Low-Fi Prototyping

No screens

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COMS 4170
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Goal 2
When the needs and abilities of users are unclear, design systems by **learning from iteration** and experimentation.

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**Clear needs, abilities, goal**

**Unclear needs, abilities, goal**

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**Part 3: Editing the Party Planning Committee**

The interface to edit the party planning committee (PPC) is a drag and drop direct manipulation interface as described below.

1. The PPC UI needs to display two lists: 1) a list of all the employees seen here; and 2) a list of people on the party planning committee. In its default state, the party planning committee will be empty.
2. Each list must have a div at the top of it that serves as a drop target.
3. Using jQuery Draggable and Dropable, list to the head of the of the PPC list, all must also be true: names from the PPC. This must be implemented in the Model.
4. To cue that an element is droppable, its background turns light yellow, and the div turns to brown.
5. While the item is being dragged, the background turns light yellow, and the div turns brown.
6. While the item is being dragged, it should also move to the new position.
7. When the item is dragged over the drop target, it should also move to the new position.
8. When the item is dragged over the drop target, it should also move to the new position.
9. If an item is “dropped” anywhere other than the drop target, it should remain in its current position.

**Columbia Paper Infinity**

Keep a list of the party planning committee
So far, you have brainstormed ideas

Ideas are a good starting point. But ideas are cheap

**Execution** is all that matters.

*The best way to have a good idea is to have lots of ideas.*

- Linus Pauling
How do get from idea to product?
The Waterfall Model

Idea

Requirements

- One button
- Touch screen
- Soft keyboard

Design

Implement

Fix bugs

Ship it

Product
The Waterfall Model is too rigid.

- Idea
- Requirements
  - One button
  - Touch screen
  - Soft keyboard
  - What if a touch screen can’t be implemented?
  - What if the hardware weighs 30 lbs?
- Design
- Implement
- Fix bugs
- Ship it

What if this device is so slow it’s unusable?
How can we keep up with the competition?
Iterative Design

Idea

Product
Iterative Design is good because it minimizes risk.
Low-Fidelity Prototypes
In Iterative Design, Prototypes get increasingly high-fidelity
The first iteration should be as low-fidelity as possible.
Start with a **paper** prototype
Paper? Are you kidding me?

No.
Pixar makes detailed and beautiful films
They always start with a storyboard. Why?

Storyboard can test the coherency of a story at a high level, while it is still easy to change it.
Storyboards are also good for prototyping software interactions.

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<th>GOALS</th>
<th>DESIGN</th>
<th>NAVIGATION</th>
<th>FITBIT</th>
<th>STORYBOARD</th>
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Given a task or goal, can the user navigate through the system coherently?
Menus and Navigation

No screens

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COMS 4170
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For complex goals, break the task into states, options, and transitions to new states.
Think of it like a video game and you are designing the experience of your user.
Pixar starts with **storyboards**. Software starts with **paper prototypes**.
Other domains with low-fi prototypes

Essays: outlines

Acting: Table reads

Painting: Sketches

Fashion: Sketches

Sports: Diagram “plays”
Paper Prototype Example
Write down a **Persona:**
**Person**, a high level **Goal**, 4 or 5 **subgoals**

**Idea:** Zumba playlist maker

- **Person:**
  - You are Katie - a Zumba instructor in New York City.

- **Goal**
  - Your goal is make a playlist of dance songs that last 20 minutes (at least 19 minutes and at most 21 minutes)

- **Subgoals:**
  - 1. Create a new playlist
  - 2. Add a song to the playlist
  - 3. Add songs to the playlist until the play list is at least 20 minutes long
  - 4. If the playlist is too long, remove a song
  - 5. Play the playlist
Subgoal 1:

Create a new playlist
Subgoal 2:
Add the first song to the playlist
Subgoal 3:
Add songs until the playlist is at least 20 minutes.
Subgoal 3:

Remove songs until the playlist is 19-21 min
Subgoal 5:

Play the playlist (part 1)
Subgoal 5:

**Play the playlist (part 2)**
You will probably learn as much from **making** the prototype, as you will from **running** it.
I started with the the playlist drag interface...

And I realized I needed more songs to pick from, so I made the songs to pick from 2 columns.
I learned that playlists need names
I realized I needed a homepage to create playlists from.... And also probably list the previous ones.
I realized I’d need CRUD operations (create, read, update and delete) on the list of playlists.
Why paper?
What if the prototype is **too polished**?

1. It takes too long to make.
2. Designers become attached to designs the spent most time on.
3. You get feedback on the wrong thing:
   - color,
   - Images
   - fonts,
   - wording
Can my prototype involve printed media?

Only if necessary. Media takes time to find and print.

Try drawing it first.
Can my prototype be made on a computer?

Only if necessary. This often takes longer than you think, and is looks too polished.

Try drawing it first.
Can my prototype contain a video?

Only if necessary. It adds complication to the set up.

Try drawing it first.
Running a Prototype
Running Prototypes (Wednesday)

- Put your low-fi prototype in front of users.
- Read them the persona, goal and subtasks (one at a time).
- Ask them to think out loud as they do the task
- Don’t interrupt them.
- Don’t lead them.
- Observe “critical incidents”
  - Times they are unsure
  - Times they did the wrong thing
- Write it down, possible take photos.
You get the best feedback when you are observing and listening. Not instructing:

• Give the user a **subgoal**:
  • “Log into the system and post on somebody’s wall”
  • “Search for tweets using the most popular hashtag”
  • “Add a new slide with two column template”
  • “Edit a post”

• **Observe** what they do
  • Encourage people to think-aloud
  • Look for “critical incidents.”
    • Times were users are unsure what to do, do the wrong thing
  • Resist the temptation to “rescue” them or tell them what to do.
Which subgoal is better for getting feedback?

Subgoal A

“Click on the ‘create playlist’ button”

Subgoal B

“Create a playlist”

Make sure to tell users the goal, not the answer. We’re trying to learn whether users can derive the actions from the goal. Knowing if they can find buttons is less important.
Homework 9: Brainstorming

Review
Help CU Tour guides memorize trivia

7. Tour guide learning information and trivia about different parts of the tour
   a. Description
      i. Allows a Columbia University tour guide to review trivia that they want to
         mention at different parts of their tour.
   b. Who is the person this will benefit?
      i. This will benefit a new Columbia tour guide who forgets information that
         they’re supposed to mention on their tour.
   c. What media will they interact with?
      i. Map, images, audio
      ii. They’ll use a map to determine where to deliver the information.
      iii. They can use images to help identify where on campus they should say
           certain things.
      iv. They can use audio to hear other tour guides delivering the information.
   d. What interaction will they have?
      i. They will be looking at a map that has images and notes pinned on it
   e. What goal will they achieve? (This goal must be more than just searching
      data)
      i. They will achieve the goal of associating certain tour notes with a location
         and image on campus.
   f. What will they see in order to know that their goal is achieved within in the
      app?
      i. They will see the percentage of pins that they clearly associate with their
         notes.
Score predictions for “Love Island” Contestants

4. Love island contestants
   Major reality show guilty pleasure! No one wants to admit it, but shows like Love Island really hook you in. With this website, you can keep up with what the contestants are up to on the show, make predictions of who you think will be in the top and who will be leaving the show.
   a. Love island fans
   b. Images, videos, predictions game
   c. Browse through the contestants to see what they’re up to on the show. Then be able to add your predictions and score points if you’re right
   d. Play along with the tv show
   e. You’ll score points if you make good predictions
Learn what to recycle

Idea 5: Learn what is supposed to go into each of the different recycling bins
i. Who is the person this will benefit?
Someone who doesn’t know what goes into which recycling bin (this gets confusing for a lot of people)

ii. What media will they interact with?
Images

iii. What interaction will they have?
Person will click on the image of a specific recycling bin, and what is supposed to go in that particular bin will be displayed

iv. What goal will they achieve? (This goal must be more than just searching data)
Learn what goes into which recycling bin

v. What will they see in order to know that their goal is achieved within in app?
Quiz
03 Dog walker schedule
a. A dog walker who receives a daily list of dogs to walk and has to decide what order and direction to walk the dogs most efficiently everyday
b. Maps, Images
c. They will have made a work schedule for that day given a list of dogs and the time frame which the walk has to happen within (large time frames such as walking Buster once between 11 and 1 and where the dogs are all located for that day (somewhere between 96\textsuperscript{th} and 110\textsuperscript{th} street)
d. They will save time in the morning by not hand organizing the schedule and trying to fit a variety of time frames within a single work day (11-3)
e. An organized order to walk the dogs and a visual representation of their dog order path (via google images or something)
Comparing NYC sublets

08  Sort & Compare Sublets
a. A new Yorker looking to sublet and is viewing apartments in a row or many at once and is unsure how to compare options and decide
b. Photos and Quiz
c. Photos they took or photos online of apartments they view can be added to each apartments listing in the list of contenders and contenders will be evaluated in an interaction
d. Holistically compare housing options / look at many data points at once in an organized way of only rooms they viewed in person
e. Ranking of their sublet options in an order which fits their custom criteria
Make a Ranked list of Horror Films

i. **Who is the person this will benefit?**
   A young individual looking to get a fright for the whole night.

ii. **What media will they interact with?**
    The user will interact with poster images and movie trailers, offering a short presentation of the movie series.

iii. **What interaction will they have?**
    By selecting on a movie series, all the movie trailers will be pieced together so the user can get an idea of what the series is about. For instance, if the horror film is a trilogy, movie trailers 1-3 (one for each of the three films) will be pieced together to form one continuous trailer.

iv. **What goal will they achieve? (This goal must be more than just searching data)**
    The user will determine which scary movie series they would like to watch for the night.

v. **What will they see in order to know that their goal is achieved within app?**
    After watching the movie trailer, the user can then select what position they want to rank the series in their priority queue. When they’re done, they will have a saved ranking of which horror series they liked best.
Patterns of ideas that won’t work

“What will they see in order to know if their goal was achieved within the app?”

**Fitness:** People will know their goal is achieved when they are fit.

**Fitness:** People will know their goal is achieved when they love their body.

**Education:** People will know their goal is achieved when ....they learn more about the domain.

**Products:** People will know their goal is achieved when they purchase the item.
Patterns of ideas that do work

“What will they see in order to know if their goal was achieved within the app?”

Movies: Create a ranked list based on criteria

Deciding on things: Compare two options across N dimensions

Learning: A quiz

Travel planning: A map/calendar with a path/plan to all the things on it
Summary
Iterative Design

Idea

Product
Iterative Design is good because it minimizes risk.
In Iterative Design, Prototypes get increasingly high-fidelity
The first iteration should be as low-fidelity as possible

1. Determine objectives
2. Identify and resolve risks
3. Development and Test
4. Plan the next iteration

Requirements plan
Concept of operation
Concept of requirements
Low-Fi Prototypes mitigate risk by getting feedback on the most fundamental aspects of the design first.

Given a task or goal, can the user navigate the interaction coherently?
Pixar starts with **storyboards**. Software starts with **paper prototypes**.
Homework 10: Paper Prototypes

Choose two of your ideas.
Create a paper prototype of both of them.
Test them and write up what you learn
In class Wednesday:
Running Paper Prototype

Bring one of your prototypes to class (or both if you have them)
• Persona, Goal, subgoals, and the prototype.

You will get to test it on a classmate.

Class time will be divided into half
Section 1: 4:10-4:45 (35 min)
Section 2: 4:50- 5:25 (35 min)

Please come only to the section you are assigned
We will post it on Piazza.
Now:
Run your ideas by me