CS160 Spring 2006

Low-fi Prototyping and Usability Testing (Group)

Due: Weds, Mar 1, 2006

Overview

The goal of this assignment is to learn how to use low-fidelity prototyping in the early stages of UI design. You will first build a low-fi prototype and then perform a simple usability test. You will incorporate the results of the test into design changes in your prototype for the *next assignment.*

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 test will use the **three (3)** new tasks that you created for the last assignment (unless you were asked to change them in the assignment feedback). These benchmark tasks should include 1 easy task, 1 moderate task, and 1 hard task. These tasks should give good coverage of your interface.

Design and construct your low-fidelity prototype. Use the techniques described in the "Prototyping for Tiny Fingers" paper as a guideline. You may choose to design your low-fi prototype either on **paper** or using a prototyping program such as **DENIM** (for websites) or **SUEDE** (for speech UIs). You can find Denim at: http://dub.washington.edu/denim and Suede at http://guir.berkeley.edu/projects/suede/

You will find *at least* **three (3)** participants (volunteers who are **not** in your group) to work through your benchmark tasks. You should not use friends or other members of the class. The type of people you use should be based on your task analysis. Remember it must be voluntary. You should get them to sign an informed consent form explaining the test. Remember to keep all information confidential. Don't use real names or identifying information in your write-up.

Testing Procedure

Have one of your teammates demo the system to show the real participant how they would interact with your prototyped system. Do not show your participants exactly how to perform your tasks. Just show how the system works in general and give an example of something specific that is different enough from your tasks.

You should write up a script of your demo and follow the same script with each participant. The participant will then be given task directions for the first task that tells them what they are trying to achieve, **not** how to do it. When they are finished, you will give them the directions for the next task and so on. Keep each task on a separate card.

During the experiment, you should make 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 it down along with a description of what was going on. Collect all the incidents first (all observers do this). Then go over them again as a group to assign severity ratings. The ratings scale looks like this:

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

Each participant will perform all 3 tasks. You will want to keep the data separate for each task and participant.

Deliverable

You will submit your printed essay of *no more than* **6 pages** of text in class. You must also submit a copy of the essay online. Your essay should follow the outline below and will be graded using the writing and experimentation guidelines detailed on the back of this handout.

1. Each team member's **name**, and **role**
2. Introduction and Mission Statement (1/4 page)
3. Prototype description, with sketches and a picture of the entire system (1 page)
4. Method
    4.1 Participants (1 paragraph)
    4.2 Environment (1 paragraph)
    4.3 Tasks (1/2 page)
    4.4 Procedure (1/2 page)
    4.5 Test Measures (1 paragraph)
5. Results (3/4 page)
6. Discussion (3/4 page)
7. Appendices (as many pages as necessary - link from text into the appendices)

Writing and Experimentation Guidelines

Introduction and Mission Statement (6 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. Each member of the team should agree on and be committed to achieving the mission statement.

Prototype (12 pts)

Describe your prototype. Reference sketches of the interface screens in your description. Finally, take one picture (for a paper prototype) or screenshot (of a DENIM prototype) of the entire system with all of its elements laid out. For a speech-based interface, provide us with a SUEDE screenshot.

Method (12 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 details of your testing procedure. This should include the roles of each member of the team. To prepare for the experiment, you should assign team members to the different tasks (i.e., computer, facilitator, etc.) 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 (12 pts)

Summarize the results of the experiment from your process data.

Discussion (12 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

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 out loud to your participants.

Finally, it should include *all* the raw process data you gathered during the experiment. Merge the critical incidents logged by the observers and list them here.

The appendix materials and screenshots do not count in your 6 page total.