User Interface Design

CSCI 3300/5300

Announcements

- Perusall reading posted: comments due by April 16, 9am
  - Guiding User Choices Through Interface Design
- Sample microsecond rate data file linked to today's lecture on the schedule
- Still need peer evaluations from some people. Submit it asap!
- Sprint 3 backlogs are due today: share your Google Sheets with me, if you have not done so.

Have you ever came across a system that is miserable to use?

- Requires training to use
  - Not easy to learn
- You have no idea if the action you performed did anything
  - No feedback
- It's hard to find information
  - Poor visibility
- Takes a lot of work on your part to get a seemingly trivial task done
  - Inefficient

eRS at Saint Louis University

- A system for tracking research grant proposals
- https://ers.slu.edu/ers/index.aspx

Electronic Visa Application System

- Electronic system used for filling out Russian Visa application
- Fill out application online, review, and submit
  - Submit doesn't really do anything
- Print the application and mail hard copy
- https://visa.kdmid.ru/

What about a system that is easy, elegant, and fluid to use?

- Intuitive
- Responsive
- If you made a mistake, you know how to fix it

Comcast Innovation Fund

- A system for submitting grant proposals to be evaluated by Comcast
- https://comcastinnovationfund.smartsimple.com/s_Login.jsp?lang=1&prole=0

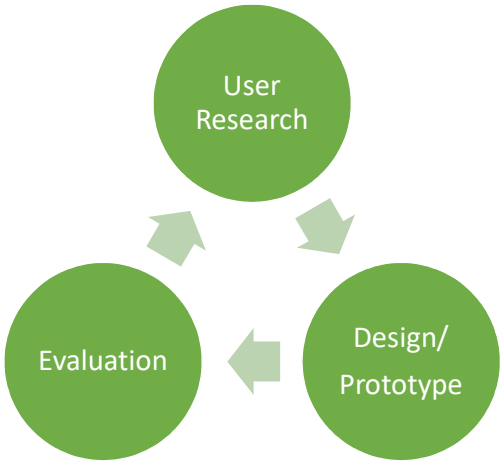
User Interface Design Jobs (April 12, 2019)

- Google: 286
- Facebook: 102 (let's look at this user interface)
- Microsoft: 58 (experienced professionals)

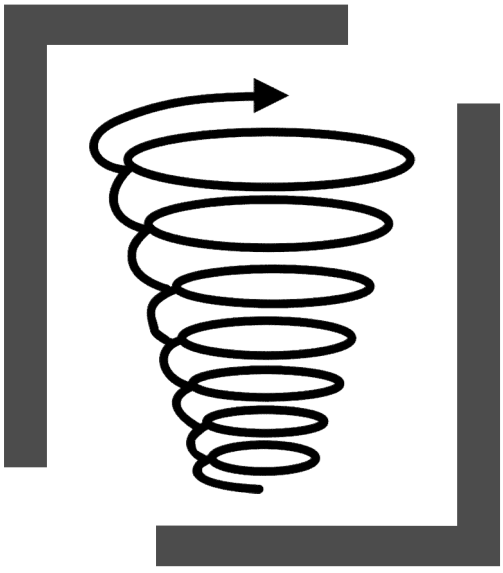
Important aspects of UI Design

- Usability
- Learnability
- Visibility
- Efficiency
- Errors and user control

Iterative Design



Why is the Waterfall Model a Bad Choice for UI Design?



Better Approach: Spiral Model

- Room for several iterations of design
- Start small, gain knowledge, improve
- Radius corresponds to cost/accuracy/commitment

User Research: You are not your users

- You know your design, you know how it works
- Users encountering your product for the first time can get frustrated
- Especially if your users are different from you
  - Systems built for kids
  - Systems for the elderly

Questions to consider?

- Who is the target user?
- What challenges do they face?
- What knowledge/experience to they have?
- What current strategies do they use today?
- What is acceptable to the users?
- What are the constraints?

User Research Strategies

- Observe what the user does
- Interview the user
- Interact with the user to understand what is important

Wrong questions to ask the user

- What solution should I build for you?
- What technology do you want?
- What would solve your problems?

Example: International Children's Digital Library

- Target users: children
- What age?
- How do children search for books?
- How do children pick books?

Design and Prototyping

- From basic understanding to concrete interface implementations
- Prototype
  - Sketch on a napkin
  - More detailed sketches
  - Executable prototype
  - Mock-up of how the system works
  - Less expensive prior to building full system
  - Use prototype to do evaluation
  - Multiple prototypes

Evaluation

- Assessing the quality of the design, identifying promising areas for investment
- Evaluation with users
  - Usability difficulties
  - Identify misunderstandings
- Field evaluation and data collection
  - Later stage of development (have something that works)
  - Get the system in front of the users and observe how they use it