

Human-Computer Interaction (HCI): Designing Technology for People

What is HCI?

- **Definition:** HCI is a multidisciplinary field that designs, evaluates, and implements interactive computing systems for human use, bridging the gap between humans and technology.
- **Human-Computer Interaction (HCI)** is about creating technology that understands how humans think, feel, and behave. It combines psychology, design, and computer science to make apps, websites, and devices easy, safe, and enjoyable to use.
- **Scope:** It covers everything from traditional computers and websites to mobile apps, ATMs, and accessibility for diverse users, stemming from the rise of personal computing.

Why Understanding People is Crucial

- **Usability & User Experience (UX):** Poor design leads to confusion, frustration, and inefficiency. Many people who engage with computing systems will have differing needs, maybe they are not confident with technology use, maybe their language skills are limited, maybe they have a learning or physical disability. HCI ensures systems are easy to learn and use, making technology enjoyable, not a chore.
- **Cognitive Alignment:** It recognises that interaction is a cycle of perception cognition and action. Designing systems that align with how human brains naturally process information, preventing errors and increasing efficiency. In other words it seeks to make them easy to use and accessible to all.

The Web Content Accessibility Guidelines (WCAG) are organised into four foundational principles known by the acronym **POUR**. These principles ensure that digital content is accessible to all users, regardless of their sensory, physical, or cognitive abilities.

1. Perceivable

Users must be able to recognise and process information using the senses available to them (sight, hearing, or touch).

2. Operable

Users must be able to navigate and interact with the interface using various input methods.

3. Understandable

Information and the operation of the user interface must be clear and predictable.

4. Robust

Content must be compatible with a wide range of current and future technologies like screen readers.

You can read more on this here:

<https://www.thisisfever.co.uk/knowledge-hub/understanding-web-content-accessibility-guidelines/>

Key Principles of Good Design:

- Visibility – Users should see what actions are possible.
- Feedback – Systems should respond clearly to user actions.
- Simplicity – Keep interfaces clean and easy to understand.
- Accessibility – Design for everyone, including people with disabilities.

Here are 2 videos that provide a good insight into HCI and accessibility

- Video: Accessibility Basics – <https://www.youtube.com/watch?v=3f31oufqFSM>
- Article: 10 Usability Heuristics – <https://www.nngroup.com/articles/ten-usability-heuristics/>

This website reviews some very popular applications highlighting some flaws in the designs.

An interesting article ~~will~~ worth a look.

https://www.interaction-design.org/literature/article/bad-ux-examples?srltid=AfmBOoqf2z9nunxstFMyL1er0ivoiOq1tUWXHxr82SXfVOcSSqKGq9HR#1._apple_music-1

Interested in finding out more this site looks at accessibility web designs

- Intro to Web Accessibility – <https://www.w3.org/WAI/fundamentals/accessibility-intro/>
- **Why it Matters:** Successful design must respect human **cognitive limitations**. If a system requires a user to remember too many things or learn complex rules too quickly, it will fail. Take a look at this short video to see how poor design can impact businesses <https://boagworld.com/usability/bad-user-interface-design-is-death-by-a-thousand-cuts/>

Other interesting reads

[Interaction Design Foundation: History of HCI.](#)
[GeeksforGeeks: HCI Guidelines.](#)