Homework 2 Problem 8

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1	How to run the code	
	# move to code dir	
	for server with python sython3 server.py	
	# for client1 with cpp g++ client1.cpp -o client1 && ./client1	
	# for client2 with c gcc client2.c -o client2 && ./client2	

2 Steps

- 1. Client 1 sends a mathematical expression (5+5+5) to the server.
- 2. The server evaluates the expression manually (without using eval()), and appends the result in the format 5+5+5=15.0 to a file named history.html.
- 3. The server responds to Client 1 with only the result (e.g., Result = 15.0).
- 4. Client 1 sends another expression (square of 15).
- 5. The server evaluates it, appends the square of 15 = 225.0 to history.html.
- 6. The server responds to Client 1 with the result "Result = 225.0".
- 7. Client 2 connects and sends an HTTP GET request for history.html. (GET history.html)
- 8. The server finds history.html, reads its content, and sends the response with the file content.
- 9. Client 1 sends a GET request for a non-existent file. (GET XYX.html)
- 10. The server checks its file system, does not find XYX.html, and sends back a proper 404 File Not Found response.

Computer Network 2

3 Screenshot

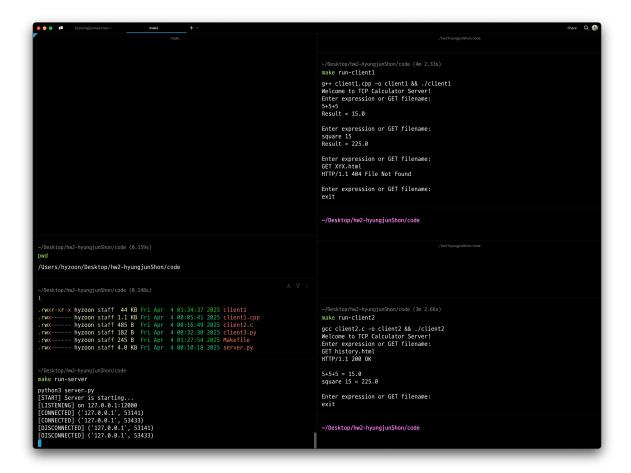


Figure 1: Example steps in the guideline

- use make for convinience, but same run command in the guideline can be found in screenshot
- client2.c meets the size limit of 500 byte by 485 byte.
- client3.py is additional code for shortest client code but not in use in this homework. (185 byte)

Computer Network 3

4 Additional Example

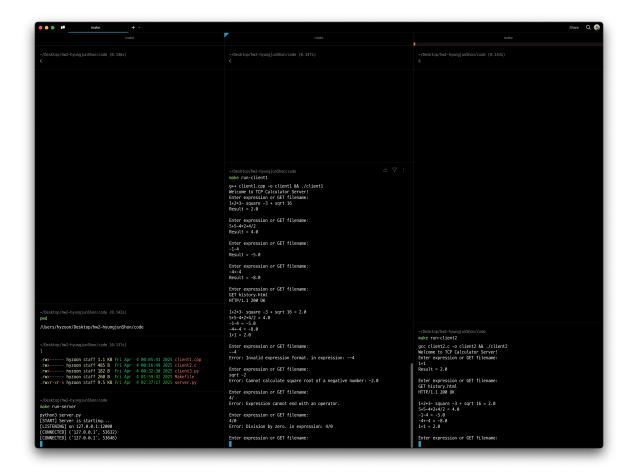


Figure 2: Additional operations not in the guideline

- Both client1 and client2 support both calculation and HTTP request functionalities.
- Complex arithmetic operations are supported.
- All operations (sum, subtract, multiply, divide, square, sqrt) are all error handled.
 - invalid character
 - invalid operator usage
 - divide by zero
 - sqrt negative number