Due December 7, 2006 by 10:15am in the CIS Office in Deschutes Hall.

Description: The goal of this assignment is to produce a prototype of software that has excellent usability. This is a team project with 2-4 people on a team, worth 30% 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.

Ideas for Final Projects:
- Information kiosk and travel planner for Lane County Transit
- Hiking guide for Lane County
- Math tutor
- Distributed, multi-player games: Wheel of Fortune, “Chinese” checkers
- Furniture layout editor
- Planner for a CIS major
- Scrapbook creator
- Tutorial for blind persons using a screen reader

Grading:
Usability studies: Quality of studies and integration of analysis into changes in the design (20%)
Usability of Final Artifact (20%)
Programming: Effort and quality of final code (20%)
Written Report: Completeness and quality of (40%)
NOTE: You will be graded on (1) completing all the parts of the assignment, (2) correctly applying the methods and techniques, (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 (spelling and grammar).

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. Group Member Evaluation (GME) form 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.)
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 from your description.

use the following headings and contents for your report. This font is an explanation.

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

PART II. REQUIREMENTS SPECIFICATION
A. Description of program’s overall functionality
   What are the typical user tasks or activities? Describe briefly as 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?
      Have you accommodated that in the design.
   3. Products
      What products will it produce and at what level of quality?
   4. Outstanding constraints on design (standards, laws, etc.)
C. Functional requirements (What the system should do.)
   1. Core Functions
      a. What are absolutely necessary for your users? List & describe. Be very specific. These are what you should implement. You might find it useful to also describe your tasks as a task hierarchy.
      b. On-line help facilities required? What functions need to be supported by on-line help? What kinds of “errors” might users make?
      c. On-line learning materials (tutorials) and manuals required?
   2. What other functions would be nice to have? List & describe. Be very 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 and the advanced functions?
   4. Core Function Usability
      For each core function, give a set of average user usability requirements: learning time, skilled performance time, and accuracy. (List & describe. Be very specific)

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: What functions the user can perform are tied to what the screens look like and what user actions occur.

A. Overall interface style chosen and why
B. Conceptual model or metaphor (if any) used
C. 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. (Be sure state the core activities from II-C-1 above.) These should illustrate typical use. In these narratives, coordinate screen states to represent what the user sees. Responsive actions are described in the narrative. This will provide a description of how the user interface works for core activities without having to run the program. These also can be used for training purposes in the user manual. Be sure that labels and screens are large enough that we can read the text!

D. How the user interface works: Learning the system
   Provide at least one interaction scenario as narrative descriptions (see lecture 4, slides 28-29) of the core user activities. These should illustrate typical use.

E. 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.

F. Overall User Interface interaction specification
   You can also specify the UI interaction through a storyboard (see lecture 4, slides 30 and 40) or an Interaction Network (see lecture 4, slides 43-57).
   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