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

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.
2. Each list must have a div at the top of the list serve as a drop target.
3. Using jQuery Draggable and Droppable event list to the head of the of the PPC list, and who must also be true names from the PPC list.
   This must be implemented in the Model + View.
4. To cue that an element is draggable, implement background turns light yellow, and the cursor.
5. While the item is being dragged, the background cursor.
6. While the item is being dragged, it should be.
7. While the item is being dragged, the drop target.
8. When the item is dragged over the drop target.
9. If an item is “dropped” anywhere other than where the user started dragging it.

Note: When the user toggles between the Logging Sales UI should be stored in a javascript variable that it the UI be there. However, for this implementation, if the UI.
Please submit your HTML, CSS, and JS files, along with

Columbia Paper Infinity

Keep a list of the party planning committee

Clear needs, abilities, goal

Unclear needs, abilities, goal
Final Project

• Build a **web** application
• That allows a user to **interact** with media
• Within a **domain**
• To achieve a **specific user goal**
• Where the output of the goal must be **visible** within the app.

• The goal and interaction must be more complex than simply searching the data.
The best way to have a good idea is to have lots of ideas.

- Linus Pauling
Homework 9: 
Brainstorm 10 possible projects.

- What **person** this will benefit?
- What **media** will they interact with?
- What **interaction** will they have?
- What **goal** will they achieve? (This goal must be more than just searching data)
- What **will they see** in order to know that their goal is achieved within in app?
Examples
Domain: NBA

Specific goal: Help casual NBA fans recognize plays like the ‘pick and roll’ during games, by first seeing the play broken down into pieces, then seeing it in games.

what **person**? Casual NBA fan

uses what **media**? video

**Interacts** with it in what way? ? Play and pause the video?

to achieve what **goal**? Learn to recognize pick-and-roll

How is it **visible**? ? Take a quiz
Domain: Language learning

Specific goal: Tonal languages like Chinese and Vietnamese can be challenging to learners whose native languages don’t have tones. For example, the Vietnamese ma means “ghost,” but with different tones, má can mean “mother” while mà means “but.” An interface can have videos for each of the different tones grouped by vowel to help language learners distinguish between tones. This can help students familiarize themselves with tones, and quiz themselves on the tones.

what person? Beginners learning Vietnamese
uses what media? Audio (maybe sound wave?)
Interacts with it in what way? Plays them.. organized in a grid
to achieve what goal? Learn to recognize 4 tones in 8 different syllabus (ma, shi, ji, chi)
How is it visible? Take a quiz
Domain: Fitness

Specific goal: For a person trying to create a regimented workout routine: allow the user to save workout videos to a calendar so that he/she can see each day of the month and select the folder on that day that will contain the exercises to be completed. allow the user to add notes indicating the number of reps, amount of time, and weight to use for each exercise. Every check off whether you did it or not. At the end of the week, they want to know if they met their fitness goal.

what person? Serious fitness person
uses what media? Videos, calendar
Interacts with it in what way? Drags videos into calendar spots
to achieve what goal? Plan “balanced” workouts? And see if you did them.
How is it visible? Can see the success percentage at the end of the week
Domain: Musicians

Specific goal: Musicians learning a song that has been covered by multiple artists need to be able to listen and compare each version at multiple sections without needing to restart the video each time in order to understand the different ways the track can be interpreted.

what person?

Guitar player learning a song... Hotel California?

uses what media?

Video

Interacts with it in what way?

Selects the same elements in two different recordings

to achieve what goal?

Find the major interpretative differences

How is it visible?

The list of differences, and perhaps which one he wants to build on (or none of them)
Domain: Health

Specific goal: Visualizing disease progression...
Allow users to upload daily images of disease progression. After a month of uploading, patients want to see side-by-side progressions for every week, and for the entire month to see if the progress is worse.

what person? A person with a visually disease (eczema)
uses what media? Images, calendar?
Interacts with it in what way? Upload them, sees them side by side
to achieve what goal? Track progress – is the disease better or worse after 1 week? 1 month?
How is it visible? Can see the visual summary at the end of each week.
Domain: Education

Specific goal: Columbia has many outreach programs and they collect data on what activities and outcomes have been achieved over time. They want to know, over time, what the the most and least active areas of our outreach, and where we have overlooked.

what person? Columbia Outreach Office Program manager
uses what media? Map, xls file of outreach
Interacts with it in what way? Queries, and compares two maps over time
to achieve what goal? Figure out if outreach is rising or falling in regions of NYC
How is it visible? Comparing two maps – plus, maybe a numerical difference
Domain: Education

Specific goal: Help people memorize music pieces for a Music Hum class.

what person?
uses what media?
**Interacts** with it in what way?
to achieve what **goal**?
How is it **visible**?
All the needs are very **specific** and can be **generalized**

<table>
<thead>
<tr>
<th>Specific Need</th>
<th>Generalize to</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recognize pick-and-roll</td>
<td>Other basketball offensive plays, Other Defensive set ups, Referee hand gestured for calls, Other sports stuff..?</td>
</tr>
<tr>
<td>Learning tones in Chinese</td>
<td>Tone combinations, Phrases, Characters</td>
</tr>
<tr>
<td>Differentiate types of Jazz in MusicHum</td>
<td>Differentiating other types of music subgenres, Differentiating types of Art for ArtHum, ... literature passages for LitHum</td>
</tr>
</tbody>
</table>

(and drawn from domains familiar to that person)
Where are you stuck?
Iterative Design

No screens

Prof. Lydia Chilton
COMS 4170
27 March 2019

Say your name
So far, you have brainstormed ideas

Ideas are a good starting point. But ideas are cheap. Let people steal your ideas.

**Execution** is all that matters.
How do get from idea to product?
How do get from idea to product?

What I expect:
How do get from idea to product?
What it’s like:
Two Design Processes

The waterfall model, and iterative design
The Waterfall Model

- Idea
  - Requirements
    - One button
    - Touch screen
    - Soft keyboard
  - Design
  - Implement
  - Fix bugs
  - Ship it

Product
The Waterfall Model: What’s good about it?

- One button
- Touch screen
- Soft keyboard

It’s simple, linear, and the steps are certain
The Waterfall Model: **What could go wrong?**

- **Idea**
- **Requirements**
  - One button
  - Touch screen
  - Soft keyboard
- **Design**
- **Implement**
- **Fix bugs**
- **Ship it**

When there are many unknowns, design is always iterative – so you might as well plan for it.

What if a touch screen can’t be implemented?

What if this device is so slow it’s unusable?

How can we keep up with the competition?
Iterative Design

Idea

Product
Iterative Design origins:
Spiral Model of software engineering  (Barry Boehm, 1988)

Every iteration should experiment with the next biggest risk.

How to achieve the perfect gradient on app icons?

Does touch work?

All new concepts are risks. They must all be prototyped.
Iterative Design is **good because it minimizes risk**
Iterative Design: what’s hard about it?

The steps aren’t certain from the start.
To minimize risk on novel designs, use iteration on each risky aspect of the design.

Idea

Touch screen

Soft keyboard

One button

Product
In this video, what are new concepts?

Write them down now, we will list them together after the video
What new concepts should we prototype?
Initial Prototype:
What did they prototype and how?
What new concepts did they prototype? And How?

- Can the drone carry the stuff?
- Can users select from menu?
- Can users select symbols?
- Can users select outdoors?
- Can the drone detect hand position?

Drone projection

User interaction with projection
What was the biggest new risk they discovered during prototyping?

DRIFT
Summary
Developing an idea into a product involves risk.
The Waterfall Model is simple and linear, but ...
The Waterfall Model is simple and linear, but it breaks when there are risks.

Idea

Requirements
- One button
- Touch screen
- Soft keyboard

Design

What if a touch screen can’t be implemented?

Implement

What if the hardware weighs 30 lbs?

Fix bugs

What if this device is so slow it’s unusable?

Ship it

How can we keep up with the competition?
Iterative Design is less straightforward

Idea

Product
Iterative Design **mitigates risk** by iteratively prototyping and testing risky features.

Idea

- Touch screen
- Soft keyboard
- One button

Product
Sometimes you find “showstopping” problems. It sucks, but at least you can fail fast and move on.