



# **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



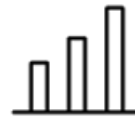
Service  
Accessibility



Cross Border  
Compliance



Staff Training



Regular Audits



Reporting &  
Review



Personalized  
learning paths



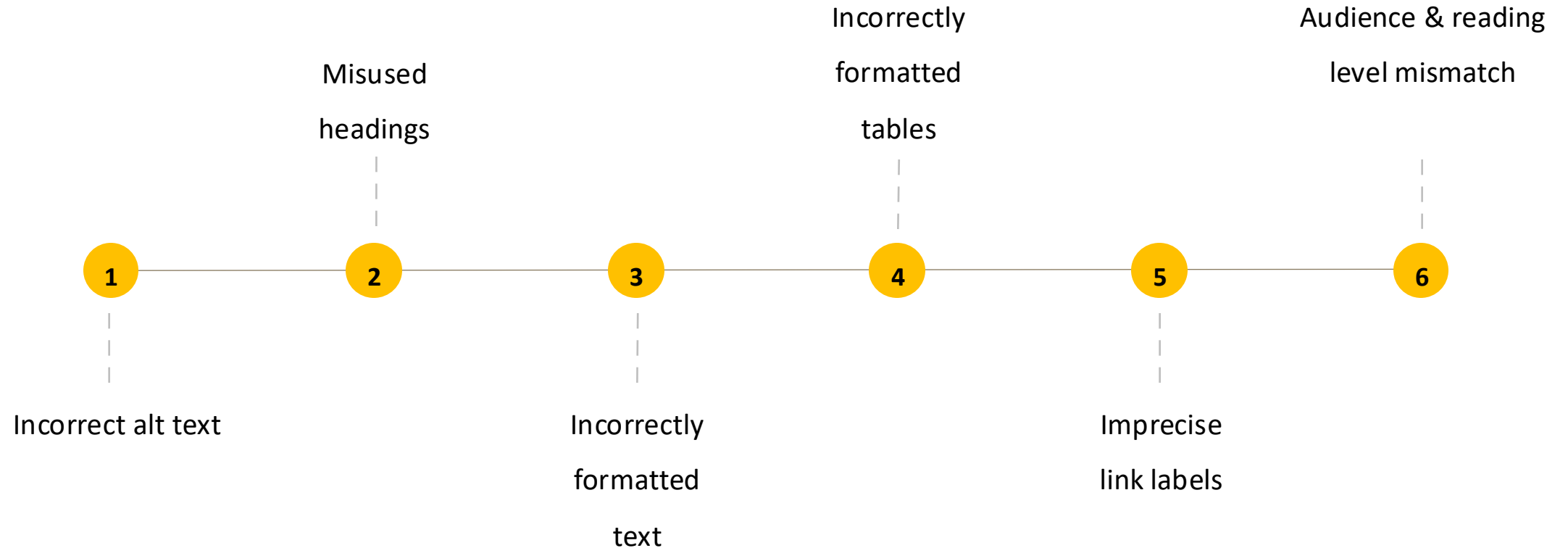
Empowers  
teachers

# 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%

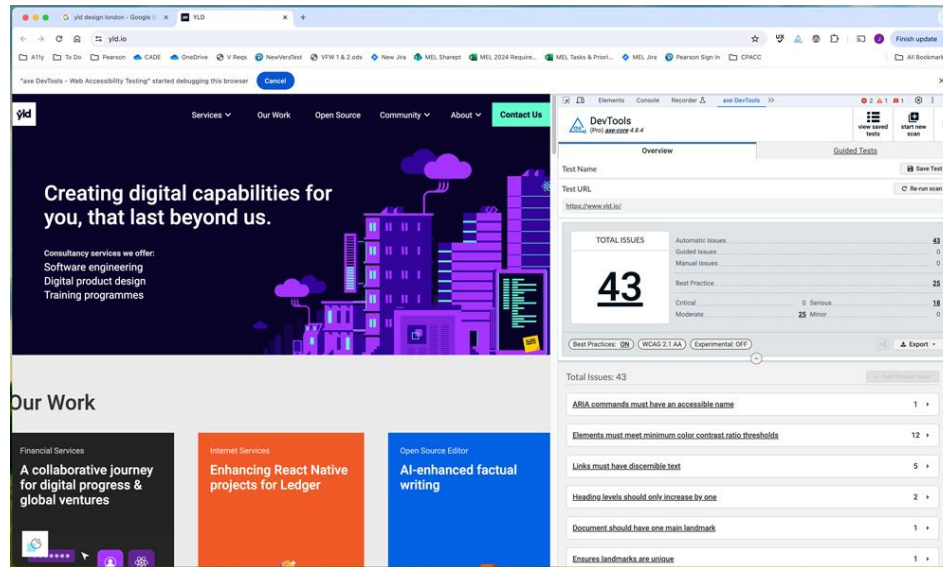
# AI Scans vs Human Surveys

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

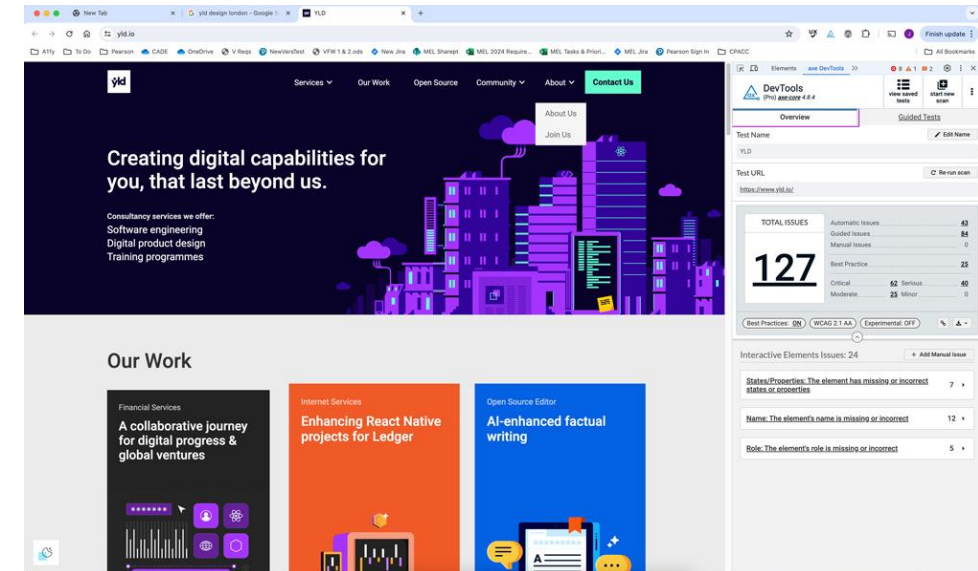


# Human surveys must supplement AI scans



## 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**

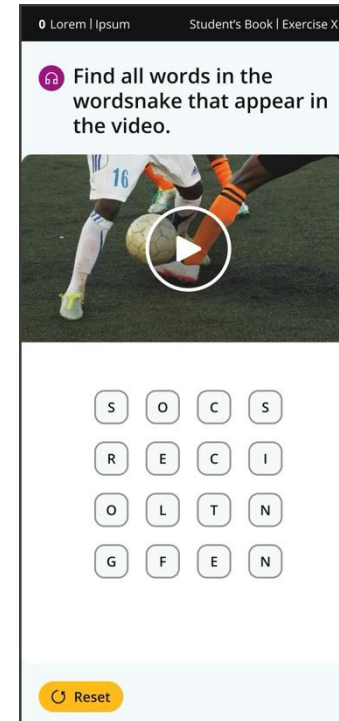
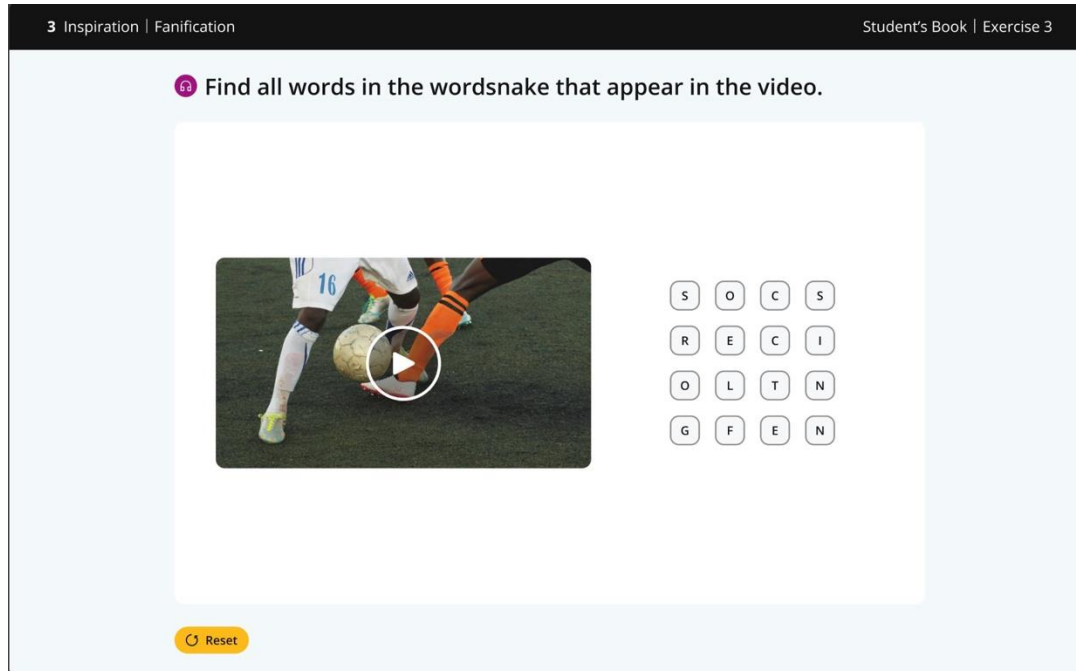
All the components in Nemo, our new design system, are accessible and ready to use

## Stepper Component

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



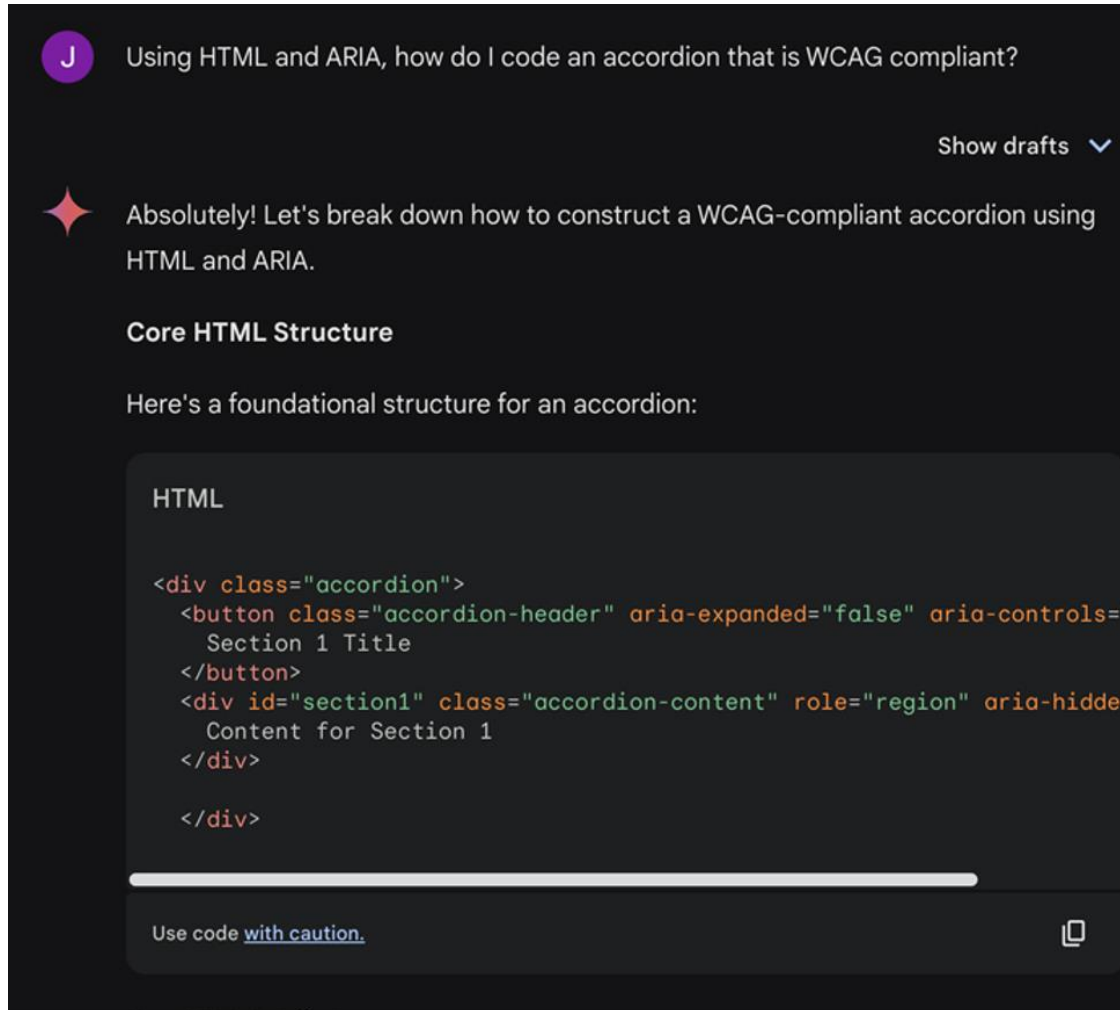
# Screens must be responsive



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



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