email

elli@wix.com

Please fill in your email according to this format: elli@wix.com

I agree to the [Terms and Conditions](#)

Elements Console Sources Network Performance Memory > Styles Computed Accessibility >

<form class="form" aria-labelledby="form-name">  
 <p>All fields are required</p>  
 <div class="form-fields"> grid  
 <label class="label" for="email">Email</label>  
 <input id="email" autocomplete="email" class="email-input" type="email" placeholder="elli@wix.com" aria-required="true" aria-invalid="true" aria-describedby="email-error" == \$0  
 <span id="email-error" class="email-error" style="display: block;">Please fill in your email according to this format: elli@wix.com</span>  
 </div>  
 <div class="checkbox-fields">...</div>  
 <span id="checkbox-error" style="display: block;">Please accept the terms and conditions</span>  
 <button class="btn" type="button">Submit</button>  
</div>  
</form>  
<p class="message" role="status" aria-live="polite"></p>  
<script id="rendered-js">...</script>  
</body>  
<grammarly-desktop-integration data-gran...>...</grammarly-desktop-integration>  
</html>  
</iframe>  
<grammarly-extension data-gran...>...</grammarly-extension>  
<div id="non-3d">...</div>  
<form> form div.form-fields input#email.email-input.email-input-invalid

Styles Computed Accessibility >

▼ ARIA Attributes

- aria-required: true
- aria-invalid: true
- aria-describedby: email-error

▼ Computed Properties

- Name: "Email"
- aria-labelledby: Not specified
- aria-label: Not specified
- From label (for= attribute): label.label...
- title: Not specified
- placeholder: "elli@wix.com"
- aria-placeholder: Not specified
- title: Not specified

Description: "Please fill in your email according to this format: elli@wix.com"

Role: textbox

Invalid user entry: true

Focusable: true

Focused: true

Editable: plaintext

Can set value: true

Multi-line: false

Read-only: false

Required: true

▼ Described by:

- span#email-error.email-error
- Labeled by: label.label

Accessible name

Description

# Naming non interactive elements

HTML

```
<nav aria-label="Breadcrumb" class="breadcrumb">
<ol>
  <li>
    <a href="../../../../../../">Web technology for developers</a>
  </li>
  <li>
    <a href="../../../../../">Accessibility</a>
  </li>
  <li>
    <a href="../../../../">ARIA</a>
  </li>
  <li>
    <a href="../../">ARIA States and Properties</a>
  </li>
  <li>
    <a href="/" aria-current="page">ARIA: `aria-current` attribute</a>
  </li>
</ol>
</nav>
```

# Naming non interactive elements

- <nav> or <div role="navigation">
  - aria-label="main", "page", "breadcrumbs"
  - Best practice for multiple navigation areas
- <section> or <div role="region">
  - In order to expose as a landmark (use only for important page regions)
  - aria-label="slider", "gallery" or aria-labelledby={section heading id}
- <form> or <div role="form">
  - In order to expose as a landmark
  - aria-label="contact us" or aria-labelledby={form heading id}
- <fieldset>&<legend> or <div role="group"> or <div role="radiogroup">
  - For grouping related elements, such as checkboxes
  - aria-label="choose the toppings" or aria-labelledby={group label/heading id}
- <ul>
  - aria-label="to do" or aria-labelledby={the list title}

# Important notes of use

- aria-label and aria-labelledby **override the visible text**
- ARIA names and descriptions **should not be used** on elements with no semantics (<div> and <span>) - same as tabindex
- To enhance an accessible name with aria-label always **start with the visible text** and remember that this will only benefit blind users.
  - aria-label=“Read more about accessibility”

Read more

# My name is?

# aria-label overrides other names

WIX

Log In

Don't have an account? [Sign Up](#)



The input field has a red border and contains the placeholder text "Email".

**Elements**   **Console**   **Sources**   **Network**   **Performance**   **Memory**   **Application**   >>

Styles   Computed   **Accessibility** >>

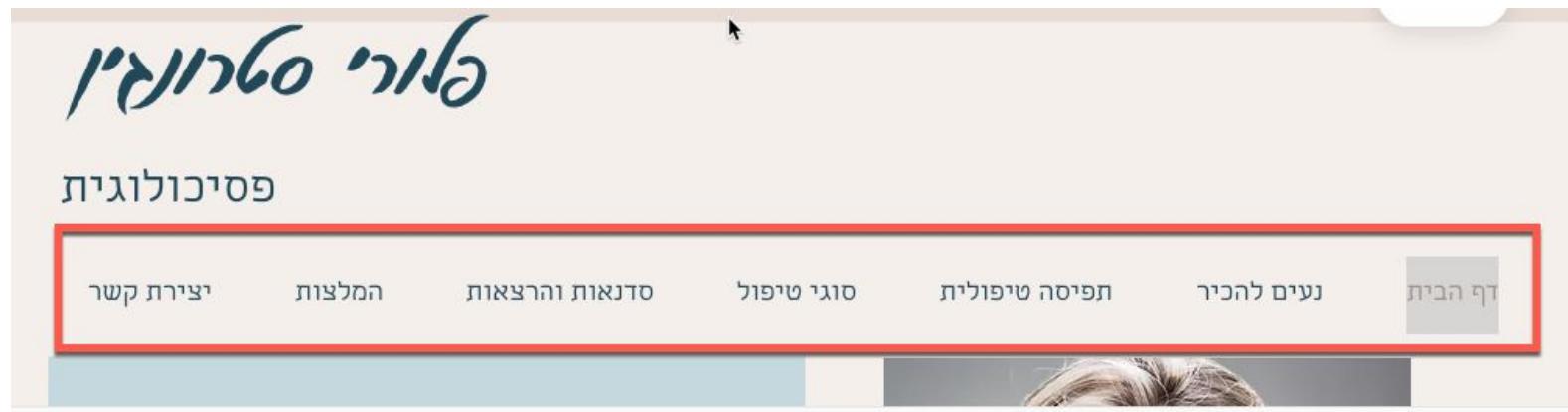
- ▼ Accessibility Tree
- Enable full-page accessibility tree
- The accessibility tree moved to the top right corner of the DOM tree. [Send us your feedback.](#)
- ▼ ARIA Attributes
- aria-label: Signup or login with email
- ▼ Computed Properties
- Name: "Signup or login with email"
- aria-labelledby: Not specified
- aria-label: "Signup or login with email"
- From label (for attribute): ...
- title: Not specified
- placeholder: Not specified
- aria-placeholder: Not specified
- aria-label: "Signup or login with email"
- Role: textbox
- Invalid user entry: false
- Focusable: true

```

<input data-hook="wsr-input" data-mask="false" class="wds_1_110_0_Input_input" id="labelled-element-2d2e844b-416b-ac7b-3ce6-ae55c51bde58" maxlength="524288" type="text" required autocomplete="email" aria-label="Signup or login with email" value="text-overflow: clip;"> == $0
    
```



# What is the problem with this aria-label?



Elements    Console    Sources    Network    Performance    Memory    Application    Security    Lighthouse >>    ① 1 ▲ 148 🔍 19 ⚙ : X

ropdown-menu menu-is-opening-prewarmup data-stretch-buttons-to-menu-width="true" data-same-width-buttons="false" data-num-items="7" data-menuborder-y="0" data-menubtn-border="0" data-ribbon-els="0" data-label="ה" data-ribbon-extra="0" data-dropalign="right" style="visibility: inherit; overflow-x: visible;" data-dropmode="dropUp">>

▼ **<nav class="l9EQj1" id="comp-jusdlxynavContainer" aria-label="site" flex>**

    == \$0

▼ **<ul class="DN7syf" id="comp-jusdlxryitemsContainer" style="text-align:right" data-marginallchildren="true">**

    ▼ **<li id="comp-jusdlxyr0" data-direction="rtl" data-listposition="right" data-data-id="dataItem-lqqd6fu9" data-state="menu selected link" data-index="0" class="rqt3qI wixui-dropdown-menu\_\_item vDnwI4" data-original-gap-between-text-and-btn="10" aria-hidden="false" style="width: 114px; height: 50px; position: relative; box-sizing: border-box; overflow: visible; visibility: inherit;">**

        ▼ **<a data-testid="linkElement" href="https://www.floristronguin.com" target="\_self" class="LY3Nwh" aria-haspopup="false">**

        ▼ **<div class="rBTT56">**

            ▼ **<div class="text-align:right">**

**<p class="foFAdY" style="text-align: right; line-height: 50px;" id="**

Styles    Computed    **Accessibility**    Landmarks >>

▼ Accessibility Tree

Enable full-page accessibility tree

The accessibility tree moved to the top right corner of the DOM tree. [Send us your feedback.](#)

▼ ARIA Attributes

aria-label: site

▼ Computed Properties

Name: "site"

aria-labelledby: Not specified

aria-label: "site"

title: Not specified

Role: navigation

▼ Source Order Viewer

IONS TRAINING

# What is the problem with this code?

The screenshot shows the WIX developer tools interface. On the left, the DOM tree displays an SVG element with the following attributes highlighted by a red box:

```
<svg preserveAspectRatio="xMidYMid meet" data-bbox="0 0.7 216.659 29.88" xmlns="http://www.w3.org/2000/svg" viewBox="0 0.76 216.659 29.88" height="31" width="217" data-type="shape" role="presentation" aria-hidden="true" aria-label=" == $0">
```

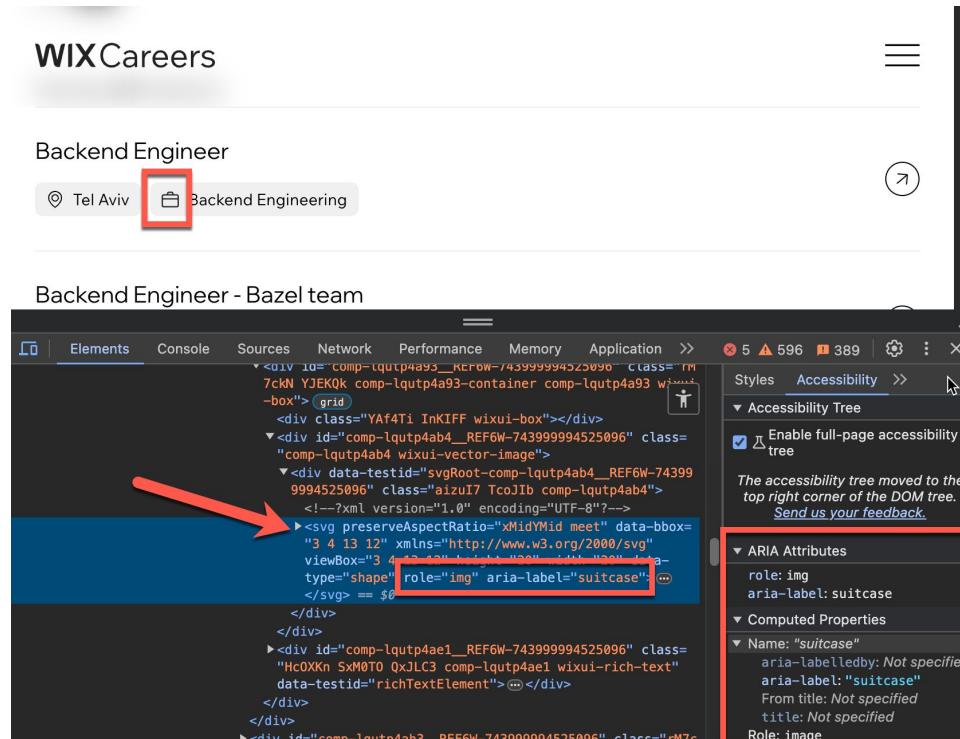
On the right, the Accessibility panel shows the following errors:

- Enable full-page accessibility tree**: A note states: "The accessibility tree moved to the top right corner of the DOM tree. [Send us your feedback](#)".
- ARIA Attributes**: Shows "role: presentation", "aria-hidden: true", and "aria-label: == \$0".
- Computed Properties**: Shows "Accessibility node not exposed" and "Element is aria-hidden."

# SVG - scalable vector graphic

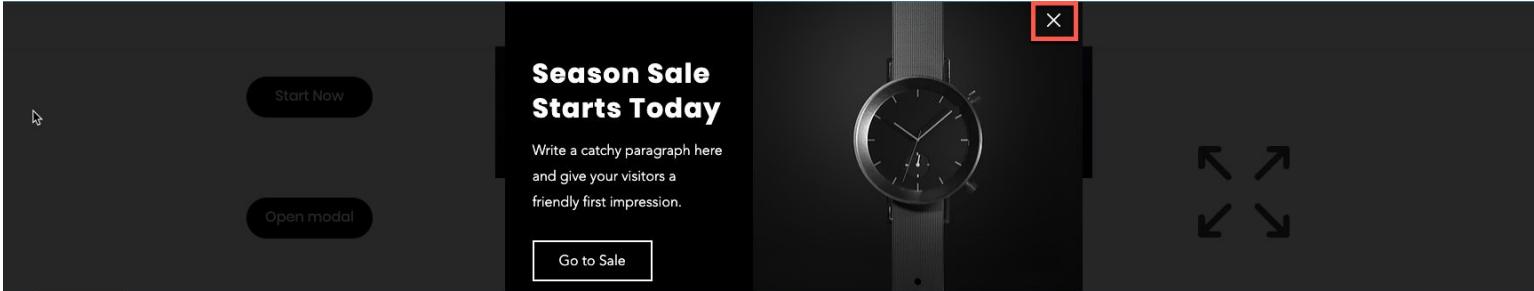
The accessible name is set using ARIA.

1. role = "img"
  2. Name:
    - o aria-label = "label"
    - o aria-labelledby = {<title> id}



`<title>` – the SVG accessible name element

# aria-label on Wix lightbox close button



The screenshot shows a Wix lightbox interface. At the top right of the lightbox is a red 'X' close button. Below it are four navigation arrows (left, right, up, down). The main content area features a large image of a watch with a black dial and a dark strap. To the left of the watch, there's promotional text: "Season Sale Starts Today" and "Write a catchy paragraph here and give your visitors a friendly first impression." At the bottom left is a "Go to Sale" button.

The developer tools (Elements tab) are open, showing the DOM structure of the lightbox. A red arrow points to the close button element in the Elements panel:

```
<div id="comp-ladr5r3a" class=" _3IMoN" data-testid="popupCloseIconButtonRoot">
  <div tabindex="0" role="button" title="Back to site" aria-label="Back to site" class=" _1RsPI">
    == $0
    <svg preserveAspectRatio="xMidYMid meet" data-bbox="25.975 25.975 148.05 148.05" xmlns="http://www.w3.org/2000/svg" viewBox="25.975 25.975 148.05 148.05" role="presentation" aria-hidden="true">
      </svg>
  </div>
</div>
```

The Accessibility panel is also visible, with a red box highlighting the "aria-label" entry under the "Name: 'Back to site'" section:

Name: "Back to site"
aria-labelledby: Not specified
aria-label: "Back to site"
Contents: Not specified
title: "Back to site"
Description: "Back to site"
Role: button
Focusable: true
Focused: true

# Static attributes

# #1 Hiding redundant content

**aria-hidden="true"** (use with caution)

Can be used only on **non-interactive and purely decorative elements**

1. Decorative SVGs
2. Repetitive text

Ask yourself: **Does this element convey information?**

## TIP #1 Accessible Icon Links (using aria-label)



```
<a href="https://www.twitter.com/acme"  
     aria-label="Follow us on Twitter"  
>  
<svg aria-hidden="true" focusable="false">  
...  
</svg>  

```

www.aditus.io

ADITUS

# Hiding decorative content example



OFFF example



HATA example

☀️ Good Morning, it's 8:25 AM at HATA ☀️ Good Morning, it's 8:25 AM at HATA ☀️ Good Morning, it's 8:25 AM at HATA ☀️

# #2 Status updates

AKA Live Region

This region is monitored by the AT for changes in content and updates the user every time the text changes.

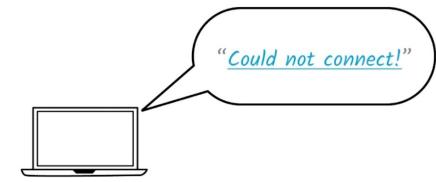
1. **role = alert | status**
2. **aria-live = assertive | polite**

Accessible form (Codepen)

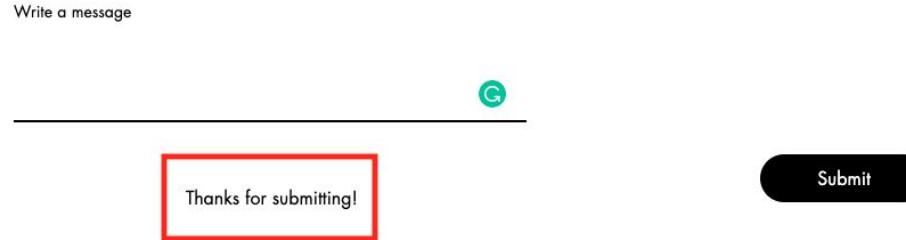
## Live updates

Could not connect!

```
<div role="alert">  
  Could not connect!  
</div>
```



# Wix forms - “Thank you” message is announced



Console Sources Network Performance Memory Application Security Lighthouse Recorder Performance insights ARC Toolkit Adblock Plus axe DevTools Components Profiler

```

<div id="comp-l8mxt9ox1" data-scope data-repeater-items-indexes class="MpKiNN qzvPmW lPl_oN">...</div>
<div id="comp-l8mxt9ov" data-scope data-repeater-items-indexes class="MpKiNN qzvPmW">...</div>
<div id="comp-l8mxvorf" data-scope data-repeater-items-indexes class="MpKiNN qzvPmW lPl_oN">...</div>
<div id="comp-l8mxt9oz2" data-scope data-repeater-items-indexes class="snt4te oke0Po">...</div>
<div id="comp-l8mxt9of2" data-scope data-repeater-items-indexes class="BaOVQ8 tz5f0K" data-testid="richTextElement">
  <span role="alert" style="font-size:16px; color:#000000; font-family:futura-lt-w01-book,sans-serif;">Thanks for submitting!</span>
</div>
<div data-scope data-repeater-items-indexes class="R6ex7N" id="comp-l8mxt9p71" aria-disabled="false">...</div>
<div data-mesh-id="comp-l8mxt9o8inlineContent-wedge-5"></div>
</div>
</div>

```

Styles Computed Layout Event Listeners DOM Breakpoints Properties

generic alert paragraph

aria-label: Not specified  
aria-labelledby: Not specified  
aria-describedby: Not specified  
title: Not specified  
Role: alert  
Live region: assertive  
Atomic (live regions): true  
Relevant (live regions): additions text

Source Order Viewer

# aria-haspopup

**WIX** Creation Business Resources Pricing Support More | Log In Get S [Wix homepage](#)

The screenshot shows the Wix website builder interface with the 'Creation' menu item highlighted. The developer tools are open, displaying the DOM structure and the Accessibility pane.

**DOM Structure:**

```
<!DOCTYPE html>
<html lang="en">
  <head> ...
    <body class="yAvnVV Xni1xR"> ...
      <div data-hook="wix-header-skip-button" tabindex="-1" class="RIDDm6 "> Skip to Main Content </button>
      <div class="x2w504"> ...
      <div class="w50Nfa"> ...
      <button class="SOIoya" title="open navigation" aria-label="open navigation" data-toggle="collapse" aria-haspopup="true" data-expanded="false" aria-expanded="false" data-hook="wix-header-hamburger-button"> ...
      <div class="qjGGlc"> ...
      <nav class="sjPohq gt_E_lI" aria-label="main menu">
        <ul class="jz2tij VKQJs6"> ...
          <li class="Io3KWD fGC5X_NDaRgI" data-hook="wix-header-main-menu-item"> ...
            <div class="jrvWYl" data-hook="wix-header-menu-button"> ...
              <button id="main-menu-item-creation" class="76T9na undefined" data-hi-name="creation" data-toggle="collapse" aria-expanded="false" aria-haspopup="true"> ...
                == $0
                " Creation "
                <div class="uf1Xmn"> ...
                  <svg xmlns="http://www.w3.org/2000/svg" width="12" viewBox="6 6 12 12"> ...
                    </svg>
                  </div>
                </button>
              </div>
            <div class="n_SxIP Gnit4 sub-menu-items-4" data-hook="wix-header-sub-menu" role="group" aria-labelledby="main-menu-item-creation"> ...
            </li>
          <li class="Io3KWD fGC5X_NDaRgI" data-hook="wix-header-main-menu-item"> ...
        </ul>
      </nav>
    </div>
  </body>
</html>
```

**Accessibility pane:**

- Enable full-page accessibility tree
- RootWebArea "Website Builder - Create a Free Website"
  - banner
  - generic
    - navigation "main menu"
      - list
        - listitem
          - generic
            - button "Creation"
              - StaticText "Creation"
              - image
- ARIA Attributes
  - aria-expanded: false
  - aria-haspopup: true
- Computed Properties
  - Name: "Creation"
    - aria-labelledby: Not specified
    - aria-label: Not specified
    - From label: Not specified
    - Contents: "Creation"
    - title: Not specified
  - Role: button
  - Invalid user entry: false
  - Focusable: true
  - hasPopup: menu
  - Expanded: false

# Missing HTML attributes

## **Dynamic - the state must be updated with JS**

aria-expanded = “true” | “false”

aria-current = “page” | “step” | “true” | “false”

aria-invalid = “true” | “false” (form field)

## **Static - doesn't need to be updated**

aria-haspopup = “true” | “dialog” | “menu”

aria-label = “name”

MDN:

[aria-expanded](#)

[aria-current](#)

[aria-invalid](#)

[aria-haspopup](#)

[ARIA roles and properties not available in HTML](#)

# Dynamic attributes

# aria-expanded

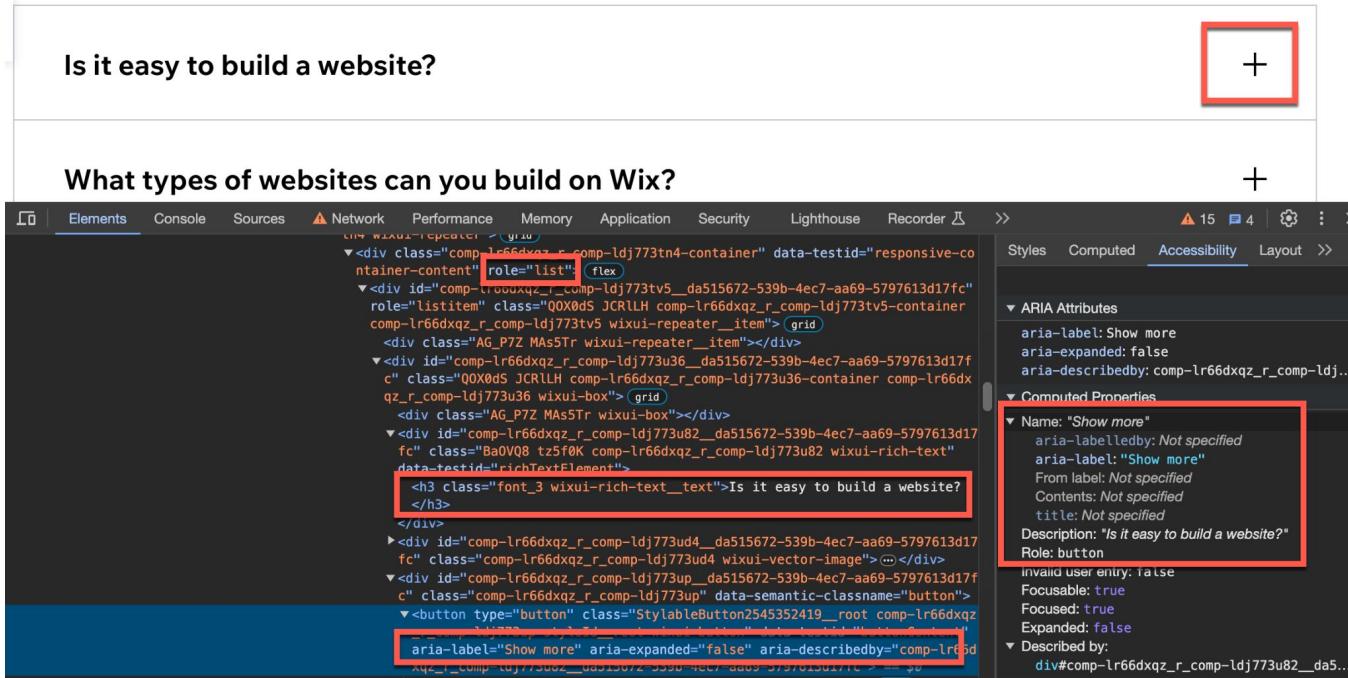
WIX

# FAQs

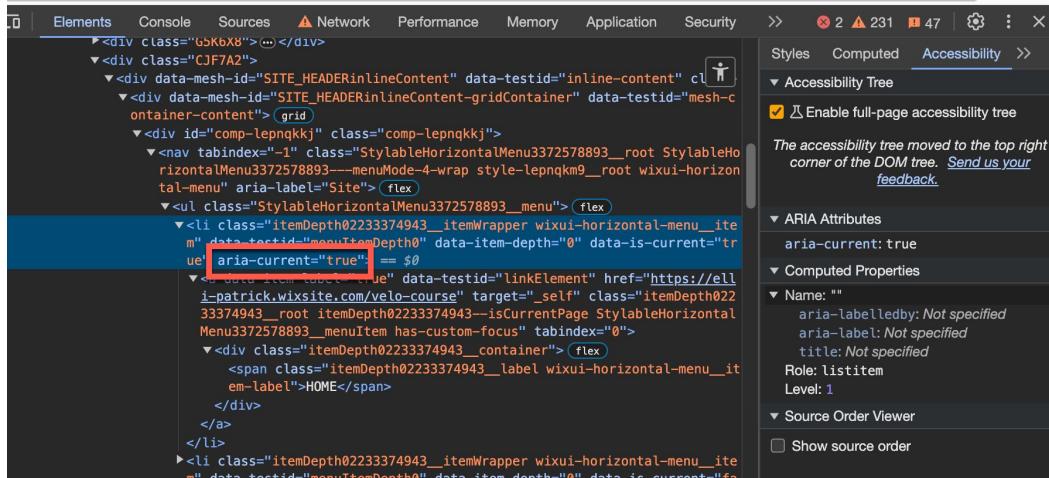
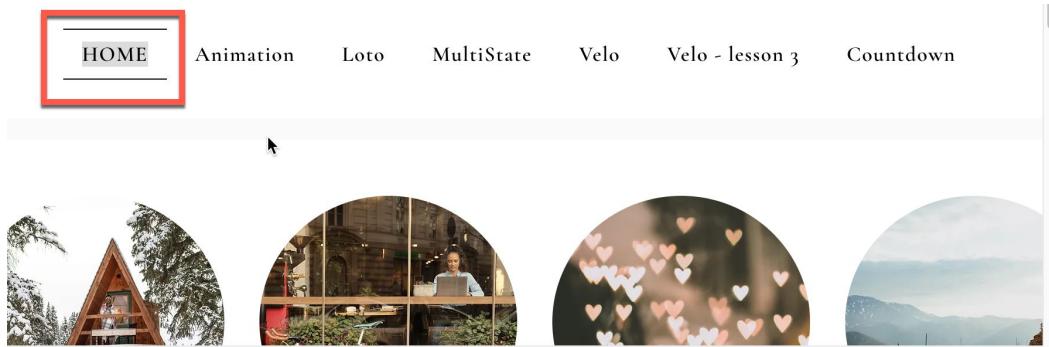
## Wix homepage

## Is it easy to build a website?

## What types of websites can you build on Wix?



# aria-current

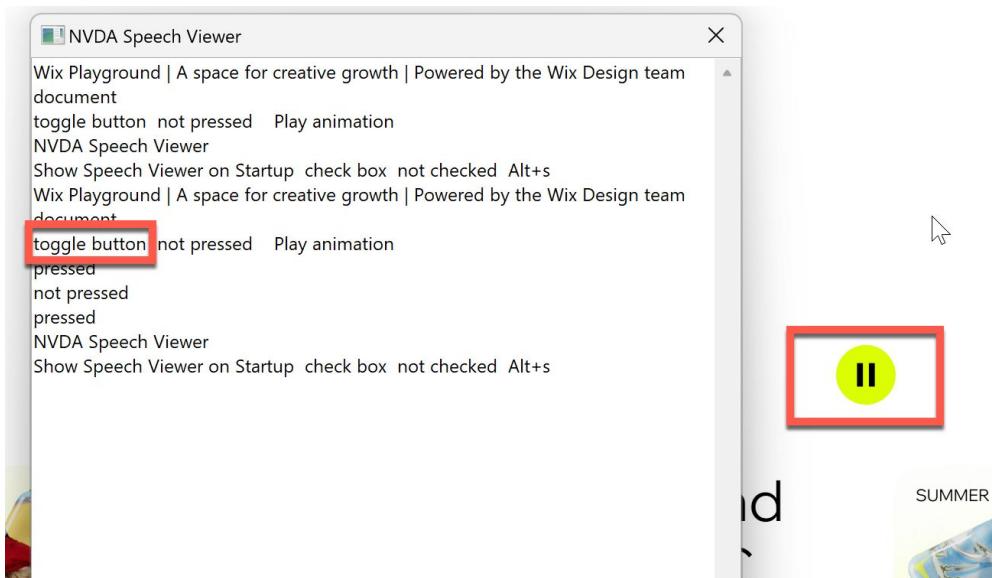


## My Velo site

# #5 No HTML element

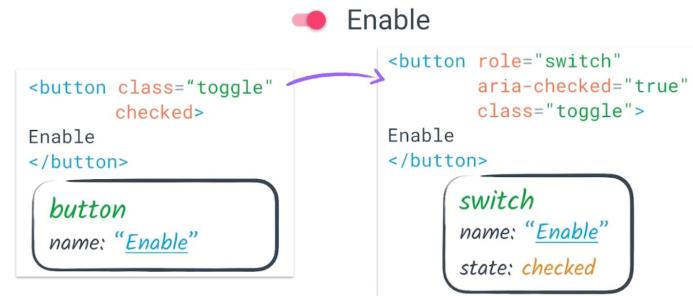
No toggle button in HTML (yet)

aria-pressed turns the button into a toggle button



Building Inclusive Toggle Buttons

## Modify semantics



ACCESSIBILITY CHAMPIONS TRAINING

# aria-pressed example

## UPDATES

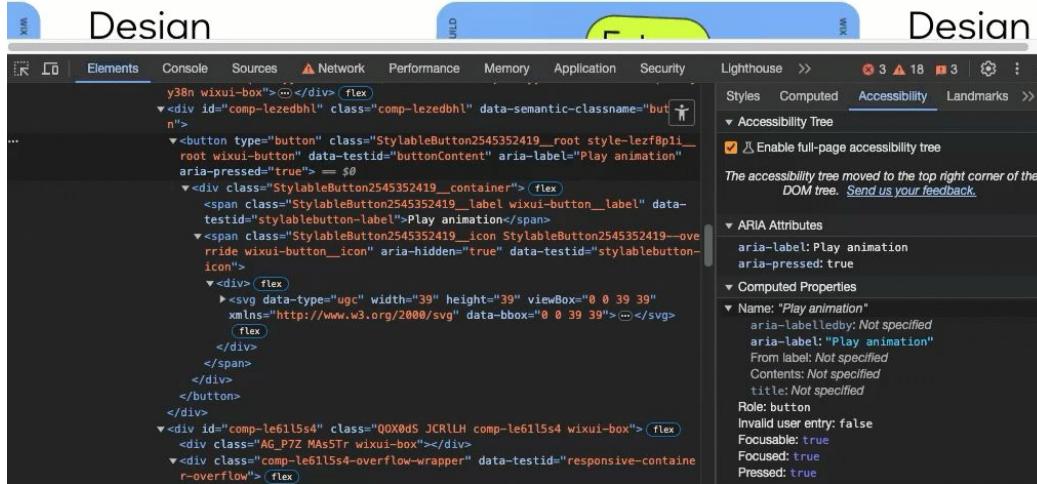
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[Wix Playground](#)



## ACCESSIBILITY CHAMPIONS TRAINING

# Custom elements

# Complex Javascript widgets

Should be used according to the ARIA guidelines

## Danish Composers

Maria Ahlefeldt

Carl Andersen

Ida da Fonseca

Peter Müller

Carl Joachim Andersen (29 April 1847 – 7 May 1909) was a Danish flutist, conductor and composer born in Copenhagen, son of the flutist Christian Joachim Andersen. Both as a virtuoso and as composer of flute music, he is considered one of the best of his time. He was considered to be a tough leader and teacher and demanded as such a lot from his orchestras but through that style he reached a high level.

## Tabs Pattern (APG)

# Styling limitations in CSS

✓ I totally agree

Checkbox Pattern (APG):

## Keyboard

1. tabindex="0"
2. keyboard event to fire on Spacebar
3. focus indicator

## Screen reader

4. role="checkbox"
5. aria-checked="false" initial state
6. toggle aria-checked state

# Custom checkbox

Before

The code editor shows the initial state of a custom checkbox component. The HTML tab contains a single 

element with an id of "my-checkbox" and a class of "checkbox", which has a for attribute pointing to "apple". The CSS tab is empty. The JS tab contains a script block with a click event listener for the checkbox. The function handleClick toggles the checked class on the target element and logs the event to the console.

```
4 <div id="my-checkbox" class="checkbox" for="apple">I totally agree</div>
5
6 myCheckbox.addEventListener("click", handleClick);
7
8 function handleClick(e) {
9   console.log(e);
10  e.target.classList.toggle("checked");
11 }
12
13
14
```

✓ I totally agree

Custom checkbox (codepen)

After

The code editor shows the updated state of the custom checkbox component. The HTML tab now includes a tabindex attribute of "0" and an aria-checked attribute set to "false". The JS tab has been expanded to show additional logic. It includes a fixCheckbox variable and two new event listeners: "click" and "keyup", both pointing to the handleCheckbox function. The handleCheckbox function checks if the event is a space key or a click. If so, it prevents the default action, toggles the checked class on the target, and updates the aria-checked attribute to either "true" or "false" based on its current value.

```
14
15 <div id="fix-checkbox" class="checkbox" role="checkbox" aria-checked="false" tabindex="0">I totally agree</div>
16
17
18
19
20
21
22
23
24
25
26
27
```

# When to use ARIA?

## Enhance experience

1. Hiding redundant content
2. Status updates (Live Region)

## Enhance semantics

3. Missing attributes in HTML (expanded/collapsed, invalid field)
4. Accessible name and description

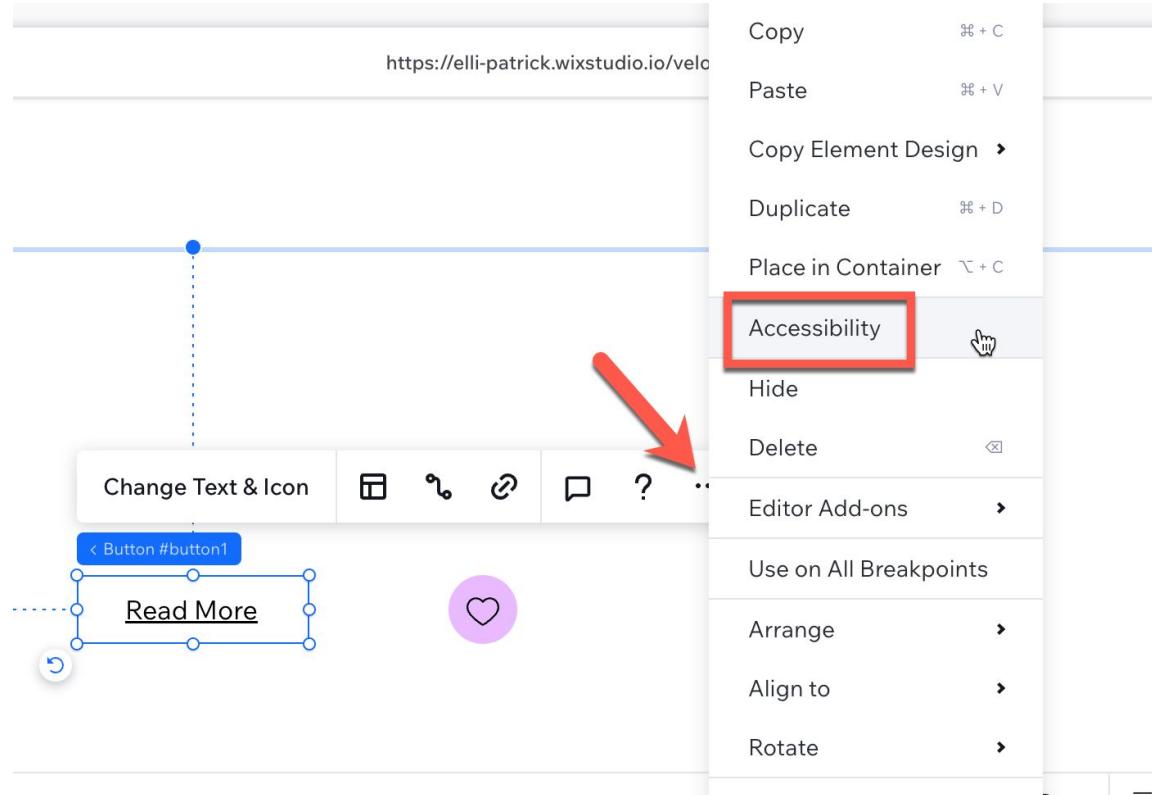
## Building a custom component

5. No HTML element (tabs, toggle button)
6. Styling limitations in CSS (checkbox, radio, select)

# ARIA in Wix

# Advanced accessibility attributes

1. The attributes are accessible only when the **dev mode is on**
2. The attributes are predefined and differ between elements



# Accessible name for icons in the Editor

The image shows two floating toolbars from the Wix Editor interface:

- Basic Shape Settings**: A toolbar for shapes. It includes a "Change Basic Shape" button and several icons for modifying the shape's appearance.
- Button Settings**: A toolbar for buttons. It includes a "Change Text & Icon" button and several icons for modifying the button's appearance.

Both toolbars have sections for "Accessible name" and "Links to". In the "Accessible name" section of the "Button Settings" toolbar, the text "Phone" is entered. The "Links to" section in both toolbars has a placeholder "Choose a link ...".

# Accessibility in Velo

Velo documentation is coming soon!

## Gaps

- Components Velo API completion
- No support for keyboard events - Q5

```
$w.onReady(function () {  
  
  let btn1 = $w("#button1");  
  btn1.accessibility.ariaExpanded = false;  
  
  btn1.onClick(() => {  
    let isExpanded = btn1.accessibility.ariaExpanded;  
    if (isExpanded) {  
      console.log(isExpanded, "if");  
      btn1.accessibility.ariaExpanded = false;  
    } else {  
      console.log(isExpanded, "else");  
      btn1.accessibility.ariaExpanded = true;  
    }  
  })  
  
  
  let btn2 = $w("#button2");  
  btn2.accessibility.ariaPressed = "false"  
  
  btn2.onClick(() => {  
    let isPressed = btn2.accessibility.ariaPressed;  
    if (isPressed === 'false') {  
      btn2.accessibility.ariaPressed = "true";  
    } else {  
      btn2.accessibility.ariaPressed = "false";  
    }  
  })  
});
```

CHAPTER 08

# Mobile apps

# Mobile apps docs

Use native controls!



Let's  
exercise!

# Wix.com menu

Good example for reference: [Wix.com menu](#)

WIX



Product ▾

Solutions ▾

Resources ▾

Pricing

| Wix Studio

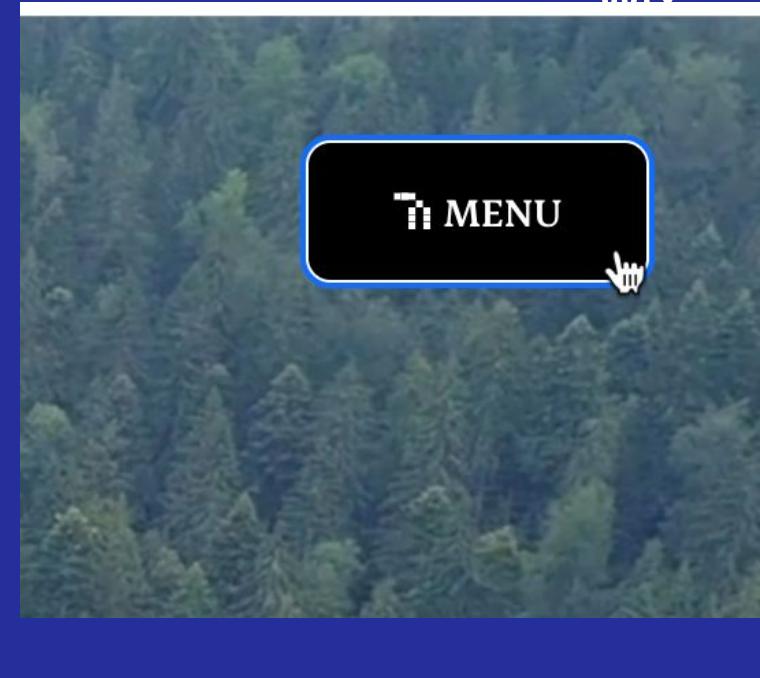
Enterprise

# The new Wix menu

## New menu cacaotv

1. Mouse
2. Touch
3. Keyboard

## New Hamburger Menu example



A screenshot of a Wix website for "קקאו טבעי" (Natural Cocoa). The header is dark with white text and icons. From left to right, it includes: a shopping cart icon, a heart icon, a person icon, a "התחברות" (Connect) button, the brand name "קקאו טבעי" with a cocoa bean graphic, and navigation links in Hebrew: "אודוות", "מתכונים", "סיפורי קקאו", "קנייה קבוצתית", "קקאו, שוקולד וסופרפודס", "כל המוצרים", "ממרחים, שמנים וمشקאות", "מטבח עולמי", "לבית ולנפש", "אורגני", "נסנושיים וטعמים", "בישול, אפייה וטעמים", and "פירות יבשים ואגוזים".