

I need to create online version of the game 4 in a row in console app in python.

(client-server architecture).

in our case the client side will be a player in the computer, that want to participate in the game.

the server side is the computer that responsible to manage the game (his services contain allowing access to game to multiple clients in a row, update game progress, allow a game between 2 players one against each other, participate in a game against client etc..).

The board is built from 7 columns and 6 rows. at the start of the game, all indexes on the board are empty.

the goal of every player is to complete 4 sequence cells that creates a line (diagonal / horizontal / vertical) line that is not intersect with one of the tokens of the second player.

in any stage, the player has an option to select a column where he wants to put his token.

we can only choose one single column every turn that from her the player throw the token. note that the token will occupy the last cell empty in the column selected. you must validate that the place selected is valid.

Game stages: at the start of the game, the player gets opening message where he requested to select game type that he wants to play.

we have to suggest him 2 options as follows:

1. Doesn't want to play. in this case, we have to disconnect him from server immediately, and end his program as player. the server should continue to work regularly.

2. game against the server (AI) 3. game one on one with additional player (which is not the server). you have to think how to implement this option.

-for selection number 2, ask the client what is the difficulty level he wants against the server, you should allow selection of 2 difficulty levels:

1. easy - the server randomly generates the column he wants to put token in this turn

2. hard - the server selects the location in wise way which is not random. you have to think how the server can select the column in wise way.

- after that, you have to input from the user the number of wins required to win the game, where the minimum is 1.

make sure the player does not select negative number or equal to 0. in case the player sends illegal number over 5 times, you have to block him for 1 minute.

after the end of the block, you should continue asking him similarity but this way if he wrong for 5 times, you double the block duration (2 minutes) and so on.

hint: remember what is the meaning of Blocking Call, which service functions of socket library are of Blocking Call type and how can we use it in this idea. -After win of one of the

players, you have to show the current score (split the wins between the players, number of turns it took to finish the game, etc..) add interesting statistics.

Notes:

- you are responsible to create reliable connection between server to clients. using the service functions of Socket library wisely.

- allow 5 players to login to the server in any given time. you have to make sure its possible to run the players in parallel.

use number of Terminals to verify it manually. for additional player that tries to login in parallel to the 5 that already handled by the server, send reject message that says the capacity is full.

- the server is automatic and not human player, the algorithmic of the server for the "hard" difficulty is up to your choosing. -Write the output of the game board to the console in pretty way as you think. The code should work in Python for Linux Operation system.