INSTRUCTIONS TO RUN THE CODES

Server1(Single Client)

STEP1:

Open terminal and give server IP and Port number on command line.

python server1.py 127.0.0.1 5000 (here 5000 is port number and 127.0.0.1 is IP address of local host)

Press Enter then it shows Listening on 127.0.0.1:5000.

STEP2:

Open another terminal Server IP and Port number is given on command line

python client.py 127.0.0.1 5000

press enter it shows Connected to server.

Server displays connected with client socket number x.

STEP3:

Client displays Please enter the message to the server then user enters the message.

Displays server replied: result

STEP4:

Server displays Client socket number x sent message:

Sending reply: result

STEP 5: If client wants to terminate enter CTRL+C

Server2(multi-threaded server):

STEP1:

Open terminal and give server IP and Port number on command line

python server2.py 127.0.0.1 5000 (here 5000 is port number and 127.0.0.1 is IP address of local host)

Press Enter then it shows Listening on 127.0.0.1:5000

STEP2:

Open another terminal Server IP and Port number is given on command line

python client.py 127.0.0.1 5000

Press enter it shows Connected to server.

Server displays connected with client socket number x.

STEP3:

Client displays Please enter the message to the server then user enters the message

Displays server replied: result.

STEP4:

Client socket number x sent message.

Sending reply: result

STEP5:

Open another terminal Server IP and Port number is given on command line

python client2.py 127.0.0.1 5000

Press enter it shows Connected to server.

Server displays connected with client socket number y.

STEP6:

Client displays Please enter the message to the server then user enters the message.

Displays server replied: result

STEP7:

Client socket number y sent message:

Sending reply: result

STEP8: If client wants to terminate enter CTRL+C

We can run multiple clients simultaneously with server2.

Server 3(Select method for handling multiple clients)

STEP1:

Open terminal and give server IP and Port number on command line

python server2.py 127.0.0.1 5000 (here 5000 is port number and 127.0.0.1 is IP address of local host)

Press Enter then it shows Listening on 127.0.0.1:5000

STEP2:

Open another terminal Server IP and Port number is given on command line.

python client.py 127.0.0.1 5000

Press enter it shows Connected to server.

Server displays connected with client socket number x.

STEP3:

Client displays Please enter the message to the server then user enters the message.

Displays server replied: result.

STEP4:

Client socket number x sent message:

Sending reply: result

STEP5:

Open another terminal Server IP and Port number is given on command line

python client2.py 127.0.0.1 5000

Press enter it shows Connected to server.

Server displays connected with client socket number y.

STEP6:

Client displays Please enter the message to the server then user enters the message.

Displays server replied: result.

STEP7:

Client socket number y sent message:

Sending reply: result

STEP8: If client wants to terminate enter CTRL+C

SERVER 4(echo server):

STEP1:

Open terminal and give server IP and Port number on command line.

python server2.py 127.0.0.1 5000 (here 5000 is server port number and 127.0.0.1 is IP address of local host)

Press Enter then it shows New Client connected :(' 127.0.0.1,61036')Here 61036 is client port number

STEP2:

Open another terminal Server IP and Port number is given on command line.

python client.py 127.0.0.1 5000

Press enter it shows Connected to server.

STEP3:

Client displays Please enter the message to the server then user enters: 5+3

Server replied: 5+3

STEP4:

Server displays Client socket number x sent message:5+3

Sending reply:5+3

STEP5:

Open another terminal Server IP and Port number is given on command line

python client2.py 127.0.0.1 5000

Press enter it shows Connected to server.

Server displays New Client connected: (' 127.0.0.1,61060') Here 61060 is client port number

STEP6:

Client displays Please enter the message to the server then user enters: hii

Server replied: hii

STEP7:

Server displays Client socket number x sent message:5+3

Sending reply:5+3

STEP8: If client wants to terminate enter CTRL+C

TESTCASES OUTPUTS OF 4 SERVERS:

SERVER1

```
PS C:\Users\salon\Downloads\Tut3> python server1.py 127.0.0.1 5000
Listening on 127.0.0.1 : 5000
Connected with client socket number 472
Client socket 472 sent message: 3+6
Sending reply: 9
Client socket 472 sent message: 7*7
Sending reply: 49
Client socket 472 sent message: 1*7
Sending reply: 7
```

```
# Receive data from the client

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE

Connected to server
Please enter the message to the server: 3+6
Server replied: 9
Please enter the message to the server: 7*7
Server replied: 49
Please enter the message to the server: 1*7
Server replied: 7
Please enter the message to the server: []
```

```
PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE

PS C:\Users\salon\Downloads\Tut3> python client3.py 127.0.0.1 5000

Client is already connected, please try after sometime

PS C:\Users\salon\Downloads\Tut3> [
```

PROBLEMS OUTPUT **TERMINAL** DEBUG CONSOLE

PS C:\Users\salon\Downloads\Tut3> python server2.py 127.0.0.1 5000

Listening on 127.0.0.1:5000 Connected with 127.0.0.1:51532

Connected with client socket number 384 Client socket 384 sent message: 6*9

Sending reply: 54

Connected with 127.0.0.1:51534

Connected with client socket number 428 Client socket 428 sent message: 9/4

Sending reply: 2.25

PS C:\Users\salon\Downloads\Tut3> python client.py 127.0.0.1 5000

Connected to server

Please enter the message to the server: 6*9

Server replied: 54

Please enter the message to the server: 3+6

Server replied: 9

TRODLEMS OUT OF TERMINAL DEBOG COMSOLE

PS C:\Users\salon\Downloads\Tut3> python client2.py 127.0.0.1 5000

Connected to server

Please enter the message to the server: 9/4

Server replied: 2.25

Please enter the message to the server: 6/4+8

Server replied: 9.5

Please enter the message to the server: 7%3

Server replied: 1

```
PS C:\Users\salon\Downloads\Tut3> python server3.py 127.0.0.1 5000
Listening on 127.0.0.1:5000
Connected with client socket number 420
Client socket 420 sent message: 70%6
Sending reply: 4
Client socket 420 sent message: 8*8+8-8
Sending reply: 64
Connected with 127.0.0.1:60882
Connected with client socket number 424
Client socket 424 sent message: 90-67
Sending reply: 23
```

WHEN WE ENTER CTRL+C IT SHOWS KEYBOARD INTERRUPT

```
PS C:\Users\salon\Downloads\Tut3> python client2.py 127.0.0.1 5000 Connected to server
Please enter the message to the server: 90-67
Server replied: 23
Please enter the message to the server: 4+5-9+7
Server replied: 7
Please enter the message to the server: 3-8
Server replied: -5
Please enter the message to the server: [
```

PROBLEMS OUTPUT TERMINAL **DEBUG CONSOLE** PS C:\Users\salon\Downloads\Tut3> python server4.py 127.0.0.1 5000 New client connected: ('127.0.0.1', 61036) Client socket 412 sent message: 27/100*100 Sending reply: 27/100*100 Client socket 412 sent message: hii Sending reply: hii Client socket 412 sent message: bye Sending reply: bye New client connected: ('127.0.0.1', 61060) Client socket 416 sent message: hw r u Sending reply: hw r u Client socket 416 sent message: get lost Sending reply: get lost

PS C:\Users\salon\Downloads\Tut3> python client.py 127.0.0.1 5000 Connected to server
Please enter the message to the server: 27/100*100
Server replied: 27/100*100
Please enter the message to the server: hii
Server replied: hii
Please enter the message to the server: bye
Server replied: bye
Please enter the message to the server:

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE

PS C:\Users\salon\Downloads\Tut3> python client2.py 127.0.0.1 5000

Connected to server

Please enter the message to the server: hw r u

Server replied: hw r u

Please enter the message to the server: get lost

Server replied: get lost

Please enter the message to the server: 7/4

Server replied: 7/4

Please enter the message to the server: