Brainstorming and Conceptual Design
CS344 W07 Workshop

November 12, 2017
Agenda

- Task Example Exercise (15 min)
- Review Conceptual Models (10 min)
- Watch Deep Dive Video (15 min)
  - Look at a design project in practice in industry
- Deep dive discussion (10 min)
- Project Brainstorming Session (20 min)
- Mini-Design Review + Free Work Time
How do we ensure good group work?

Brainstorm as a class, then make explicit agreements within groups.
Outline

1. Agenda

2. Conceptual Models
   - Overview
   - Relationship to Project
   - Components
   - Representation

3. Deep Dive
   - Ideo
   - Video

4. Project Brainstorming
   - Guidelines
   - BrainStorm 1
   - Brainstorm 2
Conceptual Models

- Describes how an interactive system is organized. (aka the designers mental model)
  - doesn’t necessarily match the users mental model
- Conceptual Model = Bones of the Interface
  - different user interfaces could be built upon those bones (i.e. the skin).
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W08 checkpoint asks you to focus on bones
- What concepts do the users need to be able to reason about.
- Avoid thinking about the skin just yet
  - Avoid widgets and low level design
  - Low details are next week with paper prototyping
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Components of a Conceptual Model

- Conceptual models are made up of....
  - Concepts
    - objects and attributes
    - Possible actions on objects (ie possible actions)
    - User roles
  - Relationships among concepts
  - Metaphors and analogies
  - Mapping from concepts to the actual task
  - Interaction Types
  - Interface Types
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Representations of a Conceptual Model

- How can you represent your conceptual model in a deliverable?
  - Descriptions of the type of model
    - e.g. Exploratory Interaction or functional models
  - Images or sketches
    - e.g. To illustrate metaphors or analogies
  - Object/action models
    - e.g. showing relationships, mappings to task
  - Others?
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Who is Ideo?

- International design firm and innovation consultant
- AKA they design things
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The Deep Dive Video

- Video shows the design process from start to finish of a redesign of a shopping cart
- Take notes on:
  - **Primary:** components of mental models/conceptual models related to shopping with a shopping cart
  - **Secondary:**
    - The brainstorming process
    - What they do prior to making mockups
    - How they determined tasks, requirements, users
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Project Brainstorming Guidelines

- prepare a list of topics / questions ahead of time; or in a preliminary brainstorm
- facilitator takes team through list of topics
- switch when energy ramps down
- notetaker takes notes
- trying recording ideas on sticky notes!
- switch roles so everyone can play
- ground rules
Ground Rules

- Defer judgment
- Encourage wild ideas
- Build on the ideas of others
- Stay focused on the topic
- Once conversation at a time
- Be visual
- Go for quantity
Remember the popcorn
Follow up

- collect the notes
- go through carefully, with judgment turned on
- look for
  - interesting, surprising ideas that might work
  - ideas that will combine well
  - promising directions on which you should brainstorm more
- **keep your notes.** at a later design stage, come back to them and see if anything else has become useful in the meantime.
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Brainstorming Session 1

Step 1 - pick a topic (5 min)
Step 2/3 - brainstorm task examples and requirements (10 min)

Topic: What should a good solution support in terms of?

- Users (types and any special characteristics)
  - E.g. students. What types of students?
- Tasks (types of tasks and constraints on tasks)
  - E.g. should support viewing two calendars at the same time
- Should be able to compare calendars in one click
- Most important aspects of usability and user experience
- Often there is a tradeoff between them. (i.e. Do you want it to be learnable or efficient?)
- Any other topics?
Affinity Diagram Ideas

10 min - Arrange your brainstormed ideas
- make an affinity diagram
- Write on whiteboard a few ideas or clusters of ideas
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Brainstorming
and Conceptual Design

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Brainstorm 2

Brainstorm 2

**Topic:** Forms a solution could have

Think about conceptual models:

- Concepts
- Objects
- Actions possible on objects, interaction types
- what can users do? e.g., give commands, explore
- User roles
- Relationships among concepts
- Metaphors and analogies
- Mapping from concepts to the actual task
Work on Project

After you complete your brainstorm...

- Reflect on the requirements, tasks to support, and constraints of your system
- remove infeasible brainstormed ideas

Mini Design Reviews:

- be prepared to discuss your thoughts/plans for project stages
- any questions you may have (especially regarding conceptual models)