

USER INTERFACE DESIGN + PROTOTYPING + EVALUATION

## Picking Project Teams & Problem Finding

Prof. James A. Landay  
 University of Washington

Autumn 2012

\* Problem Finding slides from Prof. Tad Hirsch, UW Design

## Hall of Fame or Shame?

ADDRESS	LOCATION	PRICE	BEDS	BATHS	SQFT	DAYS
5417 Phinney Ave N	Phinney Ridge	\$489,000	2	2.5	1,465	1
5415 Phinney Ave N	Phinney Ridge	\$513,000	3	2.5	1,980	1
5419 Phinney Ave N	Phinney Ridge	\$509,000	2	2.5	1,455	1
7320 E Green Lake Dr N	Woodland Park	\$525,000	2	2	1,300	1
7300 Woodland Ave NE #204	Green Lake	\$124,000	1	1	719	1

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- Good
  - flexible sort
  - icons change if save a house
  - understands “neighborhoods”
- Bad
  - no map legend?
  - unclear how to sort
  - cluttered map
  - similar icons

## Hall of Fame or Shame?

Alessi Juicy Salif Citrus Juicer  
 By Philippe Stark

## Hall of Shame!

Aesthetically pleasing but...

Does not perform it's only function well: To make Juice.

Amazon review:  
*You'll get almost as much juice on the wall and counter as you do in the glass since the juice will spray in every direction.*

An example of where beauty can overpower purpose

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## Outline

- Review
- Project teams
- Administrivia
- Brainstorming & Problem Finding

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## Readings

- Fitts' Law ?
  - time it takes a person to move a mouse to a target is proportional to distance to target divided by target size
    - e.g., buttons that are small or far away are harder to click on than buttons that are large or nearby
- What was NLS?
  - oNLine System
- Features of NLS?
  - mouse, groupware, client-server, windows, version control, hypertext, 2d editing, context-sensitive help, ...

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## Project Team Ideas

- Let's hear 1 minute from each proposer
- At the end rank the top 4 projects you'd like to work on
- Don't pick groups with your friends
- Groups will be on web site by end of day
  - get together soon & start talking
  - problem finding assignment due this Thur (online today)



## Project Team Ideas

1	Happiness Project (Emily Harmell)
2	Resound (Huijun Zhou)
3	Outdoor Adventure via Public Transit (Adrian Laurenzi)
4	Social Media at Events (Derek Reinelt)
5	Mobile Support Group (David Opincarne)
6	Personalized Workout Coach (Akshaya Venkat)
7	Find My Bike (Jim Inoue)
8	Social Reaction Coaching (David Mailhot)
9	Smell the Roses (Vince Blas)
10	Physical Profiles (Albert Lui)
11	Say it For Me (Yingqing Wang)
12	Food Decider (Eric Oltean)
13	Moraleaty (Rishi Goutam)

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## Administrivia

- Roll

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## Teams vs. Groups

- Teams & good performance are inseparable
  - a team is more than the sum of its parts
- Groups
  - strong leader
  - individual accountability
  - organizational purpose
  - individual work products
  - efficient meetings
  - measures performance by influence on others
  - delegates work
- Teams
  - shared leadership
  - individual & mutual accountability
  - specific team purpose
  - collective work products
  - open-ended meetings
  - measures performance from work products
  - does real work together

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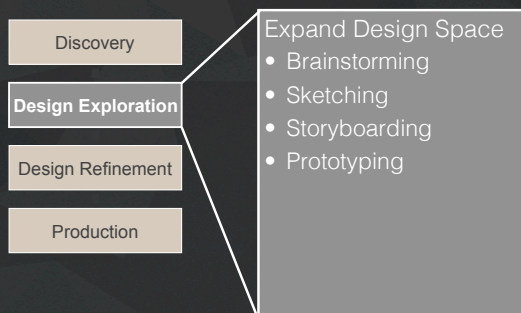
## Keys to Team Success

- Common commitment
  - requires a purpose in which team members believe
    - “prove that all children can learn”, “revolutionizing how we use energy in the home”, ...
- Specific performance goals
  - comes directly from the common purpose
    - “increasing the scores of graduates from 40% to 95%”
  - helps maintain focus – start w/ something achievable
- A right mix of skills
  - technical/functional expertise (programming/design/writing)
  - problem-solving & decision-making skills
  - interpersonal skills
- Agreement
  - who will do particular jobs, when to meet & work, schedules

## Team Action Items

- Keep meeting & get used to each other
- Figure out strengths of team members
- Assign each person a role
  - responsible for seeing work is organized & done
  - not responsible for doing it themselves
- Names/roles listed on next assign. turned in
- Roles
  - team manager (coordinate - big picture)
  - design (visual/interaction)
  - user testing
  - documentation (writing)
  - development

## Design Process: Exploration



## Wicked Problems

### Ill-defined

Complex, interrelated  
Multiple stakeholders, differing perspectives  
*Example: Air pollution*

### No stopping rule

Problems are managed, not solved  
*Examples: Aging*

## Implications for Design

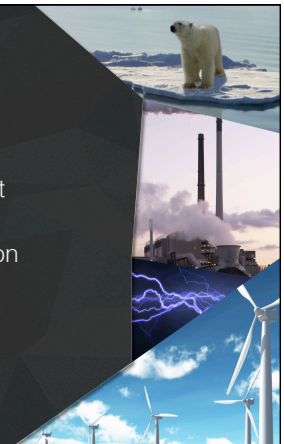
Solutions depend on how the problem is Framed... and vice-versa

Solutions are not optimal  
There's no right or wrong... but there is better and worse

Every problem is unique  
Creative approaches are required

## Approach

1. Explore the problem
2. Find a leverage point
3. Design an intervention
4. See what happens
5. Repeat



## Methods

### Concept mapping

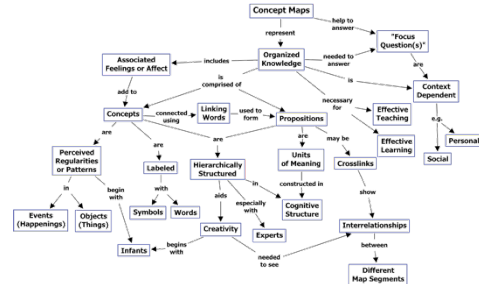
create a model  
 find out what you already know

### Ideation

explore a solution space

## Concept mapping

A technique for visualizing relationships between ideas



## Concept mapping

### Process

1. List 10-20 words associated with the topic
2. Group them into named categories
3. Start diagramming
4. Add categories + examples
5. Label the relationships
6. Keep going until you lose momentum (and/or run out of time)
7. Highlight areas for further investigation

### Outcomes

1. A model (not definitive!)
2. A few design directions



### TRANSPORTATION

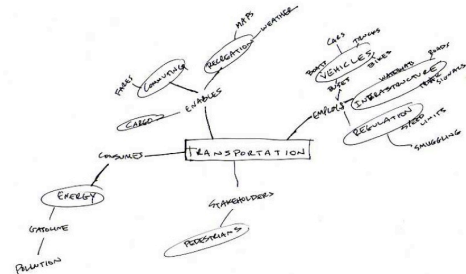
CARS	PEDESTRIANS	SMUGGLING
TRUCKS	CARGO	MAPS
BUSES	SPEED LIMITS	FARES
BICYCLES	POLLUTION	RAIN
BOATS	GASOLINE	
PLANES	COMMUTING	
ROADS	RECREATION	
TRAFFIC SIGNALS		

### Step 1: List associated words

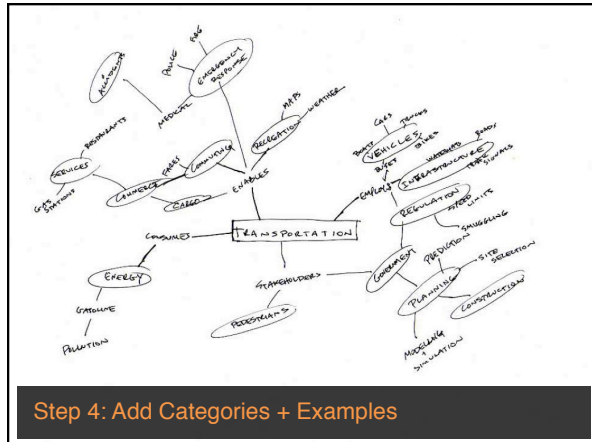
### TRANSPORTATION

CARS	PEDESTRIANS	SMUGGLING
TRUCKS	CARGO	MAPS - NAVIGATION
BUSES	SPEED LIMITS - DEPENDENT	FARES - TRANSPORT
BICYCLES	POLLUTION	RAIN - WEATHER
BOATS	GASOLINE - BURNED	
PLANES	COMMUTING	
ROADS	RECREATION	
TRAFFIC SIGNALS		

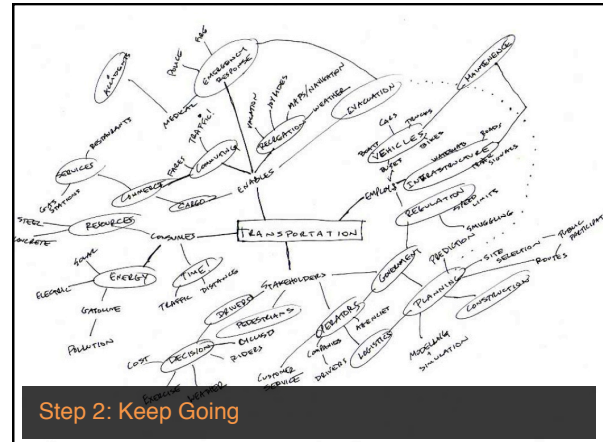
### Step 2: Group into Categories



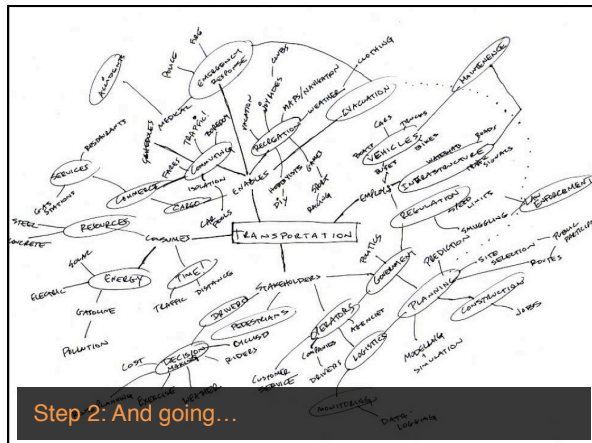
### Step 3: Start Diagramming



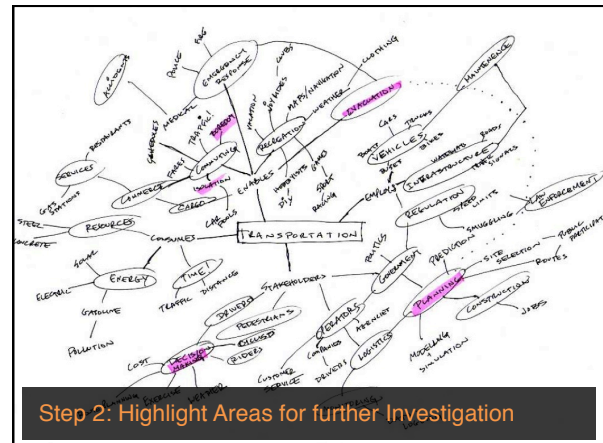
Step 4: Add Categories + Examples



Step 2: Keep Going



Step 2: And going...



Step 2: Highlight Areas for further Investigation

	SIGNIFICANT?	FEASIBLE?	INTERESTED?
EMERGENCY EVALUATION	Y	?	Y
TRANSPORTATION PLANNING	Y	N	?
DAILY DECISION MAKING	Y	Y	?
MAKING COMMUTING FUN	N	Y	N

Step 8: Edit and Prioritize

## Next step: Research + Analysis

How big a problem is it? (market)



Whose problem is it? (stakeholders)



What's already out there? (competition)



How are things done currently? (status quo)



How can they be improved? (innovation)



## Next Time

- Lecture
  - Design Discovery: Contextual Inquiry & Task Analysis
- Readings
  - Chapter 3 of *Contextual Design*
  - optional: Lewis & Reiman Chapter 2