Name: Srujan R
Roll No: BT18CSE041

CN Assignment: 3

Details about files

- client.py : contains the code for client to make requests to the server; initially sends a message about the length of the question it is sending and then sends the actual message; upon closing it disconnect message sent to server to close the connection
- server1.py : single process server which handles a single client at a time
- server2.py : multithreaded server which handles multiple clients concurrently using threads
- server3.py : single process server handling multiple clients using select() method
- server4.py : single process ECHO server handling multiple clients using select() method

To execute

Note : Please execute the codes in windows command line as I have used signal handling which would give errors in linux terminal

1. First start the server : python servername.py IP_address port_number
   For eg : python server1.py 127.0.0.1 5000

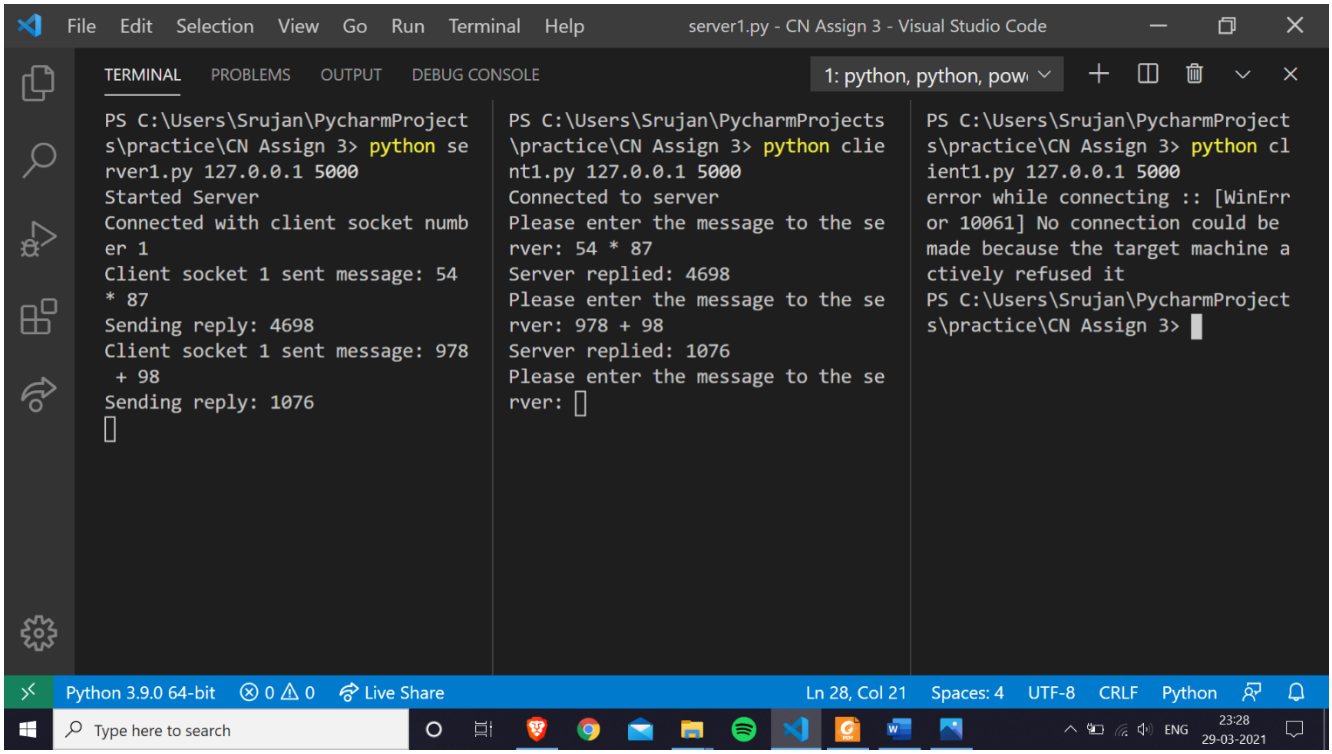
Note : For TCP, ports 1-1023 are by default privileged ports. So avoid using those port numbers.

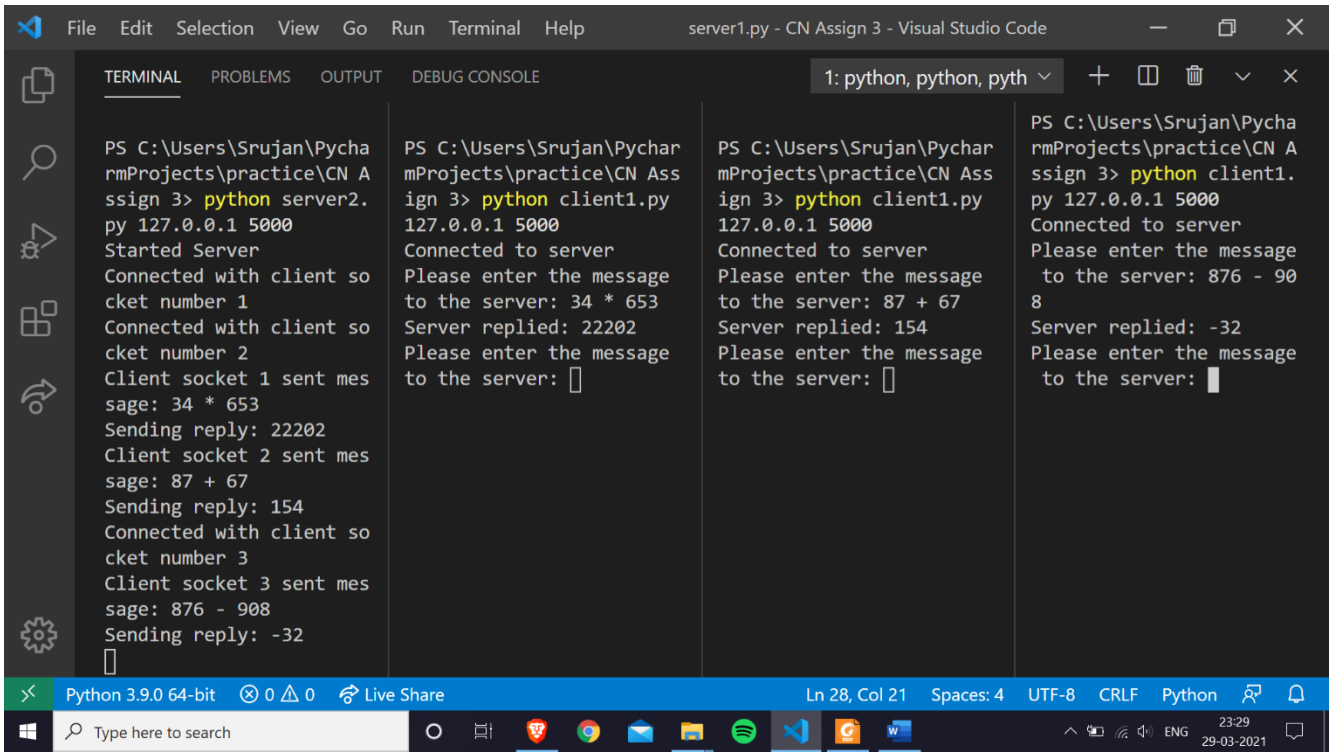
2. To run client and make request : python client.py IP_address port_number
   For eg : python client.py 127.0.0.1 5000
3. Give an integer equation having 2 operands that needs to be evaluated and the server will send back the answer or the error encountered.

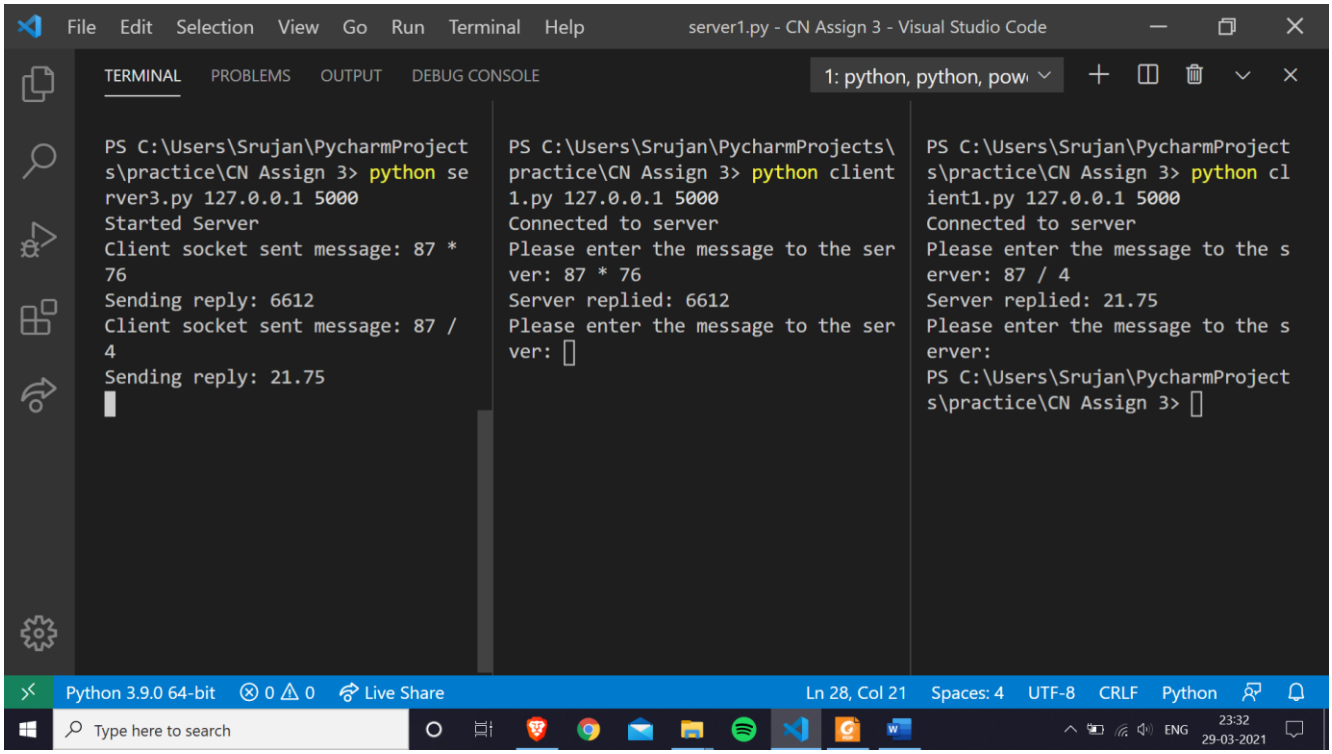
Features

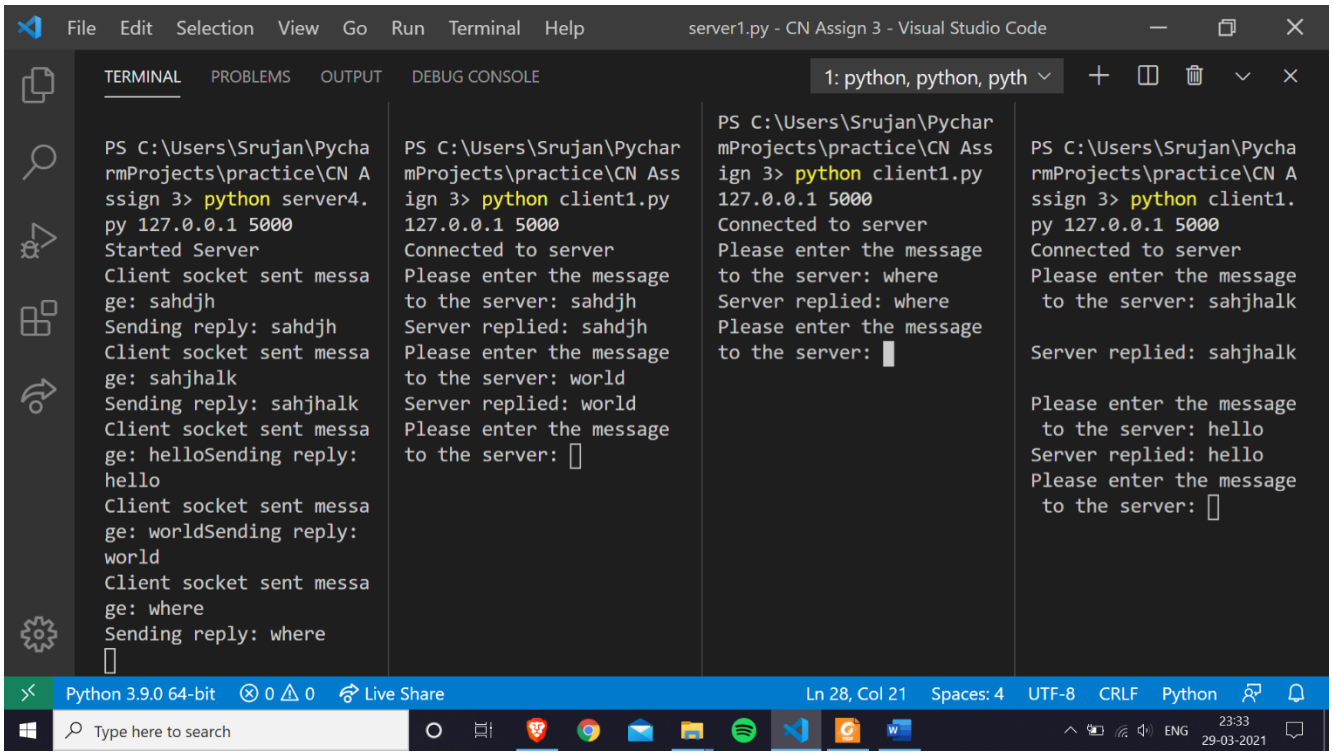
- Taking in 2 messages from client to determine the length of message the client wants to send. This reduces the number of bytes being received at server.
- Appropriate errors are sent to client. Exceptions are handled properly for the both socket and string handling lines of code.

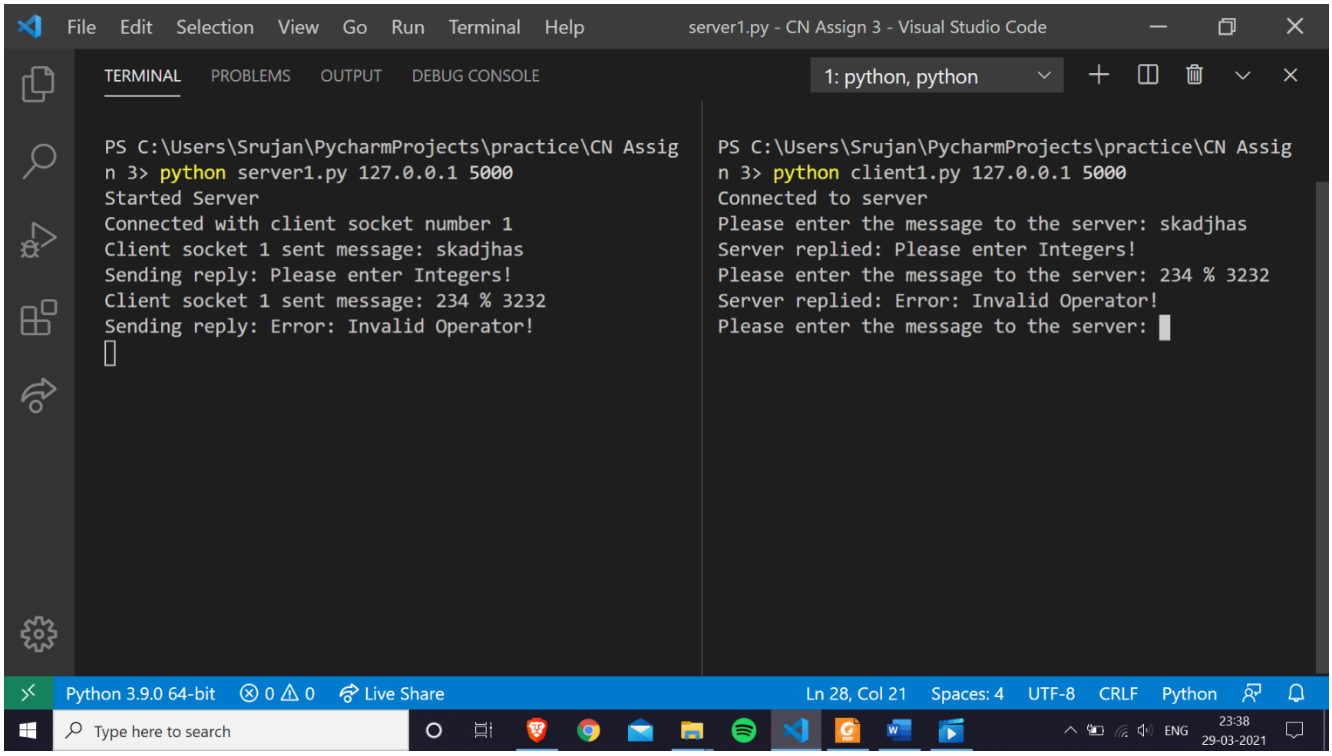
Output Snippets


File Edit Selection View Go Run Terminal Help
server1.py - CN Assign 3 - Visual Studio Code
TERMINAL PROBLEMS OUTPUT DEBUG CONSOLE
1: python, python, pow
PS C:\Users\Srujan\PycharmProjects\practice\CN Assign 3> python server1.py 127.0.0.1 5000
Started Server
Connected with client socket number 1
Client socket 1 sent message: 54 * 87
Sending reply: 4698
Client socket 1 sent message: 978 + 98
Sending reply: 1076
PS C:\Users\Srujan\PycharmProjects\practice\CN Assign 3> python client1.py 127.0.0.1 5000
Connected to server
Please enter the message to the server: 54 * 87
Server replied: 4698
Please enter the message to the server: 978 + 98
Server replied: 1076
Please enter the message to the server:
PS C:\Users\Srujan\PycharmProjects\practice\CN Assign 3> python client1.py 127.0.0.1 5000
error while connecting :: [WinError 10061] No connection could be made because the target machine actively refused it
PS C:\Users\Srujan\PycharmProjects\practice\CN Assign 3>
Python 3.9.0 64-bit
Live Share
Ln 28, Col 21
Spaces: 4
UTF-8
CRLF
Python
Type here to search
ENG
23:28
29-03-2021


File Edit Selection View Go Run Terminal Help
server1.py - CN Assign 3 - Visual Studio Code
TERMINAL PROBLEMS OUTPUT DEBUG CONSOLE
1: python, python, pyth
PS C:\Users\Srujan\PycharmProjects\practice\CN Assign 3> python server2.py 127.0.0.1 5000
Started Server
Connected with client socket number 1
Connected with client socket number 2
Client socket 1 sent message: 34 * 653
Sending reply: 22202
Client socket 2 sent message: 87 + 67
Sending reply: 154
Connected with client socket number 3
Client socket 3 sent message: 876 - 908
Sending reply: -32
PS C:\Users\Srujan\PycharmProjects\practice\CN Assign 3> python client1.py 127.0.0.1 5000
Connected to server
Please enter the message to the server: 34 * 653
Server replied: 22202
Please enter the message to the server:
PS C:\Users\Srujan\PycharmProjects\practice\CN Assign 3> python client1.py 127.0.0.1 5000
Connected to server
Please enter the message to the server: 87 + 67
Server replied: 154
Please enter the message to the server:
PS C:\Users\Srujan\PycharmProjects\practice\CN Assign 3> python client1.py 127.0.0.1 5000
Connected to server
Please enter the message to the server: 876 - 908
Server replied: -32
Please enter the message to the server:
Python 3.9.0 64-bit
Live Share
Ln 28, Col 21
Spaces: 4
UTF-8
CRLF
Python
Type here to search
ENG
23:29
29-03-2021


File Edit Selection View Go Run Terminal Help
server1.py - CN Assign 3 - Visual Studio Code
TERMINAL PROBLEMS OUTPUT DEBUG CONSOLE
1: python, python, pow
PS C:\Users\Srujan\PycharmProjects\practice\CN Assign 3> python server3.py 127.0.0.1 5000
Started Server
Client socket sent message: 87 * 76
Sending reply: 6612
Client socket sent message: 87 / 4
Sending reply: 21.75
PS C:\Users\Srujan\PycharmProjects\practice\CN Assign 3> python client1.py 127.0.0.1 5000
Connected to server
Please enter the message to the server: 87 * 76
Server replied: 6612
Please enter the message to the server:
PS C:\Users\Srujan\PycharmProjects\practice\CN Assign 3> python client1.py 127.0.0.1 5000
Connected to server
Please enter the message to the server: 87 / 4
Server replied: 21.75
Please enter the message to the server:
PS C:\Users\Srujan\PycharmProjects\practice\CN Assign 3>
Python 3.9.0 64-bit
0 0
Live Share
Ln 28, Col 21
Spaces: 4
UTF-8
CRLF
Python
Type here to search
ENG
23:32
29-03-2021


File Edit Selection View Go Run Terminal Help
server1.py - CN Assign 3 - Visual Studio Code
TERMINAL PROBLEMS OUTPUT DEBUG CONSOLE
1: python, python, pyth
PS C:\Users\Srujan\PycharmProjects\practice\CN Assign 3> python server4.py 127.0.0.1 5000
Started Server
Client socket sent message: sahdjh
Sending reply: sahdjh
Client socket sent message: sahjhalk
Sending reply: sahjhalk
Client socket sent message: helloSending reply: hello
Client socket sent message: worldSending reply: world
Client socket sent message: where
Sending reply: where
PS C:\Users\Srujan\PycharmProjects\practice\CN Assign 3> python client1.py 127.0.0.1 5000
Connected to server
Please enter the message to the server: sahdjh
Server replied: sahdjh
Please enter the message to the server: world
Server replied: world
Please enter the message to the server:
PS C:\Users\Srujan\PycharmProjects\practice\CN Assign 3> python client1.py 127.0.0.1 5000
Connected to server
Please enter the message to the server: where
Server replied: where
Please enter the message to the server:
PS C:\Users\Srujan\PycharmProjects\practice\CN Assign 3> python client1.py 127.0.0.1 5000
Connected to server
Please enter the message to the server: sahjhalk
Server replied: sahjhalk
Please enter the message to the server: hello
Server replied: hello
Please enter the message to the server:
Python 3.9.0 64-bit
0 0
Live Share
Ln 28, Col 21
Spaces: 4
UTF-8
CRLF
Python
Type here to search
ENG
23:33
29-03-2021


File Edit Selection View Go Run Terminal Help
server1.py - CN Assign 3 - Visual Studio Code
TERMINAL PROBLEMS OUTPUT DEBUG CONSOLE
1: python, python
PS C:\Users\Srujan\PycharmProjects\practice\CN Assig
n 3> python server1.py 127.0.0.1 5000
Started Server
Connected with client socket number 1
Client socket 1 sent message: skadjhas
Sending reply: Please enter Integers!
Client socket 1 sent message: 234 % 3232
Sending reply: Error: Invalid Operator!
PS C:\Users\Srujan\PycharmProjects\practice\CN Assig
n 3> python client1.py 127.0.0.1 5000
Connected to server
Please enter the message to the server: skadjhas
Server replied: Please enter Integers!
Please enter the message to the server: 234 % 3232
Server replied: Error: Invalid Operator!
Please enter the message to the server:
Python 3.9.0 64-bit
0 0
Live Share
Ln 28, Col 21
Spaces: 4
UTF-8
CRLF
Python
Type here to search
ENG
23:38
29-03-2021