COMS W4170: User Interface Design—Fall 2013

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Assignment 2: PhotoShare

Photos, especially ones taken with ubiquitous personal devices, have become a common currency of interaction. How can we make it easier to view and share our photos with each other? For your second assignment, you'll be practicing what you've learned about lo-fi paper prototyping by working in a small (four-person) team whose members we will assign. Your team will develop a paper prototype that will explore the design of the user interface for *PhotoShare*, a fictitious system that supports people in their interaction with photos that they and others take.

PhotoShare is intended to be an app for a touchscreen device with a "tablet"/"pad" form factor, which can communicate through Wi-Fi to one or more touchscreen devices with which you'd like to share. Your design for the *PhotoShare* user interface should address: (a) allowing owners of one or more other devices to view selected photos on your device; (b) viewing photos made available to you by others on their devices; and (c) copying photos to and from each other's devices. *In all cases, please assume that each user has direct physical access to **all** of the devices.*

To simplify your scenarios (and make life easier for your human computer), you can assume that two people are interacting: each has a single device, the devices have different-sized screens, and both users are seated together at a table. When you test your system, one user will be played by a member of another team, and the other user will be played by a member of your team. You can further assume that all of the interactions needed to enable Wi-Fi and connect the devices securely with each other have already been accomplished. You should aim to design a user experience that is efficient, understandable, and enjoyable.

We have chosen a domain that we assume you will be able to address from the standpoint of a potential user. However, since this is a rather broadly and fuzzily defined idea, you will need to narrow things down to something that is both doable and interesting.

There are four parts to this assignment:

- Develop an initial paper prototype.
- Run tests of your prototype with each member of another team.
- Evaluate your prototype based on the results of the tests.
- Redesign your prototype based on your evaluation.

Each part will be written up as part of a combined document that your team will author and submit.

Part 1: Develop an initial paper prototype (20%)

You should develop a design that supports the tasks listed above, bearing in mind the usability heuristics discussed in class (J. Nielsen, Ten Usability Heuristics) and using the paper-prototyping approach defined in class and in the readings. To guide your thinking about how to go about the design process, you may also wish to look at H. Beyer and K. Holtzblatt, "Contextual Design," *ACM Interactions*, 6(1), January/February 1999, 32–42.

During your team's initial brainstorming sessions, you'll want to create a small set of use scenarios and personas and play with some quick sketches before constructing the first versions of your paper prototype. As you start feeling your prototype solidify, you should choose a set of at least *three* use scenarios (reflecting tasks a–c listed above), design output data for the use scenarios, assign team roles for testing (greeter, facilitator, computer, observer(s)), and practice. Unlike some of the prototyping approaches mentioned in class, your paper prototype should be created entirely "by hand," rather than using computer-based tools.

In the pdf document that your team turns in, your initial design should be represented by a written description of your general approach to the assignment, a description of each of your use scenarios (see above), and a *storyboard* for each use scenario. The storyboard should be created using your paper prototype, showing it as each user operation is performed in the process of accomplishing the task (i.e., executing its scenario). There are many possible ways to create these storyboards. If you have a digital camera (a "point and shoot" camera, or a webcam), you can take a photo of your prototype as each operation in the scenario is performed by one of your own team members acting as user. Alternatively, you can place your paper prototype on a scanner to capture successive states of the scenario. Each image should be accompanied by a succinct verbal description. Your description of the general approach to the assignment should include references to any sources of inspiration and how they influenced you.

Part 2: Test your paper prototype (20%)

We will assign all members of another team to test your team's prototype. You will need to arrange and perform your tests, noting that *all* members of your team and exactly *one* external user from the other team must be present in the room during each test. You are welcome to modify your prototype after (or, in the case of quick minor modifications, during) testing with one of the assigned team members, based on their use of your prototype.

The document your team turns in should record this part of the assignment by providing, for each test, copies of the observation index cards written during that test, and a brief overall summary of that test.

Part 3: Evaluate your prototype (25%)

Analyze the results of your tests, as discussed in class and in the readings, determining any changes to be made to your prototype. Depending upon whether you have analyzed results at the end of each test or at the end of all tests, you will have from one to four evaluations. Each evaluation should be represented by an annotated copy of the portions of your paper prototype addressed by that evaluation session, imaged together with your index-card or Post-it note annotations describing problems in place, and with a brief overview explanation. Please make sure that your annotations are legible.

Part 4: Revise your paper prototype and record a video (35%)

Revise your prototype—as before, entirely by hand—based on the changes that you have determined need to be made. (Based on how you did part 3, you may perform from one to four revisions, potentially interleaved with the evaluation process.) Document each revision by imaging any portion of a storyboard that has been modified, describing how that change addresses the issues noted in your evaluation. Your documentation of the revision process should be followed by a complete set of revised storyboards. If there are new sources of inspiration, please refer to them, and describe how they influenced you. Then, using the approach discussed in class, make a brief (under five minute) video of your paper prototype, with your team members acting as the personas in your three use scenarios.

Submission

The two documents your team turn in should be a .pdf file with embedded images and a video; for the pdf, we suggest using the Acrobat "High Quality Print" Conversion Settings to help ensure that the images are legible. Alternatively, we will also accept a MIME HTML .mhtm or Word .doc[x] file with embedded images. Please name your files "yourteam" (where "yourteam" is the name that you have given your team and emailed in response to the request for your team's name from the TAs). Make sure the files have the appropriate extensions, and upload them in CourseWorks into the folder named "yourteam" that we will have already created in **Class Files→Shared Files→Homework 2.**

Hints

Please be sure to note the deadlines listed at the top of the assignment. You will need to develop a prototype, practice using it, run tests, evaluate the results, revise your prototype based on those results, write up your assignment, and record a video, all within a limited period of time. Because this assignment is not merely being done as a team project, but also involves the participation of members of another team, *there is simply no way that you can wait until the last minute to get it done*.

Randy Pausch at CMU compiled a great list of tips for working successfully in a group. Please read it!

Since your team is turning in a single document and video, each late day used (if any) will apply to each team member. Please be sure to determine well in advance before submitting whether each of your team members has enough late days and is willing to use them on this project!

The best evidence that we will have of your process and results will be what you turn in, so please be sure to *document, document, document*!

Your participation in the testing process of another team is a required part of the assignment; problems will be dealt with on an individual basis, and will affect your own personal grade for the assignment. Please be a good citizen!

Please see *Using Video to Support Interaction Design* for hints on creating video prototypes.