



# FMT Reversi

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# Roadmap

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



# Introduction

- The aim of the project is to realize (in Java) Reversi game
  - The game rules are based on [Reversi on Wikipedia](#) and [Federazione Nazionale Gioco Othello](#)
  - The project has 3 target platforms:
    - Command line
    - Desktop
    - Android
- 




# The project - what did we use?






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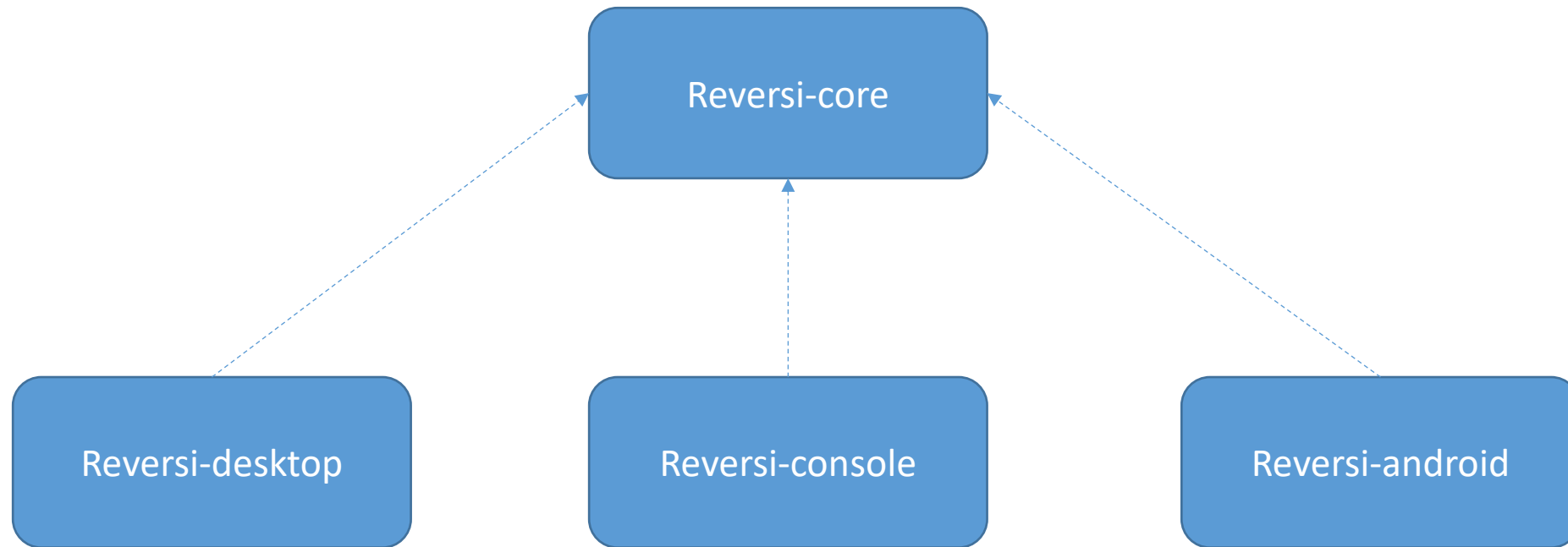
- ▶ Project is managed with Maven
  - ▶ OpenJDK 11 (for Android OpenJDK 8)
  - ▶ Github hosts project source code (IntelliJ git integration)
  - ▶ Issue were managed in github
  - ▶ Continuous Integration tools: [Travis CI](#)
  - ▶ Test coverage: [Codecov](#)
  - ▶ Code quality: [SonarCloud](#)
  - ▶ IDEs from JetBrains: IntelliJ, Android Studio
- 



# The project - what did we do?

- ▶ Think!
  - ▶ We use agile methodology to develop the software
  - ▶ 4 x 1 week sprint
    - ▶ One big briefing at week beginning
    - ▶ Daily check
    - ▶ We (try to create) for each activity an issue
  - ▶ First phase had a bottom up approach (starting from documentation) to define entities
  - ▶ Following phases use a top down approach
- 

# The project - modules



# Entities - part 1

Board		
copy()	Board	
getCellStream()	Stream<Cell>	
setCell(Coordinates, Piece)	void	
getCellContent(Coordinates)	Piece	
isCellContentEqualsTo(Coordinates, Piece)	boolean	
equals(Object)	boolean	
hashCode()	int	

Coordinates		
of(int, int)	Coordinates	
of(String)	Coordinates	
getRow()	int	
getColumn()	int	
isValid()	boolean	
translate(Direction)	Coordinates	
translate(Direction, int)	Coordinates	
toString()	String	
compareTo(Coordinates)	int	
equals(Object)	boolean	
hashCode()	int	
charInRange(char, char, char)	boolean	

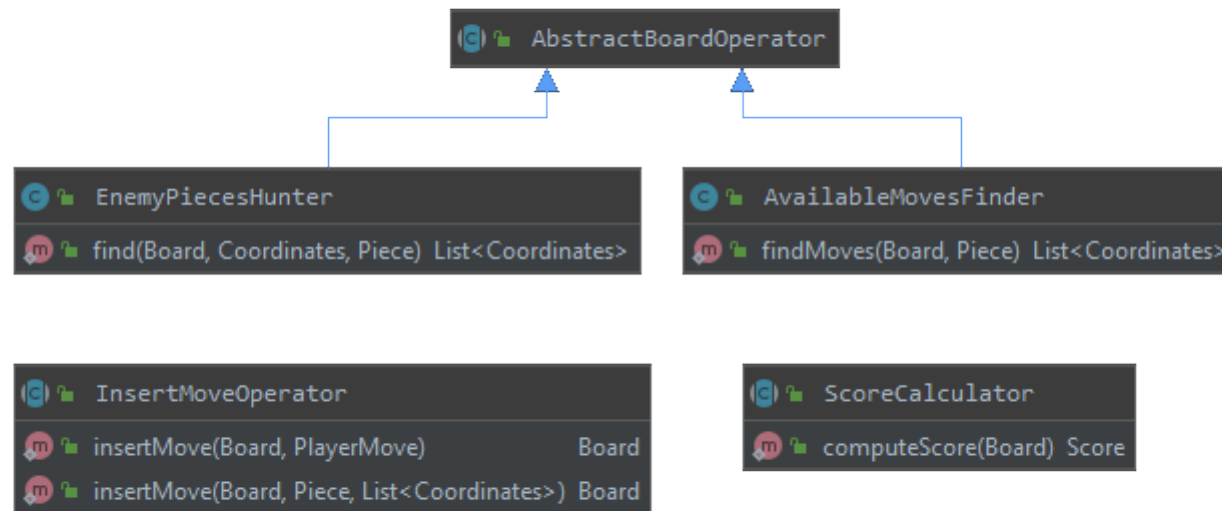
Piece		
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Direction		
getOffsetRow()	int	
getOffsetCol()	int	

Cell		
getCoordinates()	Coordinates	
getPiece()	Piece	
equals(Object)	boolean	
hashCode()	int	



## Entities - part 2



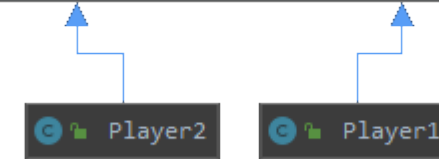
# Entities - part 3

```
Reversi
play() GameSnapshot
```

```
PlayerFactory
createHumanPlayer2() Player2
createHumanPlayer1() Player1
createCpuPlayer2() Player2
createCpuPlayer2(DecisionHandlerType) Player2
createCpuPlayer2(DecisionHandler) Player2
createCpuPlayer1() Player1
createCpuPlayer1(DecisionHandlerType) Player1
createCpuPlayer1(DecisionHandler) Player1
```

```
GameLogic
initialize() AvailableMoves
findMovesForPlayers() AvailableMoves
insertSelectedMove(Coordinates) void
switchPlayers() void
getGameSnapshot() GameSnapshot
readActivePlayerMove(List<Coordinates>) Coordinates
```

```
Player
getPiece() Piece
isHumanPlayer() boolean
computeNextMove(List<Coordinates>) Coordinates
```



```
GameRenderer
render(GameSnapshot) void
```

```
DecisionHandler
compute(List<Coordinates>) Coordinates
```

```
UserInputReader
readInputFor(Player, List<Coordinates>) Coordinates
```

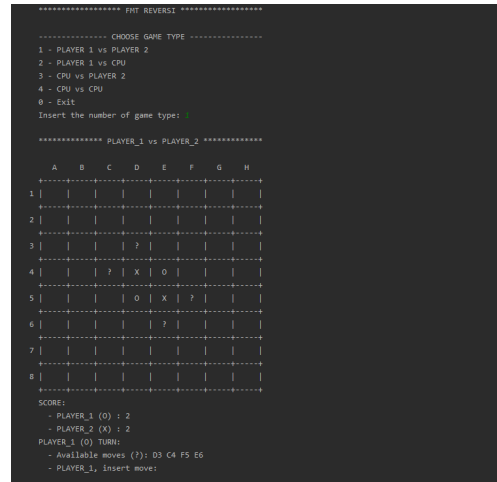
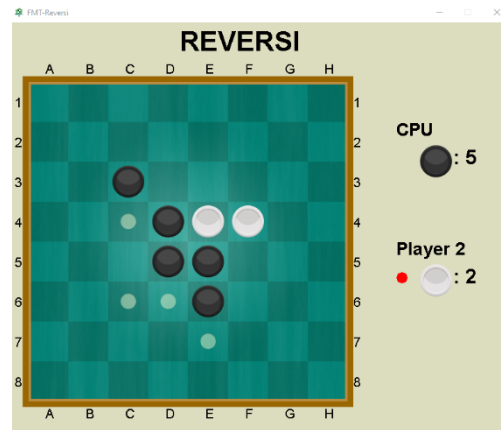
# Demo

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)


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

Desktop and Console versions are ready to be run!





# Some interesting links

- ▶ [FMT Reversi source code on Github](#)
  - ▶ [FMT Reversi Android source code on Github](#)
  - ▶ [Travis CI](#)
  - ▶ [CodeCov](#)
  - ▶ [SonarCloud](#)
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# Conclusions

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

Thanks!

