Accessibility in Web Development & Design

An Introduction

Accessibility is...

Accessibility is the practice of making your websites usable by as many people as possible. We traditionally think of this as being about people with disabilities, but the practice of making sites accessible also benefits other groups such as those using mobile devices, or those with slow network connections.

Building accessible sites benefits everyone.

Benefits of accessible websites -

- Semantic HTML, which improves accessibility, also improves SEO, making your site more findable.
- Caring about accessibility demonstrates good ethics and morals, which improves your public image.
- Practices that improve accessibility also make your site more usable by other groups, such as mobile phone users or those on low network speed.
- In many places, companies have a legal obligation to have an accessible site.

What kind of disability are we looking at?

People with visual impairments

- People with visual impairments include people with blindness, low-level vision, and color blindness. Many people with visual impairments use screen magnifiers that are either physical magnifiers or software zoom capabilities.
- Many users will rely on **screen readers** which is software that reads digital text aloud.
- According to the World Health organization, 285 million people are estimated to be visually impaired worldwide - a highly significant number of users to miss out on just because our site isn't coded properly.

Demonstration of a Screen Reader

People with hearing impairments

- Otherwise known as people with low hearing levels and deaf people.
- Unfortunately there are no particular **assistive technologies** for computer/web use.
- According to the World Health Organization, over 5% of the world's population (about 466 million people) have a disabling hearing loss.

People with mobility impairments

- This includes people who have disabilities concerning movement, which might involve purely physical issues or neurological/genetic disorders.
- This can be a result of aging or a temporary condition resulting from an accident or surgery.
- According to the Federal Statistical Office (Destatis), 7.6 million people living in Germany are considered severely disabled.

People with cognitive impairments

- This refers to people with a broad range of disabilities, such as those with intellectual disabilities, learning disabilities, mental illnesses and the aged.
- Many people with cognitive impairments also have physical disabilities.
- Cognitive impairment is typically most common among young people.

So how can we design for accessibility?

1. Use correct markup on your content

- Structural, semantic HTML is the key starting point to good accessibility practices.
- HTML elements communicate to the browser what kind of content they contain and how the browser should render that content.
- When a screen reader, or any sort of assistive device scans a web page, it gets information about the **Document Object Model** (DOM) or the HTML structure of the page.

Best Practices

- Use one `<h1>` tag per page, matching the page title.
- Create good link text, for example `Click here for more information` is more semantic than `Click here`
- Container elements like `<div>` and `<span>` should be used for layout purposes only.
- Use HTML elements the way they're intended - all of our elements should be used to tell the browser what functional purpose the content serves.

2. Add enough color contrast

- People who have low vision can find it difficult to read text from a background color if it has low contrast.
- The contrast ratio between text and its background should be at least 4.5 to 1.
- The ratios become more forgiving with larger and heavier fonts since they’re easier to read at a lower contrast.
- Many applications are available to check our contrast levels, for example https://usecontrast.com/.

3. Write useful alternative text for images

- **Always** fill out the `alt` attribute for the `<img>` tag.
- Try to describe what's happening in the image and how it matters to the page. **Context is everything**.
- Alt tags provide better image context and descriptions to search engine crawlers, helping them to index an image properly.

Optimal alt - text Format

Okay:

```
<img src="pancakes.png"
alt="pancakes">
```

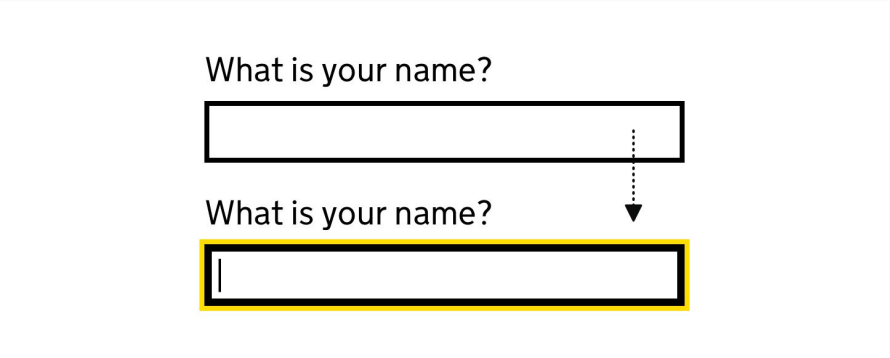
Good:

```
<img src="pancakes.png" alt="Stack of
blueberry pancakes with powdered sugar">
```

This is a better example since it's far more descriptive of what's in the image.

4. Support Keyboard Navigation

- Keyboard accessibility is one of the most critical aspects of web accessibility - many users are dependent on a keyboard to navigate content.
- By designing a usable **focus state** on our elements we can provide visual cues to the user as to which component is currently selected.
- The **tab order** should follow the flow of the page: left to right, top to bottom - header, main navigation, content buttons and inputs, and finally the footer.



Example of a well-designed focus state

Make accessibility part of your design research.

Designing for accessibility is not hard.

By applying these practices to our websites, we can help assure that the web is fair, accessible, and easy to use for **everyone**.