

How to Run Programs:

There are two versions of the program.

1. One implementation without the game but meets requirements.
 - a. The files are contained in the server_client_chat_V1 and contains the following:
 - i. Client.py
 - ii. Server.py
 - b. The client and server .py files will be need to started separately. The server.py file needs to be started first and then the client.py file after.
2. The other implementation meets requirements and contains the implementation of Tic Tac Toe.
 - a. The files are contained in the server_client_chat_V2 and contains the following:
 - i. Client.py
 - ii. Server.py
 - iii. TicTacToe.py
 - b. The client and server .py files will be need to started separately. The server.py file needs to be started first and then the client.py file after.
 - c. The TicTacToe.py does not need to be ran, and is imported in both the client and server .py files.
 - d. The server and client has imported the pickle library module to allow the server to send the gameboard to the client, and for the client to receive the gameboard.
 - e. The game is played with an AI who will choose a random number between 1-9 by importing and using the random python module.

Screenshots for both version 1 and 2 are included below.

Screenshots (server client chat V1):

server_client_chat_V1 server view:

```
"C:\Program Files (x86)\Python39-32\python.exe" C:/Users/kasae/Desktop/client_server_chat-master/server.py
Server listening on: localhost on port: 1024
connected to: 127.0.0.1 on port 1024
Waiting for message...
From client: hi
Enter your message: hi
From client: bye
Enter your message: ok...

Process finished with exit code 0
|
```

server_client_chat_V1 client view:

```
"C:\Program Files (x86)\Python39-32\python.exe" C:/Users/kasae/Desktop/client_server_chat-master/client.py
Connected to: localhost on port: 1024
say hi to your new friend!
Enter your message: hi
Server Response: hi
Enter your message: bye
Server Response: ok...
Enter your message: /q

Process finished with exit code 0
|
```

Screenshots (server client chat V2):

server_client_chat_V2 server view:

```
"C:\Program Files (x86)\Python39-32\python.exe" C:/Users/kasae/PycharmProjects/client_server_chat/server.py
Server listening on: localhost on port: 1024
connected to: 127.0.0.1 on port 1024
Waiting for message...
client reply: hi
['x', '_', '_']
['_', '_', 'o']
['_', '_', '_']
['x', 'x', '_']
['o', '_', 'o']
['_', '_', '_']
['x', 'x', 'x']
['o', '_', 'o']
['_', '_', '_']
GAME OVER

Process finished with exit code 0
|
```

server_client_chat_V2 client view:

```
"C:\Program Files (x86)\Python39-32\python.exe" C:/Users/kasae/PycharmProjects/client_server_chat/client.py
Connected to: localhost on port: 1024
say hi to your new friend!
Enter your message: h
Server Response: Hi there, lets play Tic Tac Toe. Enter a number between (1-9) inclusive, '/q' to quit anytime.

Enter your message: 1
Server response:
['x', '_', '_']
['_', '_', 'o']
['_', '_', '_']

Enter your message: 2
Server response:
['x', 'x', '_']
['o', '_', 'o']
['_', '_', '_']

Enter your message: 3
Server response:
['x', 'x', 'x']
['o', '_', 'o']
['_', '_', '_']

Enter your message: /q
Server Response: GAME OVER, x won!Thanks for playing, bye! '/q' to diconnect

Enter your message: |
```

Sources Cited:

- a. James F. Kurose, Keith Ross, Computer Networking A Top Down Approach
- b. <https://docs.python.org/3/library/socket.html>
- c. https://canvas.oregonstate.edu/courses/1821340/pages/exploration-socket-programming?module_item_id=21279603