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# UI Prototyping

Paper prototyping & Wizard of OZ

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# What we do?



NASA Ames green building



Artifact from Pinoleville Pomo Nation



Smart Lighting

- “Enabling Technology” design for smart grid
- *Co-design* sensing and information visualization platform for enabling sustainable community development: *display actionable information*

<https://www.youtube.com/watch?v=JHtfu1-Ov1w>



Net zero energy houses in Pinoleville Pomo Nation: We are co-designing sensing and collaborative data visualization platforms for the native American tribes aspiring to be a sustainable community.

- *Smart grid challenge: information flow across stake holders*
- *How could we design a fast decision support system for different stakeholders in smart grid?*

# Contents

- Introduction to paper prototyping
- Introduction to Wizard of Oz
- Four Exercises
- Q&A

# Paper Prototyping

- Low fidelity
- Disposability
- Cost
- Speed
- Ideal for simple user interface design

Team Name: Splitter

Class: Designing Mobile Experience 2012

Instructor: Suzanne Ginsburg

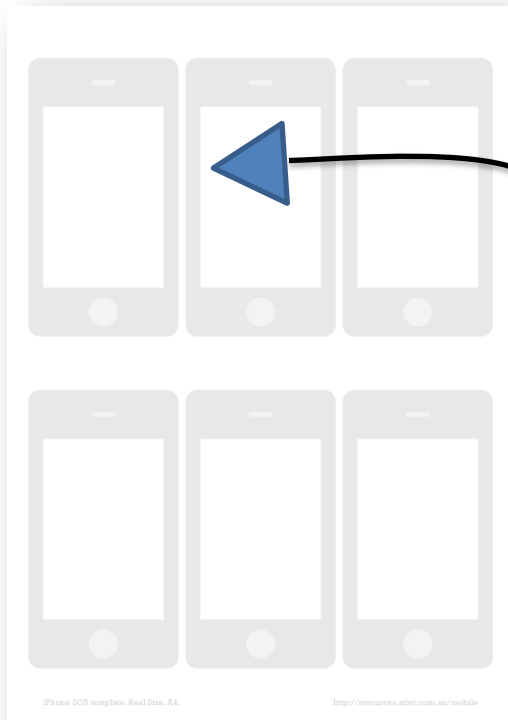
Courtesy of Chan Kim

# Paper Prototyping: challenges

- Interaction design in critical situations
- Real-time calculation
- Lag between decision and end result
- New forms of interaction:  
face recognition,  
context awareness,  
voice and other auditory feedback

Examples: Hospital search, Personal safety

# Paper Prototyping: tools



<http://resources.siter.com.au/mobile/>



Shading / highlighting / line weight  
Creative use of office supplies like correction tape and overhead transparency, markers

# Paper Prototyping: methods

- Graphic design:  
Attraction  
Distraction
- Depth of display
- Breadth of features
- Feel:  
Input method (eg. keyboard, mouse versus pointing or writing)  
Personalization  
A person simulates computer operation

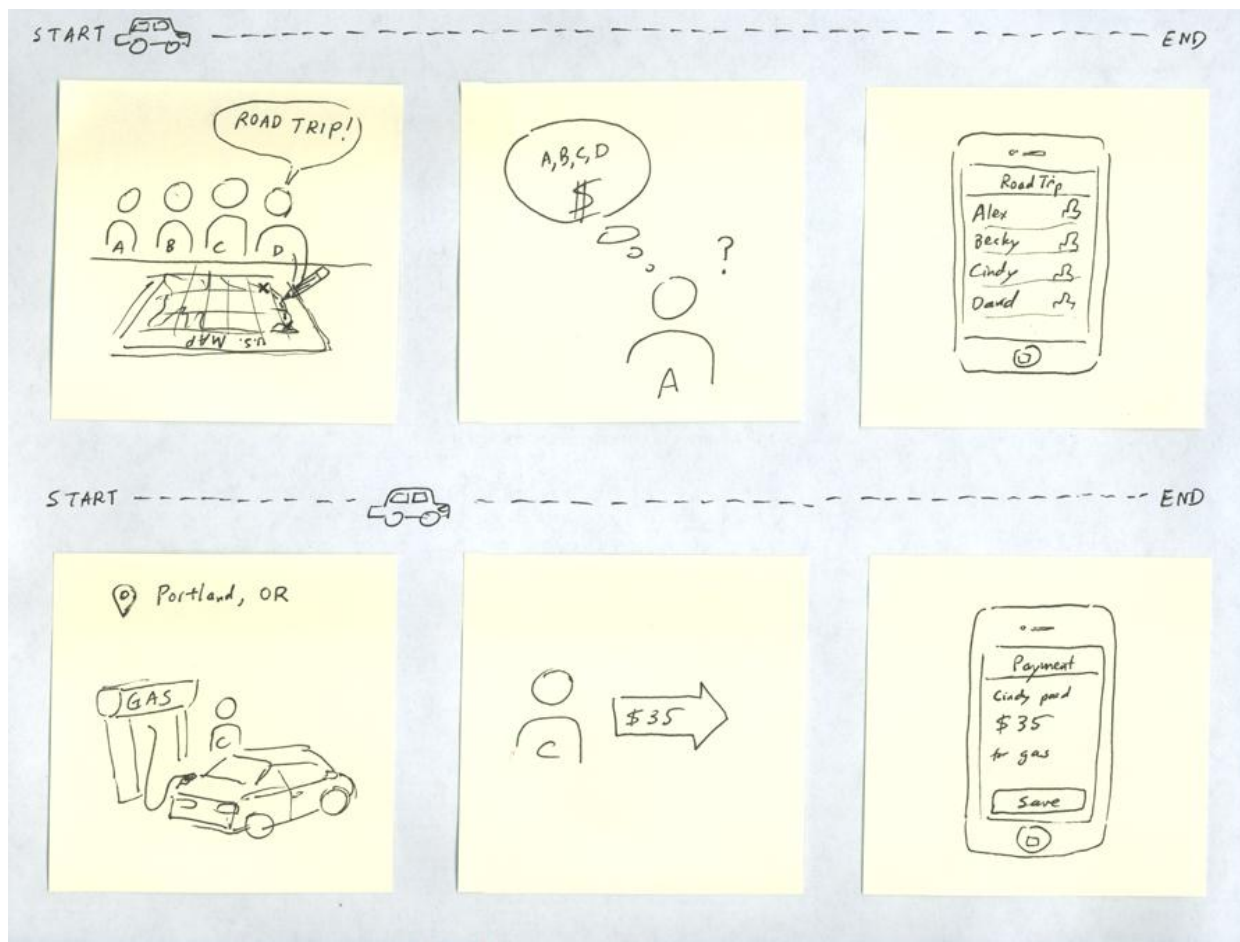


<http://k4rl.com/shopwell/>



# Paper Prototyping: methods

## story telling



Team Name: Splitter

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Courtesy of Chan Kim

# Paper Prototyping: digital paper



- Pidoco  
<https://pidoco.com/>
- Prototype mobile app in mobile phone
- Real-time collaboration can allow remote usability test
- Hybrid prototypes

# Paper Prototyping: testing

## Roles for design team

### Computer

Simulates prototype

Doesn't give any feedback that the computer wouldn't

### Facilitator

Presents interface and tasks to the user

Encourages user to think aloud by asking questions

Keeps user test from getting off track

### Observer

Keeps mouth shut, sits on hands if necessary

Takes copious notes

# Paper Prototyping: what should the observer note

- Do the users understand the interface and the functionality?
- Is the purpose of the application served?
- Can users navigate properly?
- Do users understand the labels?

# Wizard of Oz

- Wizard of Oz is the “man behind the curtain”.

Wizard is the backend, computer presents the front end.

- Wizard simulates the computer's reaction usually from a hidden location.

A wizard can perform a mathematical operation in response to the user's input and prepare the next page of the application with the result.

- Used to simulate future technology like speech recognition, learning etc.

Most of the social media apps will require this method of prototyping! Try it out.

# Wizard of Oz: tools



Li, Yang; Hong, Jason I.; and Landlay, James A., "Topiary: A Tool for Prototyping Location-Enhanced Applications" (2004). *Human-Computer Interaction Institute*. Paper 81.  
<http://repository.cmu.edu/hcii/81>

Courtesy of Chandrayee Basu

# Exercises

- Exercise #1 (15 minutes)
- Exercise #2: (10 minutes)
- Exercise #3: Paper Prototyping (20 minutes)
- Exercise #4: Wizard of Oz (30 minutes)

# Exercise #1 Give examples

(15 minutes)

Describe \*how will you paper prototype and Wizard of OZ for the three scenarios.

1. Mobile application for emergency access to security service for women's protection.
2. Healthcare application for Africa
3. Personal newspaper

Write about three example applications where Wizard of Oz would be a good prototyping technique.

(You can use cases from your own project)

\*Make it the lowest fidelity prototype with comments or tags.



# Exercise #2 Critique a mobile app

(10 minutes)

Look at a phone app page and create a paper prototype for it and critique

# Exercise #3

(20 minutes)

# Paper prototyping

## Scenarios:

1. New art archival method by popular opinion
2. I have 6 power consuming devices in house (refrigerator, microwave, light, washing machine, room heater, oven), each has 2 power states, in 2 minutes I want to decide which one to turn off and which one on, I know the power consumption of each device from the application, and the required load shed at the moment.
3. From your own project

## Group formation:

5 members, will design a Paper prototype for one of the above scenarios. Each team will have 1 designer, 1 facilitator, 1-2 users and rest observers. The observers and users can take turns.

# Exercise #4 Wizard of Oz

(30 minutes)

## Scenarios:

1. Personal travel entertainment guide
2. Emergency friend search anywhere
3. Your own project

## Group formation:

5 members, will design a Paper prototype for one of the above scenarios

Each team will have 1 designer, 1 facilitator, 1 wizard, 1 user and 1 observer. The observers and users can take turns.

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