COS 436 / ELE 469
Spring 2013

P5: Working Prototype

Due 22 April 2013, 11:59 PM

Overview

The goal of this project step is to build a working prototype of your interactive system (or a substantial component thereof). You will perform a pilot usability study with this prototype in P6, with three users. You will use the results of P6 to inform your own final evaluation of your system and concept, and to drive final revisions before your presentation of your system at the demo session on May 16.

The Assignment

1. Revise the design of your system based on feedback from P4.

Use the results of P4 to design a revised system. Also develop new and/or revised scenarios for your three tasks (to be used in your pilot usability evaluation in P6, covering easy, medium, and hard tasks). The tasks you used in P4 should be mostly sufficient. However, you should update or replace simple or partial tasks used in P4 that did not adequately cover your proposed functionality. Make sure to make revisions based on the feedback from your users in P4. Express your revised set of scenarios in a new set of storyboards (unless you have a good reason to make absolutely no changes).

2. Create the working prototype.

Your prototype should support the three revised scenarios that you developed for your tasks. The design of the prototype should now start to account for the characteristics of your hardware platform (i.e., sensors, Arduino, Kinect, etc.).

You should implement enough functionality so that a user can adequately evaluate your system. While the underlying functionality does not have to be fully implemented, enough parts should work so that you can ask users to tell you whether or not the system is understandable and usable. For example, an application requiring voice recognition could instead use a wizard-of-oz interface in which a human-operator could manually do the recognition behind the scenes. (Note, however, that wizard-of-oz control often requires special code to be written.)

You have a relatively short period of time to complete this prototype, so you should focus on implementing the aspects of your system that are essential to its functioning and/or will get you the most valuable feedback to inform essential refinements to your design. For example, you may wish to skip implementing features such as configuration screens in favor of features that are more central to the user experience. You will likely have to make some difficult choices! Make sure you talk with us if you have any questions about how much of your project you should implement.

Note: You should not consider this interactive prototype to be your final implementation. You will be evaluating this prototype in P6, and we expect that you will continue revising the implementation through the remainder of the class.

3. Document the prototype.

See the submission instructions and grading guidelines below for a list of the documentation to produce.

Submission Instructions

1. Create a new blog post on the course blog.
2. **Add this blog post to category Project5**. (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 1-sentence project summary

d. 1 paragraph describing the tasks you have chosen to support in this working prototype (3 short descriptions, 2–3 sentences each; should be one easy, one medium, one hard).
e. 1 short paragraph discussing how your choice of tasks has changed from P3 and P4, if at all, as well as the rationale for changing or not changing the set of tasks from your earlier work.
f. 2–3 paragraphs discussing your revised interface design
    i. Describe changes you made to the design as a result of P4, and your rationale behind these changes (refer to photos, your P4 blog post, etc. where appropriate)
    ii. Provide updated storyboards of your 3 tasks
    iii. Provide sketches for still-unimplemented portions of the system, and any other sketches that are helpful in communicating changes to your design and/or scenarios
g. 3–4 paragraphs providing an overview and discussion of your new prototype
    i. Discuss the implemented functionality, with references to images and/or video in the next section
    ii. Describe what functionality from the proposed complete system you decided to leave out of this prototype, and why
    iii. Describe any wizard-of-oz techniques that are required to make your prototype work
    iv. In the above sections, be sure to provide your rationale for choosing what functionality to implement, what to wizard-of-oz, and what to ignore.
    v. Document any code you used that was not written by your team (e.g., obtained from an online tutorial, third-party library, etc.). If you did not use code from other sources, say so.
h. Video and/or images documenting your current prototype

4. Fill out the Google Form at **http://tinyurl.com/cos436P5** with the URL of your blog.

Grading

- Design (12 points)
    - Tasks (6 points)
        - Do the tasks adequately cover the interesting features of the project?
        - Do the tasks have an appropriate difficulty/complexity specified?
        - Do the tasks form a compelling story for the project?
    - Changes informed by P4 (6 points)
        - Were appropriate changes made to address the important problems discovered?
        - Are these changes well-illustrated with photos, storyboards, and/or text?
- Prototype (20 points)
    - Is the prototype clearly working as described?
    - Can users complete the three tasks with the prototype?
    - Were appropriate tradeoffs made between breadth and depth of functionality? (i.e., choice of features to support vs. completeness of their support)
    - Were the limitations of the current prototype and tradeoffs between breadth and depth justified and described in the report?
- Report (20 points)
    - Writing
        - Does the report cover all topics in the outline? Does the organization follow the outline?
        - Are sub-sections used for easy scanning of important parts?
        - Does the report adhere to length limits described above? (We will dock points for reports that are too long or too short)
        - Is writing clear, concise, and free of spelling and grammatical errors?
    - Images, video, storyboards
        - Are important figures/video captioned and referenced appropriately in the text?
        - Do the figures/video appropriately communicate the functionality of the prototype?
        - Were you reasonable in the file sizes used in your report? (We will take off points for egregiously large files)

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