



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?






The project - what did we use?

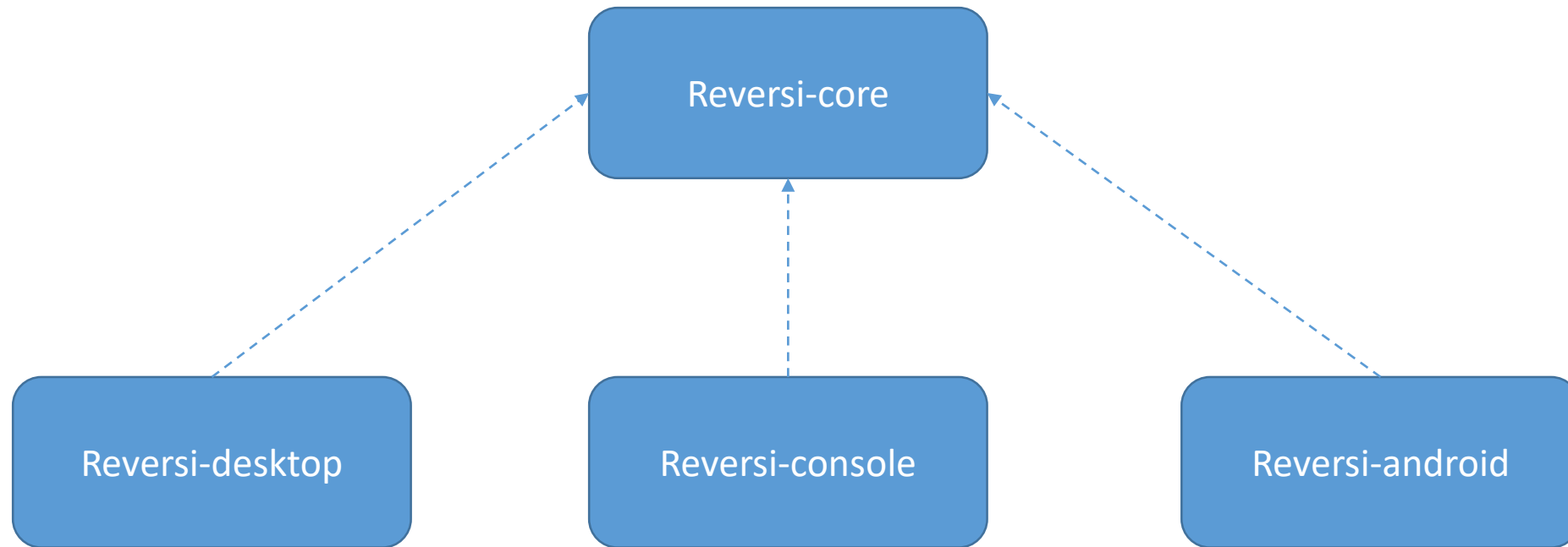
- ▶ Project are managed with Maven
 - ▶ OpenJDK 11 (for Android OpenJDK 8)
 - ▶ Github hosts project source code (IntelliJ git integration)
 - ▶ Issue were managed in github
 - ▶ Continuous Integration tools: [Travis CI](#)
 - ▶ Test coverage: [Codecov](#)
 - ▶ Code quality: [SonarCloud](#)
 - ▶ IDEs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



The project - what did we do?

- ▶ Think!
 - ▶ Using 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		
m	copy()	Board
m	getCellStream()	Stream<Cell>
m	setCell(Coordinates, Piece)	void
m	getCellContent(Coordinates)	Piece
m	isCellContentEqualsTo(Coordinates, Piece)	boolean
m	equals(Object)	boolean
m	hashCode()	int

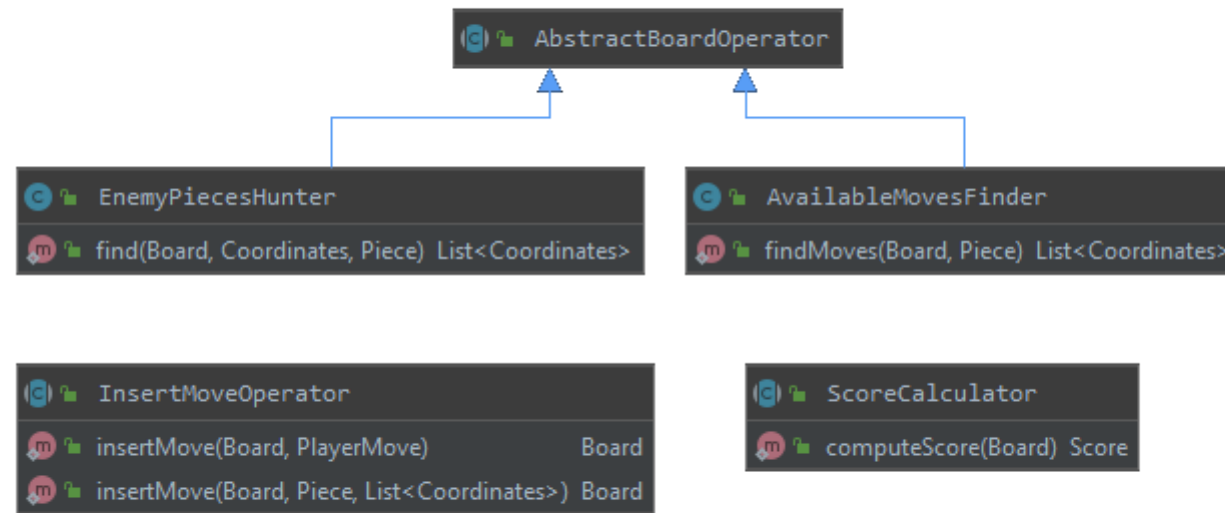
Coordinates		
m	of(int, int)	Coordinates
m	of(String)	Coordinates
m	getRow()	int
m	getColumn()	int
m	isValid()	boolean
m	translate(Direction)	Coordinates
m	translate(Direction, int)	Coordinates
m	toString()	String
m	compareTo(Coordinates)	int
m	equals(Object)	boolean
m	hashCode()	int
m	charAtRange(char,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

Piece		
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Direction		
m	getOffsetRow()	int
m	getOffsetCol()	int

Cell		
m	getCoordinates()	Coordinates
m	getPiece()	Piece
m	equals(Object)	boolean
m	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
```

```
Player2
Player1
```

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

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

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

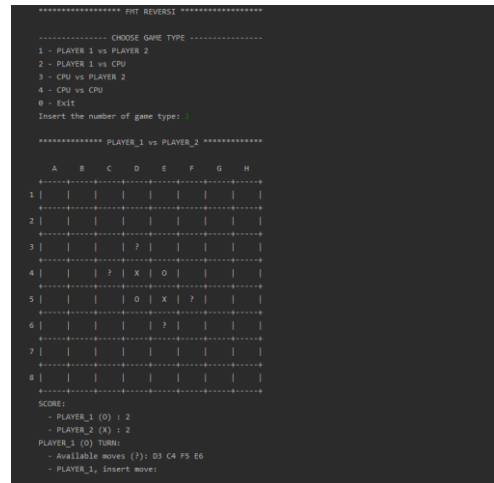
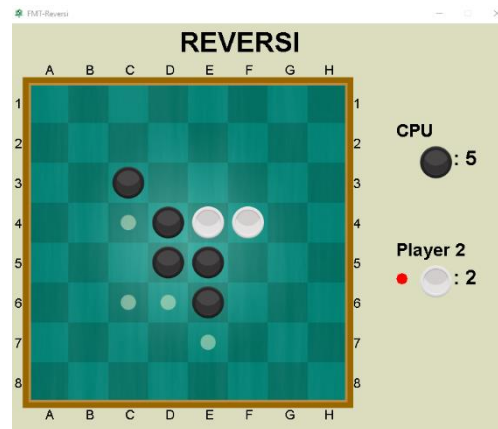
Demo

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](#)
- 



Conclusions

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

Thanks!

