GameChat in Four Parts

www.github.com/pajato/GameChat

Part 1: the app

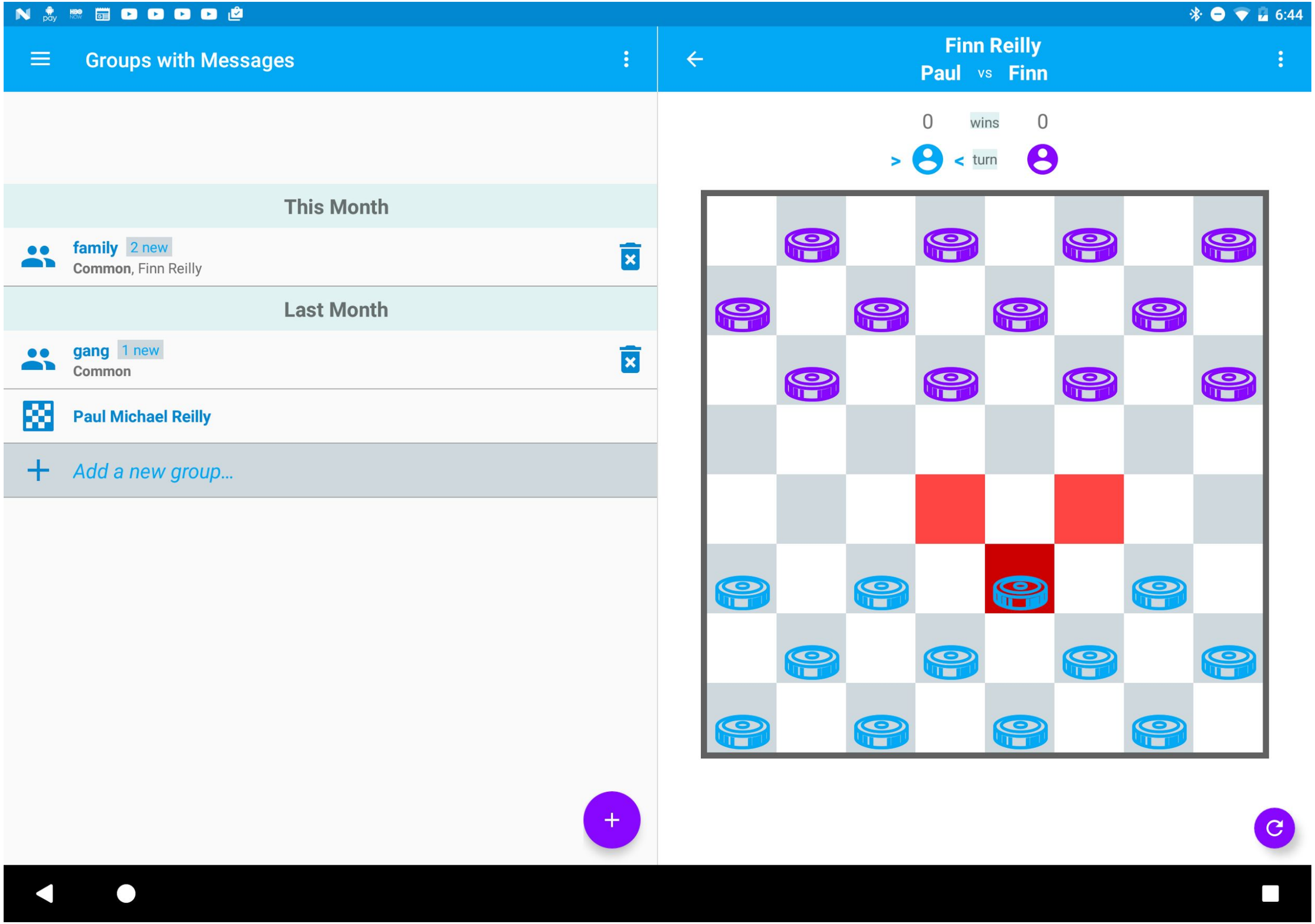
Part 2: Firebase within the app

Part 3: live demo

Part 4: Q & A

Part 1: What?

1) An Android social and gaming app
2) An open source/Free Software project
3) My (mostly me) first mobile app
4) Firebase learning and testing vehicle



Groups with Messages

This Month

family 2 new
Common, Finn Reilly

Last Month

gang 1 new
Common

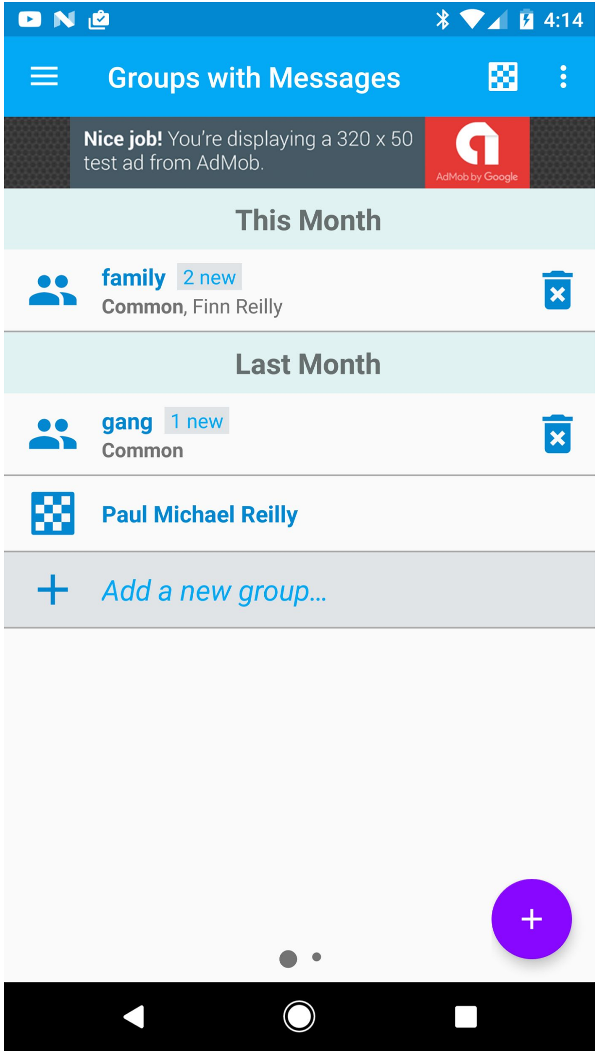
Paul Michael Reilly

Add a new group...

Finn Reilly
Paul vs Finn

0 wins 0

> < turn



4:14

Groups with Messages

Nice job! You're displaying a 320 x 50 test ad from AdMob.

AdMob by Google

This Month

family 2 new
Common, Finn Reilly

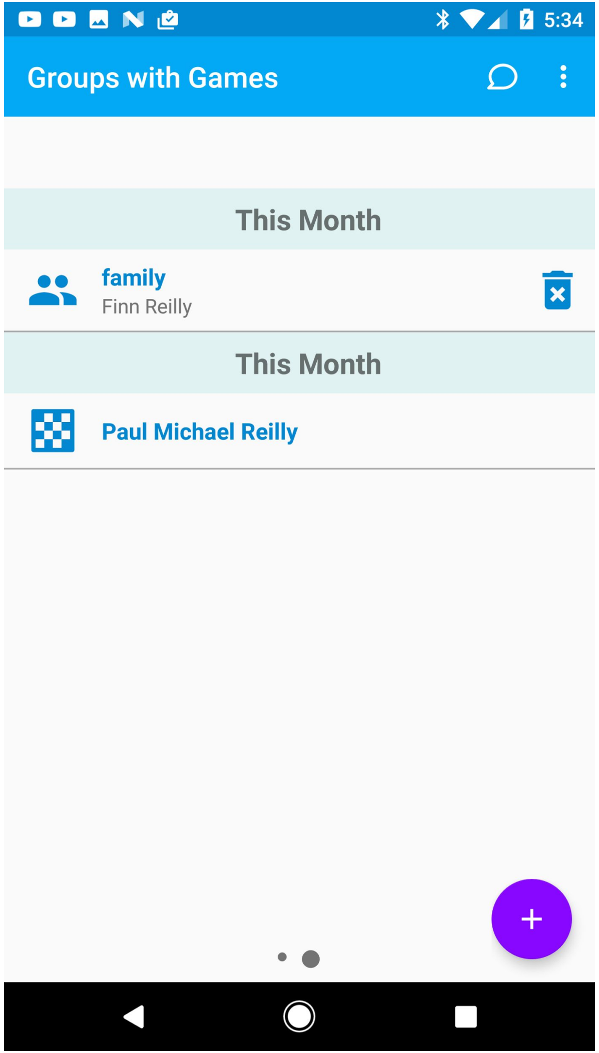
Last Month

gang 1 new
Common

Paul Michael Reilly

+ *Add a new group...*

+



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Groups with Games

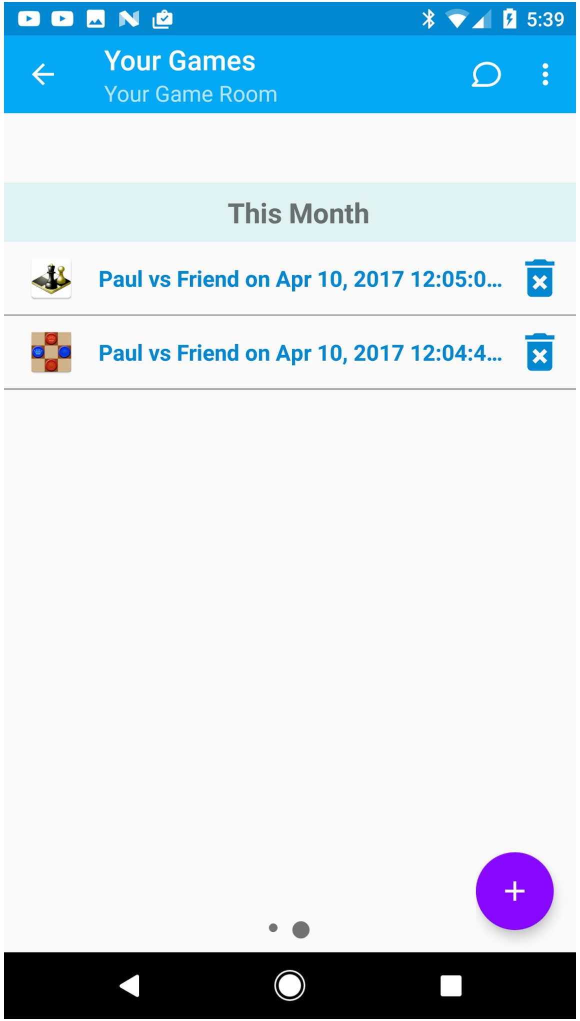
This Month

family
Finn Reilly

This Month

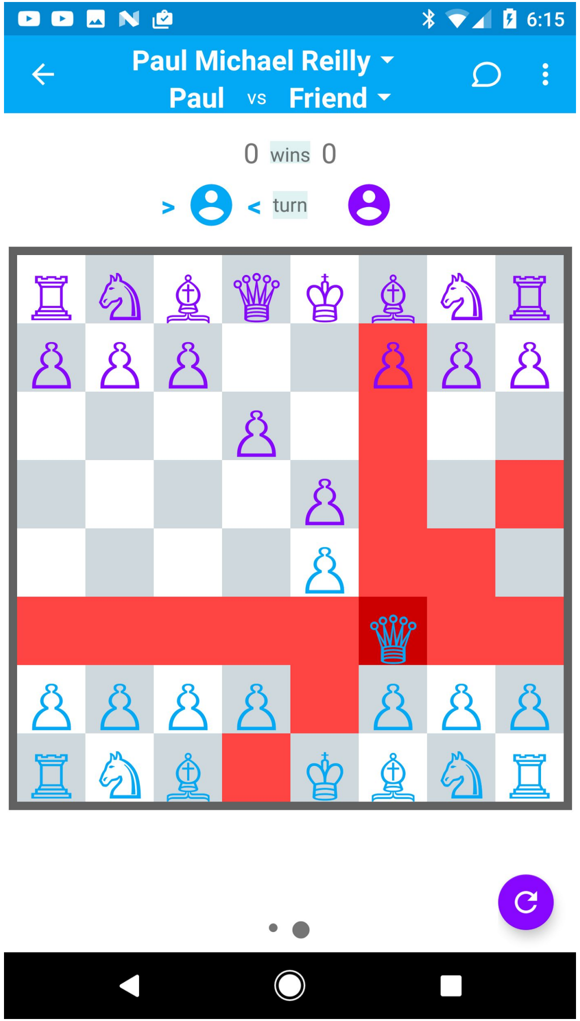
Paul Michael Reilly

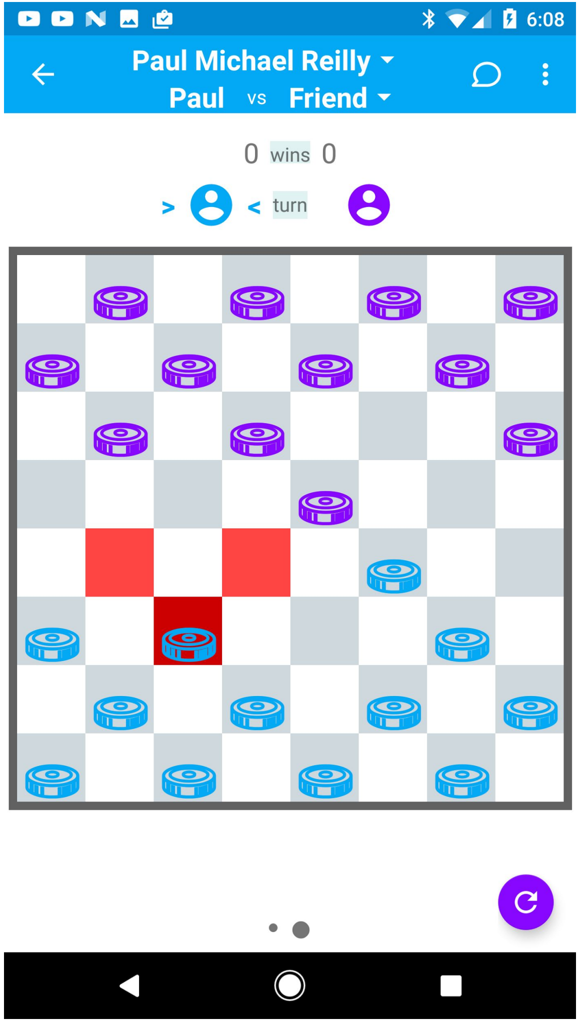
+



Paul vs Friend on Apr 10, 2017 12:05:0...

Paul vs Friend on Apr 10, 2017 12:04:4...





Features

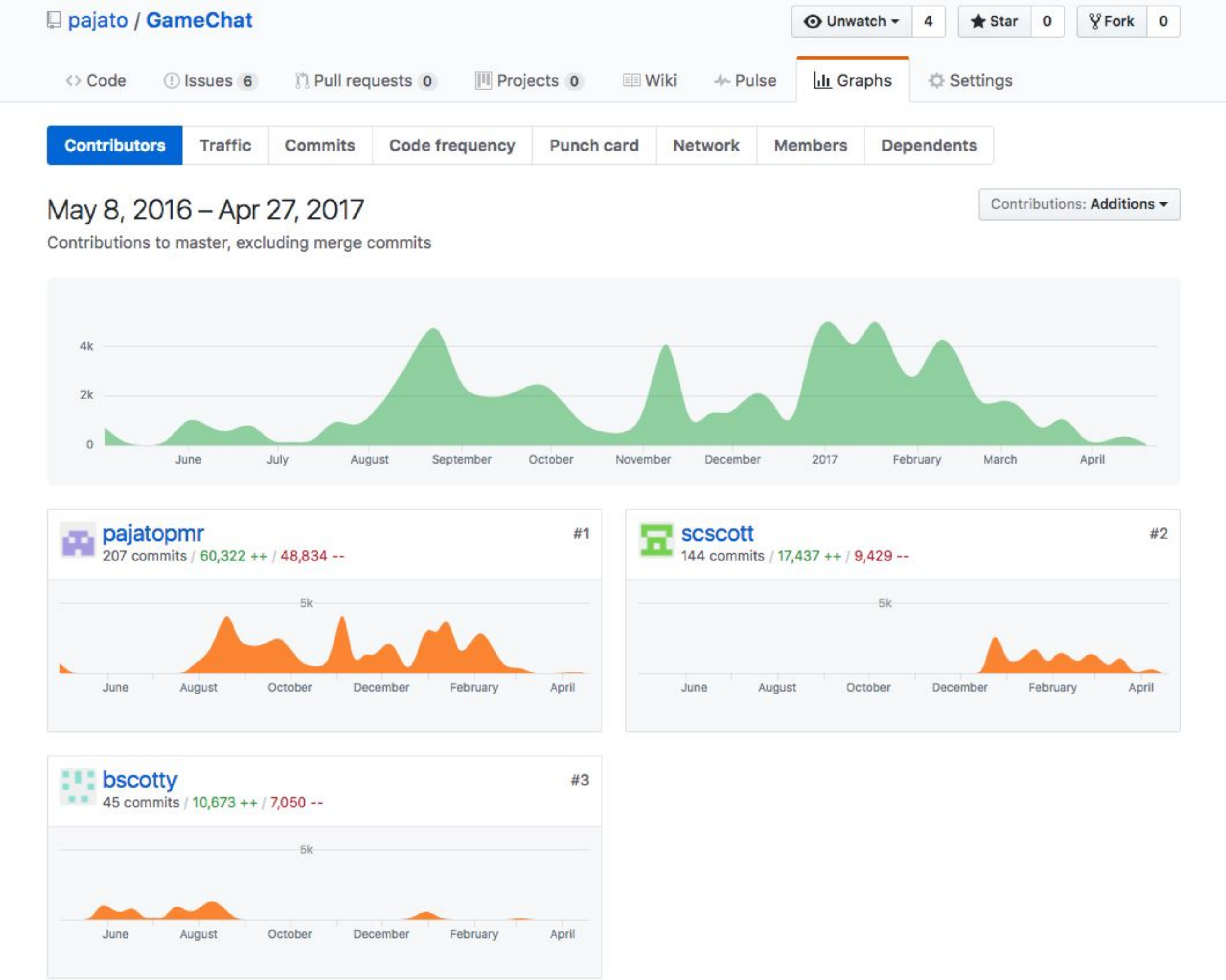
- Groups
- Rooms
- Chat
- Games

- Protected Users
- Chaperones
- Encryption
- Invitations

Why?

- an app itch
- relevant App experience.
- Tom’s request

Who?
&
When?



May 8, 2016 – Apr 27, 2017

Contributions to master, excluding merge commits

Contributions: Additions

pajatopmr #1
207 commits / 60,322 ++ / 48,834 --

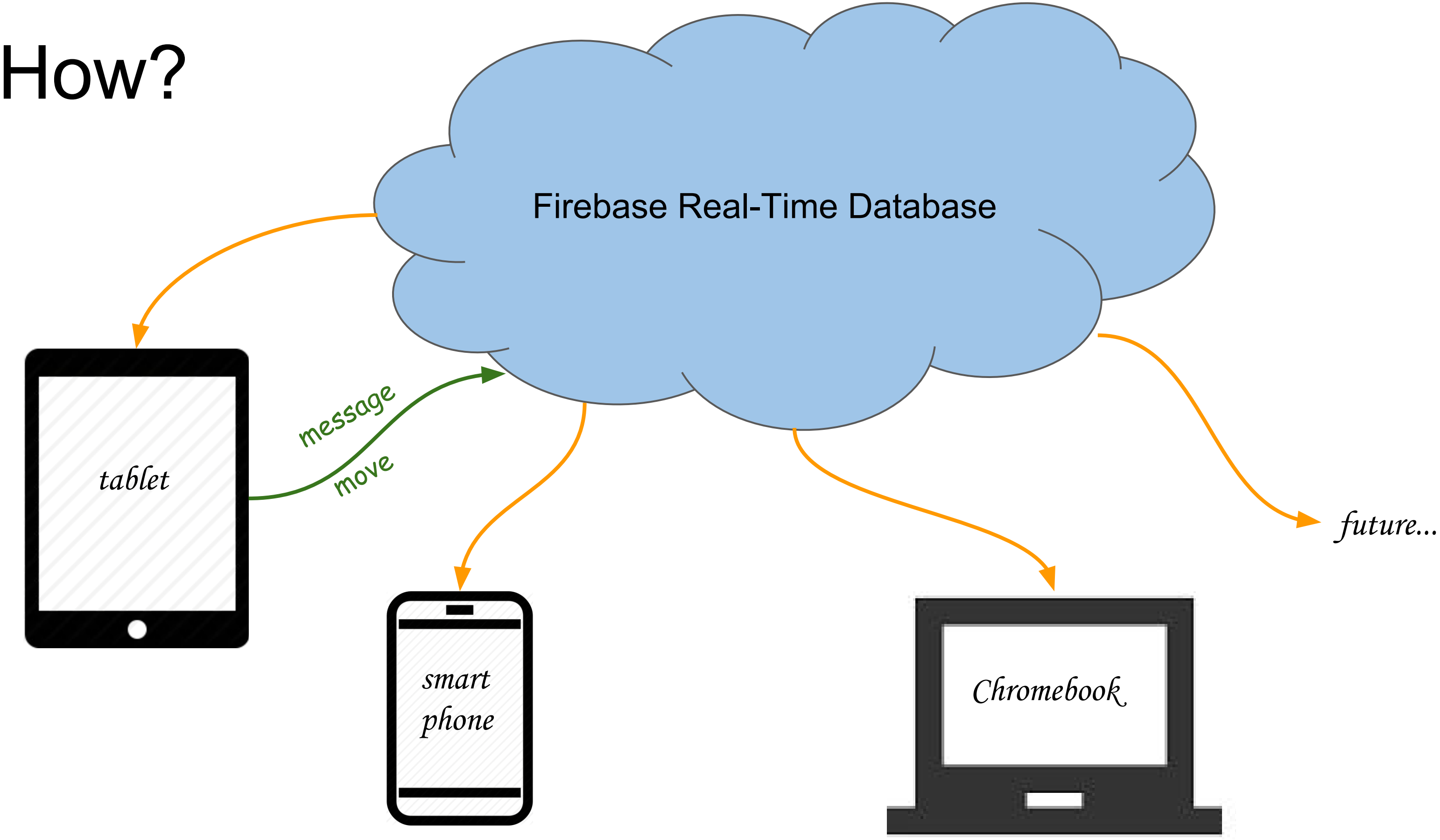
scscott #2
144 commits / 17,437 ++ / 9,429 --

bscotty #3
45 commits / 10,673 ++ / 7,050 --

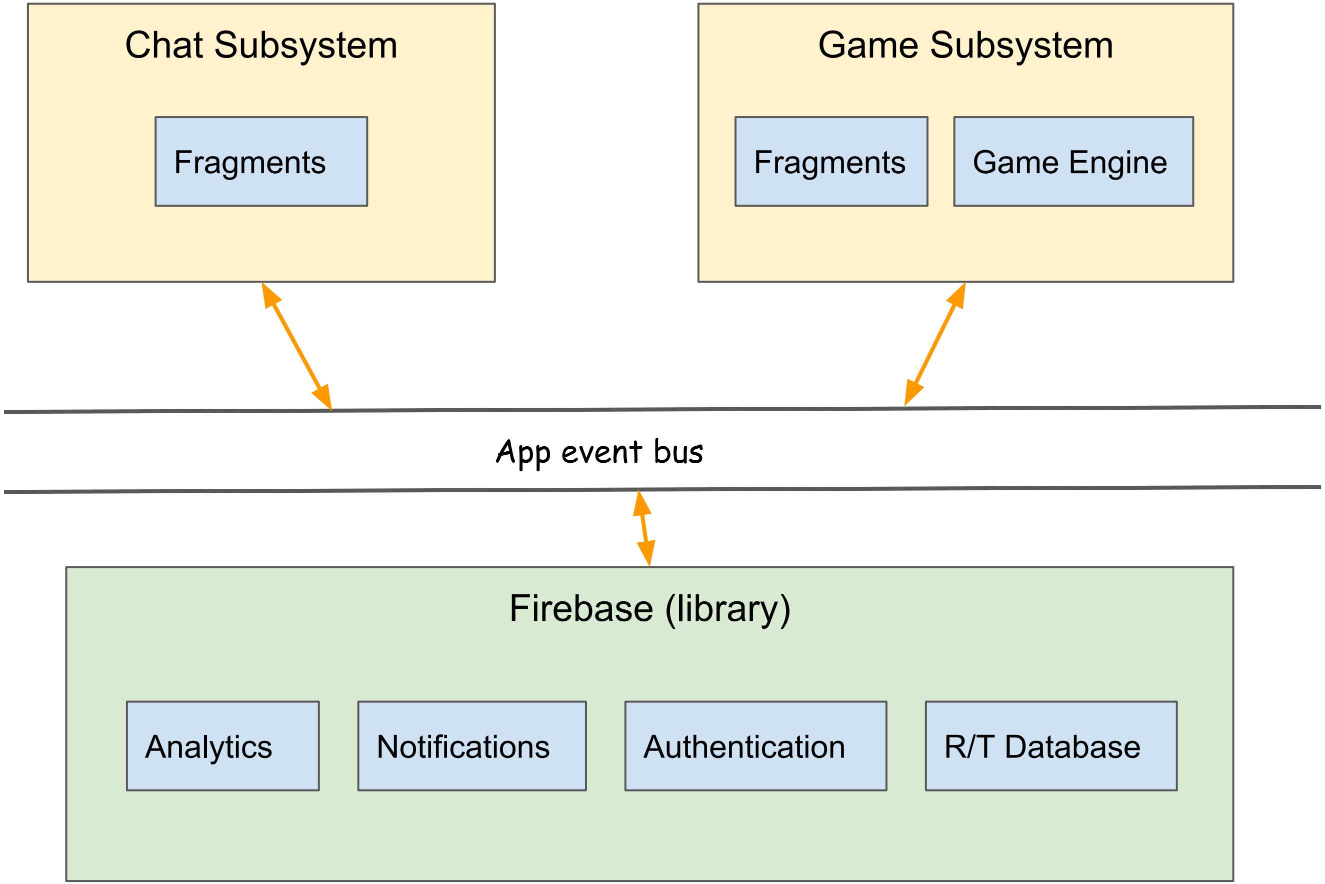
GameChat Status

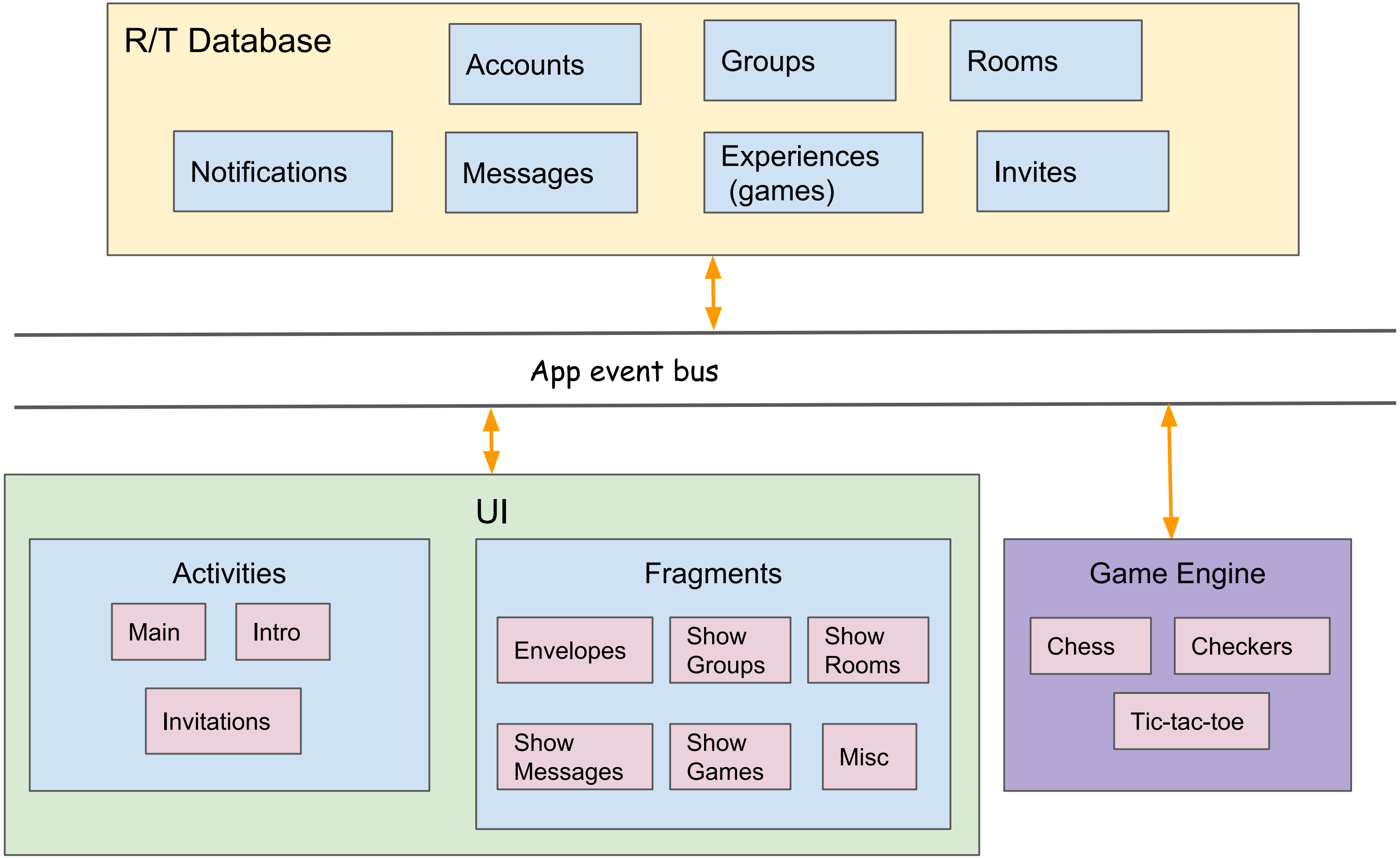
- Entered Alpha test in Play Store ~ December 2016
- Entered Beta test ~ May 2017
- General Release ~ November 2017

How?



Firebase Real-Time Database
tablet
message
move
smart phone
Chromebook
future...


Chat Subsystem
Fragments
Game Subsystem
Fragments
Game Engine
App event bus
Firebase (library)
Analytics
Notifications
Authentication
R/T Database



R/T Database

Accounts

Groups

Rooms

Notifications

Messages

Experiences (games)

Invites

App event bus

UI

Activities

Main

Intro

Invitations

Fragments

Envelopes

Show Groups

Show Rooms

Show Messages

Show Games

Misc

Game Engine

Chess

Checkers

Tic-tac-toe

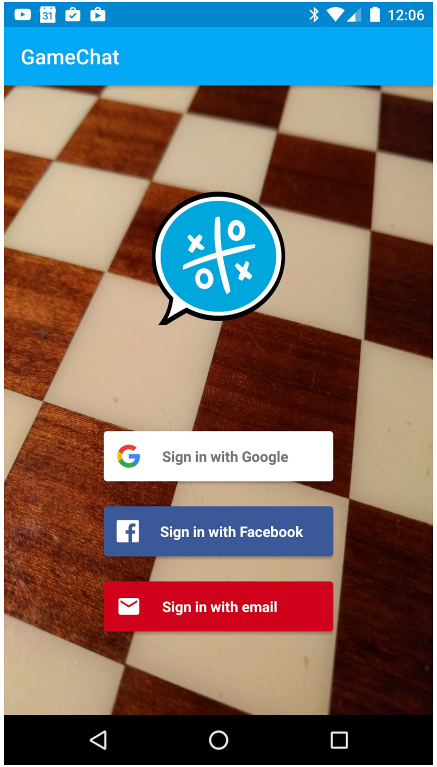
Part 2: Firebase in the app

1) “Not for real” issues
2) Authentication
3) R/T Database
4) Authorization
5) Notifications
6) Console and Project Model
7) Summary

“Not for real” Issues

- Will it scale?
- Is it well supported?
- Is it fast enough?
- Is it robust enough?

GameChat Authentication



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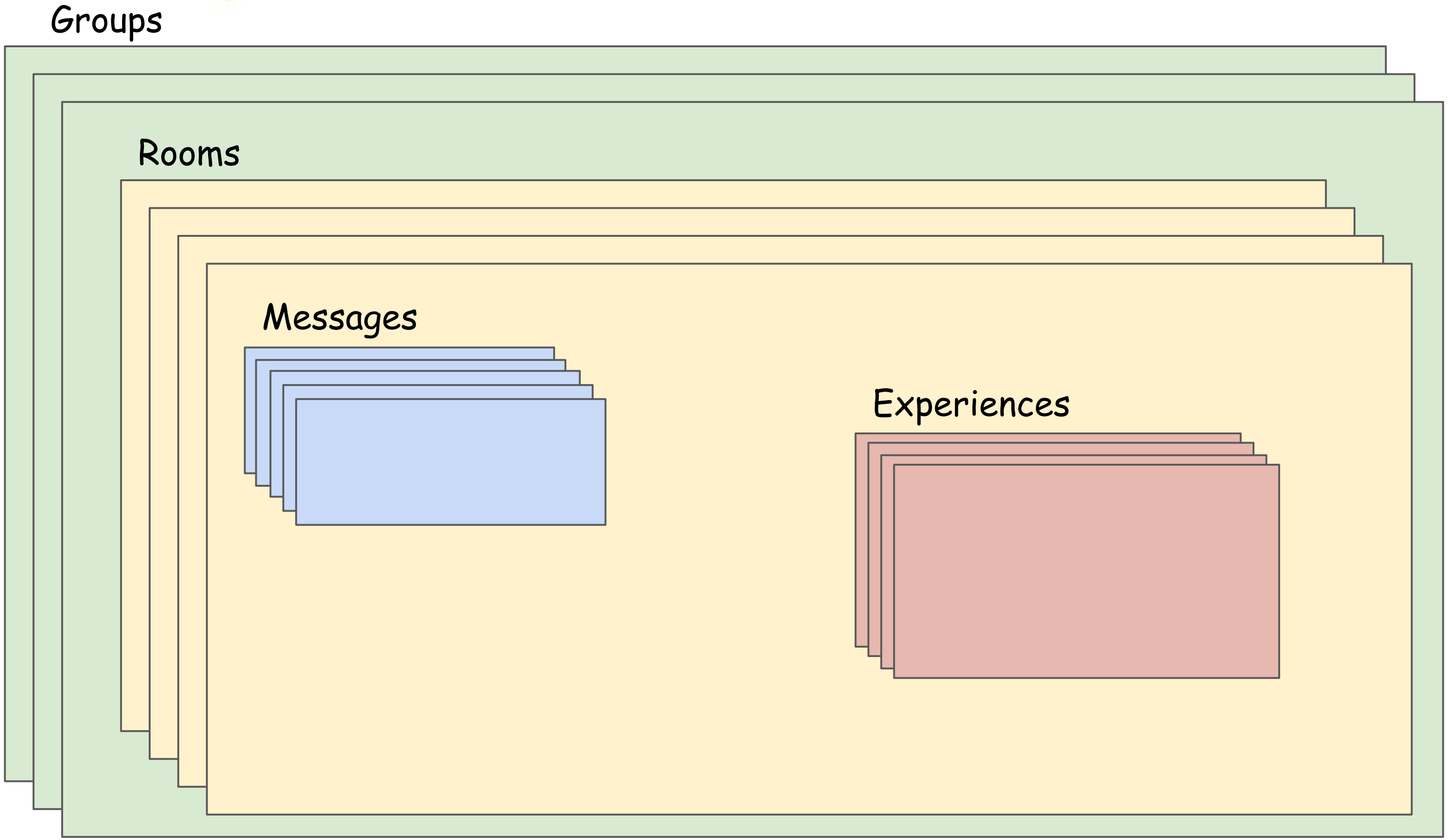
GameChat

Sign in with Google

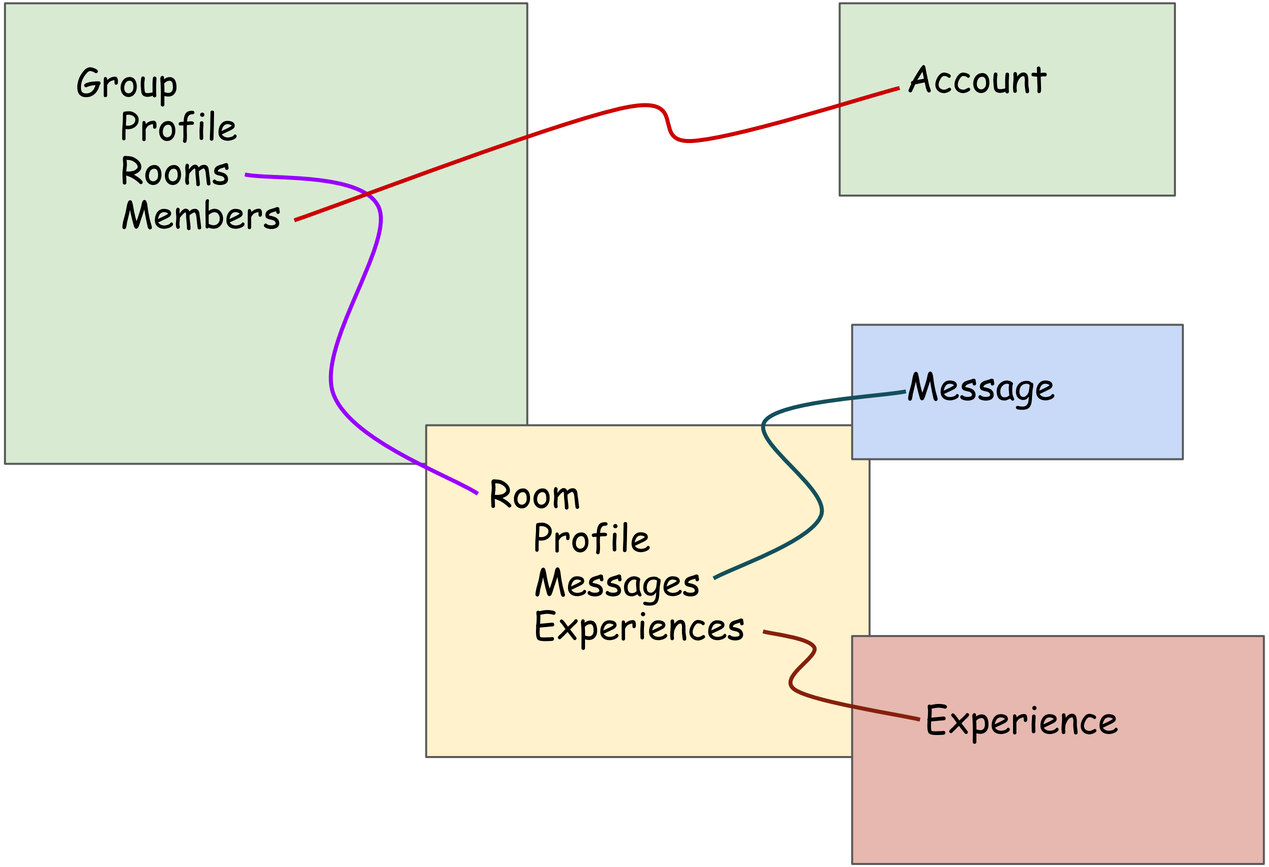
Sign in with Facebook

Sign in with email

GameChat Real-Time Database



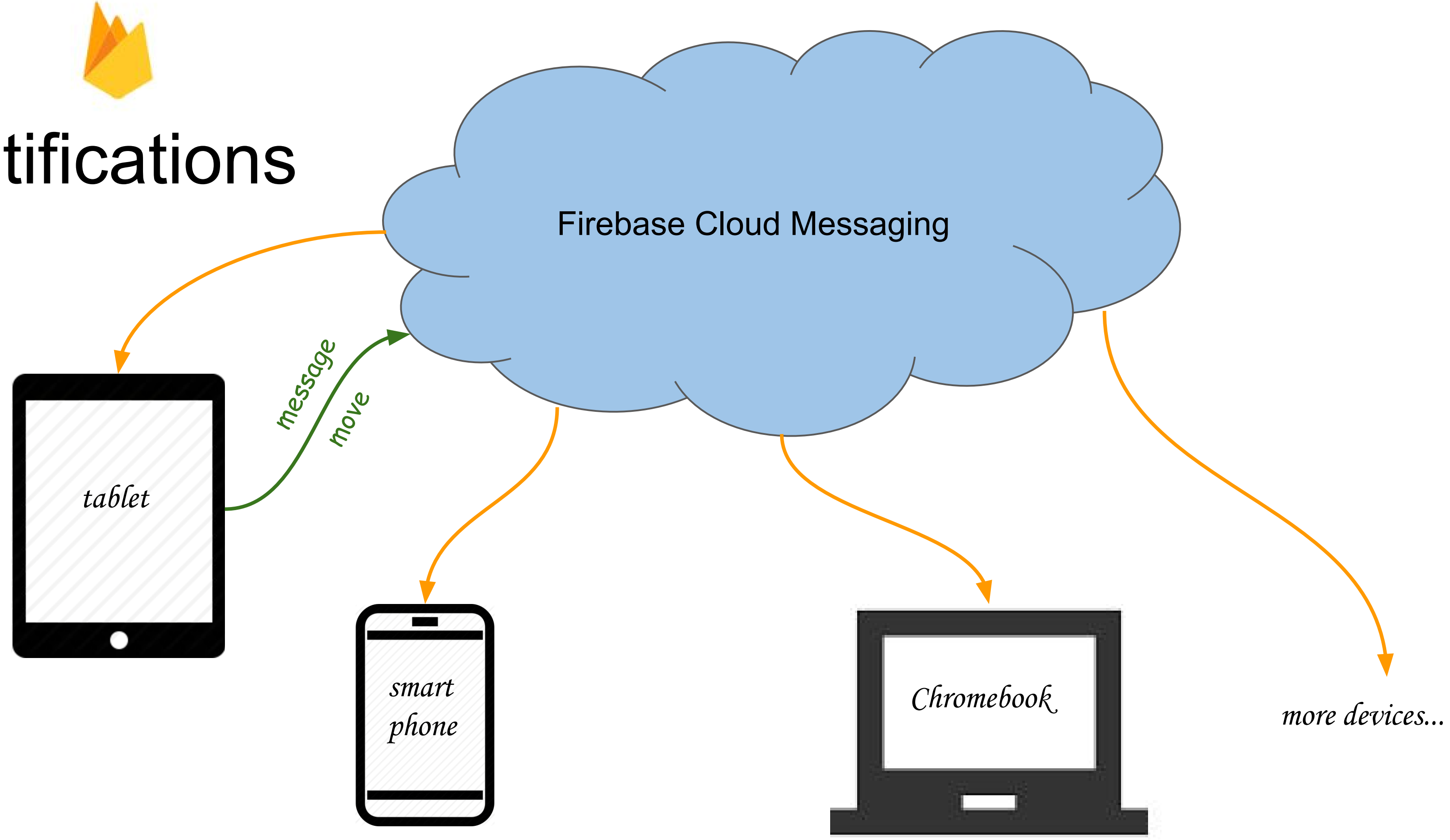
GameChat Database



Authorization Rules

```
rules: // setup authorization to database objects

    accounts: // account access is only allowed to the account holder or chaperone
      $uid:
         .read: auth != null && uid == auth.uid || (data.child(‘chaperone’).exists…
         .write: auth != null && ($uid == auth.uid || data.child(‘chaperone’).exists…

    groups:  // group access is allowed for an member of the group with special
             // rules for group creation, invitations and protected users.
      $groupId:
         .read: …
         .write: ...

    invites: // all accounts can access invites
         .read: auth != true
         .write: auth != true

    protectedUsers: // write (create) access for the chaperone, read/write access to protected user
      $pUser:
         .read: $pUser == auth.uid
         .write: $pUser == auth.uid || !root.child(‘protectedUsers/’ + $pUser).exists()
```

Notifications



Console and Firebase Project Model

- Console is an integral part of Firebase development
- Projects are managed inside of a Firebase console
- Multi-project is way to go: per Developer, Alpha, Beta, QA, Production.

Qualitative Summary

- Flat stack
- Simple to use
- Cross platform
- Well supported
- Cost effective

Part 3: Demo

- Play another User in private room

Part 4: Q & A