

Before starting the game, client and server should send a message to each other.

Type “/game” in the Client, which can start the game Tic-tac-toe. Client will send an invitation message to server. After server agree to join in the game, the Client can choose the chess. Chess “X” moves first. If server refuse the Client’s invitation. The client side can send message to server.

After the game is over, the server side can send messages to client. (Note: In the game, both of server and client cannot exit the game by typing “/q”).

I assume the players can input the valid characters or numbers following the prompt.

Screenshot:

Client chess: “X”

```
yujiangldeMBP:project3 yujianglan$ python3 Client_chat.py
Connected to: localhost on port: 3090
Type /q to quit
Type /game to start Tic-tac-toe
Enter message to send...
>hello
hello client
>Wanna play a game?
sure
>/game
Server accepted your game invitation!
start game!
please choose your chess X or 0(just press the letter, X is first
): X
  0 | 1 | 2
  --|---|
  3 | 4 | 5
  --|---|
  6 | 7 | 8
Please choose where to play chess(0-8):4
  0 | 1 | 2
  --|---|
  3 | X | 5
  --|---|
  6 | 7 | 8
server drop chess on: 6
  0 | 1 | 2
  --|---|
  3 | X | 5
  --|---|
  0 | 7 | 8
Please choose where to play chess(0-8):0
  X | 1 | 2
  --|---|
  3 | X | 5
  --|---|
  0 | 7 | 8
server drop chess on: 8
```

```
yujiangldeMBP:project3 yujianglan$ python3 Server_chat.py
Server listening on: localhost on port: 3090
Connected by (127.0.0.1, 50818)
waiting for message...
hello
Type /q to quit
Enter message to send...
>hello client
Wanna play a game?
>sure
Client invited you join the Tic-tac-toe game.(Accept press 1, Refuse press
0)
>1
The chess X selected by the client, so your chess is 0.
Waiting for the client to place the pawn
  0 | 1 | 2
  --|---|
  3 | 4 | 5
  --|---|
  6 | 7 | 8
client drop chess on: 4
  0 | 1 | 2
  --|---|
  3 | X | 5
  --|---|
  6 | 7 | 8
Please choose where to play chess(0-8):6
  0 | 1 | 2
  --|---|
  3 | X | 5
  --|---|
  0 | 7 | 8
client drop chess on: 0
  X | 1 | 2
  --|---|
  3 | X | 5
  --|---|
  0 | 7 | 8
```

```

server drop chess on: 8
  X | 1 | 2
  --|---|
  3 | X | 5
  --|---|
  0 | 7 | 0
Please choose where to play chess(0-8):5
  X | 1 | 2
  --|---|
  3 | X | X
  --|---|
  0 | 7 | 0
server drop chess on: 7
  X | 1 | 2
  --|---|
  3 | X | X
  --|---|
  0 | 0 | 0
Server win!
I won!
>/q
yujianglandeMBP:project3 yujianglan$

  3 | X | 5
  --|---|
  0 | 7 | 0
client drop chess on: 5
  X | 1 | 2
  --|---|
  3 | X | X
  --|---|
  0 | 7 | 0
Please choose where to play chess(0-8):7
  X | 1 | 2
  --|---|
  3 | X | X
  --|---|
  0 | 0 | 0
Server win!
>I won!
>/q
yujianglandeMBP:project3 yujianglan$

```

Client chess: “O”

```

50.
yujianglandeMBP:project3 yujianglan$ python3 Client_chat.py
Connected to: localhost on port: 3081
Type /q to quit
Type /game to start Tic-tac-toe
Enter message to send...
>hello server
hello client
>/game
Server accepted your game invitation!
start game!
please choose your chess X or O(just press the letter, X is first)
: 0
  0 | 1 | 2
  --|---|
  3 | 4 | 5
  --|---|
  6 | 7 | 8
server drop chess on: 4
  0 | 1 | 2
  --|---|
  3 | X | 5
  --|---|
  6 | 7 | 8
Please choose where to play chess(0-8):0
  0 | 1 | 2
  --|---|
  3 | X | 5
  --|---|
  6 | 7 | 8
server drop chess on: 6
  0 | 1 | 2
  --|---|
  3 | X | 5
  --|---|
  X | 7 | 8
Please choose where to play chess(0-8):2

yujianglandeMBP:project3 yujianglan$ python3 Server_chat.py
Server listening on: localhost on port: 3081
Connected by (127.0.0.1, 51150)
waiting for message...
hello server
Type /q to quit
Enter message to send...
>hello client
Client invited you join the Tic-tac-toe game.(Accept press 1, Refuse press 0)
>1
The chess 0 selected by the client, so your chess is X.
You can place the pawn first
  0 | 1 | 2
  --|---|
  3 | 4 | 5
  --|---|
  6 | 7 | 8
Please choose where to play chess(0-8):4
  0 | 1 | 2
  --|---|
  3 | X | 5
  --|---|
  6 | 7 | 8
client drop chess on: 0
  0 | 1 | 2
  --|---|
  3 | X | 5
  --|---|
  6 | 7 | 8
Please choose where to play chess(0-8):6
  0 | 1 | 2
  --|---|
  3 | X | 5
  --|---|
  X | 7 | 8
client drop chess on: 2

```

```
Please choose where to play chess(0-8):2
  0 | 1 | 0
  --|---|
  3 | X | 5
  --|---|
  X | 7 | 8
server drop chess on: 1
  0 | X | 0
  --|---|
  3 | X | 5
  --|---|
  X | 7 | 8
Please choose where to play chess(0-8):7
  0 | X | 0
  --|---|
  3 | X | 5
  --|---|
  X | 0 | 8
server drop chess on: 5
  0 | X | 0
  --|---|
  3 | X | X
  --|---|
  X | 0 | 8
Please choose where to play chess(0-8):3
  0 | X | 0
  --|---|
  0 | X | X
  --|---|
  X | 0 | 8
server drop chess on: 8
  0 | X | 0
  --|---|
  0 | X | X
  --|---|
  X | 0 | X
Draw!
>/q
yujianglandeMBP:project3 yujianglan$

client drop chess on: 2
  0 | 1 | 0
  --|---|
  3 | X | 5
  --|---|
  X | 7 | 8
Please choose where to play chess(0-8):1
  0 | X | 0
  --|---|
  3 | X | 5
  --|---|
  X | 7 | 8
client drop chess on: 7
  0 | X | 0
  --|---|
  3 | X | 5
  --|---|
  X | 0 | 8
Please choose where to play chess(0-8):5
  0 | X | 0
  --|---|
  3 | X | X
  --|---|
  X | 0 | 8
client drop chess on: 3
  0 | X | 0
  --|---|
  0 | X | X
  --|---|
  X | 0 | 8
Please choose where to play chess(0-8):8
  0 | X | 0
  --|---|
  0 | X | X
  --|---|
  X | 0 | X
Draw!
>/q
yujianglandeMBP:project3 yujianglan$
```

Error:

If there is an error: "Bind failed. Error Code: XXXX", please try to change the port number in the line 82 in Server_chat.py and line 117 in Client_chat.py, confirm they are the same number.