

CS160 Discussion Section

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Who am I?

- International student from Singapore
- Ph.D. student in EECS
- Former Berkeley undergraduate (B.S. EECS '01, B.A. Economics '01)
- Current research
 - Educational computing (Livenotes)
 - Distributed computing
 - Mobile computing and p2p networking
 - Human-computer interaction
 - Educational psychology
 - Sustainable economic development
 - Digital divide

Goals as TA

- Considering career in academia
- Consulted past CS160 students
 - Motivation for HCI techniques
 - Supplement and cover “wet” side of lecture material
 - More open discussions, less lecturing
 - Live demonstrations
 - Coaching with projects; correct applications
- Results from educational psychology research group (decreasing order of importance)
 - Prepare students for examinations
 - Inspire interest in subject
 - Make learning fun and interesting
 - Highlight key points of class readings
 - Help students with homework

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

Concepts

- Work practices
- Interaction techniques
- Personas (part of user-centered design)
- Ubiquitous computing
- Context- / location- awareness



Mobile Devices / Phones

- What are their physical characteristics?

- Small display
- Limited entry, i.e. “select vs. type”
- Limited memory and storage
- Portable
- Moderate to long battery life
- Wireless, “intermittent” connectivity

- What else?
- Which are pros, which are cons?

Mobile Devices / Phones

- Engendered practices?

- Regular recharging and synchronization
- Regular checks on voicemail
- “Please turn off your cellphones...”
- Driving while talking

- What else?

Mobile Devices / Phones

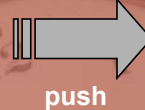
- Interaction Techniques?

- Select by tapping, touching or pressing
- Voice dictation
- Pen input and handwriting recognition
- Negligible bootstrap time => short, simple tasks
- What else?

- “Books with Voices” demo by Scott Klemmer

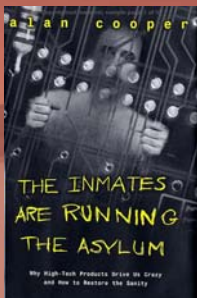
- Novel interaction technique: using a tangible medium (paper and barcodes) to index into an electronic database (oral history archive)

Technology



Social pull
(user needs)

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.”

Personas

- Web design tool example
- Betsy
 - A former graphic artist
 - Knows how to build static HTML pages
 - But not interested in programming
 - Goal: To design and build websites for clients as an independent artist/consultant

Personas

- Ernie
 - A new-age programmer geek
 - Doesn't know C, C++ or assembly
 - But knows CGI, Perl, JavaScript and VB
 - Competent in assembling components to attain required functionality
 - Familiar with hundreds of ActiveX controls and JavaBeans
 - Goal: To work on and solve technical problems

Personas

- Who is the primary persona?
- Betsy's needs changed as Web technologies evolved; websites becoming more dynamic
 - But goal remains unchanged
- Solution?
 - Visual programming interface

Ubiquitous Computing

- People and environments integrated seamlessly with computationally-enabled 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
 - E.g.: Electronic movement board

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.

More Project Tips

- Past CS160 projects:
5th floor Soda hallway
- Ongoing HCI research at Berkeley:
<http://guir.cs.berkeley.edu>
- Ready access to users and test subjects
- Why would users want to use your system over existing system?
- Choose something you *really* care about!

Feedback

- Feedback is always welcome, anytime
- Email them to mattkam@cs.berkeley.edu
- Suggestions for discussion sections material
- Survey