

# Orbital 2018 Introduction to Android App Development



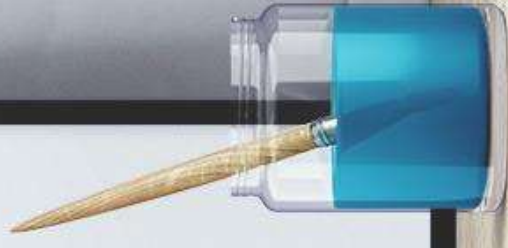
# What is this section gonna cover:

- 👍 A short intro to Android
- 👍 Reasons to develop in Android
- 👍 Features of Android Development  
(language, mobile app communications, etc.)
- 👍 Work model & Timeline Breakdown
- 👍 Useful Resources

# What is Android?



A software Platform and OS for Mobile devices developed by Google





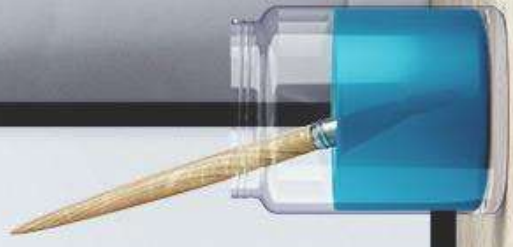
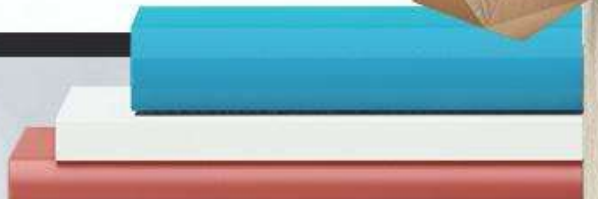
Developed as Linux Based Mobile Device OS



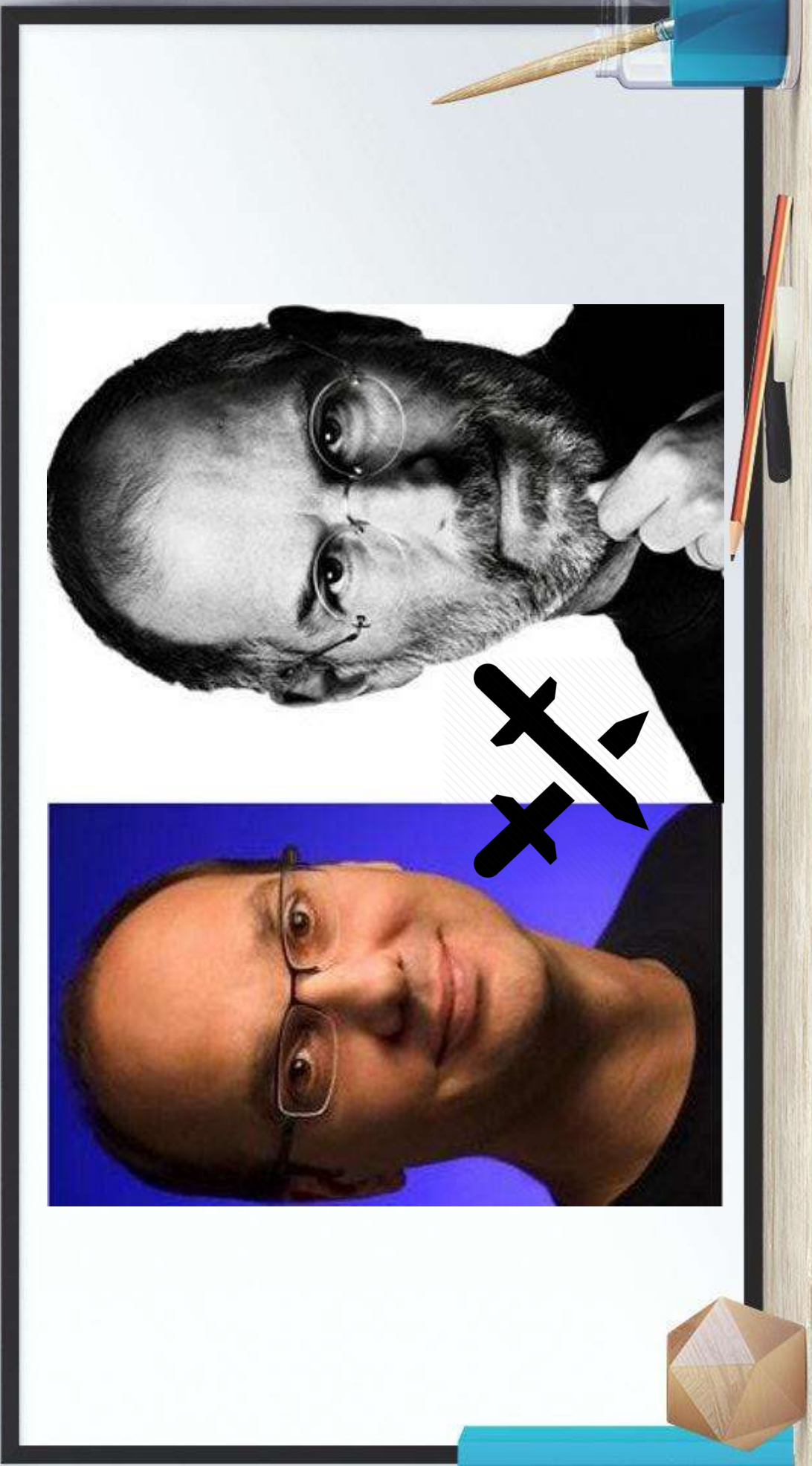
100% Pure Java Code



An Open Platform for Developers,  
Users & Industries







# ANDROID

## Version



We will be using...Android KITKAT & ABOVE!

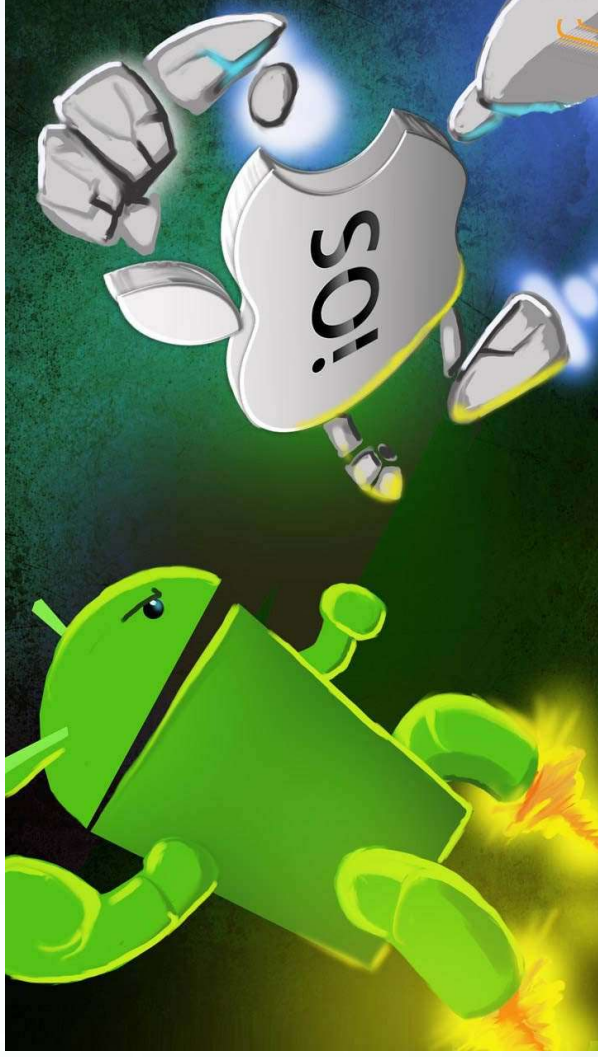
Version	Codename	API	Distribution
2.3.3 - 2.3.7	Gingerbread	10	0.3%
4.0.3 - 4.0.4	Ice Cream Sandwich	15	0.4%
4.1.x	Jelly Bean	16	1.5%
4.2.x		17	2.2%
4.3		18	0.6%
4.4	KitKat	19	10.3%
5.0	Lollipop	21	4.8%
5.1		22	17.6%
6.0	Marshmallow	23	25.5%
7.0	Nougat	24	22.9%
7.1		25	8.2%
8.0	Oreo	26	4.9%
8.1		27	0.8%

More information: <https://developer.android.com/about/dashboards/>



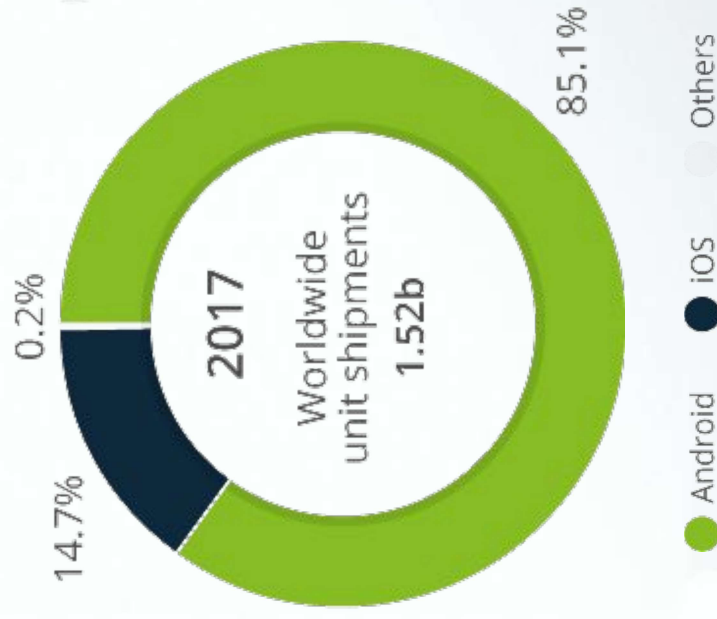


# Why Android?





# Worldwide smartphone shipments & OS "market share"



To date, Android has about...

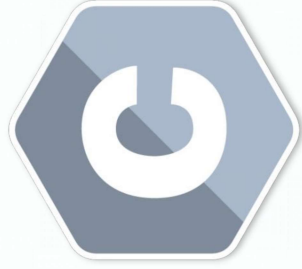
- 86.1% Market share
- 2.8 Million Apps
- Two Billion monthly Active Users
- Six Million Android Developers



## Mobile Platforms

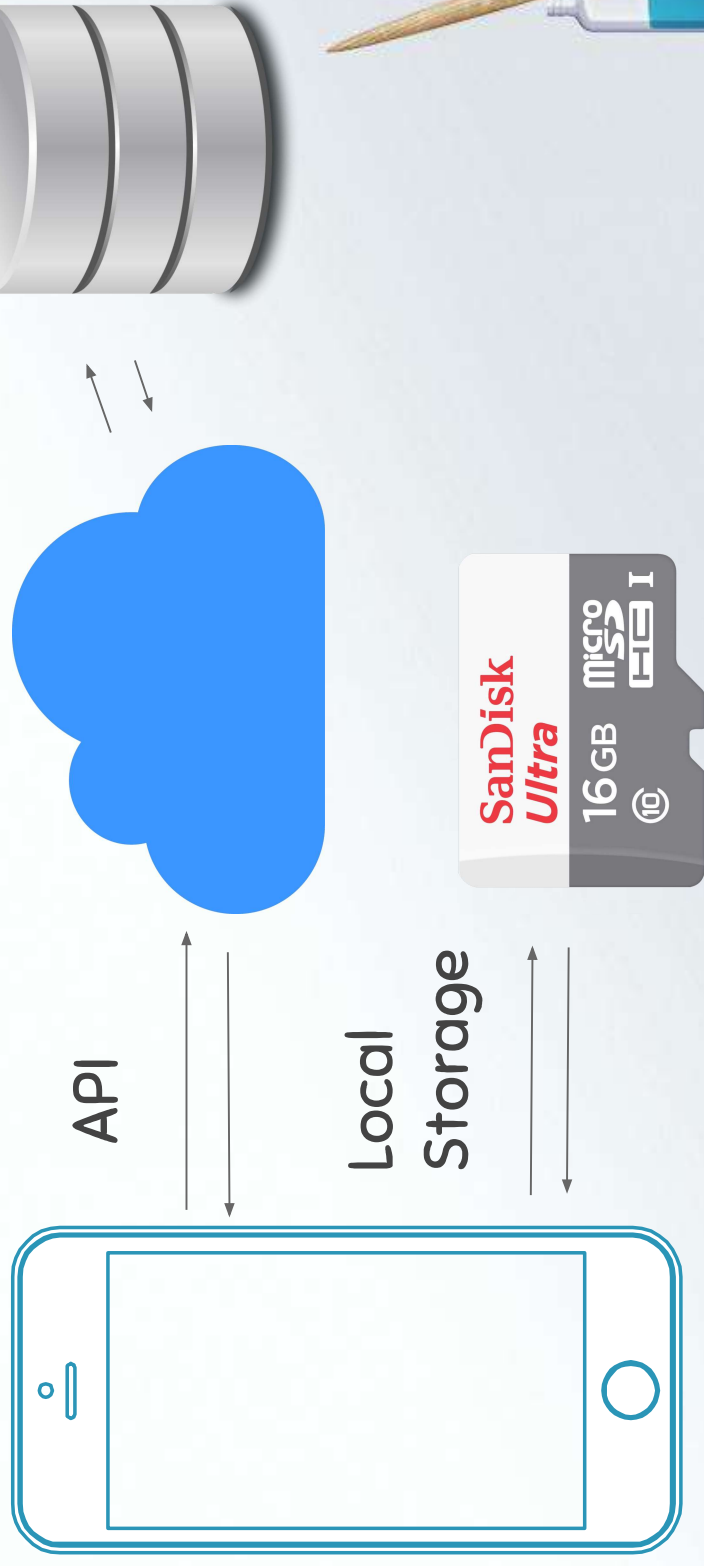
Type	Language	Development	Publish	Cost to Publish	Benefits
IOS	Swift, Obj-C	Xcode (MACOS)	App store	\$99 Per-year	Fluid UI. Better security
Android	Java, Kotlin,	Android Studio	Google Play Store	\$25 one-time	Open-source, customizable. Easy to adopt
Window 10 Mobile	HTML5, Javascript,	Visual Studio	Microsoft Store	Free	Compatible with desktop counterparts
BlackBerry 10	.NET C#,	Theme Studio	Amazon Appstore	Free	Friendly community?

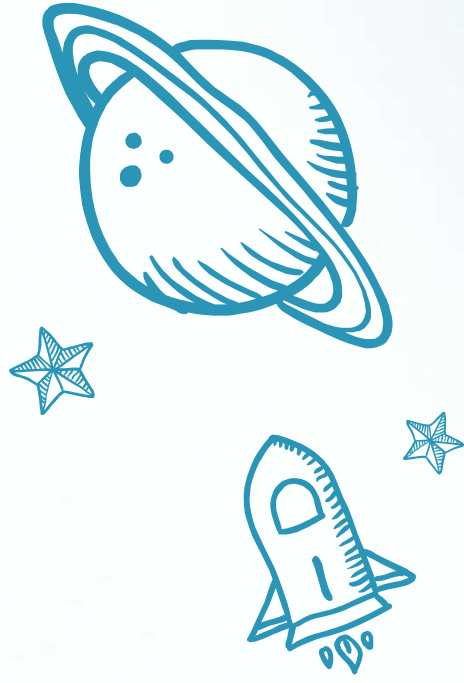
# Language supported by Android Studio 3.X.X





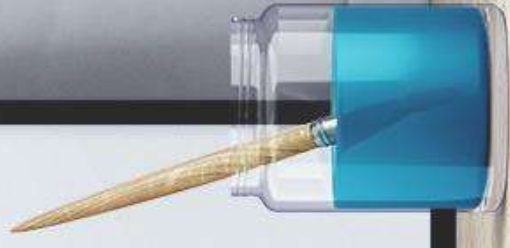
# TYPICAL MOBILE APPS COMMUNICATION





WAKAO SO difficult!

Where do I start?



# PROCESS OF CREATING YOUR APPLICATION

IDEATION

PROTOTYPING

IMPLEMENTATION





# IDEATion - Key Features

Location?

Navigation?

Map?

Problem  
Statement

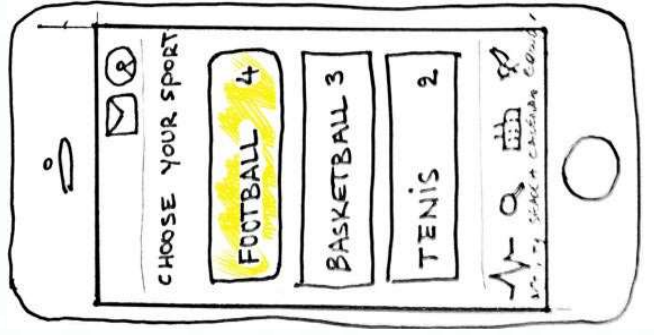
Bluetooth?

Messaging?

Notification



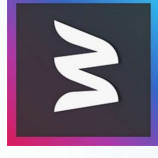
# Prototyping - Sketches and Wireframe



## Tools (Examples)

Online:

+ FIGMA



+ Webflow

Download required:

+ Balsamiq



+ Axure RP



+ Sketch on Invision (**MAC**)



Link to paper sketches:

<https://webdesignledger.com/10-free-printable-web-design-wireframing-templates/#07b6590631>

# Implementation (Backend)

## Backend 3rd Party

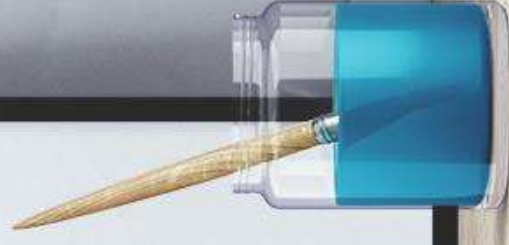
- + Firebase
- + Backand
- + Parse
- + PubNub

## 3rd party

- + Openweather API/Yelp API

## Or host your own backend via...

- + Google app engine
- + Herokuapp
- + AWS



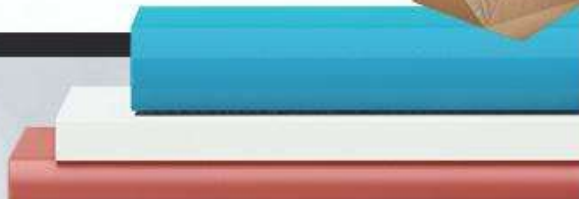
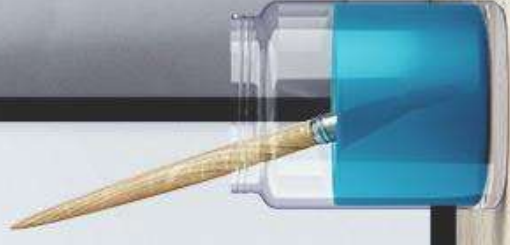


# Combine-into-one

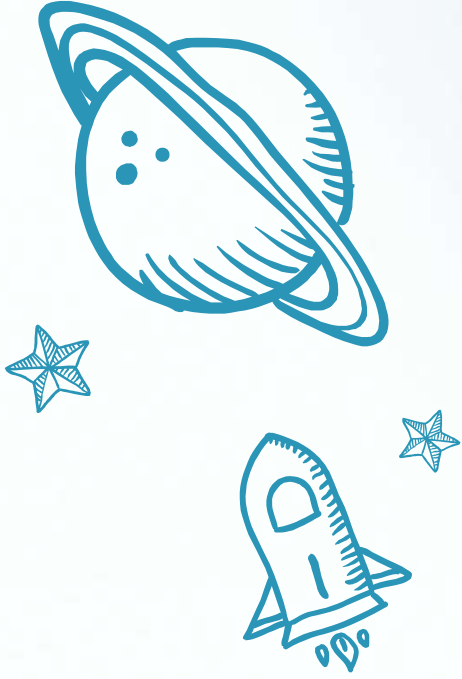
IDEATION

PROTOTYPING

IMPLEMENTATION



# Examples

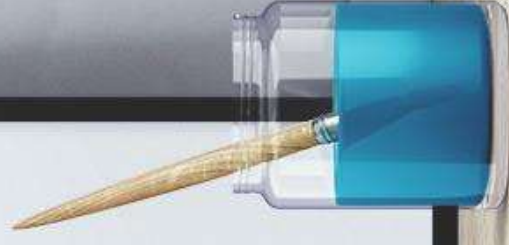
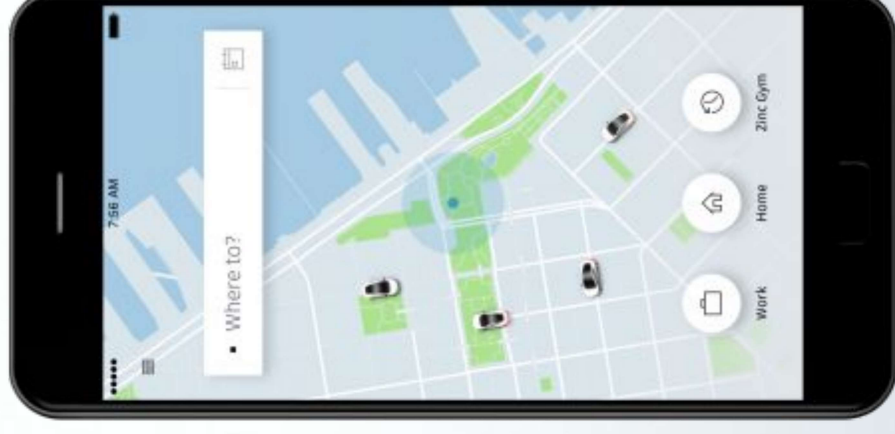


# Example 1 - UBER

## Features

### *Native App recommended*

- + Location/Map Services
  - + Google places API
  - + Autocomplete
- + Google maps API
  - + Actual map
  - + Waypoints
  - + Estimated Time





# Example 2 - Instagram

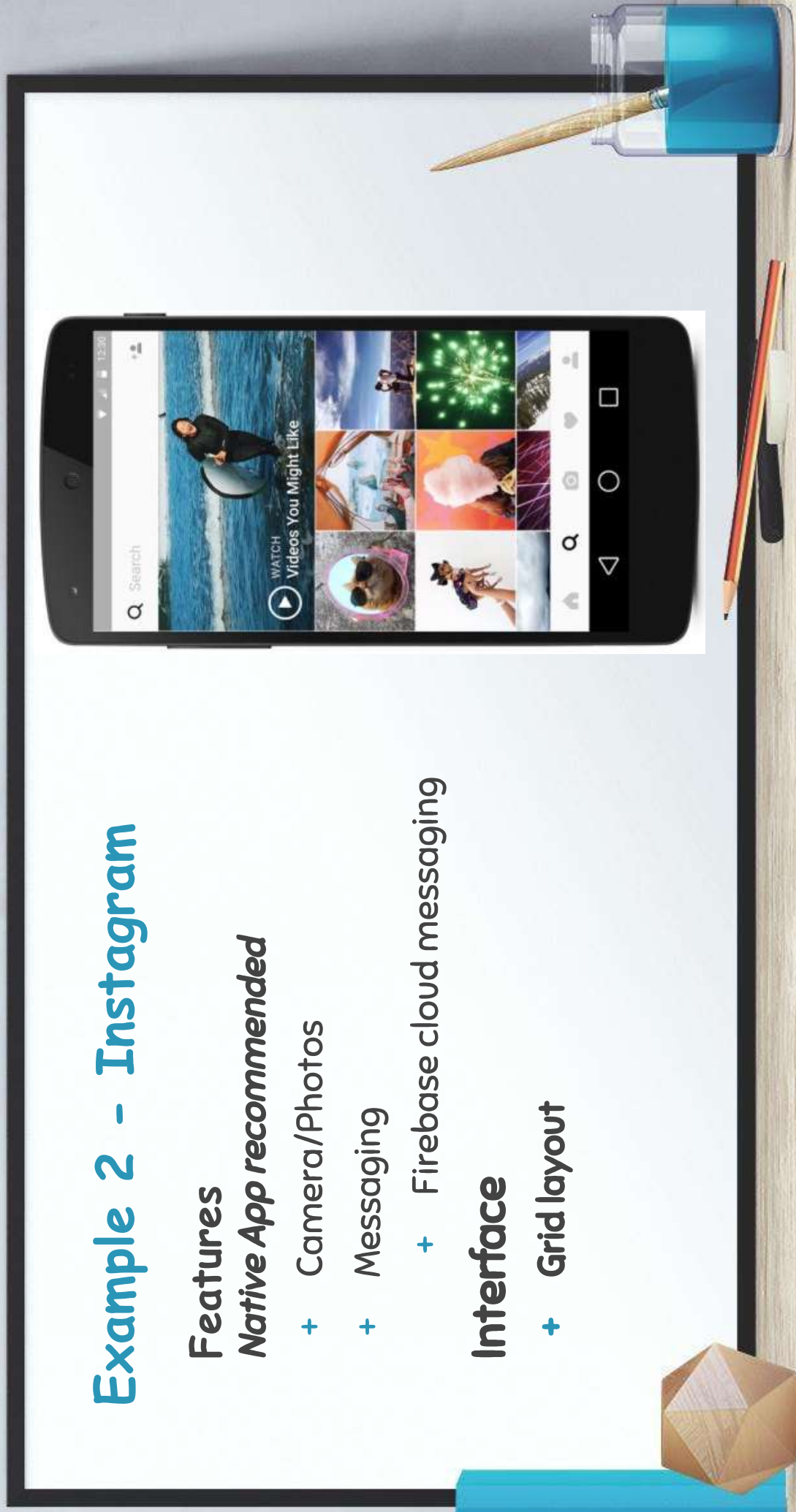
## Features

### *Native App recommended*

- + Camera/Photos
- + Messaging
- + Firebase cloud messaging

## Interface

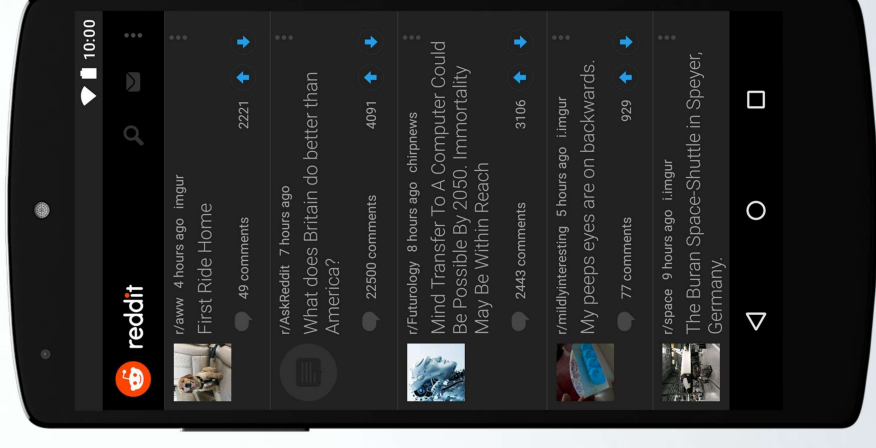
- + Grid layout



# Example 3 - Reddit

## Features

- + Content Driven
- + Customizable content
- + Offline Access
- + Store top 50 content
- + Vertical Scrolling



# Features of Android app (In Summary)

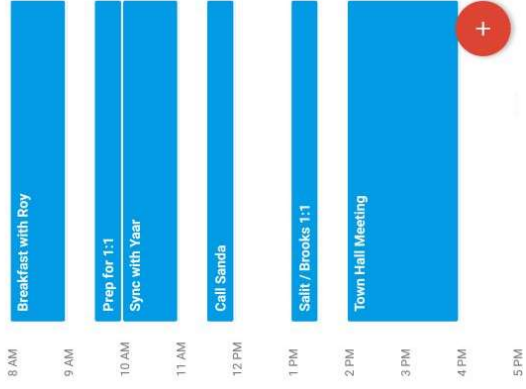
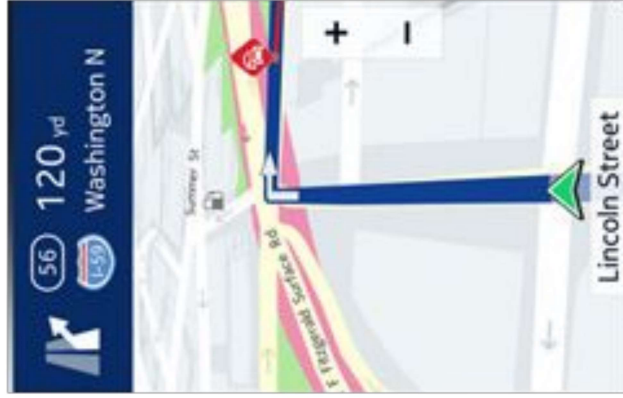
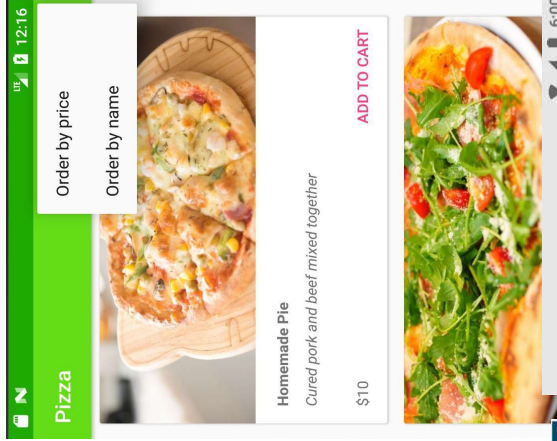
## Native Features

- + Sensors (Pedometers, Accelerometer, compass)
- + Bluetooth (Wearables)
- + Camera
- + Fingerprint Capability
- + Push notification
- + Multi-touch fns
- + AR/VR
- + GPS

## Key Features

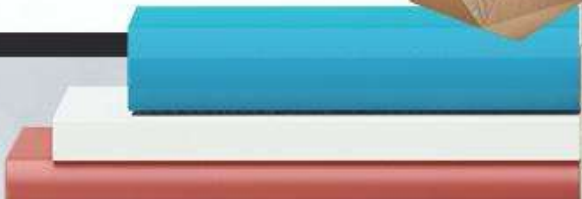
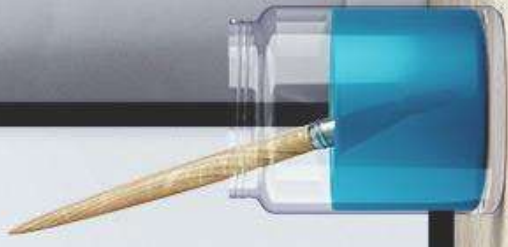
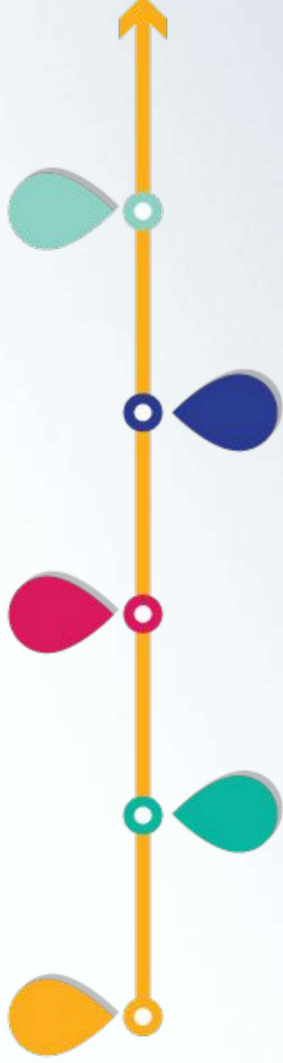
- + Media support for common audio, video & img format
- + Offline access
- + Build in SQLite
- + Developer Logger fns
- + Optimized graphics - VGA ,2D/3D







# Timeline



# Suggested Timeline Breakdown

## Ideation (3 weeks)

- + Research on product
- + Outline product features

## Prototyping (2 weeks)

- + Mock-ups / Sketches
- + Wireframing and Storyboarding

## Implementation (7 weeks)

- + Architecture Design
- + Product Development

## Remaining weeks

- + Perform validation, review and reiterate
- + User Guide
- + Server Hosting (if applicable)



# Orbital Timeline

## Milestone 1 (4<sup>th</sup> June)

- + Ideation: Research and project outline (3 weeks)
- + Prototyping: Mockup / Sketches (1 week)

## Milestone 2 (2<sup>nd</sup> July)

- + Prototyping: Wireframe & storyboard (1 week)
- + Implementation: Architecture Design (1 week)
- + Implementation: Backend + Frontend (2 weeks)

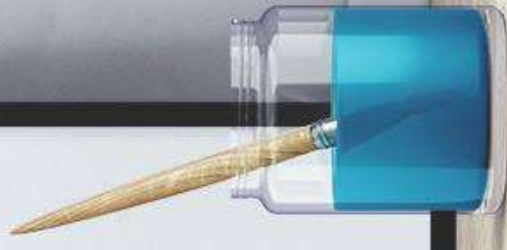
## Milestone 3 (30<sup>th</sup> July)

- + cont. Implementation (4 weeks)
- + Testing // to do done in-between

## To Splashdown (5<sup>th</sup> September).

*School open on 13<sup>th</sup> Aug*

- + Poster design
- + Minor Refinements (Adjustments, reiterations, documentation)



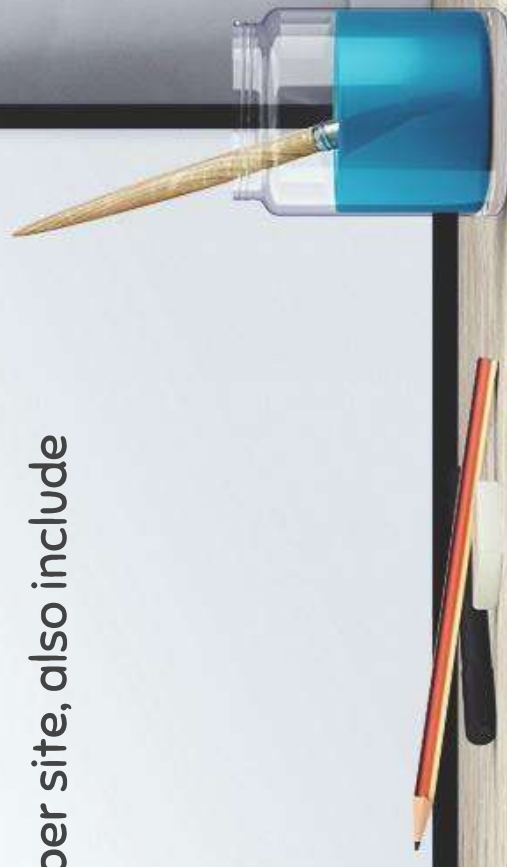
# Helpful Sources

## Online courses

- + Udemy/Coursera/Tutorial point

## Feature-based

- + Stack overflow
- + Developer.android (official android developer site, also include **material design guideline\***)





## More Help: *Mission Controls*

### IOS Development by Calvin

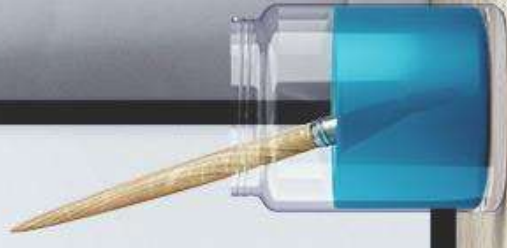
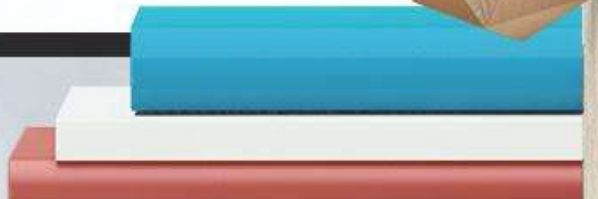
(19 May)

- + Hands-on programming for IOS
- + IOS Deep-dive: component and scripts

### UI/UX by Terence

(9 June)

- + Industrial best practices
- + Empathetic design
- + User Ergonomics & Behaviour
- + User Research Interview



# Thank You

