CSE440 Autumn 2009
Assignment 6
James Fogarty

# Low-Fidelity Prototyping and Usability Testing

**Low-Fidelity Prototyping Due: November 10**
**Usability Testing Due: November 17**
**Project Website Up: November 17**
**In-Class Presentations: November 17 and 19**

## Overview

The goal of this assignment is to learn how to use low-fidelity prototyping in the early stages of interface design. You will first build a low-fidelity prototype and then perform a usability test.

In the next assignment, you will incorporate the results of your low-fidelity prototyping and testing into design changes for your interactive prototype.

## Requirements

Now that you have had a chance to work with your teammates and develop your project idea, create a team *mission statement* that describes your goal for the project.

Your low-fidelity test will use the **three (3)** tasks that you have turned into scenarios (unless you have discovered some reason to change them). These benchmark tasks should include 1 easy task, 1 moderate task, and 1 hard task. They should also give good coverage of your interface. Design and construct your low-fidelity prototype. Use the techniques described in the Nielsen Norman video and the Snyder chapter as a guideline. Your low-fidelity prototype must be made on **paper**. It must also be effectively designed. Use the inspection-based methods we discuss in class to iteratively improve your interface prior to testing.

You will find *at least* **three (3)** participants to work through your tasks. You should not use friends or members of the class. Nor should you use people who have been previously exposed to your project. The type of people you use should be based on your contextual inquiry.

You will put together a project website presenting your project to classmates and potential attendees of the course project fair. This will include all of your current and previous deliverables, and will also serve as a long-term presentation of this work as a part of your portfolio.

You will present your project in a **ten (10)** minute in-class PowerPoint-based presentation.

## Testing Procedure

Have one of your teammates demonstrate the system to show the participant how they would interact with your prototyped system. Do not show your participants how to perform your tasks. Instead show them how paper prototyping work, how your system generally works, and give an example of something specific that is sufficiently different from your tasks.

You should **write up a script of your demonstration** and follow the same script with each participant. Then give the participant task directions for the first task that tells them what they are trying to achieve, but **not** how to do it. When they are finished, give them the directions for the next task, and so on. Keep each task **separate** so that participants are appropriately focused.

During the experiment, you should **make a log of critical incidents** (both positive and negative events). For example, a person might make a mistake or they might see something they like and say "cool". Write it down along with a description of what was going on. Later you should discuss and prioritize these events and assign **severity ratings** to the problems (use the ratings we will discuss in the Heuristic Evaluation lecture, ranging from 0 for no problem to 4 for usability catastrophe).

Each participant will perform all three tasks. Keep the data separate for each task and participant. Keep participant names confidential.

Remember that participation must be voluntary. You should get them to sign a consent form ensuring confidentiality. See an example form at:

http://www.cs.washington.edu/education/courses/cse440/CurrentQtr/consent-form.htm

## Deliverables

You will write up your design, experiment, and results, and one member of your team will make an in-class presentation.

*Low-Fidelity Prototype In-Progress Report*

For the low-fidelity prototype deadline, you will submit a partial report presenting your prototype. This partial report should address items 1, 2, 3 and possibly 7 from the full report. You should feel free to update these sections when preparing your full report, but this in-progress report should demonstrate your progress and be a reasonable approximation of these sections of your full report. Your full report will be penalized if this in-progress report is inadequate.

*Usability Testing Full Report*

You will submit an essay of *no more than* **5 pages** of text (images are free). Your essay should follow the outline below and will be graded using the guidelines detailed on the next page.

1) **Title**, each team member's **name**, **role**, and a **URL** to an online copy of this essay
2) Introduction and Mission Statement (1/4 page text)
3) Prototype description, with sketches and a picture of the entire system (1 page text)
4) Method
   a) Participants (1 paragraph text)
   b) Environment (1 paragraph text)
   c) Tasks (1/2 page text)
   d) Procedure (1/2 page text)
   e) Test Measures (1 paragraph text)
5) Results (3/4 page text)
6) Discussion (3/4 page text)
7) Appendices (as many pages as necessary - link from text into the appendices)
   a) include all forms handed out to participants
   b) include raw data (cleaned up and readable)
   c) include any extra figures that do not fit in the body

Good examples of previous report include:

August 2008, GreenBean;
August 2007, TripMe
August 2007, What's Happening (missing appendix details)

*Class Presentation*

One member of your team will present your project in class during a **ten (10)** minute PowerPoint-based presentation. See the grading guidelines for information on how to structure your talk. Practice in advance!

*Project Website*

Your project website needs to present your project and its milestones in a professional manner. See previous course project websites for examples of this.

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# *Writing and Experimentation Guidelines*

## Introduction and Mission Statement (10 pts)

Briefly introduce the system being evaluated, and state the purpose and rationale behind the experiment. Then, present your *mission statement*. As described in *The Discipline of Teams*, the mission statement should represent the common purpose and goal of the project.

## Prototype (20 pts)

Describe your prototype. What are the main pieces of functionality? What are the main interaction ideas? How does a person operate it? Reference sketches of the interface screens in your description (scan them in). Include one picture of the entire paper-based system with all of its elements laid out.

## Method (20 pts)

Describe the participants in the experiment and how they were selected. Also describe the testing environment and how the prototype and any other equipment were set up.

Describe some relevant details of your testing procedure. This should include the experimental roles of each member of the team. To prepare, you should assign team members to the different tasks (i.e., computer, facilitator, observer) and practice with someone playing the participant.

The test measures detail what you looked for or measured during the experiment. You should concentrate on process data (i.e., what is happening in the big picture) in addition to bottom-line data (i.e., time or number of errors).

## Results (20 pts)

Summarize the results of the experiment from your process data.

## Discussion (20 pts)

Discuss your results. What did you learn from the experiment? How will the results change the design of your interface? Was there anything that the experiment could *not* reveal?

## Appendix (10 pts)

The appendix should include copies of *all* materials involved in the experiment. This includes your consent form, demo script, and any instructions or task descriptions you handed out or read aloud to your participants.

Finally, it should include *all* the raw process data you gathered during the experiment. Clean it up to make it easier to read. Merge the critical incidents logged by the observers and list them.

The appendix materials and screenshots do not count in your 5 page total.

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## *Presentation Guidelines* (30 pts)

The presentation grading will be broken into two components: the individual grade of the presenter and a group grade for the presentation of the project. Use images liberally and try to keep the text on the slides brief (and use large fonts – no less than 20 pt anywhere).

Slide counts are suggestions to help you organize, not strict constraints. Present effectively.

### Presenter's grades (NAME: _____)

Suggested Organization

- ___ Team mission statement (1 slide)
- ___ Overview of talk (1 slide) – don't read this, tell it like a story
- ___ 3 representative tasks (1-3 slides)
- ___ Low-fidelity prototype structure (1 slide – mainly images)
- ___ 3 scenarios shown carrying out each task w/ prototype (1 slide + animation/each)
- ___ Experimental method (1 slide)
- ___ Experimental results (1 slide)
- ___ Suggested UI changes (1 slide)
- ___ Summary of talk (1 slide)

Presentation

- ___ Use slides. Ensure that the presentation shows appropriate preparation, and that visual aids are effective, properly prepared, and properly employed. Make sure that people at the back of the room can see your slides.
- ___ Cover the required scope within the 10 minute time period (there will be 2 extra minutes for questions). **Practice & time your presentation in advance. We will cut you off if you go over and you will lose points for missed material.**
- ___ Ensure the presenter makes eye contact and projects well.

### Group grade (GROUP NAME: _____)

- Mission Statement
  - ___ Was the mission compelling and achievable?
- Representative Tasks & Scenarios
  - ___ Did they provide coverage of the functionality?
  - ___ Where the tasks too easy or too hard?
- Lo-fidelity Prototype
  - ___ Was the interface novel and creative?
  - ___ Was it appropriate for the supported tasks?
  - ___ Did it follow from sound reasoning?
  - ___ Were appropriate low-fidelity techniques/style used?
- Experiment
  - ___ Was the experiment carried out in a sound manner?
  - ___ Were the results given in sufficient detail to understand what occurred?
  - ___ Were the suggested UI improvements sound & follow from the results?

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## *Website* (20 pts)

See previous course offerings for examples of the desired websites.

http://www.cs.washington.edu/education/courses/cse440/07au/projects.html

http://www.cs.washington.edu/education/courses/cse440/08au/projects.html

Your website will be graded on its professional appearance, the extent to which it motivates a reader to want to learn about your project, and its effective presentation of each of your milestones.

## *Report Submission*

Report must be in PDF format.

Upload reports to the catalyst drop box here:

https://catalysttools.washington.edu/collectit/dropbox/summary/jaf1978/7152