

P4: Usability Test with Low-Fidelity Prototype

Due 4/8/13 at 11:59 PM

Overview

The goal of this project step is to obtain rapid feedback and refine your design. You will perform a simple usability test with your low-fi prototype, three users, and your three tasks described in P3. You will use the results of the test to inform your next, higher-fidelity prototype.

The Assignment

1. Decide how to obtain informed consent

As discussed in class, IRB approval is not necessary for your class projects, since you are not conducting research. However, you still must act in an ethical way towards your participants, and you must treat them with respect in all stages of your work (from recruiting them, to interacting with them, to handling their data). So it is still a good idea to thoroughly inform people about what you are doing, and to only work with them if they freely consent to participate after they understand the possible benefits and risks.

Decide how you will inform people about all relevant benefits (if any) and risks (if any) of interacting with your low-fi prototype, about the expected time involved, about their ability to end participation at any time without consequence, and about how you will use their data (including possibly images, video, names, etc). (You do not have to use their names, images, video, etc. on your blog or other course assignments, but you may use these if you think it is helpful **and** you obtain consent.)

You should create a script (script as in “movie script,” not “shell script”) to read out loud to participants and/or a printed document for them to read. You might adapt the standard consent form template from http://www.princeton.edu/ria/human-research-protection/documents/Adult-Consent_12-18_12_afd.doc However, if you use this template, note that you will need to modify it to reflect the fact that you are not doing a research project. You will probably want to make other modifications, as well.

Save your script text and/or document.

2. Write a demo script

Write up a short script (again, as in “movie script”) that one of your teammates can follow to explain the overall goal of the application/system at the beginning of your usability test. You should also include a demo of a simple task to show the participant how he or she will interact with your prototype system (don't use one of your three tasks in this initial explanation). After you have followed this script, the participant should have a pretty good idea of how the system works. Save your script text.

3. Write three task scripts

For each of your three tasks discussed in P3, write a script that explains the task. You should tell the participant what you want him or her to achieve, but not how to perform the task. Save your script texts.

4. Practice testing with your prototype

Decide who will be responsible for “running” your prototype (e.g., changing the screens on a paper UI), who will be responsible for greeting the participant, running through the demo and task scripts with the participant, etc. Practice running the entire test with members of your group acting as the participant until you're confident that you're ready to test it with another person.

4. Run the test

You will find three participants to evaluate your low-fidelity prototype. At most one of your participants may be a student in this class. The ideal participants will be members of your specific target user group. You will evaluate the three tasks you discussed in P3.

Perform a separate evaluation with each participant (i.e., don't just gather three participants together and get them to evaluate it at the same time; you'll get less diverse and less helpful feedback if you do that).

Take at least one photograph showing your prototype test in progress. This photo should not include information that can be used to identify your participant(s) unless you have their explicit consent. (You might consider taking photos only of people's hands interacting with your prototype, or at least a member of your group demonstrating how the test was conducted.)

Follow these steps for each participant:

- A. Obtain informed consent.
- B. Run through the demo script, explaining the overall goal and demonstrating how people should interact with the prototype. Follow the same script for each participant. Answer any questions the participant may have.
- C. Once you have shown participants the demo, explain the first task using your script. Answer any questions, then observe the participant as he or she executes the "task" using your prototype.
- D. During the observation of the task, each member of your group should keep a log of critical incidents (both positive and negative events). For example, the user might make a mistake or they might see something they like and say, "cool!" Write down a description of the incident along with a description of what was going on at the time. (Obviously, some members of your group will probably be busy making your prototype work, so they may not be able to write down observations. But make sure you have at least one dedicated scribe in each task. The more scribes, the better.)
- E. Repeat Steps C and D for the other two tasks.
- F. Thank your participant!

After you have finished with each participant, each group member who acted as an observer should gather their notes on critical incidents. (Keep them ordered by task & participant.) Then go over your notes as a group to assign severity ratings. The ratings scale looks like this:

1. I don't agree this is a usability problem.
2. Cosmetic problem
3. Minor usability problem
4. Major usability problem: important to fix
5. Usability catastrophe: imperative to fix

Keep the data separate for each task and participant.

5. Write a summary of your results

Write 1–2 paragraphs summarizing your findings from your data. Explain how the users performed on each of the tasks. Describe the most important critical incidents. If similar problems occurred multiple times, report how many times.

6. Discuss your results

Write 1–2 paragraphs discussing your results. What did you learn from the experiment? How will the results change the design of your interface? Was there anything the experiment could not reveal?

7. Describe any proposed subsequent testing

Are there any other tests that you foresee having to run before making your higher-fidelity prototype? This could involve re-testing a low-fi prototype with new participants after you've fixed some fatal flaw you discovered in this assignment, or it could involve testing the range of some sensor you'd like to use, or something else. If you do need to run any more tests, write a short test plan (1–2 paragraphs) and a timeline for completing these tests. If you don't need to run any more tests, explain why you feel you're ready to proceed without them.

Submission Instructions

1. Create a new blog post on the course blog.
2. **Add this blog post to category Project4.** (We will take off points for not doing this.)
3. Include on your blog, in order, and with section headings:

- a. Your group number and name
- b. First names of everyone in your group
- c. A one-sentence project summary
- d. A description of the test method you used. (This entire section should take up **no more than roughly 1 page** of text, if you were to print the blog with a reasonable font size.) This includes the following subsections:
 - i. A few sentences describing your **procedure for obtaining informed consent**, and explaining why you feel this procedure is appropriate. Provide a link to your consent script text or document.
 - ii. A few sentences describing the **participants** in the experiment and how they were selected. Do not include names.
 - iii. A few sentences describing the **testing environment**, how the prototype was set up, and any other equipment used.
 - iv. Describe your **testing procedure**, including the roles of each member of your team, the order and choice of tasks, etc. Include at least one photo showing your test in progress (see above). Provide links to your demo and task scripts.
- e. 1–2 paragraphs summarizing your results, as described above. Do not submit your full logs of critical incidents! Just submit a nicely readable summary.
- f. 1–2 paragraphs discussing your results, as described above.
- g. A 1–2 paragraph test plan for subsequent testing, or a statement that you are ready to build a higher-fidelity prototype without further testing.

Fill out the Google Form at <http://tinyurl.com/cos436P4> with the URL of your blog.

Grading

- Informed consent procedure (2 points): Is this appropriate and clear?
- Description of participants, testing environment, and testing procedure (8 points): Is the description clear, readable, and succinct? Is the procedure for selecting participants and running the test appropriate?
- Results (5 points): Have you summarized results clearly and succinctly? Are the most important findings easily identifiable from your summary?
- Discussion (10 points): Is your discussion thoughtful and thorough? Does it follow logically from your project goals and your test observations? Were you able to translate your observations into a reasonable plan for refining your design? Have you considered the questions that are still unanswered, and devised a plan to address these using further testing, if necessary?

Acknowledgements

Much of this assignment is adapted from Manish Agrawala's CS 160 course at UC Berkeley.