



FMT Reversi Android

by
[Francesco Benincasa](#)



Roadmap

- ▶ Intro
- ▶ The project
- ▶ Demo
- ▶ Let's dive into the code
- ▶ Conclusions



Introduction

- The aim of the project is to realize a Reversi implementation on Android platform:
 - Match on the same device
 - Match between two devices (each player on his own device)
- The game rules are based on [Reversi on Wikipedia](#) and [Federazione Nazionale Gioco Othello](#)



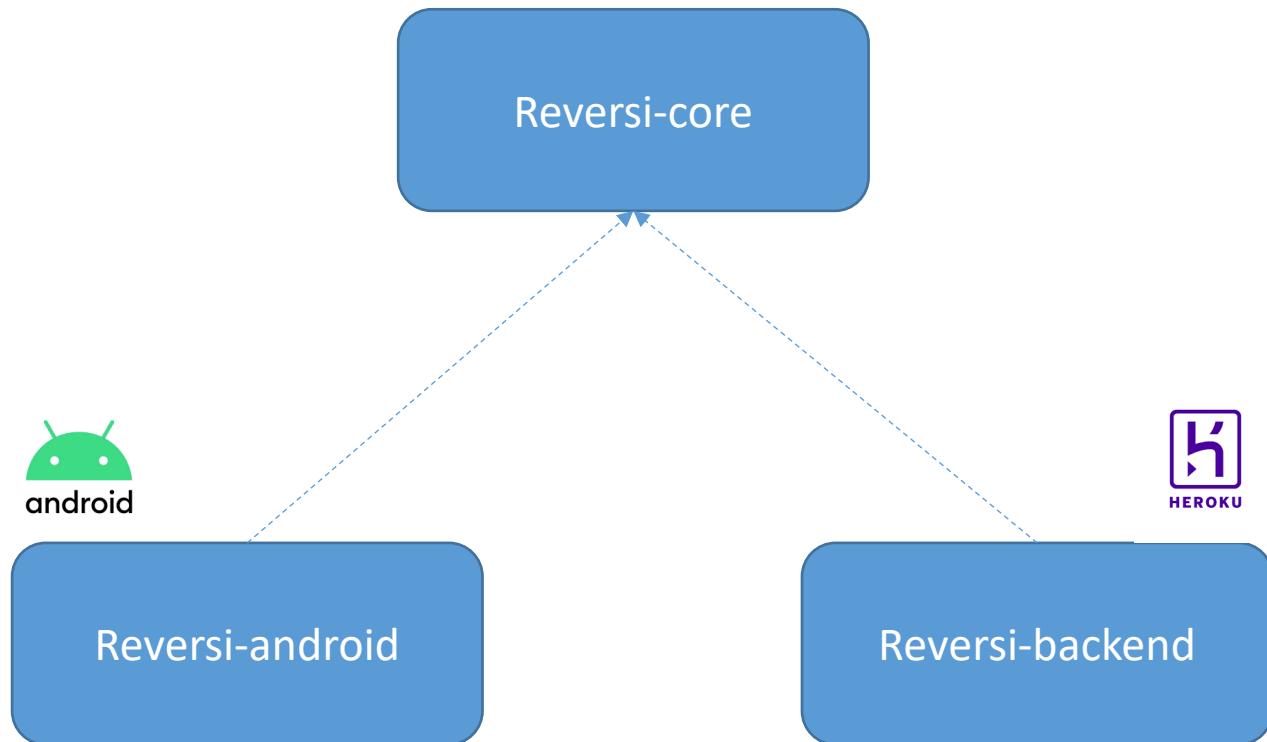
The project - what did we use?



ngrok



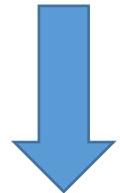
The project - modules





Build process

Android development



Backend development



ngrok



<https://836c360b507d.ngrok.io>



HEROKU

<https://fmt-reversi.herokuapp.com/>



Backend development

NGROK was used to expose local server on the web during development

The screenshot shows a Java IDE with several tabs open. The main code editor displays `WebPathConstants.java` which contains static final String declarations for various URL segments. Below the code editor is a terminal window showing ngrok logs. The logs include entries for favicon.ico and robots.txt requests, along with tracebacks for awaitng_to_start and awaiting_to_start errors. To the right of the IDE is a screenshot of a browser window displaying a ngrok URL (`https://katesapp.ngrok.io`) which shows a placeholder page for "Kate's Site".

```
server - WebPathConstants.java
server - Server Dev
server - WebPathConstants.java
server - .gitignore
server - .mvnw
server - .mvnw.cmd
server - LICENSE
server - pom.xml
server - README.md
server - reversi-backend.iml
server - reversi-backend

public static final String WS_USER_MOVES_URL_SEGMENT = "/users/{uuid}/moves";
public static final String WS_USER_READY_URL_SEGMENT = "/users/{uuid}/ready";
public static final String WS_USER_NOT_READY_URL_SEGMENT = "/users/{uuid}/not-ready";

public static final String USER_READY_URL_SEGMENT = "{uuid}/ready";
public static final String USER_NOT_READY_URL_SEGMENT = "{uuid}/not-ready";
public static final String USER_MATCH_URL_SEGMENT = "{uuid}/match";
public static final String WS_TOPIC_USER_MATCH_DESTINATION = TOPIC_PREFIX + "/user/{uid}/topic/{topic}/{segment}"
```

ngrok online Inspect Status Documentation

All Requests

Request	Status	Duration
GET /favicon.ico	200	3.02ms
GET /favicon.ico	200	4.3ms
GET /public/index.html	500	41.76ms
GET /	200	142.75ms
GET /favicon.ico	502 Bad Gateway	0.36ms
GET /robots.txt	502 Bad Gateway	0.54ms
GET /robots.txt	502 Bad Gateway	1.27ms
GET /	502 Bad Gateway	3.42ms

GET /favicon.ico

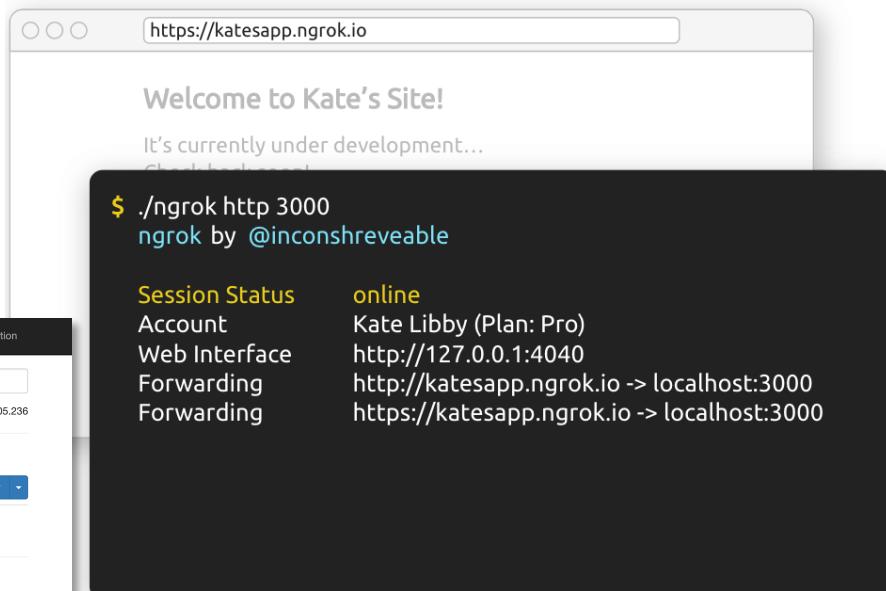
200

Summary Headers Raw Binary

200

Summary Headers Raw Binary

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>Title</title>
  <meta http-equiv='refresh' content='0; URL=../public/index.html'>
</head>
<body>
</body>
</html>
```



Backend development

To deploy backend server, github, travis and heroku were used

The image displays three screenshots illustrating the deployment process for a backend application:

- Github Repository (xcesco/reversi-backend):** Shows the repository structure with files like .mvn/wrapper, docs, src, .gitignore, .travis.yml, HELP.md, LICENSE, README.md, mvnw, mvnw.cmd, pom.xml, reversi-backend.iml, and system.properties. A recent commit by xcesco is shown.
- Heroku Application (fmt-reversi):** Shows the Heroku dashboard for the app, including sections for Overview, Resources, Deploy, Metrics, Activity, Access, and Settings. It indicates no add-ons are installed and shows deployment history.
- Travis CI Build Log (xcesco/reversi-backend):** Shows the build status as "build passing". The log details a successful build (#50) for the master branch, comparing commits 9897118 and 3c462ee5, running on an AMD64 machine.



Android development

- ▶ View model & live data
- ▶ Shared preferences
- ▶ Navigation
- ▶ Intent
- ▶ Retrofit
- ▶ Websocket & STOMP
- ▶ Recycler View
- ▶ Jackson
- ▶ RX java
- ▶ Timber
- ▶ Firebase
- ▶ Dagger2



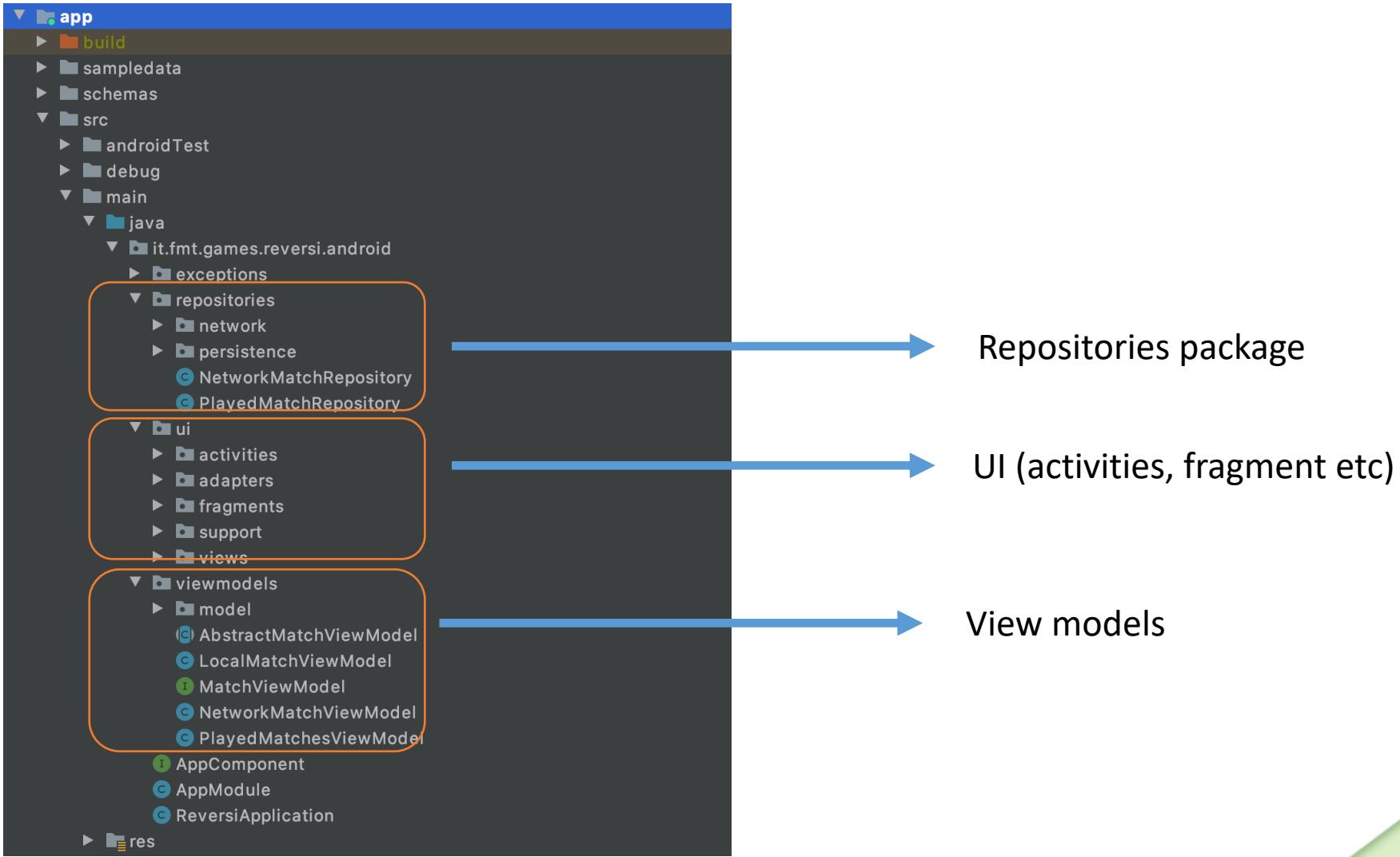
websocket navigation timber model_view rx java live_data firebase jackson intent dagger2 view retrofit recycler-view room view_binding



About Android development

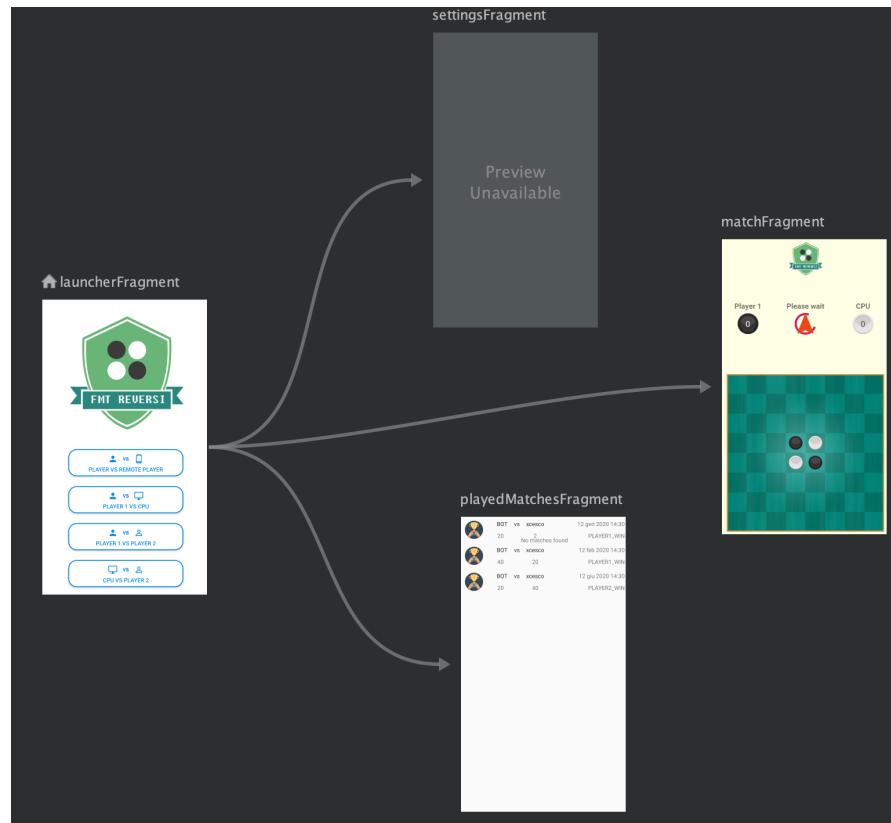
- ▶ Retrofit: <https://square.github.io/retrofit/>
- ▶ Okhttp: <https://square.github.io/okhttp/>
- ▶ Websocket & STOMP protocol: <https://github.com/NaikSoftware/StompProtocolAndroid>
- ▶ ViewBinding:
<https://developer.android.com/topic/libraries/view-binding#java>
- ▶ Dagger: <https://github.com/google/dagger>
- ▶ Navigation component:
<https://developer.android.com/guide/navigation/navigation-pass-data>
- ▶ ModelView & Live data components:
<https://developer.android.com/topic/libraries/architecture/livedata>
- ▶ Timber:
<https://github.com/JakeWharton/timber>
- ▶ Firebase
<https://firebase.google.com/docs/crashlytics/get-started?authuser=0&platform=android>

Source code organization



Navigation between fragments

1 activity, 4 fragments, 1 navigation graph



Navigation between fragments



Network
Preferences for network matches

Network player name
Cesco

Local
Preference for local match

Player 1 name
Player 1

Player 2 name
Player 2

CPU Type
Random choice



	Cesco	vs	BOT	06 lug 2020 12:04
39	25			PLAYER1 WIN
	BOT	vs	Cesco	06 lug 2020 11:58
29	35			PLAYER2 WIN
	Cesco	vs	BOT	06 lug 2020 11:50
37	27			PLAYER1 WIN
BOT	vs	Cesco	05 lug 2020 02:40	
10	0			PLAYER1 WIN
BOT	vs	Cesco	05 lug 2020 02:39	
4	0			PLAYER1 WIN
BOT	vs	Cesco	05 lug 2020 02:32	
4	0			PLAYER1 WIN
BOT	vs	Cesco	05 lug 2020 02:30	
5	0			PLAYER1 WIN
BOT	vs	Cesco	05 lug 2020 02:24	
4	0			PLAYER1 WIN
Cesco	vs	BOT	05 lug 2020 01:47	
0	2			PLAYER2 WIN

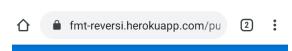


Cesco

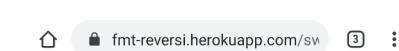
BOT

2

2



FMT Reversi Server is running!
Resources
Here are some links to help you get started:
[Swagger UI](#)



Reversi FMT API
This page is created using springdocs - a library for OpenAPI 3 with spring boot.
Terms of service
Apache 2.0

match-controller	GET /api/v1/public/matches
users-controller	DELETE /api/v1/public/users
	GET /api/v1/public/users
	GET /api/v1/public/users/{uuid}/match
	PATCH /api/v1/public/users/{uuid}/ready
	POST /api/v1/public/users/{uuid}/not-ready

Demo

It's time to play!

Android version available on [Google Play Store](#)

<https://play.google.com/store/apps/details?id=it.fmt.games.reversi.android>





Some interesting links

- ▶ [FMT Reversi Android source code on Github](#)
- ▶ [FMT Reversi Backend source code on Github](#)
- ▶ [FMT Reversi source code on Github](#)



Conclusions

- ▶ FMT Reversi can be improved:
 - ▶ Support for other platform (web)
 - ▶ Improved IA for CPU players
 - ▶ Google play game service
 - ▶ PS4 version cooming soon!
- ▶ Any question?

Thanks!

