

Design for impactful communication

Visual perception and accessibility

The importance of digital accessibility

Did you know that roughly **9 in 10 websites are not accessible**?

Below are some of the chief reasons why designing with digital accessibility in mind is so vital:



Inclusivity

It ensures that people with disabilities, including those with visual, auditory, motor, and cognitive impairments, can access and use digital content.



Legal compliance

Many countries have legislation and regulations that require websites to be accessible. Non-compliance can lead to legal issues and fines.



Better UI/UX

Good accessibility practices often lead to a better overall user experience, which benefits all users.



Better SEO rankings

Accessibility features often improve search engine optimisation (SEO) by making content more structured and understandable to search engines.



Mobile and multilingual users

Accessibility practices benefit mobile users and those who speak different languages, making content more adaptable and translatable.



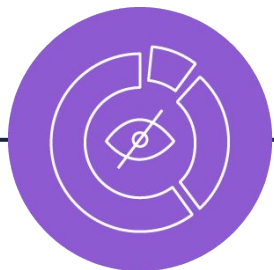
It's the right thing to do

Promoting web accessibility is a matter of ethics, ensuring that all individuals have equal access to information, services, and opportunities on the Internet.

Web accessibility for data professionals

What are some tasks in the **day-to-day role** of a **data professional** that might be **affected by web accessibility** guidelines and best practices?

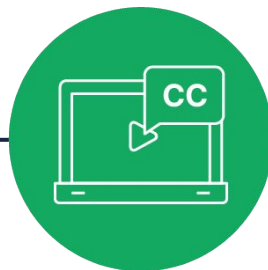
Visual media such as **charts and graphs** need an alternative way to be understood by non-sighted individuals.



Data dashboards and reports need to be navigable by keyboard input and those who use screen readers.



Demo videos of tools or dashboards need to be shared with a text alternative for hearing-impaired individuals.



User testing needs to include participants with different abilities and impairments.



Web Content Accessibility Guidelines (WCAG)

There are many **different associations involved with promoting web accessibility** and setting **guidelines** and **best practices** for its implementation (for example, the Web Accessibility Initiative (WAI) and the World Wide Web Consortium (W3C), etc.).

The **Web Content Accessibility Guidelines (WCAG)** are the most commonly used standards.

WCAG is broken down into **three levels of "success criteria"**:

A = the bare minimum conformance level

AA = the mid-range conformance level

AAA = advanced conformance (rare)



AA is the **standard most legal requirements are based on**. It ensures an equivalent experience for all users and is **the standard we should aim for** when designing content for the web.

The four principles of web accessibility

Perceivable

Content must be presented so that users can sense it (for example, readable text, alt text for images).



Understandable

Information and interface should be clear and easy to grasp.



Operable

Users can navigate and interact easily (for example, keyboard-friendly, no time limits).



Robust

Content should work reliably across different technologies, including assistive tools.



POUR: Perceivable

Content must be available for users to **interact with via their senses** – sight, hearing, and/or touch.

→ Use descriptive **alternative text** for **images and non-text content**.

Hint: Alt text should not include phrases like "image of" or "link of".

→ Use **sufficient contrast** to make content easy to see and hear.

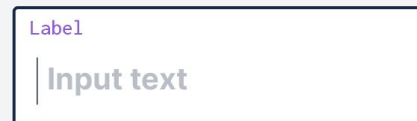
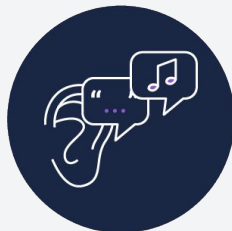
E.g. music and spoken audio should not compete in volume within video or audio content.

→ Programmatically **label** input **fields** and **buttons**.

All inputs and buttons should have labels that accurately **define their purpose**.



Alt text



POUR: Perceivable

- **Don't use colour alone to convey meaning or differentiation.**

For those with difficulty distinguishing between colours, **another differentiator** should be used.

E.g. underlining on text links

E.g. icons to accompany colour coding:



Piped water



Wells and boreholes



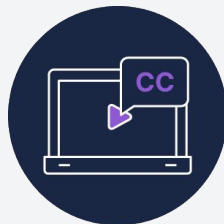
Dams

- **Provide captions and/or transcripts for video and audio content.**

Captions can be:

Open (baked into the video), or
Closed (toggle on and off).

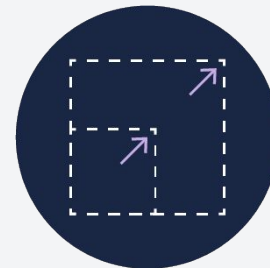
Transcripts should be **downloadable** and in a text **format that screen readers can interpret.**



- **Make content adaptable and adjustable.**

Volume, text size, contrast, brightness, playback speed, proportional scaling, etc.

E.g. Page text and content should scale legibly to 200%.



→ According to the WCAG guidelines, these are the **contrast ratios required for the AA success criteria**:

Large text = 3:1 | Large text is anything from 18pt upwards, or bolded text 14pt or larger.

Light text on dark backgrounds should be used **sparsely** or otherwise when developing an **additional dark mode or theme** for websites and apps.



Hint: Don't place colour text on a colour background. The contrast will always fail, even when using complementary colours.

POUR: Operable

Users should be able to navigate and interact with web content using a **variety of input methods** and **without time limits** that could be a barrier to people with disabilities.

→ Enable users to navigate with a **keyboard, mouse, or screen reader**.

→ Make navigation features **predictable and consistent**.

E.g. menu dropdowns should appear in the same place and operate in the same way on every page.

→ Allow users to **pause, stop, or adjust time-sensitive** content.

E.g. Speed controls on video playback.



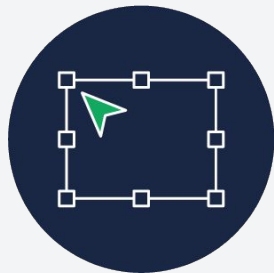
POUR: Understandable

The information and operation of user interface components must be **clear and comprehensible**, making it **easy for all users** to **understand and use** the content.

→ Use **consistent design** and **layout**.

Use proper **text hierarchy** to indicate **importance** and **chronology**.

Do not use **different ordering systems** in different places (for example, left-to-right vs. right-to-left).



→ Use descriptive **section headings**.

Individuals who use **screen readers** often **navigate pages using headings**.

Logical headings and well-distributed content also **reduce cognitive load**, which **helps all users** make sense of content more easily.



POUR: Understandable

- Make error messages **informative** and **easy to solve**.

E.g. providing clear visual and textual **feedback** for the reason why a form could not be completed.

- Present content in the **simplest possible language**.

Using succinct and straightforward language **benefits all users**, but specifically those with **cognitive impairments**.

- Make use of **easy-to-understand** and **inclusive** examples.

Accessibility and **inclusivity** are **closely linked**.

E.g. do we use examples only sighted individuals would relate to?

E.g. do we assume the lived experiences of our users?



POUR: Robust

Web content must be designed to **work reliably across a variety of user agents**, including assistive technologies, ensuring that it **remains accessible as technology evolves**.

→ Use **web standards** and **coding best practices**.

→ Design to ensure **compatibility** with **assistive technologies**.

E.g. screen readers, adaptive keyboards, alternative input devices, screen magnifiers, etc.

→ **Design content responsively**, so it can be viewed optimally across devices.

This may mean making **multiple versions** of static content in different aspect ratios.



POUR: Robust

- Ensure websites are **compatible** across **browsers**.

Websites should be **tested across a wide range of browsers** to ensure robustness in this area.



- Make certain **markup** is **valid**.

Enhance how well our content works with both current and future user tools, including assistive technologies, by making sure that content created using **markup languages** is **coded accurately** and includes **complete starting and ending tags**.



- Use **semantic HTML** and **proper document structure**.

Semantic HTML helps screen readers **recognise** different **elements** on a website, for example, headers, images, navigation bars, etc.



Accessibility tools in Power BI

Power BI conforms to **WCAG 2.1** standards, as well as what is **legislatively required** when operating information and communication technologies (ICT) services in the **US and European regions**. There are many **accessibility features in Power BI** we can and should use to **make our dashboards and reports available to all users**.

A high-level overview of some of Power BI's accessibility features:

The following features are **programmed into Power BI** and **don't require any configuration** from the author:

- Keyboard navigation
- Screen reader compatibility
- High-contrast colors view
- Focus mode
- Show data table

These features are also built into Power BI, but do **require author configuration**:

- Alt text
- Tab order
- Titles and labels
- Markers
- Report themes

Accessibility tools in Power BI: Configurable

Alt text

Tab order

Titles and labels

Markers

Report themes

Learn more detail about how to use [Power BI's configurable accessibility features](#) before creating your next dashboard or report.

[Power BI's report accessibility checklist](#) can be used to ensure we've utilised all of the accessibility features the software has to offer.

Useful tools

Some of these **links and tools** could be **useful when next developing content** for viewing, sharing, or interacting with on the web:

We can use [this handy \(and well-designed\) checklist](#) when developing content. Each checkbox contains a drop-down with more information, and a link out to the in-depth WCAG guidelines on that topic.

Check out the [WebAIM contrast checker](#) to make sure our text, icons, and images are presented in sufficient contrast with their backgrounds.

Make use of [WebAIM's suite of WAVE tools](#) to test and evaluate the accessibility of our web content.

Take a look at [this Hubspot blog](#) for a succinct and digestible overview of the WCAG guidelines, along with some examples in context.