490F Midterm Review

Midterm in-class
Tuesday, Nov 7

Midterm Format
- Multiple Choice
- Fill in the Blank
- Short Essay Answer
  - Example interface: Here is an example of an interface – find the flaws
  - Example situations: Here is an example design process – find the flaws, or what concepts does it illustrate?
  - Definitions
  - Compare and contrast
  - Process: Perform a heuristic analysis on the following interface...

Midterm Content
- You will be expected to know everything, up to the midterm
  - Lecture
  - Individual Homework
  - Readings
  - Project processes
  - (tutorial)

Tips for Preparation
- During the semester
  - Keep up with readings
- Before the exam
  - Review readings and notes → esp “Review” sections
  - List concepts
  - Group similar concepts together
  - Make up exam questions
    - Why is this concept important?
    - How does it fit into the big picture?
    - Can I compare this concept to other similar ones? If so, then how is it different?
    - What is a real world example of this concept?
  - During the exam
    - Read questions carefully
    - Don’t spend too much time on one section

Tips for Preparation
- Take out a sheet of paper, and be ready to answer the mini-quizzes

Now
So what did we learn, anyway?

Topics List
- Intro
  - Design triangle
  - Usability Goals and Metrics
- Design process
  - Discovery, exploration, refinement, production
  - Iterate!
  - Understanding your user

Quiz: Design Triangle
- Organizational & Social Issues
- Design
- Humans
- Technology
- Tasks

Quiz: Usability Goals
- Learnable
- Memorable
- Flexible
- Efficient
- Robust
- Pleasing
- Fun

Quiz: Task Analysis questions
1. Who is going to use the system?
2. What tasks do they perform now?
3. What tasks are desired?
4. How are the tasks learned?
5. Where are the tasks performed?
6. What relationship between the user and data?
7. What other tools does the customer have?
8. How do customers communicate with each other?
9. How often are the tasks performed?
10. What are the time constraints on the tasks?
11. What happens when things go wrong?

Topics List
- Contextual Inquiry
  - Context, Partnership, Master/Apprentice model
- Task Analysis
  - Questions
  - Tasks
Design Concepts
- Conceptual Models (Design, User)
- Affordances
- Metaphors
- Visibility

Designing / Conceptual Model
- Conceptual model
  - mental representation of how an object works & how interface controls effect it
- Design model should equal user model
  - mismatches lead to errors
  - know the user’s likely conceptual model
- Design guides make things visible
  - map interface controls to user’s model
  - provide feedback

Quiz: Key Terms
1. Usability
2. User centered Design
3. Task Analysis
4. Contextual Inquiry
5. Rapid Prototyping
6. Evaluation
7. Affordance

Quiz: History of HCI
- Vannevar Bush
  - Memex,
  - wearcam,
  - Autospeech
- Grace Hopper
  - First Computer Bug
- Doug Englebart
  - Augmenting human intellect
    - Chorded Keyboard
    - Mouse
    - Word processing
    - Groupware

Topics List
- Human Perception
  - Color sensitivity & physical human eye
  - Hue, Lightness, Saturation
- 100 ms
- Fitt’s law
- LTM, STM, Sensory
- Model Human Processor

The Model Human Processor
- Developed by Card, Moran, & Newell (’83)
  - based on empirical data
  - Long-term Memory
  - Working Memory
  - Visual Image Store
  - Auditory Image Store
  - Perceptual Processor
  - Motor Processor
  - Cognitive Processor
  - Fingers, etc.
Topics List

- Design Patterns
  - How to use them
  - Six ways to make a good Home Page
- Patterns
  - Homepage Portal
  - Personalized Content
  - Inverse Pyramid Writing Style
  - Shopping Cart
- Heuristic Analysis

Quiz: Heuristic Analysis

- 1. Visibility of system status
- 2. Match between system and the real world
- 3. User control and freedom
- 4. Consistency and standards
- 5. Error prevention
- 6. Recognition rather than recall
- 7. Flexibility and efficiency of use
- 8. Aesthetic and minimalist design
- 9. Help users recognize, diagnose, and recover from errors
- 10. Help and documentation

Good Luck!