RealDecoy – Web Developer Technical Assessment Phase 2

To further aid in our assessment of your technical capabilities, this short test will aim to give us some insight into your thought process, problem solving abilities and overall strength as a programmer.

Multiplayer Game Of Find The Queen

You are required to implement a multi-player game of "Find The Queen" using a programming language and framework of your choice.

No database system or persistent storage is to be used in the implementation.

A GUI is not required.

If any third party libraries are used in the implementation, please ensure that they are delivered/packaged with the solution.

Premise and Rules

Find the Queen is played between two players where one is the dealer and one is the spotter. The dealer selects 1 of 3 positions to hide the "Queen" and the spotter tries to find the "Queen" in 1 of those 3 positions.
The objective of the game is for the dealer to successfully hide the queen from the player for 5 rounds while the spotter will try to find the queen.

On each turn, the dealer will select a number between 0 and 4 and then the spotter will select a number between 0 and 4. If the spotter chooses the same number as the dealer then the spotter wins the round and gains 1 point.
If the spotter chooses incorrectly the dealer wins the round and gains 1 point.
After 5 rounds the player with the most points win.

Development Guidelines

1. Develop a plain socket server that listens for connections over TCP on port 7621.
2. Develop a client application that establishes a real time connection to the socket server on port 7621
3. The socket server should support connections from 2 instances of the client application using the following credentials:
   username1: dannyboi password1: dre@margh_shelled
   username2: matty7 password2: win&win99
   Any other username or password combinations should be rejected.
4. Once both users are connected the game of "Find the Queen" should start. A message should be sent to both connected clients that the game has started.
5. The server should randomly choose who the dealer is and who the spotter is for the first round.
6. The dealer will select a choice of 1, 2 or 3 which will be sent by the server to the spotter client.
7. The spotter will then make a choice of 1,2 or 3 and if that matches the choice of the dealer then the spotter is declared the winner of the round. If the spotter chooses incorrectly then the dealer is the winner.
8. The game lasts 5 rounds with the the dealer and spotter switching places each round.
9. After 5 rounds the client with the most wins is declared the "Winner".
10. The message "Victory" and "Defeat" should be sent to both clients accordingly.
11. The server should then send the message "Thanks For Playing" to each client and disconnect them gracefully.