

Iterative Design Lab

Due: Uploaded by 10:00 am Wednesday, April 16, 2014

This assignment can be waived for students with previous HCI experience in paper prototyping and iterative design. If you want to waive this assignment, instead of the assignment submit a short statement saying when and where you did paper prototyping and iterative design in the past, and what you want to substitute in its place. (One candidate would be if you will be using paper prototyping and iterative design in your course project, but other options are possible – please talk with the instructor with any questions about this.)

Overview

In this assignment you will iteratively design and refine a photocopier for which the entire user interface is a **180x300 pixel, black & white** pixel touch sensitive display. (Yes, this is *so* 1990's. But it does give rise to some interesting design constraints.) This is primarily an **individual** assignment, with the exception of the actual testing (as further discussed below).

Your photocopier should allow people to:

- Set the lightness/darkness of the copies.
- Choose the # of copies (up to 50).
- Choose 1 sided → 2 sided, 1 sided → 1 sided, 2 sided → 1 sided, or 2 sided → 2 sided.
- Choose whether or not to collate.
- Choose whether or not to staple.
- Select which paper source to use. The copier has 3 paper bins, called “A”, “B”, and “C”.
- Provide the ability to have a special cover sheet on multi-page collated runs, where the cover sheet comes from a different bin. For example, there might be colored paper in one bin, and regular paper in another, and the person should be able to specify that the first page of each set should be copied from a different bin.
- Have a START button to begin copying.
- Have a STOP button to cancel a copy job while it is running.
- Have an account code to bill (e.g., 5150).

The goal of this assignment is to give you a first taste of iterative design driven by user testing.

Process

View the paper prototyping video that is linked from the course website.

Your design should be made with 3x5 note cards. You may not use anything larger, because you are simulating a display with limited resolution. Note the display is monochrome.

Develop at least three tasks. This set of tasks should collectively test all of the important aspects of your design. Good tasks provide a starting condition and a goal, then allow the person to work through determining how to accomplish that using your interface. A script like “*click A, now click B, type 4, click C*” is not a task. Consider varying the difficulty of your tasks, or creating a series of tasks corresponding to a larger scenario (e.g., preparation of an annual report).

Use your tasks to test your prototype with at least 3 representative people (i.e., not your friends, not other engineering students). To help things go smoothly, we recommend using a partner to help with testing (simultaneously running the paper prototype and taking notes can be difficult to manage). Have your partner run the prototype while you observe and take notes (you should obviously prepare your partner so that they understand how your paper prototype works, and they can obviously ask you for runtime assistance if necessary).

Deliverable

Submit an essay of no more than **2 pages** of text, approximately 1000 words. Any images are free, so your actual document may be more than 2 pages in length. But it should contain only 2 pages of text.

Your submission should be in PDF format. When finished, upload it to the Catalyst drop box linked from the course website.

Bring to class, in a large envelope or some other secure mechanism:

- Your paper prototype (the 3x5 cards from your sessions).
- Instructions on how to “run” your prototype. One way to do this is numbering the back of each of your cards, hand-drawing a flow chart explaining their connection, and writing brief notes explaining any parts that are not immediately obvious.
- The tasks, corresponding scripts, and any associated materials that you used for testing.
- Notes that you collected during testing.

Grading

Prototype and Instructions (10 pts)

Paper prototype and instructions. It should be easy to follow and include all required features.

Tasks (5 pts)

The tasks you used in your testing. The tasks should collectively require interacting with all of the features of your design. Tasks should be plausible scenarios of use, defined in terms of starting conditions and goals (not scripts that tell a person exactly what to click).

For the purpose of grading, also submit a script indicating how to accomplish each task.

Study Notes (5 pts)

Submit your raw notes collected during your testing. Keeping good notes is important to you being able to recall and describe the difficulties that people have with your design.

Report: Design, Testing, and Task Discussion (10 pts)

Your report should introduce your interface and briefly provide any rationale you believe is critical to understanding why you designed your interface in the way that you did. Then discuss your tasks and the process you used for testing, again including any relevant rationale.

Report: Proposed Improvements (10 pts)

You should then propose three concrete and specific improvements to your design, informed by the results of your testing. You should discuss how your design currently works, what the problem is, and what your proposed solution is.

Report: Writing (5 pts)

Make sure your writing is easy to read: ensure it is clear and concise, use section headings, make liberal use of whitespace, include images in the body of the write-up with appropriate figure numbers and captions, refer to the figures in the body of your text, and check for grammar errors.