

## Lab Usability Study (Team)

**Due: Monday, January 27th, 2020 (before class)**

### Goals

The goal of this assignment is to learn how to perform a lab usability study and to incorporate the results of the study into design changes in your hi-fi prototype. In practice, this “pilot” lab study would be used to redesign your experiment before running the study with a larger pool of participants.

### Prototypes

You will perform this test using last quarter’s prototype **after** you’ve fixed any issues you know you needed to change (i.e., implemented key missing features), and addressed issues the staff raised.

### Participants

You will find three to five participants (i.e., volunteers who are not in this class) to work through your benchmark tasks (the more you can run the better). Remember, it must be **voluntary**. You should get the participants to **sign an [informed consent form](#)** (make a copy and edit) and obtain other demographic information (e.g., age, sex, education level, major—if a student, experience with your type of tasks & application, etc.). Make sure they are **representative** of your target customers and that they are not participants that you have used previously during this project (unless you have pre-approval from the teaching staff).

You will have a team testing budget of \$100 this quarter to use. We will require user testing for this assignment and Assignment #9 Field Usability Test. For reimbursements, please read the rules and keep track of them on [this spreadsheet](#).

### Benchmark Tasks

Your test will use the tasks that you worked on in CS147 (unless we asked you to update them or you decided to make changes). They should include at least 1 simple task, 1 moderate task, and 1 complex task. These tasks should give good coverage of your interface at this point; if they don’t, you must redesign them in advance. Make sure they are not fragmented tasks and represent real things people want to accomplish. **If you are making major changes to your project, run your new tasks by the teaching staff well in advance.**

### Measures and Observations

Although it will be hard to get statistically significant bottom-line data with only three to five participants and a rough prototype, you should **measure and report on some important dependent variables** to get a feel for how it is done (i.e., task time, # of errors, etc.).

You will **concentrate on process data** in your presentation. For example, you should instruct your participant to **think aloud**. You should make a **log of critical incidents** (both positive and negative events - you’ve also done this in CS 147). For example, the user might make a mistake and you notice it or they might see something they like and say “cool.” Set up a clock (phone) that only the observers can see (one or more of you should observe), and when a critical incident occurs, write down (or type) in the log what happened and the time. You should also **record the test** using a digital camera or a phone – note the time that you start recording so that you can find your critical incidents later in the recording.

## Procedure

You will give the participant a short demo of the system. Do not show them 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 benchmark tasks (if necessary at all). You should **write-up a script of your demo** and follow the same script with each participant. **If your application is limited in terms of what is possible for a user to do that this would bias the test considerably, do not demo your application.**

The participant will then be given task directions (e.g., on a single card) for the first task that **tells them what they are trying to achieve, not how to do it**. Make sure that you have given them enough scenario information (e.g., who they are, who their friends are, etc.) to put them into the right context for the tasks. When they are finished, you will give them the directions for the next task and so on. Each participant will perform all 3 tasks. You will want to keep the data separate for each task and participant.

## Location

This study will be carried out in a lab setting or other quiet setting (e.g., an office, apartment, or conference room). This will make it easier for you to record the test participant's reactions and use of your application. In a later assignment you will do a field study where you will evaluate in a more naturalistic setting.

## Video and Clickstream Logging

We'd like you to integrate video *and* clickstream logging into your app. Use a tool that accomplishes this for you. For video logging, the built-in screen recorder on iPhone works quite well or the [Record It!](#) app, and there are many good apps on the Android platform, such as [AZ Screen Recorder](#).

For clickstream logging, there are many tools that are free or offer a free trial. For example, Google Analytics / Firebase Analytics (<https://analytics.google.com/analytics/web/>, <https://firebase.google.com/docs/analytics/>), Amplitude (<https://amplitude.com/>), Mixpanel (<https://mixpanel.com/>), and Lookback (<https://lookback.io/>), which has a React Native module for iPhone, but requires "detaching."

## Results

You must report your results (values of dependent variables, summaries of those values, and summaries of the process data). You should draw some conclusions with respect to your interface prototype. **You should also say how your system should change if those results hold with a larger user population.** We want to understand how you would fix your system as a result of what you observed.

## Examples

- [StayRight](#)
- [Flutter](#)
- [Wanderlust](#)
- [Cabana](#)

## Deliverables

### Presentation

One member of your team will present your project during a **twelve-minute** slide-based presentation in front of the other students and teaching staff. See the grading guidelines for information on how to structure your talk. You must **make the slides available for download on your team web site**.

### Presentation Guidelines

You will have **twelve minutes for this presentation** plus up to 5 minutes for questions. Please practice as we will grade you on how close you are to the time limit (under and over). All team members are expected to work collaboratively on the presentation, though only one team member will deliver the presentation.

### Talk Outline:

1. Project title & team (introduce yourselves)
2. Prototype Changes
  - Major changes you made to your prototype in preparation for the test (1-3 slides w/ images)
3. Method
  - Participants (who -- demographics -- and how were they **selected & compensated**) (1 slide)
  - Apparatus (describe the equipment/software you used and where tests run) (1 slide)
  - Tasks (1 slide each) - describe each task & **what you looked for** during each task
  - Procedure (1 slide) - describe what you did and how
4. Test Measures (1 slide)
  - describe what you measured and **why**
5. Results (multiple slides)
  - Results of the tests (process data, quantitative data, and **logged data**)
6. Discussion (multiple slides)
  - what you **learned** from the pilot run what you might change for the “real” experiment
  - what you **might change** in your interface from these results alone
7. Summary of talk.
  - What did you do? What were the key things you learned?

## Grading Criteria

Your grade will be based on the thoroughness of your experimental design, the analysis of your results, and the quality of your presentation. The presentation grading will be broken into two components: the individual grade of the presenter and a group grade for the quality of the content itself. Each bullet/grading category below will be out of 4 points (4=+, 3=check+, 2=check, 1=check-, 0=missing).

### Presenter's grades (NAME: \_\_\_\_\_)

- Organization
  - \_\_\_ Project & team introduction
  - \_\_\_ Prototype Changes
  - \_\_\_ Participants
  - \_\_\_ Apparatus & Environment
  - \_\_\_ Task & what looked for
  - \_\_\_ Procedure
  - \_\_\_ Test Measures
  - \_\_\_ Results
  - \_\_\_ Discussion
  - \_\_\_ Summary of talk
- Presentation
  - \_\_\_ Use effective slides (easy to read, understand, good use of visuals/images)
  - \_\_\_ Cover required scope in 12 mins (+ 5 minutes Q&A). Practice in advance.
  - \_\_\_ Ensure the presenter makes eye contact and projects well.

### Group grade (GROUP NAME: \_\_\_\_\_)

- Participants
  - \_\_\_ good range? demographics?
  - \_\_\_ recruiting/compensation clear?
- Apparatus & Environment
  - \_\_\_ clear on where the experiment took place and what equipment/software used?
  - \_\_\_ appropriate location?
- Tasks
  - \_\_\_ good range & real tasks?
  - \_\_\_ clear on what you were looking for?
- Procedure
  - \_\_\_ clear on what participants needed to do?
- Test Measures?
  - \_\_\_ appropriate variables recorded/measured?
- Results?
  - \_\_\_ clear if participants succeeded?
  - \_\_\_ clear on what worked and what did not, and why?
  - \_\_\_ good use of logged video & clickstream data?
- Discussion?
  - \_\_\_ recommendations for a larger study appropriate?
  - \_\_\_ recommendations for design changes based on the results?
  - \_\_\_ recommendations for design changes good ideas?