HCI Test 1	Name
Sep 24, 2008	/89

Closed Book, Closed Note [75 min]

1. [8 points] Consider the attached form, an application for the Miner Fit Club. Identify 4 problems with the graphic design (including layout and typography) and say why each is a problem. Try to relate your comments to general principles of human perception and graphic design.

2. [3 pts] Imagine a team considering two subtly different alternatives for a graphic design. Francine says "honestly, no one in the user population would ever be consciously aware of the difference, so let's just pick one". Her co-worker Alberto replies "that's true, but making the right choice still matters". Justify his response..

- 3. [8 pts] True or False
 - T F Color is especially useful in displays that have high information density.
 - T F RGB color descriptions are standard, so the same RGB color will always appear the same way on all displays.
 - T F Humans have 3 types of color receptors.
 - T F Blue is a good color choice for thin lines and text.
 - T F Insufficient contrast between text color and background color can make text hard to read.
 - T F Blue and red should not be adjacent on displays simply because of the emotional associations of the two colors in Western culture.
 - T F The most common form of color blindness is blue/yellow color blindness.
 - T F Saturated colors are good for drawing attention.
- 4. [2] Taylor's "Scientific Management" was focused on making factory workers more efficient. Name one of the principles or methods of Scientific Management that is still very relevant to user interfaces today.

5. [3] Fitts' Law predicts movement time as a function of three factors. What are they?

- 6. [12] Briefly define and illustrate:
- a. Haptic
- b. The gestalt principle of closure
- c. Pop-out
- d. Augmented reality
- e. Serif
- f. Softkey
- 7. [4] True or False
- T F Good interface design can positively impact market success
- T F Good interface design can improve reliability
- T F Good interface design can improve efficiency
- T F Good interface design can improve user satisfaction
- 8. [3] Imagine that you need to remotely control a robotic car driving across the desert. You have a display showing the current location and direction of the car superimposed on a map of the terrain, updated continually by GPS information transmitted from the car. To control the car which would you prefer: a joystick or a mouse? Why?

- 9. [9] From the point of view of user interface design, state whether you agree or disagree with each of the following, and why.
 - a. "Of all our senses, vision is the most important"
 - b. "Ergonomics is really just common sense"
 - c. "Touchscreens should be positioned flat or almost flat, not vertically"

10. Estimate the times required, and justify your answers. [12 pts]

The user's primary responsibility is to launch surface-to-air missiles when an attack is signaled. The signal is in the form of the code "LA345" which appears in red in 48 point bold font in the center of the screen. Upon seeing this signal, the user is to use his mouse to click on the "launch" button at the top left of the screen.

a. Supposing this is the user's only task, use the GOMS keyboard-level model to estimate the time from signal to user action.

b. Now suppose there are two signals, LA345 and CB800, and the user is required to click only in the former case.

c. Now suppose there are two buttons to push: "launch" if the signal is LA345 and "clear" if the signal is CB800.