

# Topic: Prototyping

Goals: By the end of this topic, we will discuss...

- Paper Prototyping: thinking about the project

Acknowledgements: These class notes build on the content of my previous courses as well as the work of R. Jordan Crouser, and Jeffrey S. Castrucci.

---

Creating programs without an assignment description....

You want to build X!

What is X? What is the primary goal / objective?

Who will use X (who are potential users)?

X will help < some user > be able to < complete some task >.

Facebook will help friend be able to attend each others events.

ATM will help clients be able to get cash on the go.

---

## User-Centered Design Framework

1. Discovery
  - 1.1. Learning about your users
  - 1.2. Modeling your users
  - 1.3. Analyzing your users' tasks
  - 1.4. Eliciting and defining clear product requirements
2. Conceptual Phase
  - 2.1. Developing conceptual models
  - 2.2. Solving design problems through ideation
  - 2.3. Detailed design activities
3. Prototyping + User Testing
  - 3.1. Delivery of a high-quality product that meets users' needs and is easy to learn and use



[<http://www.uxmatters.com/mt/archives/2010/07/design-is-a-process-not-a-methodology.php>]

We will use a modified order...

---

## Defining your audience

- Learning about their problem: Semi-structured interview
- Analyzing their tasks: Hierarchical task analysis
- Modeling users: Personas

---

## Personas

### Why?

- mechanism for reasoning about user needs
- model behavioral characteristics of target users
- doesn't require access to ACTUAL users

### How?

- fictionalization
- narrative, goals, needs, "pain points"
- attributes specific to the problem space
- data-driven method\* using info from interviews
- mapping persona to software features



---

## Activity: Personas

Come up with 3 personas that characterize people who might be interested in your project.

---

## Semi-structured interviews

### Why?

- gather qualitative data about users to understand the problem
- can help identify key differences between designer and target user

### How?

- ask open-ended questions
- bring along a "cheat sheet" to
- ensure that you gather all the
- information you need

### Some tips:

- establish trust at the beginning
- participant engagement will vary
- be flexible, but make sure you get what you came for
- consider recording or note-taking to help with recall

---

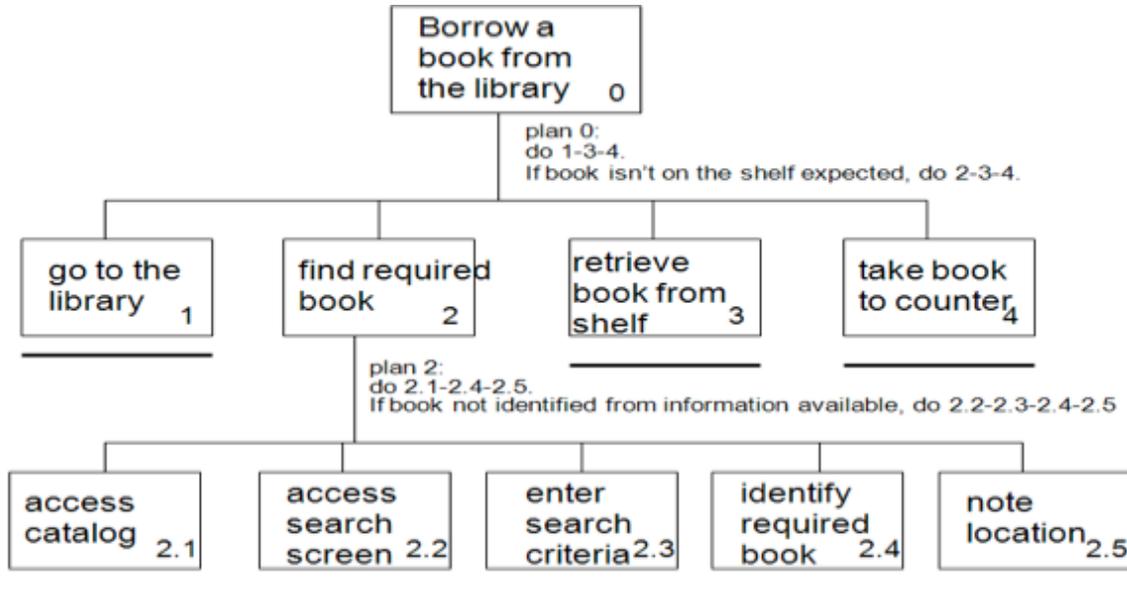
## Hierarchical task analysis

### Why?

- Understand user workflow
- Identify pain points and areas for optimization

### How?

- Decompose tasks into 4-8 sequential steps
- Identify patterns, sequences and skips in the tasks



---

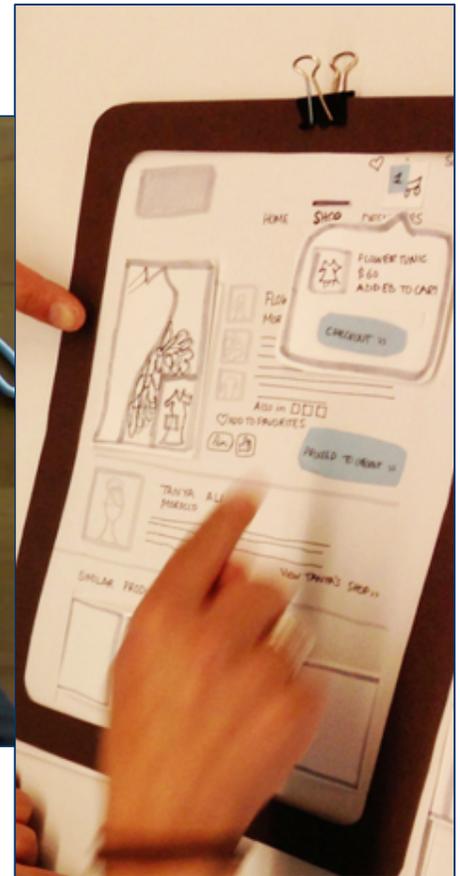
## Paper Prototype

### Making a paper version of an interface is a lot faster and easier than coding a working prototype – start there!

- Generate **lots of ideas**
- Engage **other people** in the design process
- Identify **potential problems** before you waste time coding
- Get **feedback** quickly, from lots of different people
- Some tips:
  - Focus on the **big picture**, don't worry about the details
  - **Think about what you want it to do**, rather than what you know how to implement (we'll worry about that later)
  - Not so into arts and crafts? It doesn't have to be **actual paper**... Whiteboard / PowerPoint / Keynote will also do the trick!

## Activity: Paper Prototype

Create a paper prototype of your project.



## Competitive Review

Compare your proposal to the competition.

### Why?

- If you look at what already exists, you might be able to identify potential issues in advance
- Also helps establish your unique contribution

### How?

- Literature or product review
- Analysis
  - What are the existing tools?
  - What is their purpose?
  - What audience are they aiming for?
  - What kinds of strategies are they using?
  - What functionality do they contain?
  - What are their strengths and shortcomings?
- Identify opportunities and design constraints