Advanced Interaction Design

CS377E Spring 2018
James Landay
*based on slides by Julie Stanford

what is interaction design?
the practice of designing interactive digital products, environments, systems, and services

interaction design vs. visual design
How much overlap?

where does it fit in the process?
Empathize
Define
Ideate
Prototype
Test
what to think about when you are designing

Timeline of Use

People will use your UI over time

timeline how to

- Think about not just first use but 2\textsuperscript{nd} use, and 10\textsuperscript{th} use...how do things change?
- What stays fresh? What becomes tedious?
Implicit interactions

"Sensing and computation need to be augmented with an understanding of the unstated expectations people have from our interactive counterparts."
- Wendy Ju
The Design of Implicit Interactions
You use a DVR to record a show
DVR suggests a show you might like

DVR records a pre-set weekly show
DVR pre-records shows you might like on its own

Wendy Ju, Design of Implicit Interactions

Wendy Ju, Design of Implicit Interactions
Think about all the potential ways the user is implicitly interacting with your experience.

Example: Light switch state: On/Off
User's State:
- Can see the light is on
- Sees the light is on but thinks it should be off
- Doesn’t notice the light is on but would want it off
- Might want to turn it off if it were clear how to
- Doesn’t know if he is responsible for the light or not

Consider ALL the mental states that the user might have when they are engaging with your interface (make a list!)

How will the interface react? What social cues will it use?

And don’t forget the basics…

A high percentage of effects in any large system are caused by a low percentage of variables. Also known as Pareto’s Principle. – *Universal Principles of Design*

“Users use 20% of the features 80% of the time.”
80/20 rule: CS247 microwave redesign

- Removed unnecessary buttons
- Only functionality to increase time
- Most important buttons larger

80/20 rule: cross-platform design

- Make a list of all the things your user may want to do
- Select 20% of them as the key things
- Make sure those 20% of things is super easy and fast
- Question your need for the other 80%

80/20 rule how to
affordances

A relationship between controls and their movements or effects. Good mapping between controls and their effects results in greater ease of use. – Universal Principles of Design

mapping

mapping – which knob goes to each burner?
mapping – better knob & burner mapping

progressive disclosure

visual hierarchy and reading order

source: http://52weeksofux.com/post/443828775/visual-hierarchy
reading order pillars

1. size
2. color
3. layout
4. spacing
5. style

Source: http://thenextweb.com/dd/2015/04/30/the-5-pillars-of-visual-hierarchy-in-web-design/#ref

5 ways to organize information (five hat racks)

category

time

location

continuum

alphabet

The fallback order is alphabetical order.

Source: Universal Principles of Design

What to consider

• Timeline of use
• Implicit interactions
• Basics
  • 80/20
  • consistency
  • mapping
  • progressive disclosure
  • order
  • hierarchy

Combining it all
Virgin America

Travel: Domestic & International Flights

Where would you like to go?

- Adult
- San Francisco
- City

Edward Tufte on visualizing information

How should I design a bar chart?

- Universal Principles of Design by Lidwell, Holden, and Butler
- Designing for Interaction by Dan Saffer
- The Non-Designer’s Design Book by Robin Williams
- Don’t Make Me Think by Steve Krug
inspiration and resources

• inspiration
  – https://www.pinterest.com/timoa
  – http://pttrns.com/

• icon resources
  – Noun Project
  – FontAwesome