

# Accessibility

## Content Management

# Topic overview

- What is Accessibility
- Why Accessibility is important
- Who is impacted by Accessibility
  
- National guidelines and recommendations
- W3C guidelines and testing
- Assistive technologies
- Good practice: Coding
- WAI-ARIA
- Good practice: Visual design and Video
- Navigation techniques
  - Skipnav
  - Keyboard navigation
- Accessibility statements and support

# What is Accessibility?

Web accessibility means that websites, tools, and technologies are designed and developed so that people with disabilities can use them.

— W3C - [World Wide Web Consortium](#)

# Why Accessibility is important?

***The power of the Web is in its universality. Access by everyone regardless of disability is an essential aspect.***

— Tim Berners-Lee, W3C Director and inventor of the World Wide Web W3C - [World Wide Web Consortium](https://www.w3.org/)

Who is impacted by the lack of Accessibility?

**EVERYONE**















# Who is Accessibility for?

- Accessibility is for all, not just for those with obvious disabilities.
- The principle of website accessibility is that content should be available/understandable to all, irrespective of circumstances.

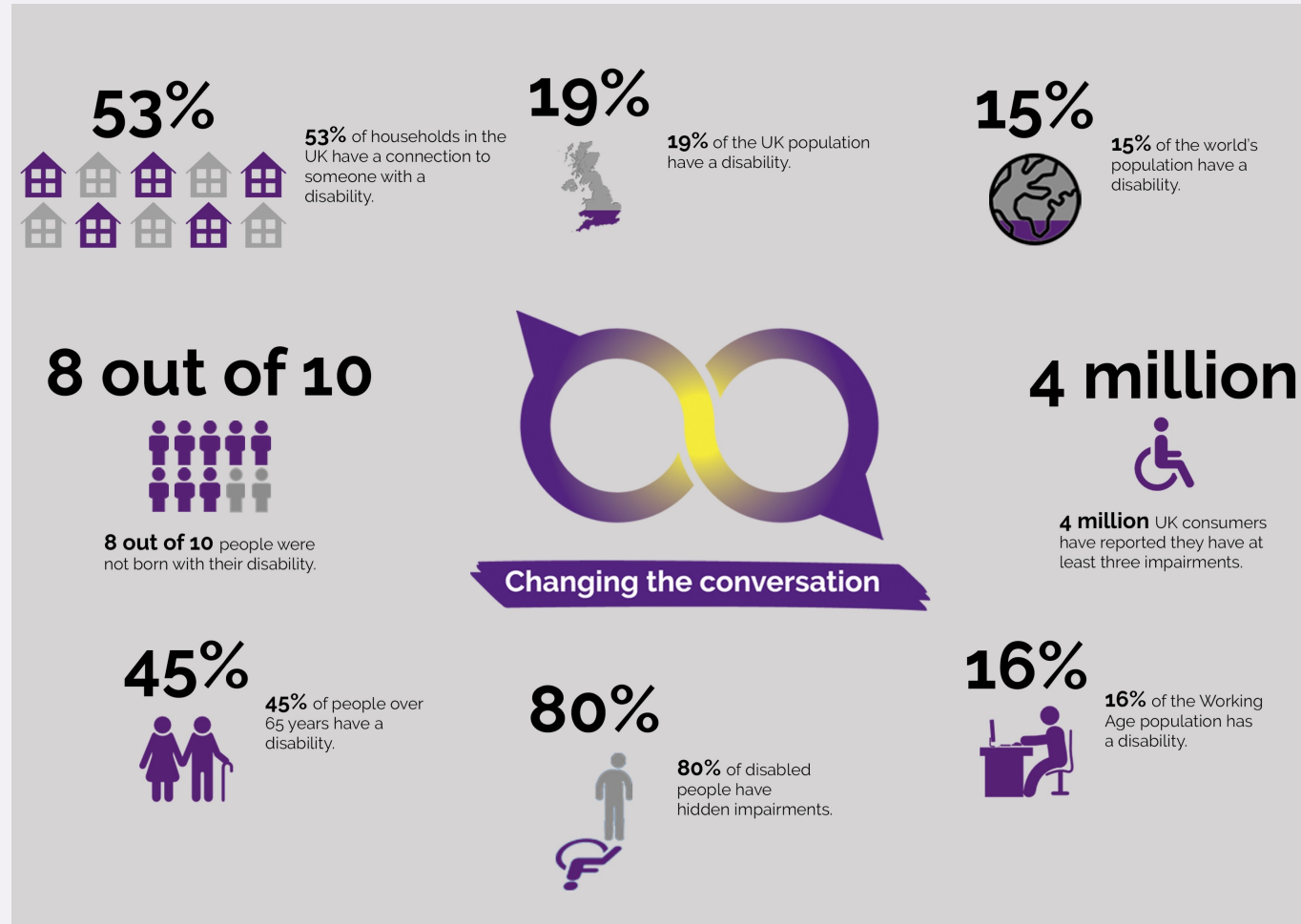
# Disabilities

**16 %** of the world's population have a disability.



An estimated **1.3 billion** people experience significant disability.  
This represents **16%** of the world's population or **1 in 6 of us**.

# Overview of Disabilities





# Type of Disabilities



## Visual

- Blindness
- Low vision
- Colour blindness



## Auditory

- Profound or Partial deafness
- Neural hearing loss
- Deaf-blindness



## Cognitive

- Learning disabilities (Dyslexia)
- Attention disorders (ADHD)
- Math and Computation (Dyscalculia)



## Physical

- Slow, shaky or no motor functions
- Reduced Dexterity
- Ambulation
- Muscle Fatigue



## Speech

- Articulation
- Aphasia
- No Speech



## Contextual

- Browsers and devices
- Connectivity
- Language
- Space and context

# What can web designers do?

- Sometimes, alternative versions of content must be provided like the `alt` attribute for image descriptions or video captioning.
- Our sites must be **coded** in such a way as to allow assistive technologies to convey content to users easily. That's why code validation is so important.
- **Visual designs** (typeface, contrast, colour combinations) should be carefully chosen.
- **Content** should be written in a way that makes it easily understandable.

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# ASSISTIVE TECHNOLOGIES



# Assistive technologies

- Assistive Technologies is a general term to describe those technologies/devices/software that allow people with disabilities to operate a computer.
- Probably the most common aid for web surfing is the screen reader. This is a software application that reads website text and vocalises it. This enables blind and partially-sighted users to navigate a website and read its content.
- The most common screen reader ([currently 54% of the market](#)) is [JAWS](#) with [NVDA](#) second with 31%. VoiceOver and others make up the minority applications.
- Although screen readers like JAWS are very good at deciphering web pages, they can only work effectively if the designer has used correct, semantic markup and has implemented some additional accessibility tools such as “skip-nav” links and/or WAI-ARIA roles.

# JAWS alternatives

- JAWS is quite expensive (over \$1,000) and there are some free alternatives.

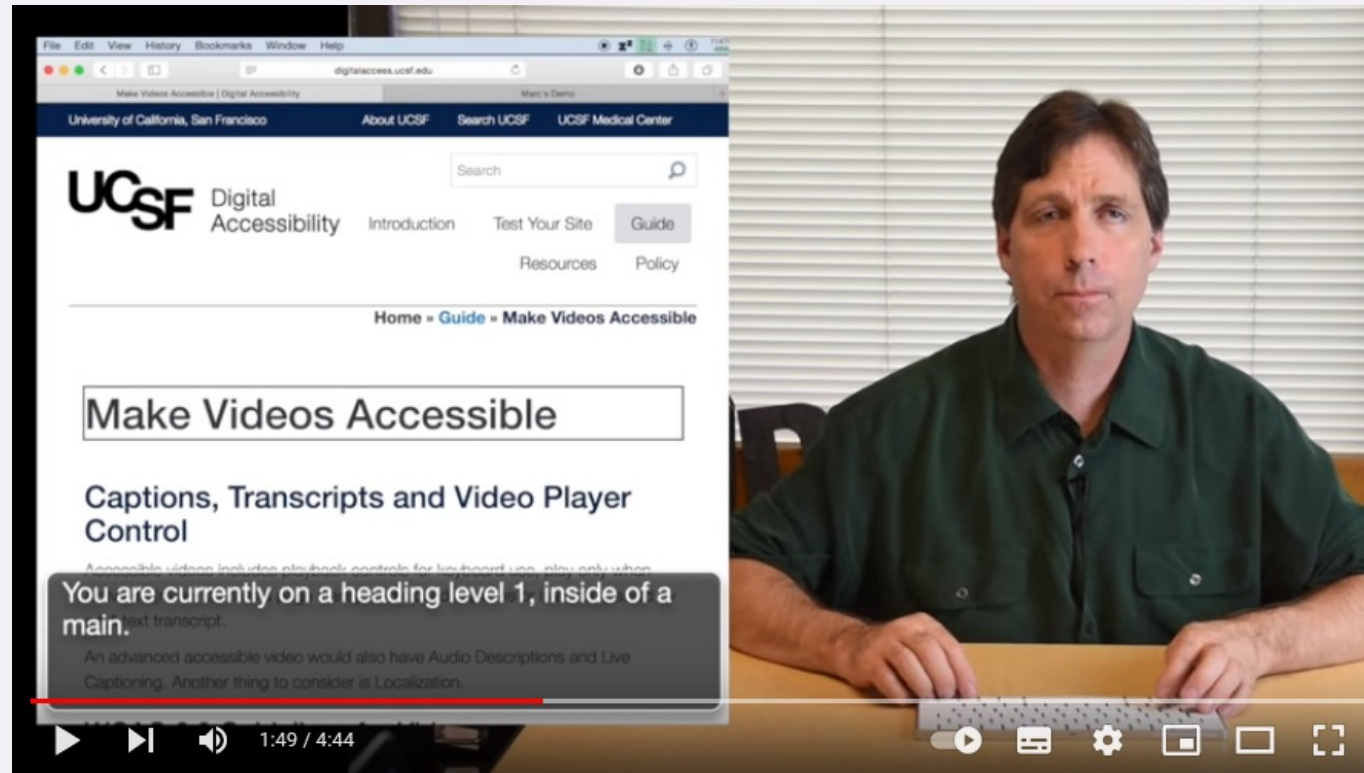
## Windows

- Narrator (installed in all windows machine)
- [NVDA Screen Reader](#) is an open source project and is entirely free to install and use. It also comes in a “portable” version and can be stored on a USB drive.

## Apple

VoiceOver (installed in all Apple devices )

# Screen reader in action



The key point here is that screen readers can only work effectively if web documents are correctly marked up.

[Screen Reader Demo for Digital Accessibility](#)



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# GOOD PRACTICE: CODING

# Semantic coding

- Semantic coding is important for accessibility because it gives structure and meaning to content that might only be obvious visually.
- For example:

```
<p class="big">Title</p>
```

may look the same as...

```
<h1>Title</h1>
```

...but it has an entirely different meaning if the user cannot see the rendered result.

See HTML: [A good basis for accessibility](#) by MDN Web Docs

# Content order

- Screen readers begin reading from the top of the HTML document and therefore, the order of the content in the document should reflect the order on the rendered page.
- This is sometimes difficult to achieve but a logical use of floating `<div>`s or grid areas can usually be employed successfully.



# Alt text for images

All images must have a text alternative, except for purely decorative images where a null alt attribute may be acceptable. However, [decorative images](#) are better done with CSS.

An image with a **descriptive** text alternative:

```

```

An image with a **null** alt attribute:

```

```

The alt attribute should have a clear and concise description of the image – it is intended to be a text *alternative* for those who cannot see the image.

# Write Good Alt Text

- Add alt text to all non-decorative images.
- Keep it short and descriptive, like a tweet.
- Don't include "image of" or "photo of".
- Leave alt text blank if the image is purely decorative
- It's not necessary to add text in the Title field.

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# ACCESSIBLE RICH INTERNET APPLICATIONS (ARIA)

# WAI – ARIA

- The Web Accessibility Initiative's *Accessible Rich Internet Applications* was created to address the semantic shortfall in markup (standard in 2014).
- WAI-ARIA is an extension to HTML that allows developers to explicitly specify page elements by adding *attributes* and *roles* to enhance the user experience to people with disabilities.

# WAI-ARIA

ARIA attributes enable modifying an element's states and properties how assistive technology presents the content to your users.

Note that ARIA doesn't change anything about an element's function or behaviour.

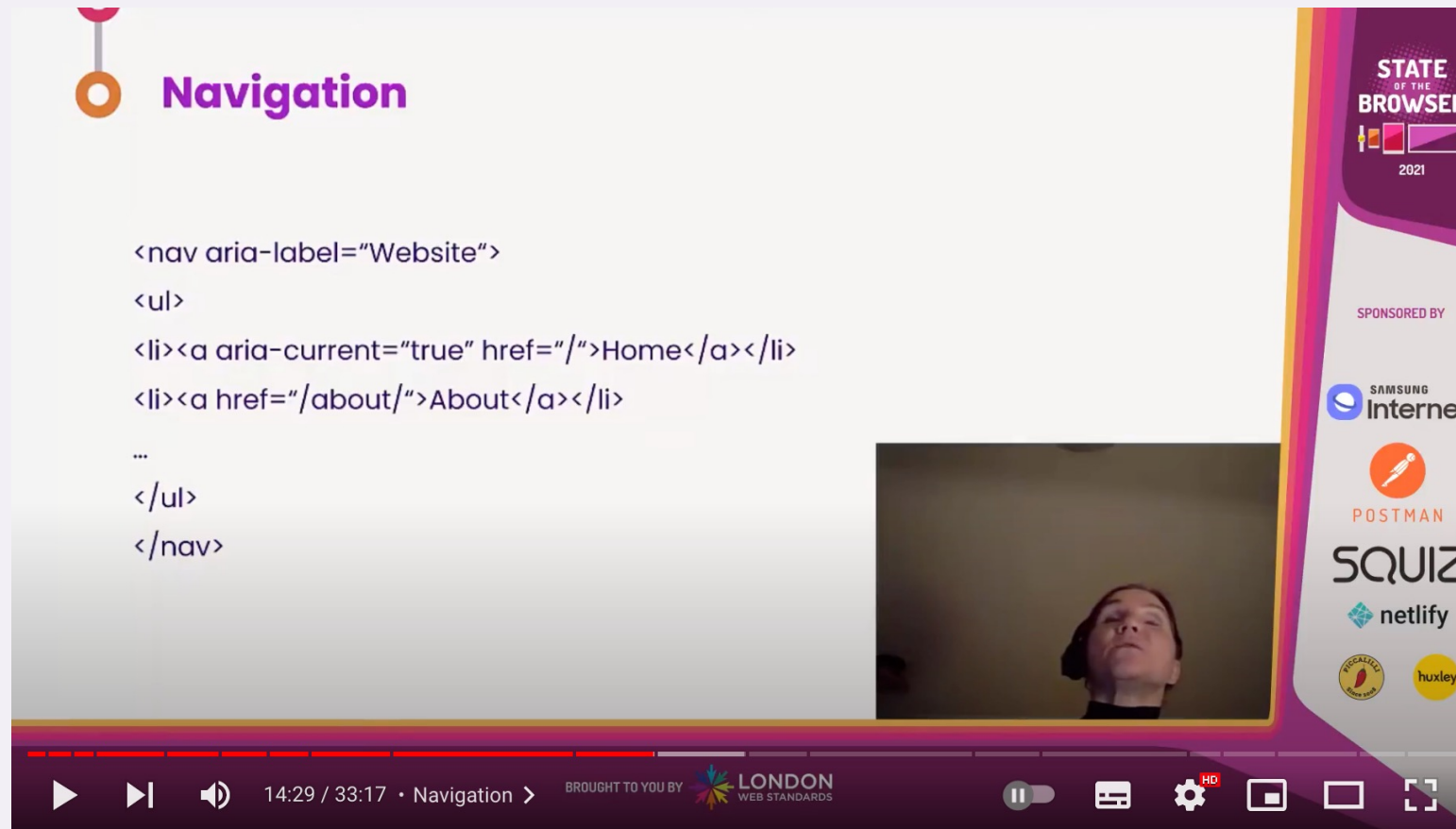


**Liquorice**      **Toffee**      **Marshmallow**

```
<nav aria-label "primary">
  <ul>
    <li><a href "#">Liquorice</a></li>
```



# Semantic and ARIA



The screenshot shows a video player interface. The main content area displays a presentation slide titled "Navigation" with a red location pin icon. The slide contains the following HTML code:

```
<nav aria-label="Website">  
<ul>  
<li><a aria-current="true" href="/">Home</a></li>  
<li><a href="/about/">About</a></li>  
...  
</ul>  
</nav>
```

Below the code is a small video feed showing a person's face. The right sidebar of the video player lists sponsors: "STATE OF THE BROWSER 2021", "SPONSORED BY", "SAMSUNG Internet", "POSTMAN", "SQUIZ", "netlify", "LOCALIZED", and "huxley". The bottom of the video player shows a progress bar at 14:29 / 33:17, the title "Navigation", and the text "BROUGHT TO YOU BY LONDON WEB STANDARDS".

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# GOOD PRACTICE: VISUAL DESIGN

# Colour, contrast & font size

- Make sure that websites are still readable by those with colour blindness.
- There are a number of useful checking tools, such as the [WebAIM Contrast Checker](#) and [Colour Contrast Analyser](#)
- Contrast between foreground and background should be at least 70% (as a general rule).
- Text should be large enough to be easily readable by those with less-than-perfect eyesight.

# Font face and readability

- Those with dyslexia may find sans serif fonts easier to read because the letter forms are simpler.
- High contrast (black on white) is not ideal, off-black on off-white is better.
- Avoid long sentences and keep paragraphs relatively short (chunking information).

# Closed captioning



[Good general advice on captioning](#)

[Captions/Subtitles](#) - WAI W3C



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# NAVIGATION TECHNIQUES

# Keyboard navigation

Testing with a keyboard is an essential part of any accessibility evaluation. Site navigation by keyboard (rather than clicking on links) is possible by using the **TAB** key to move forward and **SHIFT** + **TAB** to move backwards. **ENTER** activates links, while activating a button is possible by pressing **ENTER** or **SPACEBAR**.

WebAIM has an excellent article on [keyboard navigation](#) and an extensive table listing the most common online interactions and the standard keystrokes for the interaction.

[Use the web for a day with just a keyboard](#) - Smashing Magazine



# Skipnav

Skipnav is the technique of allowing users using screen readers to skip the navigation and go straight to the page content.

## Markup:

```
<a class="skip-to-content-link" href="#main"> Skip to content </a>
```

## CSS:

```
.skip-to-content-link {  
  background: #e77e23;  
  height: 30px;  
  left: 50%;  
  padding: 8px;  
  position: absolute;  
  transform: translateY(-100%);  
  transition: transform 0.3s; }
```

```
.skip-to-content-link:focus {  
  transform: translateY(0%); }
```



[How to Create a “Skip to Content” Link](#) – CSS-Tricks

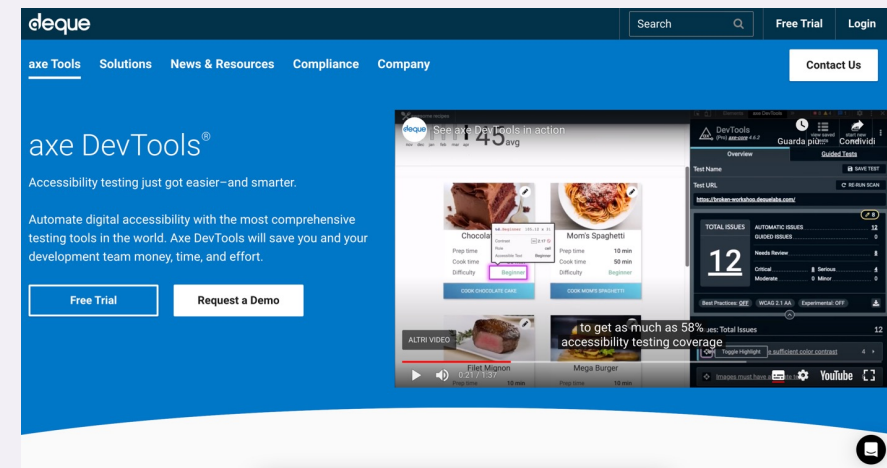
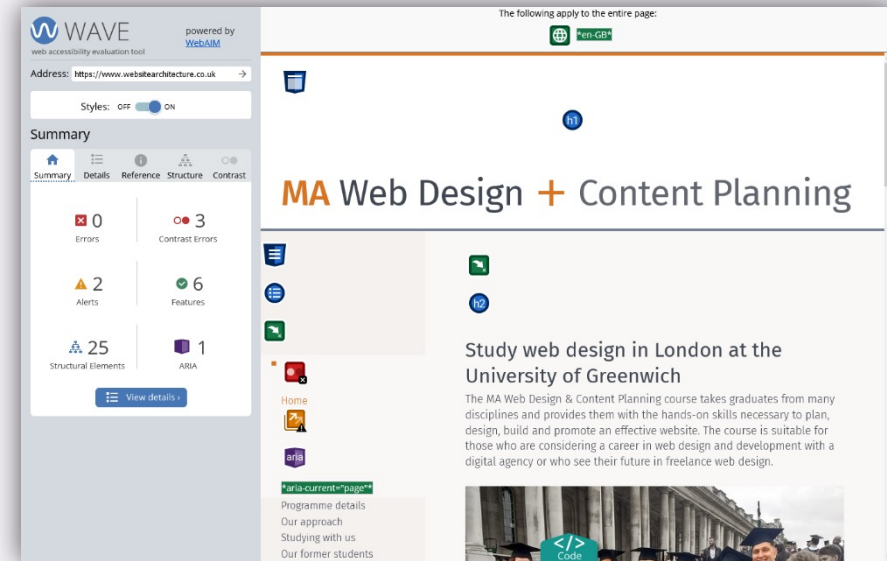
[Skip Navigation Links](#) — WebAIM

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# TESTING FOR ACCESSIBILITY

# Testing for accessibility

- Testing for accessibility is not as easy as testing for code validation because there are no strict rules, only guidelines.
- There are some useful online tools that can help. [Wave](#) is particularly good and gives a visual map of your page with suggested improvements.
- [axe DevTools](#) is also excellent and gives a great level of feedback on your coding related to WCAG level.
- [Lighthouse](#) we can use it to audit both performance and accessibility of your website





# Main Manual Testing

- Keyboard navigation
- Zoom 200%
- Responsiveness
- Heading structure
- Colour Contrast
- Content order / Screen Reader

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# NATIONAL GUIDELINES

# National guidelines & recommendations

- Most countries now have or are developing guidelines.  
E.g. [Section 508](#) in the USA, as part of the Rehabilitation Act of 1973.
- The EU has created the [Web Accessibility Directive](#) (2016). This is a directive with rules for social inclusion using W3C WCAG 2.1 recommendations.
- In the UK, the Equality Act (2010) applies and website content must therefore be accessible to all.

# Recommendations in the UK

- The Government Cabinet Office have initiated a number of guidance projects.
- For the public sector: general guidance [Accessibility and assisted digital](#) recommends AA support for WCAG 2.1.
- For the private sector: [Web accessibility: Code of practice](#) by BSi. This is a publicly available (at a cost) specification (BS 8878:2010).
- Unfortunately, the guidance is short on detail and focuses on outcome rather than practice.
- However, more recently, GOV.UK have published [Understanding WCAG 2.1](#), which includes actionable checklists.

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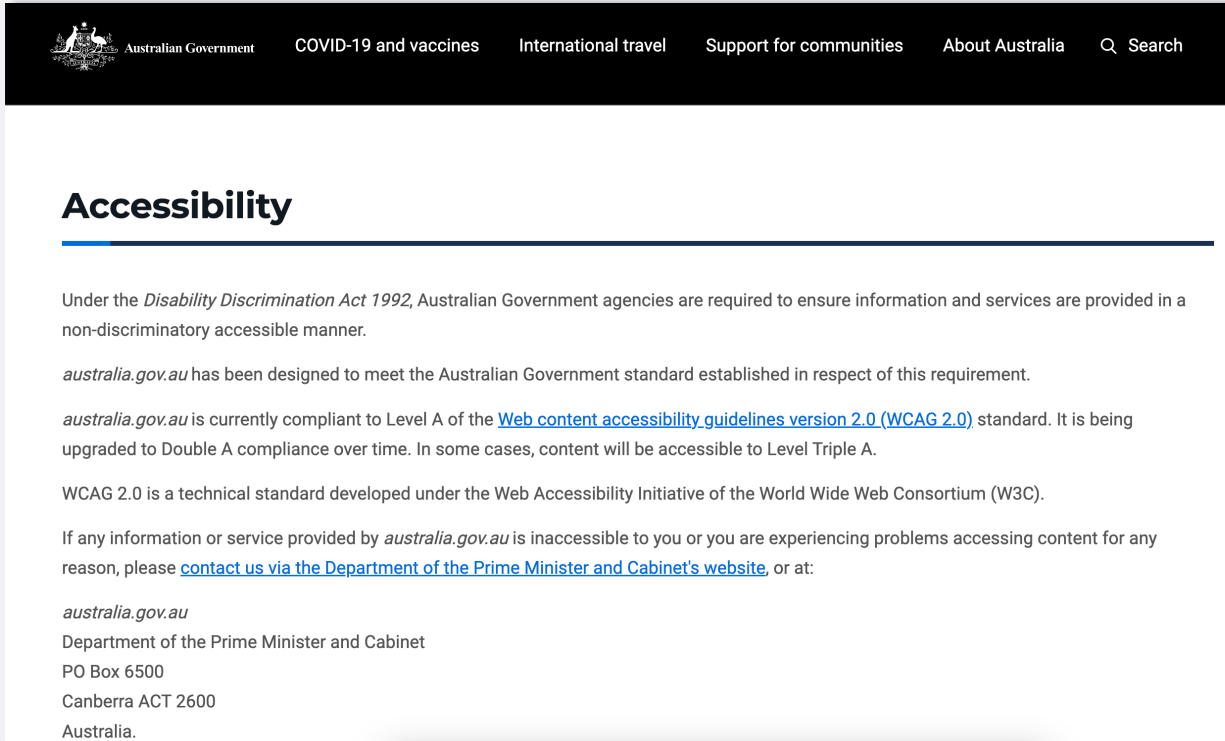
# W3C GUIDELINES

# Accessibility for web designers

- The W3C [Web Accessibility Initiative](#) (WAI).
- [Web Content Accessibility Guidelines](#) version 2 (WCAG 2.0) was finalised on 11<sup>th</sup> December 2008. Version **2.2** is the “recommended” status starting 5<sup>th</sup> October 2023.
- These are the guidelines we should use when building websites.
- W3C has provided the very useful “[How to Meet WCAG 2.1 \(Quick Reference\)](#)”.
- There are 3 success criteria levels: A, AA and AAA.
- Most websites should achieve at least A and aim for AA.
- Many organisations and jurisdictions have widely adopted the WCAG guidelines.



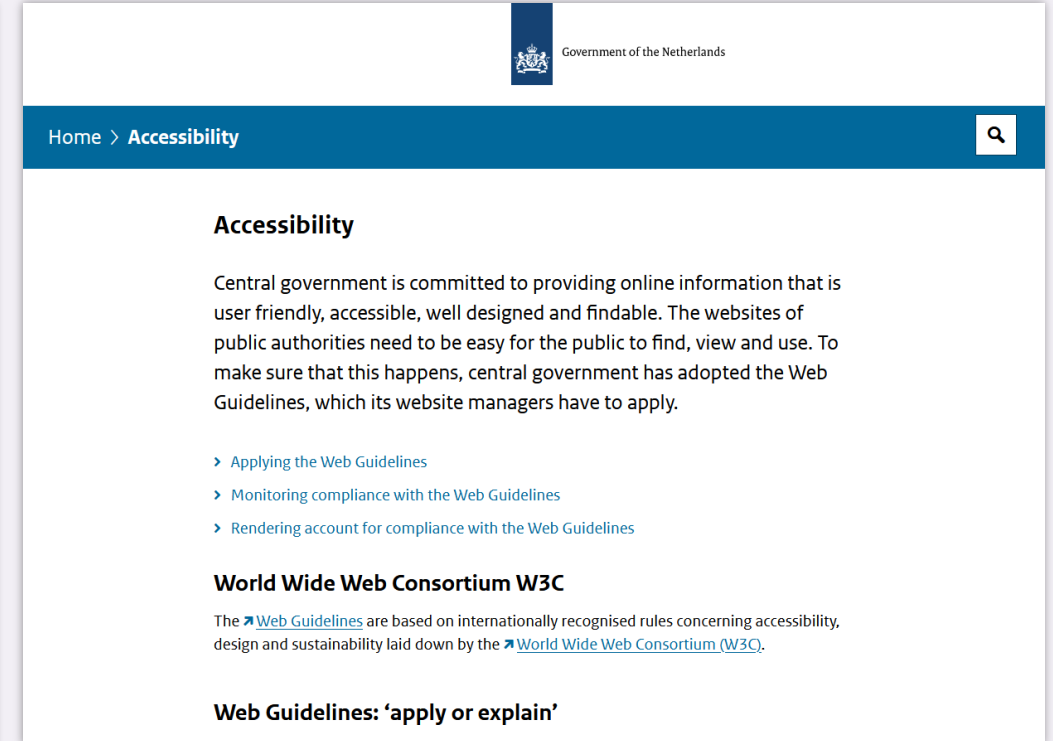
# WCAG in action



The screenshot shows the top navigation bar of the Australian Government website with links for COVID-19 and vaccines, International travel, Support for communities, About Australia, and a search function. The main heading is 'Accessibility'. The text explains that under the Disability Discrimination Act 1992, Australian Government agencies are required to ensure information and services are provided in a non-discriminatory accessible manner. It states that *australia.gov.au* has been designed to meet the Australian Government standard established in respect of this requirement. It further mentions that *australia.gov.au* is currently compliant to Level A of the [Web content accessibility guidelines version 2.0 \(WCAG 2.0\)](#) standard. It is being upgraded to Double A compliance over time. In some cases, content will be accessible to Level Triple A. WCAG 2.0 is a technical standard developed under the Web Accessibility Initiative of the World Wide Web Consortium (W3C). If any information or service provided by *australia.gov.au* is inaccessible to you or you are experiencing problems accessing content for any reason, please [contact us via the Department of the Prime Minister and Cabinet's website](#), or at:

*australia.gov.au*  
Department of the Prime Minister and Cabinet  
PO Box 6500  
Canberra ACT 2600  
Australia.

[Accessibility](#) – Australian Government



The screenshot shows the top navigation bar of the Dutch Government website with the Government of the Netherlands logo. The main heading is 'Accessibility'. The text states that Central government is committed to providing online information that is user friendly, accessible, well designed and findable. The websites of public authorities need to be easy for the public to find, view and use. To make sure that this happens, central government has adopted the Web Guidelines, which its website managers have to apply.

- › [Applying the Web Guidelines](#)
- › [Monitoring compliance with the Web Guidelines](#)
- › [Rendering account for compliance with the Web Guidelines](#)

**World Wide Web Consortium W3C**

The [Web Guidelines](#) are based on internationally recognised rules concerning accessibility, design and sustainability laid down by the [World Wide Web Consortium \(W3C\)](#).

**Web Guidelines: 'apply or explain'**

[Accessibility](#) – Dutch Government

# Accessibility in action



[f](#) [t](#)

Skip to main content | [Sign In](#) | [Register](#) | -A A +A A A हिन्दी

 **india.gov.in**  
national portal of india

TOPICS SERVICES MY GOVERNMENT PEOPLE GROUPS INDIA AT A GLANCE

Search - Keyword, Phrase [Search](#) [Advanced Search](#) **MOST SEARCHED** [Birth Certificate](#) | [Driving Licence](#) | [Pan card](#)

[Home](#) » [Accessible India Campaign](#)



**Accessible India Campaign**

**Accessible India - Empowered India**

Department of Empowerment of Persons with Disabilities  
Ministry of Social Justice & Empowerment

[Accessible India Campaign](#) (Sugamya Bharat Abhiyan) is a nation-wide Campaign launched by [Department of Empowerment of Persons with Disabilities \(DEPwD\)](#) of [Ministry of Social Justice & Empowerment](#) to provide universal accessibility to persons with disabilities.

The campaign aims at providing equal opportunity to persons with disabilities to participate in all the aspects of life and live independently. The [Sugamya Bharat Abhiyan](#) focuses on developing accessible physical environment, transportation system and Information & communication ecosystem.

The Government of India with firm commitment towards socio-economic transformation of the persons with disabilities is making efforts to create mass awareness for universal accessibility. India is a signatory to the UN Convention on the Rights of Persons with Disabilities (UNCRPD). Article 9 of UNCRPD casts an obligation on all the signatory governments to take appropriate measures to ensure to persons with disabilities access, on an equal basis with others, to the physical environment, to transportation, to information and communications, including information and communications technologies and systems, and to other facilities and services open or provided to the public, both in urban and in rural areas.

All the States are required to follow the [Persons with Disabilities \(Equal Opportunities, Protection of Rights and Full Participation\) Act, 1995](#) under sections 44, 45 and 46 categorically provides for non-discrimination in transport, non-discrimination on the road and non-discrimination in built environment respectively

[Department of Empowerment of Persons with Disabilities \(DEPwD\)](#) through [Accessible India Campaign](#) (Sugamya Bharat Abhiyan) aims to develop an inclusive society in which equal opportunities and access is provided for the growth and development of Persons with Disabilities.

[Accessibility](#) – India Government

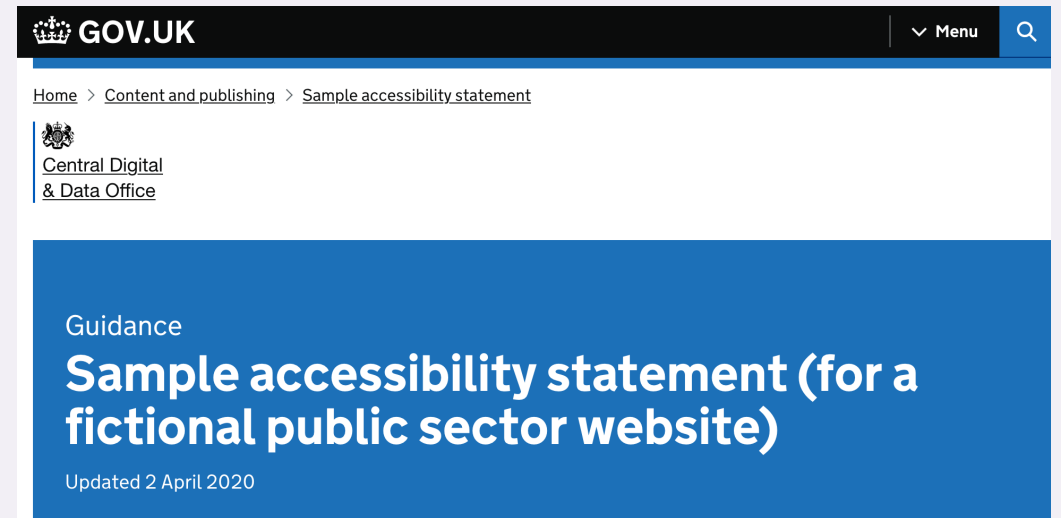
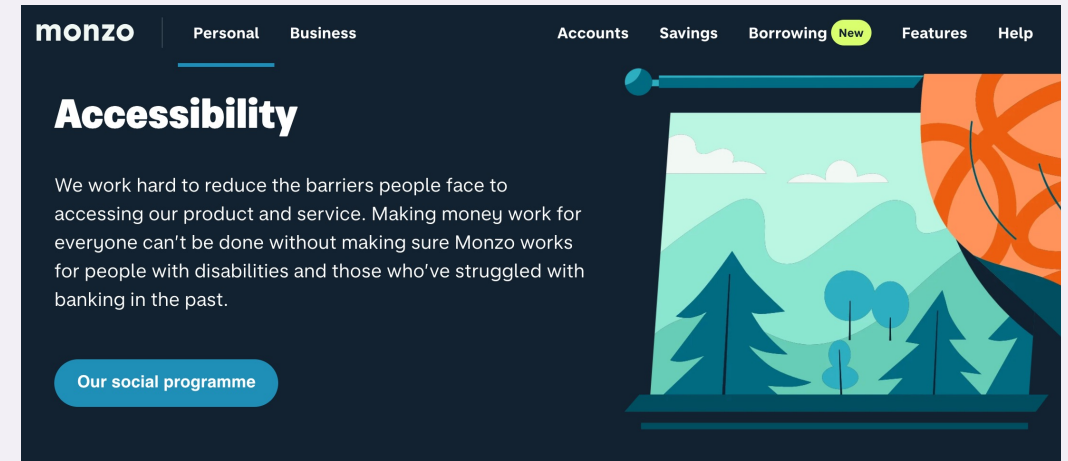
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# STATEMENTS AND SUPPORT

# Accessibility statements

- Where a site provides accessibility features, an accessibility statement should be used in order to describe what is available and how it can be used.
- This can also be a statement of compliance.

[Accessibility Statement](#) – Monzo  
[Sample Accessibility Statement](#) - GOV.UK

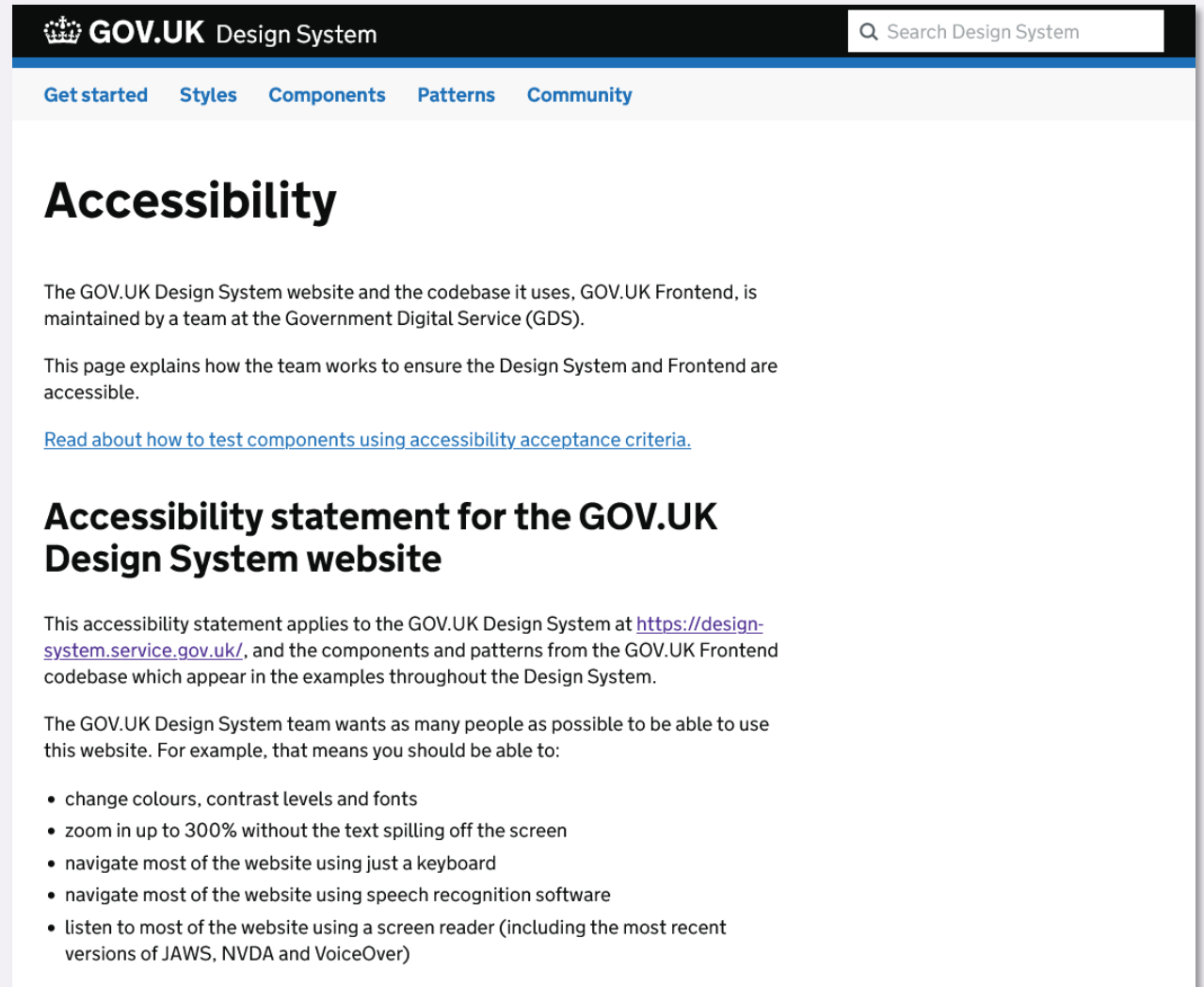


# Accessibility support

## *Best Practice*

As with many things, the GOV.UK team is leading the way in support for those with web access difficulties. Their site has plenty of useful resources for users and for designers/developers.

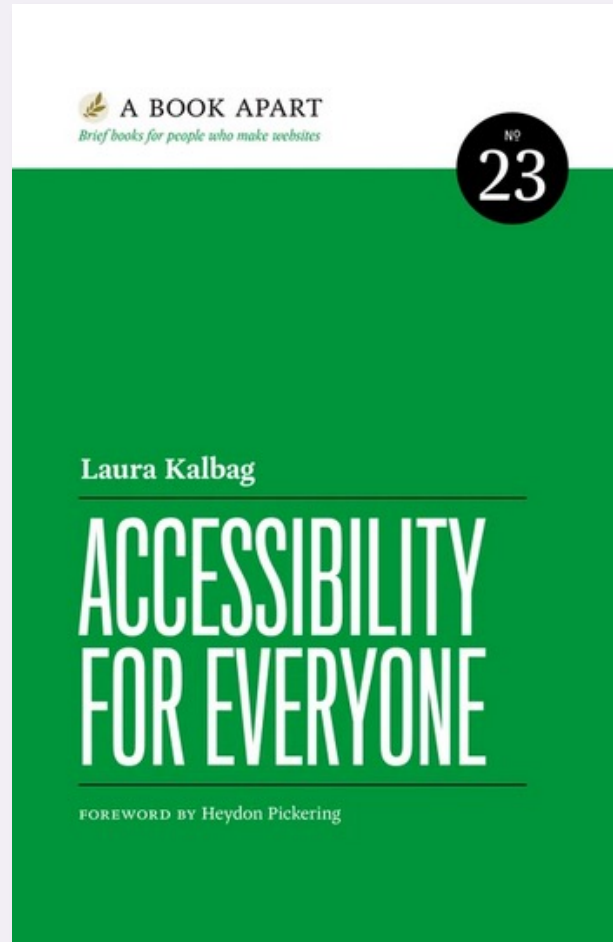
[design-system.service.gov.uk/accessibility/](https://design-system.service.gov.uk/accessibility/)



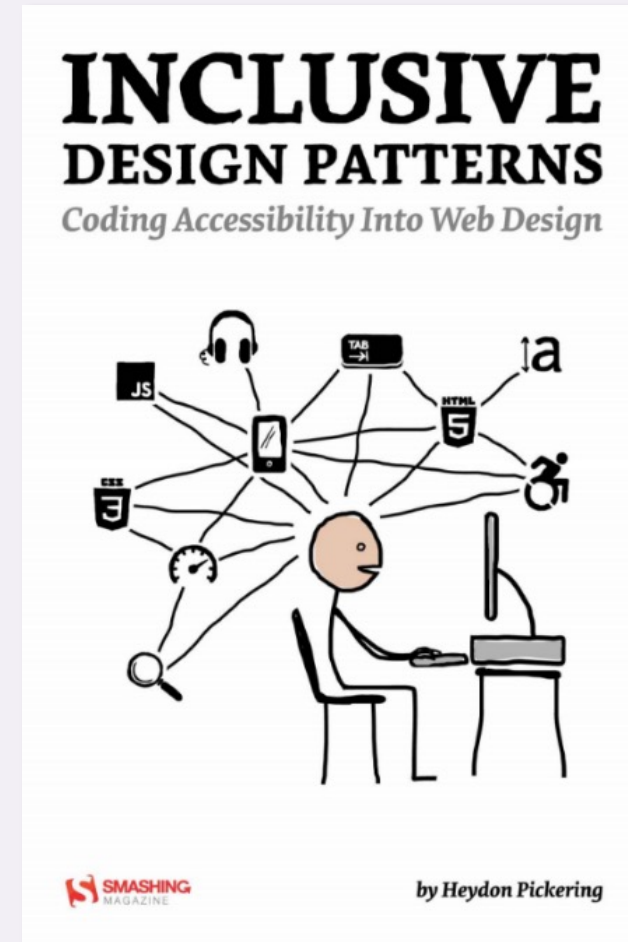
The screenshot shows the GOV.UK Design System website. The header is black with the GOV.UK logo and 'Design System' text. A search bar is on the right. Below the header is a navigation bar with links: 'Get started', 'Styles', 'Components', 'Patterns', and 'Community'. The main content area has a large heading 'Accessibility'. Below this, it states that the GOV.UK Design System website and the codebase it uses, GOV.UK Frontend, is maintained by a team at the Government Digital Service (GDS). It then explains how the team works to ensure the Design System and Frontend are accessible. A link is provided: 'Read about how to test components using accessibility acceptance criteria.' Below this is another heading: 'Accessibility statement for the GOV.UK Design System website'. This section explains that the accessibility statement applies to the GOV.UK Design System at 'https://design-system.service.gov.uk/', and the components and patterns from the GOV.UK Frontend codebase which appear in the examples throughout the Design System. It then states that the GOV.UK Design System team wants as many people as possible to be able to use this website. For example, that means you should be able to:

- change colours, contrast levels and fonts
- zoom in up to 300% without the text spilling off the screen
- navigate most of the website using just a keyboard
- navigate most of the website using speech recognition software
- listen to most of the website using a screen reader (including the most recent versions of JAWS, NVDA and VoiceOver)

# Reading

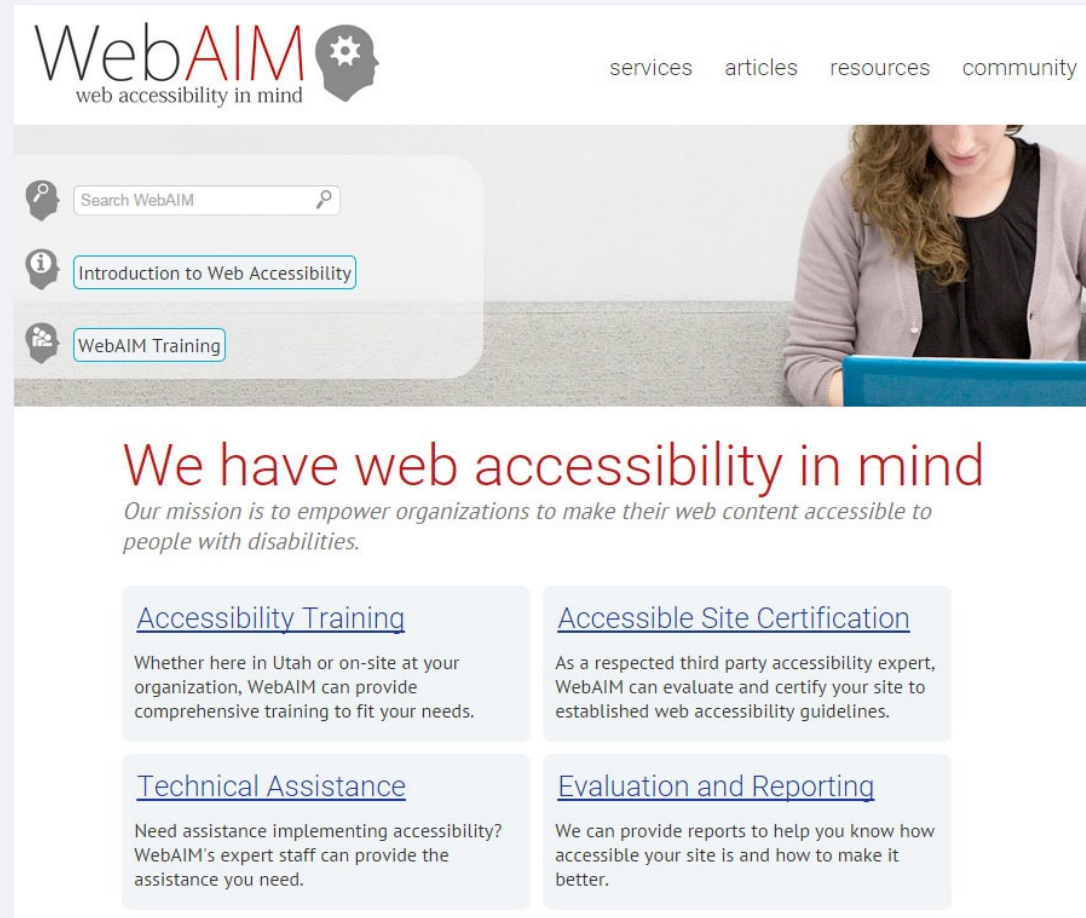


Published in 2017



Published in 2016


# Online resources



[WebAIM](https://www.webaim.org/) – Excellent articles and resources



# Online resources

 mdn web docs

ReferencesGuidesMDN Plus

Theme

Log in

Get MDN Plus

References > Accessibility


English (US)

In this article

Key tutorials

Other documentation

See also



Advance your JavaScript skills with free access to 5 Frontend Masters courses! No card required.

## Accessibility

**Accessibility** (often abbreviated to **A11y** — as in, "a", then 11 characters, and then "y") in web development means enabling as many people as possible to use websites, even when those people's abilities are limited in some way.

For many people, technology makes things easier. For people with disabilities, technology makes things possible. Accessibility means developing content to be as accessible as possible, no matter an individual's physical and cognitive abilities and how they access the web.

**"The Web is fundamentally designed to work for all people**, whatever their hardware, software, language, location, or ability. When the Web meets this goal, it is accessible to people with a diverse range of hearing, movement, sight, and cognitive ability." ([W3C - Accessibility](#))

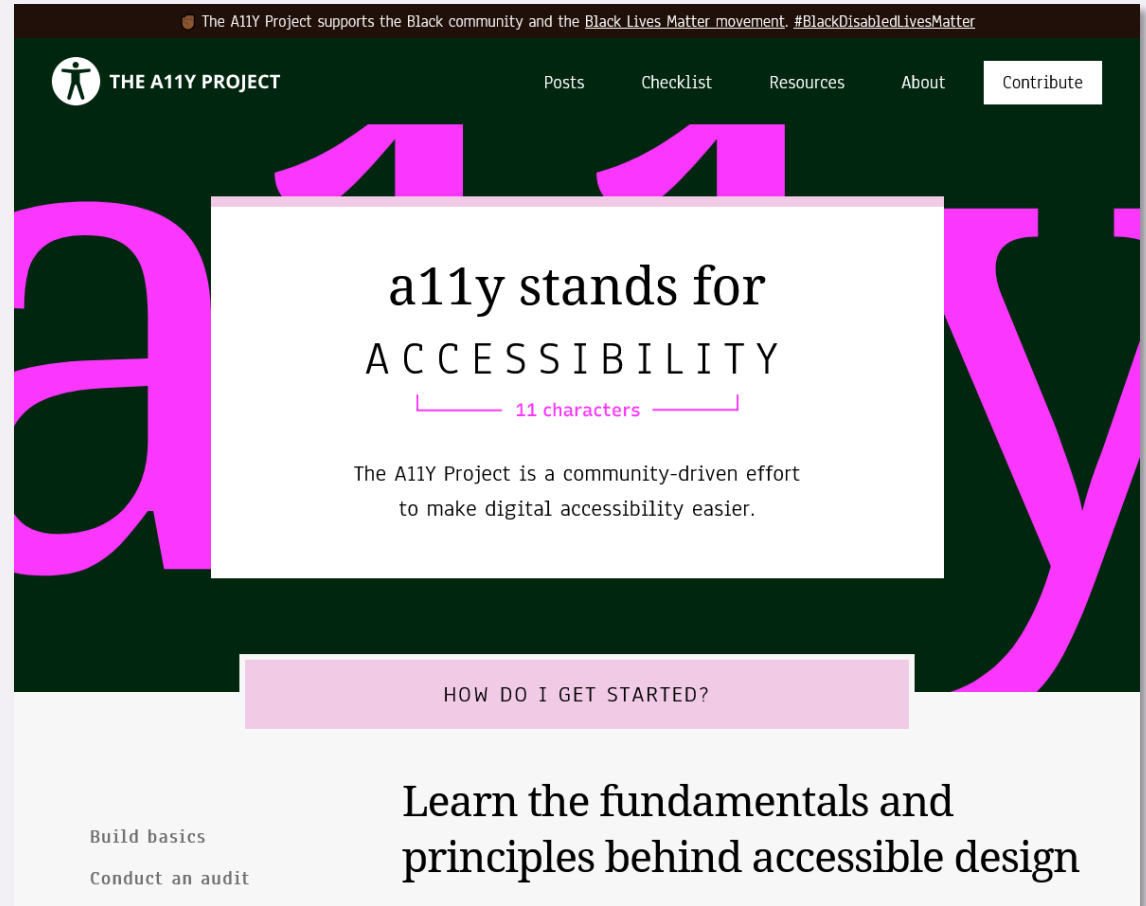
[MDN web docs](#) – Accessibility and ARIA documentation

# The A11Y Project

A11Y is an open source, community project that aims to provide all the up-to-date information web designers need in order to create accessible websites.

It provides tutorials and accessible web design patterns (JavaScript widgets) such as accordions that are as accessible as possible.

It's probably the single most useful resource.



[The A11Y Project](https://a11yproject.com/)

# Introduction to Web Accessibility


Introduction to Web Accessibility is a well-rounded course run by W3C and available on the edX platform.

It provides a solid foundation in web accessibility to developers, designers, and content authors.

It's your next step if you want to deepen your knowledge about Accessibility.


What set aside this course from others are the videos showing how people with disabilities use different assistive technologies and adaptive strategies to navigate the web.


[Introduction to Web Accessibility - W3C](#)





## Introduction to Web Accessibility


Get a strong foundation in digital accessibility to make your websites and apps work well for people with disabilities, meet international standards, and provide a better user experience for everyone.



**4 weeks**  
4–5 hours per week

**Self-paced**  
Progress at your own speed

**Free**  
Optional upgrade available

**There is one session available:**  
49,304 already enrolled! After a course session ends, it will be [archived](#) .

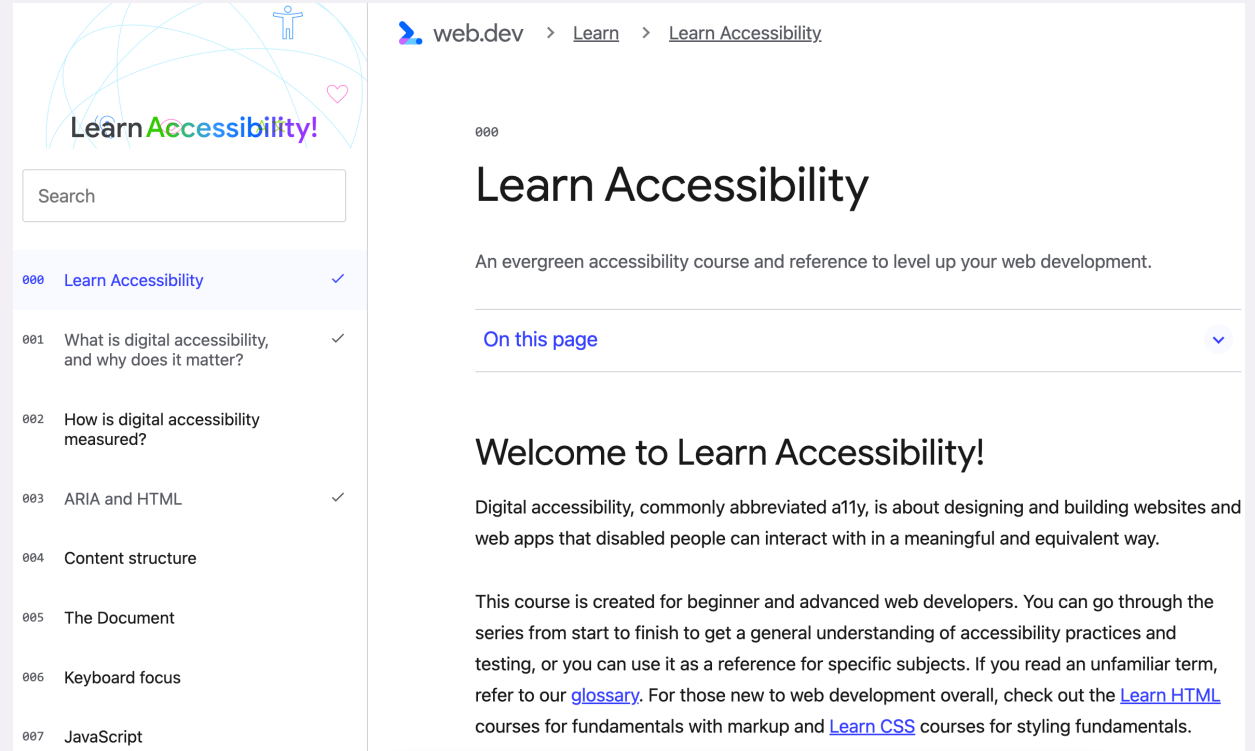
**Starts Feb 20**  
Ends Jul 1

**Enroll**

# Learn Accessibility

Learn Accessibility is an excellent course launched in 2022. [Carie Fisher](#) wrote it, and it was specifically designed for web developers. It will take you through the essentials for building accessible websites and web apps.

Carie Fisher is a prominent name in the Web Accessibility space. [Rachel Andrew](#) also collaborated by reviewing the programme.



The screenshot shows the 'Learn Accessibility' course page on the web.dev website. The left sidebar contains a table of contents with 8 items, where the first item 'Learn Accessibility' is highlighted. The main content area shows the course title, a description, a 'On this page' link, and a 'Welcome to Learn Accessibility!' section with introductory text and links to related resources like 'glossary', 'Learn HTML', and 'Learn CSS'.

	Learn Accessibility	
000	Learn Accessibility	✓
001	What is digital accessibility, and why does it matter?	✓
002	How is digital accessibility measured?	
003	ARIA and HTML	✓
004	Content structure	
005	The Document	
006	Keyboard focus	
007	JavaScript	

web.dev > Learn > Learn Accessibility

000

## Learn Accessibility

An evergreen accessibility course and reference to level up your web development.

[On this page](#)

### Welcome to Learn Accessibility!

Digital accessibility, commonly abbreviated a11y, is about designing and building websites and web apps that disabled people can interact with in a meaningful and equivalent way.

This course is created for beginner and advanced web developers. You can go through the series from start to finish to get a general understanding of accessibility practices and testing, or you can use it as a reference for specific subjects. If you read an unfamiliar term, refer to our [glossary](#). For those new to web development overall, check out the [Learn HTML](#) courses for fundamentals with markup and [Learn CSS](#) courses for styling fundamentals.

**Skip to End**

```

```

Informative Image



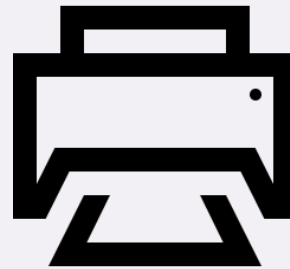
Decorative Image



Image of text



Functional Image



Print