Group Activity: Redesigning a CAPTCHA as a WIMP Interface

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Context

You will work in groups to design a **CAPTCHA system re-imagined as a WIMP interface** (Windows, Icons, Menus, Pointer).
The goal is to prove a user is human (not a robot) by interacting with CAPTCHA elements using WIMP conventions.

Task (to be done during class)

1. **Define an object of interest and operation.**
    - Object examples: images, puzzle pieces, draggable sliders, text boxes, interactive icons.
    - Operation examples: select, drag, rotate, resize, re-arrange, annotate.
2. **Design an original CAPTCHA interaction** to perform the chosen operation, following the principles of Instrumental Interaction.
    - The interaction must not simply replicate existing shortcuts (e.g., Ctrl+C).
3. **Clarify how the three principles apply:**
    - **Reification**: turning operations into manipulable tools or objects.
    - **Polymorphism**: enabling the interaction to work across different types of objects.
    - **Reuse**: allowing the interaction/tool to be applied again in new contexts.
4. **Describe further opportunities.**
    - Explain at least 2 distinct ways your design could be extended or inspire new designs.

Assignment 3 VB - HCI2: Report on Group Activity

Submission Format

- **File type:** PDF only.
- **Length:** Minimum **3,000 characters** (with spaces), maximum **6,000 characters** (≈ 500–1,000 words).
- **Font:** Roboto, size 12.

- **Line spacing:** 1.5.
- **Letter spacing:** Normal (100%).
- **Margins:** 2.5 cm on all sides.
- **Page numbering:** Bottom-center on every page.
- **File name format:** `HCI2_Assignment3VB_TeamName.pdf`.

Report Structure (exact order, all sections required)

1. Title Page

- Title of your CAPTCHA design.
- Full names of all team members.
- Date of submission.
- Justification of assignment version (A or B): This must appear directly on the title page, immediately below the team member names. Length: **400–800 characters (≈60–140 words)**.
- The text must begin exactly with: *"We choose to do the Assignment B because …"*

2. Context Definition

- Length: **1,000–1,200 characters** (≈ 160–200 words).
- Must specify:
    - The CAPTCHA context assumed
    - The chosen object of interest.
    - The operation users will perform.
    - How the CAPTCHA is explicitly structured as a WIMP interface.

3. Interaction Design

- **Sketches: minimum 3 (you may include more).**
    - **Sketch 1:** CAPTCHA object before operation.
    - **Sketch 2:** CAPTCHA interaction in progress.
    - **Sketch 3:** CAPTCHA object after completion.
    - Optional sketches beyond 3: show variations or refinements.

- Each sketch must:
    - Be labeled sequentially ("Sketch 1," "Sketch 2," etc.).

    - Have a caption of **20–40 words**.

- **Written description:** 800–1,200 characters (≈ 130–200 words).

4. Instrumental Interaction Application

- Divide into 3 subsections:
    - **Reification** → 700–900 characters (≈ 110–150 words).
    - **Polymorphism** → 700–900 characters (≈ 110–150 words).
    - **Reuse** → 700–900 characters (≈ 110–150 words).
- **Total length for this section:** 2,100–2,700 characters (≈ 330–450 words).

5. Further Perspective

- Length: **600–900 characters** (≈ 100–150 words).
- Must describe at least **2 distinct opportunities**:
    - **Opportunity 1 (Extension):** how your CAPTCHA-as-WIMP design could be expanded (adaptive difficulty, accessibility improvements, multimodal interaction).
    - **Opportunity 2 (Broader implication):** how this approach could change authentication practices, security workflows, or user experience.

6. Contribution Statement

- Length: **50–100 words total** (≈ 300–600 characters).
- Format: bullet points or list format.
- Each team member must be listed with their contribution.
    - Example:
        - *Alice — created sketches and drafted Interaction Design section.*
        - *Bob — wrote Instrumental Interaction Application.*
        - *Carla — editing, formatting, and integration of sections.*
- Generic statements such as *"we all contributed equally"* or vague entries (e.g., *"helped"*) will NOT be accepted.

Grading Criteria (100 points total)

- **Theory (30 points):**
    - Reification explained correctly (10).
    - Polymorphism explained correctly (10).

    - Reuse explained correctly (10).

- **Creativity (30 points):**
    - Novelty of the design (15).
    - Practical usefulness (15).

- **Sketches (20 points):**
    - First 3 sketches: correct, captioned, relevant (15).
    - Consistency with written description (5).
    - Extra sketches may earn recognition, but the maximum total score for Sketches remains 20/20.

- **Writing Clarity & Structure (20 points):**
    - Correct section order (5).
    - Formatting rules respected (5).
    - Grammar/spelling clarity (5).
    - Explanations easy to follow (5).

Deadline

- **Submission email:** fundamentalhci2025@outlook.com
- **Deadline:** October 2, 2025, 23:59 (Central European Time, CET — UTC+1, not adjusted for daylight savings).

Late Submission Penalty (hourly)

- 1 hour late → –30 points.
- 2 hours late → –60 points.
- 3 hours late → –90 points.
- More than 3 hours late → **automatic grade = 0**.

Deductions for Common Errors

Error	Deduction
Fewer than 3 sketches total	-20 points
Captions missing or outside 20–40 words	–5 points each
Section missing (Context, Interaction, Principles, Further Perspective)	–25 points per section
Contribution section missing or not following instructions	-50 points
Sections in wrong order	–5 points
File not in PDF format	–20 points
Wrong file name format	–5 points
Missing team member name	–5 points each
Formatting violation (font, size, spacing, margins, numbering, letter spacing)	2 points each, maximum –10 total
Spelling/grammar errors	–1 point per error, up to –10 points max
Late submission	According to hourly penalty
Miscellaneous errors	Arbitrary deduction proportional to severity (0–100 points)

Total Estimated Time

≈ 11–14 hours of effective work (for the whole group, not per person).

Rationale for Requirements

Some requirements in this assignment may feel bureaucratic or overly rigid. They are deliberately designed to simulate academic and professional practices you will encounter in HCI research, design work, and publication. Each rule has a learning objective:

- **Strict Word/Character Counts**
  Academic venues (e.g., CHI, UIST) impose length limits. This trains you to communicate depth within fixed boundaries, developing conciseness, precision, and the ability to balance detail with brevity.

- **Exact Report Structure & Section Order**
  Reviewers and editors expect submissions in standardized formats. Following structure reduces ambiguity and ensures your ideas can be compared consistently with others. This develops discipline in adhering to external conventions.

- **Formatting Rules (font, spacing, margins, etc.)**
  These mirror conference/journal submission templates. Uniform formatting ensures readability, accessibility, and fairness in evaluation. Attention to such details is part of professional academic work.

- **Sketch Requirements (minimum 3, captions of 20–40 words)**
  Sketching is not about artistic skill but about *externalizing design thinking*. The word-limited captions enforce clarity in explaining visuals without rambling. You learn to express interaction concepts visually and textually in tandem.

- **Contribution Statement**
  Academic publications require contribution declarations to clarify who did what. This rule discourages "free riders" and prepares you for collaborative authorship where accountability is transparent.
- **Severe Late Penalties**
  While harsh, these simulate real-world submission deadlines where missing even a few minutes can invalidate your paper. The goal is to instill time management and contingency planning (e.g., submitting early to avoid technical issues).

Overall Learning Outcome: These constraints are not arbitrary. They aim to train you in the **core competencies of HCI research and practice**:

- Creative application of theory to design problems.
- Visual and textual clarity in communication.
- Academic writing discipline under constraints.
- Collaboration and accountability in group projects.
- Professional reliability in meeting deadlines.

This assignment is as much about **process** as about the final design. Mastering both is what prepares you for higher-level research and professional practice in HCI.