CIS 443/543 User Interfaces
Exercise #4
(Team-work: Presentation, Written Report, Graded)
Due: Tuesday, Feb. 10 at 10am

<u>Introduction and Motivation</u>

The fourth step in the scenario-based development process is called *interaction design* (chapter 5). Its purpose is to specify the user's interaction (input) in response to display of information required by the activities specified in information design (chapter 4). Interaction design includes control widgets such as menus, icons, dialog boxes and links. The goal is to represent and arrange information to facilitate execution of procedures. Interaction design is the last part of designing the actual user interface. It will be followed by user evaluation (chapter 7).

An interaction design begins with the prior scenarios generated from information design (Exercise #3). The output of this phase is a set of storyboards with mockup screens that support the core—and any other important—activity scenarios. During initial *exploration* of interaction designs, designers start by identifying the interaction required in the information scenarios. Primary focus should be on the core activities. Later other activities that support advanced or infrequent functions, or a small subgroup of users can be integrated into the design. Brainstorm with your users' metaphors and prior practice. Thoroughly consider the technology options you have and how they will influence the interaction design such as supported types of menu, user experience with different input devices and control widgets. After exploration, begin to *envision* and *elaborate* the full interaction. Try to generate multiple alternative design approaches. Choose the best and add the details to the screen sketches from Exercise #3. Later, you may decide that you like another alternative better. In any case, refine the design layouts to the point of screen mock-ups and a storyboard for each scenario (R&C Figure 5.7). Finally, after developing the storyboards, validate the completeness, coherence and *rationale* for the interaction design. Draw a user interaction network to test your design for completeness and consistency. Include help and error processing. (Note: This network is not given in the R&C textbook. See Lecture 6 (Feb 5) for details.) Can your users accomplish their activities with your interaction design with minimal learning and confusion? Is the feedback sufficient? Will you users recognize the purpose of a widget given its label or icon? What are the positive and negative claims for the detailed interaction design for improving usability?

At this point you have completed the design specification, and will be ready to evaluate and test the usability of the design.

NOTE: The text website has several case studies illustrating interaction design. See http://ucs.cs.vt.edu/default.asp?button=2

<u>Assignment</u>
1. Read Chapter 5 in the Rosson and Carroll text.
2. Using the on-line election problem, prepare a team presentation and written report.

TURN-OVER

<u>Presentation</u> (10 minutes/group)
1. Describe the interaction metaphors and interaction design technology options you considered for your overall design for one core group of stakeholders' activities. (See R&C Tables 5.2 & 5.3) (1 minute)
2. Describe the design of the interaction (screens) for one core scenario. At this point the screens will be mock-ups, not sketches. Justify the details of the interaction design including control widgets or input method, labels, iconic pictures, etc. (3 minutes)
3. For the same scenario, walk through the activity with a storyboard describing how the user will interact with the proposed design. (4 minutes)
4. Show the user interaction network for the activity described above plus any others that use the same screens. Don't forget to add help for the user, and error processing. (2 minutes)

<u>Written Report</u> (10-13 pages)
1. Provide your information design scenarios for your core groups of stakeholders from Exercise #3. You may have changed and rewritten them. (2-3 pages)
2. Describe the interaction metaphors and interaction design technology options you considered for your overall design for one core group of stakeholders' activities. (See R&C Tables 5.2 & 5.3) (1 page)
3. Describe the design of the interaction (screens) for all scenarios. At this point the screens will be mock-ups, not sketches. Justify the details of the interaction design including control widgets or input method, labels, iconic pictures, etc. (1-2 pages)
4. For each scenario, provide a storyboard describing how the user will interact with the proposed design. (3-4 page)
5. Show the user interaction networks for all activities. Don't forget to add help for the user, and error processing. (1 page)
6. Rewrite your information design scenarios with the interaction design added. (2-3 pages)
7. Each member fills out a Group Membership Evaluation (GME)

<u>Grading</u>
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).

See the Grading Sheet for Exercise #4.

TURN-OVER