



Integrating AI Tools into Accessible Product Design

Aligned with the European Accessibility Act

by John Walker

Definition of Disability

“People with disabilities include those who have **long-term physical, mental, intellectual, or sensory impairments** which, in interaction with various barriers, **may hinder their full and effective participation** in society on an equal basis...”

CATEGORIES OF DISABILITIES



Auditory



Cognitive



Neurological



Physical



Speech



Visual

PERMANENT

TEMPORARY

253 million

3.2% of people globally are affected by blindness and visual impairment

466 million

6% of people globally are affected by deafness and hearing loss

80%

Of disabilities are acquired between the ages of 18 and 64

The Aim of the European Accessibility Act

LEVEL THE PLAYING FIELD

For 135 Million people in the EU with disabilities

HARMONIZE ACCESSIBILITY LAWS

Across all EU member states

APPLIES TO MOST BUSINESSES

E-books, e-readers, e-commerce, websites and mobile apps are all explicitly included

BASED ON WCAG 2.2

Minimum compliance of Web Content Accessibility Guidelines

84% CURRENT WEBSITES FAIL

Estimate of current compliance failure

ENFORCEMENT BEGINS 2025

Enacted in 2019

EAA 25 Business Objectives

The European Accessibility Act (EAA) 2025 aims to improve accessibility for a range of digital services and products, and has several objectives for businesses



Product
Accessibility &
Compliance



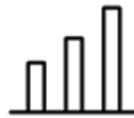
Service
Accessibility



Cross Border
Compliance



Staff Training



Regular Audits



Reporting &
Review



Personalized
learning paths



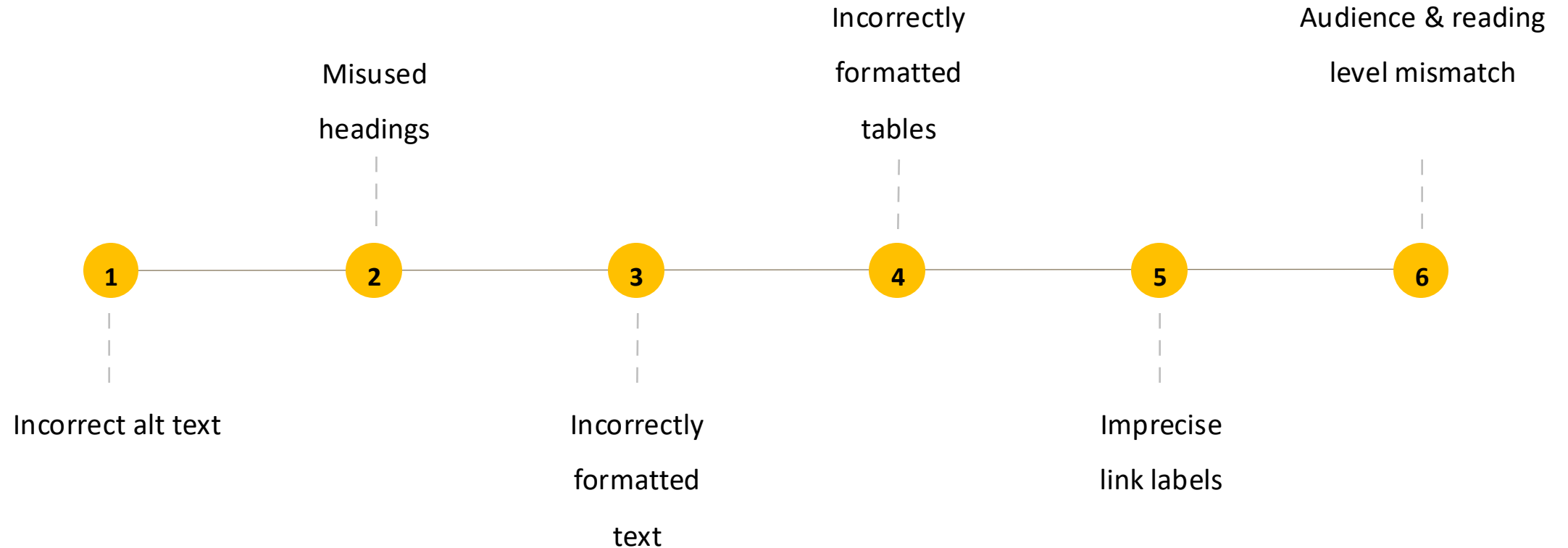
Empowers
teachers

AI and Accessibility




Image created with AI

AI tools can *sometimes* identify textual issues



AI tools can generate alt text/captions

J write alt text



◆ Sure, here is some alt text for the image:

- A photo of a lone pine tree standing on a rocky cliff overlooking the ocean.
- A photo of a pine tree with its branches reaching towards the sky.
- A close-up photo of the bark of a pine tree.
- A photo of a pine tree at sunset, with the sky ablaze with color.

Gemini AI auto-generated alt text options

AI tools can generate alt text— but there can be problems

- But may refuse to caption images with people
- Their content can be incorrect
- AI's inability to understand context

Video captioning services also exist

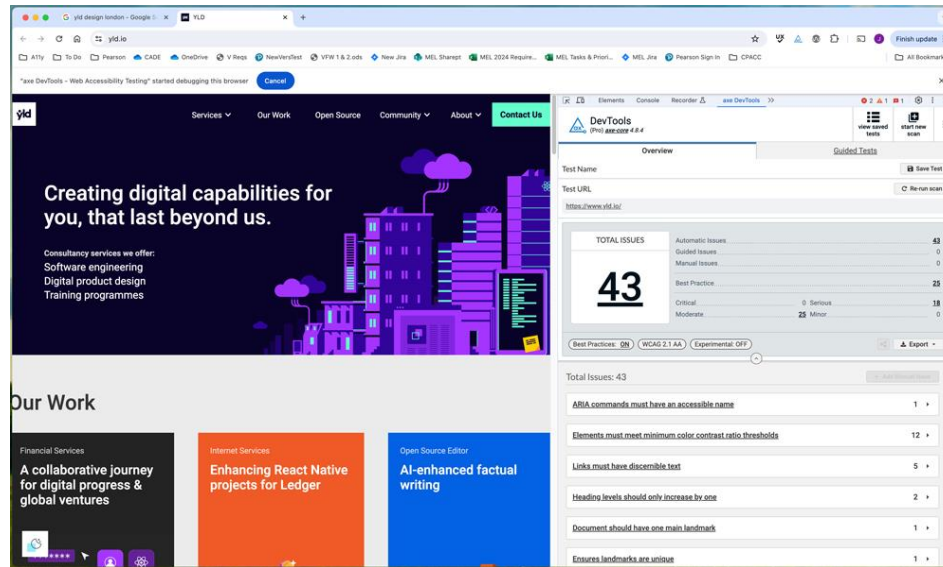
- But accuracy can vary from 17% to 48%

AI Scans vs Human Surveys

AI provides a baseline for assessing compliance, while manual human surveys are needed to find contextual issues

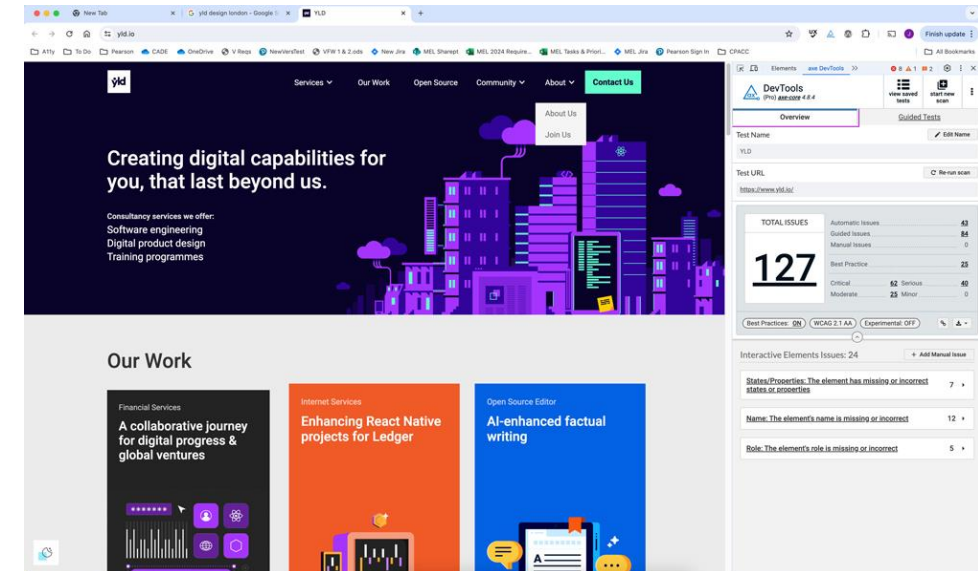
	AI	Humans
Evaluate	Quickly scan large sites	Evaluate content structure, presentation and comprehensibility
Identify	Identify basic, technical issues such as missing alt text	Log functional limitations via screen reader testing
Code	Document simple code violations	Identify misapplied (but technically correct) code
Plan		Parse WCAG guidelines and create prioritized remediation plan

Human surveys must supplement AI scans



AI Scan

- Identified **43** issues



Human Survey + AI Scan

- Identified **100+** issues

Accessible Interfaces



Image created with AI

Start with accessibility



× link, Step 2 (Completed) <Label>

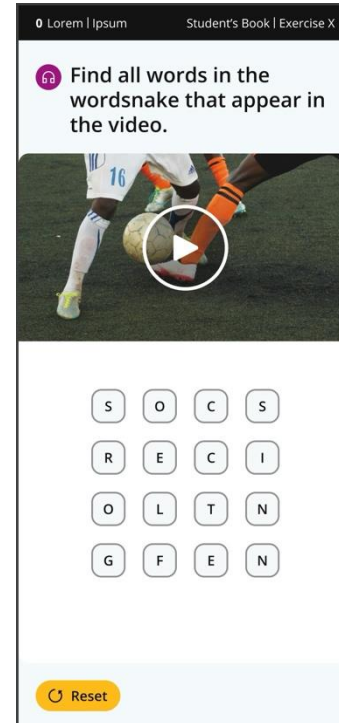
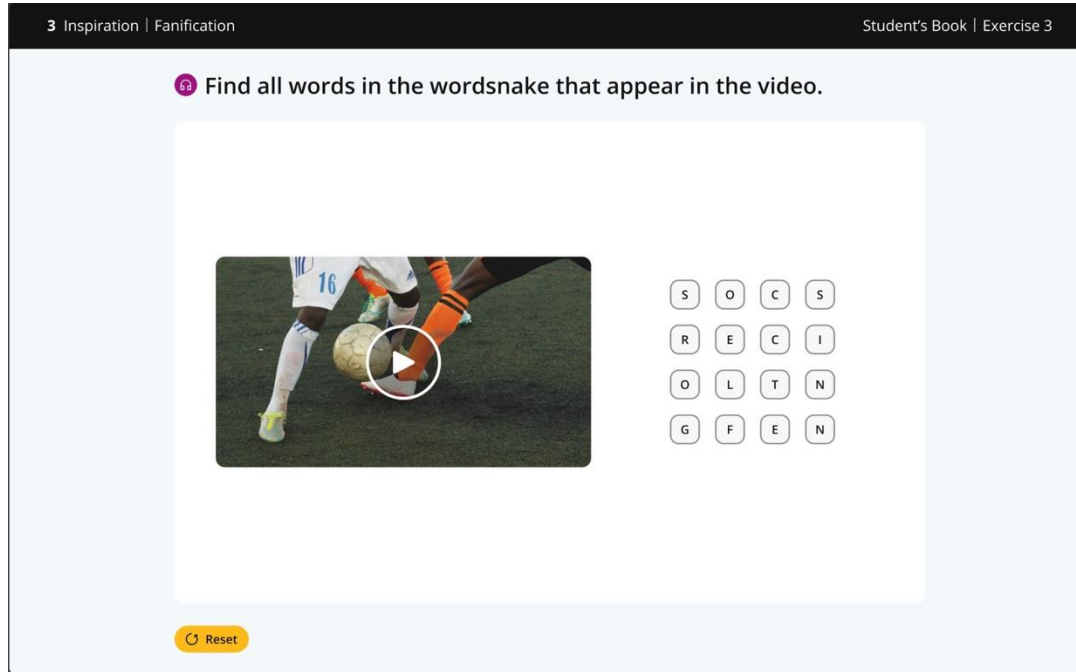
Embedding accessibility considerations into the product development lifecycle ultimately **saves teams time, effort and money**

All the components in Nemo, our new design system, are accessible and ready to use

Stepper Component

- Each step announced
- Additional screen reader-only content helps screen readers understand where they are in the process

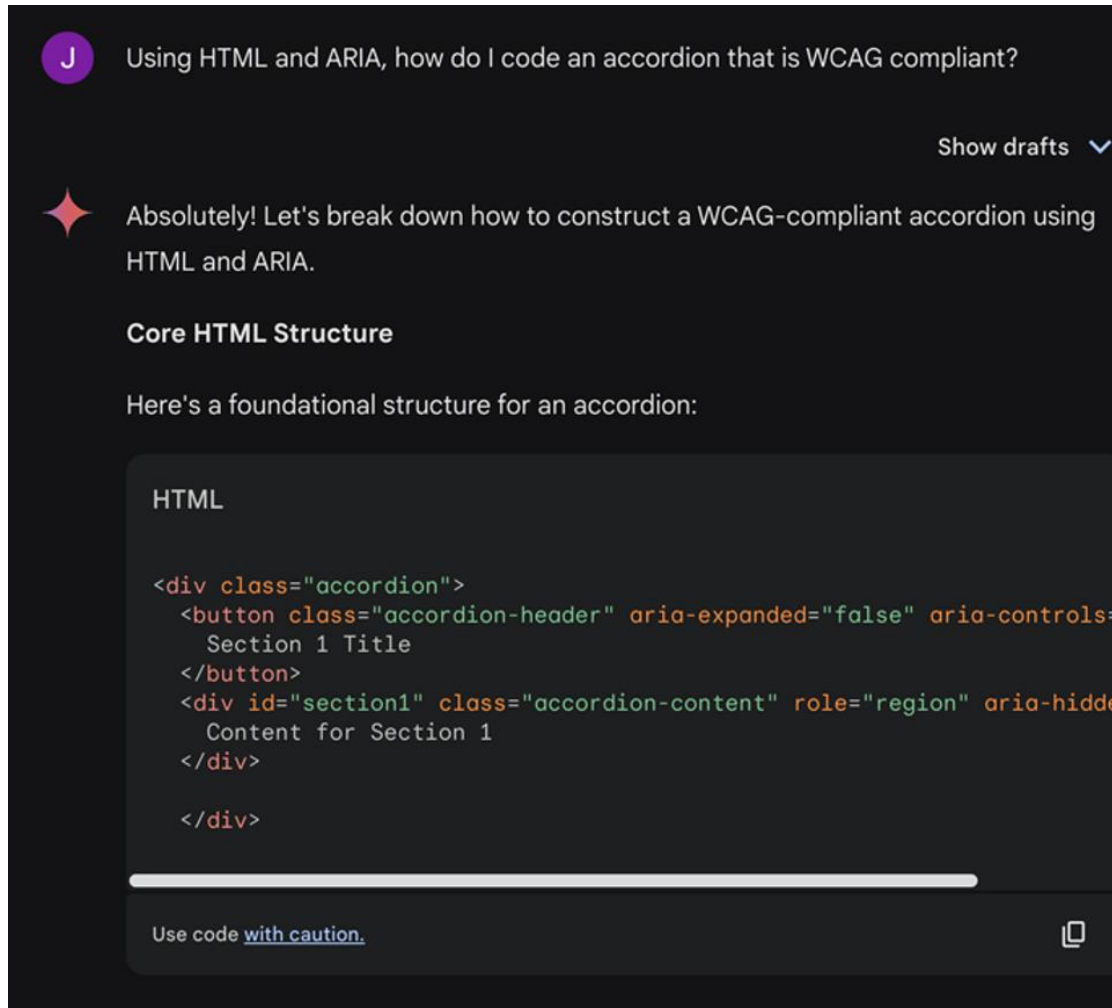
Screens must be responsive



Create components that can be presented on any screen without reformatting

- This design stacks for mobile, but the game itself doesn't reformat
- Use a grid no bigger than 8x8 to ensure cognitive load isn't overwhelming

AI can *help* code components



J Using HTML and ARIA, how do I code an accordion that is WCAG compliant?

Show drafts ▾


✦ Absolutely! Let's break down how to construct a WCAG-compliant accordion using HTML and ARIA.

Core HTML Structure

Here's a foundational structure for an accordion:

```
HTML

<div class="accordion">
  <button class="accordion-header" aria-expanded="false" aria-controls=
    Section 1 Title
  </button>
  <div id="section1" class="accordion-content" role="region" aria-hidden=
    Content for Section 1
  </div>
</div>
```

Use code [with caution](#). 

Query: how to code a WCAG-compliant accordion

Gemini generated:

- **HTML tips** - to create accessible components
- **ARIA tips** - to make HTML components available to Javascript
- **Javascript tips** - to dynamically transform and update the components in real time

Keep in mind

- AI tools can “hallucinate” and provide seemingly realistic made-up nonsense
- In our experience, AI's responses are partially or completely wrong about 30% of the time