

# Today's Agenda

- Prototyping
- Discussion on the Design Alternatives Presentation
- Group work on Design Alternatives Presentation

# Prototyping

Rapid prototyping, sketches, storyboards, mock-ups, etc  
(adopted partially from Dr. Bruce Walker)

# PROTOTYPE EXAMPLES/TYPES

# I am about to show you many examples....

I expect your group to go through multiple rounds of prototype development

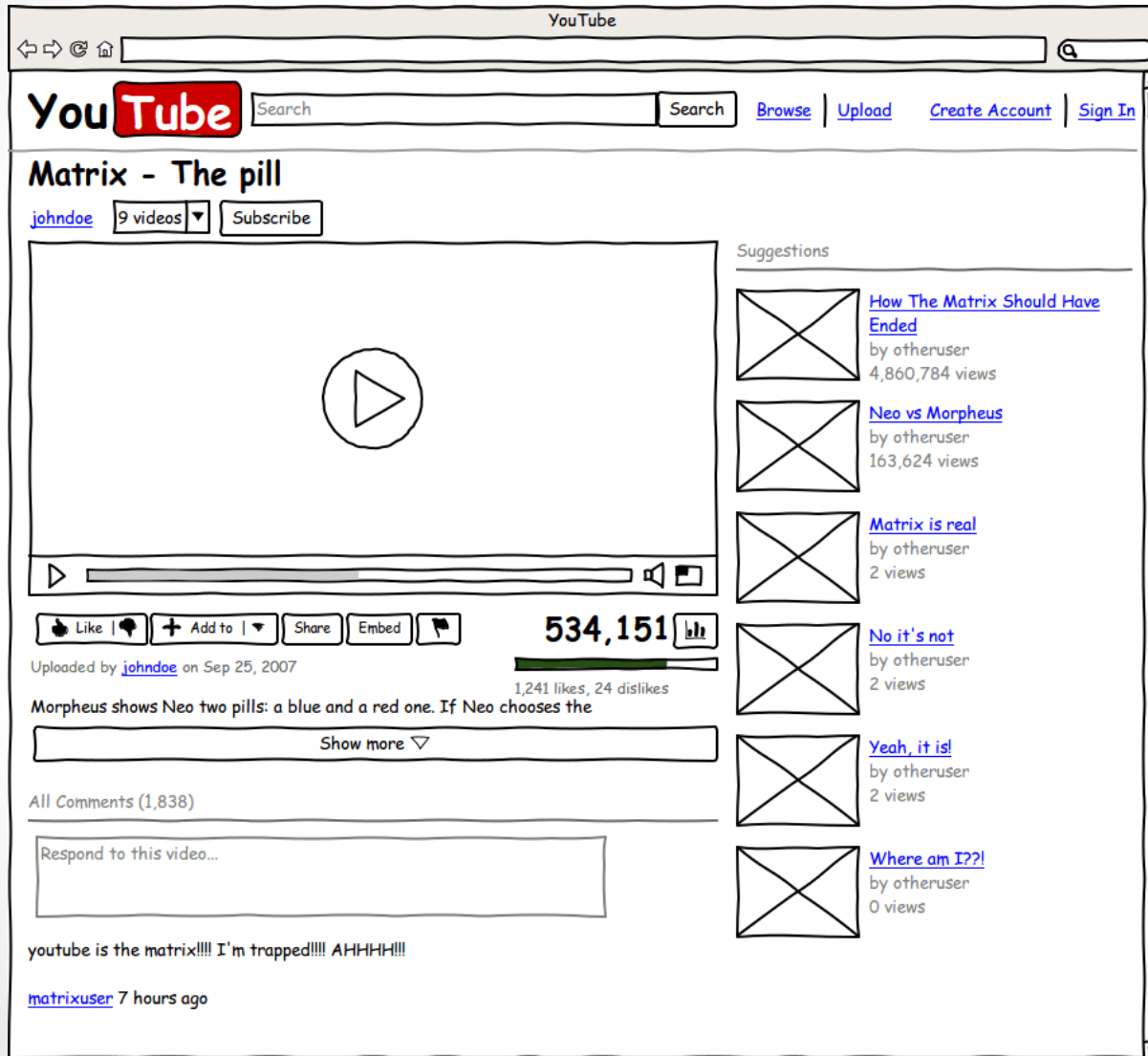
1. Start with drawings / sketches
2. Revise, revise, revise
3. Work up to functional website/app prototypes
4. Test
5. Revise
6. etc.

# 1. Flow Chart Prototype

- Functional specification of how the system operates, in a step-by-step flow
- IF-THENS, branches, loops
- No visual layout/interface specified
- More detailed, useful for quick evaluation, but requires more commitment of resources to produce
- Also more advanced (sometimes means more rigid) than simpler mockups



# 2. Wireframes: Screen



“a wireframe is a visual illustration of a web page... to show you where each item should be placed on a page.”

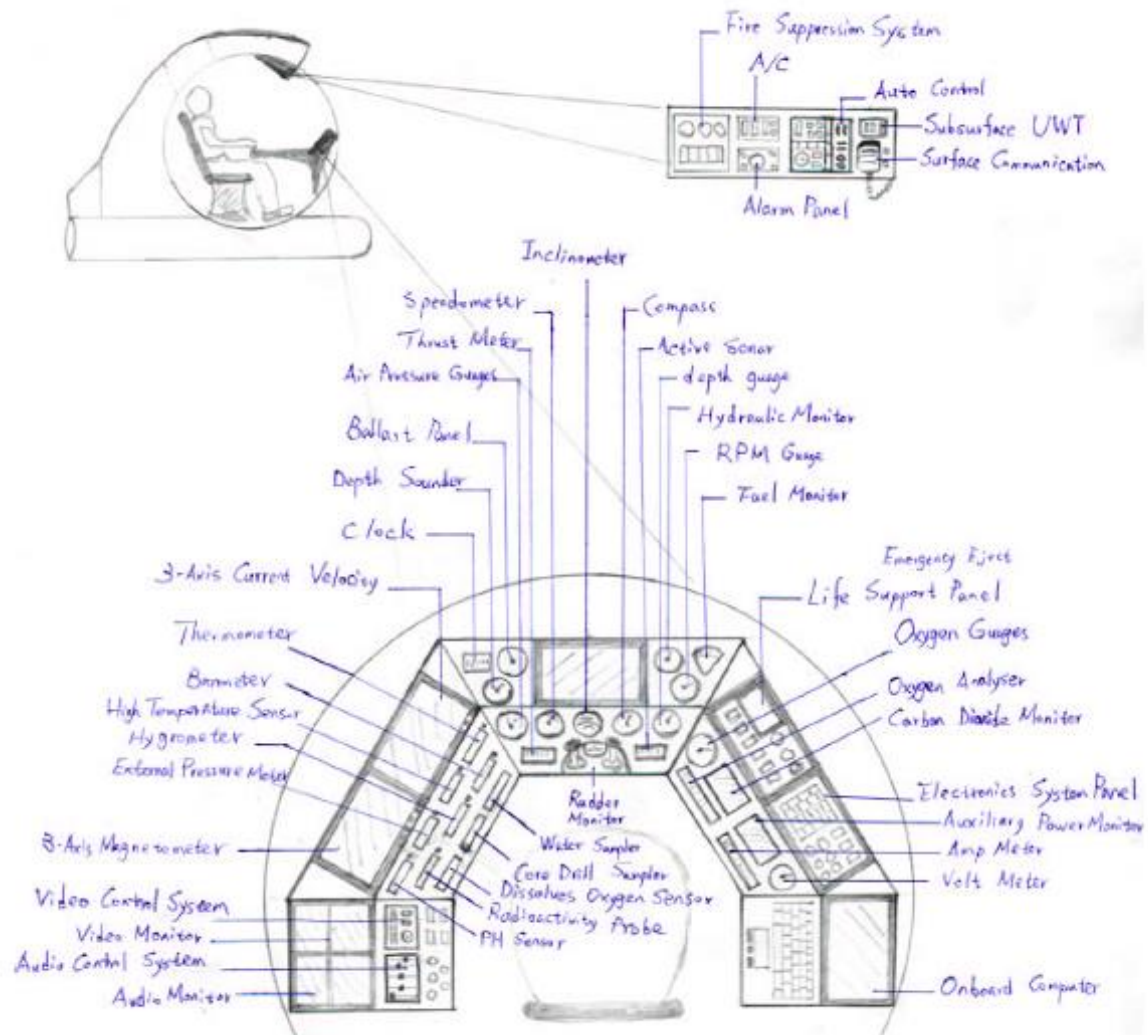
[Usability.gov](http://Usability.gov)

# 3. Sketches and Mock-Ups

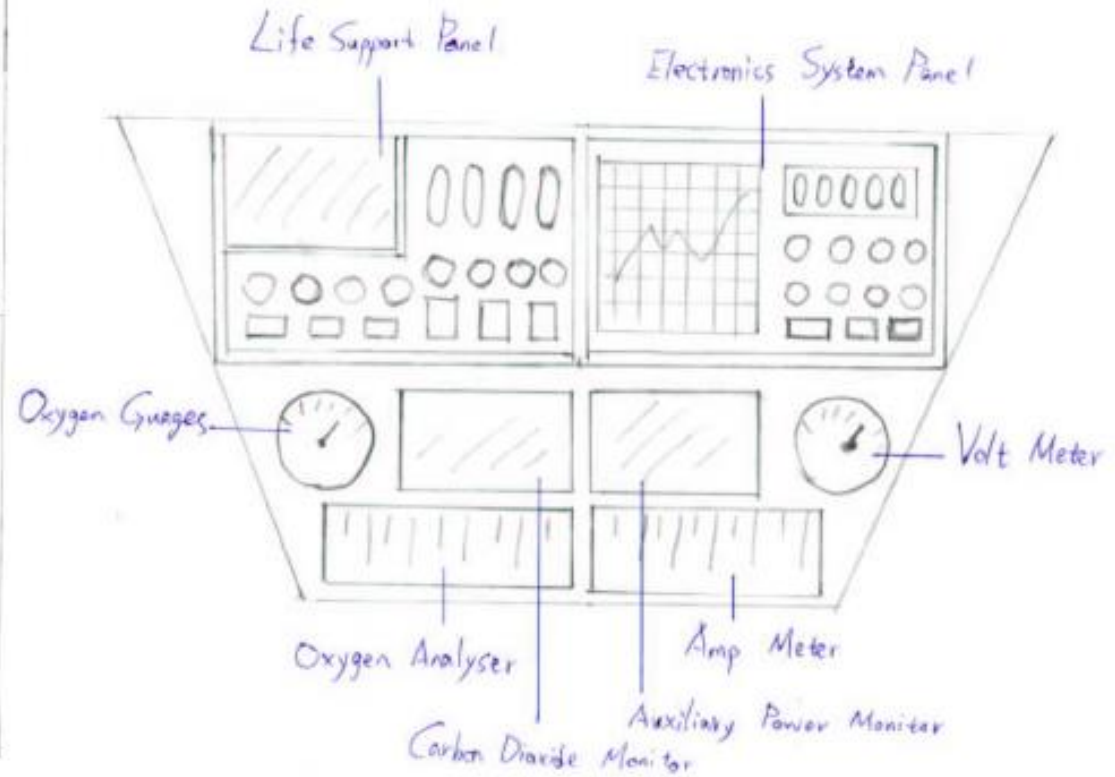
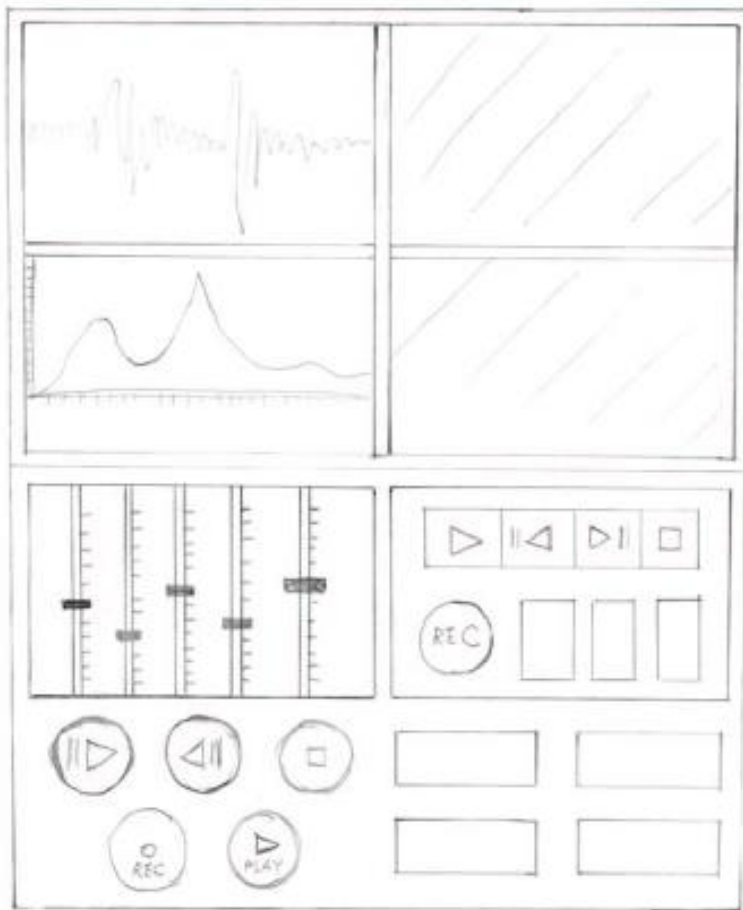
- Paper-based “drawings” of interfaces
- Good for brainstorming
- Focuses people on high-level design notions
- Not so good for illustrating flow and the details
- Quick and cheap -> helpful feedback



# Sketches and Mock-Ups



# Sketches and Mock-Ups: Displays



Audio Monitor  
Audio Control System

Video Monitor  
Video Control System

# Physical Mock-Up



# Showing users sketches & mock-ups...

- What is benefit of using a not-so-pretty sketch with users?
- Danger in using professional art or design tools?
  - Users may over focus on aesthetics, which you don't care about just yet
  - If it is obvious it is a prototype, then user will focus on functionality or “imagine” what final product will do

# 4. Storyboarding

- Pencil and paper simulation or walkthrough of system look and functionality
  - ❖ Use sequence of diagrams/drawings
  - ❖ Show key snap shots
  - ❖ Quick & easy



# Storyboard



Customer

## Contoso ice cream

Flavors:

- Shortbread
- Oatmeal
- Toothpaste

Buy

Customer chooses flavor

How do you  
want to pay?

Login

Card

Customer pays



Dispatcher

## Orders

~~XXXXXXXXXXXXXXXXXXXX~~  
Jo Oatmeal 2  
Dipak Cherry 1  
Liz Grout 1

Dispatcher fulfills orders



Ice cream is  
delivered



# Paper Prototypes

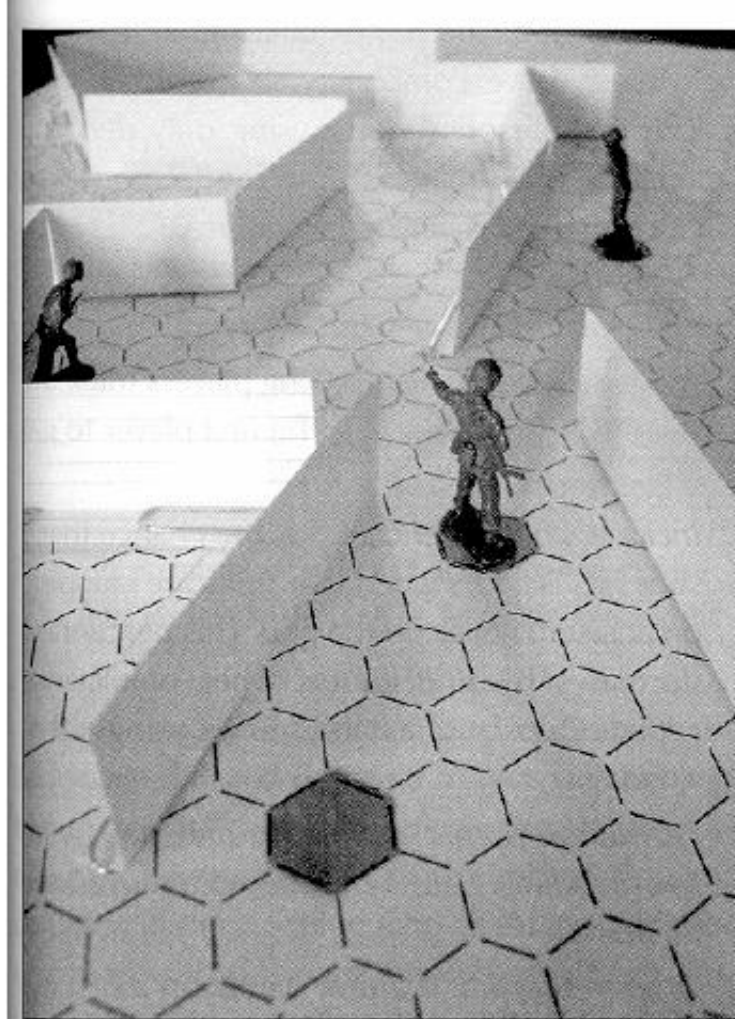


# Paper Prototypes (game design)





# Paper Prototypes (game design)



7.5 FPS Prototype example

# Prototyping

- Tradeoffs of simplicity, manageability
- Veracity
- Interactiveness
- Up-front costs vs. down the road costs
  
- Key: Don't let the prototyping environment drive or constrain your creativity!!

# Prototyping Tools

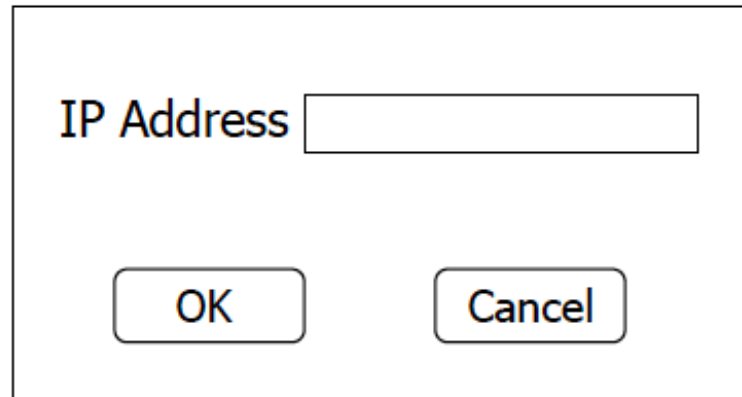
Lots of prototyping software out there

- Many free
- Many more with free trial (just be sure to save your prototype so you can access after trial)

# Prototyping Tools (draw/paint)

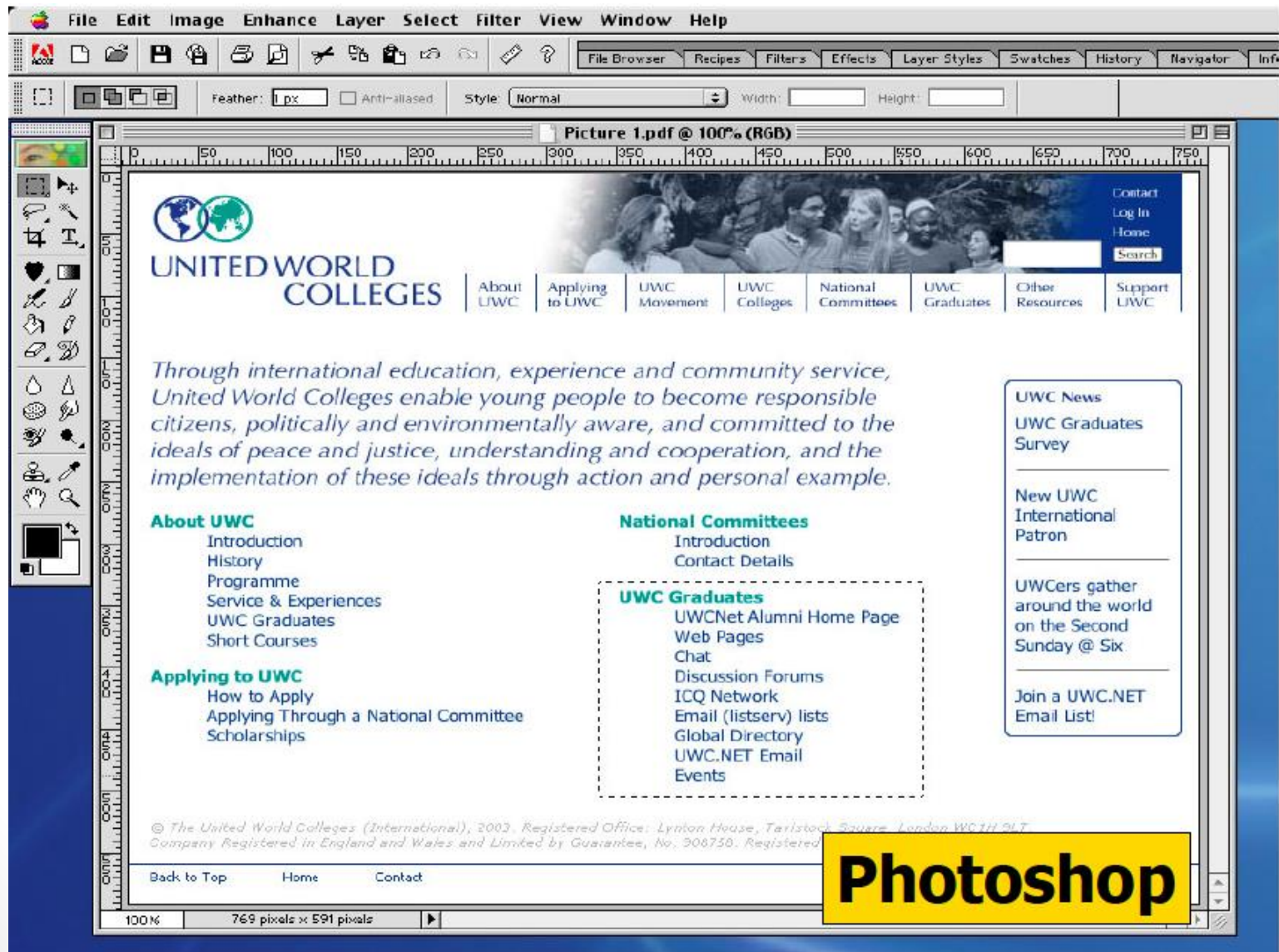
## 1 Draw/Paint programs

- ❖ Draw each screen, good for look



A hand-drawn dialog box with a rectangular border. Inside, the text "IP Address" is followed by a rectangular input field. Below the input field are two rounded rectangular buttons labeled "OK" and "Cancel".

# Prototyping Tools (Photoshop)



# Prototyping Tools (Scripted Simulations)

## Scripted simulations/slide shows

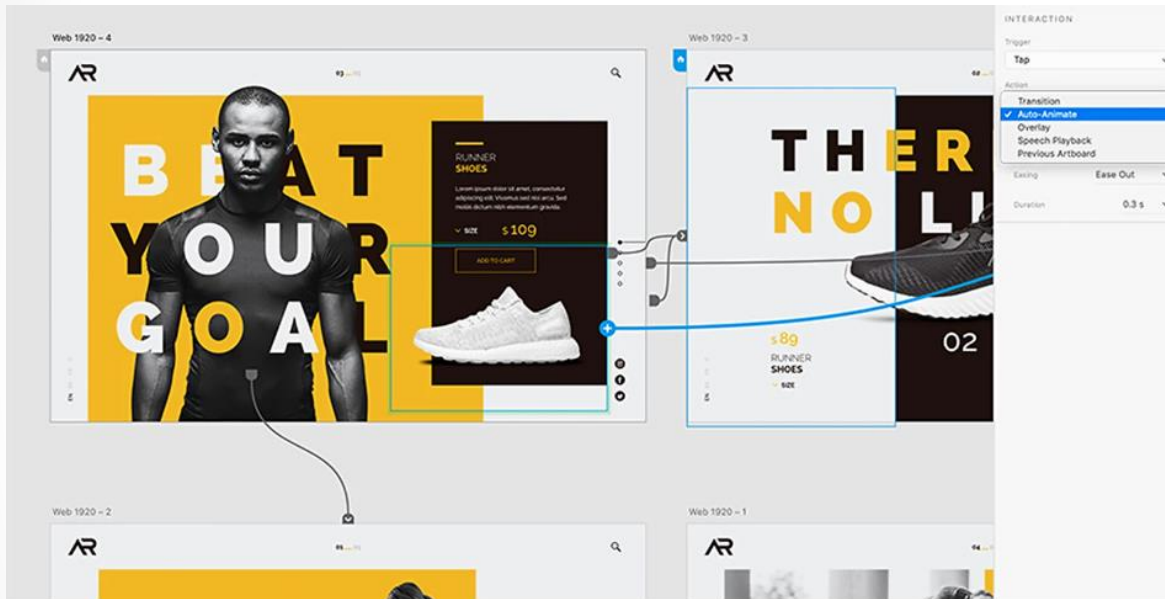
- ❖ Put storyboard-like views down with (animated) transitions between them
- ❖ Can give user very specific script to follow
- ❖ Often called *chauffeured prototyping*

Examples: PowerPoint,  
AdobeXD





# Prototyping Tools (Adobe XD)



- ❖ Static designs/ wireframes to interactive prototypes
- ❖ Motion and animations
- ❖ Prototype on Mac or Windows, iOS or Android
- ❖ Free trial

<https://www.adobe.com/products/xd/prototyping-tool.html>

# Prototyping Tools (Interface Builders)

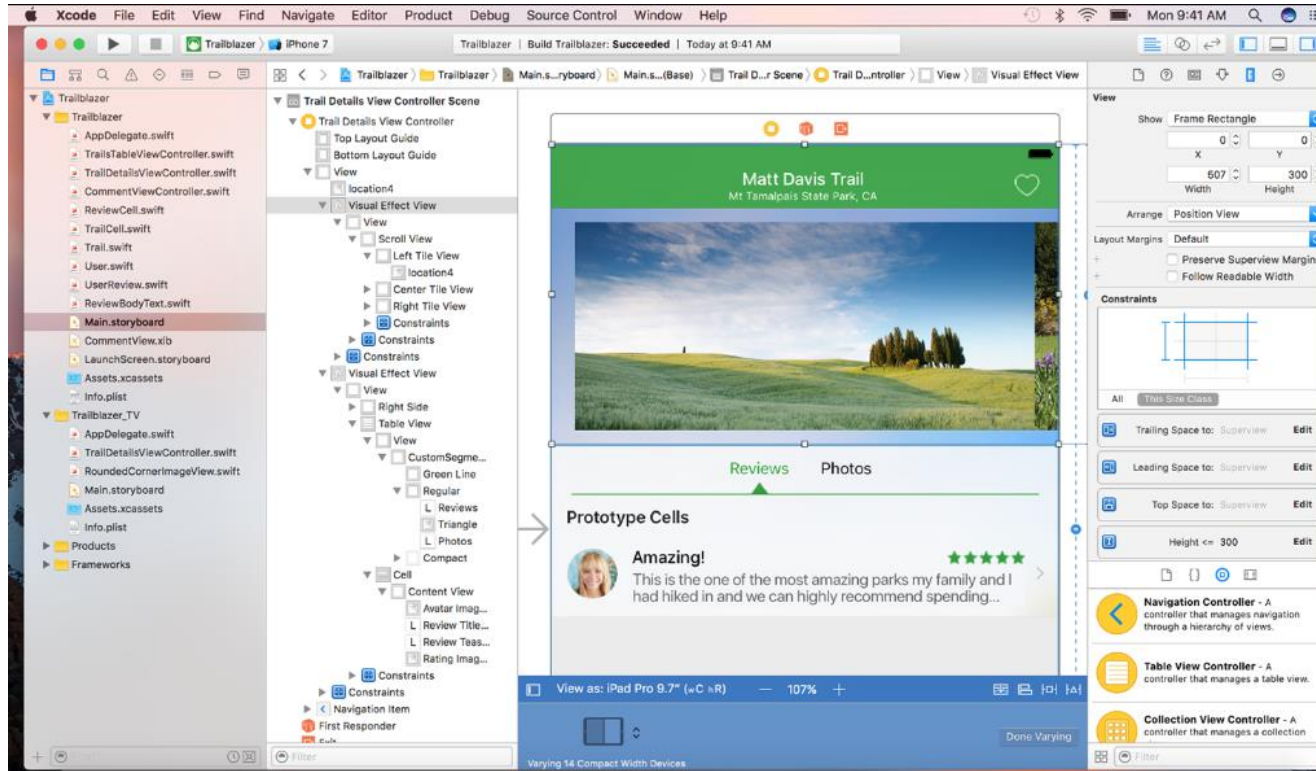
## Interface Builders

- ❖ Tools for laying out windows, controls, etc. of interface
  - Have build and test modes that are good for exhibiting look and feel
  - Generate code to which back-end functionality can be added through programming

Examples: Interface Builder (Xcode) by Apple and Delphi



# Xcode

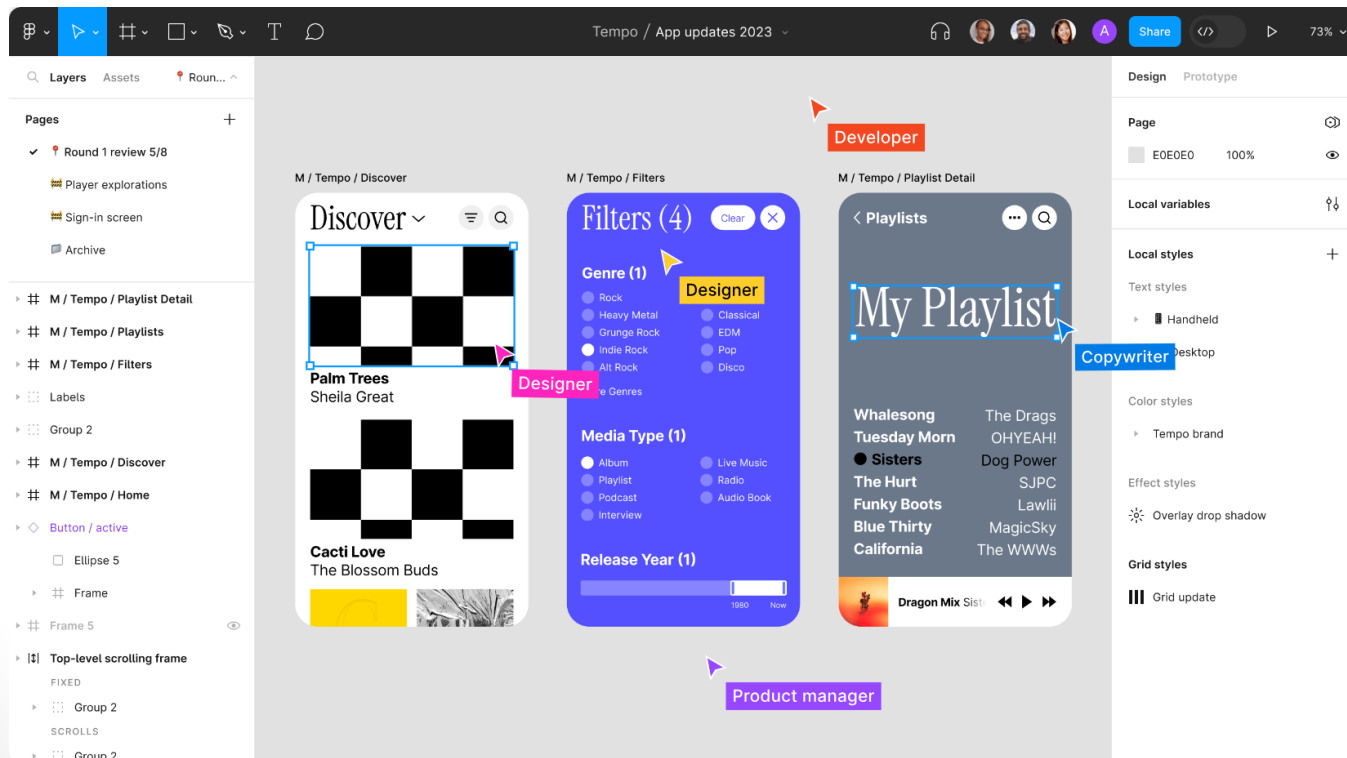


- Create apps for Mac, iPhone, iPad, Apple Watch, and Apple TV
- No coding
- Drag and drop
- Create connection between interface and code in macOS and iOS
- Free download

<https://developer.apple.com/xcode/interface-builder/>

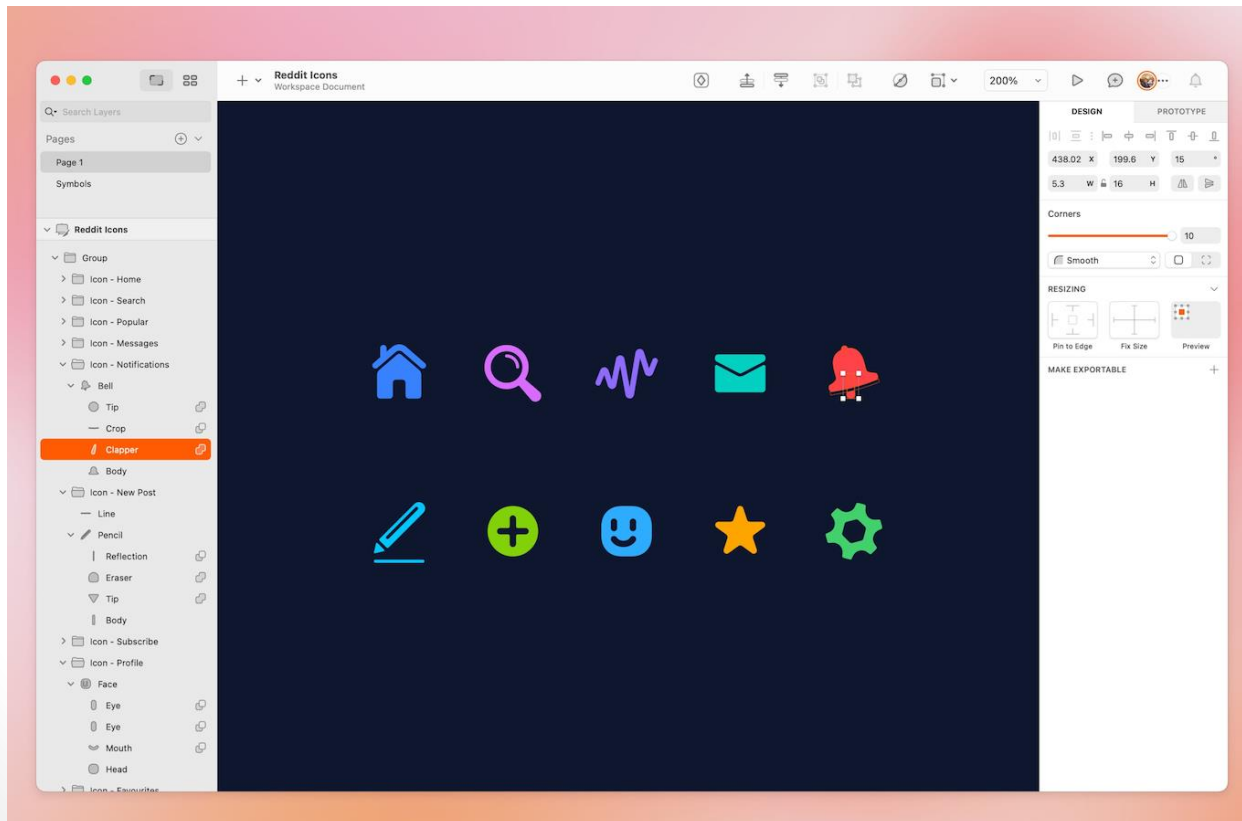
# Other Prototyping Tools: Figma

- Cloud-based enabling teamwork
- All-in-one
- Realistic prototypes
- Dev mode
- Starter free



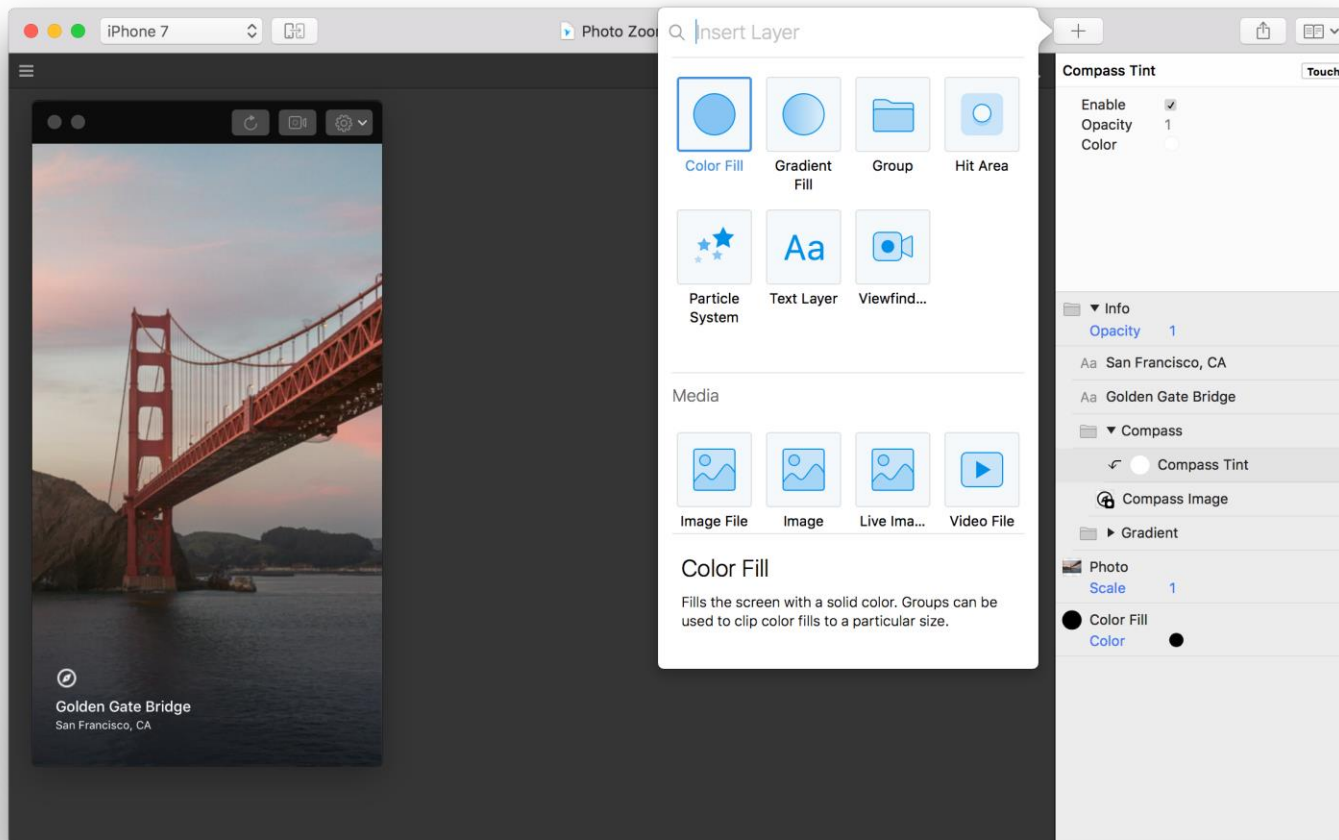
# Other Prototyping Tools: Sketch

- A Mac app for designers
- A web app for sharing, testing, and collecting feedback
- Free trial



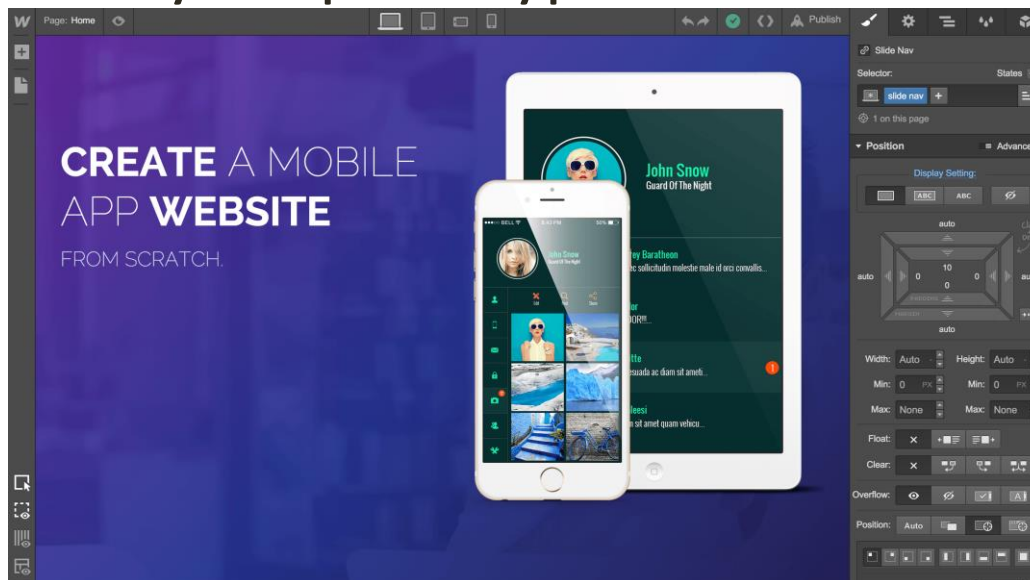
# Other prototyping tools: Origami Studio

- First developed by Facebook <https://origami.design/>
- Design, animate, and prototype
- It is FREE



# Other prototyping tools: Webflow

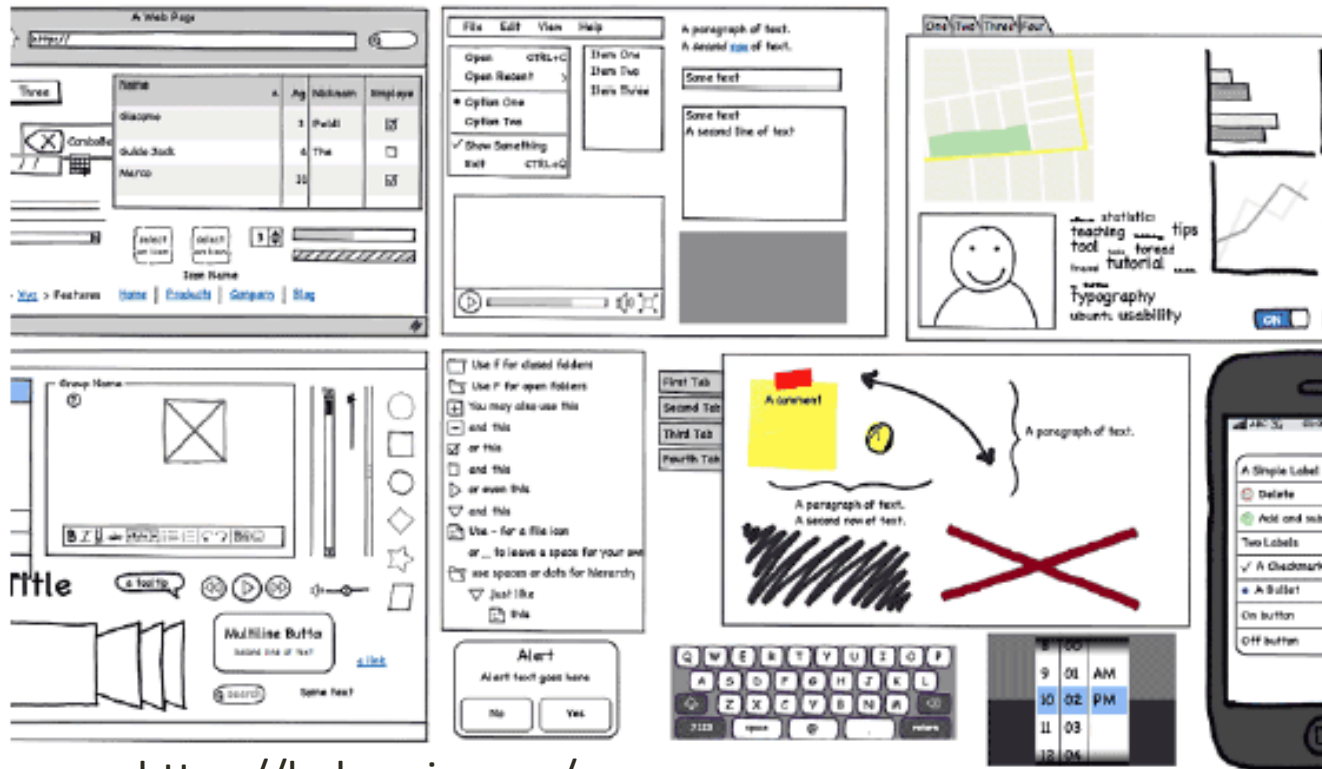
- Free trial <https://webflow.com/>
- Webflow's content management system is completely visual,
  - Create sites without writing code
- Site templates and web components dragged and dropped into your prototype



# Other Prototyping Tools: Balsamiq Mockups

Wireframe builder

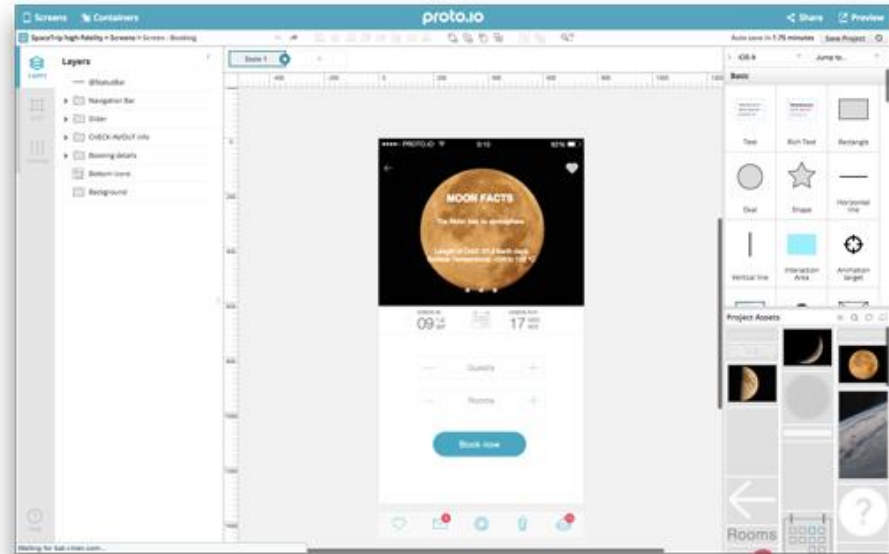
## Components for Web, Application, and Mobile Interface Design



<https://balsamiq.com/>

# Other prototyping tools: Proto.io

- [Proto.io - Prototyping for all](https://proto.io)
- Free trial
- Ready-made templates for websites and apps
- Entire app runs on the web, so run on any platform
- Share prototype with URL









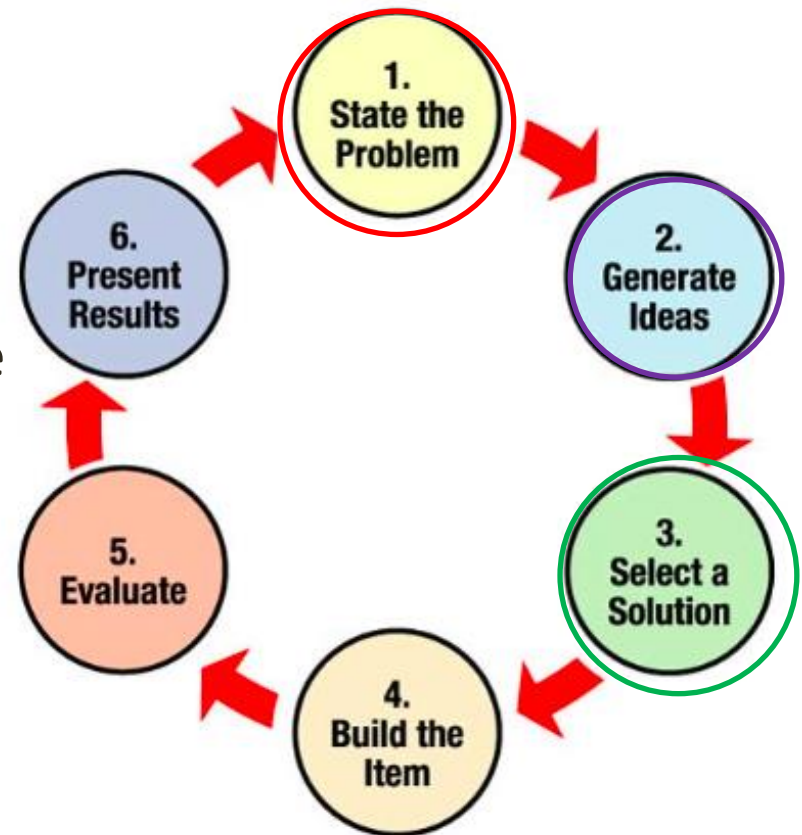
# Design Alternatives Presentation

- Group 1-3, Oct. 5 (Thursday)
- Group 4-6, Oct. 10 (Tuesday)

Please submit your slides to Blackboard by  
11:59pm EST, Tuesday, Oct. 10, 2023

# Design Alternatives Presentation

- Define your topic
  - What is the problem
- Develop your concept
  - Formulate system goals/purpose
  - Identify user requirements
  - What are the major functions
  - Identify environment
- Present your design ideas
  - Wireframe is preferred



Narrow down your solution and acquire feedback from audience

# Design Alternatives Presentation

12~15 minutes presentation

You also need to include

- An updated project management plan including
  - The role of team members
  - A breakdown of the tasks
  - Timeline
- A short list of questions for the audience
- Refer to HCI goals to formulate the questions

8~10 minutes Q&A

Please make sure to address the comments in “Topic Definition and Problem Understanding”

# Design Alternatives Presentation

All team members should participate your group presentation

Preferred way of presentation:

- One member displays/controls the slides
- All members contribute to the presentation

# Extra Credit – Group Assignment

- A written report summarizing the outcome from the design alternative presentations
  - What are the major concerns from the audience?
  - What are the feedbacks from the audience? You can use some statistics to summarize the feedbacks.
  - How would you propose solution to address the concerns?
  - How would you incorporate the feedback to improve your design?
- **Up to 2 points towards your final grade**
  - calculated based on the written report and the peer evaluation
- Due: 11:59pm, Friday, Oct. 13, in Blackboard

# Time to work in your groups!

So far, you have defined your topic for the project

It is time to work on designs

Before you start...

Figure out who is taking notes.

1. Discuss on design options
2. Discuss on prototyping tools
3. Take notes during discussion