

HCI and Design

Today

Design patterns and components

Material Design (Google)

Basically: How can YOU create designs that look good?

Design = Solutions

Design is about finding solutions

Unfortunately, designers often reinvent things

Hard to know *how* things were done before

Why things were done a certain way

How to reuse solutions

How can codify design knowledge?

- An effective and flexible design is difficult to get “right” the first time.
- Yet experienced designers do make good designs
 - New designers (like many of you!) are usually overwhelmed by the all the design options available.
- Experienced designers evidently know something inexperienced ones don't, what is it?

How can codify design knowledge?

- Expert designers usually do **not** solve every problem from first principles, they **reuse** solutions that have worked for them in the past.
- When they find a good solution, they use it again and again.
- How can you reuse solutions that good designers have used again and again?
 - But still make them new/yours
 - And learn how to create awesome designs at the same time

Answer: Design patterns



Web design circa 2006

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New Releases



Jan 2007: The iPhone is introduced



The crisis of a tiny screen

Everyone simultaneously realizes their website is completely unusable.



But Apple's own apps worked pretty well...



iOS DEV KIT

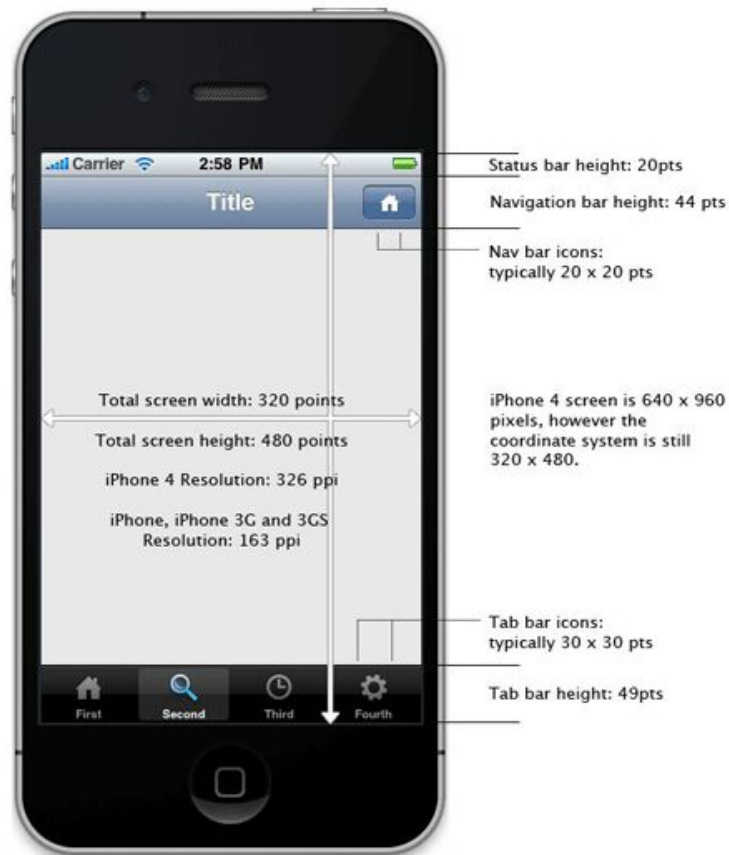
Guidelines for plug & play UI



Apple as the benevolent dictator

An opportunity to **redesign** **EVERYTHING** from scratch...

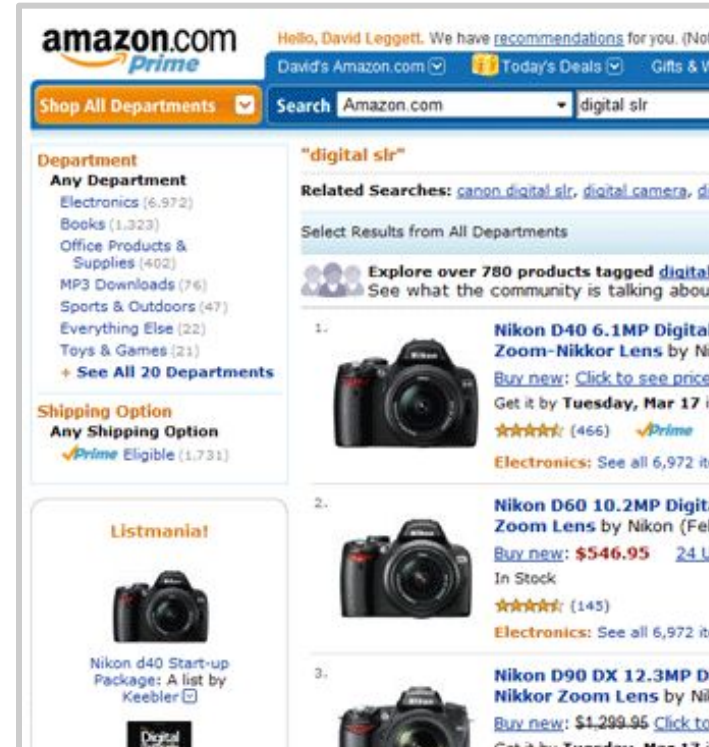
(for a very specific device)



The resource-rich fared best

Re-make your app 10 times!

- Web
- iPhone
- iPad
- Android
- Windows Phone
- Smart TVs
- etc...



A SOLUTION

Responsive design for any screen



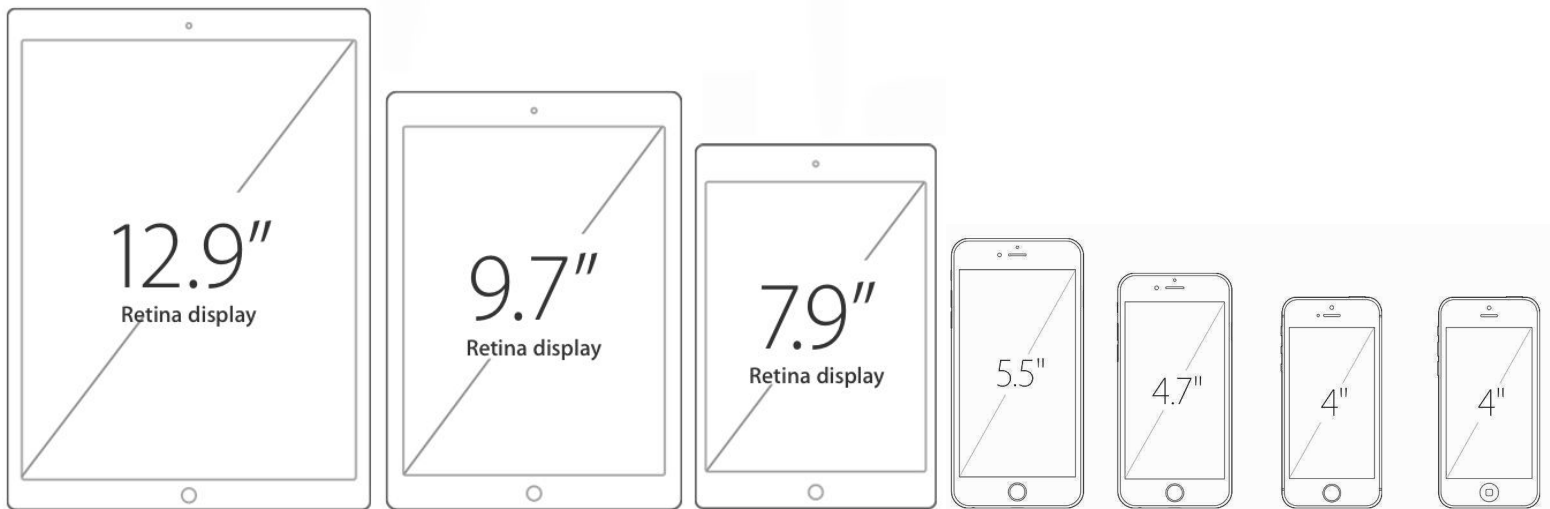
Adaptability also a mobile issue...

Oh Android. You so crazy.

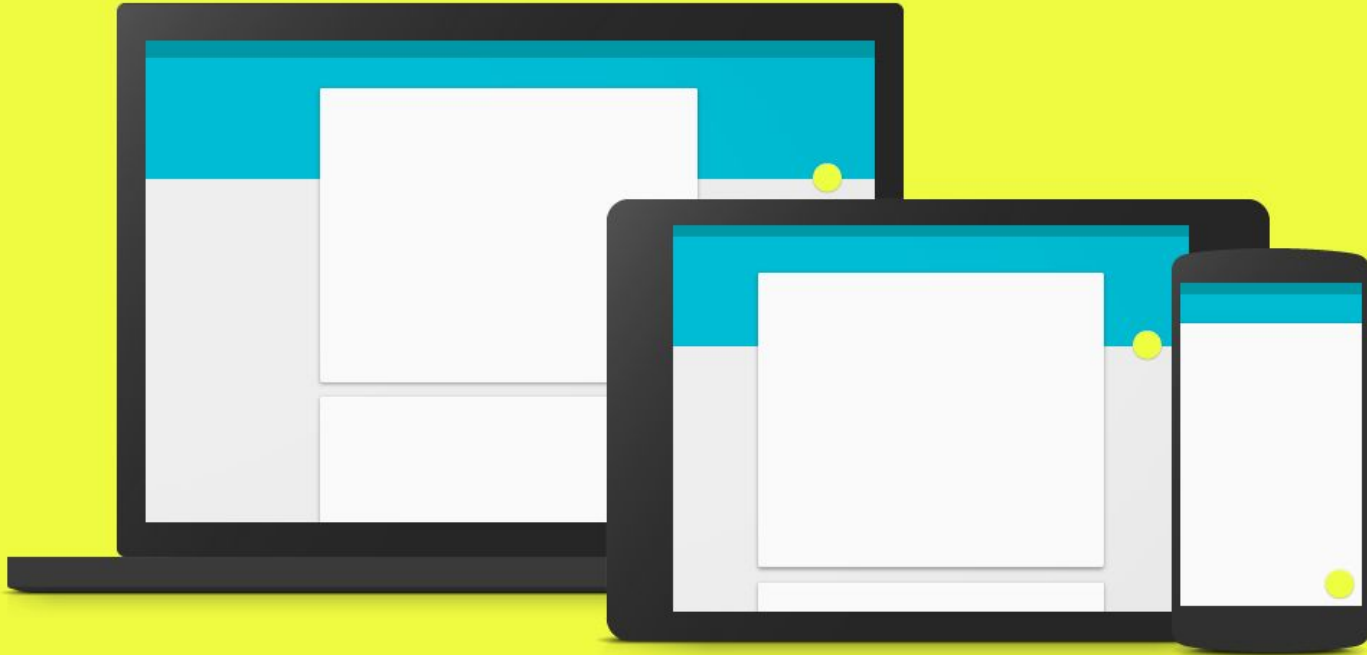


...eventually even for Apple

No more 320x480 pixel-perfect layouts :-)



Google responds: Material Design



Material Design

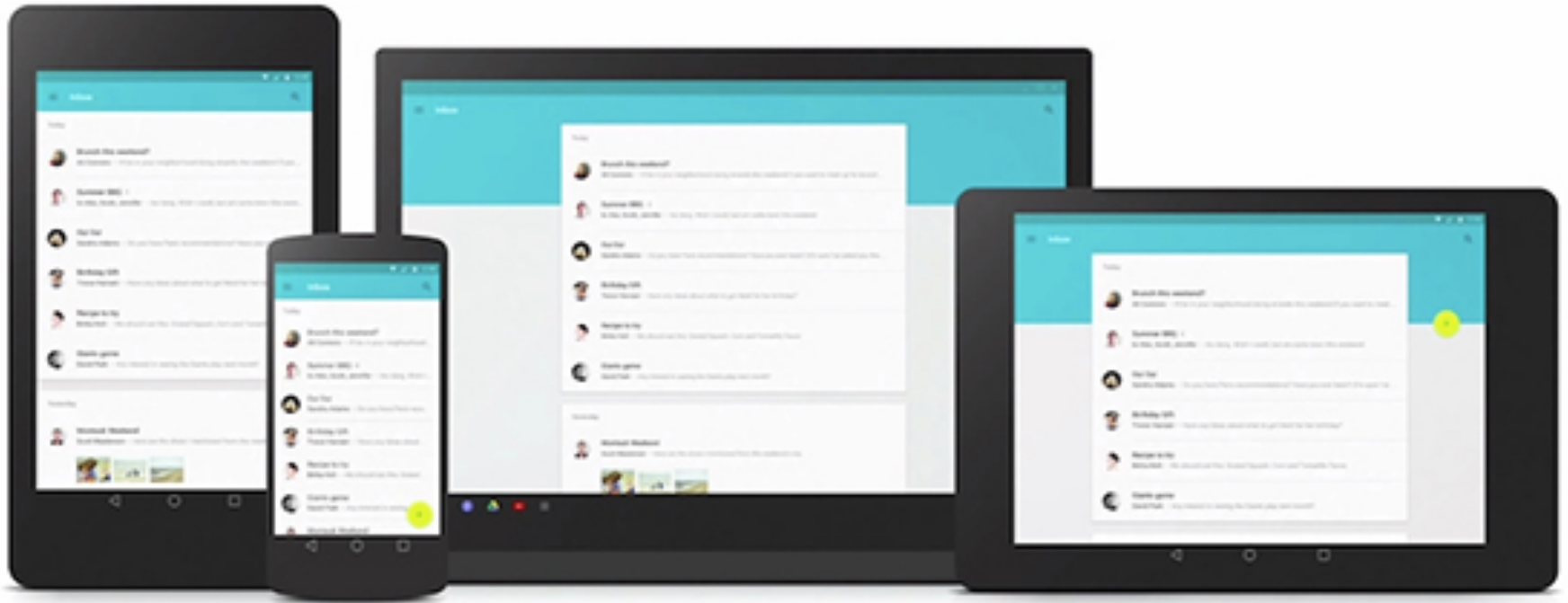
Released by Google in 2014

material.io

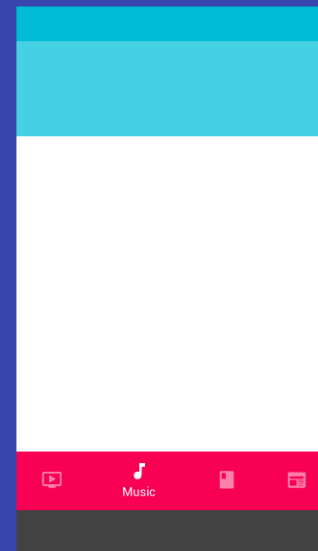
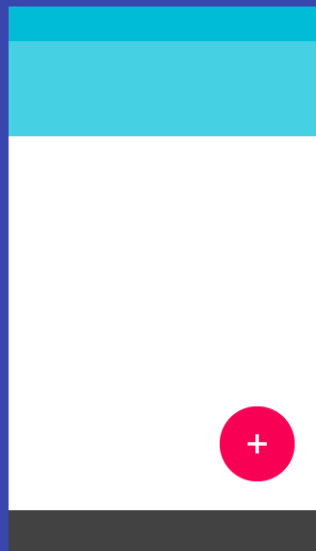
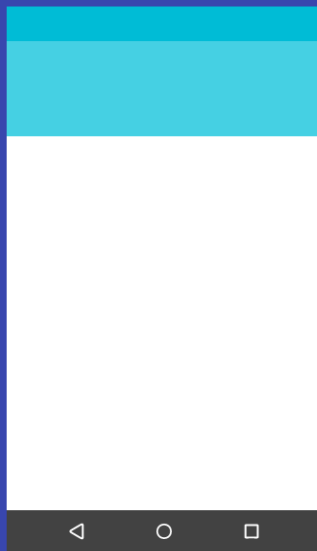
The main purpose of material design is to create a new visual language that combines principles of good design with technical and scientific innovation.

Develop a single underlying system that allows for a unified experience across platforms and device sizes.

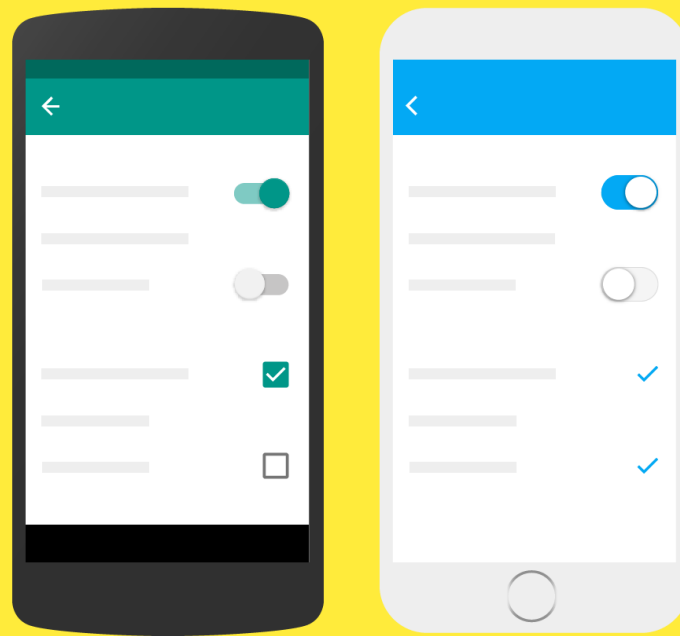
Material Design



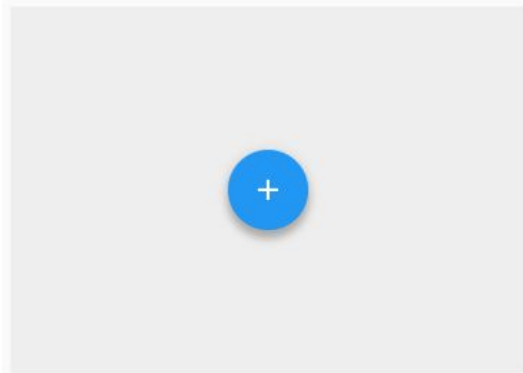
Reusable components



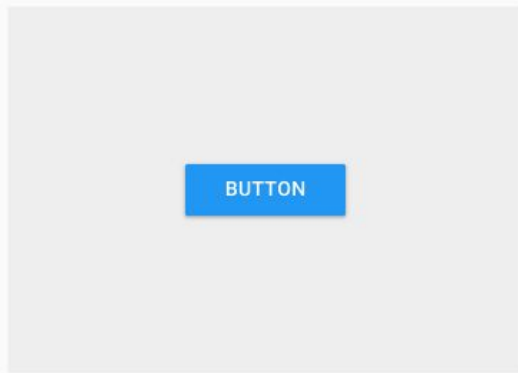
Different devices



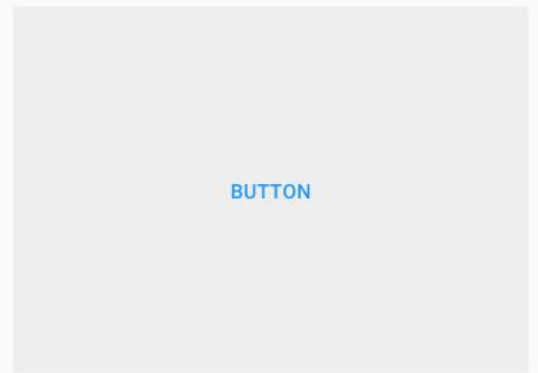
Buttons



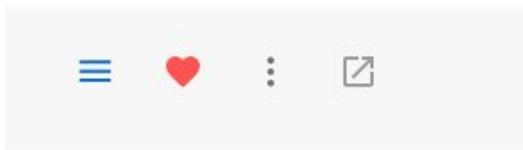
Floating action button



Raised button

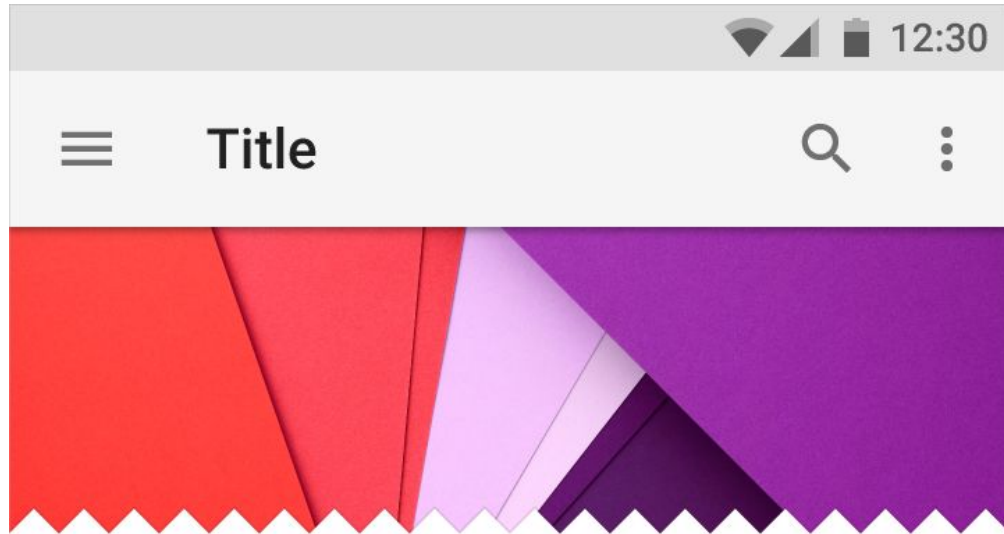


Flat button

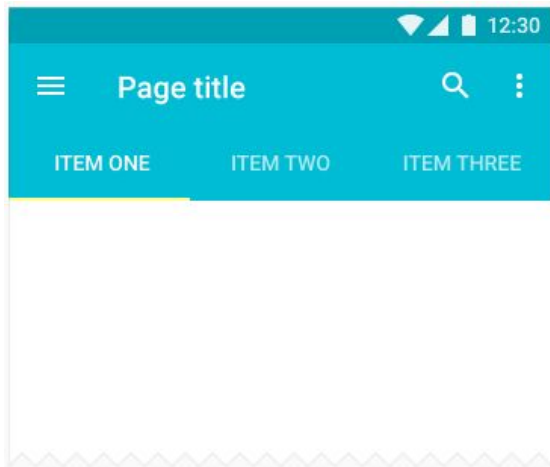


Icon buttons

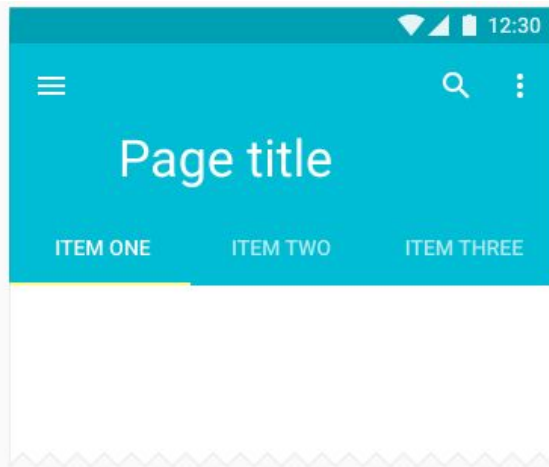
Navigation bar



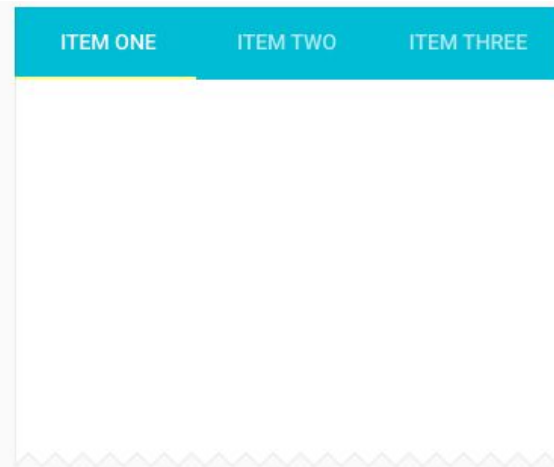
Tabs



Default app bar and fixed tab bar

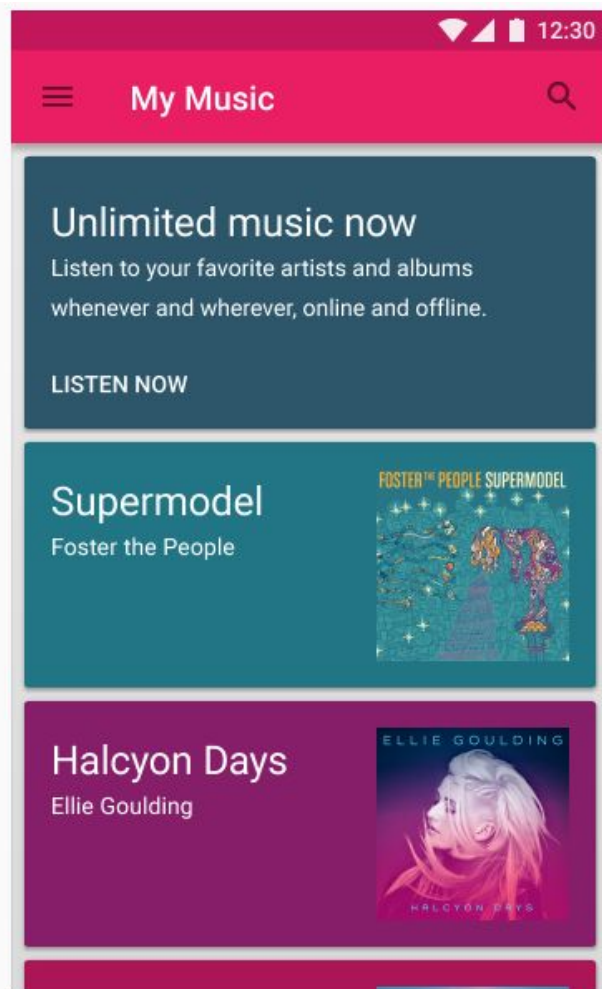
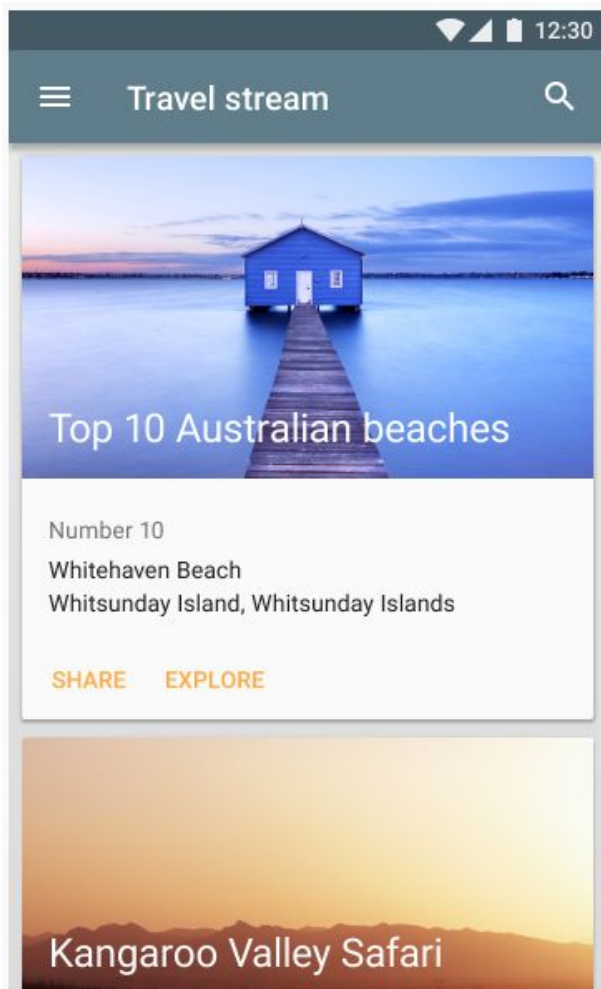


Extended app bar and fixed tab bar



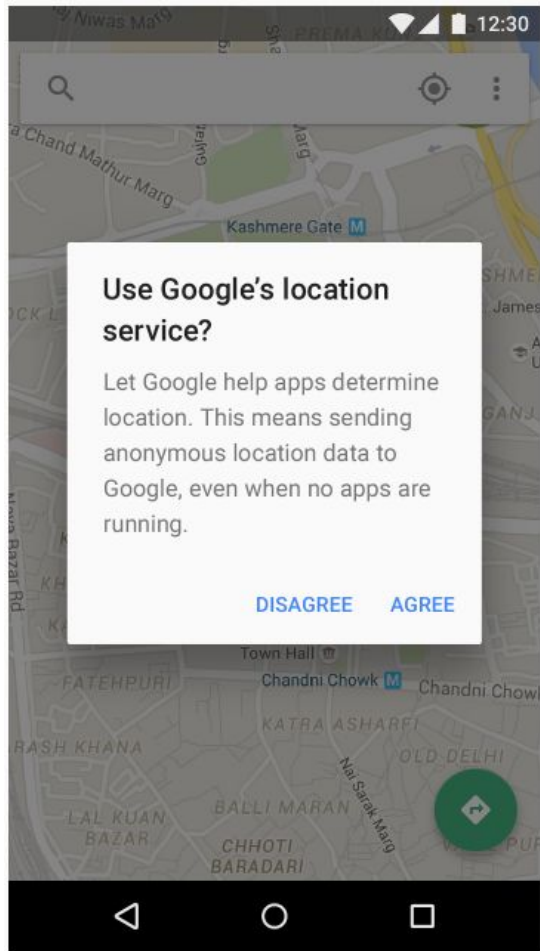
Fixed tab bar pinned to top with scrolled content

Cards

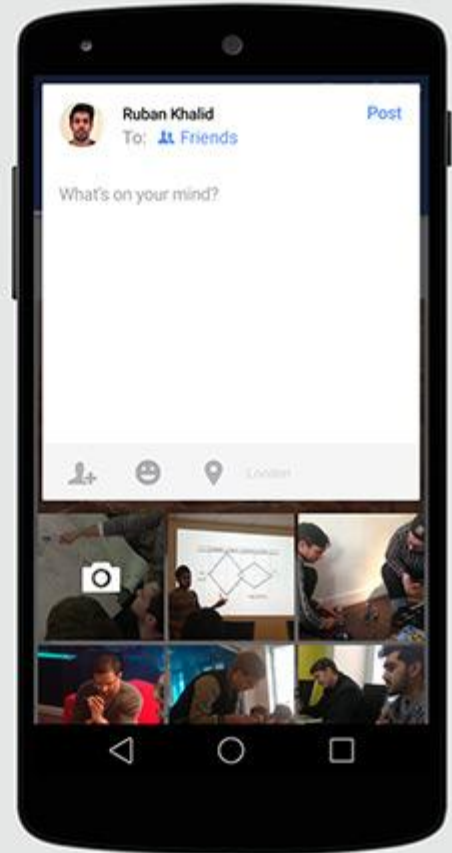
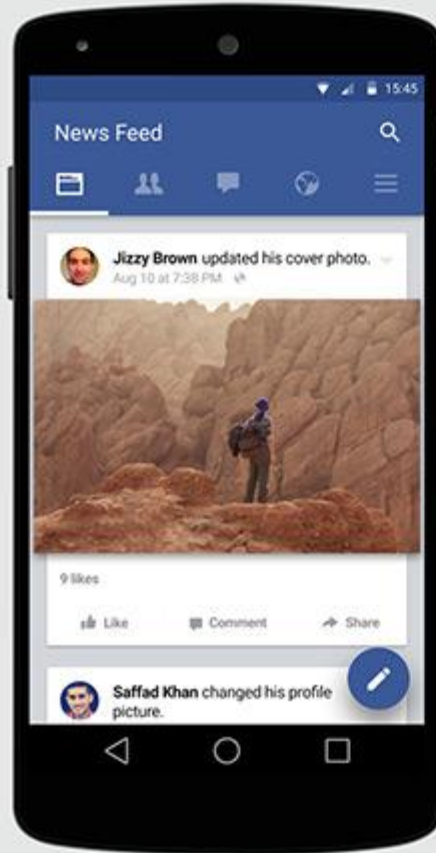


Dialogue

Spot the <card> and the <button>!



**Any app
can be
reduced to
these basic
elements**



Let's Practice

Goal: Decompose an app into design patterns / components

1. Choose any popular app or website
2. Go through it and identify the different patterns/components used
3. Make a list, take screenshots, label different components
4. (If time) Compare and critique with your neighbor

List of components: <https://material.io/guidelines/>

Submit: Upload a pdf of your work to this google folder.

<http://bit.ly/2FjuURw> **THE FILENAME SHOULD BE YOUR NETID!**