Instituto Superior de Engenharia de Lisboa

Mobile Devices Programming

Practical Assignment - Option B, Winter Semester 2023/2024

Delivery date: december 16, 2023

The course's project is the Gomoku Royale application, to be developed throughout the semester. The main functionality of the application is to allow its users to play gomoku games with other users. The game description can be found here. The choice of which rule variant to use is left to the authors' discretion.

This document contains the specification of the requirements for **option B** of practical assignment. **In this option, games are played using the players' devices.**

Each game is preceded by the matchmaking phase, where two players who want to play are paired. Availability to play is expressed by entering the lobby. The pairing attempt is initiated by an explicit action by one of the players, choosing another player in the lobby as his opponent. The game starts when the pairing procedure succeeds.

Each player controls a set of pieces: black or white. Players alternately place pieces on the board. The player who controls the black pieces starts. The first player who manages to create an uninterrupted horizontal, vertical or diagonal line of 5 of their pieces wins. When the game ends it can be marked as a favorite, in which case it is stored persistently for future reference.

The Gomoku Royale application contains, at least, the following screens:

- Screen for matchmaking (lobby);
- Screen for playing the game;
- Screen for displaying the list of favorite games;
- Screen for showing the replay of a game previously marked as a favorite;
- Screen for displaying information about the application's authors.

The matchmaking screen contains the list of players in the lobby. Each item on the list contains the player's name, chosen when entering the lobby. This name does not have to be unique in the lobby, nor does it always have to be the same for a given player.

The game screen is used to make moves, observe the current state of the board and, when the game ends, to announce the winner.

The screen for displaying the favorites contains the list of games marked as such. Each item on the list contains the elements necessary to identify the game, that is, its title, the opponent's name and the date and time of the game. This data is collected when the game is marked as a favorite, using a screen dedicated to this purpose if necessary. When one of the items in the list is selected, the screen used to view the replay of that game is displayed.

The screen for displaying a game replay shows the state of the board and the moves that were made by each player. On this screen the user can navigate between moves (i.e. next and previous) to observe the evolution of the game. Note that this screen is likely to share visual elements with the game screen. Therefore, make sure that your solution is made up of reusable elements, thus reducing the volume of required code and consequently the complexity of the solution.

The screen for displaying information about the authors of the application contains the identification of all

members of the group. The identification of each element consists of the student number and first and last names. The screen also contains a button to send an email to the group members, for example to congratulate them on their excellent work. 😆 The emails to use are those assigned by ISEL.

Communication between devices is carried out using the publish/subscribe model supported by Firestore, to be presented during the courses' classes.

The remaining details related to the user experience, such as the general appearance of the UI, which orientation is used on each screen, and other navigation details between screens, are left to the authors' discretion.

Delivery is carried out by creating the "gomoku_b" tag in the group's GitHub repository. The repository is created within the scope of GitHub Classrooms by the teacher of each section group and **must contain at its root the README.md file with the identification of the group's members and the link to the video demonstrating how the application works.**

Due date
december 16, 2023

ISEL, september 11, 2023