

# MOBA1

## DESIGN AND DEVELOPMENT OF MOBILE APPS (2)

# OVERVIEW

- First Steps (recap)
- Wireframe, prototype, mockup
- Wireframe – a blueprint of the app
- Visual Concept and Mockup
- Prototype and Test

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# Human Centered Design

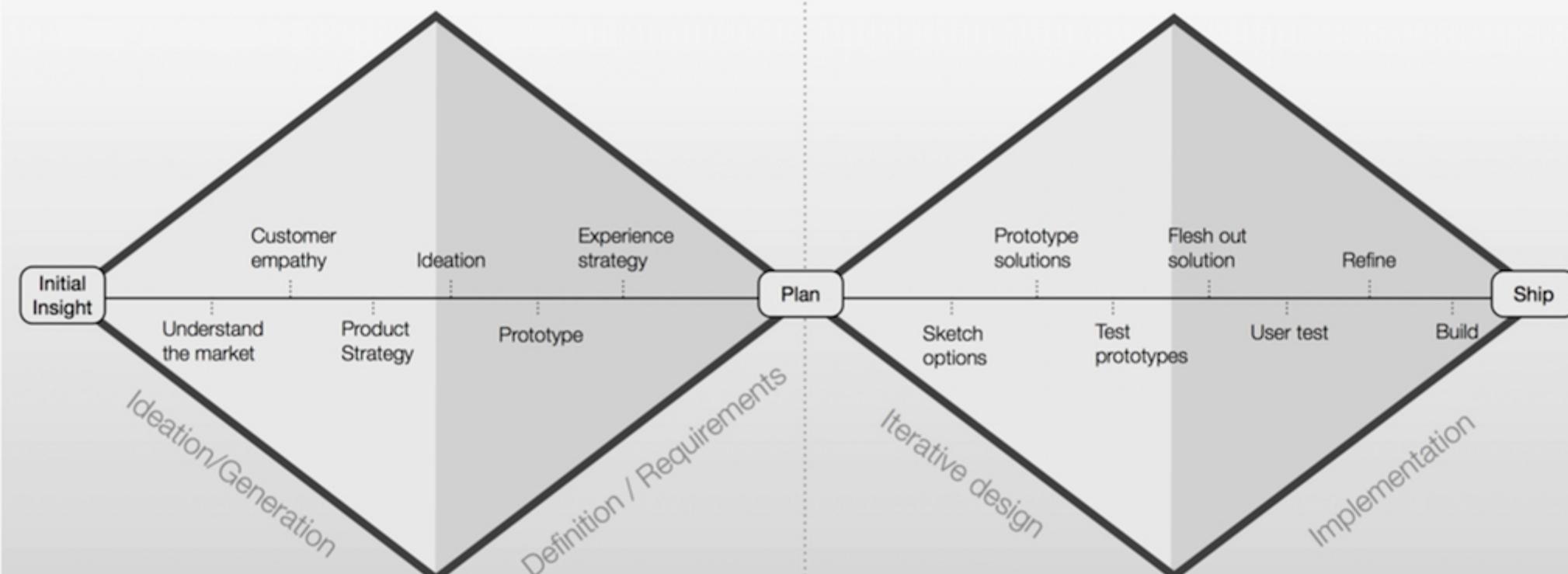
- UX is human first
- UX uses observations as starting place
- UX tracks experiences through qualitative and quantitative methods
- UX relies on the feed back for real users through conversations and interviews
- Users communicate through their actions. Verbal and non verbal.

Packt

# Human Centered Design Starts with Find the Right Problem

## Definition

Strategy and plan, aka "Why?" and "How?"



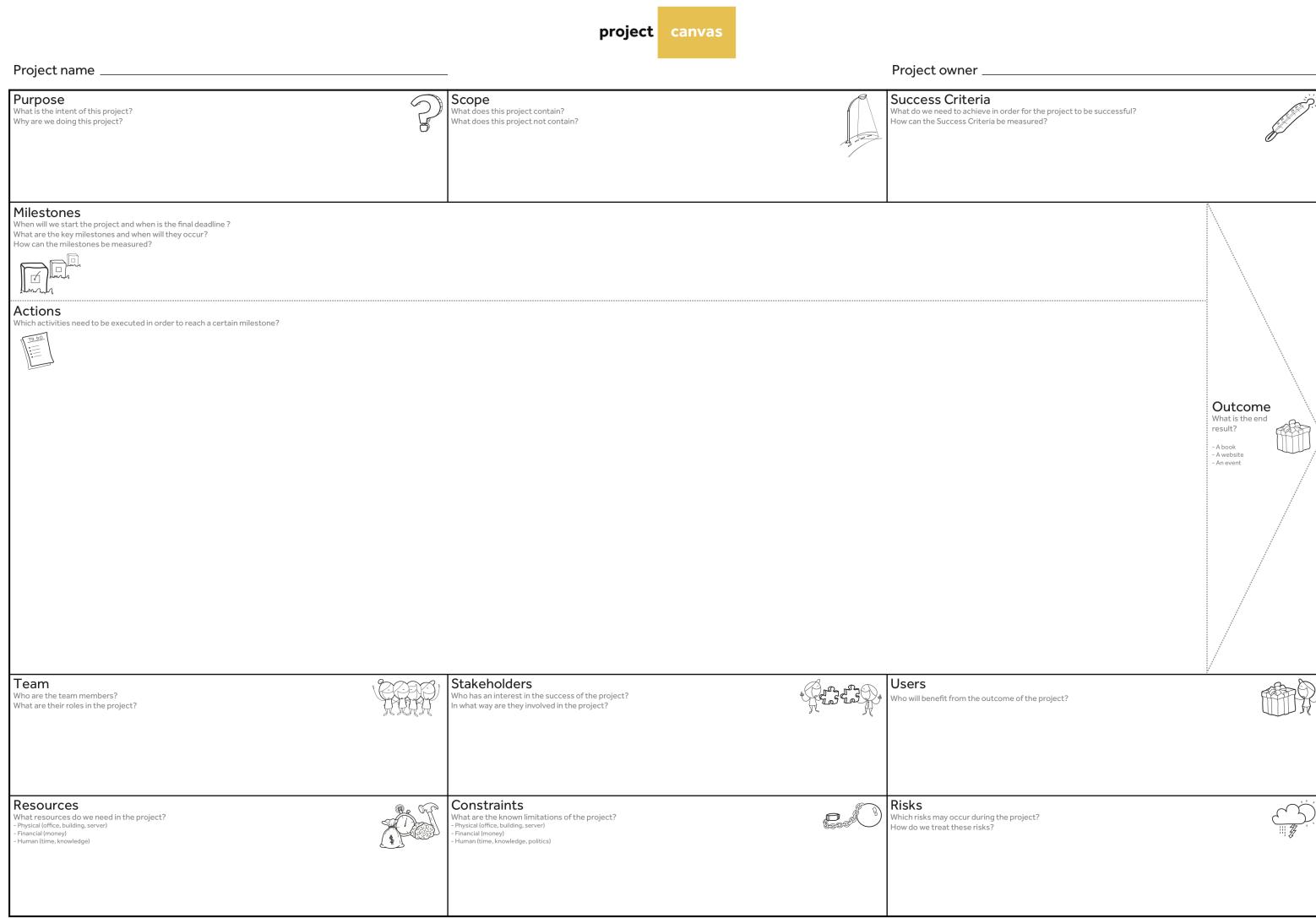
Packt

By Peter Merholz, <http://peterme.com>. If you use it, please attribute it. Thanks.

# FIRST STEPS (RECAP)

- Describe the problem you're going to solve
- First, we need to make sure who the users are
- Concretize them by creating personas
- Focus on users' problems, not features
- Again: describe the problem you're going to solve
- Find possible solutions, focus on quantity
- Prioritize your ideas
- Write user narratives (storytelling design)

# TOOLS: PROJECT CANVAS



<http://www.projectcanvas.dk>

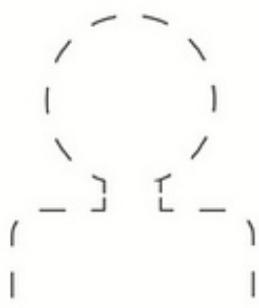
# TOOLS: HYPOTHESIS CHART

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## 1. Set Hypothesis

Problem hypothesis	Sharing pictures taken with your phone on social networks is complicated
Customer hypothesis	College students

# TOOLS: PERSONA CANVAS

<b>Facts</b> <i>Factual information about your target customer.</i> 	<b>Pain</b> <i>State the problem you believe your target customers have, that your solution solves for.</i>
<b>Behavior</b> <i>Existing behavior they exhibit now, because they don't have your solution.</i>	<b>Goals</b> <i>What goals are they trying to accomplish through the behavior, that your solution will do better?</i>

# TOOLS: GOAL STORY TEMPLATE

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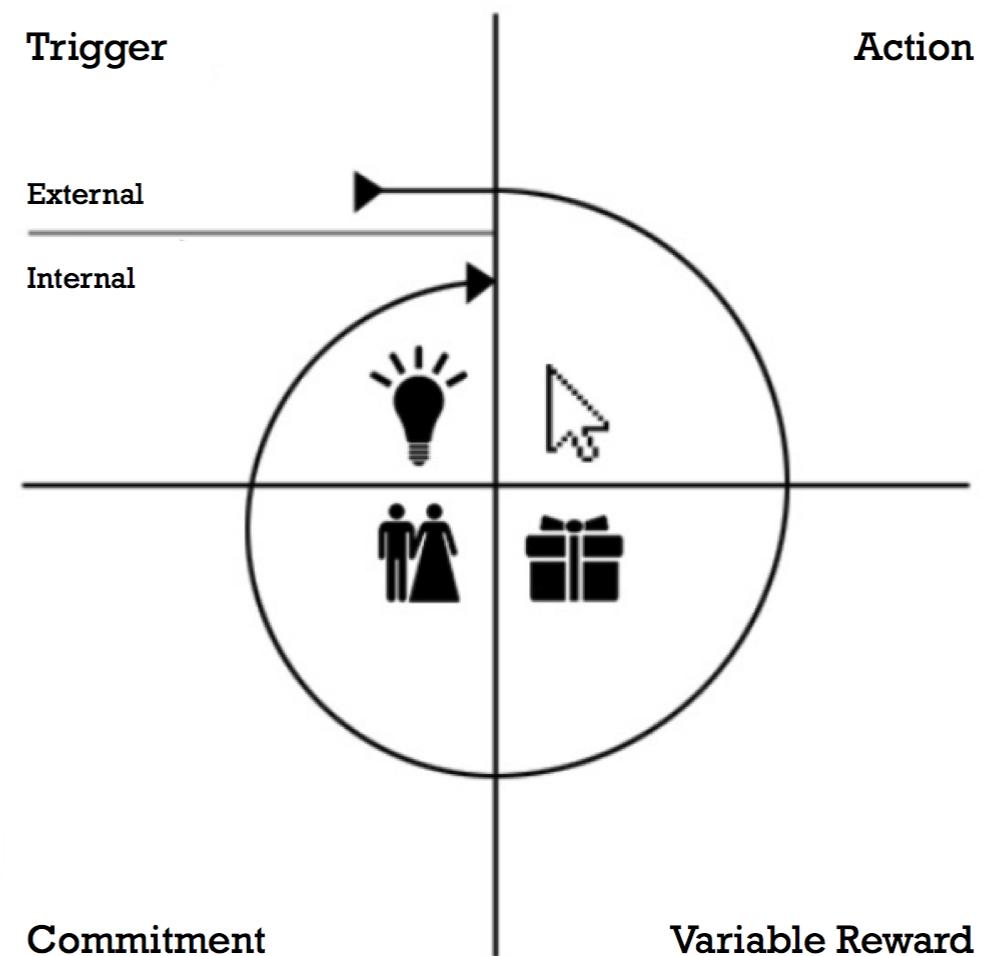
## Goal story template

As [user persona]

I want to [accomplish something]

So that [some benefit happens]

# TOOLS: DESIRE ENGINE



# USER NARRATIVES

Key feature	User feed	Explore section	Notifications	<b>Profile</b>
As Kevin I want to take a nice picture of what I'm doing so that people can see that I'm doing something cool.	As Kevin I want to see my friends' pictures and give them feedback so they know I'm giving them validation.	As Kevin I want to be able to see other people's pictures and give them feedback.	As Kevin I want to know when people interact with my pictures.	<b>As Kevin I want to access my infos and my pictures</b>
<ul style="list-style-type: none"> <li>• I open the app</li> <li>• I take a picture</li> <li>• I apply a filter to make it look good</li> <li>• I can add a description</li> <li>• I can select on what networks I want to share my picture on</li> <li>• My picture is shared on my followers' feed</li> <li>• It is published to the explore section if I get enough likes</li> </ul>	<ul style="list-style-type: none"> <li>• I open the app and access a feed of my friends' pictures</li> <li>• I can like my friends' pictures</li> <li>• I can comment on them</li> <li>• As I scrolled down my feed I'm invited to follow more people or to invite friends</li> </ul>	<ul style="list-style-type: none"> <li>• I can access interesting pictures from people who are not my friends</li> <li>• I can like pictures</li> <li>• I can comment on them</li> </ul>	<ul style="list-style-type: none"> <li>• I open the app</li> <li>• I go to the notifications section</li> <li>• I'm able to see who has interacted with my pictures</li> </ul>	<ul style="list-style-type: none"> <li><b>• I open the app</b></li> <li><b>• I can go to my profile</b></li> <li><b>• I can see how many people I follow and how many people follow me</b></li> <li><b>• I can see my pictures</b></li> <li><b>• I can find more people to follow</b></li> <li><b>• I can invite friends</b></li> <li><b>• I can change my profile picture</b></li> </ul>

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# WIREFRAMES, PROTOTYPES AND MOCKUPS

- All are forms of representation of the final product
- But what is the difference?

The following slides are based on the article *Wireframing, Prototyping, Mockuping – What's the Difference?*

<http://designmodo.com/wireframing-prototyping-mockuping/>

# WHAT IS A WIREFRAME?

- A low fidelity representation of a design
- It should show
  - the main groups of content (*what?*)
  - the structure of information (*where?*)
  - a description and basic visualisation of the UI interaction (*how?*)
- The backbone of your design

# WHEN TO USE WIREFRAMES

- Typically used as the documentation of the project
- Should be accompanied by the written word
- Serve as sketches for communication in the team
- Eliminates misunderstandings and is cheap

# WHAT IS A PROTOTYPE?

- Middle to high fidelity representation of the final product
- Allows to
  - experience content and interactions with the interface
  - test the main interactions in a way similar to the final product
- Might not look exactly like the final product, but should be similar
- Interdependence between the interface and backend is often omitted

# WHEN TO USE A PROTOTYPE

- Used in user testing
- Check the usability of the interface
- Rather expensive and time-consuming

# WHAT IS A MOCKUP?

- Middle to high fidelity, *static*, design representation
- Visual design draft, or even the actual visual design
- Demonstrates the basic functionalities in a static way
- Encourages to review the visual side of the project
- Much quicker to create than prototypes

# WHEN TO USE A MOCKUP

- Useful if you want to get early buy-in from a stakeholder
- Good feedback-gatherer
- Can form a great chapter of documentation

# SUMMARY

	Fidelity	Cost	Use	General traits
Wireframe	low fidelity	\$	documentation, quick communication	Sketchy, black, white & grey representation of the interface
Prototype	middle to high fidelity	\$\$\$	User testing, reusable backbone of the interface	Interactive
Mockup	middle to high fidelity	\$\$	Gathering feedback and getting buy-in from stakeholders	Static visualization

# PROTOTYPING IN GENERAL

- Should be easy and fast to build
- Should represent the essential parts of your idea

Start small, fail early, and learn fast

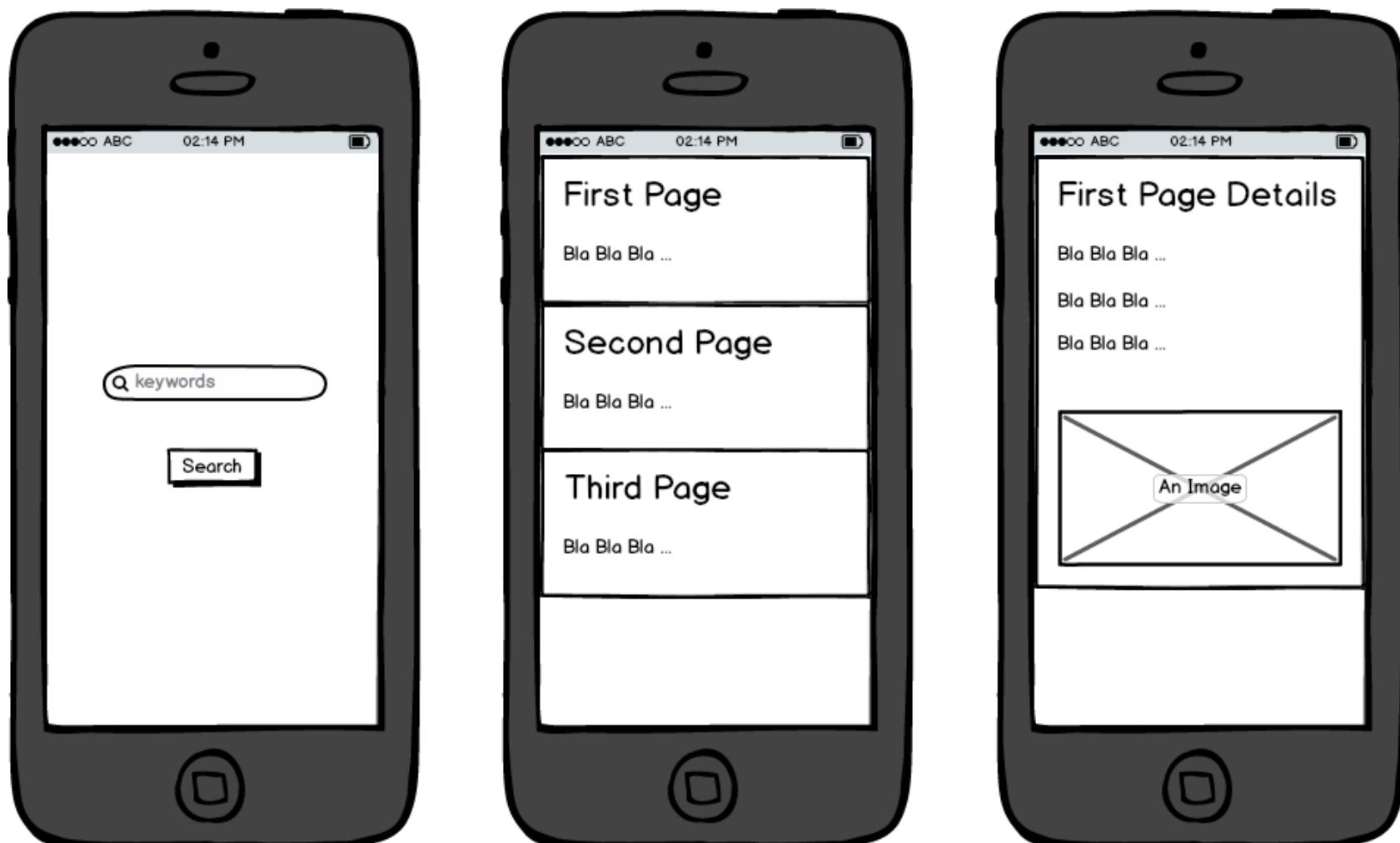
# PROOF-OF-CONCEPT IMPLEMENTATION

- Another prototyping artifact
- Focus on the risks in the project
- Elaborate technical possibilities and boundaries

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# WIREFRAMES



# WIREFRAMES

- Plan the flow according to your user stories
- Sketched layouts of your application screens
- Show where each element will be placed
- Understand of content and interactions
- Can be as simple as sketches on paper

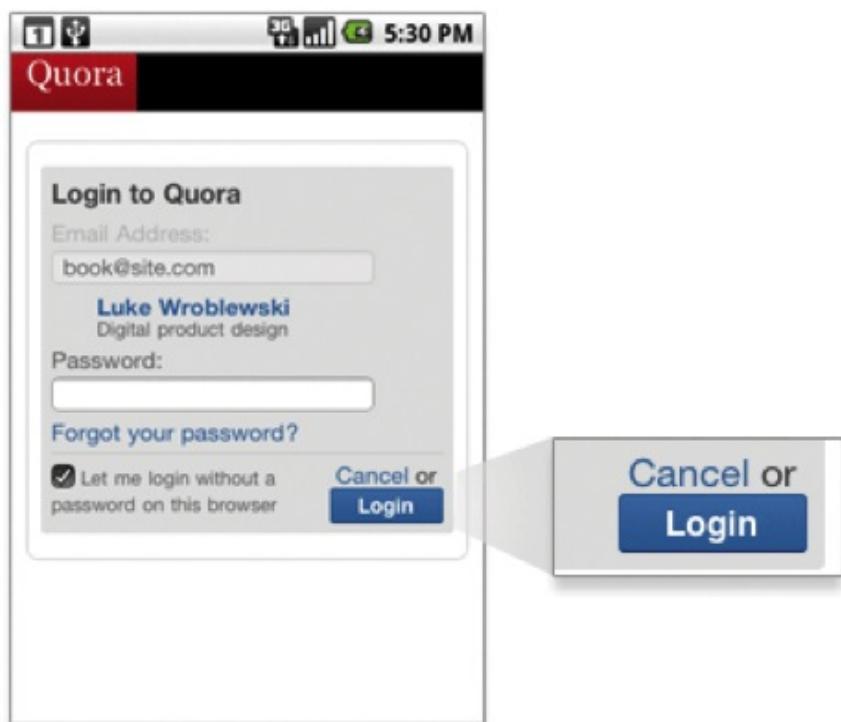
# TOUCH CONTROL

- Bigger control elements required
- "44 x 44 points is the comfortable minimum size of a tappable UI element" (iOS Human Interface Guidelines)

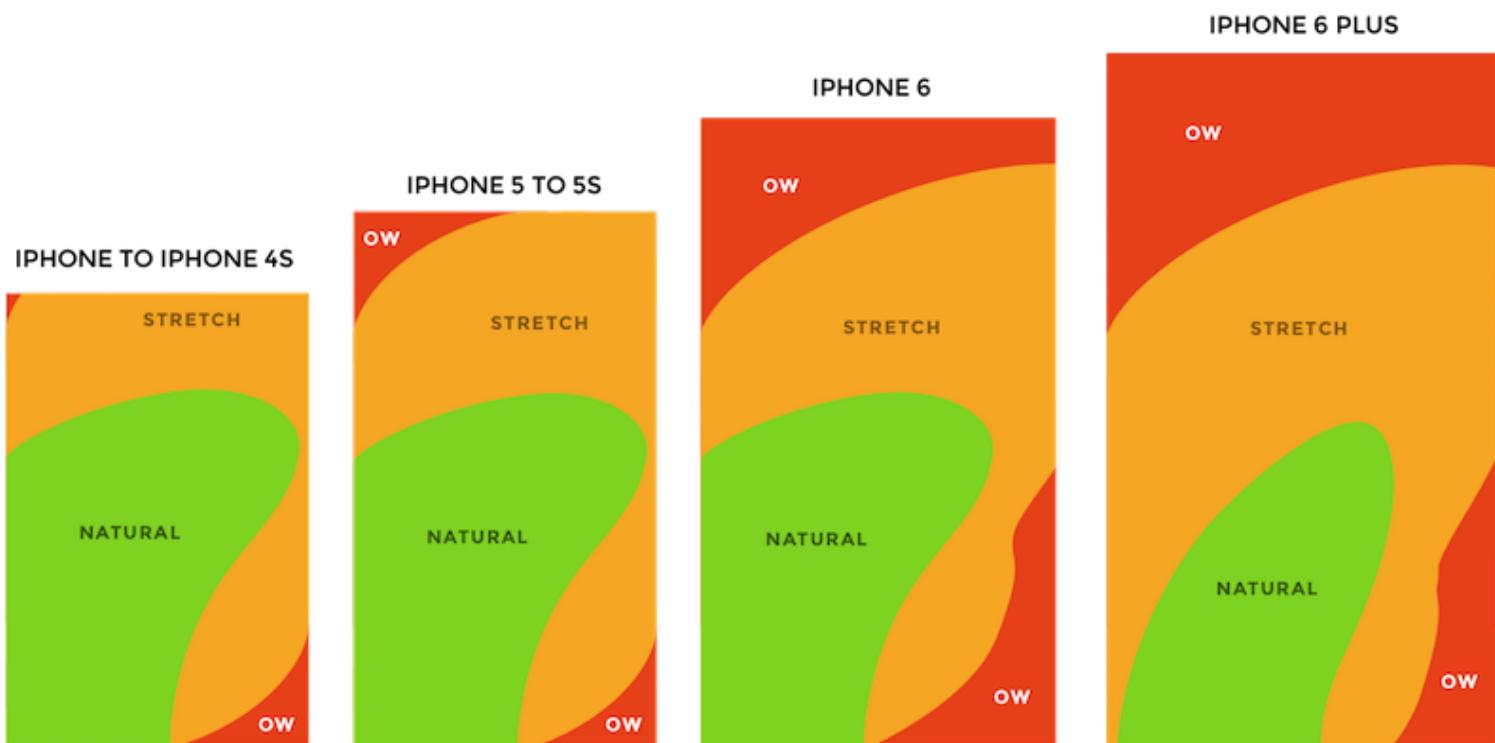
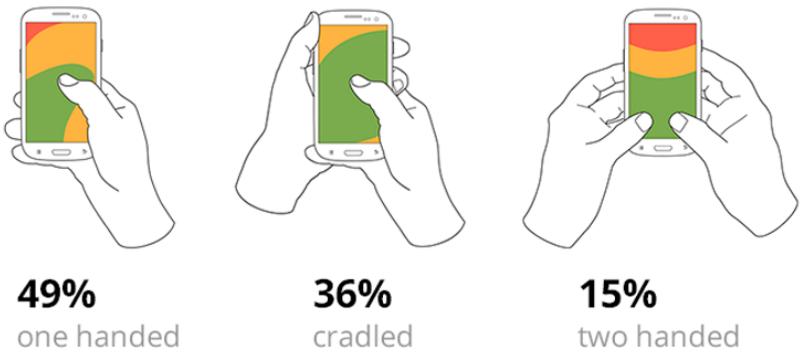
Point: "On a standard-resolution device screen, one point equals one pixel, but other resolutions might dictate a different relationship. On a Retina display, for example, one point equals two pixels." (iOS Human Interface Guidelines)

This is different to the CSS unit pt (also: Point).

# TOUCH CONTROL: DISTANCE

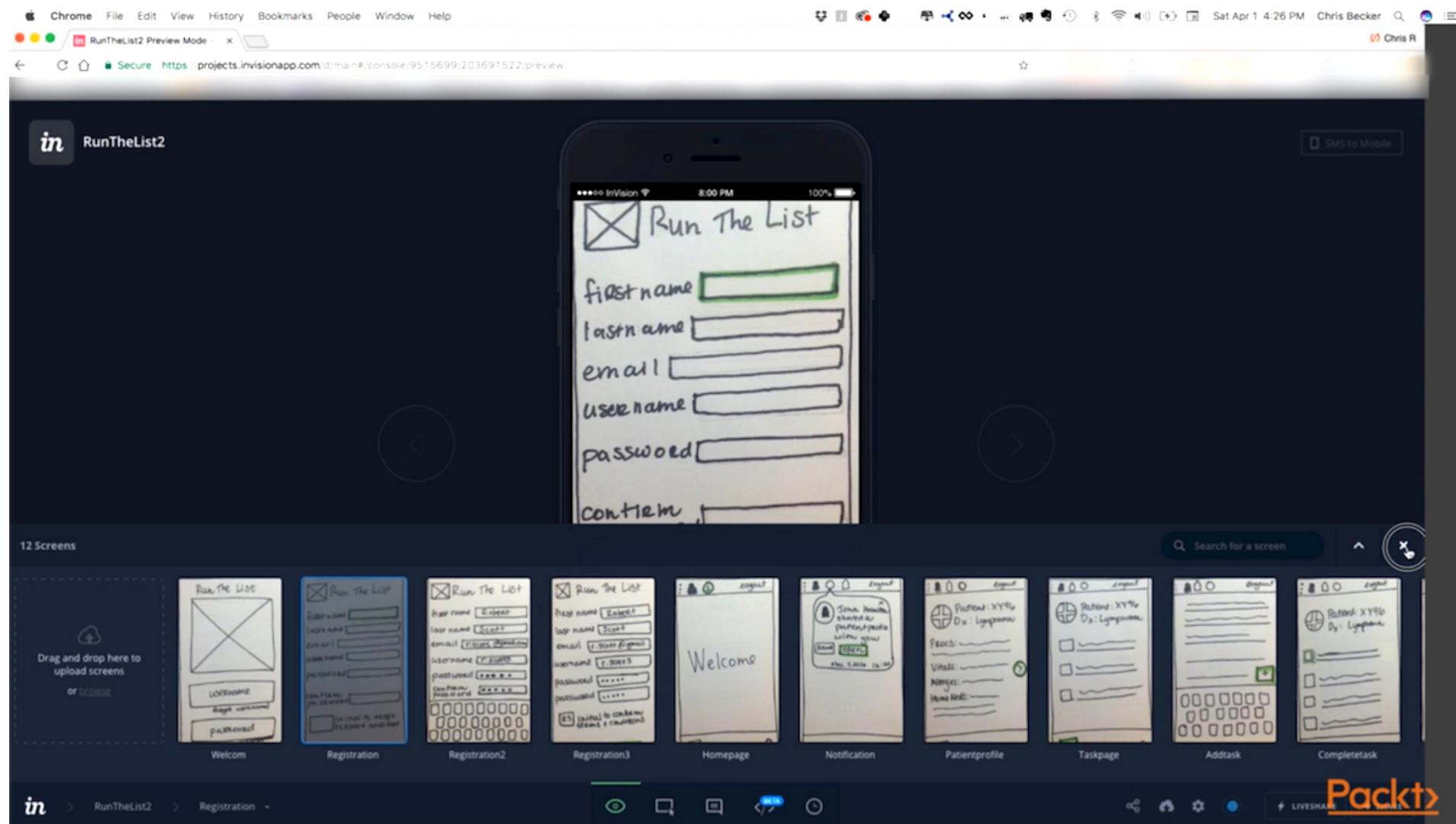


# TOUCH CONTROL: REACH



<https://theblog.adobe.com/mobile-design-best-practices/>

# WIREFRAMES



# FLOW DIAGRAM

- Based on steps in user stories
- Major decisions points while navigating inside the app
- Allows to think through the possible routes in a visual way
- Chart for the whole application or focus on a particular journey
- On a higher level it outlines the app structure:  
How many different screens you will need to design
- Helps capturing all cases that you need to design for

# WIREFRAMES: TOOLS

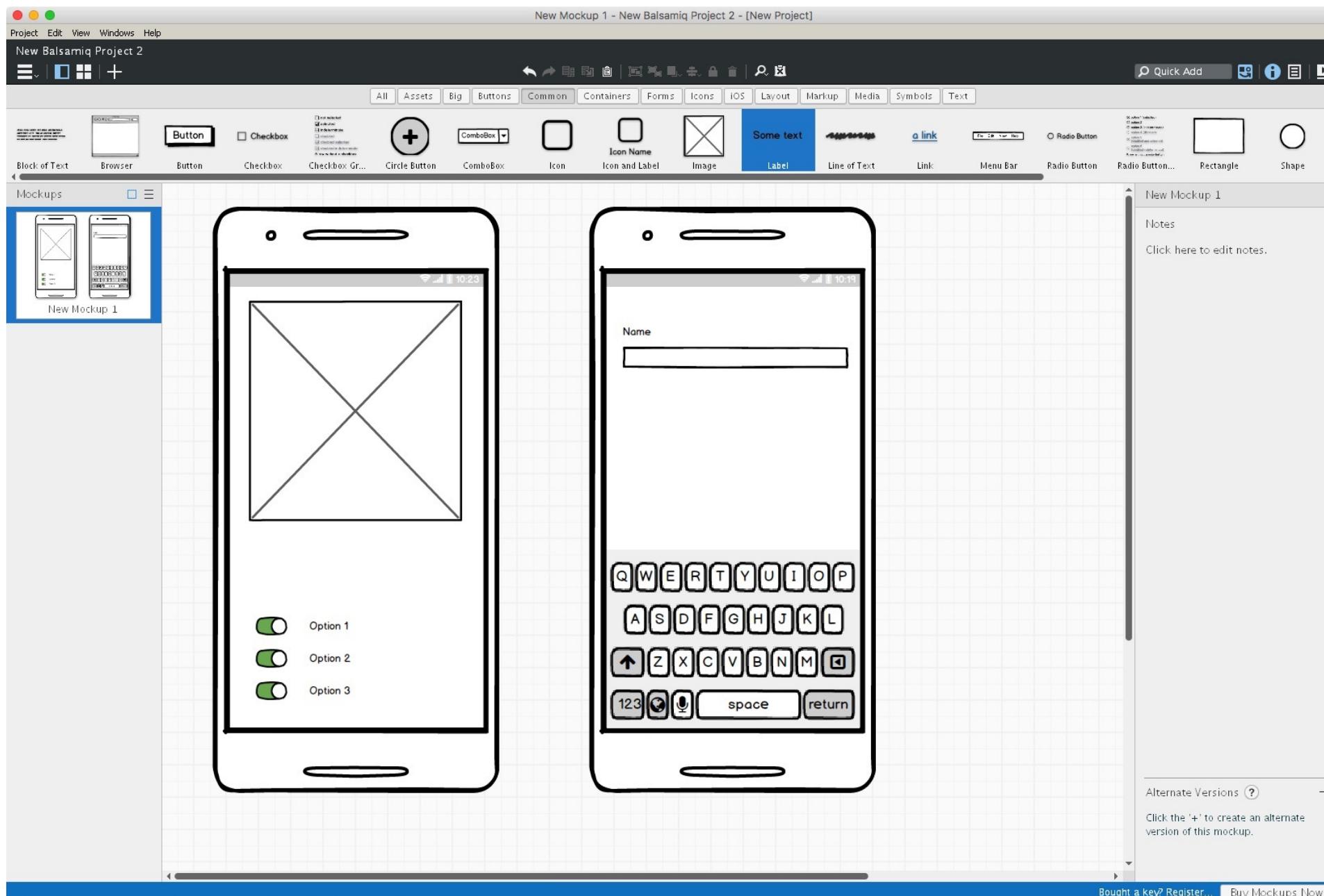
- Many digital tools available
- Libraries of ready-made widgets
- Some tools can create clickable prototypes
- Digital design is easier to update and maintain

<https://balsamiq.com>

<https://gomockingbird.com/home>

<http://iphonemockup.lkmc.ch>

# WIREFRAMES: BALSAMIQ



# WIREFRAMES: SKETCH



# WIREFRAMES: TIPS

- Eliminate all the distractors
- Use colors carefully
- Don't over-design it
- Use real sizes (approximately)
- Affordances matter

# ELIMINATE ALL THE DISTRACTORS

- Inappropriate color use
- Wrongly applied level of fidelity
- Ugly images and icons
- Comic Sans and any strange font
- Any signs and codes that only you can understand

In short: No ornaments allowed, keep only the essentials

# USE COLORS CAREFULLY

- Use shades of grey for structure and content
- Set any images and icons to grey
- Use an appropriate contrast between elements
- You may use blue for links, red boxes for alerts, etc.

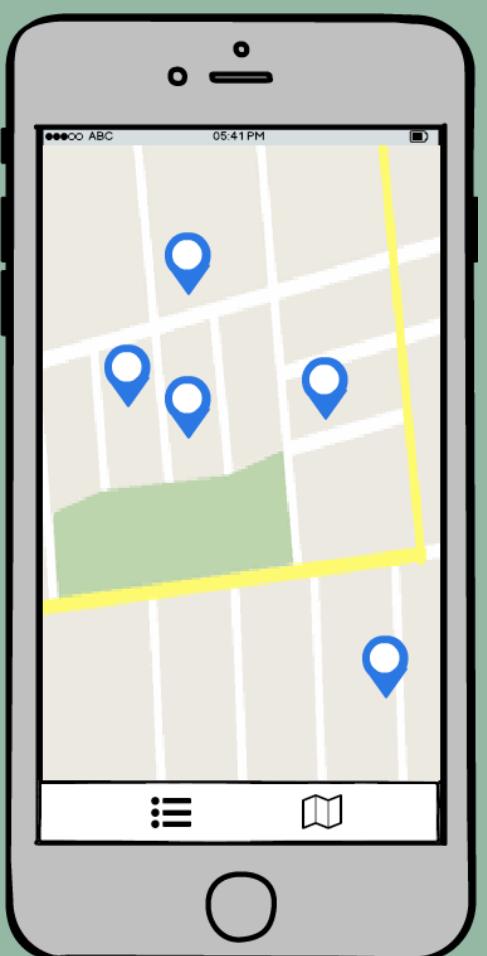
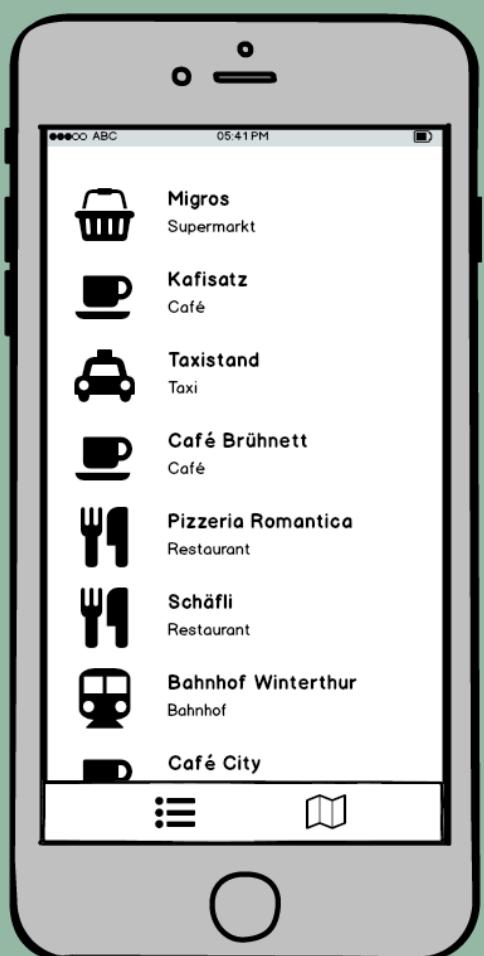
# DON'T OVER-DESIGN IT

Is a certain element ready or not?

- Does it make sense in the context of user scenarios ?
- Does it clearly communicate its sense and value?
- Will your teammates understand it?

Do not ask yourself if it's pretty, ask if it's clear and reasonable

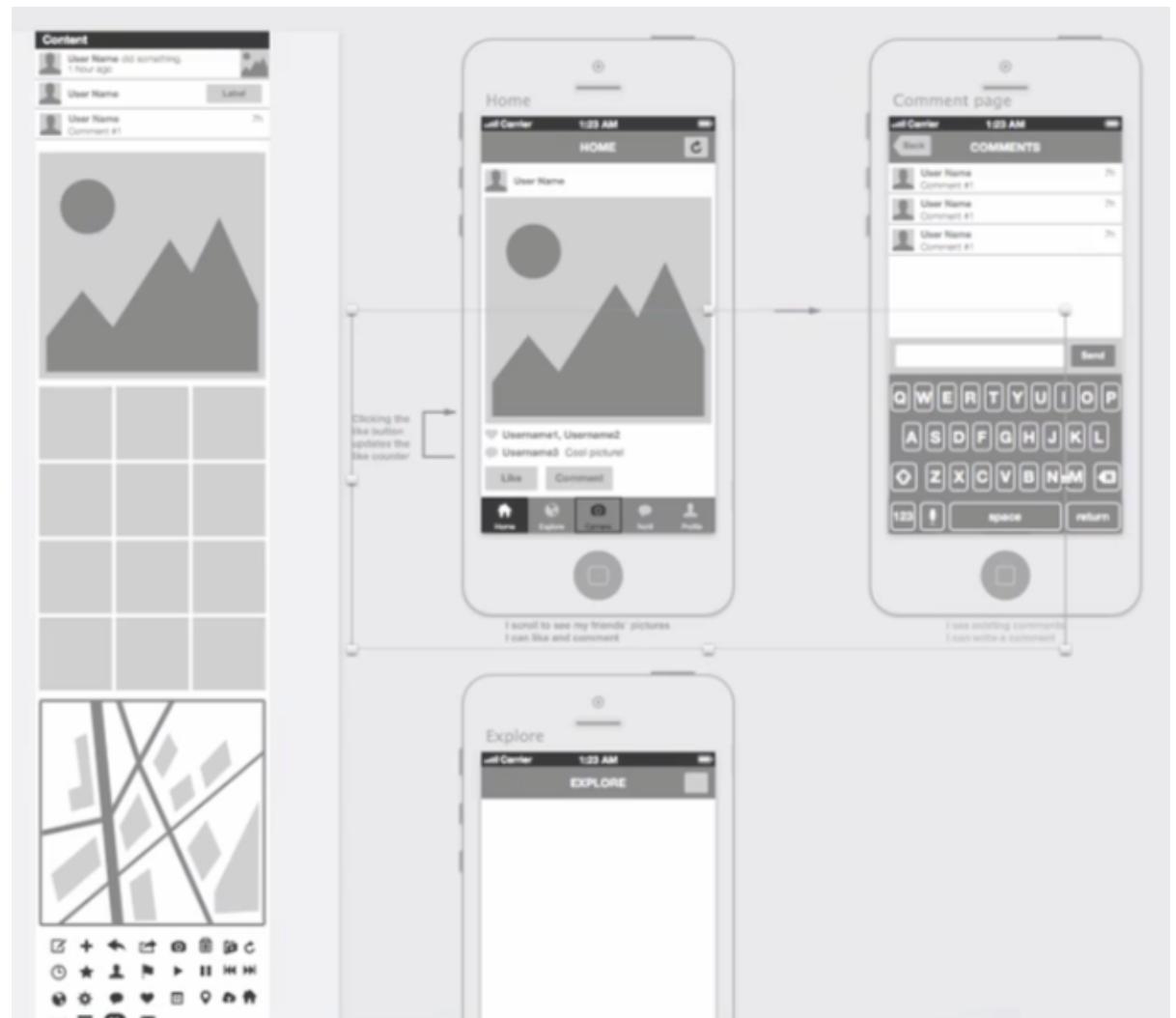
# DEMO: POIFINDER



# MORE

- Not more than 1 or 2 steps in a screen
- Below each screen write in 1 or 2 sentences what the user is supposed to do in the screen

# WIREFRAMES



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# VISUAL CONCEPT

- Design Principles
- Inspiration
- Typography
- Color

# DESIGN PRINCIPLES

- Proximity
- Alignment
- Repetition
- Contrast

(→ WBE-Vorbereitungskurs)

# PROXIMITY

CD ROMs  
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Children's CDs  
Educational CDs  
Entertainment CDs  
Laser discs  
Educational  
Early learning  
Language arts  
Science  
Math  
Teacher Tools  
Books  
Teacher tools  
Videos  
Hardware &  
Accessories  
Cables  
Input devices  
Mass storage  
Memory  
Modems  
Printers & supplies  
Video and sound

## **CD ROMs**

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Math

## **Teacher Tools**

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Videos

## **Hardware & Accessories**

Cables  
Input devices  
Mass storage  
Memory  
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Printers & supplies  
Video and sound

# ALIGNMENT

## Honor Form

Heresy rheumatic starry offer former's dodder, Violate Huskings, an wart hoppings darn honor form.

Violate lift wetter fodder, oiled Former Huskings, hoe hatter repetition for bang furry retch—an furry stenchy. Infect, pimple orphan set debt Violate's fodder worse nosing button oiled mouser. Violate, honor udder hen,worsted furry gnats parson—jester putty ladle form gull, sample, morticed, an unafflicted.

## Tarred gull

Wan moaning Former Huskings nudist haze dodder setting honor cheer, during nosing.

"Violate!" sorted dole former, "Watcher setting darn fur? Denture nor yore canned gat retch setting darn during nosing? Germ pup otter debt cheer!"

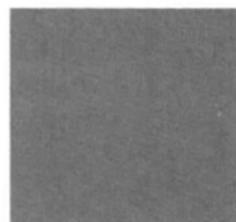
"Arm tarred, Fodder," resplendent Violate warily.

"Watcher tarred fur?" aster stenchy former, hoe dint half mush symphony further gull.

## Feeder pegs

"Are badger dint doe mush woke disk moaning! Ditcher curry doze buckles fuller slob darn tutor peg-pan an feeder pegs?"

"Yap, Fodder. Are fetter pegs."



"Ditcher mail-car caws an swoop otter caw staple?" "Off curse, Fodder. Are mulct oiler caws an swapped otter staple, fetter checkings, an clammed upper larder inner checking-horse toe gadder oiler aches, an wen darn tutor vestibule guarding two peck oiler bogs

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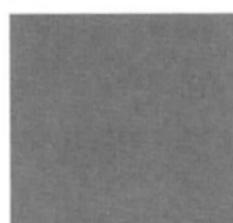
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# REPETITION

## **Mickey Mouse**

- Walt Disney Studios  
Anaheim, California  
58 years old, no children

## **Employment**

- Walt Disney Studios
- Various television studios

## **Education**

- Walt Disney Studios

## **Favorite Activities**

- Driving steamboats
- Roping cattle

## **Favorite Quote**

- Everybody can't be a duck.

# CONTRAST

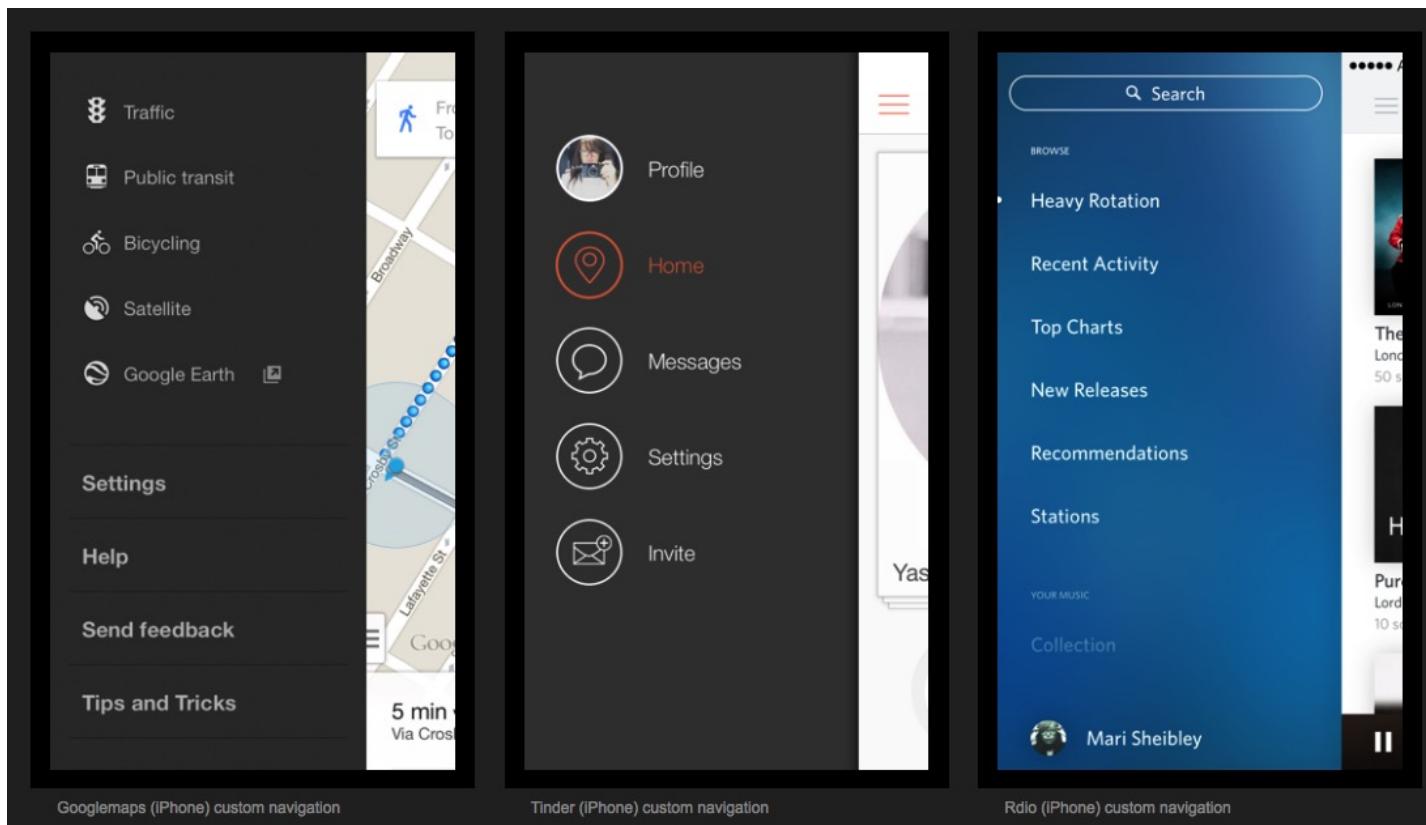


# INSPIRATION

- Start collecting inspiring things
- “Good artists copy, great artists steal” (Picasso)

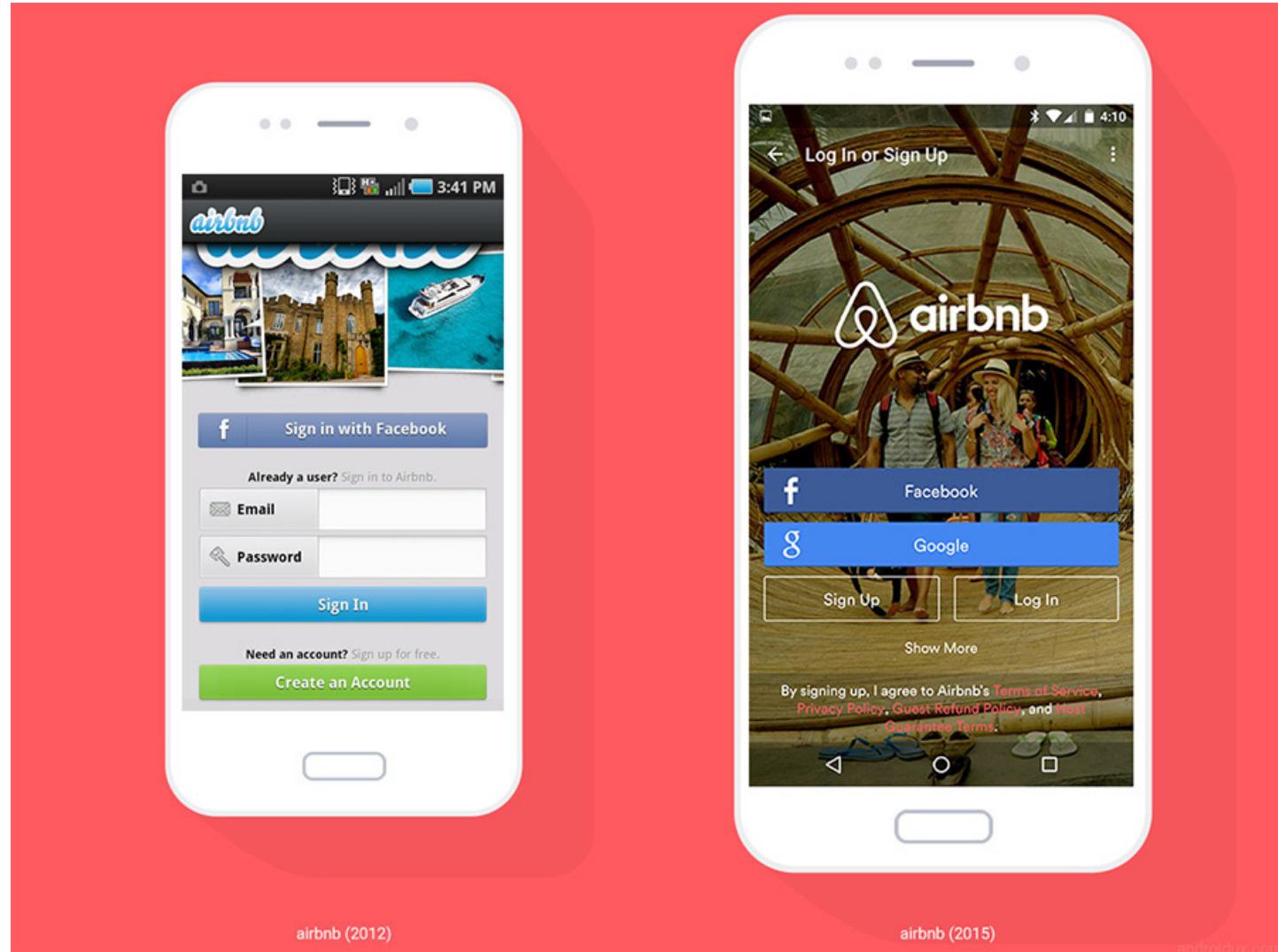
Going back to where the original idea stemmed from to get a better understanding of what made it work

# INSPIRATION: CUSTOM NAVIGATION



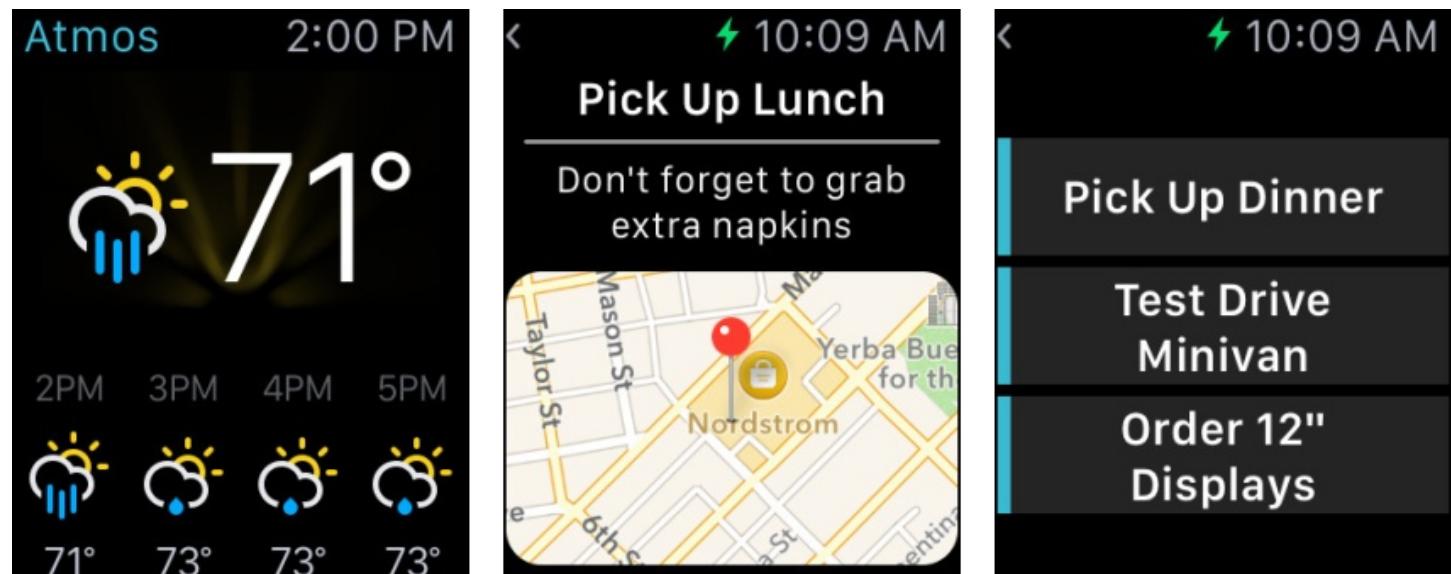
<http://www.mobile-patterns.com/custom-navigation>

# INSPIRATION: BEFORE/AFTER



<http://androidux.com/Before-After>

# INSPIRATION: WATCH



<http://pttrns.com/apple-watch-patterns>

# TYPOGRAPHY

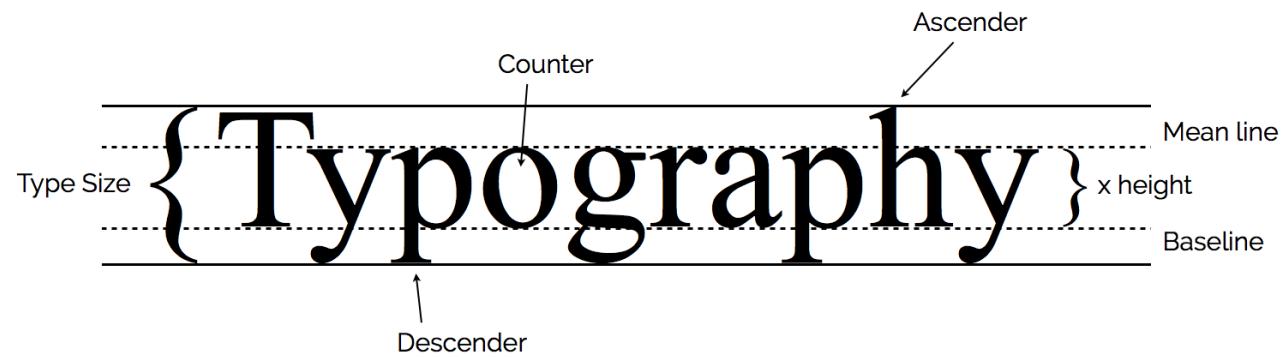
Typography matters

<http://practicaltypography.com>

When Morris asked David Dunning, a psychology professor at Cornell who helped design the questions for this experiment as to why he thought Baskerville won, he said, "Fonts have different personalities. It seems to me that one thing you can say about Baskerville is that it feels more formal or looks more formal."

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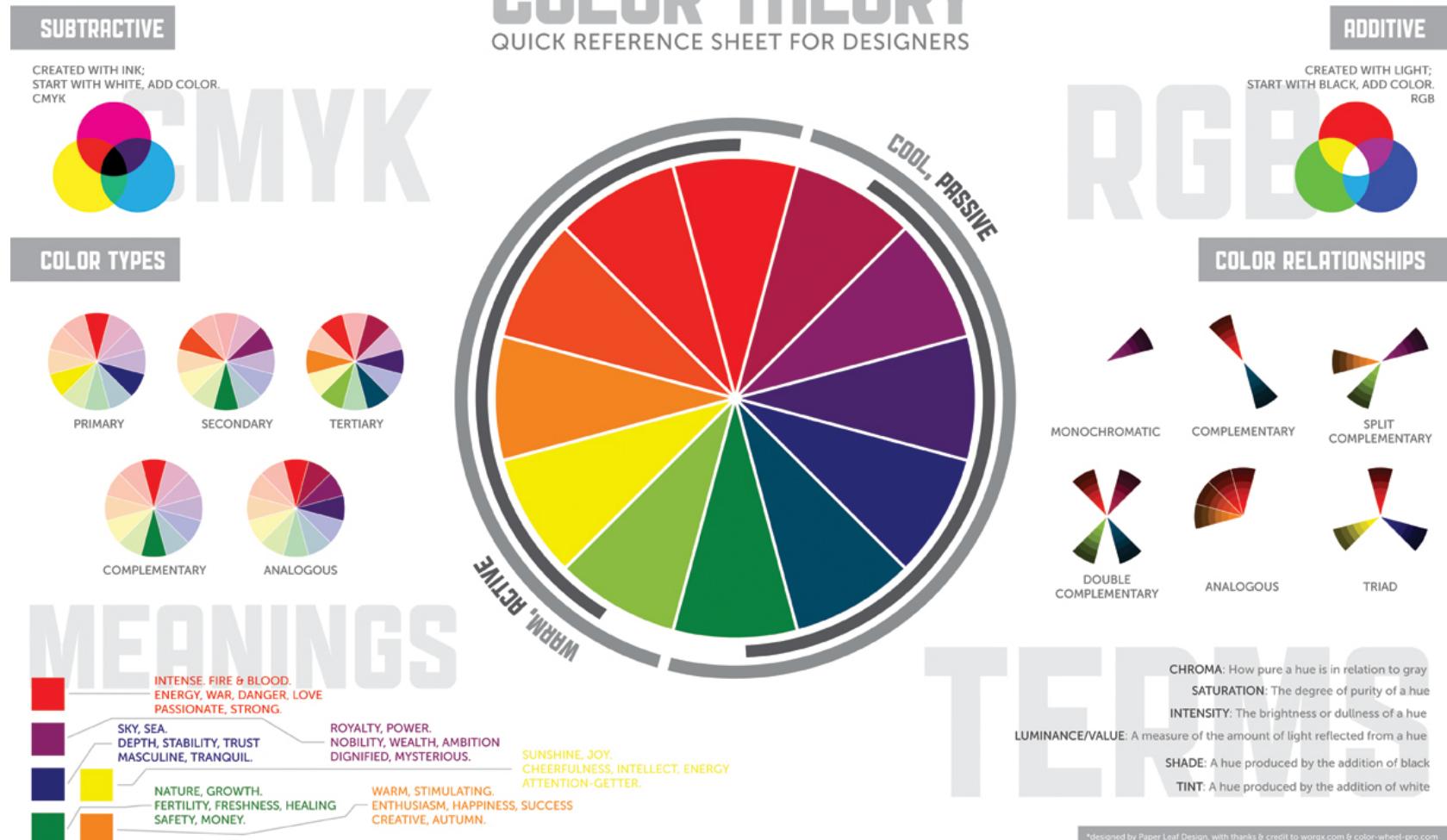


<http://type.method.ac/>

<http://www.myfonts.com/WhatTheFont/>

(→ WBE-Vorbereitungskurs)

# COLOR



(→ WBE-Vorbereitungskurs)

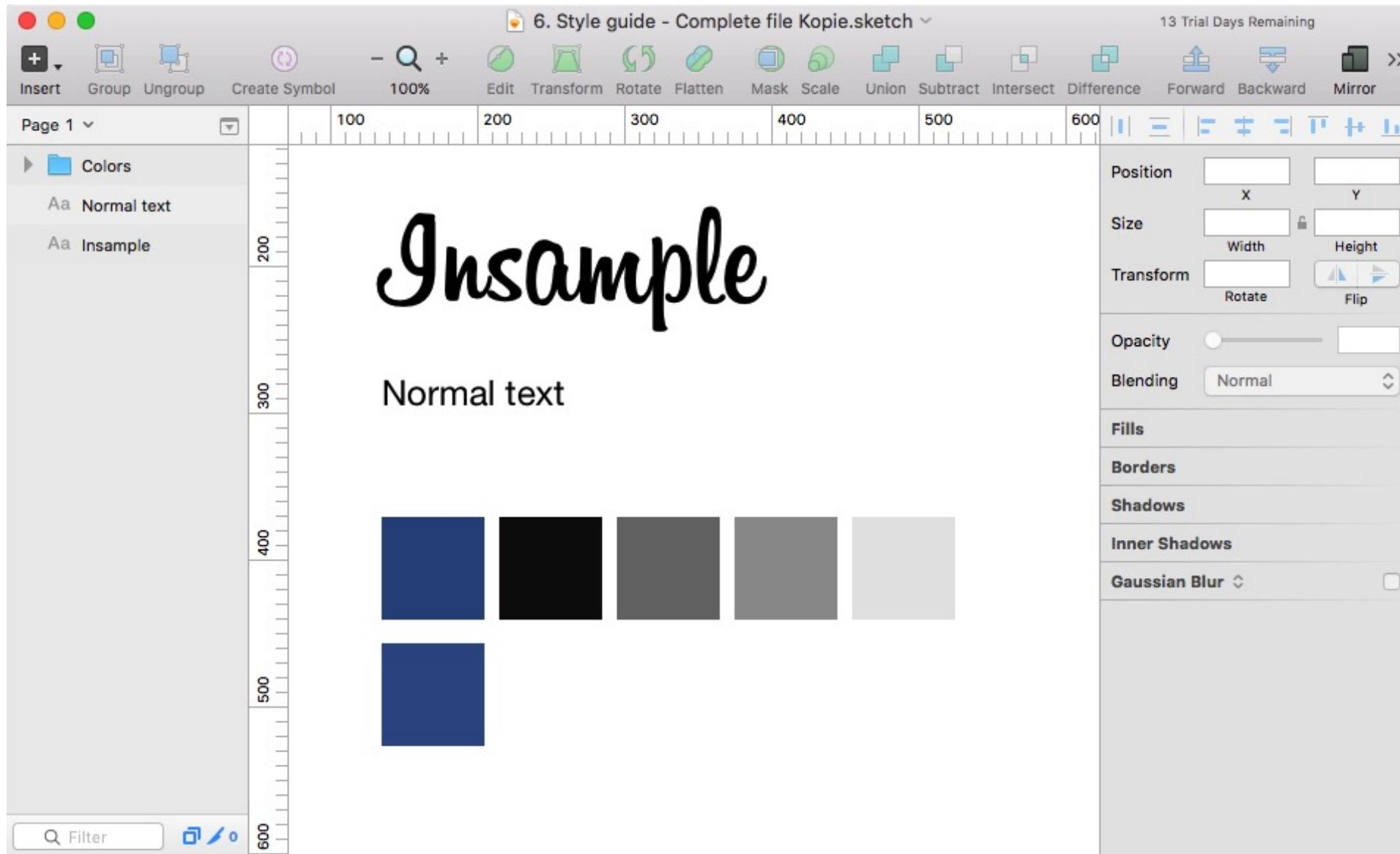
# COLOR SCHEME

1. Select a base color
2. Select secondary colors using harmony principles
3. Adjust tints, shades and tones

<https://kuler.adobe.com/>



# CREATE A STYLE GUIDE



# VISUAL DESIGN

- Graphic design principles already applied during wireframing
- Including: spacing, visual hierarchy
- Each platform has their own styling conventions and interaction methods – follow the recommended practices
- Use meaningful labels and titles rather than placeholder text

# MOCKUP

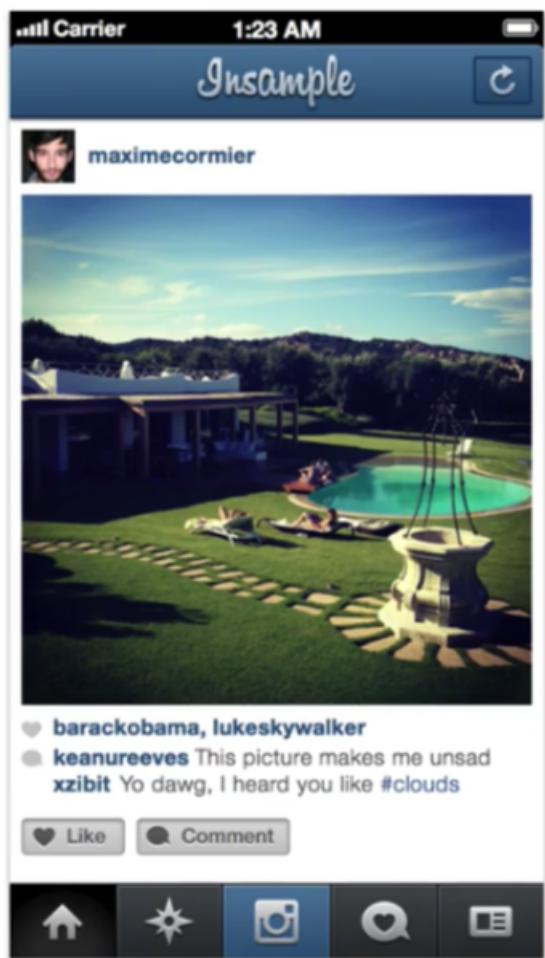
To consider:

- Platform conventions and style guides
- Skeuomorphism<sup>1</sup> vs. flat design
- Screen sizes and resolutions

<sup>1</sup>Imitate real life objects

# FLAT DESIGN

iOS 6



iOS 7

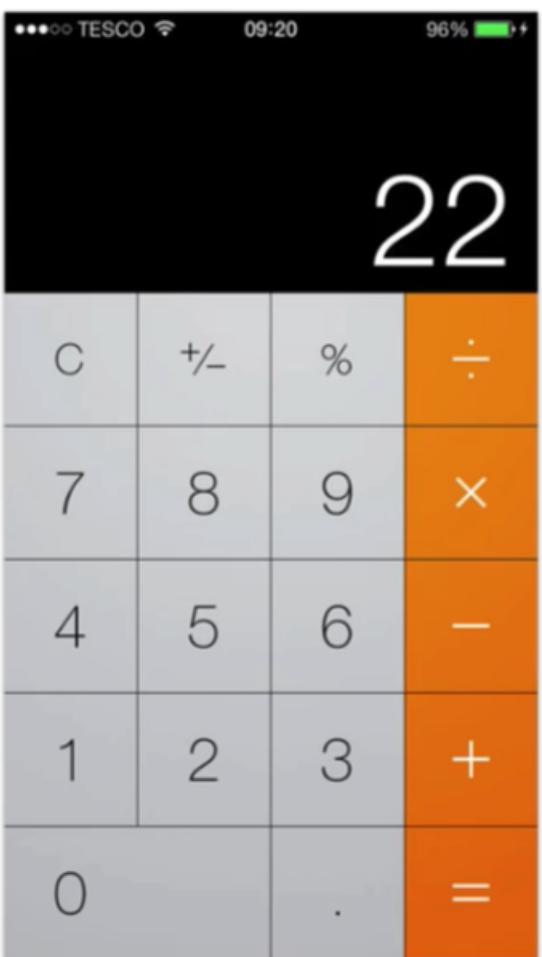


# FLAT DESIGN

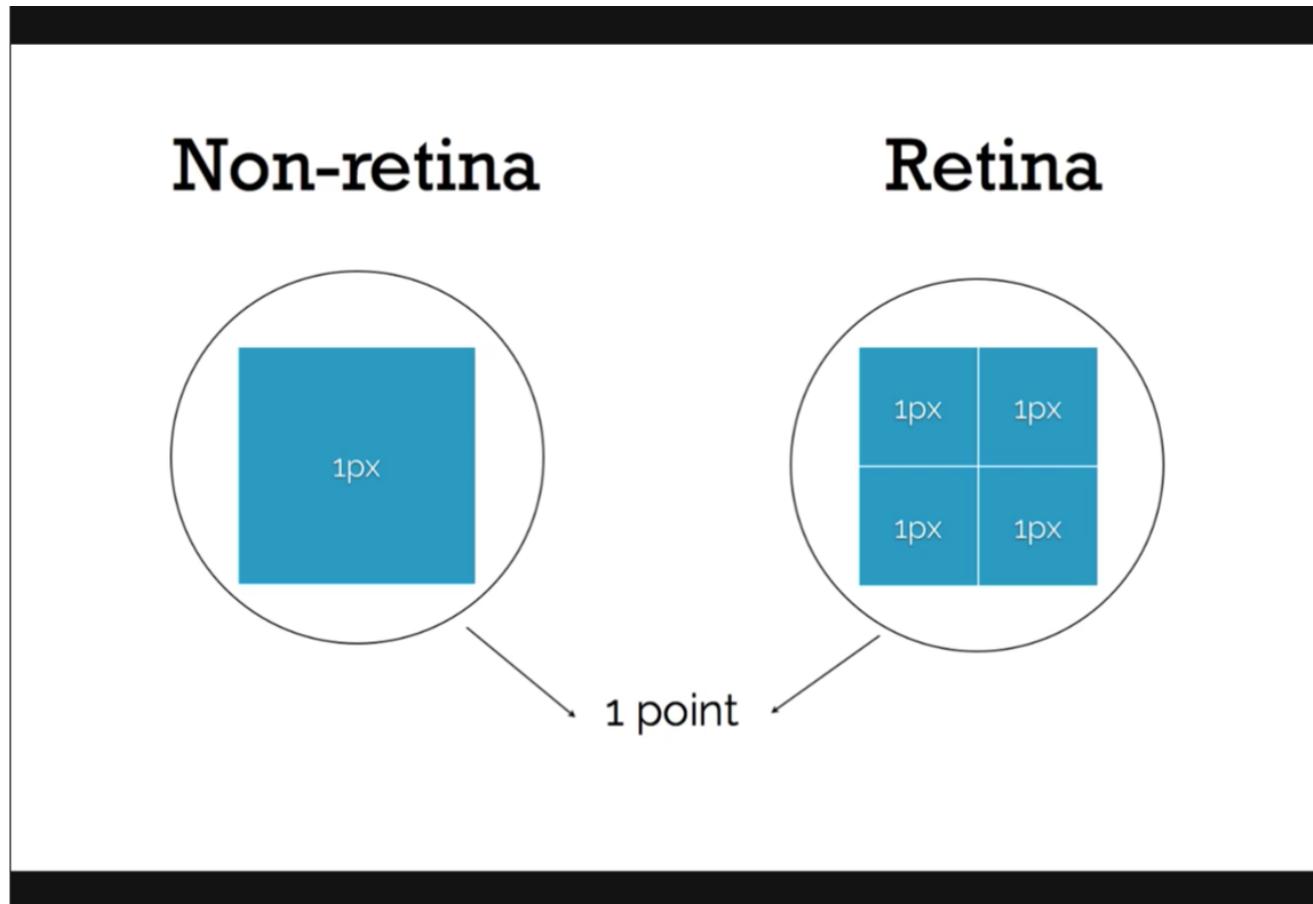
iOS 6



iOS 7



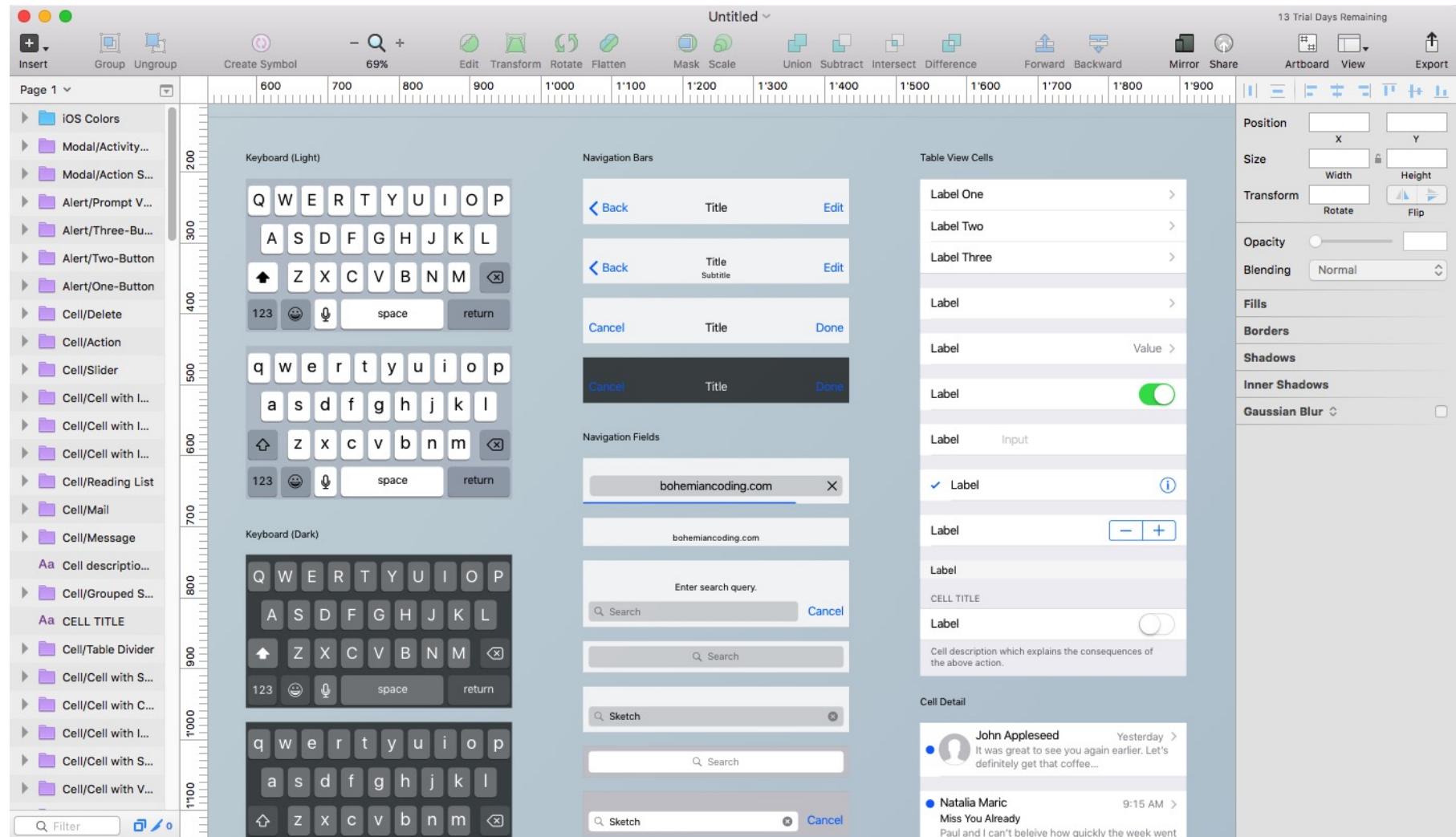
# PIXEL AND POINT



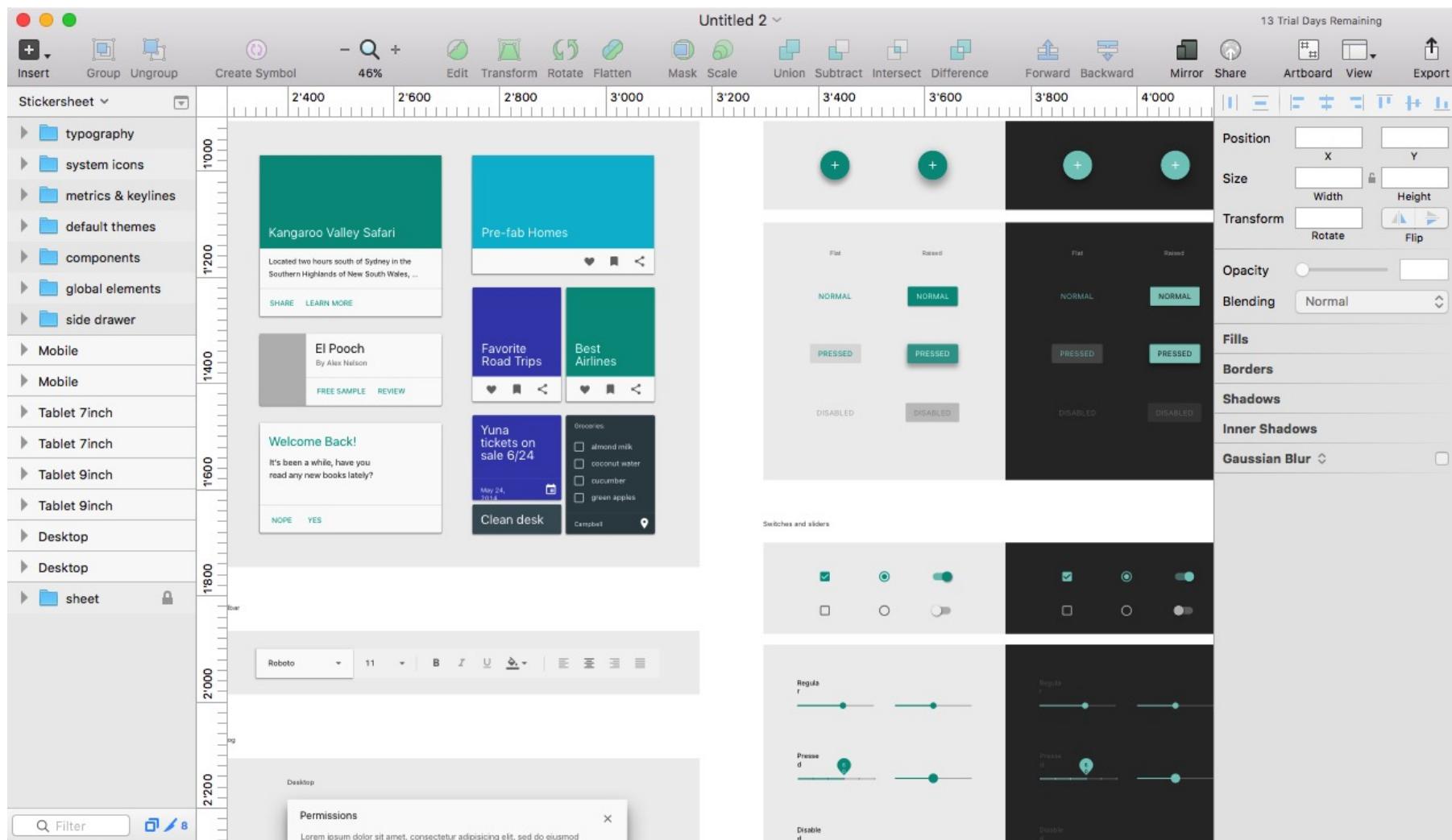
<http://screensiz.es/phone>

<http://angrytools.com/android/pixelcalc/>

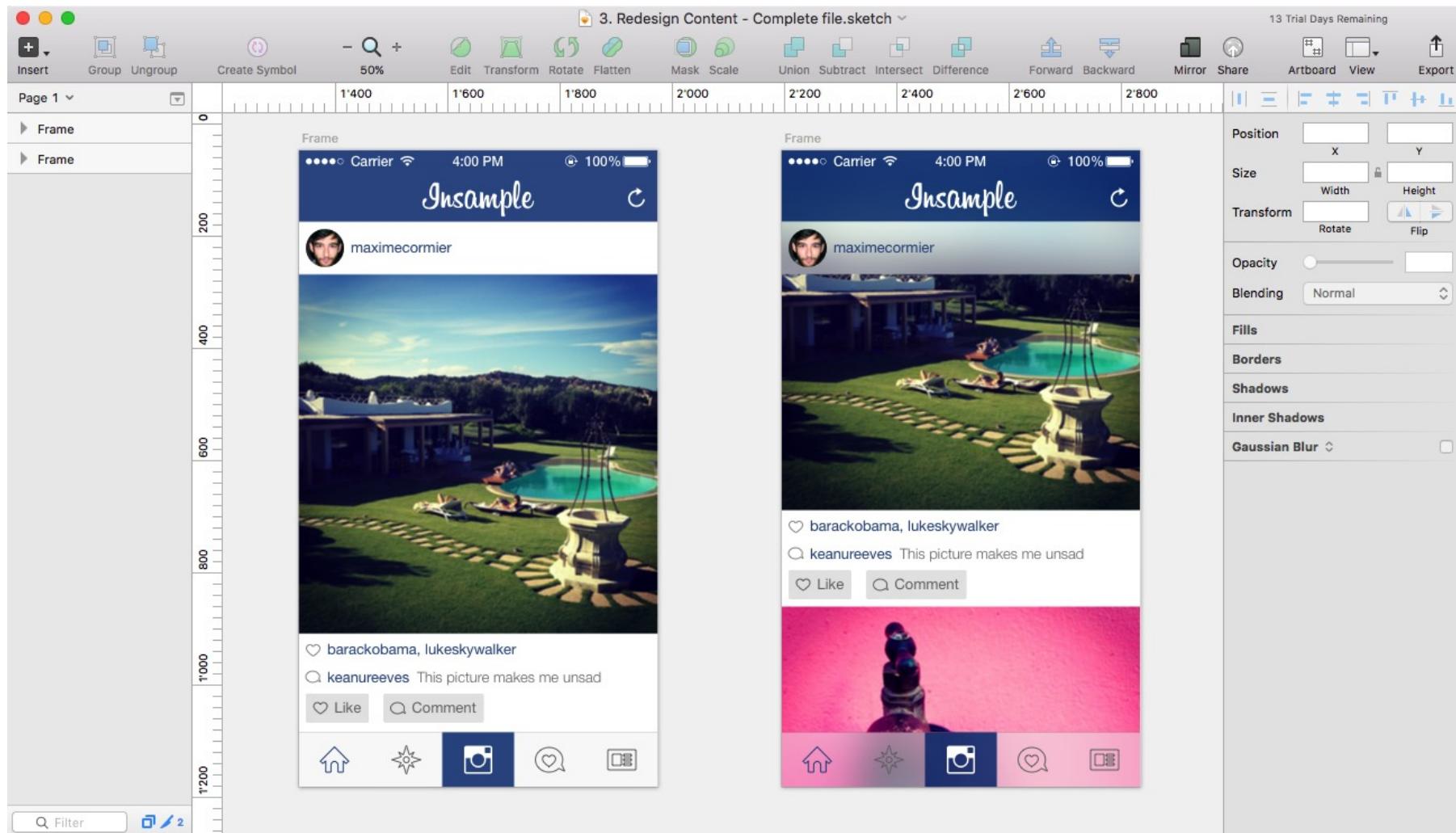
# SKETCH: IOS UI DESIGN



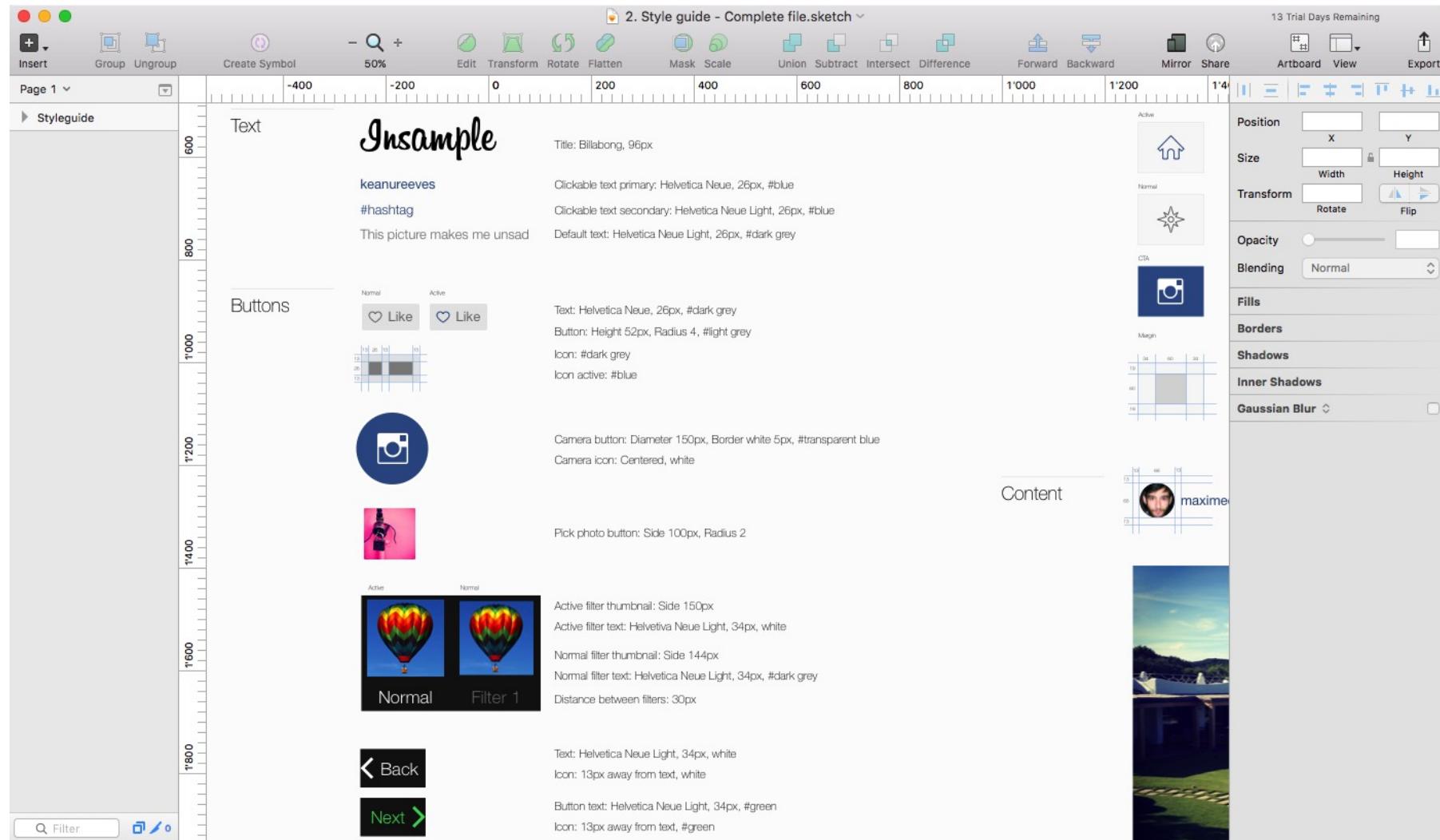
# SKETCH: MATERIAL DESIGN



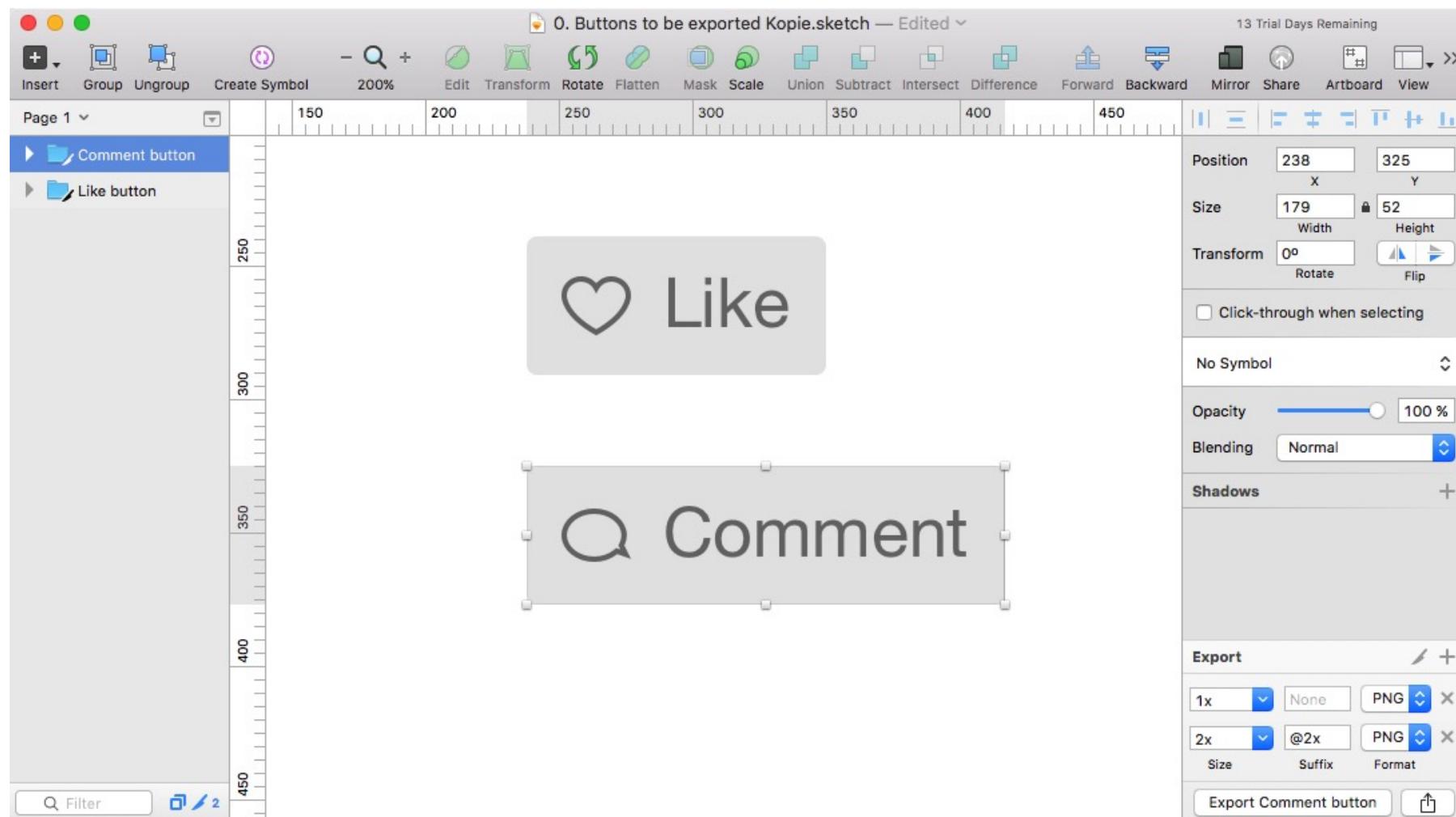
# DESIGN CONTENT AND NAVIGATION



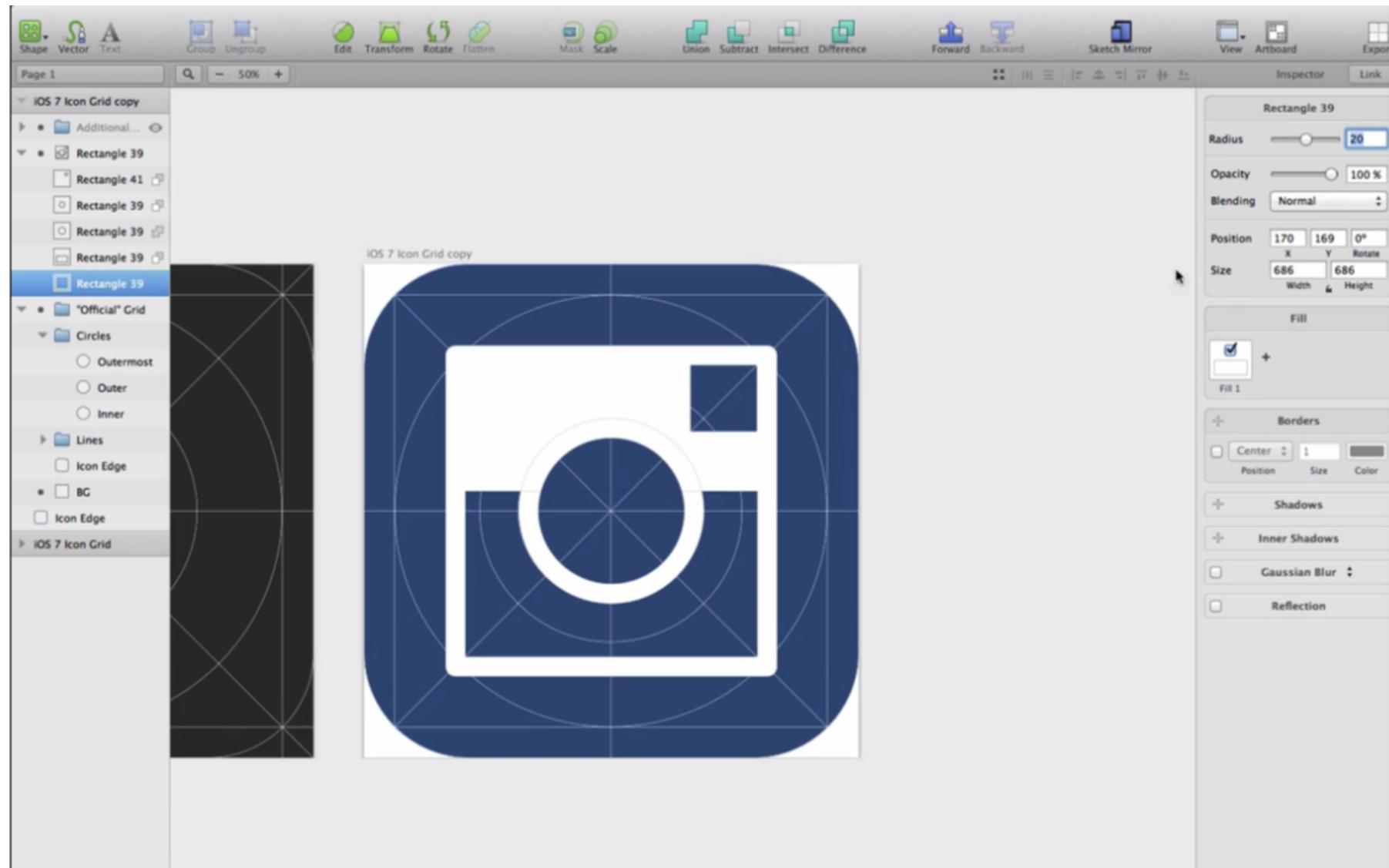
# UPDATE STYLE GUIDE



# EXPORT ELEMENTS

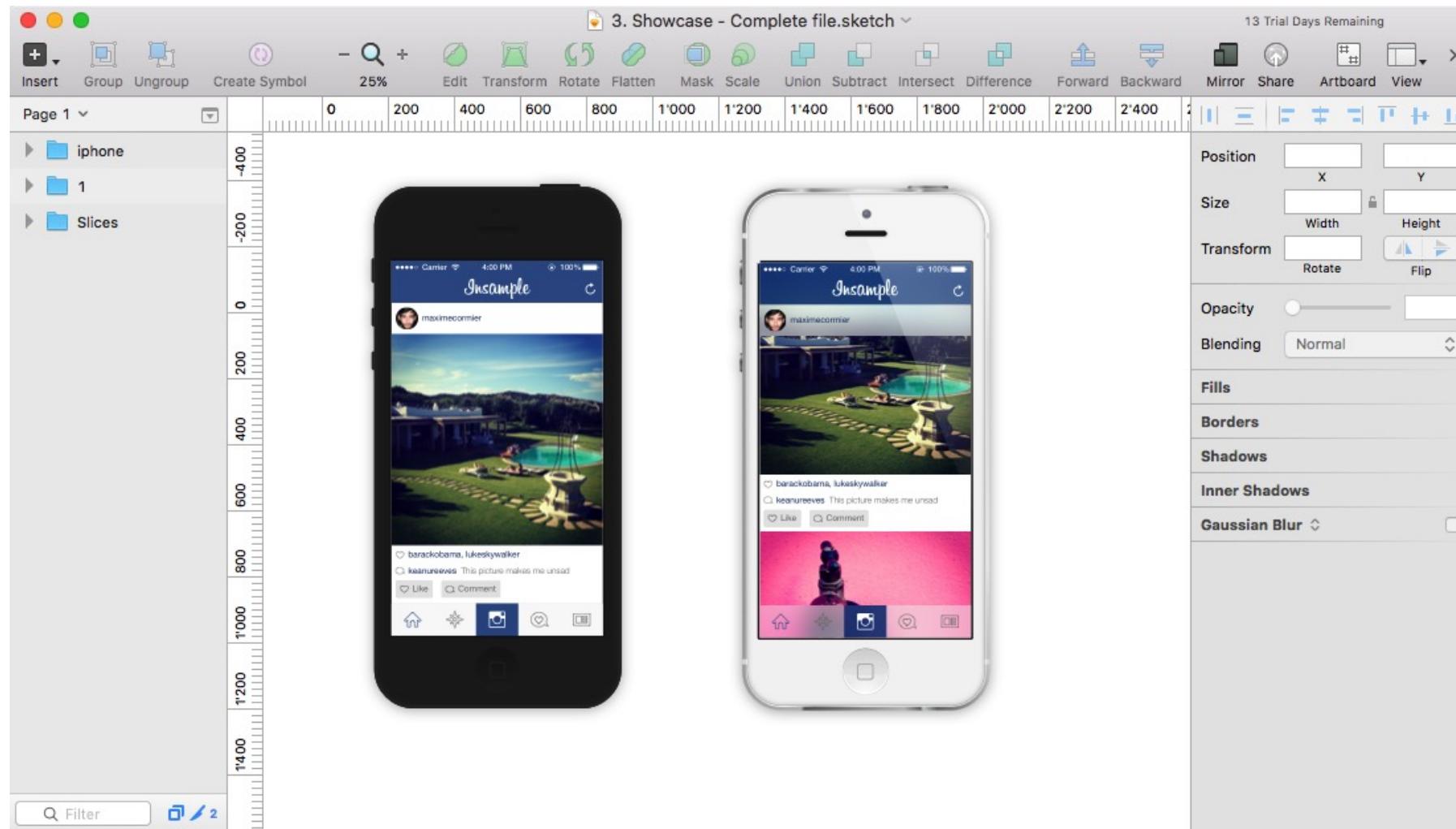


# DESIGN AN APP ICON



<http://afterios7icon.tumblr.com>

# SHOWCASE YOUR APP



<https://bjango.com/mac/skalapreview/>

<https://placeit.net>

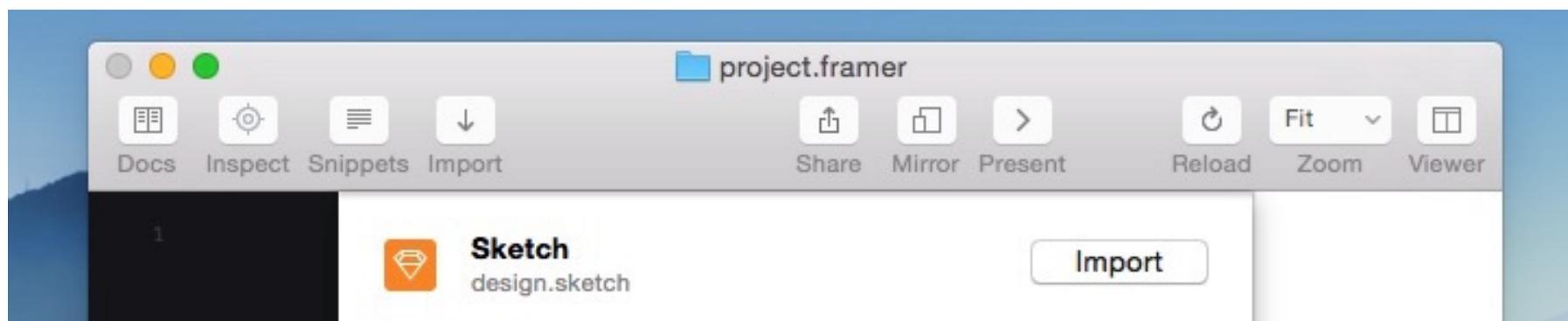
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# INTERACTIVE PROTOTYPE

- Best way to visualize and evaluate interactions
- Various tools available
- For example: Framer

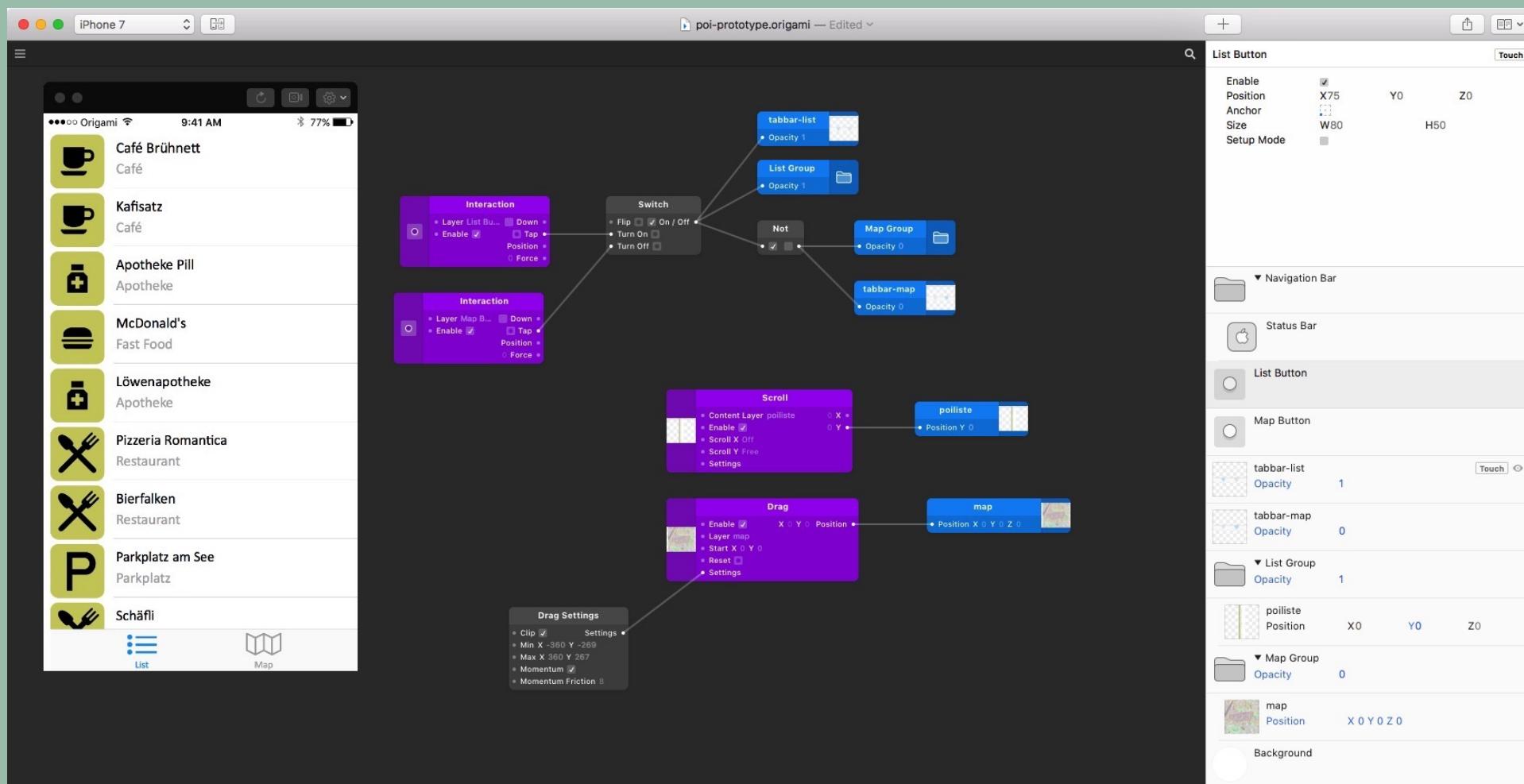
<http://framerjs.com>



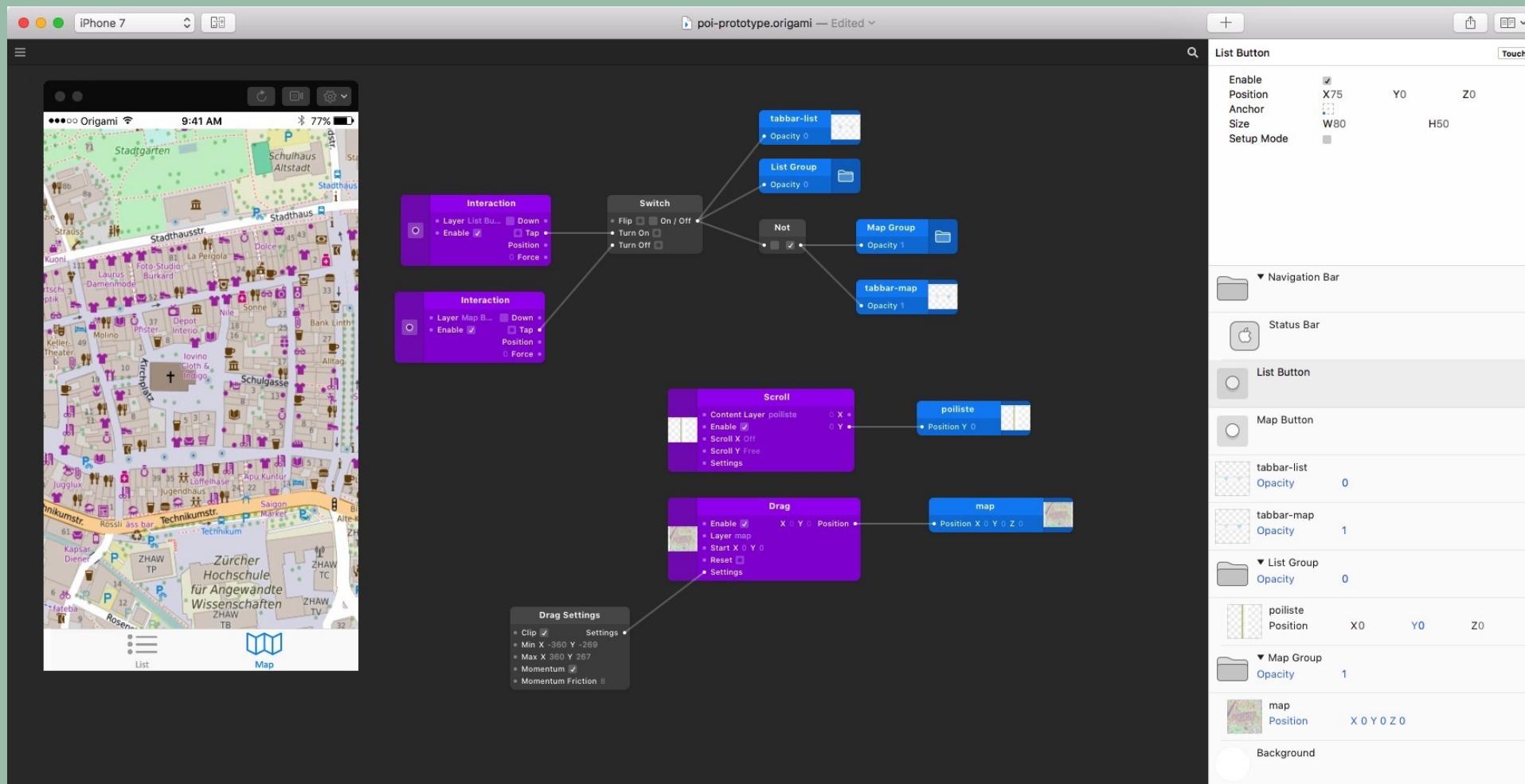
# INTERACTIVE PROTOTYPE

- Best way to visualise and evaluate your app's interactions
- Usable enough to communicate the design
- Can have the final visual design applied
- Many prototyping tools allow testing on an actual device
- Useful to get external feedback

# DEMO: POIFINDER



# DEMO: POIFINDER



# USER TESTING

- Should start early in the process
- Testing early can save you a lot of time
- Will expose concepts that don't work

The more time you already invested in your designs, the harder it gets start over

A single non-biased opinion is better than no opinion at all

# USER TESTING

- Typically about an hour long session
- Users that are unfamiliar with the product
- They are asked to perform certain tasks
- Look for users that match your personas
- Do not help them out too much
- Word your questions in a non-interrupting way
- Either record user feedback or make sure you take enough notes

# USER TESTING

If they assume that the person that running the session is the author of the design they might feel cautious of giving critical feedback. Reassure them that they are free to express their honest opinions.

# **SOURCES AND READING MATERIAL**

# OPTIONAL READING

- Mobile Design Best Practices  
<https://blogs.adobe.com/creativecloud/mobile-design-best-practices/>
- Sidebar – a list of the 5 best design links of the day  
<http://sidebar.io>
- Butterick's Practical Typography  
<http://practicaltypography.com>
- Gestaltung und Benutzbarkeit im Web  
Fakultatives Skript im WBE-Vorbereitungskurs  
<https://moodle.zhaw.ch/course/view.php?id=1007>

# NAVIGATION AND THE HAMBURGER MENU

- Optimising mobile web navigation (2 recent successes)  
<https://uxdesign.cc/optimising-mobile-web-navigation-2-recent-successes-8132c715f516>
- Why the Hamburger Menu Is so Controversial  
<https://www.westwerk.com/why-the-hamburger-menu-is-so-controversial/>
- Why and How to Avoid Hamburger Menus  
<https://lmjabreu.com/post/why-and-how-to-avoid-hamburger-menus/>

# INSPIRATION

- <http://pttrns.com>
- <http://www.mobile-patterns.com>
- <http://uxarchive.com>
- <http://androidniceties.tumblr.com>
- <http://androidux.com>
- <https://www.behance.net>
- <https://dribbble.com>

# TOOLS: WIREFRAME, MOCKUP, PROTOTYPE

- <https://balsamiq.com>
- <http://pencil.evolus.vn>
- <http://www.sketchapp.com>
- <https://www.figma.com>
- <https://moqups.com/>
- <http://framerjs.com>
- <https://origami.design>

## RESOURCES

- <https://thenounproject.com>
- <http://www.sketchappsources.com>
- <https://wireframestogo.com>

# USABILITY AND USER EXPERIENCE

- <http://uxarchive.com>
- <http://www.useronboard.com>
- <https://www.smashingmagazine.com/category/user-experience>
- <http://uxmag.com>
- <http://www.uxmatters.com>
- <https://www.nngroup.com>
- <https://www.interaction-design.org>

# SOURCES

- Mobile Developer's Guide To The Galaxy,  
17th Edition, Open-Xchange,  
<https://www.open-xchange.com/resources/mobile-developers-guide-to-the-galaxy/>
- Mobile App Design from Scratch: Design Principles,  
and UX, Online Course (commercial),  
<https://www.udemy.com/mobile-app-design-from-scratch/#/>
- Wireframing, Prototyping, Mockuping – What's the Difference?  
<http://designmodo.com/wireframing-prototyping-mockuping/>
- Robin Williams: The Non-Designer's Design Book, Peachpit Press, 1994.

