

Human Computer Interaction (HCI)

Challenge 1: What's Wrong With This App?

Instructions: Look at each design example below both. Images are for the same app

Which do you think would be easier to use and why?

The image shows two side-by-side login form designs, both enclosed in light blue rounded rectangles. Both forms have the title 'LOG IN' at the top. They both contain two input fields: 'E-mail adress' and 'Password'. Below the input fields, both forms have a blue button labeled 'LOGIN ME'. The left form has three more blue buttons stacked vertically: 'SIGN UP' and 'FORGOT PASSWORD?'. The right form has a light blue button labeled 'SIGN UP' and the text 'Forgot Password?' below it.

Simple changes to a design can make a huge difference to the user experience.

HCI Interface Design Scenario – SafeRoute Emergency App Redesign

Over the last 48 hours, a severe storm system has hit multiple UK regions, overwhelming emergency services and affecting communications. The National Emergency Response Centre (NERC) relies on a public app called SafeRoute to provide evacuation routes, alerts, shelter locations, and emergency contacts. The interface failed thousands of users due to poor design, accessibility issues, and confusing layouts. You are the new HCI team tasked with redesigning the interface.

As a team of interface designers and usability specialists, you must answer:

1. What went wrong with the original interface?
2. Which users were most affected?
3. How can we design a safer, more inclusive interface?
4. How does psychology (memory, attention, stress) affect how people use apps in emergencies?
5. What accessibility improvements are essential?

You are given three flawed SafeRoute screens (Home, "Evacuate Now" alert, Shelter map). They include many issues as reported by users.

Task: Use your HCI evaluation checklist below (visibility, feedback, consistency, simplicity, accessibility) to identify at least 6 issues that could cause panic, user error, slowed decision-making, or danger. Complete the first two columns of the table on the final page to its the problems and the impacts users.

Your Mission

Checklist

1. Clarity
Is the text easy to read (font size, colour contrast)?
Are icons and labels clear and understandable?
2. Consistency
Are colours, fonts, and layouts consistent throughout?
Do similar actions look and behave the same?
3. Navigation
Is it easy to find what you need?
Are buttons and menus logically placed?
Is the design usable for people with visual or motor impairments?
Does it avoid colour-only indicators?
4. Aesthetic & Minimalism
Is the design visually appealing without clutter?
Are unnecessary elements removed?

Psychology note: Under stress, working memory shrinks, attention narrows, and people rely on simple visual cues. Your redesign must reduce cognitive load, increase clarity, and support diverse users.

Challenge 2: Persona-Based Redesign (mydraft.cc)

You will be assigned one emergency user persona such as: elderly user with limited vision; teenager with anxiety; parent carrying a child; neurodivergent user who struggles with clutter; visitor with limited English; screen-reader user.

Create a low-fidelity wireframe using the website mydraft.cc

Create a home screen and at least one more of the following screens.

- 1) New Home Screen – clear navigation, strong visual hierarchy, one primary action
- 2) Emergency Alert Screen – unmistakable prioritisation, action vs information separated, no ambiguous colours
- 3) Shelter Locator Screen – readable markers, accessible labels, error messages and feedback

Challenge 3: Usability Test — Think Aloud

Swap designs with another team. They play the role of your assigned persona. Define one task (e.g., "Find the nearest shelter" or "Trigger the evacuation route" or "Turn on high-contrast mode"). Tester thinks aloud while attempting the task; designer observes silently and records confusion, errors, and unclear elements.

Think-Aloud Test Script Template

Task:

Success criteria:

Observation notes (time, errors, confusion):

Post-test questions: What was easy? What was confusing? If you could change one thing, what would it be?

Challenge 4: Iterate Based on Findings

Revise one part of your wireframe based on test notes. State what you changed, why.

Challenge 5: The Boardroom Report (Final Task) 5 mins

NERC executives want a 1-minute design briefing summarising: primary flaws found; personas most affected; redesign features; accessibility improvements; evidence from user testing; one key recommendation for national deployment.

Use the headings below to structure your briefing:

Problem (old app)	How it impacts users	Your redesign solution	HCI/Accessibility principle used
