**ThreeStones**

How to start a game

In order to start a game, both the server and client application should be launched (using maven). Once the server application opened, press the connect button in order to make the server start listening for players. The interface will freeze since the program is continuously listening, but it will still function properly. To connect to the server, you will have to input the port and IP address provided by the server Client. Once connected, the server will create a game session and handle all the game logic by sending and receiving packets.

How does the server and client handle the game

By using packets, the server and client are able to communicate and keep track of the game. These packets store information such as the moves played, the player making the move, the state of the game (ended or still playing) and finally, the scores. All of those packets are defined in the class PacketInfo (using Byte arrays) which allows the server to understand them and act accordingly. If the server goes offline during a game, the client will stop the game and let you know of the error thanks to an empty socket sent by the server. If the server ever receives and empty packet, it will know that the connection was lost and it will restart listening for new connections. In order to handle the game logic, the server uses a Board instance and two player variables (NetworkPlayer and AIPlayer). It also has a type made out of positions to define the moves. These variables allow the server to determine if a move made by a certain player is valid (using the move and the board variables) and apply those moves to the board. The Player variables allow the server to keep track of the amount of stones remaining and compare the scores.

How to play the game

Once the game is launched and the connection is established, you can start a game by placing your first stone. The goal of this game is to try to score three stones in a row (vertically, diagonally or horizontally). You will face a smart UI that will complete his moves right after yours. You can only place a stone in the horizontal or vertical line of the last stone placed. In order to keep track of the last stone place, it has been given a red border. On your left, you will have the scores of the current game. You will also be able to determine how many stones are remaining by looking at the left top corner. At the end of a game, the winner is declared and the option of starting a new game is available. By closing the client, the server will resume listening to connections and will start a new game session with the first client that connects to it.