# CS160 Discussion Section

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Feb 3, 2003




## Goals as TA

- Survey responses (25 respondents; ~50% response rate)
  - Discussion sections
    - **Help students with homework (12)**
    - **Prepare students for examinations (11)**
    - **Highlight key points of class readings (10)**
    - Live demonstrations (8)
    - Motivation for HCI techniques (5)
    - More open discussions, less lecturing (4)
    - Supplement and cover "wet" side of lecture material (3)
  - Office Hours
    - **Coaching with projects; correct applications (11)**
  - General
    - Inspire interest in subject (2)
    - Make learning fun and interesting (2)

## Goals as TA

- Additional feedback
  - "Discussions! For evaluation of student idea"
  - "I like your slides and outside references"
  - Critiques / analysis in live demonstrations

## Goals as TA

- Methodology flaws
  - Ambiguous instructions -> ambiguous responses
    - Some responses were ranked
  - Survey "questions" not clearly organized
    - E.g.:"Coaching with projects" should be omitted
- Real-world exceptions
  - "Prep for exam/hw"
  - "Open discussion (relevant to lecture, exams, hw)"
  - "Coaching w/ projects (that inspires interest in it)"

## TA Office Hours

- M 4:30-5:30, Th 10-11; 551 Soda (**note change!**)
- Office: 417 Soda

- Email mattkam@cs.berkeley.edu for appointments at other times, and course-related matters
- Include "CS160" in subject header
- If urgent, mark "high priority"

- Discussion sections homepage: http://www.cs.berkeley.edu/~mattkam/cs160/
- Newsgroup: ucb.class.cs160

## Teaching HCI Using HCI

- Collaborative tools
  - Email
  - Newsgroup
  - World Wide Web
  - Swiki
  - Livenotes
- Demo by designing discussion sections iteratively
  - Personas
  - Making connections
- Practical exposure to HCI research
  - Experiments and user studies
  - Drawing from own research experience

## Concepts

- History of HCI *postponed*

- Ubiquitous computing
- Context- / location- awareness
- Human-centered design
- Personas
- Value-sensitive design

## Ubiquitous Computing

- People and environments integrated seamlessly with computationally-enabled everyday objects that provide services when and where desired.
- "The most profound technologies are those that disappear. They weave themselves into the fabric of everyday life until they are indistinguishable from it."
  - E.g.: writing and print technology
- Tabs, pads and boards
- Active Badge and RFIDs
- Wireless network infrastructure (e.g. Wi-Fi, Bluetooth)

Mark Weiser. **The Computer for the 21st Century.** In *Scientific American*, September 1991.

## Context-/Location- Awareness

- What is context?
  - Available information about and in the environment that can be sensed by computer
    - Who are present?
    - What are the occupants doing?
    - Where is he heading towards?
    - When was he in this room?
    - Why is he doing this? (very challenging problem)
- Location-awareness is subset of context-awareness
- Context-awareness is a feature that many ubicomp applications will need

Gregory D. Abowd and Elizabeth D. Mynatt. **Charting Past, Present, and Future Research in Ubiquitous Computing.** In *ACM Transactions on Computer-Human Interaction*, Vol. 7, No. 1, March 2000.

## Ubicomp Meets Context-Awareness

Microsoft's Smart Personal Object Technology (SPOT)


http://www.microsoft.com/presspass/features/2003/jan03/01-09SPOTWatches.asp

## Human-Centered Design

- **Who is going to use the system?**
- **What are their characteristics, goals and desires?**
- Choose representative tasks and analyze them
- Rough out a design (plagiarize as needed)
- Rethink the design
- Create a prototype
- Test it with users
- Iterate
- Build a production version (and ship it!)
- Track use
- Evolve the design

Slide adapted from Prof. John Canny

## Human-Centered Design

- User conceptual model is the most important component of a user interface
- Should be clear, obvious and substantial
- Employs metaphors (e.g. spreadsheets, desktops) to facilitate learning
- Dissonance in models (GUI as skin for Unix)
  - Noun-verb interface
- Developers got upset when real users encountered trouble with prototype
- Caveat: Emphasis on user made Star 1.0 too slow
  - Underlying technology and its robustness is still important
- Design methodology that systematically accounts for users
  - Videotaping of user studies
  - Screen views if working prototype doesn't exist yet

Liddle reading.

## Human-Centered Design

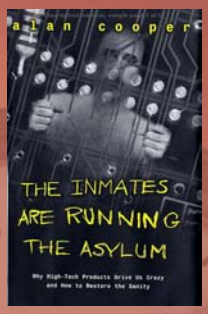
- Features list miss interconnected nature of tasks
- Need to look at each element in context
- "Submitted for approval," not to find problems
  - Linear approach is time-tested to result in complex, messy solutions
- Iterative development means rapid prototyping

- Technology also important (Mac, Lisa)
- Apple marketed for "artsy" types
- Network externalities, aka winner-takes-all

- Understand the customer!

Norman reading

## Personas




Alan Cooper and Paul Saffo. **The Inmates are Running the Asylum.** Simon and Schuster. April 6, 1999. Chapters 9 and 10.

## Personas

- Why use personas?
  - Avoids the "elastic" user
    - Programmers bend, stretch and adapt the software for the user, not user bending and adapting to software
    - Makes it difficult for programmers to distort the users' goals and needs
  - Communication within team
    - End feature debates
  - Negative personas
    - Someone you explicitly don't want to design for

## Personas

- What are personas?
  - Hypothetical archetypes of actual users
  - Defined with rigor and precision
  - Specific but stereotyped
  - Although they are imaginary, we *discover* them in the investigation process, not by making them up
  - Defined by their *goals*

## Personas

- "The essence of good interaction design is devising interactions that let users achieve their practical goals without violating their personal goals."
- Goals vs. tasks
  - A goal is an end condition
  - A task is an intermediate process required to achieve the goal
  - Tasks change as technology changes, but goals tend to remain stable
  - Programmers do task-directed design

## Personas

- What goes into a good persona?
  - Skill levels
  - Capabilities, inclinations and background (or lack of)
  - Other pertinent economic, social, values, etc. characteristics
  - Precision to extent that persona can stand for member of development team
  - Goals (most important)
- Identify the primary persona
  - "Someone who *must* be satisfied, but who cannot be satisfied with an interface designed for any other persona."

## Persona 1

- Albert
- Age: 20
- Computer science major
- Introvert, plays computer games
- Very good CS background
- Good at thinking in the abstract
- Work in structured fashion, pulls all-nighters (coffee, Jolt)
- Goal: Pursue career as user interface or application programmer

## Persona 2

- Carol
- Age: 20
- Cognitive science major
- Sociable, enjoys meeting people, hates doing Math
- CS background limited to CS188 and below
- Good at detailed thinking, non-structured design
- Goal: Pursue career as user interface designer

## Value-Sensitive Design

- Need to account for human values in system design
- E.g. of human values
  - Privacy (video-conference system)
  - Adaptation of needs (email filter)
  - Gender equality (RPG game)
  - Universal access (GUI)
- Ways to promote human values
  - User autonomy (give user right level of control)
  - Universal access (redundant information)
  - Ease of learning (standardization)
- Identify values during earliest stages of design phase
- Include human values as design criteria

Batya Friedman. **Value-Sensitive Design.**
In *ACM Interactions*, Vol. 3, Issue 6, December 1996.

## Individual Project Proposal Postmortem

- Basic rhetorical writing
  - Having a clear thesis statement
  - Making a strong case
    - Give evidence
  - Writing in an organized fashion
    - Section headings
    - Transition sentences
- Confusing problem statement with solution
- Lack of target group
- Weak personas
- Too much detail on solution
- Overall consequence: design process gets short-circuited!

## Administrivia

- EECS instructional account forms on the way
- Individual project proposals are graded
  - Pick them up in office hours today, or onwards
- Next homework handed out today
  - Due Feb 12, 2003
- Online submission (Swiki)
  - More details next Monday
- Start thinking about group project
  - Group assignments posted outside 529 Soda (or email mattkam@cs)
  - Choose sensible user population
  - Get personas right!

## Panel Discussion on Human Computer Interaction

"Join in with our panel of User Interface Designers and Usability Engineers from Oracle, Yahoo and Sony Corporation as they elaborate on their experience, industry outlook, educational training, and relevant skills. Panelists will take questions from the audience after a structured Q&A session. Snacks and drinks will be provided."

Date: Wednesday, February 5, 2003
Time: 7:00pm - 9:30pm
Place: 110 South Hall
Contact: zhanna@sims.berkeley.edu