

Introduction to User Experience Design

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About the Instructor

- Front End Engineer and UX Designer
- Department of Commerce
- Skills include graphic design, user experience design, branding, prototyping and wireframing, front end development, responsive design
- Education: James Madison University, General Assembly



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About Commerce Data Academy

- A data education initiative of the Commerce Data Service (CDS)
- Launched by CDS to offer data science, data engineering, and web development training to employees of the US Department of Commerce
- Course schedule and materials (e.g. slides, code, papers) produced for the Commerce Data Academy can be accessed on Github and at <https://dataacademy.commerce.gov/>
- Questions? Feel free to write us at Data Academy (dataacademy@doc.gov)



Class Guidelines

- Feel free to ask questions whenever!
- Slides and class materials are posted on [Github](#) and can be accessed at any time



What are **you**
interested in?



“Experience design is the design of anything, independent of medium, or across media, with human experience as an explicit outcome, and human engagement as an explicit goal.”

- Jesse James Garrett



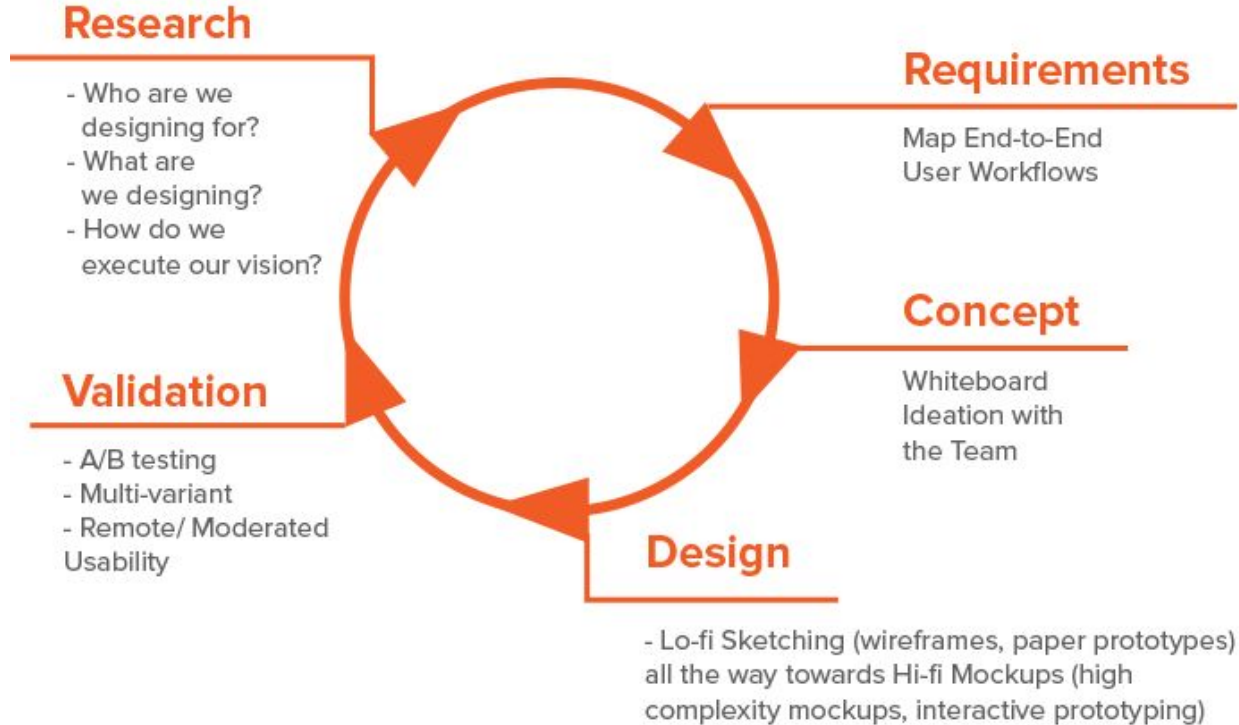
Class Goals

Together, we will discuss:

- User experience design theory
- Human-centered design thinking
- Basic principles of design
- How to conduct user research
- Develop personas
- Interview users
- Create low fidelity prototype
- Basics of usability testing



UX is a process



What does UX design entail?

Design Thinking

Product design

Problem
identification

User Testing

Human-centered
design

Copy writing

Research

Presentations

Persona creation

Communication to
stakeholders

In-person
interviewing

Information
Architecture

Working with
developers

Empathy building

Usability

Prototyping

Interface design

Problem solving



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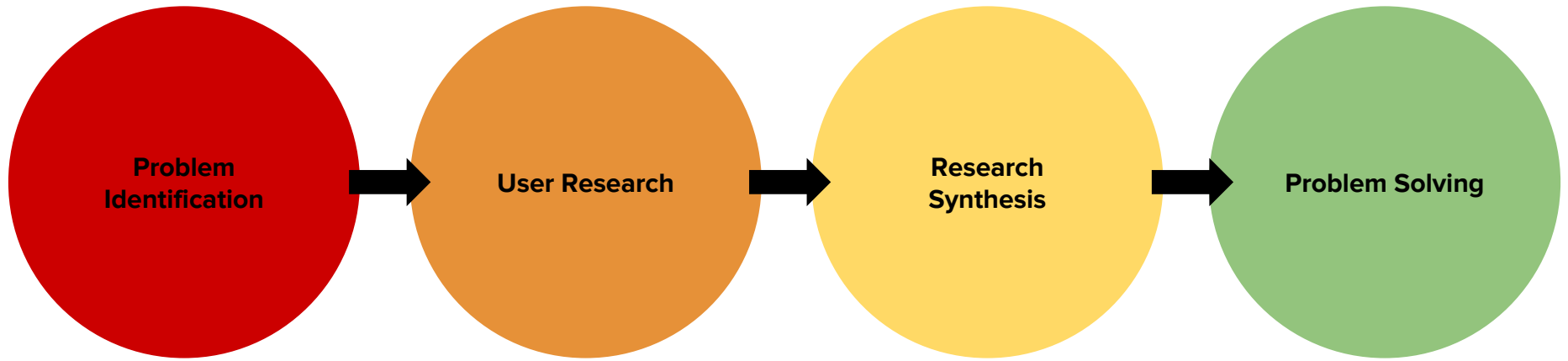


Design Thinking

“If I told you to design a better pair of scissors, you would immediately think of something with a handle and two blades that fit into your hand. But if I told you instead to find a better way to cut paper, then maybe you would imagine something that was larger and with only a single blade, or something that rips paper, or something more similar to a hole punch.”

Karen Ladenheim, Stanford Design School





Problem Identification

Problem: Employees at the Department of Commerce don't get enough sleep. The DOC Wellness Center has requested a mobile app to be built to help employees improve their sleeping habits.

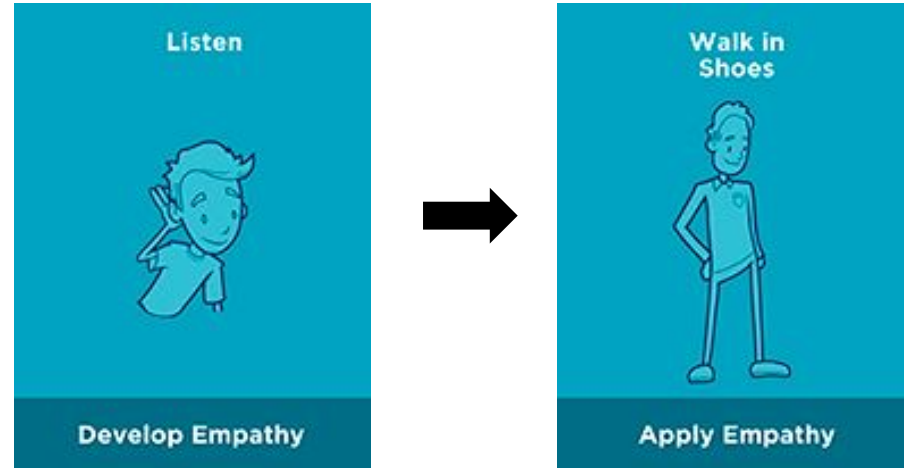
Goal:

- Improve sleeping habits of DOC employees
- Increase healthy habits of DOC employees
- Enhance capabilities of DOC employees

Empathy Building

“People try to act empathetic ... without first taking time to develop empathy.

This leap is problematic when it comes to your work. You end up with business decisions based on **expectations about how others are reasoning, not based on knowledge.**”



Gaining Empathy

Remove personal bias and listen.

Your job is to understand a user's experience - so you must remove all personal opinions while listening to their experience.

Practice active listening techniques.

Ask things like “Could you explain that further?” “What do you mean by ____?”

Always ask why.

Asking why makes the user dig deeper into their experience, helping you, the interviewer, get a better understanding of their experience(s).

Never make any assumptions.

You are not the user, therefore your assumptions may not be true.



Conducting User Research



Personas

A persona is a representation of a group of user's needs. In this case, a persona would represent a group of Commerce employees with specific needs and experiences.

Personas can be developed before user research is conducted, and user research can be conducted based on those personas.

Examples:

- Janitors
- Office of the Secretary (OS) employees
- Contractors



Jill Anderson



"I'm looking for a site that will simplify the planning of my business trips."

AGE 29

OCCUPATION Regional Director

STATUS Single

LOCATION Portsmouth, NH

TIER Frequent Traveler

ARCHETYPE The Planner

Organized

Practical

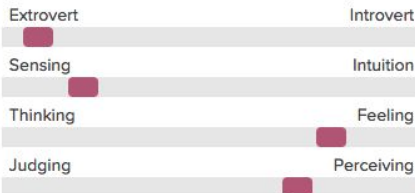
Protective

Hardworking

Bio

Jill is a Regional Director who travels 4-8 times each month for work. She has a specific region in which she travels, and she often visits the same cities and stays in the same hotel. She is frustrated by the fact that no matter how frequently she takes similar trips, she spends hours of her day booking travel. She expects her travel solutions to be as organized as she is.

Personality



Brands

KAYAK

Basecamp

Outlook

enterprise

IHG
InterContinental Hotels Group

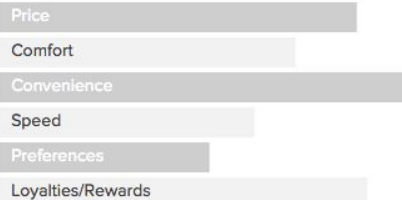
Goals

- To spend less time booking travel
- To maximize her loyalty points and rewards
- To narrow her options when it comes to shop

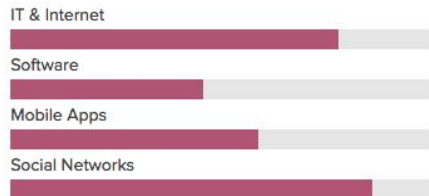
Frustrations

- Too much time spent booking - she's busy!
- Too many websites visited per trip
- Not terribly tech saavy - doesn't like the process

Motivations



Technology



Persona 1: Mary Manager



Jill travels 50% of the time and is often in non-stop meetings. She wants things done right or not done at all.

Intranet goals:

- Help her team feel connected to a whole
- Improve consistency in methodology and documentation
- Motivate her team with performance numbers

Likes:

- Great design & multimedia
- Search engines that return relevant results

Pet peeves:

- Out-of-date information

Interview Exercise

Take 15 minutes to find a partner and interview them. This will be a 30 minute exercise, each person gets to interview for 15 minutes each.

Use the [Exercise 1 document](#) for this interview exercise.

Feel free to branch outside of the questions I've written if you want to understand more about the person you're interviewing.



Synthesizing and Ideating



Synthesize Your Research by Creating A Persona

Take 15 minutes to create a persona profile. For this exercise, the one person you interviewed will be your main persona. Use the [Exercise 2 document](#) to do this.

Take the information from your interview and look for repeated themes or experiences.



Synthesize Your Research by Creating A Persona

Share!

1. What did you find out about their work and sleep habits?
2. How are their goals affected by their work and sleep habits?
3. What are major problems/pain points of your user?



Ideate

“How might we _____”

1. How might we create a solution that best serves the needs of our persona?
2. How might we develop an app feature that solves one of the problems our user has?
3. How might we create an app that meets the needs of the stakeholders?

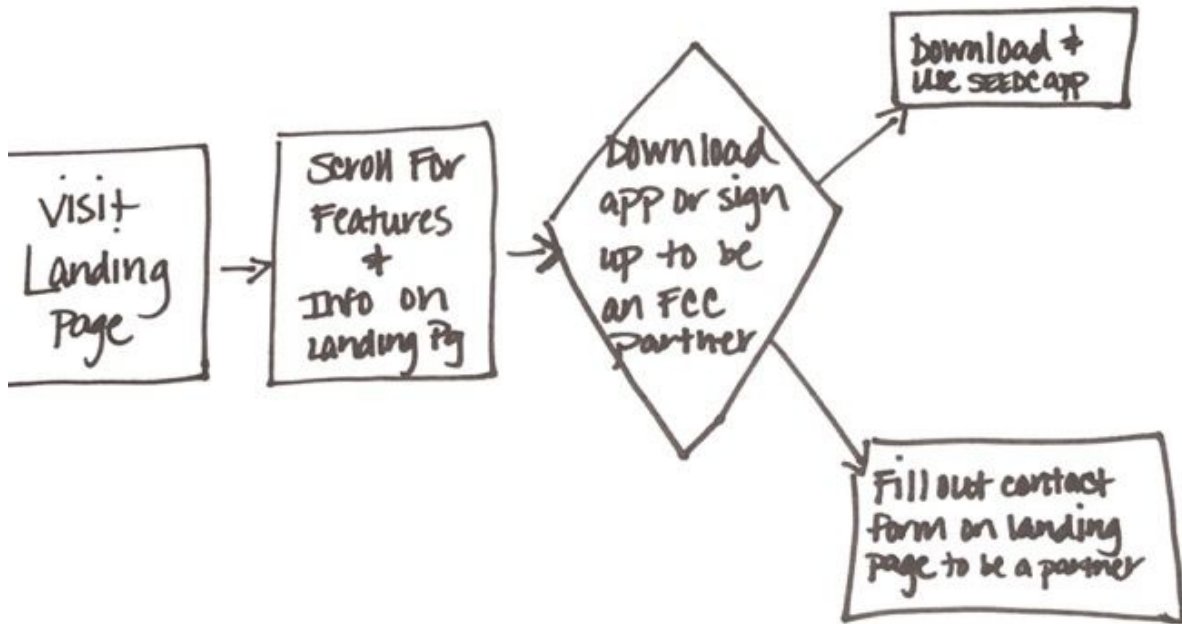


Designing



User Flow

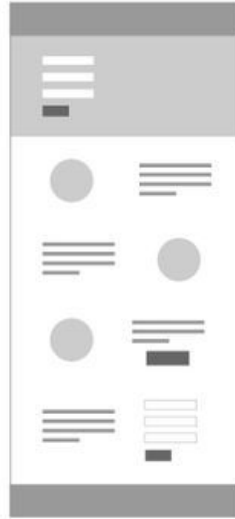
A user flow is an illustration of movement through a system, that demonstrates how users go from point A to point B within an interface.



Wireframes

A wireframe is a layout of a web page that demonstrates what interface elements will exist on key pages. It is a critical part of the interaction design process.

HOME



SECONDARY



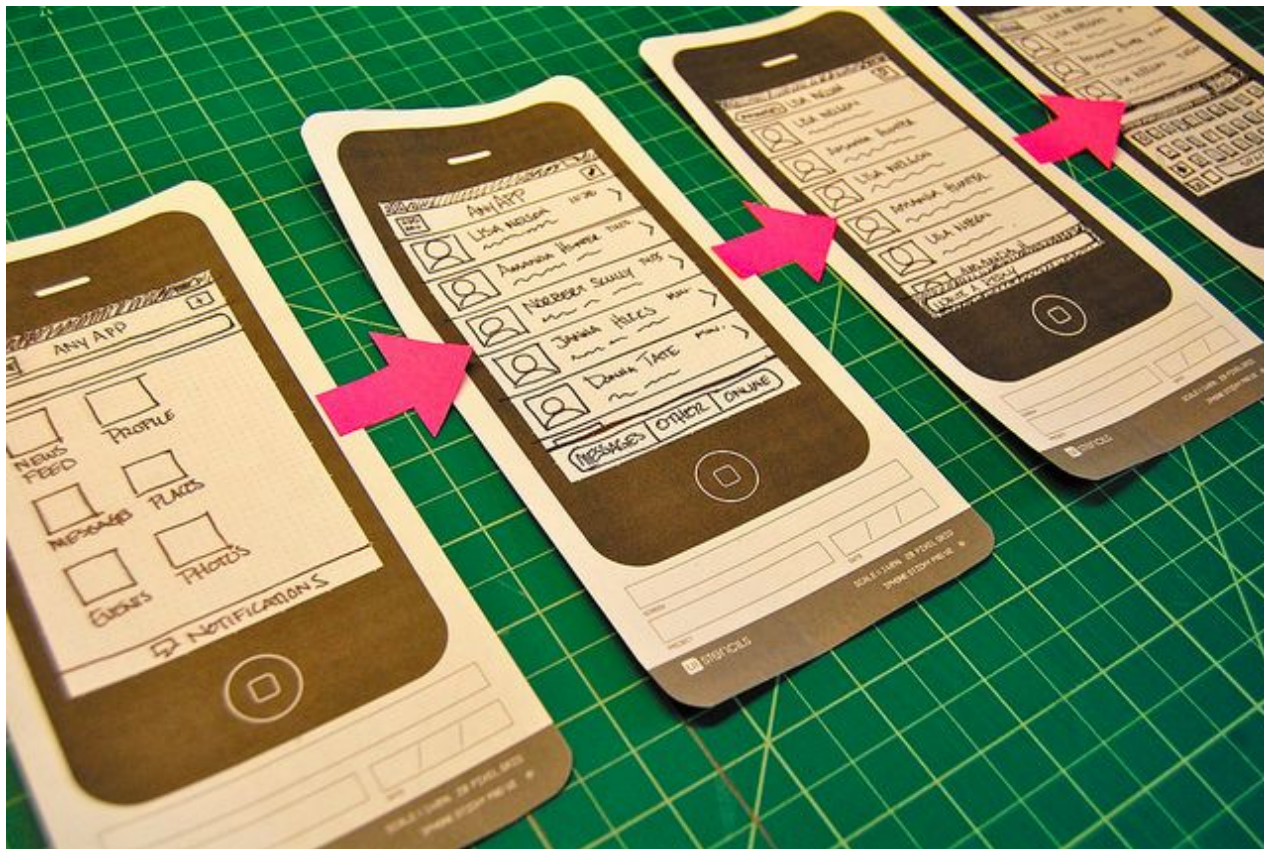
LANDING



PRODUCT PAGE



User Flow + Wireframes = Wireflow



<https://www.uxpin.com/studio/blog/creating-perfect-user-flows-for-smooth-ux/>

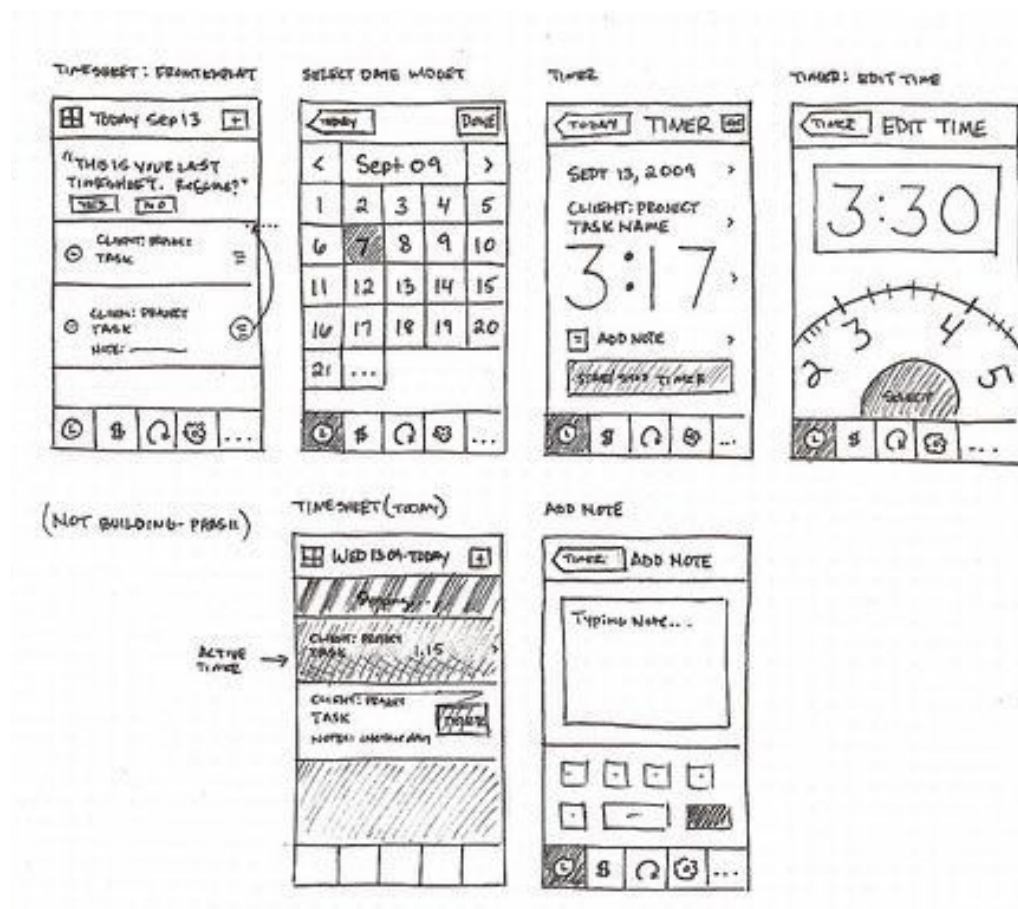


Sketching

Sketching is extremely helpful in creating your initial wireframes.

A wireframe is much easier to adapt than a concept design, and sketching helps to create the first wireframes.

Remember, you don't need to be an artist to sketch! Let's try it.



Draw a Line



Draw a Rectangle



Draw a Circle



Draw a Triangle



Draw a Square



Sketching

Now you know how to sketch! Next we will spend 20 minutes sketching out ideas for our application.

Use the blank pieces of paper in front of you to sketch out your ideas.



Usability Testing

Usability testing is a useful exercise to conduct when you need to test the usability of an application and if you want to test your assumptions about how it functions.

You may think an application may be easy to use, but remember, you are not your user, therefore it is important to sit down with real users and watch them go through the application.



How to Conduct Usability Testing

1. Find actual users of the product.
2. Come up with open ended tasks for the user to complete.
3. Sit down with real users and ask them to complete the tasks.
4. Ask the user to think out loud as they complete tasks.
5. As they complete the tasks, ask questions like:
 - a. Why did you click that button?
 - b. How did you know _____ would take you there?
6. Actively watch how they click on things and observe their body language to see any hesitation or confusion.



Additional Resources

Web Design

- [10 Principles of Effective Web Design](#)
- [Web Field Manual](#)
- [US Web Design Standards](#)
- [Designing with Grids](#)

Mobile Design

- [Curated List of Mobile Design Patterns](#)
- [Guidelines for Mobile Web Development](#)



Additional Resources

UX Design

- [5 Minute Overview of UX](#)
- [What is User Experience Design?](#)
- [Common Myths about UX Design](#)
- [How to Make Personas](#)
- [Nielsen Norman Group Articles](#)

Usability Testing

- [Introduction to Usability](#)
- [Planning a Usability Test](#)
- [Moderating a Usability Test](#)
- [Questions to Ask in Usability Testing](#)

