Group Number: 27

Overview

Our version of tic-tac-toe implements all the functionality described in part one of the project specification. Two clients can connect to the server and be auto-matched into a game. The game is played to completion with a winner declared. The commands "login", "place", "help", and "exit" are supported.

User Documentation

The user starts the server from terminal by cd'ing into the appropriate directory and entering command "python Server.py". To connect to the server via the client, open up new tabs in the terminal and enter "python client.py" from the same directory.

The user will be prompted to login. Entering any username will connect you to the server and start a game if another client is waiting. Once a game has begun you will be able to execute the place command with the format "place <loc>" which will make your move at location <loc>. The user will also have access to multiple other commands detailed below:

help: entering "help" will display the list of commands detailed in this document along with their uses.

exit: entering "exit" will exit the player from the server.

System Documentation

On a very general level, when a client connects to the server a Player is created and appended to the Players array. Once the length of the Players array is equal to 2, a game is started between the players.

The client can send messages to the server that are encoded via the encode() method in client.py, which encodes messages in the format of "COMMAND args". If one wanted to add support for more messages sent from client to server, they could easily add on to the encode() method for this purpose.

The server receives these messages and parses them based on the command. It then returns the appropriate response to the server, which is sent in an easily printable format for the client to print to console. These messages are parsed by the client based on unique key-words to determine whether the client's message was valid or not. To add support for

more messages on the server end, one would simply need to add on to the main if-else block.

Testing Documentation

Connect to the server with two clients and being playing a game. You can verify that making moves works properly by entering "place 1" and seeing the appropriate piece added to the board in position 1. This will then print the board to both clients and open up input to the other client, allowing them to make their move. You may verify that "place" works for them in the same fashion. You can also verify that attempting to enter "place 1" after the other client has already placed there results in an error message and requires the user to enter a valid move. By playing a game to completion, you can see that a winner is chosen when possible, and the appropriate messages are displayed to both clients. You may also verify at any point in the game that entering "help" will print out the help menu. Entering any unsupported commands will return an error message along with the help menu. Additionally, either client may exit on their turn.