Questions?

Prototypes

• Why prototypes?
  – Design
  – Communication
  – Usability testing

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

• Technique depends on phase of the project (& task)
• “LoFi” prototypes help find as many usability issues as “HiFi” ones. [Virzi et al., 1996]
**Tasks (Arnowitz reading)**

- Organize information (i.e., menu options)  
  => Card sorting
- Design page structure  
  => Sketch
- Structure workflow (i.e., screens and order)  
  => Wireframe
- Align thinking around product  
  => Storyboard
- Learn about how human reacts to a technology  
  => Wizard of Oz
- Test usability  
  => Prototype

**Card Sorting**

- Concepts written on individual cards
- Users sort cards into piles with similar concepts
- Users name piles
- => Decide how to organize information
Sketching Interfaces

• Design page structure

Value of Paper for Communication

• www.commoncraft.com/twitter
Wireframe

• Consider page layout
• Structure workflow – envision links and relationship among pages

Storyboard

• Communicate ideas
• Align team on strategy

http://www.youtube.com/watch?v=rDu2A3WzQpo&feature=player_embedded
Low fidelity prototypes

- Paper/plastic based interface simulation
  - Using sketches, foamcore, transparency, and PICTIVE
- Mode of operation

Observer (or video camera)

User

“Computer”

Interface elements

“Great for a computer - but it works!”

Paper prototyping (Carolyn Snyder)

Low fidelity tools
Low fidelity interface elements

Example
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…

=> 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:
    - shopping cart assistant
    - Mobile text entry prediction
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

=> Automated tools to assist prototyping

[SILK – Landay, 1995]

DENIM

[Lin et al., 2001]
WOZ

[Hundhausen at al., 2007]

More common solutions

- Powerpoint, Photoshop, Illustrator, Excel
- [www.balsamiq.com](http://www.balsamiq.com)
Medium fidelity prototypes

- 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
- Users can get distracted by small details
  - Color, font,…
High fidelity prototypes

- Best for very large and expensive products
  - Prototype can be significantly expensive
  - Difficult to change
  - Just like “real” software…

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 STUFF to them.

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

- Group size: 3-4
- What to do:
  - 10 minutes: brainstorm 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