Project 1, Milestone 3: UI Prototype & Evaluation

Summary

Create paper prototypes of two distinct user interfaces that implement your chosen approach. Then test them using two techniques: a quick usability test and heuristic evaluation.

Relevant resources

- Watch this: Paper prototyping techniques -- slow paced, but shows off some high-end paper prototyping techniques (their interaction with the user is poor, though, so don't imitate that)

- This assignment builds on the prototyping component of Monday's lecture. Review your notes on how to design good tasks for a usability test.

Optional (we strongly suggest that you take a quick look at several of these just to see the range of the techniques people use):

- Runsi -- game prototype (interesting interactivity tricks)

- Travellr (good amount of interactivity)

- Example Usability Test with a Paper Prototype -- less interactive than what you should strive for, but the interaction with the user is pretty good

- A BAD example -- this example is not a paper prototype, it's a paper mockup. Meaning, you can use it to tell a story of what your product would look like, but you cannot really use it for testing. First, it lacks any meaningful interactivity. Second, because all the screens are pre-printed, you cannot make modifications on the fly. Go wild with other youtube videos on paper prototyping

Specific steps for this assignment

Step 0. Chose a final approach and write it up as an approach thesis with evidence to support the included characteristics

You just got plenty of feedback on your approach thes(es) and if you haven't combined, revised, and/or chosen a single approach thesis, please do that now.

Design arguments can be made at multiple levels. We've only talked about them at the conceptual level, but we can repeat the process within a given approach. Develop a brief need thesis that will guide the design of your user interfaces. What goals should the UI help users achieve? What obstacles should it help overcome? What should it optimize for?

Step 1. Design and build your paper prototypes

Design two substantially distinct user interfaces for your approach and implement them as interactive paper prototypes. You need just enough interactivity to prototype realistic interaction - you do not need to animate every single menu, list, text field, etc. See, for example, this video. Also, do not waste time on mundane aspects of the interface (e.g., the UI for changing a password) -- focus on those parts that are critical to your approach.

➢ **Submit** Create a brief video showing each initial paper prototype in action (you can record each video as a single shot using a phone or a similar device; no need to edit). In each video, show how the user interface would allow your client to accomplish something valuable. Narrate it: "Our client is in a situation S and wants to accomplish G. They pull out our product. They first do this, then that and voila their goal is met!" Put the videos somewhere where we can find them (GDrive, Dropbox). Include links to these videos in the document you are accumulating your theses and evidence in for TF feedback. We would like to see your prototypes to ensure that they are appropriately interactive and complete.

Step 2. Conduct usability tests

Run user tests on your interactive prototype with at least two different people per prototype. For this assignment, it is OK to use Harvard students as participants, but you will need to make sure to put them in a state of mind where they think like your target users. Your goal is to improve your designs so discovering problems is good! You want to uncover all the design bugs that might prevent your users from:

1. Figuring out how to translate their high-level goals into capabilities provided by your interfaces;
2. Succeeding in operating the individual elements of your interfaces to complete the tasks they undertake.

Pay extra special attention to the design of your scenarios and tasks. As we discussed in class, it is very difficult to create task descriptions that are both give clear direction and avoid revealing the solution to the user.

You should have at least two members of your team present during the test (ideally all should be present). Immediately after each test, do a quick debrief with the other team member(s) and write down any reactions or thoughts that came up. You will most likely forget them, so it's important to write them down right after the user test.

Your high-level goal is to find ways to improve your interface. Look for breakdowns and pain points in your interface and try to understand what the problems are and how you might fix them. **Modify and improve your prototype before continuing to the next user.**

➢ **Submit** In your Methodological Appendix, please include basic information about the participant (no need to reveal their identity, but do note relevant characteristics). This is

standard information that clients are likely to ask about so it is worth getting into the habit of recording it.

Step 3. Synthesize your findings

For each interface, list 5–10 key problems that you have uncovered throughout the testing for each prototype. Make sure to look both at the big picture (e.g., users having difficulty figuring out how to achieve a task) as well as the details (e.g., problems with the wording/design of individual UI elements).

➢ **Submit** In your Methodological Appendix, please report these problems. Having a record of such findings is helpful if your clients challenge some of your design decisions. It allows you to explain what else you have tried and what specific evidence led you to the current solution.

Document your progress

Extend your Project report to include:

- Problem statement guiding your UI design
- Appropriately illustrated description of your final UI design. Most teams choose to use some combination of illustrations of the main "screens" of the UIs combined with annotations that reveal each screen's purpose and also how the user should navigate through the interface in pursuit of their goals.
- An argument supported by evidence to convince the reader that your final UI is effective at meeting the requirements set out in your UI problem statement. When constructing your argument you should refer to key insights from the evaluations you conducted. Don't be afraid to quote negative findings: if you uncovered major problems with your initial designs, you can use those insights to motivate your final designs (which, presumably, cleverly address the problems you uncovered).

➢ **Submit** a link to the current draft of your project report (including the Methodological Appendix) through the course Canvas site. We don't expect that the link itself will change, but resubmitting the link will make it easier for our TFs to revisit your report to give their feedback. Only one member of the team needs to submit.

Grading

- **Progress** (up to 20 pts). Has the team made reasonable progress?
- **Exceptional work** (up to 10 pts of extra credit). Design can excel in many ways, and often the best designs are unanticipated. To acknowledge and encourage this, each assignment offers a few points for this truly exceptional work. Great design is also rare. So these points can only be achieved by at most 10% of submissions.

This week's studio

Each team will conduct and receive a heuristic evaluation of their UI prototype, following the instructions in the Project 1 Milestone 3 Part 2 assignment.

In the remaining time within the studio, present your UI prototype to the entire studio for feedback. Remind everyone what your approach is and what you identified as key requirements for your UI design. Then walk everyone through a specific scenario showing how a user would accomplish their goal with your UI prototype. Feel free to include insights from the heuristic evaluation exercise.

When offering critique, systematically consider all key goals behind the design and the key design decisions. Consider the following format for your feedback: "Given goal/constraint G, design decision D is/isn't effective because ____."