CS359 Assignment 3

Client Server Interactor and Calculator

Ashish kumar Pandey
2001CS82

Files attached with this report: 4 different types of servers which would reply based on specs provided and 1 client file which would send queries related to mathematical expressions and the server would respond according to specifications provided…

Setting up the systems:

- Open any number of terminals to run clients and one server.
- You would run python file with 2 arguments namely localhost(for your system's ip) and a port number say 4800
  Eg. python client.py localhost 4800

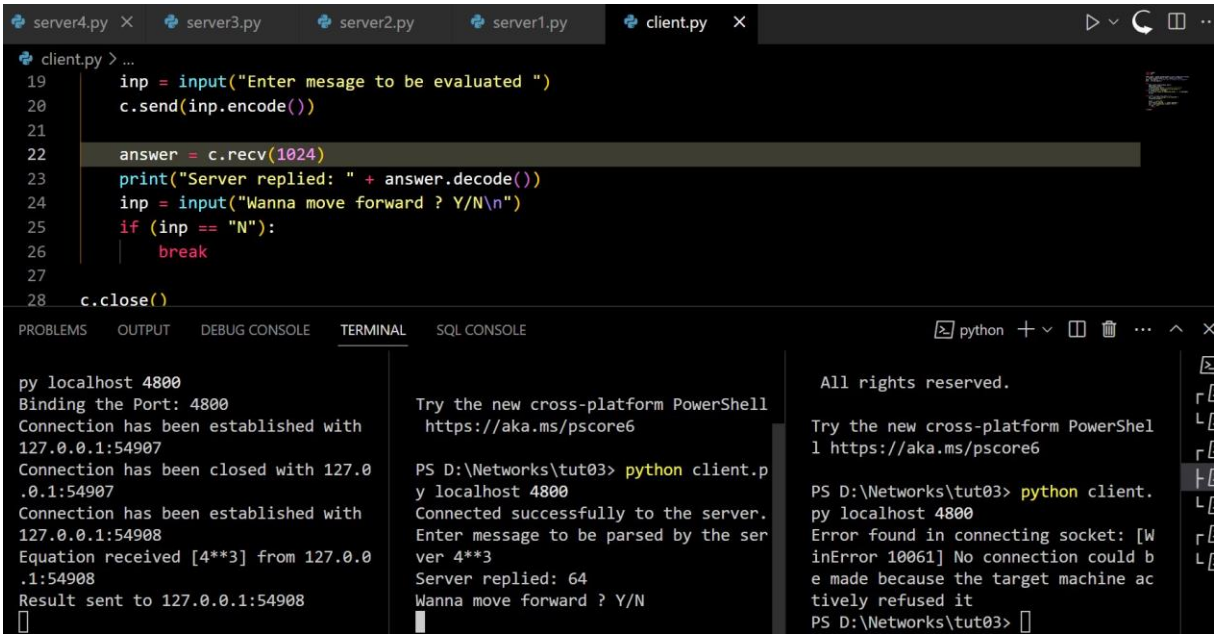
And similarly for server python server1.py localhost 4800…

- After every answer to the query you would be asked whether you want to continue or not for which you can answer by simply pressing Y for Yes and N for No and can continue with the working…
- And finally for closing servers just kill the terminal and you would be done.

So, now we are done with the setting up of the systems in place…

So, now let's jump off to the 1st server that only allows one server at a time for working:

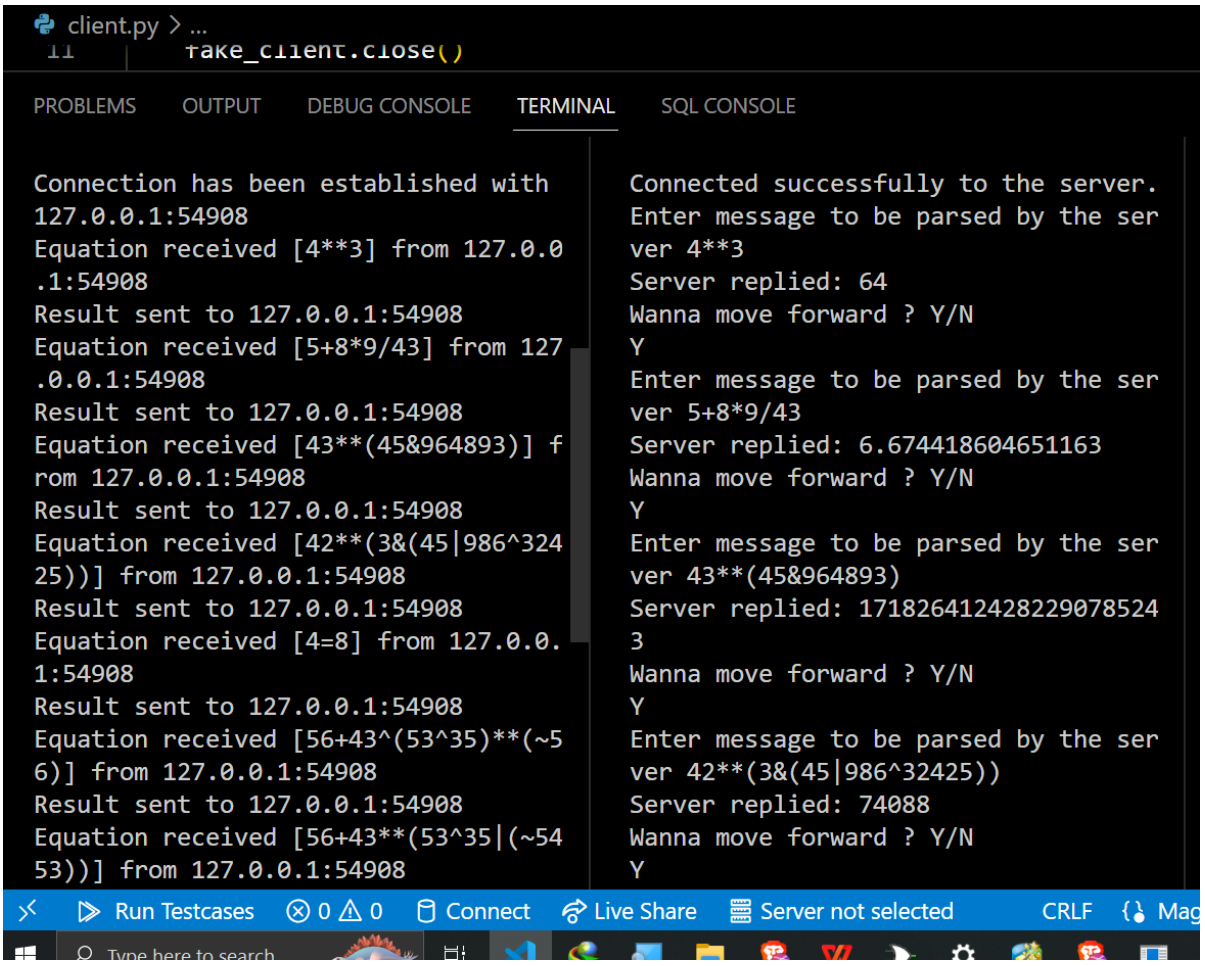
Server1:



Here I am using a fake client to restrict the command execution to only 1 client.

And for evaluating using python eval function, it’s a bit unsafe as it can be used to change system settings also like shutting down the system etc, but writing own’s function would involve just writing 100’s of lines of code for covering every single operation…

Examples with many different test cases including:

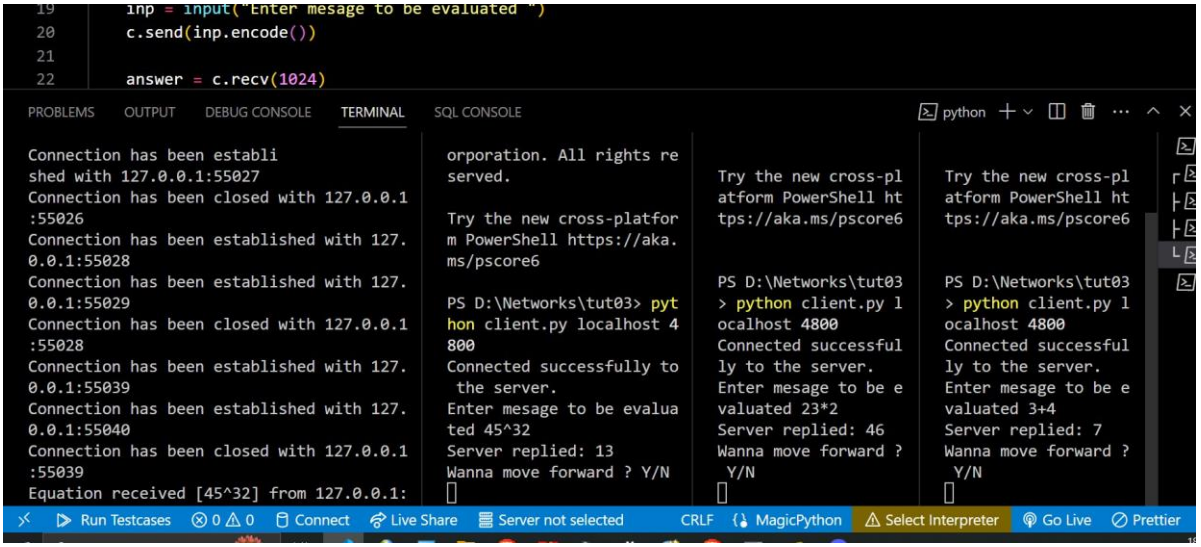


4**3
5+8*9/43
43**(45&964893)
42**(3&(45|986^32425))

4=8
56+43**(53^35|(~5453))

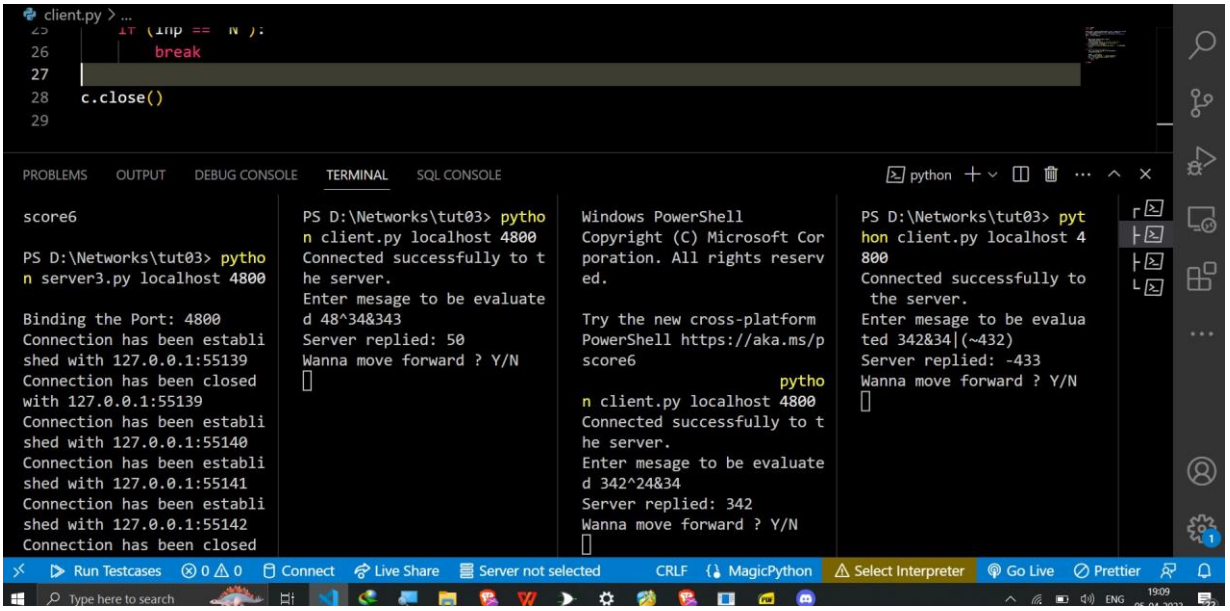
Working with server 2

Server2: Everything is same in here except that now many clients can get connected to the mainstream server… Here are the snapshots…

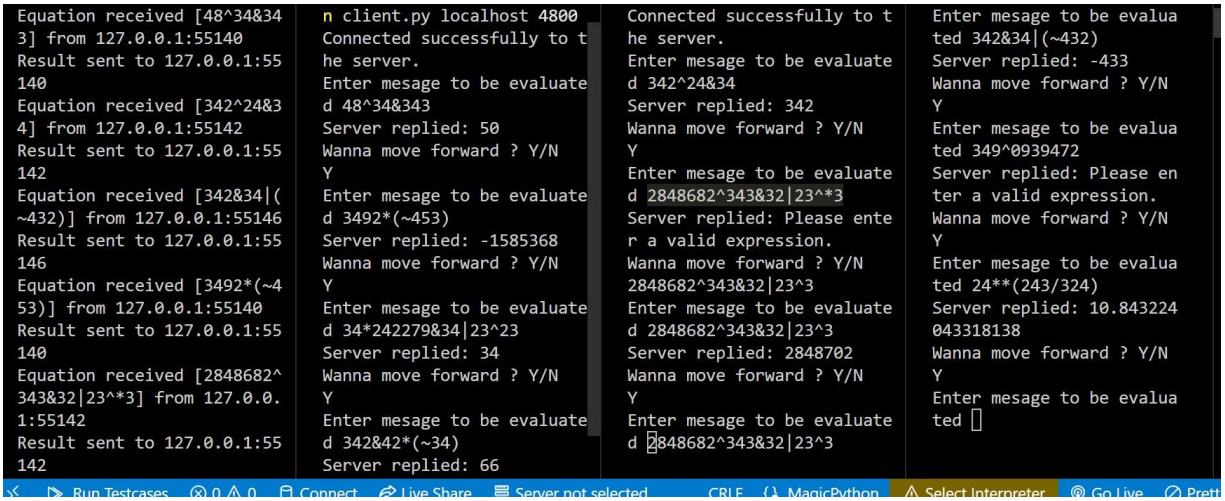


Examples used:(Combination of BODMAS operators and Bitwise operators for checking with various use cases)
43^(5435^242&4325|342)
3423*(242~324^4244)
4234&535^23^34^(~453)
234^24&24|24342^545

Now, moving on with server3.py, which uses a select algorithm to choose which one to give right to read and write at a certain time, since I am the only person opting for the multiple clients, the difference would be not that clear, but while explaining in the video, it would be quite evident…



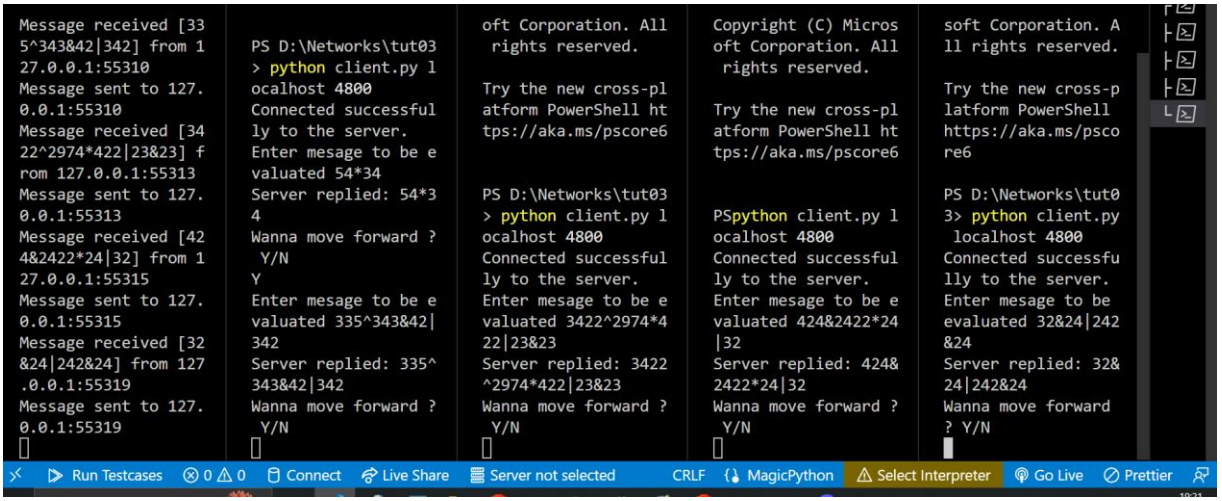
Examples used:
24**(243/324)
2848682^343&32|23^3
48^34&343
3492*(~453)
34*242279&34|23^23
342&42*(~34)



Now, with server4.py we just have to echo the statements that we are getting from the clients, so here we go…

Server4:

It’s just printing out whatever you are getting from the client…



Explanation in the YT video…

THE END

THANKYOU