



Develop

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Design, Develop and Deliver

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Prof. Giuseppe Riccardi

D-D-D







How the customer
envisioned it



How the Project
Leader understood it



How the Analyst
designed it



How the Programmer
wrote it



How the Business
Consultant described it



How the project
was documented



What operations
installed



How the customer
was billed

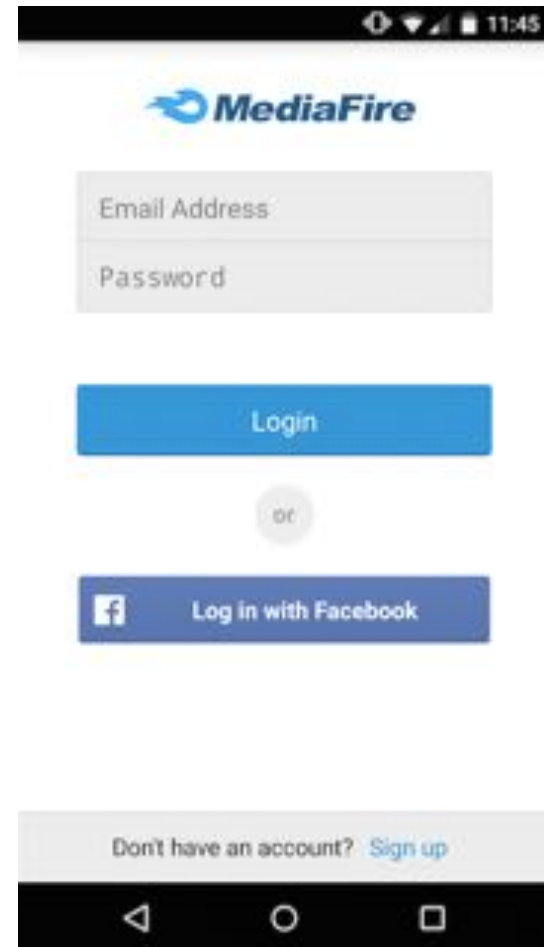


How it was supported



What the customer
really needed

Sign up screen – social or not?



NEWS

Android M's getting the equivalent of Apple's Touch ID

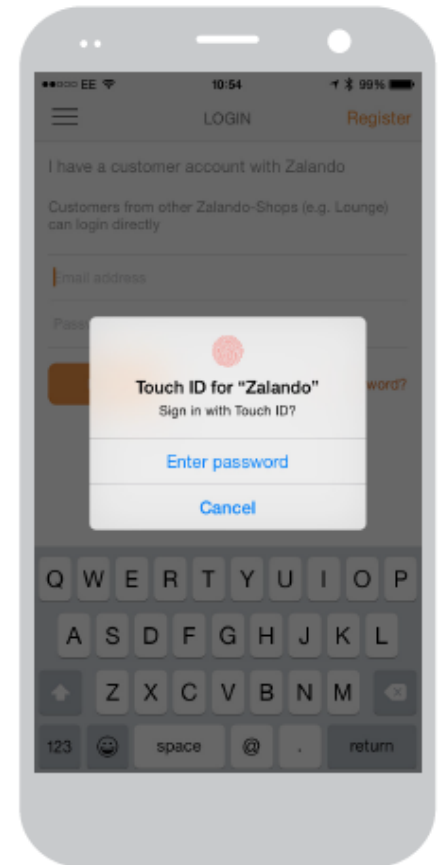
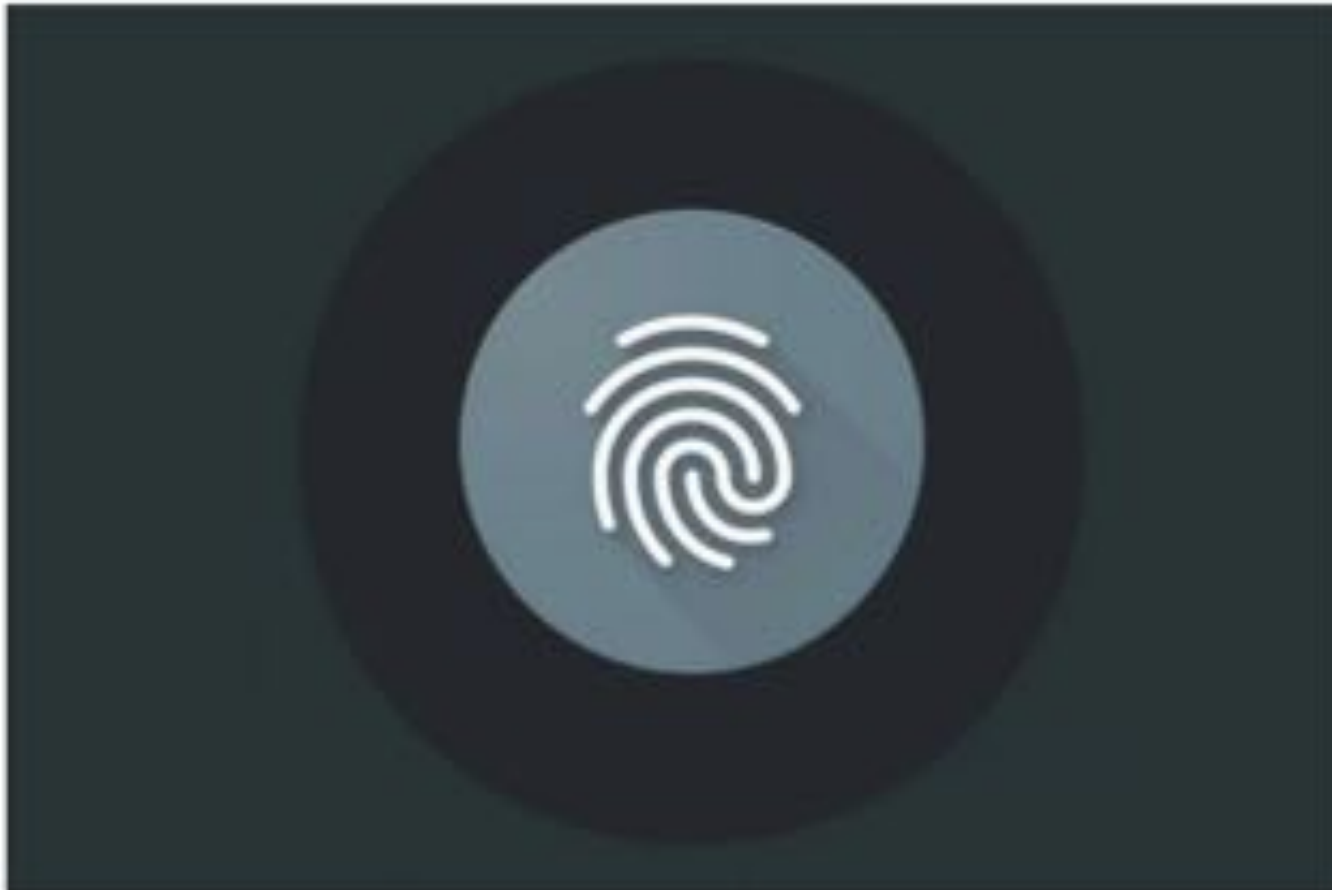


image 10

Requirements

#	Functionality	Host	Guest	To be completed by	Completed
1	Login	✓		17 March 2011	✓
2	Register	✓		17 March 2011	✓
3	Retrieve guest list	✓		24 March 2011	✓
4	Add guest	✓		24 March 2011	✓
5	Remove guest	✓		24 March 2011	✓
6	Update guest	✓		24 March 2011	✓
7	Create questionnaire	✓		24 March 2011	*
8	Retrieve questionnaire	✓		2 April 2011	*
9	Remove questionnaire	✓		2 April 2011	*
10	Send questionnaire	✓		2 April 2011	*
11	Answer questionnaire		✓	2 April 2011	*
12	Create HTML	✓		2 April 2011	✓

* Down scoped



Stylus or Touch Screen ?



Is Apple making an 'iPad Pro' with a stylus?

By **Sam Byford** on January 18, 2015 08:41 pm [Email](#) [@345triangle](#)



<http://www.theverge.com/2015/1/18/7785443/apple-ipad-pro-stylus>

DAVID PIERCE DEAR 09.12.19 7:00 AM

ONLY APPLE CAN MAKE THE PERFECT STYLUS IT ONCE SPURNED



Alarm App - cool or simple?

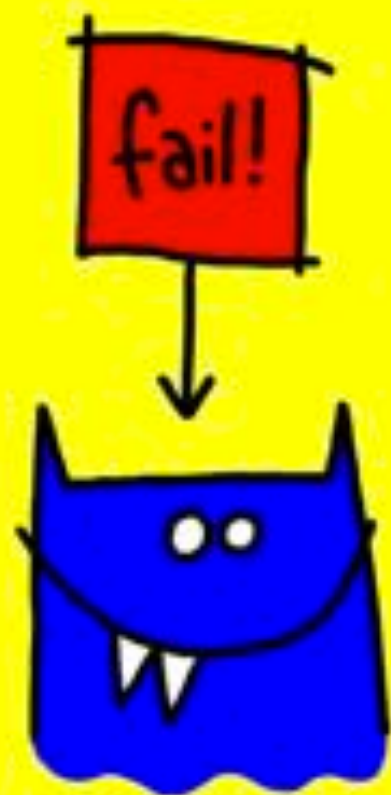


YOU HAD ONE JOB

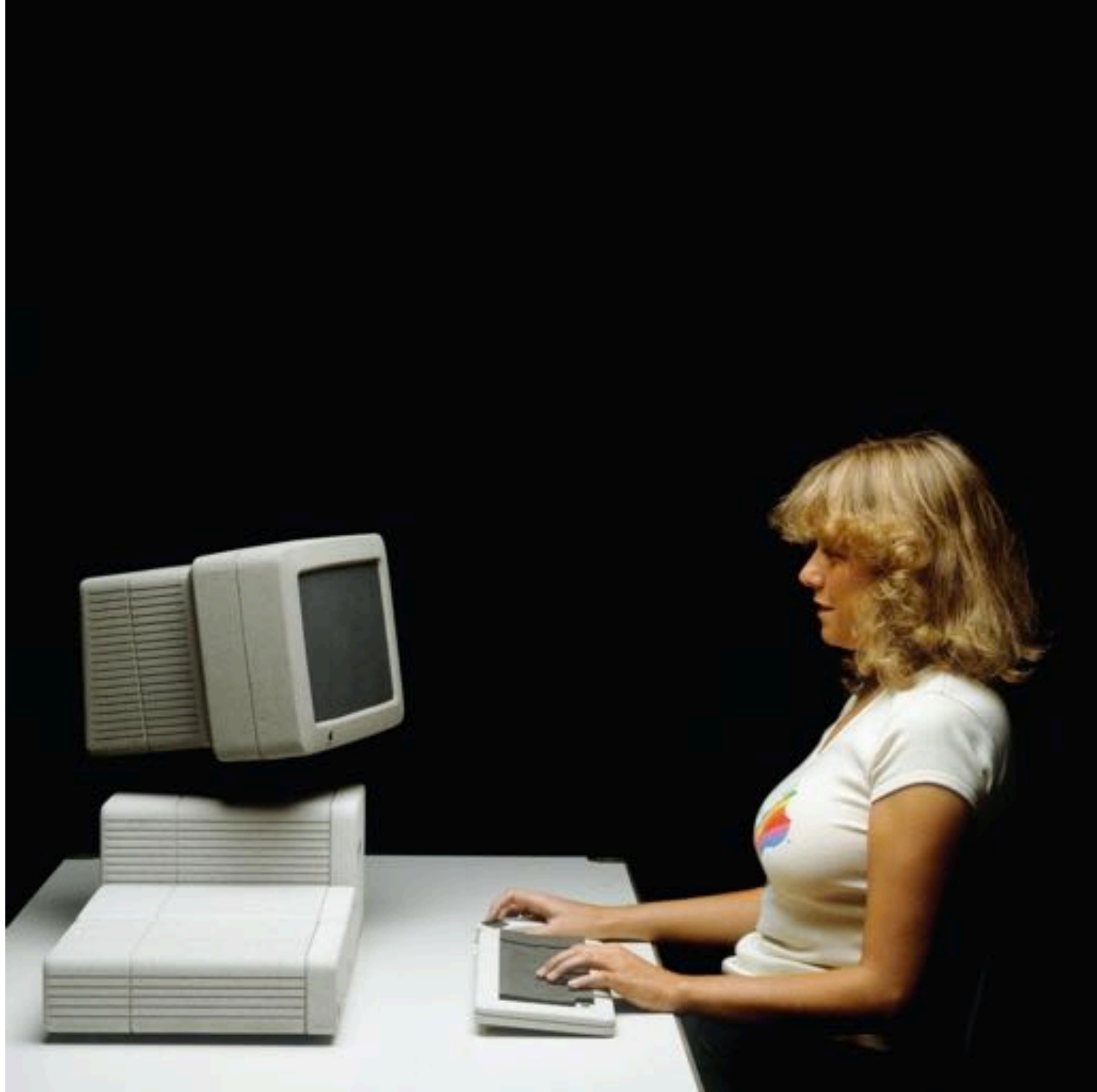




fail cheap.
fail quick.
fail often.
fail. fail. fail. fail.
fail. fail. fail. fail.
exactly.



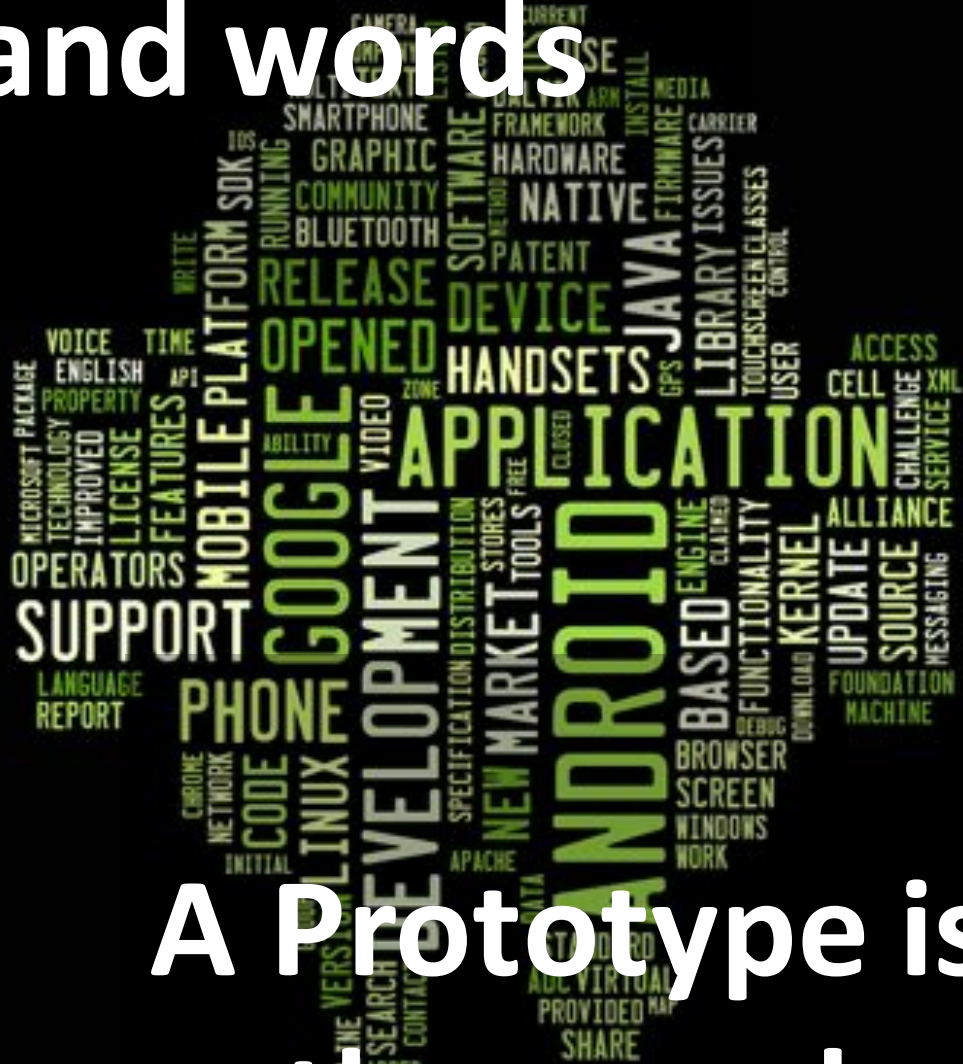
Prototype before you Build





<http://www.businessinsider.com/photos-early-apple-prototypes-2014-6?op=1&IR=T>

A Picture is worth a thousand words



A Prototype is worth a thousand pictures

3D printed future car prototype



What is a Prototype?



*A Testable, **Early***
version of an idea



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1 May 2014 Last updated at 12:36 GMT



Nasa shows off prototype spacesuit for journey to Mars

Nasa said the Z-2 spacesuit was only a prototype, but elements of it would be incorporated into the suit worn by the first humans to reach the Red Planet.



The suit is being tested in Nasa's pools used to teach astronauts to spacewalk

<http://www.bbc.com/news/technology-27238452>

Architecture

How many bedrooms do you need?
☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5+

How about bathrooms?
☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5+

How many stories?
☐ 1 ☐ 2 ☐ 3+

Do you want garage bays?
☐ 0 ☐ 1 ☐ 2 ☐ 3+

Do you have a style you like?

Square Footage:
 - Sq. ft.



Architecture

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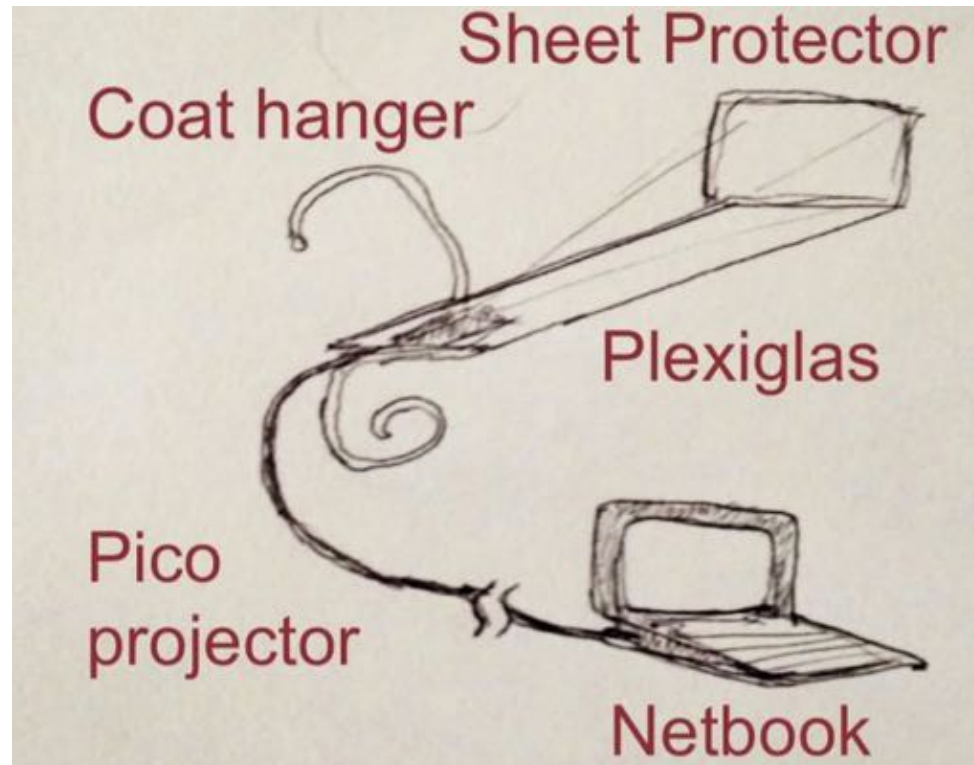
Square Footage:
 - Sq. ft.







Google Glass



http://youtu.be/d5_h1VuwD6g?t=34s

What about Prototypes
for Software?

Before Building an app



Build a Prototype



Smart Fridge





Smart Watch

Pebble Time - Awesome Smartwatch, No Compromises

by Pebble Technology



37,866

backers

\$8,035,231

pledged of \$500,000 goal

30

days to go

[Back This Project](#)

★ [Remind me](#)





<https://blog.getpebble.com/2012/08/10/user-interface-preview-updates/>

Why Prototype?

To Communicate an Idea or Experience



We want to build the next cool
gadget...

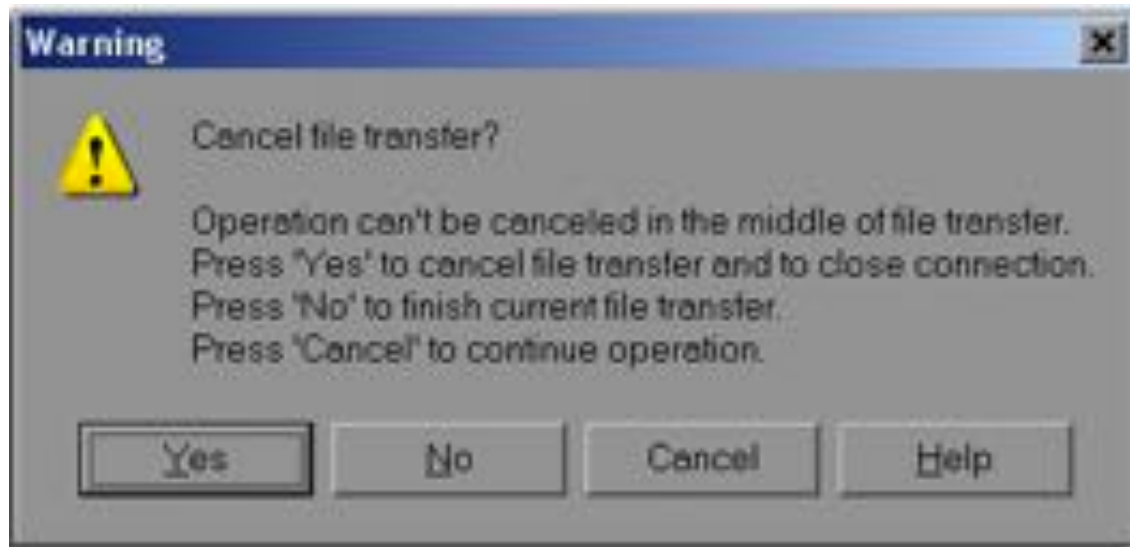


But What do people think about it?
Lets show them a video

A photograph of an iceberg floating in the ocean. The visible tip of the iceberg is small and jagged, while the much larger, submerged portion is visible below the water line. The water is a deep blue, and the sky is a lighter blue with some clouds. The image is framed by a black border.

To Validate Assumptions

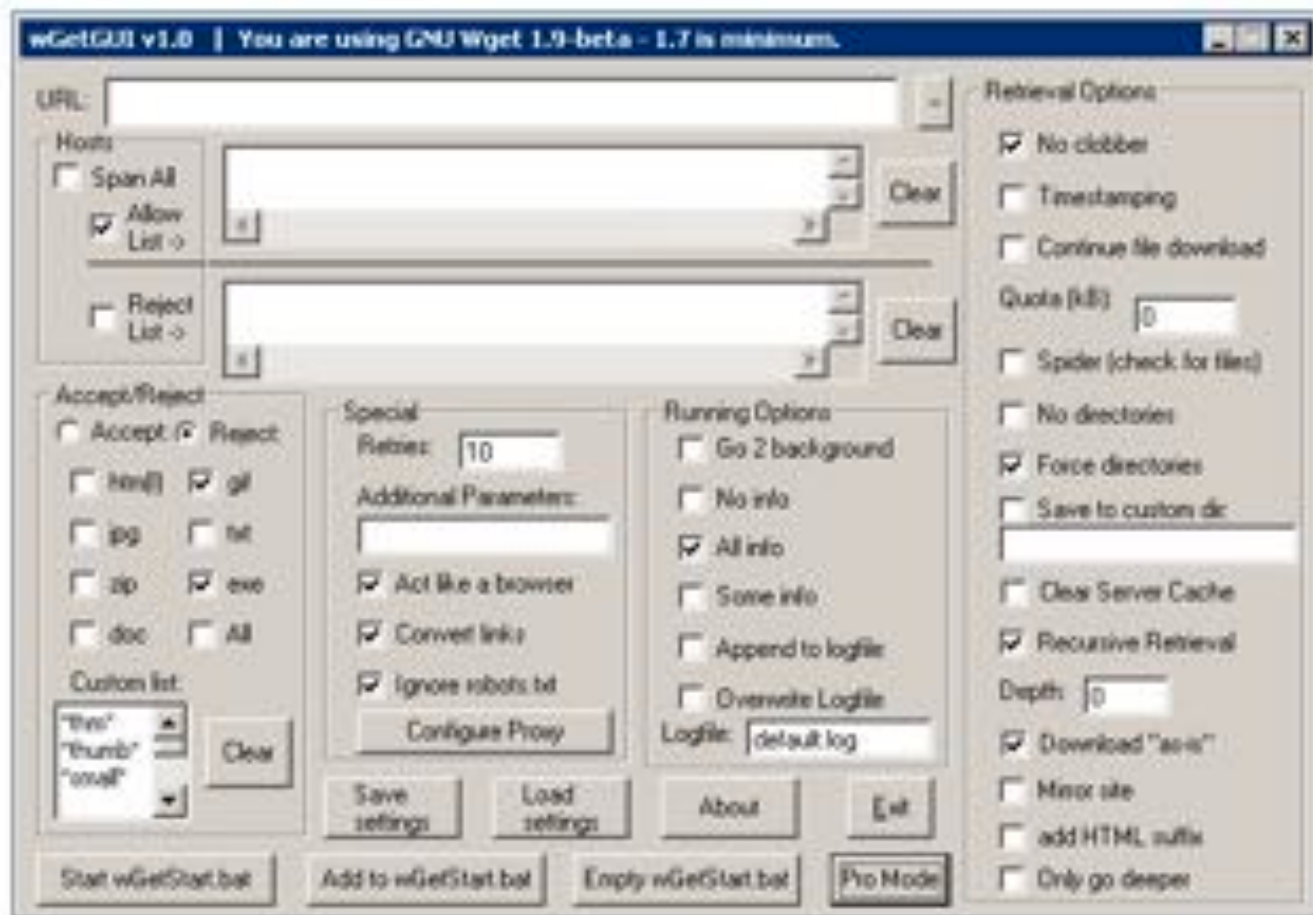
Does the User Understand you?



Press *Yes* to Cancel” – “Press *Cancel* to Continue ????

This Is What Happens When You Let Developers Create UI

Deep down inside every software developer, there's a budding graphic designer waiting to get out. And if you let that happen, you're in trouble. Or at least your users will be, anyway.



Spiral Staircase - Good Idea?



Still a good idea?



Facebook Sign-in Only?



What if your users don't trust your app?



To compare alternatives



Stylus or Touch Screen ?



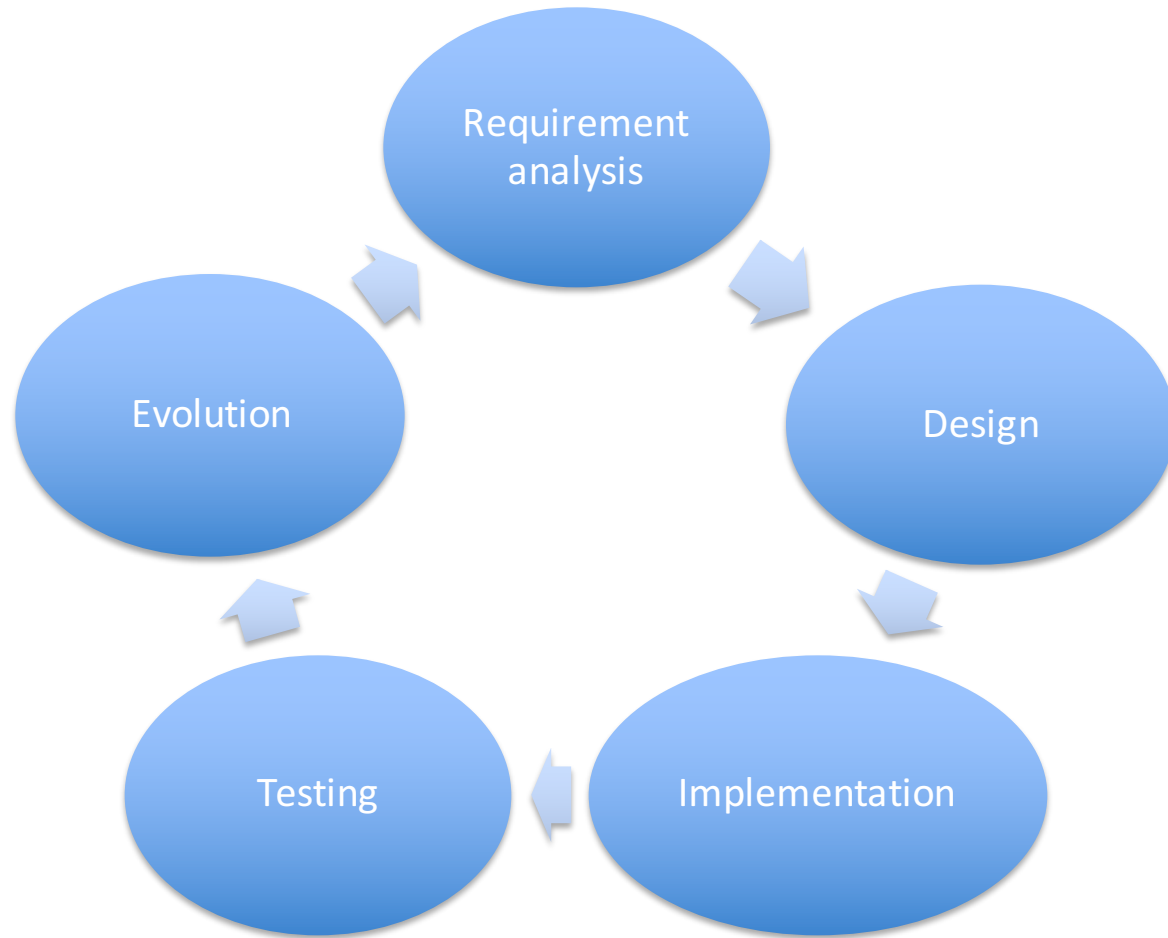


Fail early to avoid disasters

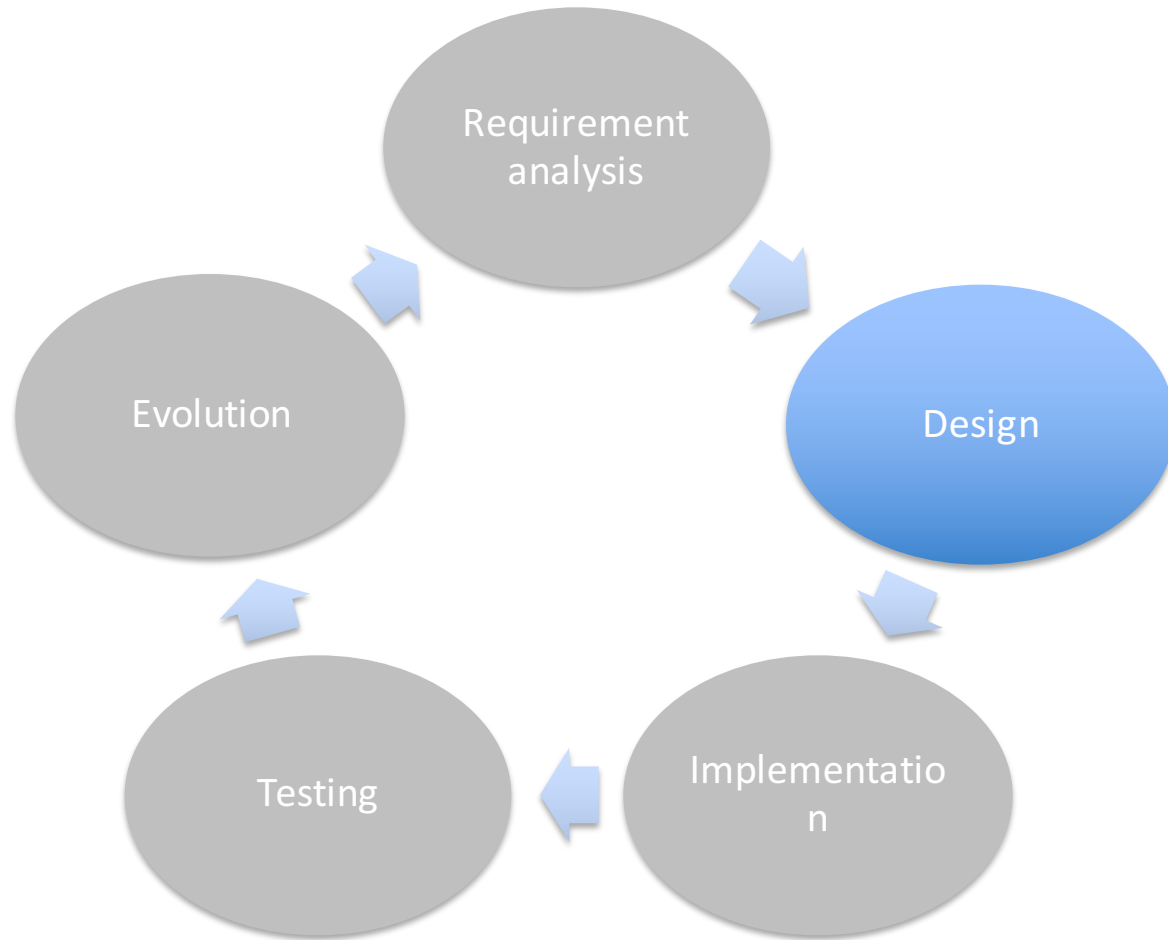
Get Feedback Early

- Design the **concept** before you build it.
- Get Feedback.
- Redesign.
- Keep it fast and simple.
- Review Early.

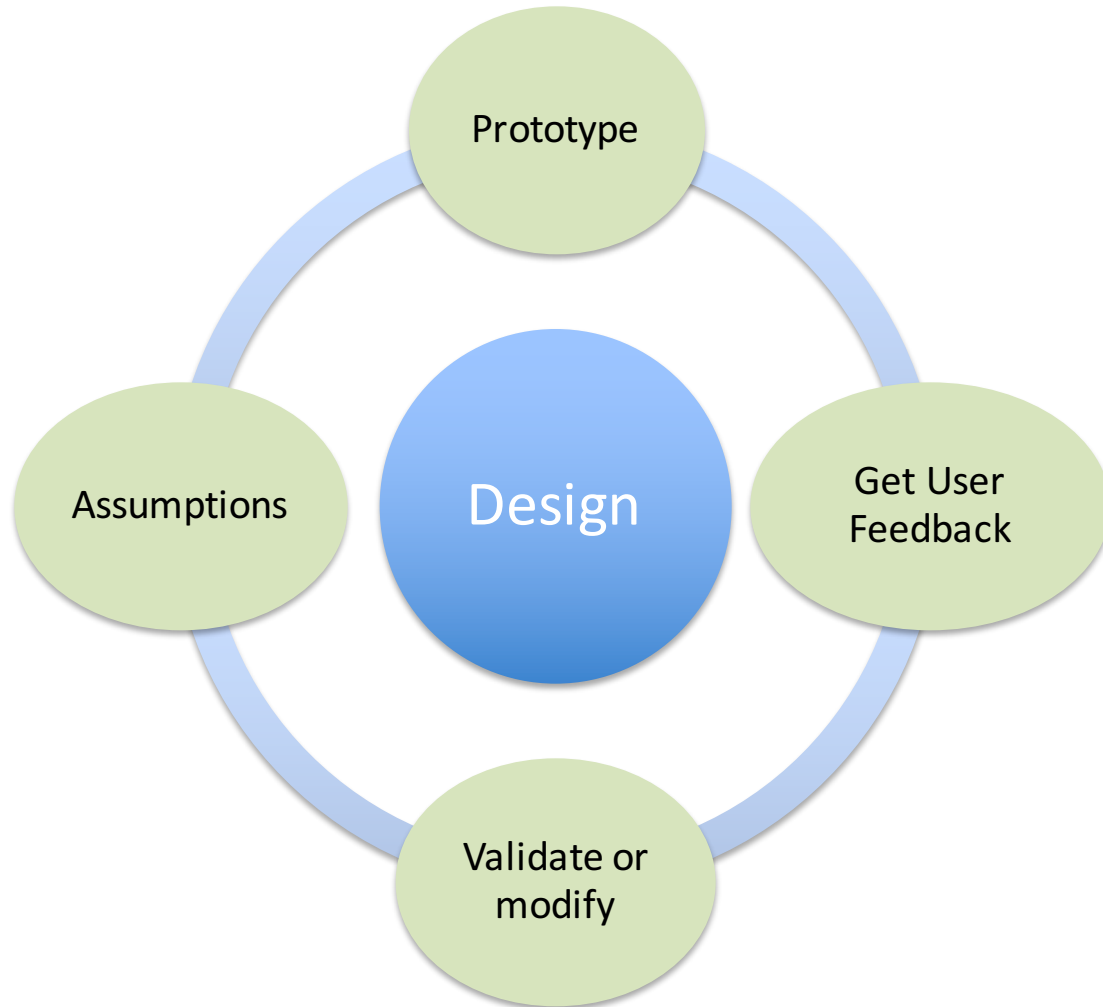
Ideal Software Engineering Life Cycle



Where does prototyping come in?



Prototyping Life Cycle



What could go wrong with a login screen?



The image shows a login interface with a blue header bar containing a red logo and the word "Enter". Below the header are two input fields labeled "E-mail" and "Password". Under the "Password" field is a checkbox labeled "Don't remember me". At the bottom of the form are two buttons: a blue "Enter" button and a green "Registration" button.

They forgot the “FORGOT PASSWORD” button!!!

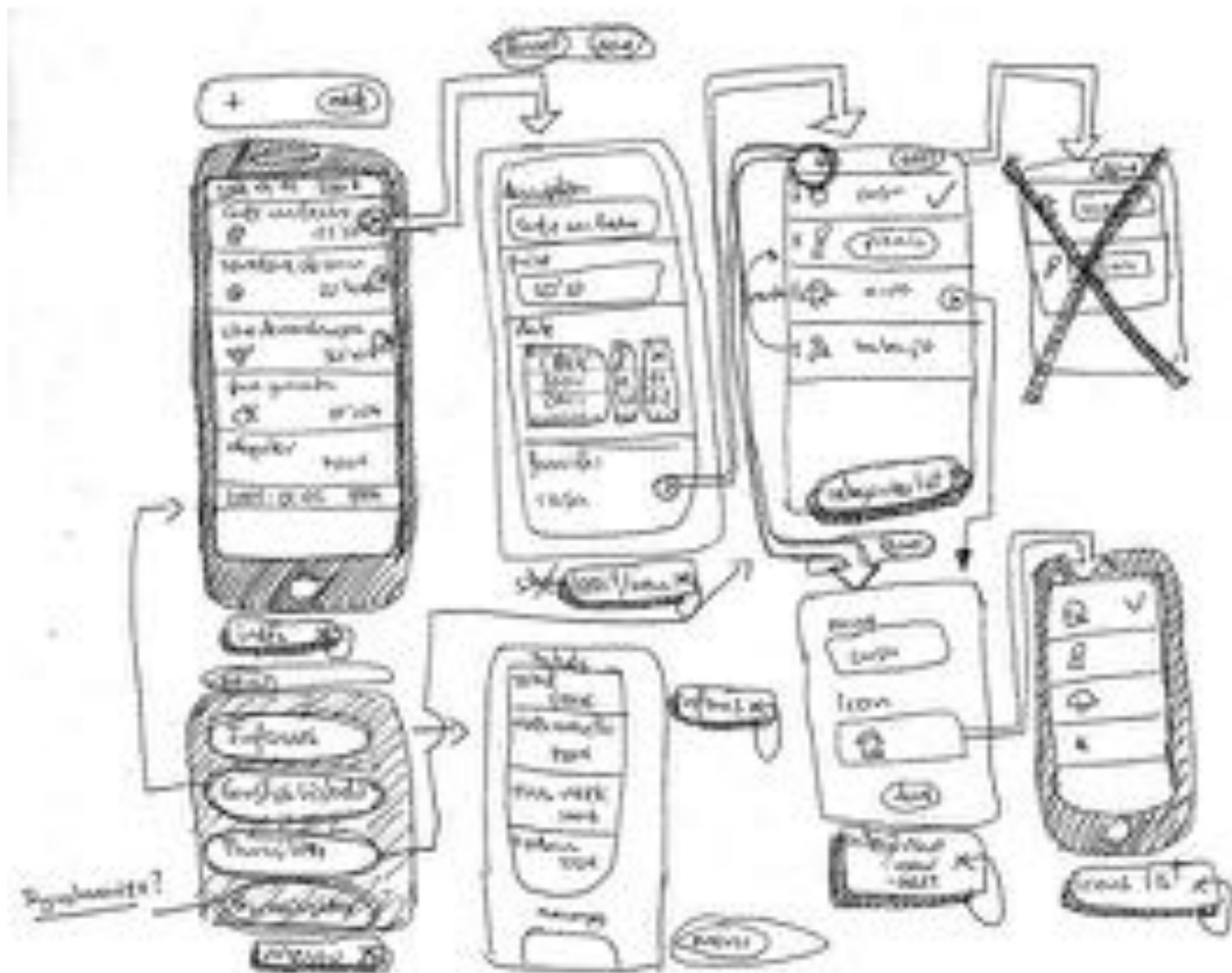
Common techniques

- **Paper prototyping**
- **Wireframes and page schematics**
- **HTML wireframes**
- **Interactive prototypes**

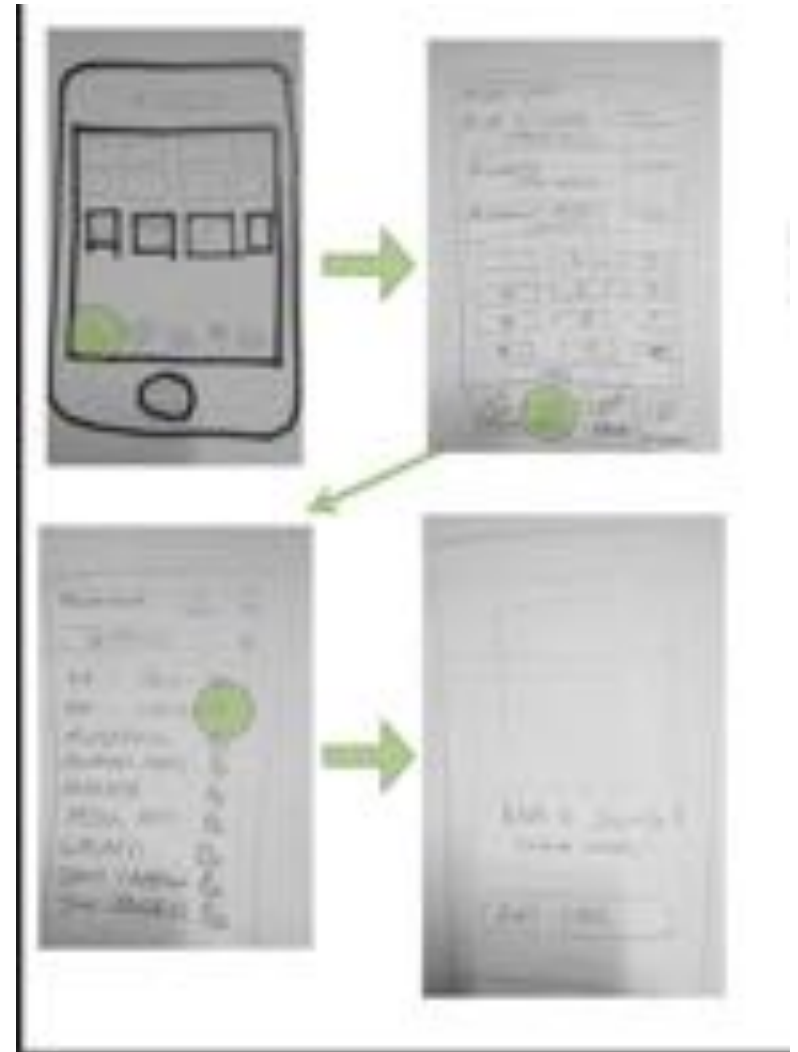
What is Paper Prototyping?

- Paper: materials of paper-and-pencil alike.
- Prototyping: The design and evaluation of the concept.
- Low-fidelity visual representation
- Test Usability.
- **Representative users** perform real tasks by **interacting with a paper version** of the interface.

Example Paper Prototypes



Example Paper Prototypes



Advantages

- Quick to build/refine, thus enabling rapid design interactions.
- Requires minimal resources and materials.
- People are willing to give you more feedback when they know you have invested little.

Disadvantages

- Its paper not a real app/webpage

Wireframes

- **Wireframes** – *basic illustrations* of the *structure and components* of a web page or Mobile Application
 - Real Proportions
 - Includes basic page/screen layout
 - Includes navigation
 - May include:
 - headers, footers, content areas, sidebars
 - dynamic widgets, search box, graphics, links

Wireframing examples



HTML Wireframes



Advantages

- Better than paper prototypes
 - Feels real
 - Things happen when you click

Disadvantages

- Just a skeleton
 - Not really how the real interfaces looks
 - Not really how the real interface behaves

Interactive Prototyping

Importance of transitions and movements

How did this?



...become this?



How did this?



...become this?

**Optimus
Prime**



How did you go from this?



...to this?



Interactive Prototyping tools



Works both as a Firefox plugin and standalone installation on windows, mac, and Linux

<http://pencil.evolus.vn/Downloads.html>

proto

Marvel

Completely in your browser

<https://proto.io/>

<https://marvelapp.com/>

JUSTINMIND[®]

Standalone installation on windows, and mac

<http://www.justinmind.com/download>

More tools

<https://popapp.in/>



<https://mockingbot.com/>



<http://www.invisionapp.com/tour>



<http://www.pixate.com/>

Justinmind Prototyper

Features

- **No programming required.** Justinmind Prototyper is an intuitive tool. Just drag the components or interactions that you need from the palettes to the work area.
- **Instant Simulations.** See your application's prototype in action by simply clicking the Simulate button. No waiting required.
- **Exportable to HTML.** Export to HTML effortlessly, so that your clients or users can see it work online and give you their opinion.

CUSTOMERS

The preferred prototyping tool for thousands of companies

600,000+ other Justinminders in 180 countries. Join them!



Google



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JUST
IN MIND

PROTOTYPER PROFESSIONAL EDITION

New

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☐ Don't show again

Close this window

Create a new prototype



Select a device



iPad



Android



Android tablet



Cancel

Next

Create a new prototype

Start your prototype from



Empty



Recent



Image



Example



Define your prototype settings

☒ Predefined: 360 x 640

☐ Custom: Width (px): Height (px):

Back

Cancel

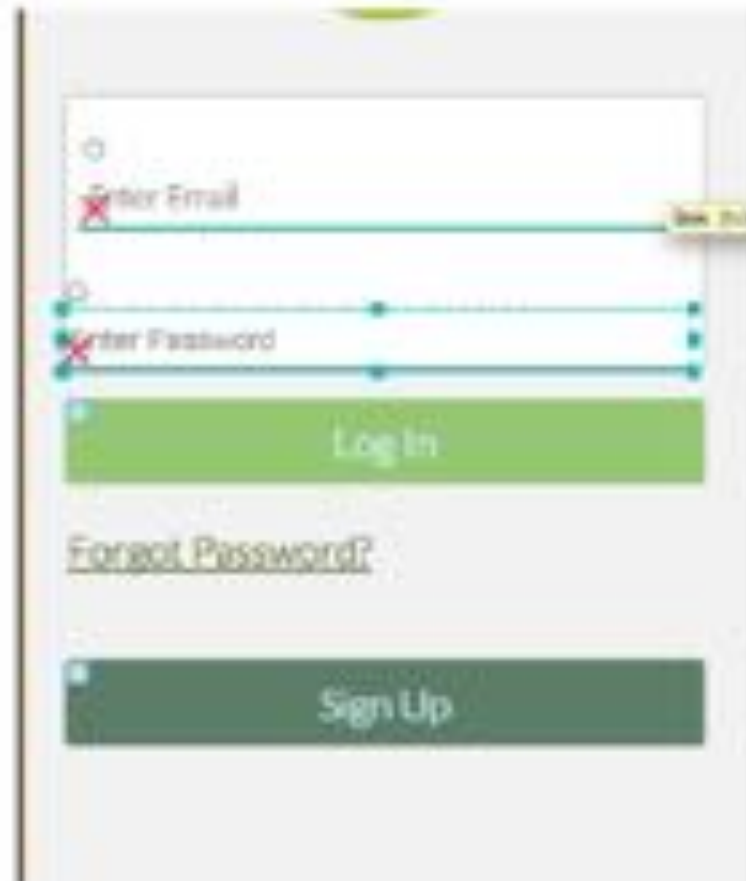
Finish



Add New Widgets from Library



Adding TextBoxes

A mobile app login form UI mockup. It features two text input fields: 'Enter Email' and 'Enter Password'. The 'Enter Password' field has a red 'X' icon on the left and a 'Show/Hide' toggle on the right. Below the fields is a green 'Log In' button, followed by a link 'Forgot Password?' and a dark green 'Sign Up' button. The form is set against a light gray background with a white border.

A screenshot of a login form with the following elements:

- ☐ Enter Email: A text input field with a red 'X' icon on the left and a yellow 'Link checked' label on the right.
- ☐ Enter Password: A text input field with a red 'X' icon on the left and a dashed blue line above it.
- : A green button.
- [Forgot Password?](#): A text link.
- : A dark green button.

A screenshot of the 'Text' widget configuration panel in a design tool. The panel is titled 'Text' and contains the following settings:

- General**: A section header.
- ID**: input_3
- Value**: Enter Password
- Type**: text
- Text/Op**: text
- Text/Op**: textarea
- Text/Op**: password
- Multiple selection**: (0)

Create Another Screen



Creating HotSpots





Simulate



Simulate



Share

- <http://justinmind.com/>

Sign In to your
JUSTINMIND ACCOUNT

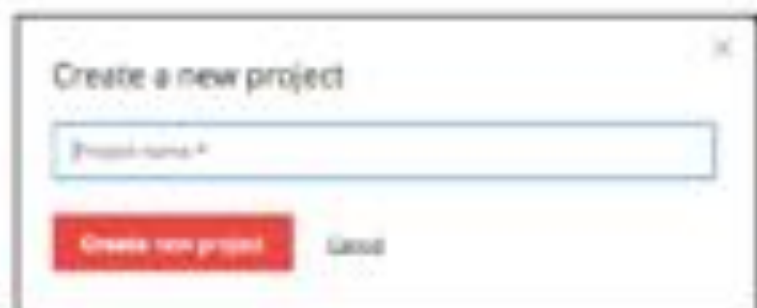
Don't have an account? [Sign Up](#)

[Forgot](#)

SIGN IN

☒ Stay Logged In

Upload the prototype



Invite Reviewers

Invite reviewers to: **smartMenuPrototype**

Smart Mail

Review the design requested by customer

Subject

You have been invited to review a prototype

Content

(Type the message you wish your users to receive. The app `smartMenuPrototype_login`, `smartMenuPrototype_logout` and `smartMenuPrototype` will be associated with this app template and be auto-dispatched.)

You have been invited to review the prototype:

smartMenuPrototype
smartMenuPrototype_login
(Warning: This link has been created for your use only. Do not reuse this address.)
Mobile app users: smartMenuPrototype

 Send Invitation

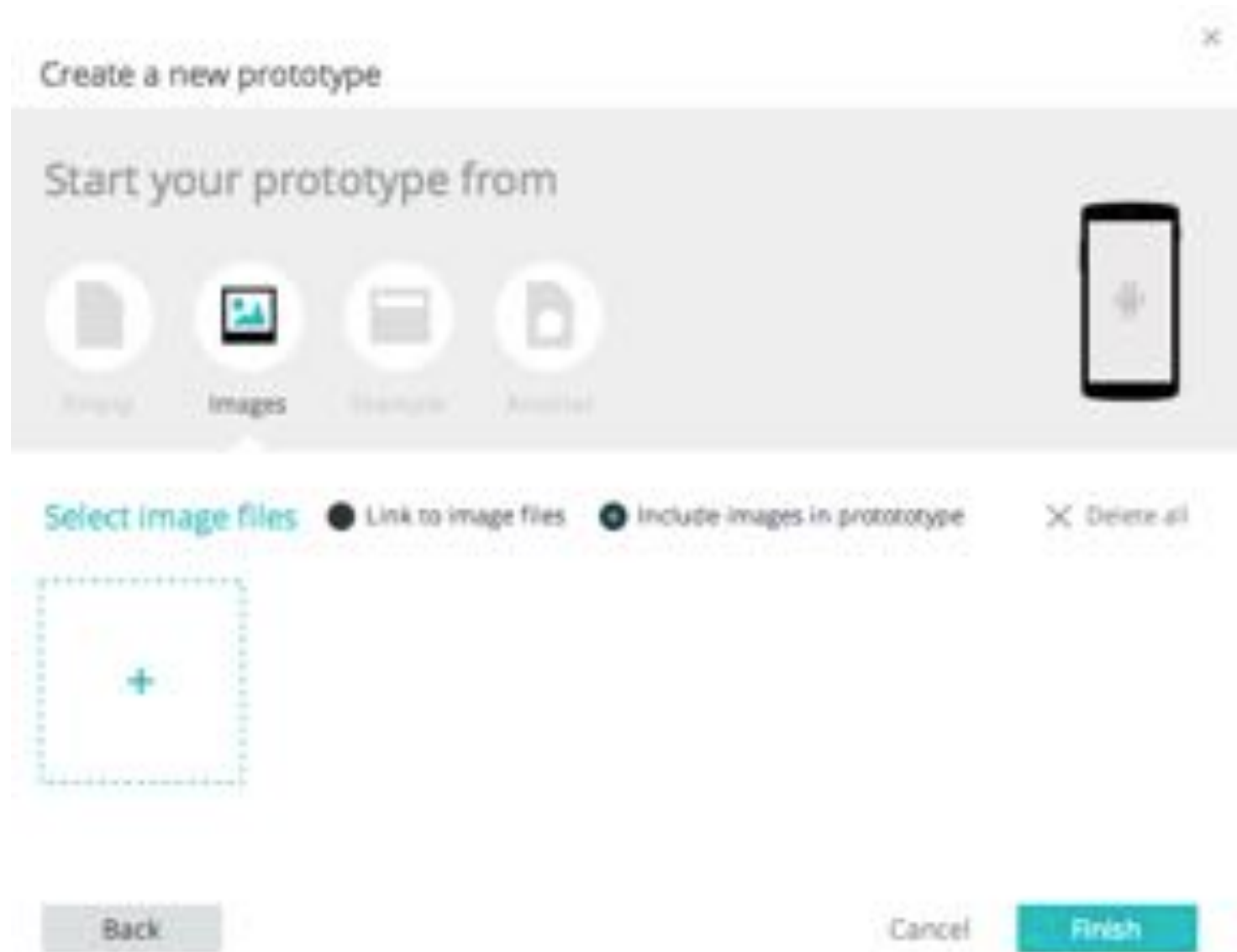
info

Users and groups that you can invite

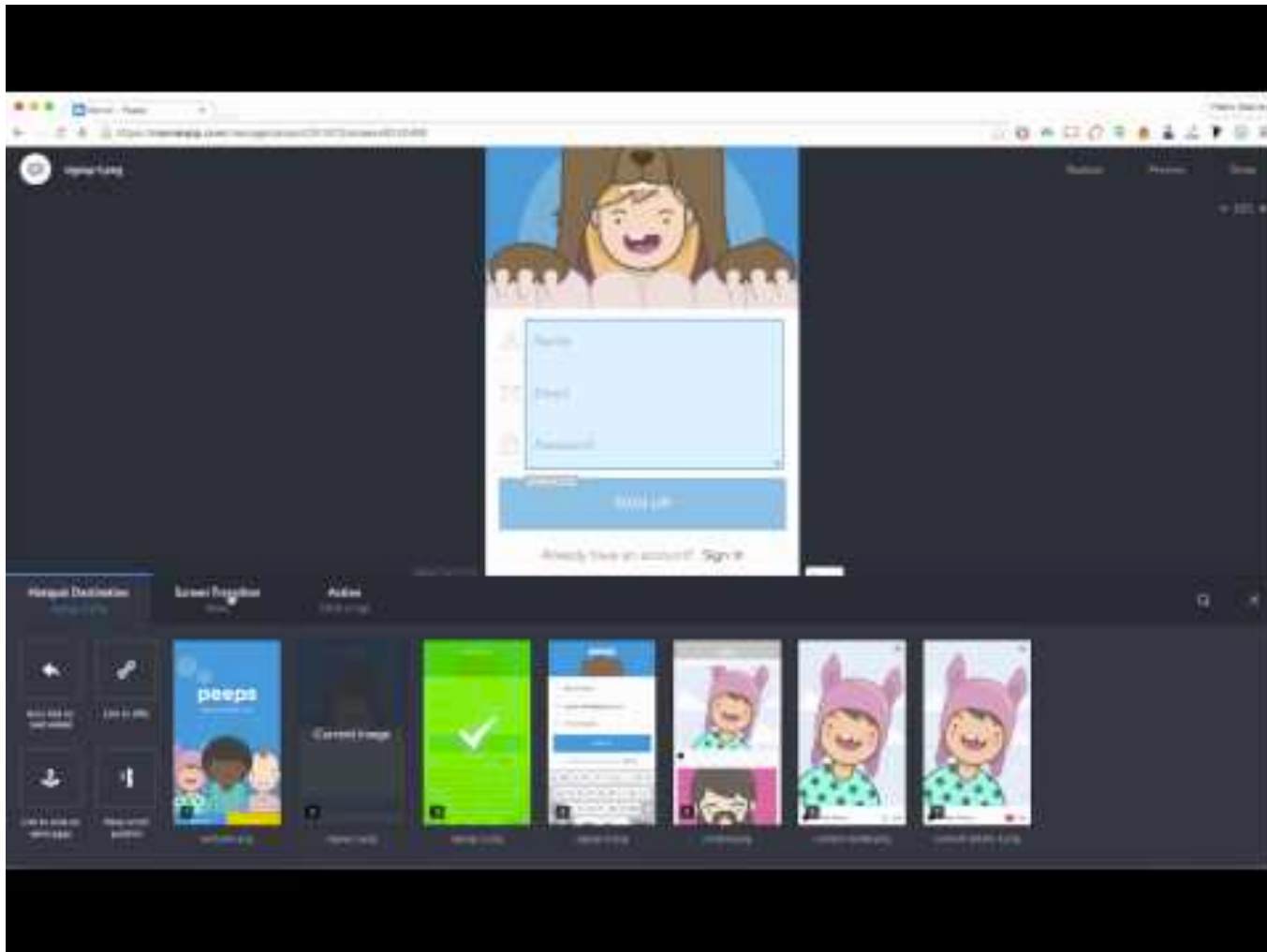
Using Predesigned Asset Files

- Designed in Adobe PS/Sketch
- Import into Prototyping Tool

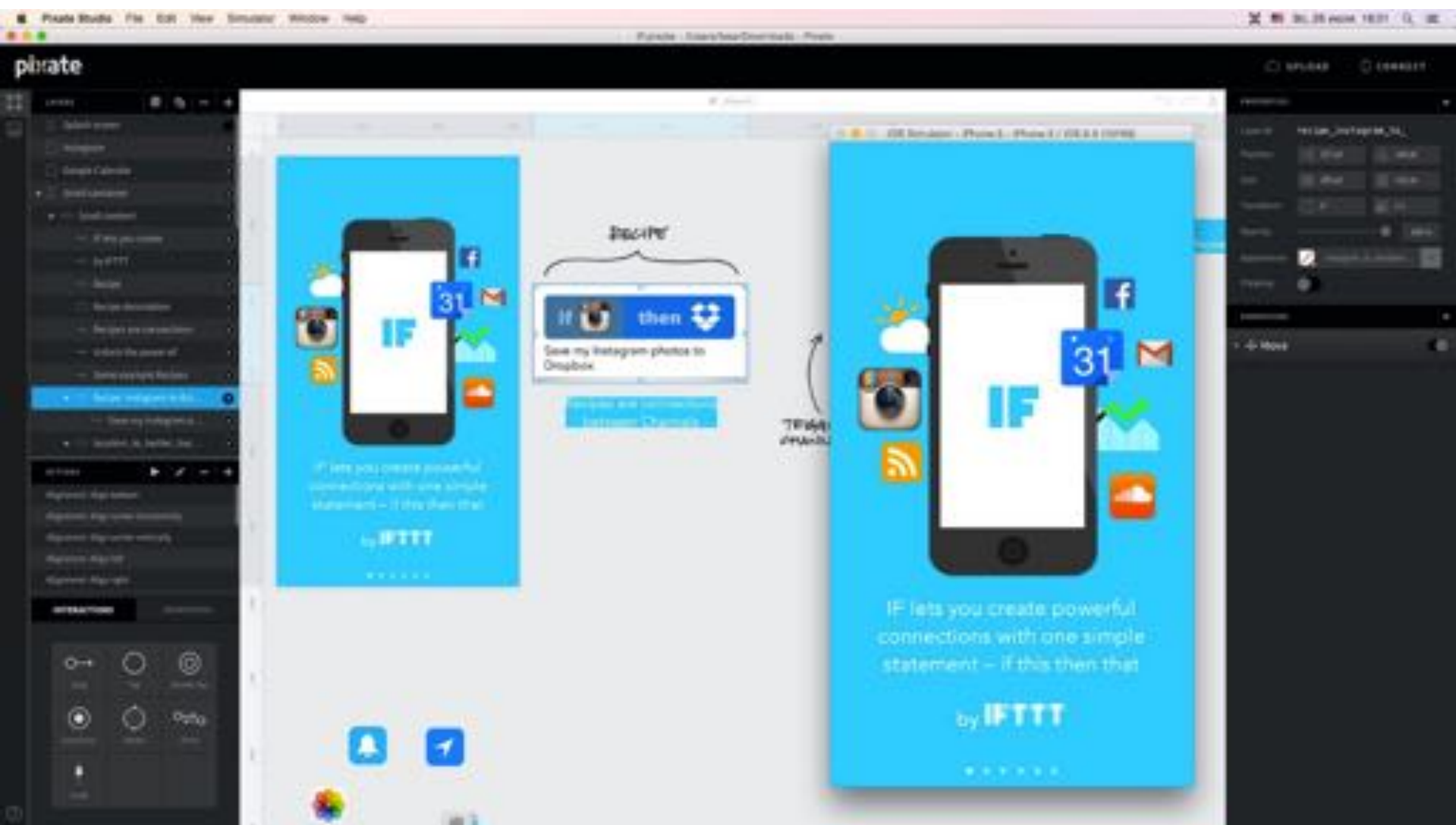
In Justinmind



Marvel App



Pixate



Pop

- Leveraging the simplicity of paper prototyping



Design on paper

Simulate and Test



Take Pictures



Simulate clicks

Homework

- Mobile Shopping Cart App
- Help People shop for Groceries
- What features should a shopping cart app have
- Look at existing shopping apps
- What features would you want to add/remove
- Next class YOU will *build the* prototype