Brief

This program implement a simple network MasterMind Game by java Socket.

It has the following features:

1. You can play with other players in a game room maintained by Server.
2. Mutiple groups of players can play at the same time in different game rooms.
3. You can browse the rooms of Server, and select which room you join in to play
4. The first one who guesses the secret code right in the shortest time will be the winner.
5. The server create a independent thread for each player to play and use a scoreboard to record the completion of each player.
6. The server will record those players who escape in the game!

Files:

Server/

    ServerMain.java //the main driver

    GameHall.java //the server that bind the port and handle the requests from clients

    GamerLauncher.java // the game launcher for a game match

    PlayGame.java //the class that implement the game logic

    GameRoom.java // class GameRoom

    Player.java //the player class (player id, player name…)

    Rules.java //the game rules

    GameConfigureation.java //the configuration of colors and max guess times

    ScoreBoard.java //the scoreboard class, it is a list of ScoreBoradItem

    ScoreBoradItem.java //the item of scoreboard.

    SecretCodeGenerator.java // help to generate the code

    CommonResult.java // the unified encapsulation of communication data format

Client/

    ClinetMain.java // the client that interacts with server

    InputUtility.java //help to verify the input from the client's standard input stream

    Vaild.java // help to verify the guess input when playing game.

    GameRoom.java // same as above

    Player.java // same as above

    GameConfigureation.java // same as above

    ScoreBoard.java // same as above

    ScoreBoradItem.java // same as above

    CommonResult.java // same as above

How to Run

Run server first:
The command is
java ServerMain

After the server started, run the clients:
java   ClientMain   server_ip   is_test_mode

where the argument server_ip is the ip address of server machine. is_test_mode means if run in test mode (you can see the secret code while playing game),
is_test_mode=1 means using the test mode. Otherwise not use.

E.g: java   ClientMain   192.168.1.5   1

After you start the client.
It will allow you input a player name , by witch other players could recognize you.

please input your player name (at most 20 characters):
testPlayer

then the client terminal will print a select menu ,and you can now choose to get the game rule or join to play:
welcome testPlayer
please select the menu:
[1] GetRule
[2] JoinGame
[3] Quit
1
Here I want to get the game rule, so I type 1 , then the client will request the game rule from server and print it to you:
Welcome to Mastermind. Here are the rules.
The computer will think of a secret code. The code consists of 4
colored pegs. The pegs MUST be one of six colors: blue, green,
orange, purple, red, or yellow. A color may appear more than once in
the code. You try to guess what colored pegs are in the code and
what order they are in. After you make a valid guess the result
(feedback) will be displayed.
The result consists of a black peg for each peg you have guessed
exactly correct (color and position) in your guess. For each peg in
the guess that is the correct color, but is out of position, you get

a white peg. For each peg, which is fully incorrect, you get no feedback.

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Only the first letter of the color is displayed. B for Blue, R for Red, and so forth. When entering guesses you only need to enter the first character of each color as a capital letter.

Then I want to play game with others, so I type 2:

please select the menu:

please select the menu:

[1] GetRule

[2] JoinGame

[3] Quit

2

| *Room ID:0* | *Room Name:RemoteGameRoom0* | *Room Size:1* | *playersNum:0* | *Gaming* |

players in this room are:

Bob

| *Room ID:1* | *Room Name:RemoteGameRoom1* | *Room Size:2* | *playersNum:1* | *Free* |

players in this room are:

| *Room ID:2* | *Room Name:RemoteGameRoom2* | *Room Size:3* | *playersNum:1* | *Free* |

players in this room are:

JOJO

| *Room ID:3* | *Room Name:RemoteGameRoom3* | *Room Size:4* | *playersNum:0* | *Free* |

players in this room are:

When you type 2 to join game, then the client will request the room information from server and print it on screen.

Here you can browse the rooms, and select a room to join in.

As seen above, there are 4 rooms in server, the Room 2 allows 3 player to play, and now a player named JOJO has already in Room 2 waiting others to join in.

Room0's status is Gaming, that means, player named Bob is playing, if you want to join in Room 0 , the server will refuse that request.

Here I want to play with JOJO, so I type the room id of Room 2:

please select the room id [0-3] that you want to join in. e.g:2

2

Join room success

Player testPlayer Join in the room RemoteGameRoom2, waiting other players to join in......

Now I have joined in Room 2, but room 2 needs 3 players to start the game. So I have to wait another one to join in.

Here another player called COCO also joins in the Room2, now we can play together

Game starts .....

Generating secret code ...(for this example the secret code is OPPB)

You have 12 guesses left.

What is your next guess?

Type in the characters for your guess and press enter.

Enter guess: OPPB

OPPB -> Result: 4B_0W – You guess right !!

getting the scores from others.......

GameScoreBoard:

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id	*name*	*status*	*turns*	*time_cost*
3	*COCO*	*Lost*	*12*	*42s*
0	*testPlayer*	*Finish*	*1*	*56s*
2	*JOJO*	*Escape*	*3*	*69s*

player id: 0 player name: testPlayer is Winner!!

After I finish the game, the Server will return the score board, which records the completion of each player:

COCO Looses the game, he/she used all 12 times but did not guess right.

JOJO escape from the game (for example, he/she shut down the process)

testPlayer guesses right using 56 seconds, so, he won the game in the shortest time.

TRY AND PLAY ！