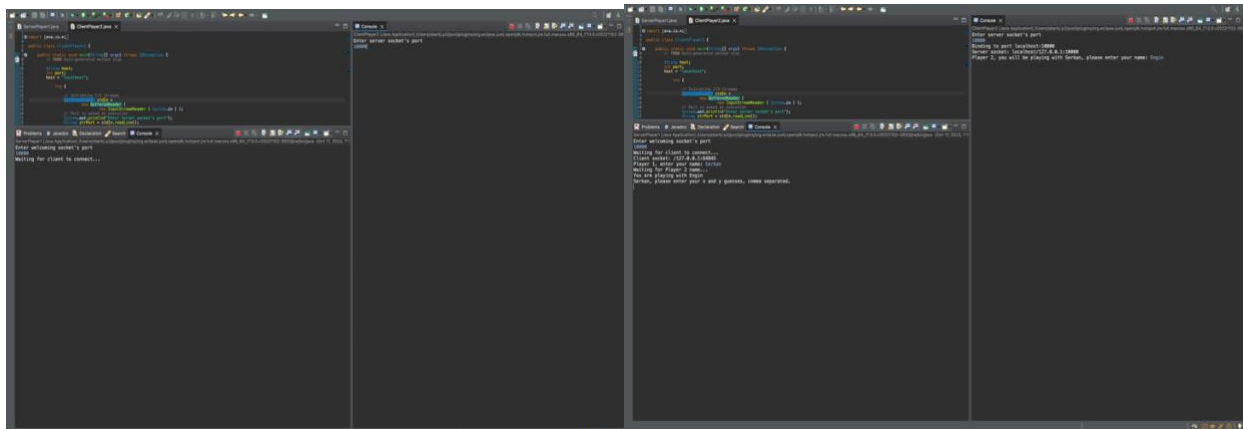**README:** First run ServerPlayer1 file which contains codes for Server side and then run ClientPlayer2. Enter the port in the Server console first then Client side. I wrote the code such that until Player 1 inputs x, y value Client waits, so you need to input x, y from Server side when the game starts. As can be seen from the 3 screenshots below port is asked at execution first and then Player 1 inputs its name in ServerPlayer1 console and then Player 2 on ClientPlayer2 console.

In the below example the port was 10000, Player 1's name is Serkan, Player 2's name is Engin. Where it asks for input, the values entered appear in blue on the console.
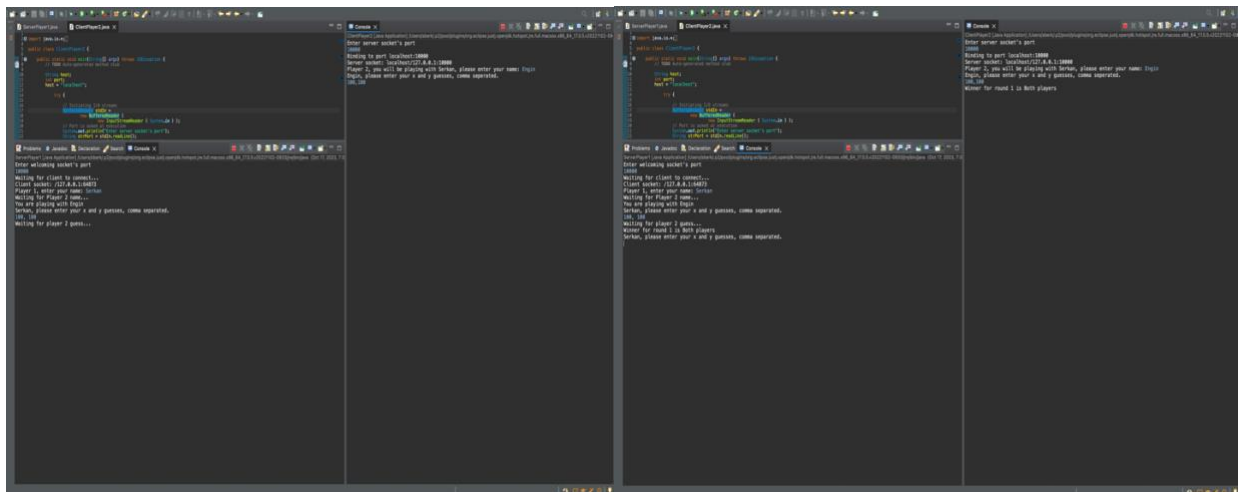
Codes: I wrote comment for each line in my code. It is a bit small because I could not take more screenshots since it says no more than 3 pages. You can zoom in these pictures to see my code and all of my comments.

ServerPlayer1.java | ClientPlayer2.java

```java
        int x_guess_p1 = arr[0]; // first value is x
        int y_guess_p1 = arr[1]; // second value is y

        System.out.println("Waiting for player 2 guess...");
        out.println(); // After inputting the x, y values Client were waiting sending signal
                       // so that Client asks for input from Player 2

        String nums2 = in.readLine();
        nums2 = nums2.replace(" ", "");
        int[] arr2 = convertPointInputs(nums2);
        int x_guess_p2 = arr2[0];
        int y_guess_p2 = arr2[1];

        double dist_pl1 = Math.sqrt( Math.pow((x_guess_p1-x),2) + Math.pow((y_guess_p1-y),2));
        double dist_pl2 = Math.sqrt( Math.pow((x_guess_p2-x),2) + Math.pow((y_guess_p2-y),2));

        //System.out.println("x: "+x+" y: "+y+" :: x1: "+ x_guess_p1+" y: "+y_guess_p1+" :: x2: "+ x_guess_p2+" y2: "+y_guess_p2);
        if (dist_pl1 < dist_pl2) {
            player1Score++;
            System.out.println("Winner for round "+i+" is "+playerName1);
            out.println("Winner for round "+i+" is "+playerName1);
        }else if(dist_pl1 > dist_pl2) {
            player2Score++;
            System.out.println("Winner for round "+i+" is "+playerName2);
            out.println("Winner for round "+i+" is "+playerName2);
        }else {
            System.out.println("Winner for round "+i+" is Both players");
            out.println("Winner for round "+i+" is Both players");
        }
    }

    // Checking the Winner of the Game at the end
    if(player1Score == player2Score) {
        System.out.println("Game Winner is Both players");
        out.println("Game Winner is Both players");
    }else if(player1Score > player2Score ) {
        System.out.println("Game Winner is "+playerName1);
        out.println("Game Winner is "+ playerName1);
    }else {
        System.out.println("Game Winner is "+playerName2);
        out.println("Game Winner is "+playerName2);
    }

    // Closing sockets and I/O streams
    out.close();
    in.close();
    serverSocket.close();

    }catch(Exception e) { // catching error and printing if any
        System.out.println("Bir hata oluştu");
        e.printStackTrace();
    }

    }

    // Converter method takes String as an argument when Player inputs the x and y values
    // creates an int[] array which contains x in its 0th index and y in 1st index. Then returns
    private static int[] convertPointInputs(String str) {
        str = str.replace(" ", "");
        String[] arr = str.split(",");
        int x_guess = Integer.parseInt(arr[0]);
        int y_guess = Integer.parseInt(arr[1]);

        int[] points = new int[2];
        points[0] = x_guess;
        points[1] = y_guess;

        return points;
    }
}
```

Problems | Javadoc | Declaration | Search | Console ×

<terminated> ServerPlayer1 [Java Application] /Users/sberk/.p2/pool/plugins/org.eclipse.justj.openjdk.hotspot.jre.full.macosx.x86_64_17.0.5.v20221102-0933/jre/bin/java (Oct 17, 2023, 6:47:25 PM – 6:55:17 PM) [pid: 7

Waiting for player 2 guess...
Winner for round 1 is Both players
Serkan, please enter your x and y guesses, comma separated.
100, 100
Waiting for player 2 guess...
Winner for round 2 is Serkan
Serkan, please enter your x and y guesses, comma separated.

Console ×

<terminated> ClientPlayer2 [Java Application] /Users/sberk/.p2/pool/plugins/org.eclipse.justj.ope
Enter server socket's port
10000
Binding to port localhost:10000
Server socket: localhost/127.0.0.1:10000
Player 2, you will be playing with Serkan, please enter your name: Eng
Engin, please enter your x and y guesses, comma seperated.
10, 10
Winner for round 1 Both players
Engin, please enter your x and y guesses, comma seperated.
50, 50
Winner for round 2 is Serkan
Engin, please enter your x and y guesses, comma seperated.
120, 20
Winner for round 2 is Engin
Game Winner is Both players

ServerPlayer1.java | ClientPlayer2.java ×

```java
import java.io.*;

public class ClientPlayer2 {

    public static void main(String[] args) throws IOException {
        // TODO Auto-generated method stub

        String host;
        int port;
        host = "localhost";

        try {

            // Initiating I/O streams
            BufferedReader stdIn =
                new BufferedReader (
                    new InputStreamReader ( System.in ) );
            // Port is asked at execution
            System.out.println("Enter server socket's port");
            String strPort = stdIn.readLine();
            port = Integer.parseInt(strPort);

            // clientSocket is initialized
            Socket clientSocket = new Socket ( host, port );
            System.out.println("Binding to port localhost:"+port);

            // Initiating I/O streams
            PrintWriter out =
                new PrintWriter ( clientSocket.getOutputStream (), true );
            BufferedReader in =
                new BufferedReader (
                    new InputStreamReader ( clientSocket.getInputStream () ) );

            // Showing the socket address of the Server
            System.out.println("Server socket: "+clientSocket.getRemoteSocketAddress());

            // Getting Player 1's name from Server and asking for Player 2's name
            String playerName1 = in.readLine();
            System.out.print("Player 2, you will be playing with "+playerName1+", please enter your name: ");
            String playerName2 = stdIn.readLine();
            out.println(playerName2);

            for(int i=0; i<3; i++) {

                in.readLine(); // To keep waiting client until Player 1 inputs the x and y values
                System.out.println(playerName2+", please enter your x and y guesses, comma seperated.");
                String nums = stdIn.readLine();
                out.println(nums);

                /*
                String[] arr = nums.split(",");
                int x_guess_p2 = Integer.parseInt(arr[0]);
                int y_guess_p2 = Integer.parseInt(arr[1]);
                */

                // Printing the result of the round and getting it from Server
                System.out.println(in.readLine());
            }

            System.out.println(in.readLine());
            out.close();
            in.close();
            clientSocket.close();

        }catch(Exception e) {
            System.out.println("Bir hata oluştu");
            e.printStackTrace();
        }

    }
}
```

Problems | Javadoc | Declaration | Search | Console ×

<terminated> ServerPlayer1 [Java Application] /Users/sberk/.p2/pool/plugins/org.eclipse.justj.openjdk.hotspot.jre.full.macosx.x86_64_17.0.5.v20221102-0933/jre/bin/java (Oct 17, 2023, 6:47:25 PM – 6:55:17 PM) [pid: 7

Waiting for player 2 guess...
Winner for round 1 is Both players
Serkan, please enter your x and y guesses, comma separated.
100, 100
Waiting for player 2 guess...
Winner for round 2 is Serkan
Serkan, please enter your x and y guesses, comma separated.

Console ×

<terminated> ClientPlayer2 [Java Application] /Users/sberk/.p2/pool/plugins/org.eclipse.justj.ope
Enter server socket's port
10000
Binding to port localhost:10000
Server socket: localhost/127.0.0.1:10000
Player 2, you will be playing with Serkan, please enter your name: Eng
Engin, please enter your x and y guesses, comma seperated.
10, 10
Winner for round 1 is Both players
Engin, please enter your x and y guesses, comma seperated.
50, 50
Winner for round 2 is Serkan
Engin, please enter your x and y guesses, comma seperated.
120, 20
Winner for round 3 is Engin
Game Winner is Both players