An Overview of Design Process

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Learning Goals for Today

- Have an overview of the Interaction Design process in general and the specific way it will be applied in this course
- Have a broad understanding of what “Design” means for this course
- Learn a first level of detail about the steps we will be employing in the project
- Understand how users can be involved in the design process
- See some examples of design projects
User Centered Design

- Users’ tasks and goals are the driving force behind development
- Users are consulted throughout development
- All design decisions are taken from within the context of the users, their work, and their environment
What is Design (Kelley)

- Not just problem solving – Creative leap
- Messy – No right answer
- Takes a point of view – or many
- Calls for vision and multiple minds
- Open attitude – many solutions
- Learned from experience with reflection
- Requires a feel for the materials
- Starts with broadening, followed by narrowing
- Requires ongoing mindfulness
Design phases (IDEO)

- Understand
- Observe
- Visualize and Predict
- Evaluate and Refine
- Implement
Simple Iterative Model

- Needs
- Design
- Evaluate
- Implement

- Modified from p. 186 in Interaction Design
Needs Analysis
Contextual Inquiry

- Users and stakeholders
- Context
- At the interviewee’s workplace
- Partnership
- Designer is apprentice to Interviewee
- Can be guided by interviewee
Contextual Interviews

- Interpretation and elicitation of needs
- Observations must be interpreted by observer and interviewee
- Focus
- Short
- Inquire about work behaviors
- Intention is to design a new system
- Focus on design goals
Capturing the Data

- Observer’s head
- Written notes
- Sketches and photos of the setting
- Audio (or even Video)
Idea Generation
Brainstorming

- Group vs. Individual Creativity
- More Ideas == More Creative == Better
- Limited Time
- Keep a Record

- Brainstorm in Section next week!

*Brainstorming is not just a good idea but an inexhaustible source of inspiration and fresh thinking (IDEO)*
The Rules According to IDEO

- Be Visual.
- Defer judgment.
- Encourage Wild Ideas.
- Build on the Ideas of Others.
- Go for Quantity.
- One Conversation at a Time.
- Stay Focused on the Topic.
Exploring Design Ideas

- Needs
- Design
- Evaluate
- Implement
Sketches

From a previous cs147 project...
Storyboards

http://www.storyboards-east.com/sb_dismol.htm
Storyboards

[Diagram of storyboard panels with numbered steps and visual elements.]
Storyboards
FLIPBOOK

PLAYS

LET'S PERFORM...

- GUYS & DOLLS
- MACBETH
- SOUTH PACIFIC
- A LONG DAY'S JOURNEY INTO NIGHT
Characters

CAST ME AS...

- Macbeth
- Lady Macbeth
- Macduff
- Witches
Flow Diagrams

From a previous cs147 project...
Woah Nelly...!

- Sketches, Storyboards, Flipbooks, Diagrams
- What’s the Difference?
- When to use them?
- Why to use them?
- Who’s the audience?
- Deliverable: Storyboard only
- But, try as many as you can
Prototyping

NEEDS -> DESIGN

EVALUATE -> IMPLEMENT

NEEDS
Using Prototypes

- Allows multiple parties to envision together
  - Designers
  - Users
  - Engineering, marketing, planning,.....
- Reflective conversation with the materials
- Focus for identifying alternatives and tradeoffs
Low-Fidelity “Paper” Prototype
Tools

- Paper, Cardboard, Transparencies
- Tape, Glue, Rubber Cement
- Pens, Pencils, Markers
- Scissors
- Plastic Tubes, Paper Cups, CD “Coasters”
- Anything that you can buy in an arts and crafts store (and that a kindergartener would have fun using).
Examples: Low-Fidelity
Examples: Low-Fidelity Prototype

http://www.mindspring.com/~bryce_g/projects/lo_fi.html
Examples: Low-Fidelity

User Testing

NEEDS -- DESIGN -- IMPLEMENT

EVALUATE

Diagram showing the process of user testing with stages: Needs, Design, Implement, Evaluate.
Tools

- 3-4 group members
- Greeter/Facilitator
- Computer (not necessary for low-fi testing)
- 2 Observers/Note takers
- Prototype
- Users!!!!
User Testing

http://www.cs.waikato.ac.nz/usability/facilities.html
http://www.itl.nist.gov/iad/gallery.html
High Fidelity “Interactive” Prototype
Tools

- HTML & Javascript
- Java JFC/Swing
- Visual C++, Visual Basic
- Flash MX, Director
- Mac Interface Builder
- others...or a mix of the above!!!
Examples: Interactive Prototype

From cs160 at UC Berkeley
Examples: Interactive Prototype

[Image of a constellation diagram with labels for location, month, and constellations.]

Below are visible constellations based on location and month. Explore constellations with your mouse in the sky below. Feel free to adjust your view and select constellations you wish to view or hide.

From cs247a at Stanford University
Examples: Interactive Prototype

Get Your Cook On!

Boiled Spinach

Category: Main Dish, American, Spinach
Serves: 4
Estimated Cost: $5
Estimated Prep Time: 10 min
Estimated Cook Time: 3 min

This might have been one of the favorite ways Popeye fixed his spinach.

Ingredients

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 1/2 pounds spinach, trimmed, rinsed and petted dry</td>
<td></td>
</tr>
<tr>
<td>1/2 teaspoon salt</td>
<td></td>
</tr>
<tr>
<td>2 tablespoons butter</td>
<td></td>
</tr>
</tbody>
</table>

Nutritional Facts

Amount per Serving:
Calories: 70
Calories from fat: 60
Total Fat 6 grams
Sodium: 550 mg
Protein: 5 grams

From cs160 at UC Berkeley
Examples of Projects

- Visual Voicemail
- Interactive Academic Planner
- Suzie Q
- ToneDeaf Revolution