Accessibility Testing

(UX Method)

User Experience (UX) Design and Management

November 12, 2025

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Objective

- Identify accessibility barriers
- Accessibility testing "ensures that […] digital content [is] usable by everyone, including individuals with disabilities."
- It makes digital products perceivable, operable and understandable by everyone.

OBJECTIVE

AI prompt: „white background. illustrate the term "objective". display a mountain with a flag on it. dont use text."

Methodological approach
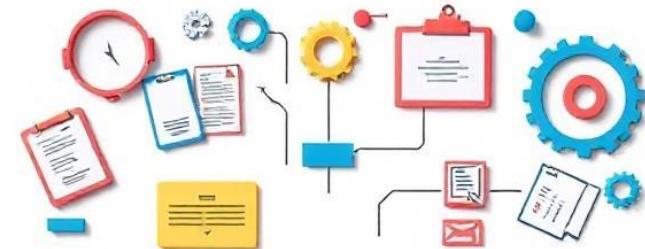
Accessibility testing typically combines automated and manual tests

- **Automated testing**
  - Conducted using software tools
  - Checks for compliance with WCAG
  - Fast, repeatable, consistent
  - Finds the most common violations

- **Manual Testing**
  - Conducted by human evaluators
  - Uses assistive technology
  - Real user experience
 - Context-aware

Methodological Approach
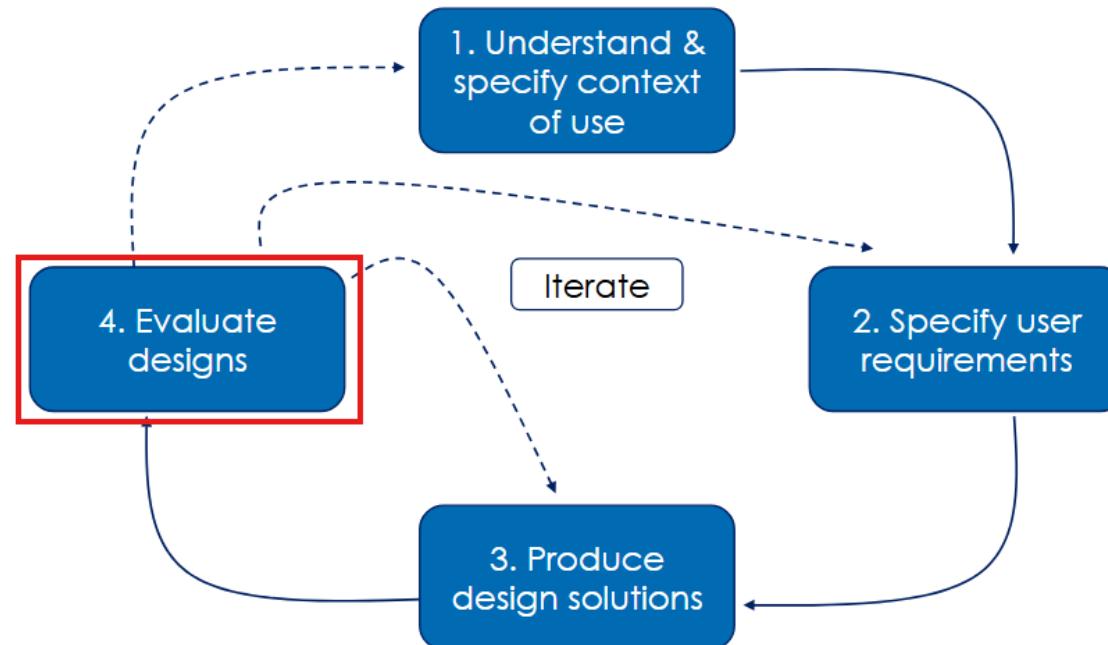
Emma (visually impaired) tries to book a flight

- **Automated Testing**
  - Selection buttons lack labels
  - Color contrast fails guidelines
- **Expert review**
  - Keyboard navigation focus jumps around the page without order skipping some sections
  - Dynamic price updates not announced
- **User observation (Emma)**
  - Cannot differentiate color coding in seat map
  - Cannot select a seat using keyboard

AI prompt: „ emma screams at her laptop and is angry. emma hates her laptop."

Categorization of UX method

Stage of the UCD process

Categorization of UX method

Dimension	Accessibility Testing Classification
Stage of the UCD process	Evaluation stage (or during iteration)
Study goal	Formative & Summative – identify & verify accessibility barriers
Measurement focus	Usability
Participants	Accessibility experts, users with disabilities
Required number of participants	Experts: 2–3 | Users: 5–10 per disability group
User behavior / attitude focus	Behavioral (observe what users do & say)
Data type	Mixed: Qualitative + Quantitative
Place of evaluation	Mostly remote (lab and field also possible)
Timeline	During & after usage
Period of experience	Snapshot during interaction
Context of use	Scripted use (or de-contextualized use)

Pros & Cons

Pros
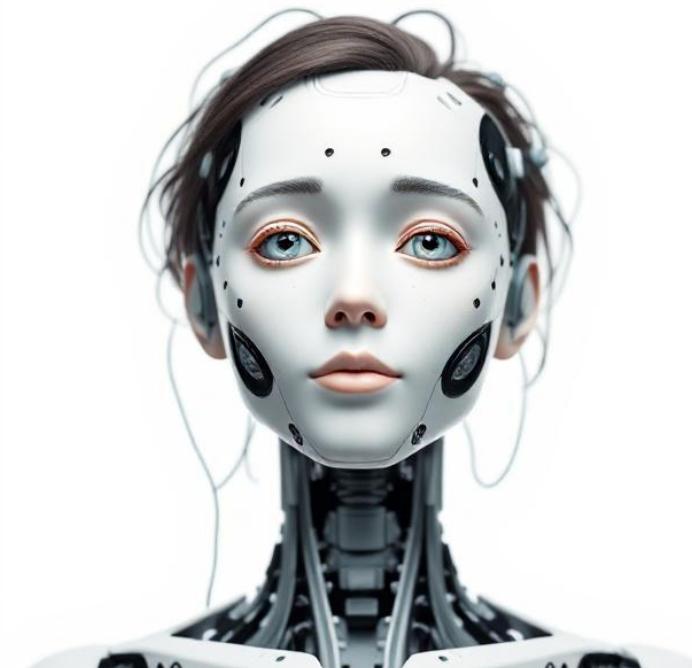
- Ensures inclusive design
- Benefits all users
- Ethical responsibility
- Business and market benefits
- Legal compliance

Cons

- Resource-intensive
- Inconsistent results
- Difficult to simulate and test thoroughly
- Late testing results in costly fixes
- May become compliance-focused, not user-focused
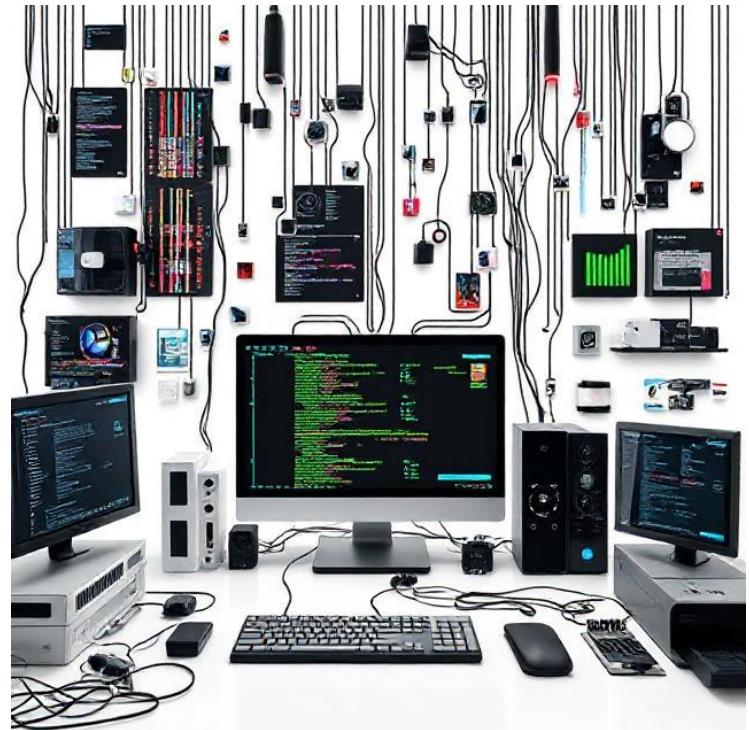
How does AI change accessibility testing?

- Expands on the automated testing
- Faster, scalable audits
- Auto-generated suggestions
- Non-Deterministic results
- Human validation remains essential

Tools or providers

- axe DevTools (by Deque Systems)
- WAVE (by WebAIM)
- Lighthouse (by Google)
- ANDI (open-source)

- Color Oracle / Stark (simulate color blindness)
- NVDA & JAWS (Screen Readers)
- Microsoft Accessibility Insights (for Windows applications)

- …

AI prompt: „white background. a lot of computer programs and digital products"

Sources

- Lazar, J., Feng, J. H., & Hochheiser, H. (2017). Research methods in human-computer interaction. Morgan Kaufmann, Cambridge, USA

- https://www.w3.org/WAI/standards-guidelines/wcag/

- https://www.nngroup.com/reports/how-to-conduct-usability-studies-accessibility/

- https://arxiv.org/abs/2510.13914

Thank you for your attention!