Questions?

• Prototyping
• HW #3
• Project #0
Hierarchy of Needs

Self-Actualization
Self-Esteem
Love
Safety
Physiological

[Maslow 1987]

Creativity
Proficiency
Usability
Reliability
Functionality

[Lidwell 2003]
Prototypes

• Why prototypes?
  – Design by designers / design with users
  – Early usability testing

• Prototype types
  – Low-tech prototypes are inexpensive, so you can do more of them
  – Pay less now or more later
  – More ideas => good ideas
  – What are they good for?

• Depending of the phase of the project
  – Walk-throughs and paper based interface (I)
  – Simulation of the interface and Wizard of Oz approaches (II)
  – Larger and larger group of users using the real interface (III)
  – Product is shipping (IV)

• “LoFi” prototypes help find as many usability issues as “HiFi” ones. [Virzi et al., 1996]
Low fidelity prototypes

• Paper/plastic based interface simulation
  – Using sketches, foamcore, transparency, and PICTIVE*

• Mode of operation

*Plastic Interface for Collaborative Technology Initiatives through Video Exploration” Muller, CHI 91
Low fidelity tools
Low fidelity prototypes (summary)

• Inexpensive
• High level feedback about the dynamic of the interface
• Trigger users reactions
  – Debrief users
• Might be inaccurate
  – Speed, human-human interferences…
• What is “incredibly intelligent help”? (Snyder)
  => Tells you the smallest bit of information that gets a user past a stumbling back.
  => Ideally gets incorporated into the app, so no help is needed
Wizard of Oz

- Testing a system that does not exist
  - Voice recognition, face identification, handwriting recognition

- Mode of operation
  - Users use the interface as intended
  - A wizard (sometime hidden) responds to users behavior
    - Follow an algorithm
    - Reproduce the expected capability of the system
  - Example: an shopping cart assistant
Using a Paper Prototype – Example 1
Using a Paper Prototype – Example 2
Low-Tech Prototype Problems

- Design changes cumbersome
- Wizard-of-Oz studies requires high cognitive load

[Landay,????]
DENIM

[Lin et al., 2001]
WOZ

Tabs at bottom of interface allow user to switch between three modes: Design Screens, Edit Screen Transitions, and Run Screens.

Pop-up menu constrains possibilities to only valid next screens, thus reducing cognitive load on human wizard.

Figure 1. Screen Shots of the WOZ Pro Interface

[Hundhausen at al., 2007]
Medium fidelity prototypes (II and III)

- Using prototyping tools (Flash, Director, JavaScript,…)
  - Vertical prototype: Provide answer about a specific question
    - *Is dialog box design A faster than dialog box design B?*
  - Horizontal prototype: the full interface without the functionality
    - *Is the command structure OK?*
  - Scenario
Medium fidelity prototypes (Summary)

• Time consuming

• Be careful about user expectations
  – Developer might resist change
  – Management might think it is real

• Do not get distracted by too small a detail
  – Color, font,…
High fidelity prototypes

- Piecewise prototype
  - Horizontal, vertical, scenario
  - Controlled setting
- Alpha and Beta releases
  - Small scale distribution
- Final product?
  - Monitor help line
  - Monitor sell rep.
- Costly
  - Problem can be deeply rooted in the software architecture
Low fidelity interface elements
Example
Palm Pilot Interview

• Haitani: p. 87, middle – developers are not users
• Haitani: p. 87, bottom – developers are not users, value of low-tech prototyping
• Haitani: p. 89, middle – cost structure of information
• Stapler example – system vs. user-centered design
• Focus on speed for frequent actions
• Give example of 80/20 rule in Palm Pilot design.
• Give example of design difference between PC
• What is the “Phone test”?
• Could we build a PC interface without “save”? Good idea?
• Why is Palm dead and iPhone winning? Simplicity?
People like to help others. Design a website that features people in need and a mechanism for donors to learn about those people and donate money to them.

- **Target persona:** Adriana, 35 y.o., professional designer  
  - Loves beautiful new gadgets  
  - Avid mountain climber  
  - Appreciates beauty

- **Group size:** 5-6

- **What to do:**  
  - 10 minutes: brainstorm on how to serve these goals  
  - 15 minutes: create the initial low fidelity prototype  
  - 15 minutes: debug the interface with a user from another group

- **Presentation to the class:**  
  - 10 minutes: Several groups will present their solution to the class