

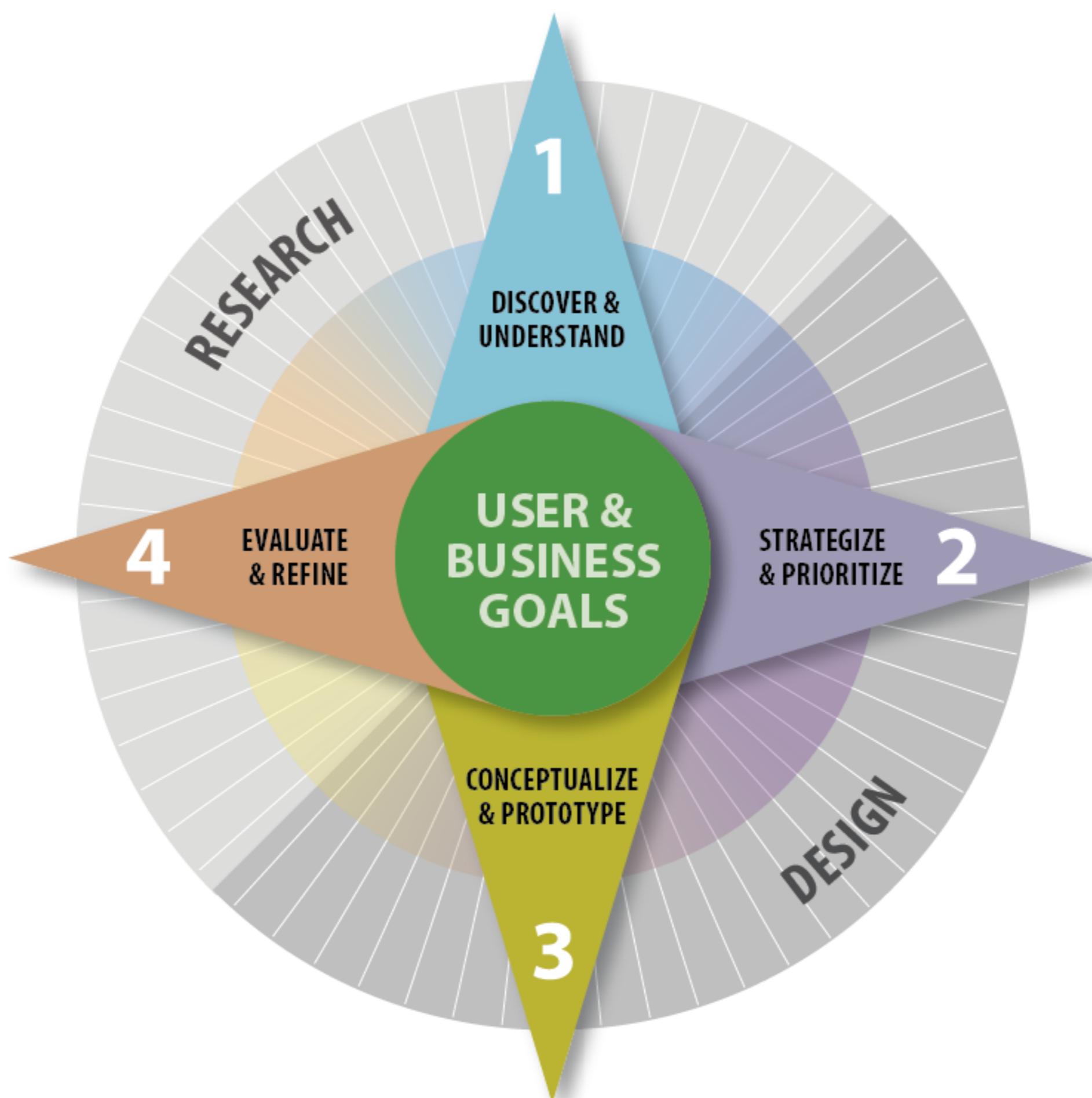
# Prototyping

CMPT 363

“If Ernest Hemingway, James Mitchener, Neil Simon, Frank Lloyd Wright, and Pablo Picasso could not get it right the first time, what makes you think that you will?”

— Paul Heckel

*How to explore and  
communicate possible design  
solutions?*



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# Topics to Explore

1. Forms and Methods
2. Design Scenarios
3. Sketching and Storyboarding

# Prototyping

Forms and Methods

# What is a Prototype?

# What is a Prototype?

A physical model of a particular design

# What is a Prototype?

A method of communication

# What is a Prototype?

A means of low-risk design exploration

# What is a Prototype?

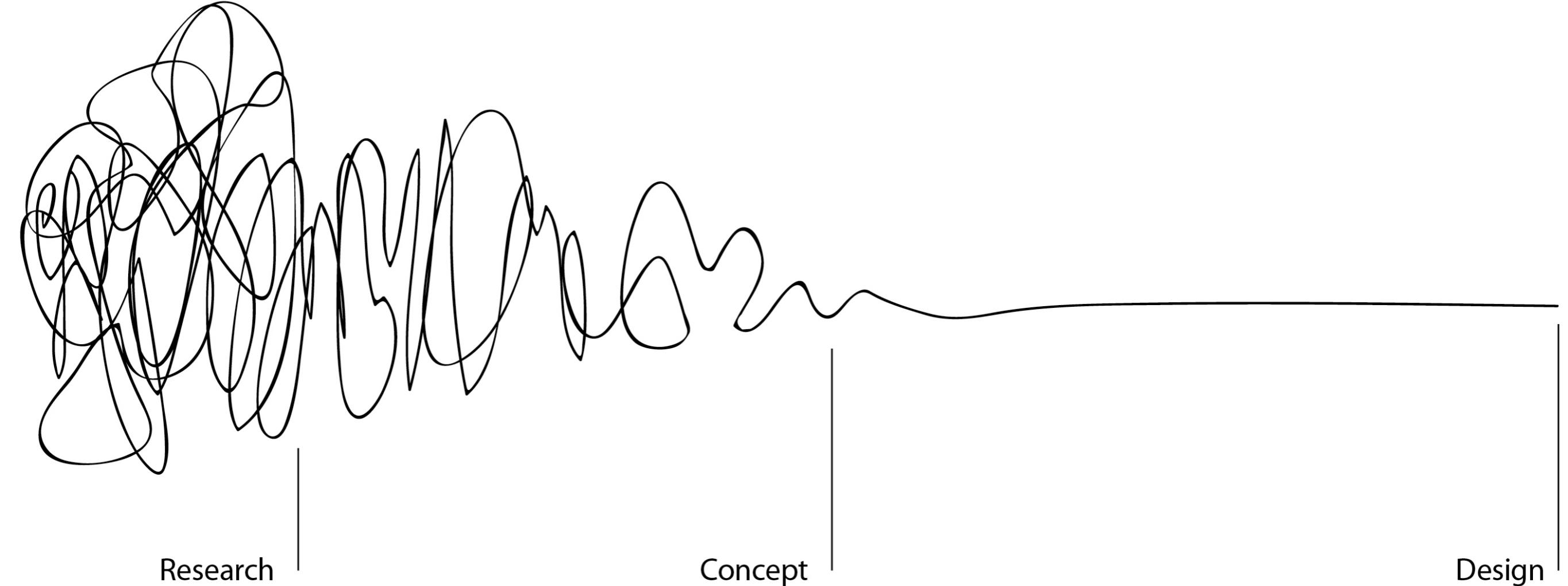
A learning process!

# Why Prototype?

- Maintain focus on user
- Encourages exploration and reflection
- More easily understood than requirements
- User evaluation and feedback is possible

Uncertainty / patterns / insights

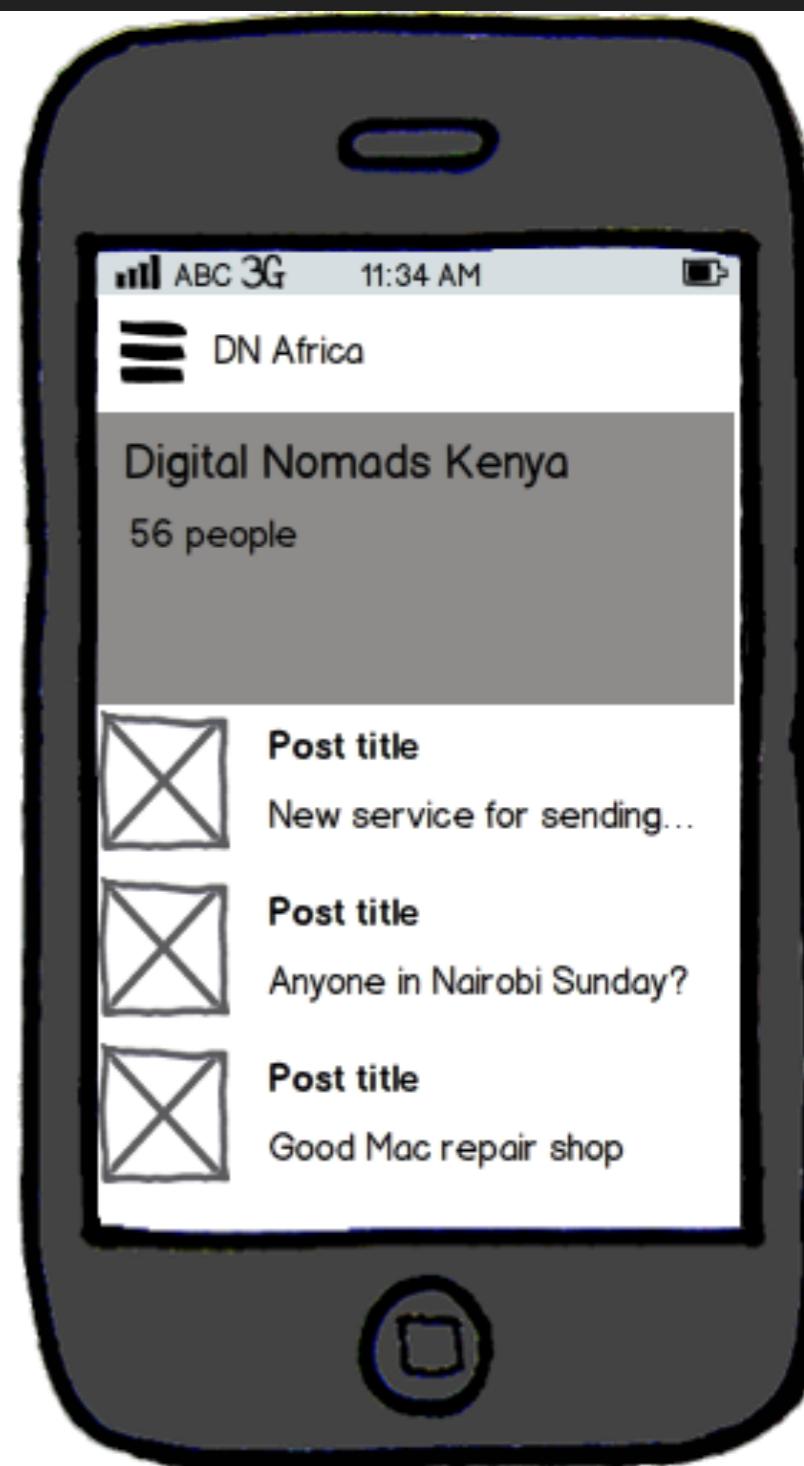
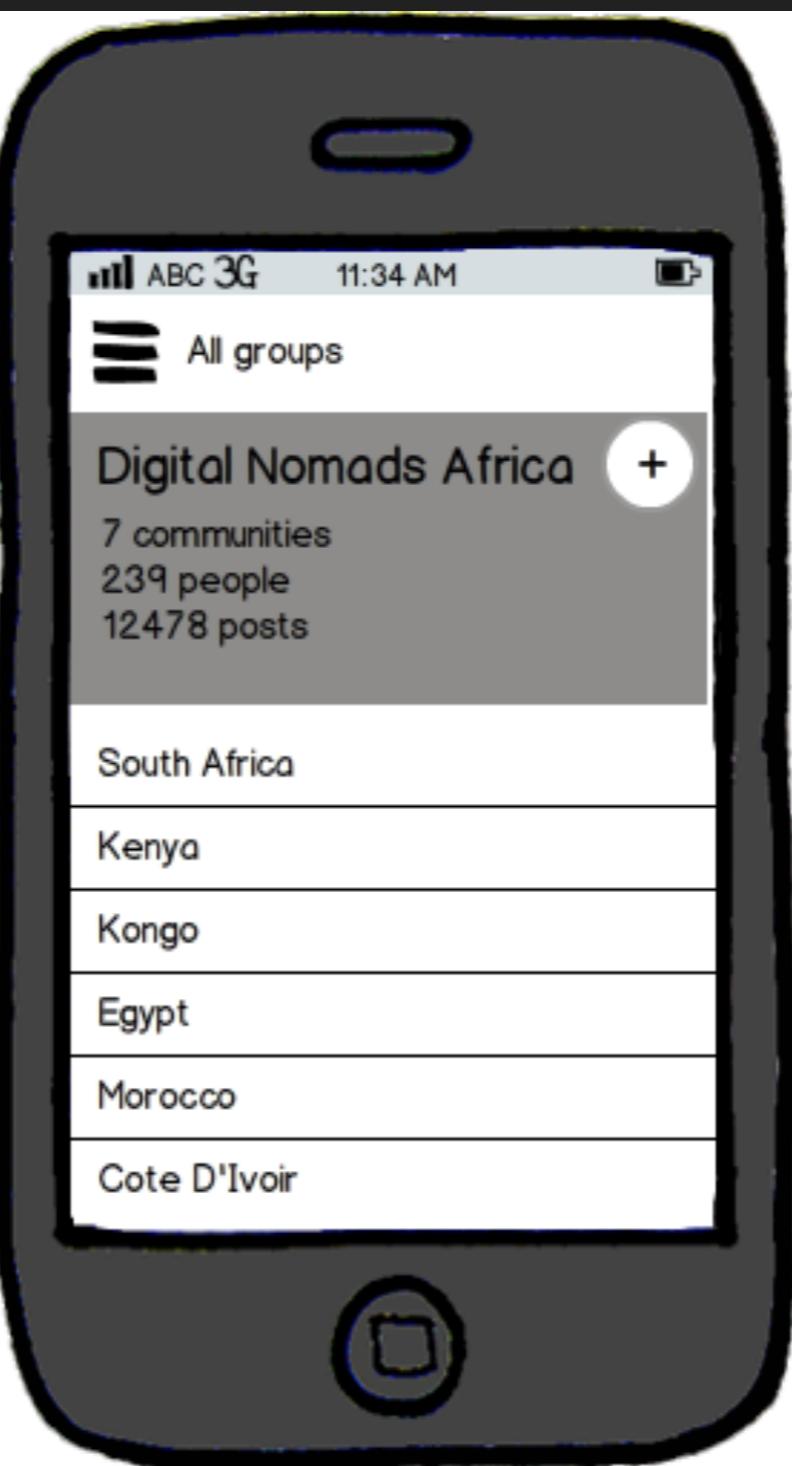
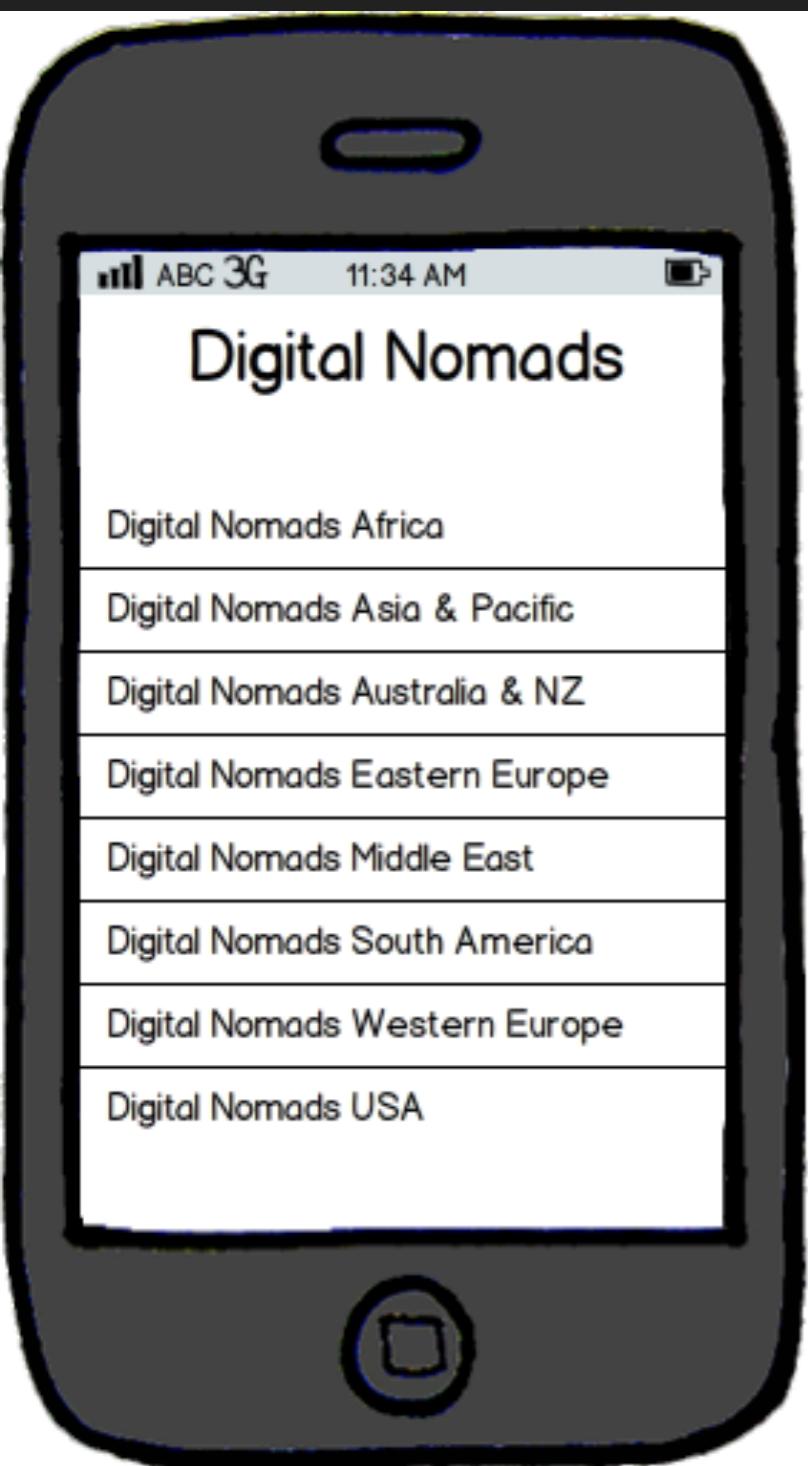
Clarity / Focus

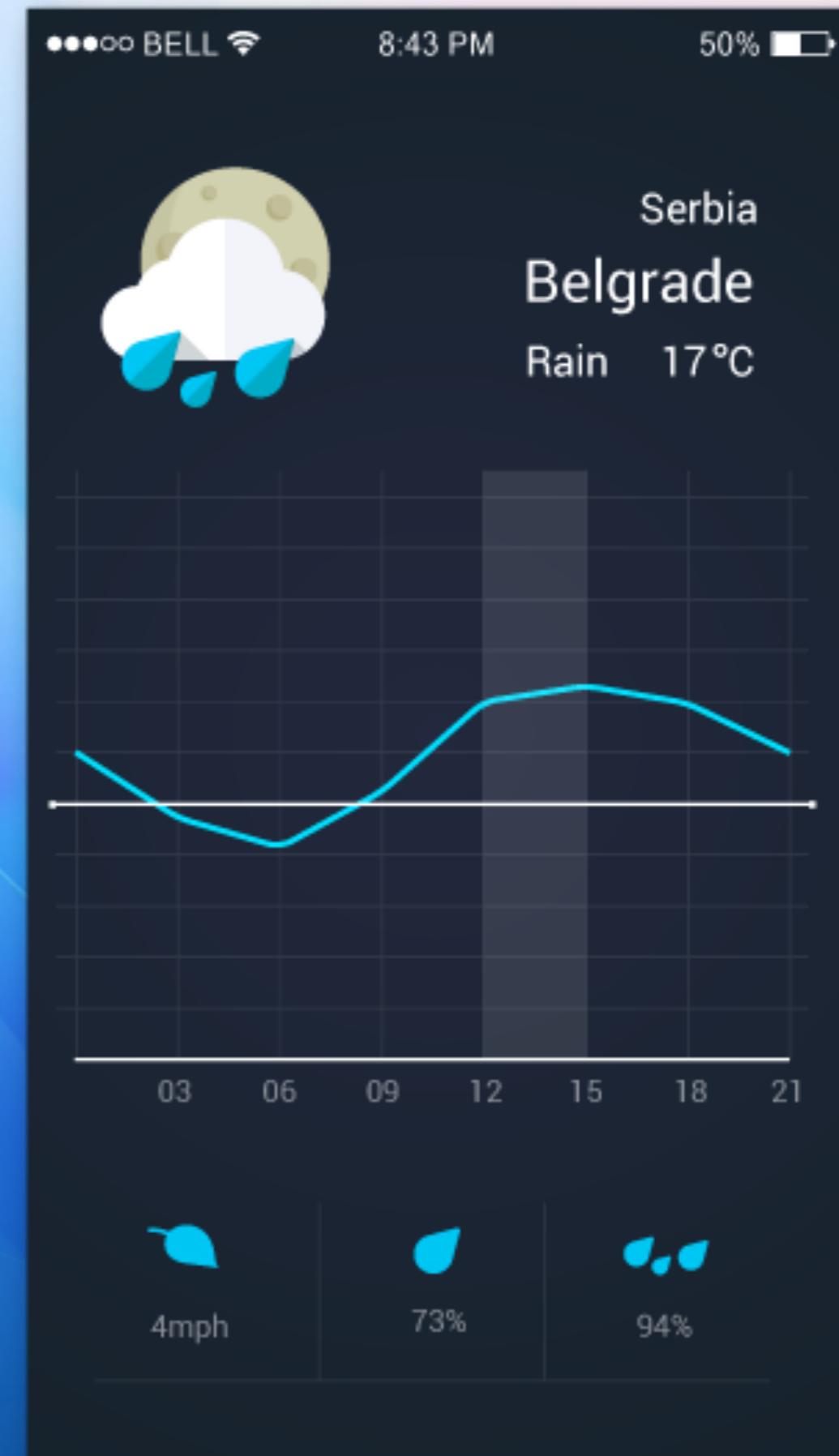
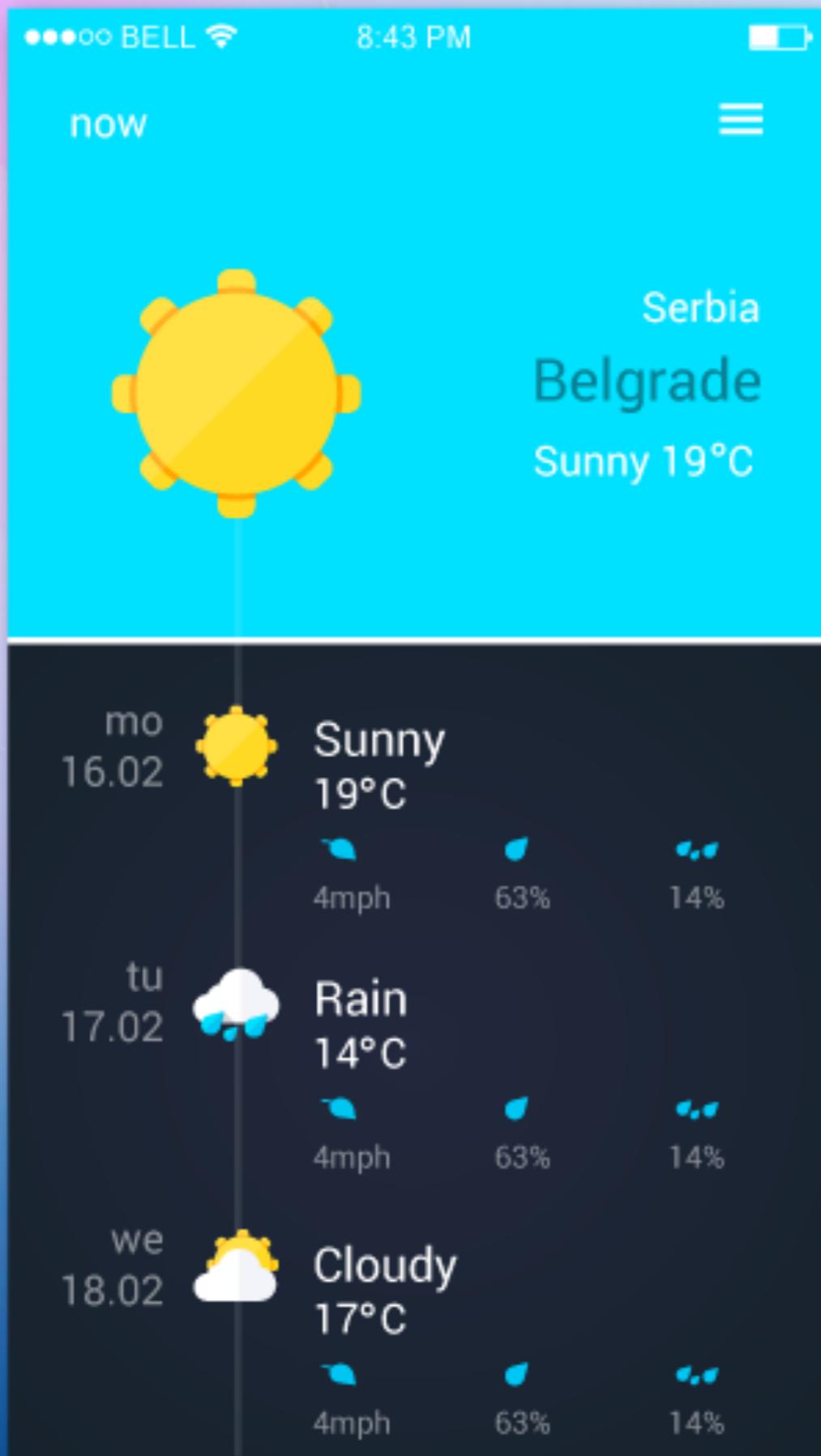


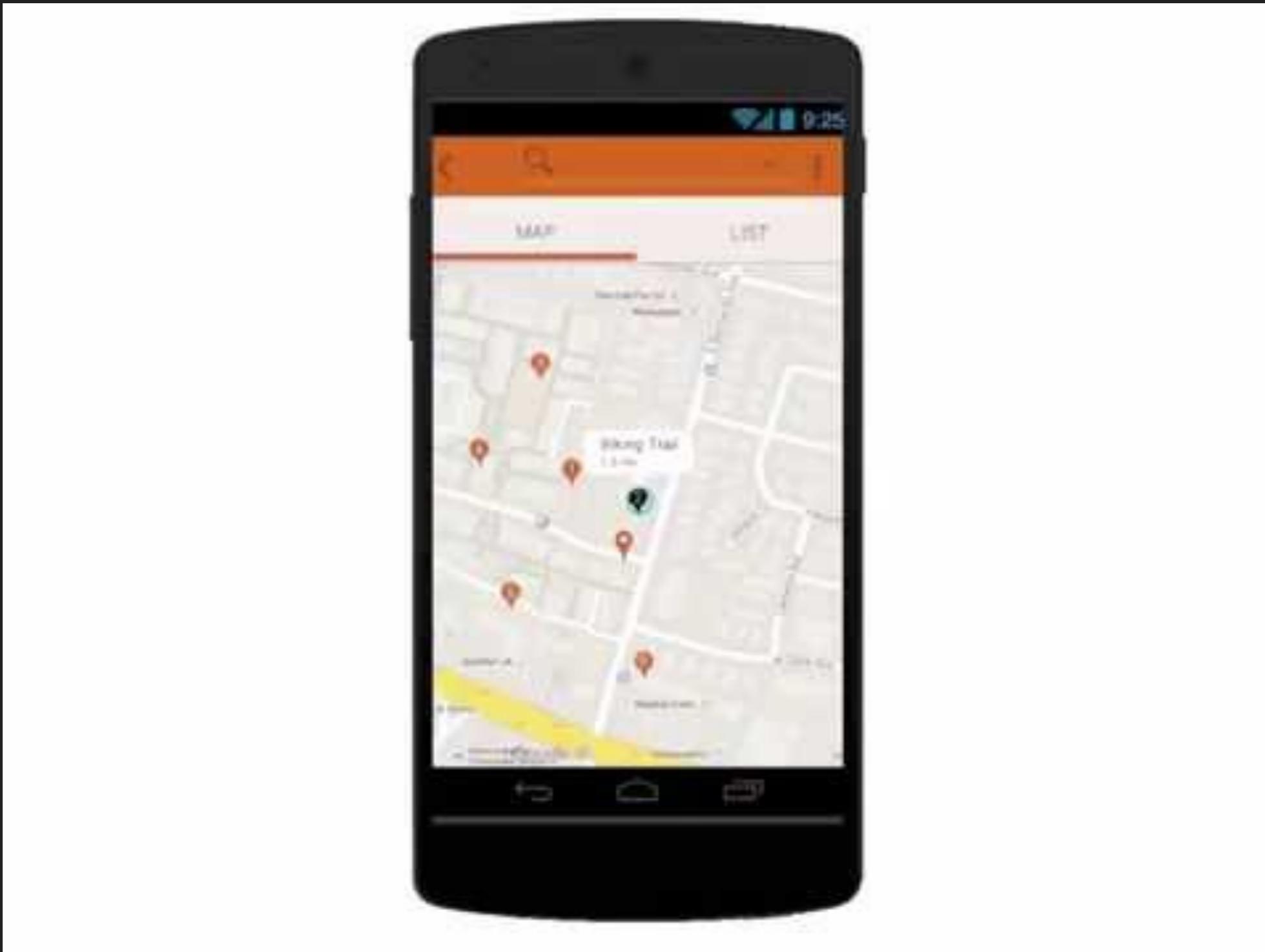
# Four Types of Prototypes

- Low-fidelity
- Mid-fidelity
- High-fidelity
- Super-fidelity









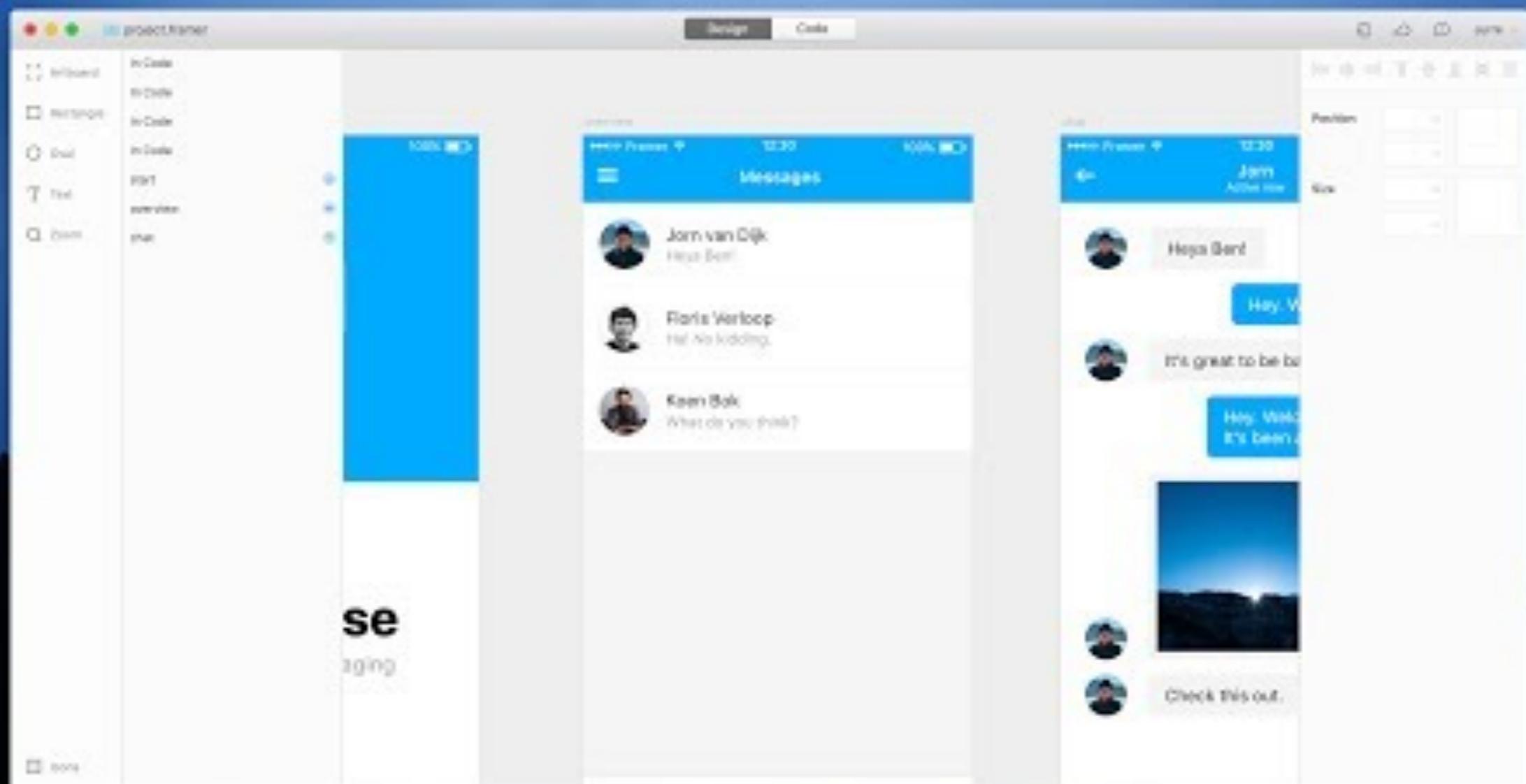
<https://www.youtube.com/watch?v=2b6PQpWH0lg>

# Example Interactive Prototyping Apps

- Justinmind
- Axure
- Eigma
- Framer
- Invision
- Marvel
- UXPin



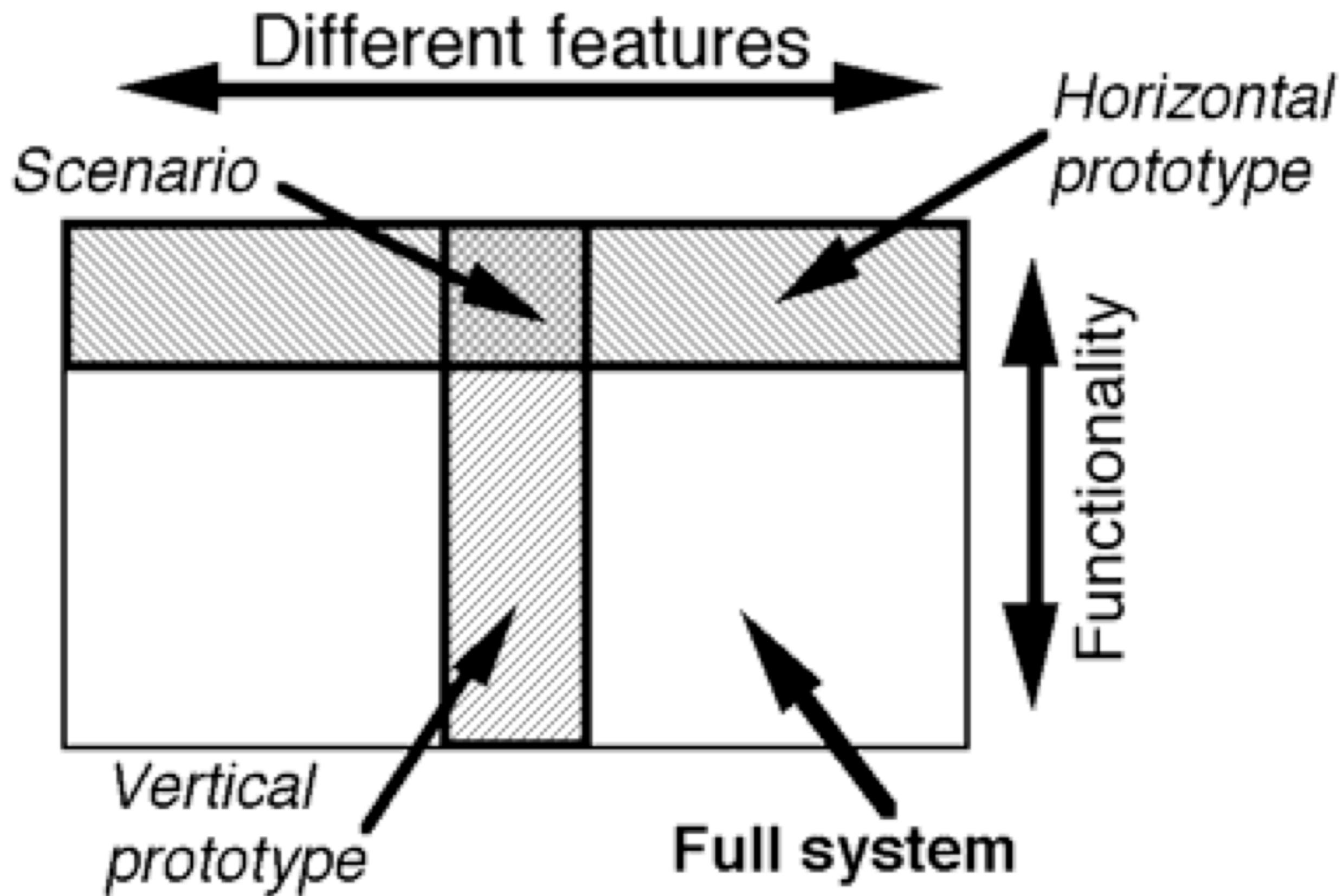
[https://www.youtube.com/watch?v=FaSKeCPC\\_Uo](https://www.youtube.com/watch?v=FaSKeCPC_Uo)



<https://www.youtube.com/watch?v=EIJOsCzm05U>

# Dimensions of Prototyping

- Vertical
- Horizontal



# Time for More Questions & Discussion

- What we've covered so far
  - What is a prototype?
  - Why prototype?
  - Types of prototypes
  - Dimensions of prototyping
- Coming up
  - Design Scenarios

# Prototyping

Design Scenarios

# What are Design Scenarios?

- Descriptions of people and their activities
- Series of events that results in reaching a goal
- Can be described textually or visually

# Example Design Scenario

“Emma, a sales manager, needs to arrange a meeting with her 5-member sales team to work out the details of an upcoming promotion. Using the meeting room booking system from her office computer she determines when they can all meet this week and reserves a room with a projector for the meeting.”

# Why Use Design Scenarios?

- Focus on (high-level) user goals
- Excellent way to share a vision (without requiring visuals)
- Highlights missing specifics early
- Provides a workflow-based viewpoint
- Establishes a shared understanding



## 4 Ways Personas & Scenarios Result In Great Design

<https://www.youtube.com/watch?v=EBI2qiADVJM>

# Choosing Design Scenarios to Create

1. Create an inventory of user tasks (moderate granularity) for the system/product you will be creating
2. Determine frequency and importance for all tasks to help with scenario creation, prioritization and UI structure decisions

# How to Create Good Design Scenarios

- Describe what, not how
- Be very specific
- Describe reaching a user goal (or solving a problem)
- Include underlying motivation
- Describe who the user(s) are
- Include the context of use

# Activity

How do Design Scenarios compare to User Stories?

# Describe What, Not How

“Emma, a sales manager, needs to arrange a meeting with her 5-member sales team to work out the details of an upcoming promotion. Using the meeting room booking system from her office computer she *determines when they can all meet this week* and reserves a room with a projector for the meeting.”

# Be Very Specific

“Emma, a sales manager, needs to arrange a meeting **with her 5-member sales team** to work out the details of an upcoming promotion. Using the meeting room booking system from her office computer she determines when they can all meet *this week* and *reserves a room with a projector* for the meeting.”

# Describes Reaching a Goal

*“Emma, a sales manager, needs to arrange a meeting with her 5-member sales team to work out the details of an upcoming promotion. Using the meeting room booking system from her office computer she determines when they can all meet this week and reserves a room with a projector for the meeting.”*

# Include Underlying Motivation

“Emma, a sales manager, needs to arrange a meeting with her 5-member sales team to *work out the details of an upcoming promotion*. Using the meeting room booking system from her office computer she determines when they can all meet this week and reserves a room with a projector for the meeting.”

# Describe Who the User(s) Are

*“Emma, a sales manager, needs to arrange a meeting with her 5-member sales team to work out the details of an upcoming promotion. Using the meeting room booking system from her office computer she determines when they can all meet this week and reserves a room with a projector for the meeting.”*

# Include the Context of Use

“Emma, a sales manager, needs to arrange a meeting with her 5-member sales team to work out the details of an upcoming promotion. *Using the meeting room booking system from her smartphone she determines when they can all meet this week and reserves a room with a projector for the meeting.*”

# Tips About Creating Design Scenarios

Start with a brief goal-oriented scenario including trigger (motivation) or alternatively create a process flow diagram

# Tips About Creating Design Scenarios

Evaluate with real users whenever possible, to check for omissions, corrections, etc.

# Identify Potential Features

Once design scenarios have been created, review them to start identifying potential features of the system

# Good Design Scenarios

- ✓ Describe what, not how
- ✓ Be very specific
- ✓ Describe reaching a user goal (or solving a problem)
- ✓ Include underlying motivation
- ✓ Describe who the user(s) are
- ✓ Include the context of use

# Activity: Write a Design Scenario

INDIVIDUAL OR TEAM

Write a scenario for a student using SFU's myExperience Web app

- Describe what, not how
- Be very specific
- Describe reaching a user goal (or solving a problem)
- Include underlying motivation
- Describe who the user(s) are
- Include the context of use

“Emma, a sales manager, needs to arrange a meeting with her 5-member sales team to work out the details of an upcoming promotion. Using the meeting room booking system from her office computer she determines when they can all meet this week and reserves a room with a projector for the meeting.”

# Time for More Questions & Discussion

- What we've covered so far
  - Design Scenarios
- Coming up
  - Sketching

# Prototyping

Sketching and Storyboarding



for Entrepreneurs

# Rapid Prototyping

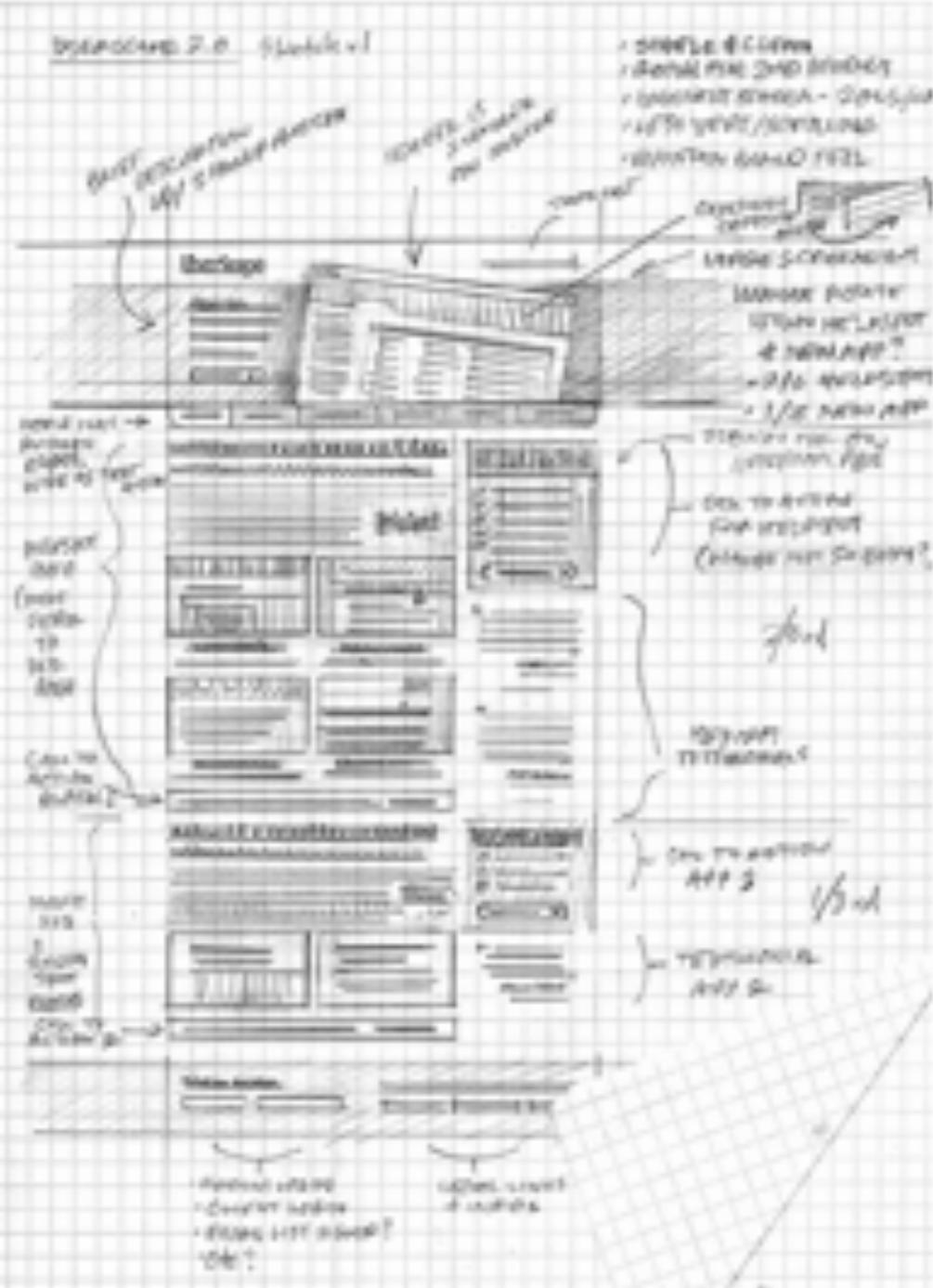
## Part 1: Paper Prototyping

<https://www.youtube.com/watch?v=JMj0zqJS44M>

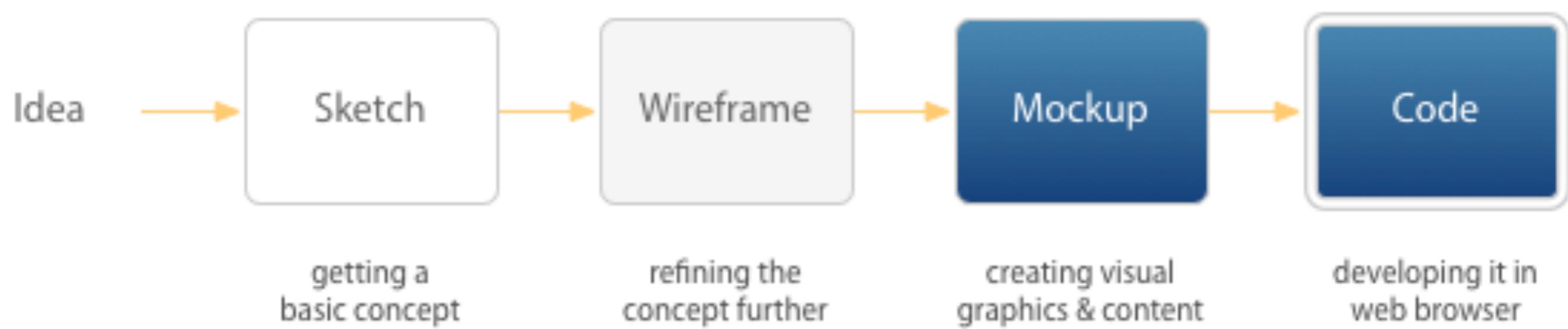
# Sketching

- Critical during the early phase of design
- Must be quick, cheap, and disposable
- Focus on design concepts rather than details (intended roughness)
- Cross-team contribution possible and valuable

# Sketching vs. Wireframes



A sketch does **not equal** a wireframe.



# Sketching with Paper

- Fine black Sharpie (start with this)
- Medium black Sharpie (to add emphasis)
- Thick grey marker (to add depth)
- Yellow highlighter (to bring attention)

# PERSON PAGE: FINAL NOTES

1 STUDENT  
#1  
#2  
ADD STUDENT

COST ESTIMATE  
WIS  
EC

CONDITIONS  
Student from overseas  
Location  
Date  
Time

SEARCH

ADD STUDENT

SEARCH

PRINT

2 STUDENT  
COST ESTIMATE  
WIS  
EC

SEARCH

ADD STUDENT

SEARCH

PRINT

3 STUDENT  
COST ESTIMATE  
WIS  
EC

SEARCH

PRINT

ADD STUDENT

COST ESTIMATE

## Reconcile "Add Student"

- \* Keep the Cost Estimate section, generally, the same.
- \* INCORPORATE WISER NAMES...
- \* Can they/do they want to add multiple actions to the same course/subject?

cost estimate (banana)  
printable concept  
Is this make sense?  
How often do Ss make multiple actions?  
Am I over-complicating?

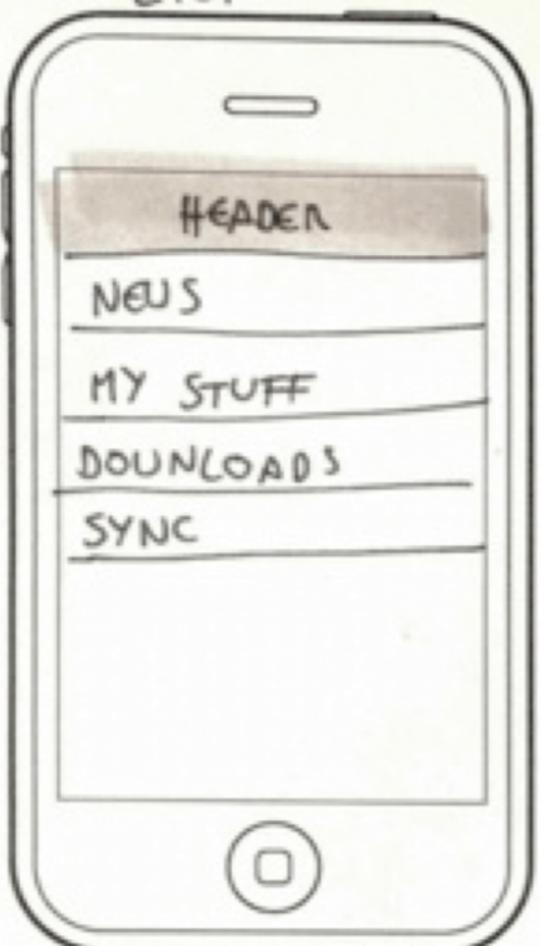
# Sketching Tips

- We can all draw adequately to sketch!
- Think of sketching simply as a means to communicate ideas
- Strive to explore an idea from multiple perspectives, not just one sketch per idea
- Consider the element of task-flow (narrative)
- Freely combine words and drawings

# Divergent Sketching

Use sketches to quickly explore a range of divergent designs for key screens or concepts

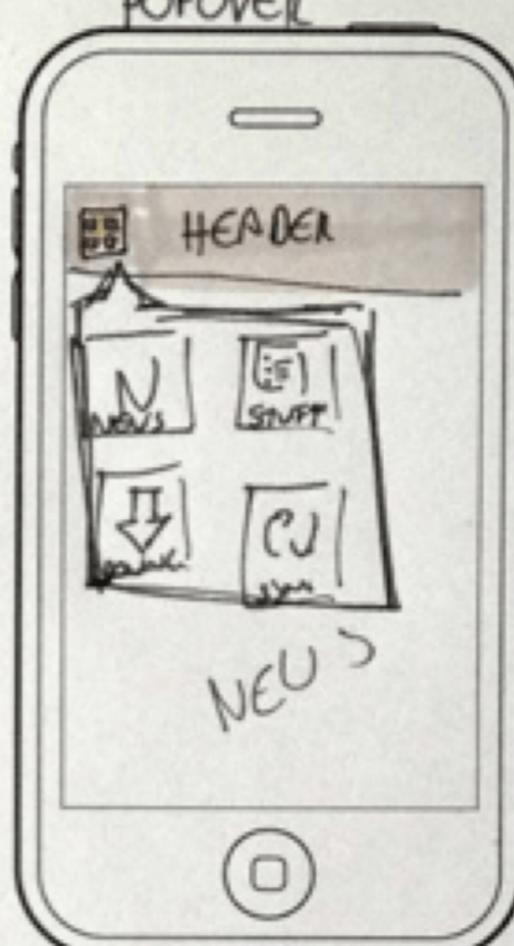
LIST



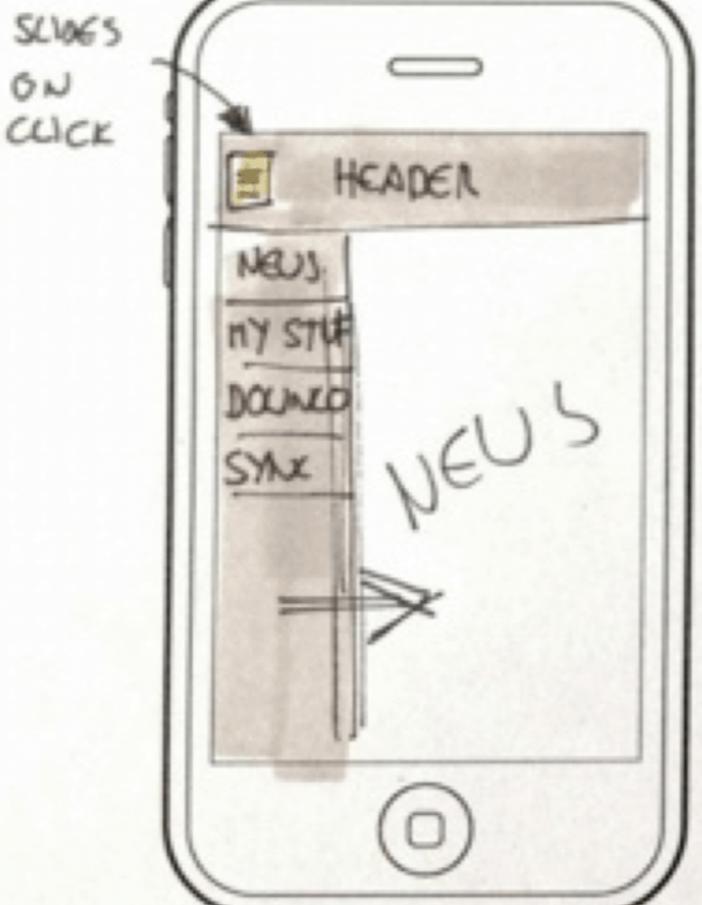
TABS



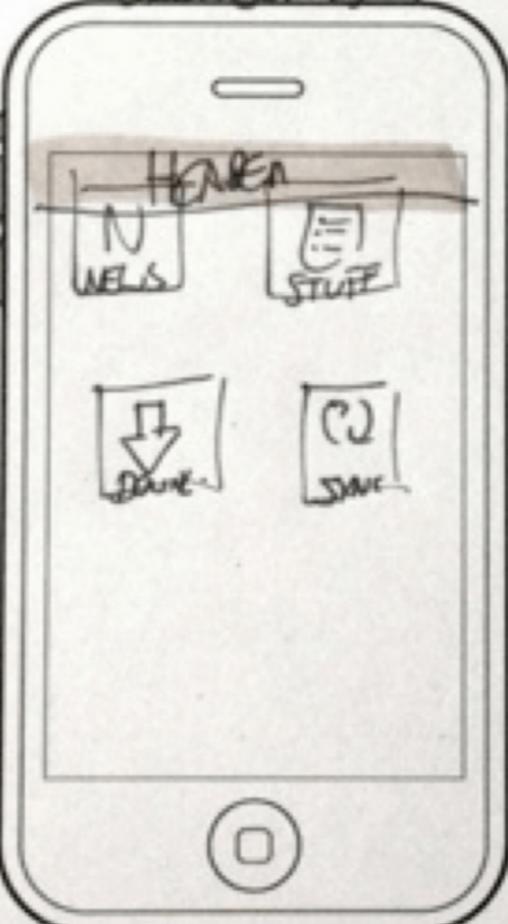
POPOVER



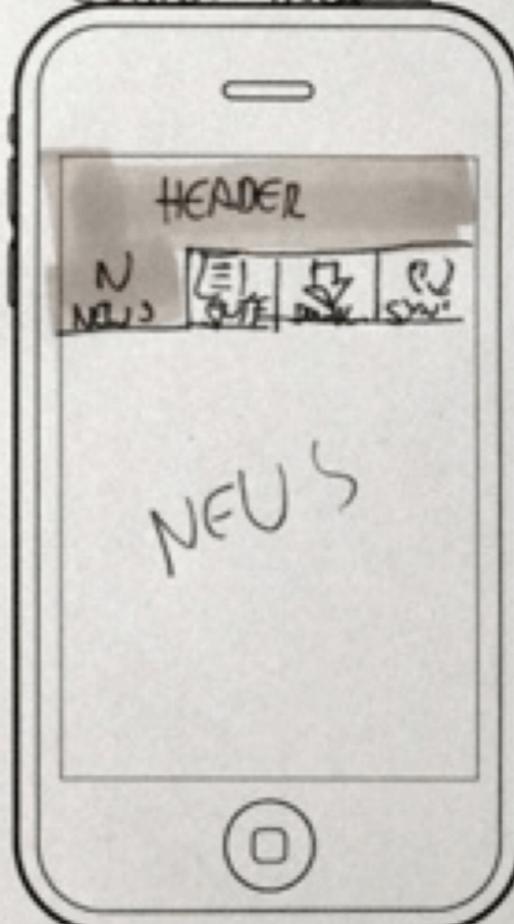
SLIDING MENU



DASHBOARD



CUSTOM TABS

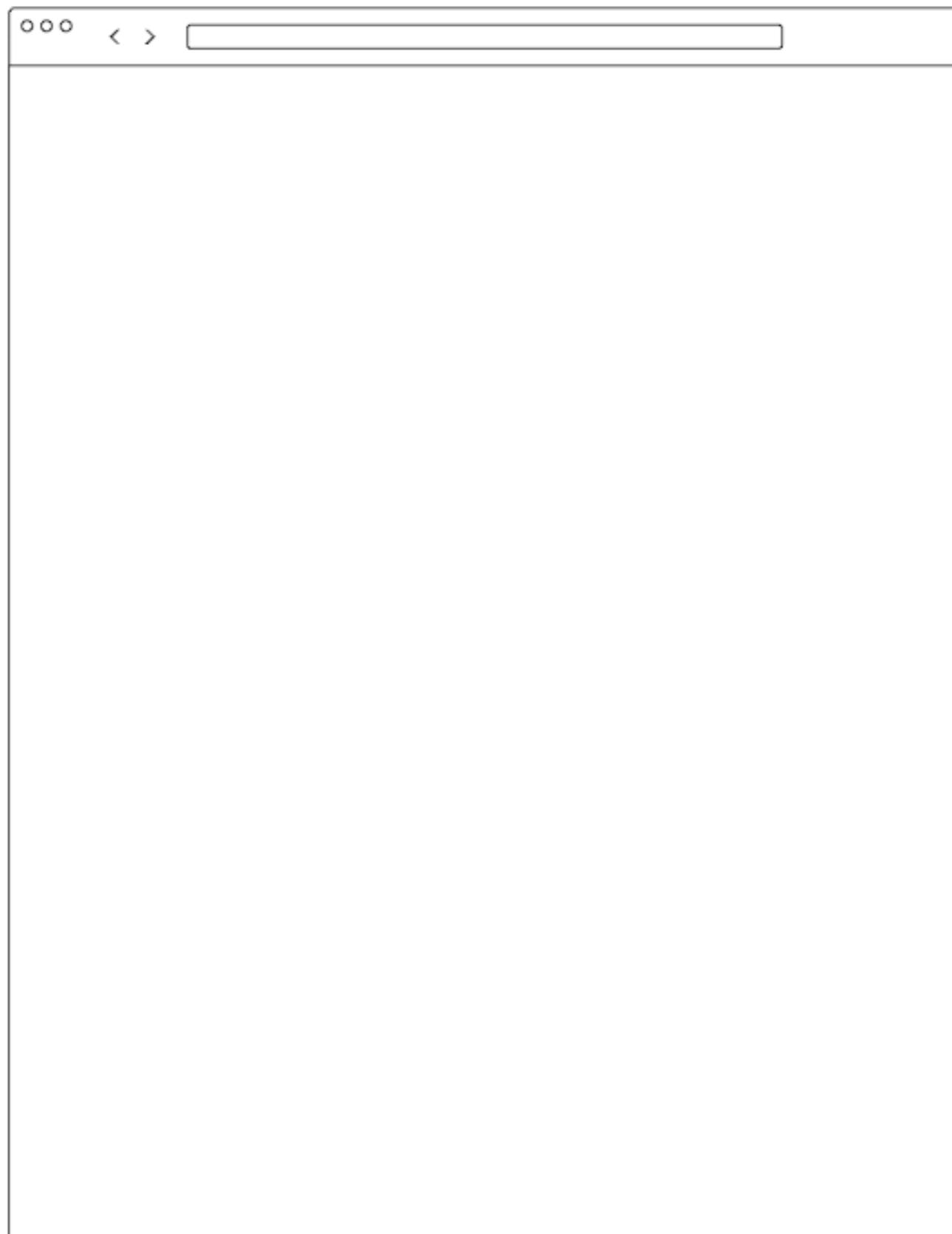


# Sketching for Requirements

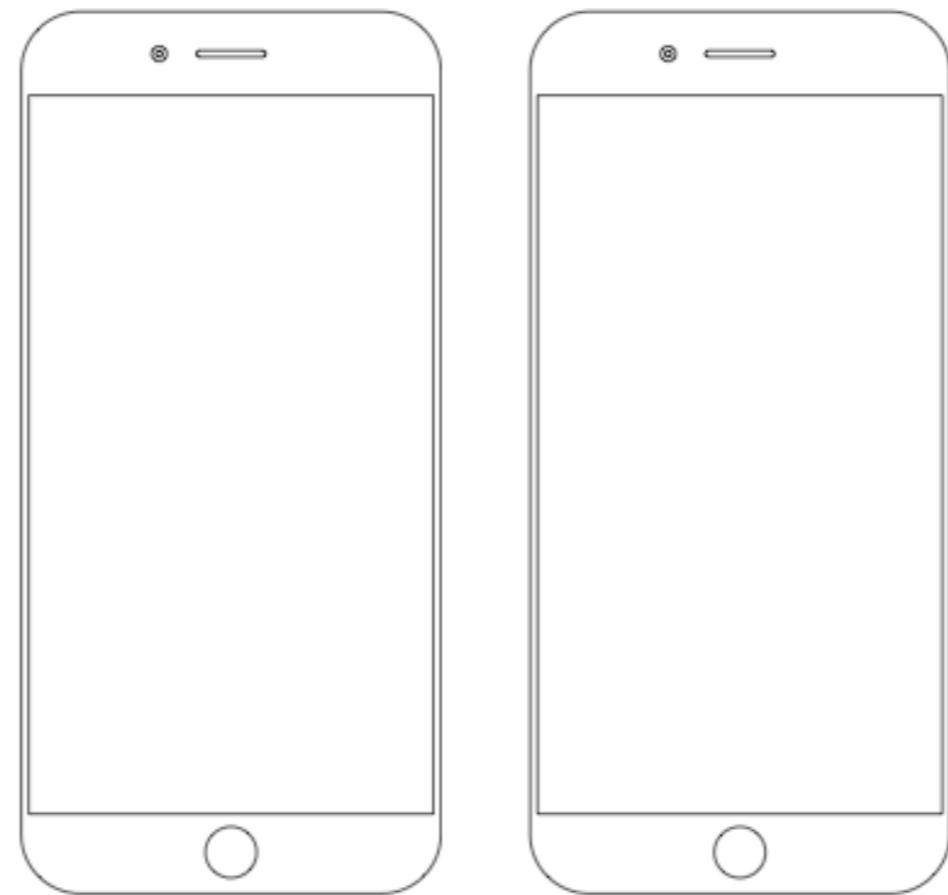
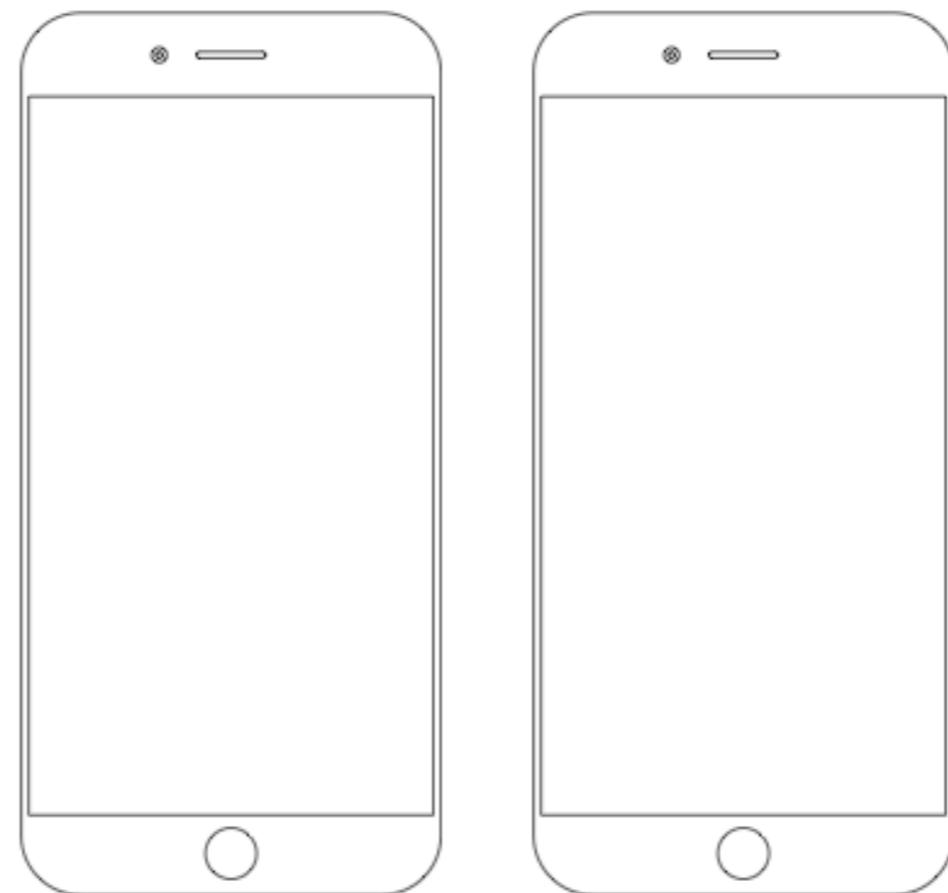
With the quick and disposable nature of sketches, they are also an effective tool to help identify requirements with users (and existing assumptions)



BROWSER



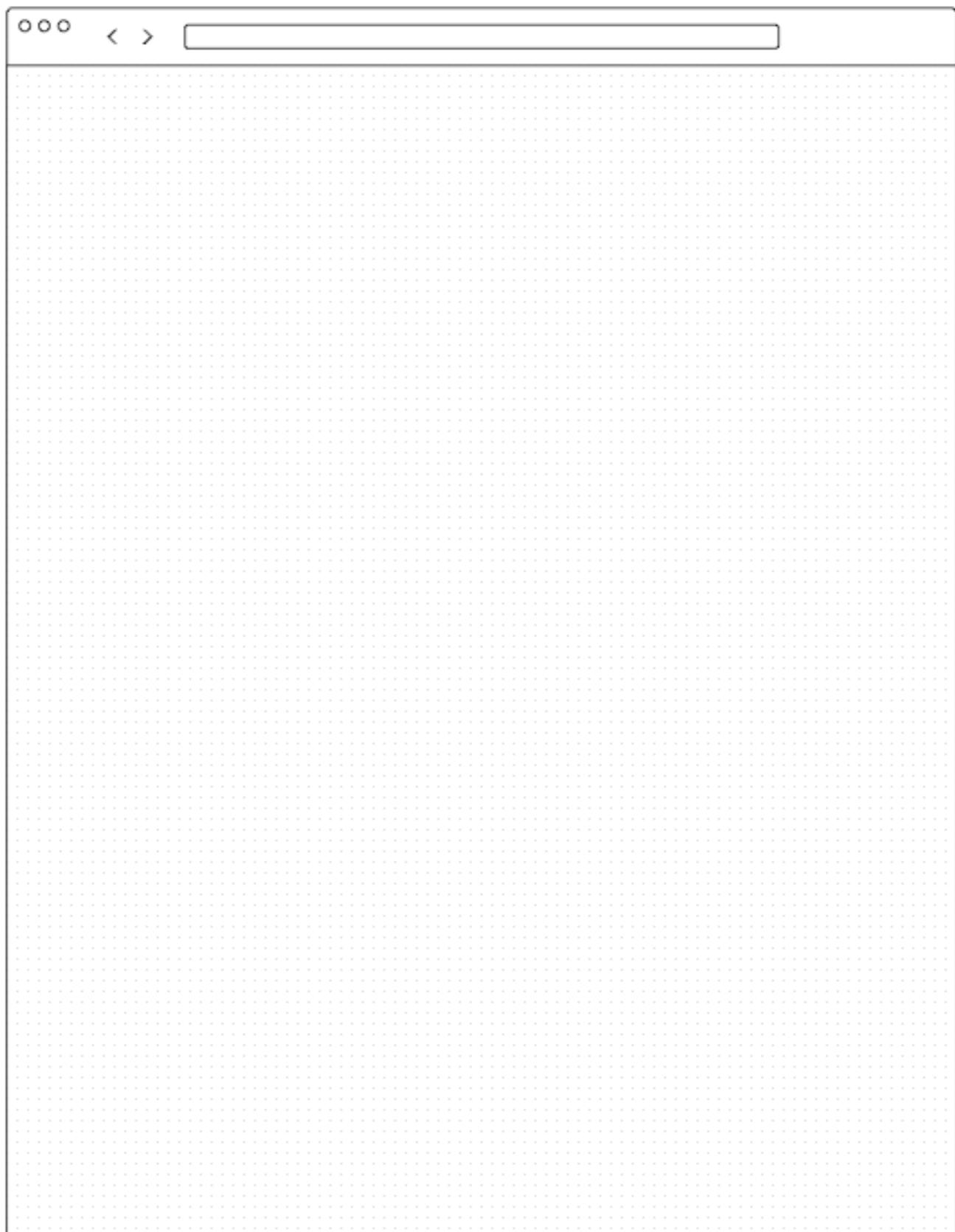
MOBILE



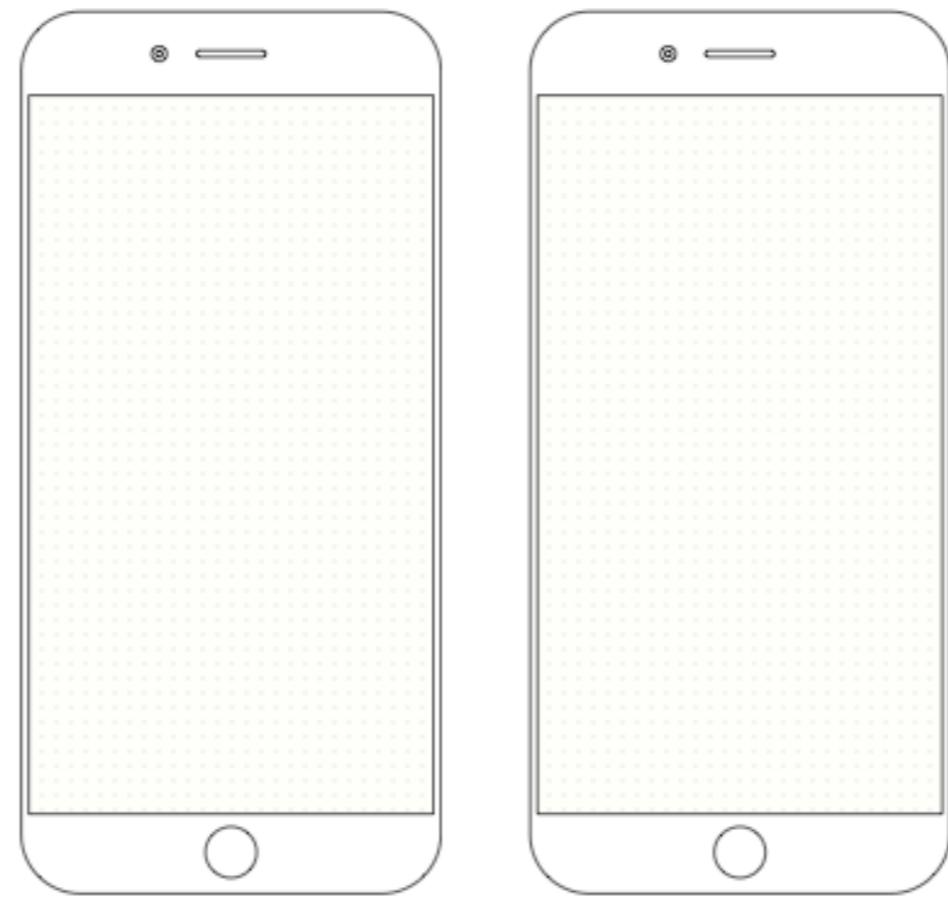
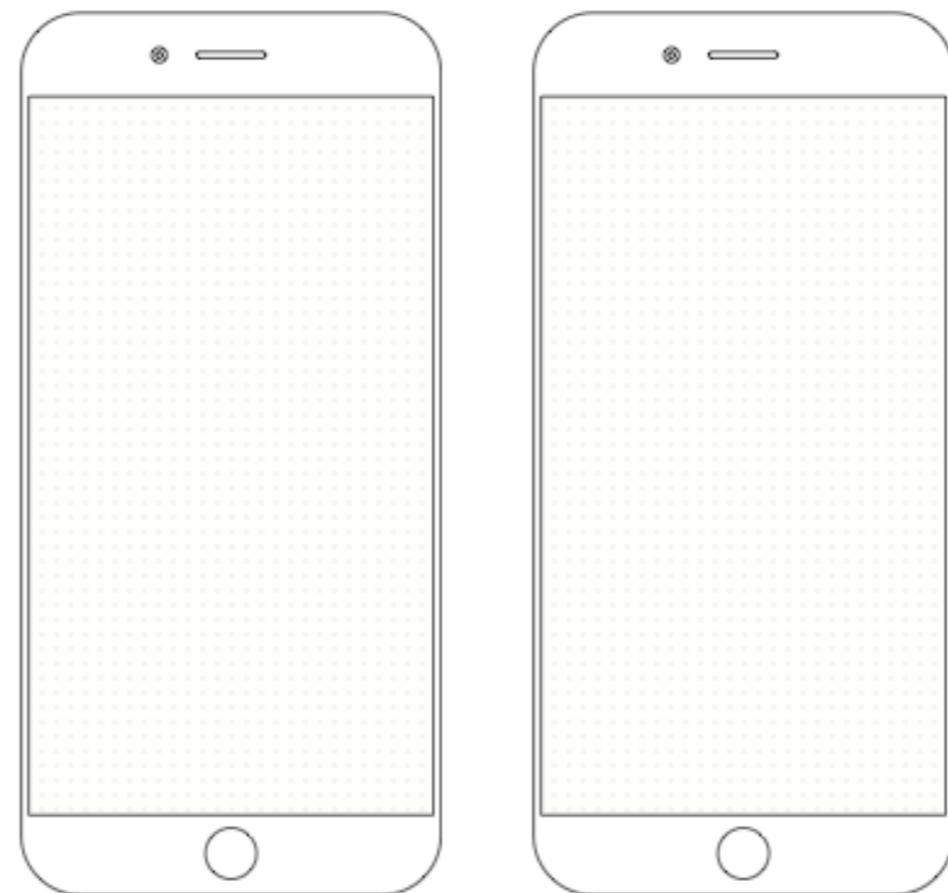
SNEAKPEEKIT

PROJECT

BROWSER GRID



MOBILE



SNEAKPEEKIT

PROJECT

# A Few Drawing Tips

- Choose a thicker marker to sketch with
- Start with a base using a light grey marker
- Draw corners with two intersecting lines
- Use shadows to add depth or highlight items
- Practice, practice, practice!

Sketching UI Cheatsheet △ □ ○

Sentence



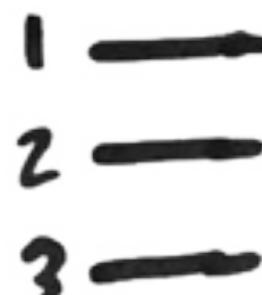
Paragraph



Bullet List



Numbered List



Content Block



Image Block



Video Block



Tabbed Block



Input Field



Date Picker



Button



Profile Image



Checkbox



Radio Button



# Activity: Sketching

INDIVIDUAL OR TEAM

1. Individually, create a quick sketch of a possible future design that represents the starting point (screen) of your previously written scenario
2. Share your sketch and discuss the similar and/or different design ideas that are represented

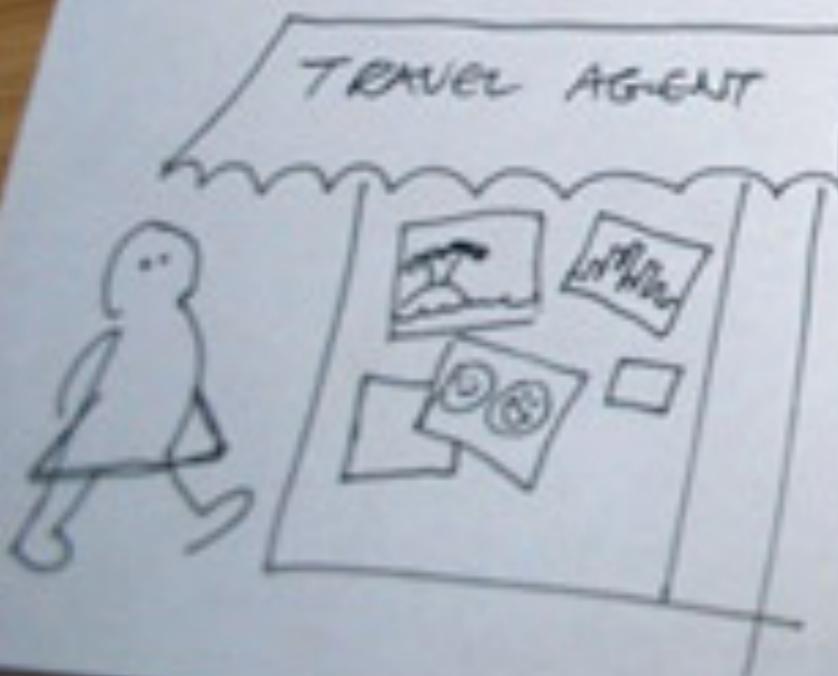
# Sketching Storyboards

- A sequence of drawings representing a specific period of time
- Can illustrate various levels of detail (fidelity)

PENNY IS LOOKING FORWARD TO HER HOLIDAY SOMEWHERE IN THE SOUTH PACIFIC.



SO PENNY TRIES THE LOCAL TRAVEL AGENT NEAR WORK AT LUNCH-TIME...



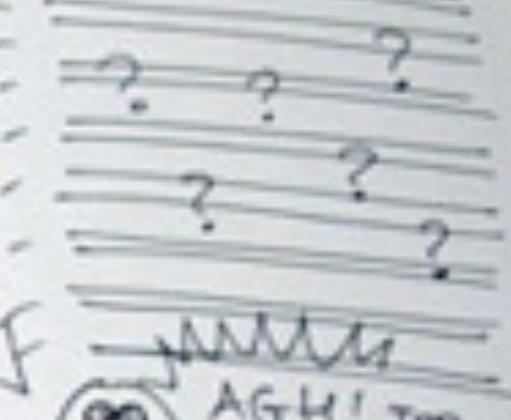
SHE ASKS HER FRIENDS ABOUT WHERE'S GOOD... ON FACEBOOK

- Penny What's been to places in South Pacific? Recommend?
  - Roland Go Fiji! Really cheap!
  - Damon Vanuatu! Great diving!
  - Ken Where's that ???



Hmm... They all cost about the same... I'll try Google...

Flight to Fiji



AGH! TOO MUCH! DON'T KNOW WHERE TO START!

Google didn't help... travel agent didn't help... I'm not getting anywhere!



SHRUG "SHRUG"

# Effective Storyboards

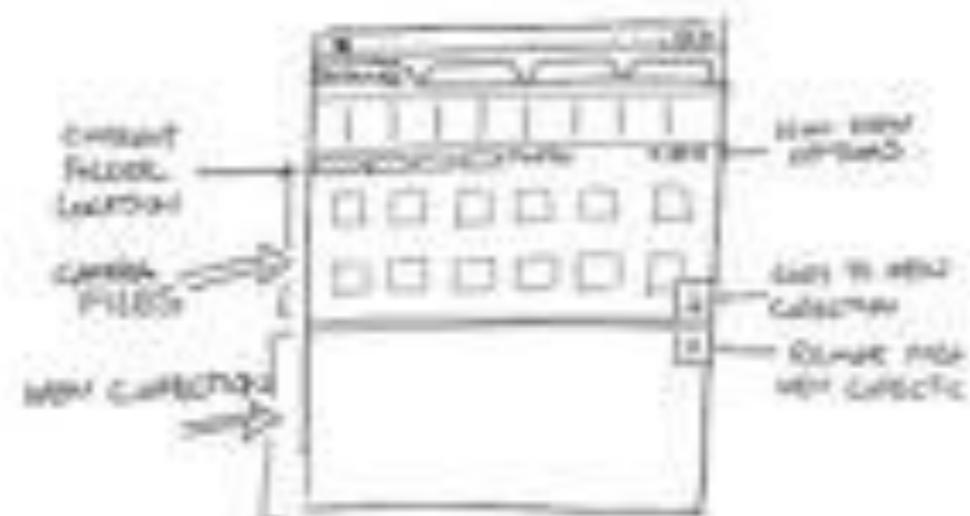
- Initially black and white
- Simple shapes and text blocks
- Unique name/number for each page
- Segment storyboards by user tasks
- Must be able to speak for themselves

# Design Scenario Storyboards

- Visually represents a user's main success path within a design scenario
- Each step has a one sentence description of the required user action



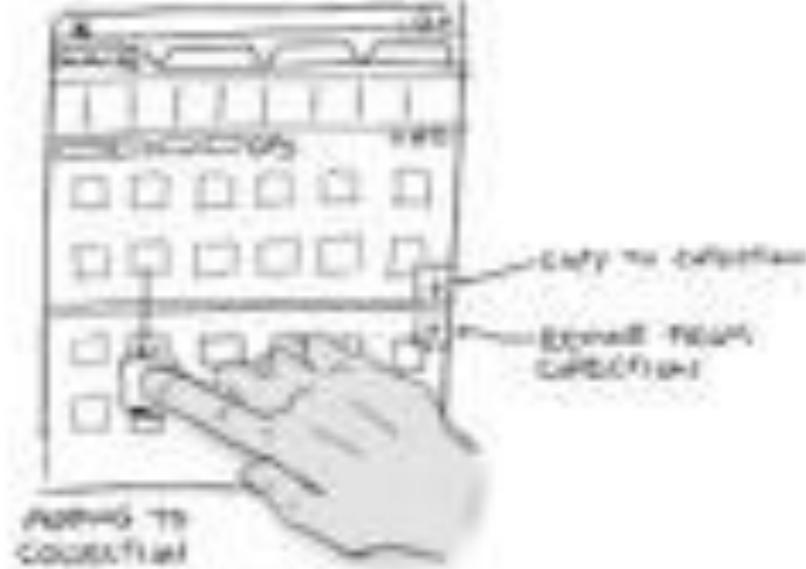
## CREATE NEW COLLECTION



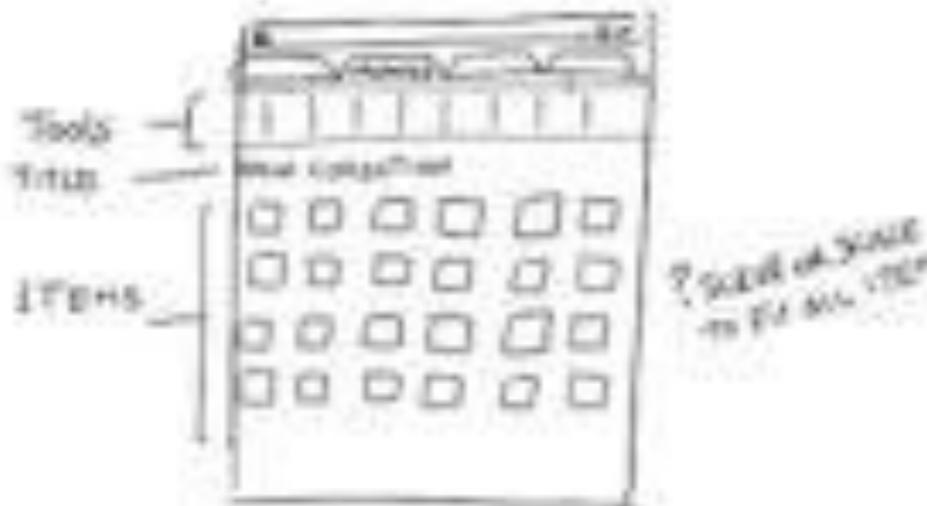
- Download Filter Camera

• Delete Product Files

Default camera location



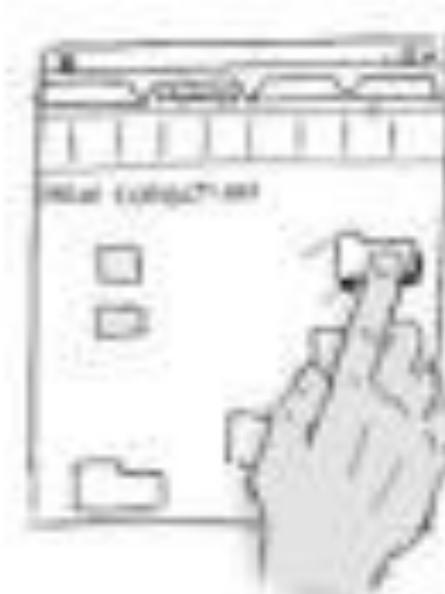
## SELECT DATA FILES



## ORGANIZE HOME SCREEN



## SELECT FACE TO SORT BY



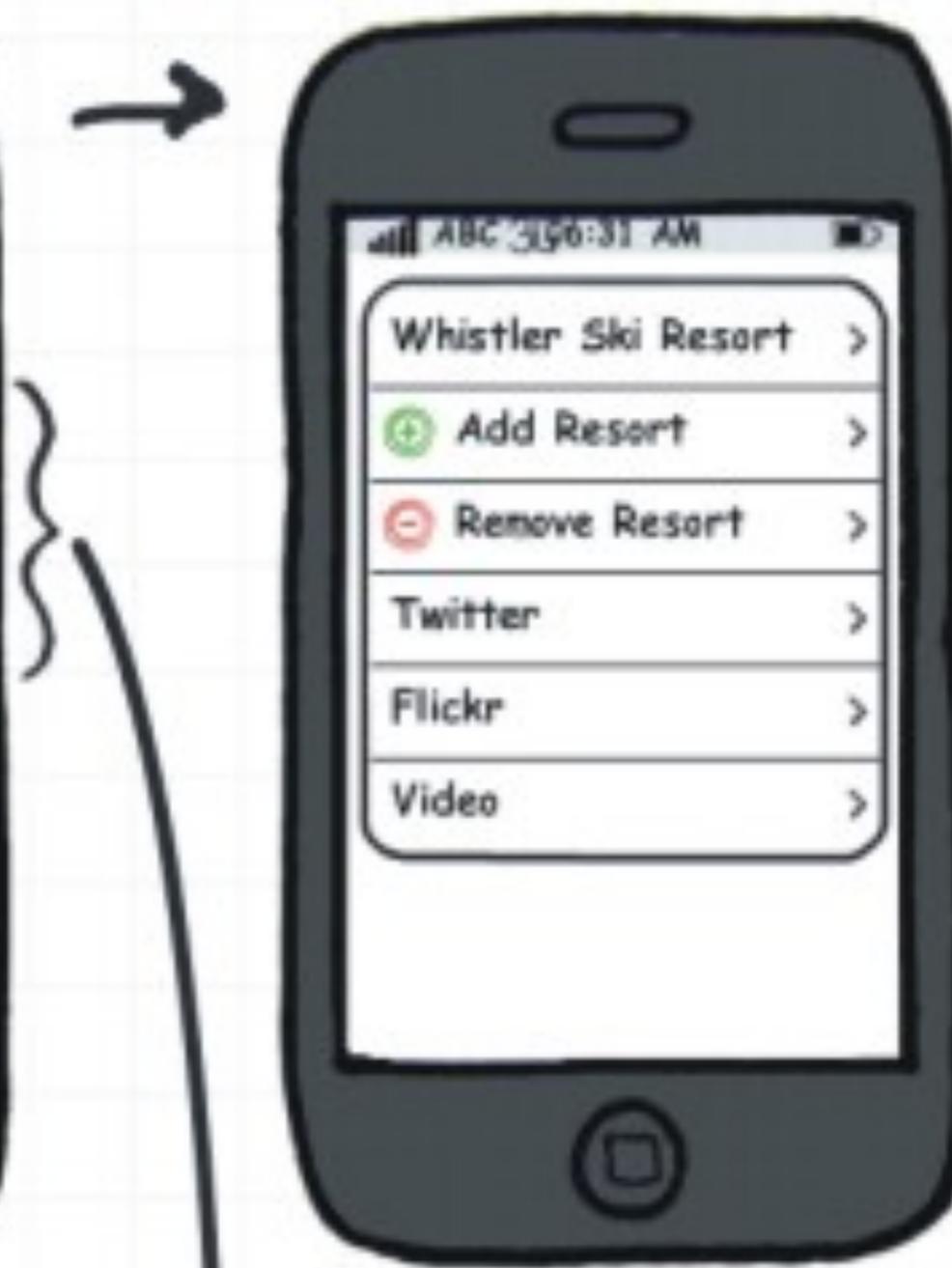
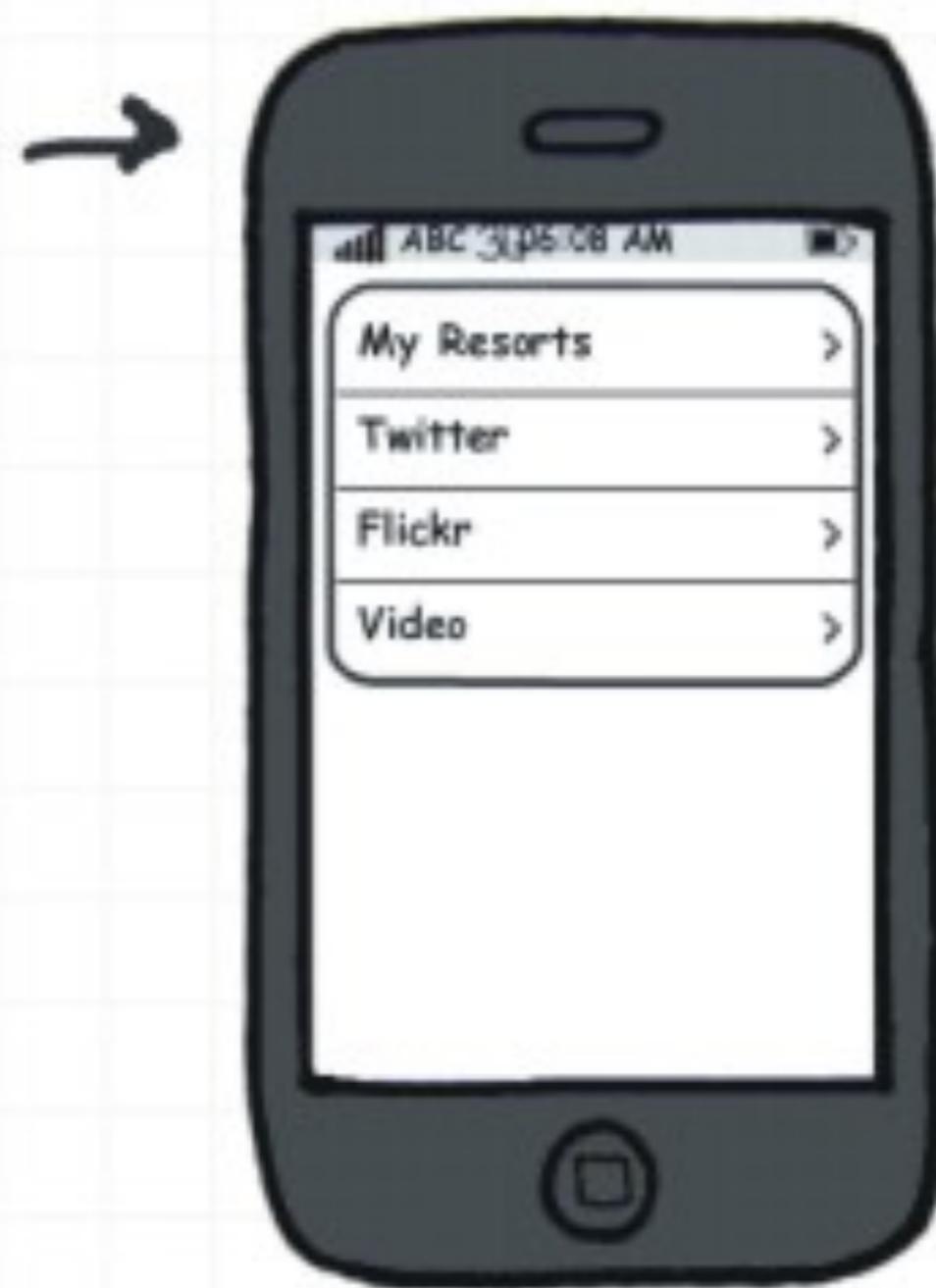
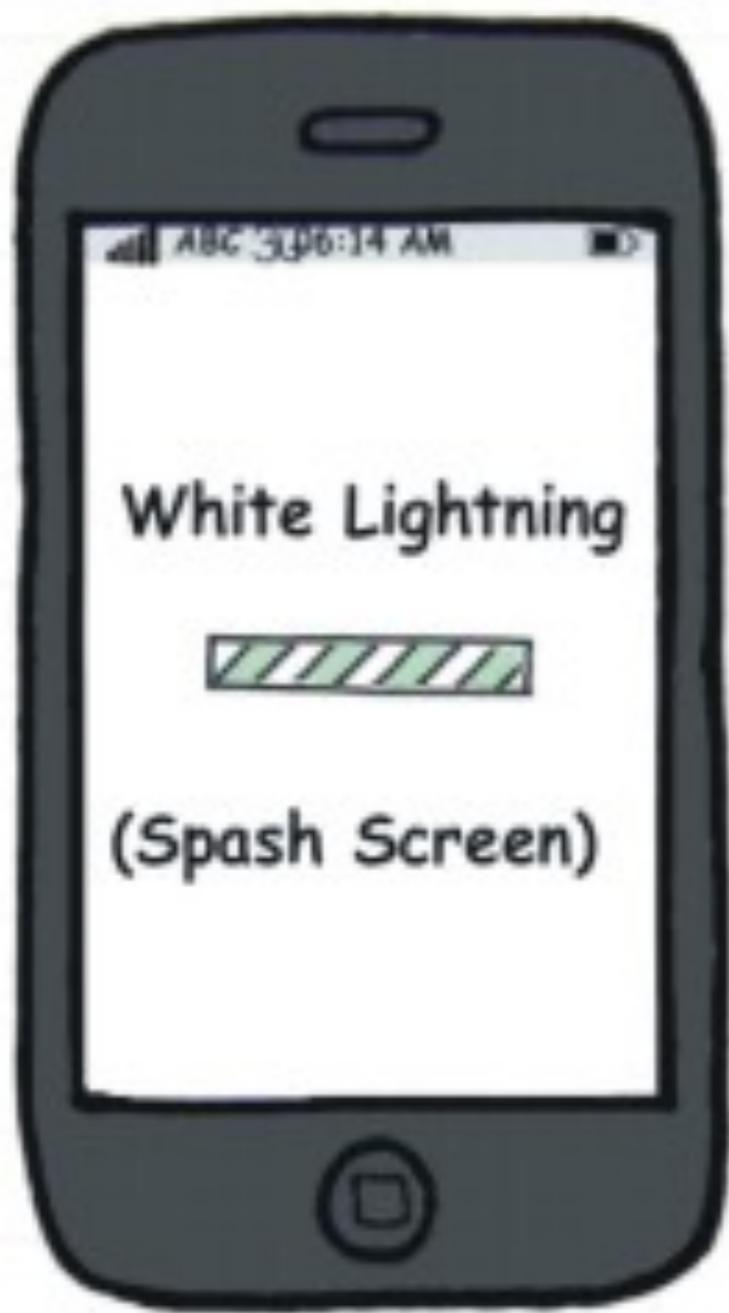
## EDIT LAYOUT OF COLLECTION

# Pre-test User Feedback

You can share the storyboards with potential users before conducting usability tests and ask questions such as what they like/dislike (with follow-up questions), is anything missing, and could you see yourself in the story shown?

# Example Sketching Apps

- Balsamiq
- and ???



Persistent

Opening twitter or flickr  
from this screen should open  
with search results for the  
resort i.e. "Whistler"



<https://www.youtube.com/watch?v=MxWTGBQE7zE>

# Summary

- Forms and Methods
- Design Scenarios
- Sketching and Storyboarding

# Image Credits

<https://revisionlab.wordpress.com/that-squiggle-of-the-design-process/>  
<https://medium.com/fold-line-gold/four-common-types-of-software-prototypes-8fa275c0602f>  
<https://www.umsl.edu/~sauterv/analysis/Fall2013Papers/Boutaugh/elementspage.html>  
<https://www.leemunroe.com/designing-with-pen-paper/>  
<https://www.smashingmagazine.com/2013/06/sketching-for-better-mobile-experiences/>  
<http://ferhatsen.com/design-fest.html>  
<https://msdn.microsoft.com/en-us/library/windows/desktop/ff800706.aspx>  
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<https://noelbyrne.wordpress.com/2010/01/16/balsamiq-mockups/>