Design: Prototyping

No screens

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COMS 6998
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You already know front-end web dev:
HTML, JavaScript, Bootstrap, jQuery

And design:
Iterative design, critique

You will learn back-end web dev:
• Server-side programming (Flask),
• Databases (Sqlite, SQLAlchemy)
• Real-time Communication (Socket.IO)

And practice web design by:
• Rebuilding IMDB.com
• Rebuilding twitter
• Pursuing your own project
By separating **observations** from **interpretations** you can get past simplistic interpretations and see the more about the world.

There is always more to discover

**Art** - More realistic drawing

**Science** – Understanding how nature really works

**Engineering** – Making better products
Finding Problems you can fix with communication

Observe your life over the next week.
• **Find problems**: what were communication
  • When are times that a communication caused frustration, confusion, annoyance, or other problem.
• **Find positive example**: when did something randomly go well. How could we repeat that awesomeness everyday?

Observe what really happened
Interpret why it worked or failed.
Is this a thing we could repeat and facilitate with technology?
Last week

• Identify a **domain** of communication where we can
  • fix a problem or (allow students to ask/answer each others questions)
  • enhance an existing practice (add emoji to texting)

• Try observing your communication issues in your life
  • Separate observations from interpretation
My app

• Observation of communication issue:
  • A random thing that went well:
    • Chris Wiggins (Stats prof) emailed me out of the blue saying “I’m free now. Wanna go over that grant?”
    • I saw the email within 10 minutes and ran down to his office.
    • I used that 30 minutes of my life much better than I would have otherwise.
  • Observe what went well:
    • He sent me an email telling me he’s free. That’s weird! Nobody ever does that.
    • It meant I didn’t have to look at my calendar and do that stupid back-and-forth of scheduling.
    • Could I do that in my life?
      • Yes. Around around lunch time.
  • App idea: build an app where I can randomly broadcast where I am going to lunch to other faculty. If they want to join, they can.
Studio: User testing & Brainstorming chat apps in new domains

3 Groups

First everyone says:
• What observation did you have?
• What’s your new domain for chat?
• Have someone use your system.

Next:
• Go around the circle again. Remind people of your domain/idea
• Drill into that domain to find more observations.
  • Bad things: what’s something annoying, frustrating, or confusing
  • Good thing: random thing that went well (which might be repeated)

Due today by 9pm on Piazza – three ideas for specific user needs within a domain.
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Pursuing your own project

• This week
  • 3 Prototypes of possible projects

• Next week
  • Project proposals:
    • What domain are you interested in.
    • What specific user goal will you meet
    • How you will know whether or not the user goal is achieved.
    • A plan for how you will iterate on it.
Review:

Why is design iterative?
What’s wrong with the waterfall model?
What’s wrong with the waterfall model?

- Requirements
- Design
- Implement
- Fix bugs
- Create unboxing experience
- Done!
Design involves **risks**

- **Requirements**
- **Design**
- **Implement**
- **Fix bugs**
- **Create unboxing experience**

**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?**

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**Iterative Design Process**

- Requirements analysis
- Preliminary and detailed design
- Implementation
- Evaluation

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**Done!**
Mitigate risk by iteratively **prototyping** the riskiest elements

**Requirements**

- 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?
- How to get perfect gradients?
- Does touch work?

**Design**

- Implement
- Fix bugs
- Create unboxing experience

**Implement**

**Fix bugs**

**Create unboxing experience**

**Done!**
At the idea stage, what’s the most important thing to prototype?
Prototype feasibility first
Problem:

People seem to like having ideas,  
But they resist actually working on them.

Why????
The shortest date I went on in Silicon Valley
The shortest date I went on in Silicon Valley

I have an amazing idea for an MMORPG...
The shortest date I went on in Silicon Valley

I have an amazing idea for an MMORPG... not only do you get to invent your character...
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I have an amazing idea for an MMORPG... not only do you get to invent your character... but you get to invent the universe you play in...
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Have you tested your idea yet?
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Have you tested your idea yet?

No. The idea isn’t done yet.
Dante’s “Divine Love” for Beatrice
You can’t patent an idea. Why not?

“Although you don't have to have a working prototype to apply for a patent, you do have to be able to describe the invention in detail and show how it will work.

Ideas are too vague
They contain too many untested assumptions
You can’t patent an idea. Why not?

I have an amazing idea for an MMORPG... not only do you get to invent your character...

To be a **designer** rather than just an ideater, you have to **want to find the problems**.
The idea is nothing.
Implementation is everything.
the social network
Build a prototype to test your assumptions

**Instacart** – order groceries

**What to test** - are people willing to order groceries

**Prototype** – the founders went to Safeway and delivered the groceries themselves.

**Snapchat** – social media...it disappears, it has stories, with funky images

**What to test** - Messages disappearing – does that drive people to use it more?

**Prototype** - just built that.
Types of Prototypes
Wizard-of-Oz Prototype
Wizard-of-Oz Prototype
Physical prototype
Paper Prototype
In prototyping, you often discover problems you didn’t even consider....
New concepts in Drone.IO
What new concepts did they prototype?

How did they prototype them?

Can the drone carry the stuff?

Can users select from menu?

Can users select symbols?

Can the drone detect hand position?

Can users select outdoors?
What was the biggest new risk they discovered during prototyping?

DRIFT
“Pound the Pavement” prototype

Rent the Runway – rents high-end women’s clothing.

What to test - would women really rent clothes?

Prototype – tested it in person. Set up a “shop” in colleges. Let girls try on clothes. As them if they’d rent it.

(34% of girls walked away with dresses)
Let’s prototype!
Image labeling game

Idea:

Millions of people will come to the site
They will get paired up
They both see an image
And they write tags for it ALONE for 30 sec
Whenever they get a tag match, they get a point.
We’ll generate millions of tags for images on the internet.

What to test:
Do people come up with ok tags?
(Is it fun?)

Prototype: ????
Next week:

• Come up with more ideas (brainstorm, observation, “borrowing”)
• Hi-level goal: build 3 low-fi prototype to test ideas.
• Report on stuff you learned from each of them.

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    • ?????
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  • Prototype:
    • Create a slack channel where we can at least message eachother in real time.
    • Test: if people message, do they really find connections?
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