CIS 443-543: User Interfaces
Fall 2009
Final Project

Due December 8, 2009 by 5pm in CIS Office. Presentation at *8am* in 200 Deschutes same day.

Description: The goal of this assignment is to produce a working *software prototype* of an interactive artifact that has excellent usability. This is a team project with 2-4 people on a team, worth 40% of your overall grade. You can produce the software using any GUI builder or programming language you want…..as long as I can run it to grade it. If you choose to do a Web project, please be aware that it must have substantial usability challenges such as a Java applet. Try to choose a problem that is not too large or complex.

Ideas for Final Projects:
- Information kiosk and travel planner for Lane County Transit
- Hiking guide for Lane County
- Math tutor or Musical Playground
- Distributed, multi-player games: Wheel of Fortune, "Chinese" checkers
- Furniture layout editor
- Planner for a CIS major
- New command language or tutorial for blind person using a screen reader
- Application for the Apple iPhone or iPod touch (Use SDK for development)
- Game for Wii (Use SDK for development)

Grading:
Usability studies: Quality of initial user studies and usability evaluation studies; integration of analysis into changes in the design (20%)
Usability of Final Artifact (20%)
Programming: Effort and quality of final code (30%)
Written Report: Completeness and quality of (20%)
Presentation: Completeness and quality of (10%)
NOTE: You will be graded on (1) completing all the parts of the assignment, (2) correctly applying the methods and techniques taught in the course, (3) having the content make sense and be representative of the real world, and (4) the quality of your presentation and writing—communicating ideas clearly, concisely, completely, and correctly.

Hand-in:
1. *How to run the system* and any other needed instructions.
2. *Interactive System Design Report* (See below.)
3. *CD-ROM* containing the project. This should contain *source code* and *application* version ready to run.
4. *Paper version of source code* - well commented. IMPORTANT: Please highlight the code you have added to any GUI builder generated code.
5. *Copy of Videotaped Usability testing*. Quicktime file or DVD. Documents used: surveys, interview questions, consent forms, etc.
6. *Group Member Evaluation (GME)* rating each of your teammates and documenting any major problems you had with your group. (You should send this to me by email or put it in my CIS mailbox.)

EXAMPLE: The Interactive System Design Report

This document must COMMUNICATE your design and its usability evaluation. Keep that goal in mind. Another programmer should be able to imagine an interactive system and how it will work, or possibly implement it from your description.

You may use the following headings and contents for your report if you like. This font is an explanation.

PART I: INTRODUCTION
    A. Problem statement: What is the program's purpose in general?
    B. Comparing programs of similar functionality:
        What's good and bad with existing similar systems?
    C. Brief description of the user studies you conducted:
        What kind of study did you do? (Task Analysis, Interviews, Observation, Questionnaire, etc.) Include example forms used.
    D. Description of potential users
        Who are the users? What is their experience with other similar devices? What are their skills and limitations? How often will they use this system, and will they become expert users? Is there anything special about them that affects usability? BE VERY SPECIFIC. This is where universal usability begins!!!!!

PART II. REQUIREMENTS SPECIFICATION
    A. Description of program's overall functionality
        What are the typical user tasks or activities? Describe briefly a few scenarios.
    B. Context
        1. Description of target hardware/software.
        2. Integration: Other application software
            How does this application integrate into other software available on the computer? What products will it produce and at what level of quality?
        3. Outstanding constraints on design (standards, laws, etc.)
    C. Functional requirements (*What* the system should do.)
        1. Core Functions (include help function!) List & describe. Be specific.
        2. What other functions would be nice to have? List & describe. Be specific.
    D. Usability requirements
        1. Overall Learning Time
            How much overall time should users take to learn the system core functions?
        2. Online Help Time
            How much time should they spend looking things up in a manual?
        3. Overall Performance Time
            How much overall time should it take to do core functions?

PART III. DETAILED USER INTERFACE SPECIFICATION

In this part of the design document, you describe how the functional requirements are achieved through specific tasks/activities of the user with the user interface. This is the "blueprint" for the implemented user interface design:

A. Overall interface style chosen and why; Conceptual model or metaphor (if any) used
B. How the user interface works: Core activities
   Provide at least three interaction scenarios as narrative descriptions (see lecture 4, slides 28-29) of the core user activities.
C. How the user interface works: Handling trouble
   Describe at least one scenario of a problem encountered doing core activities. These should illustrate error dialogs, undo and using on-line help.
D. Overall User Interface interaction specification
   You can also specify the UI interaction through a storyboard (see lecture 4, slides 35 - 49) or an Interaction Network (see lecture 4, slides 50-64).
   a. Storyboards for core activities
          OR
   b. Interaction Network

PART IV. TESTING AND EVALUATION OF THE USER INTERFACE

A. Testing and Evaluation without users
   Describe any of the following studies you may have done. Include a description of the study, what you discovered about usability and specific design solutions you proposed.
   1. Guidelines
   2. Interface Walkthrough
   3. Keystroke Level Model (KLM)
B. Testing and Evaluation with users (Usability Studies)
   1. Description of Usability Study
      Briefly describe the videotaped usability study you did, including any interviews, questionnaires, etc. What were your usability testing goals? Who were the people you tested? How did you choose them? What tasks did they do? How did you record it? How did you analyze it?
   2. Summary of Findings
      Summarize what you learned from this testing regarding overall usability of the design, and the usability requirements that were specified in Part II. BE SPECIFIC!!
   3. Design Solutions to Problems
      What are the specific problems you observed? What problems were you able to fix? What problems still need to be fixed? What further usability testing do you need to do?

PART V. CONCLUSIONS

A. Future Design
   Is the design working? Improvements, extensions, etc. Where should this design go in the future?
B. Overall reflection on achieving the usability issues for your system