Programming Assignment 1: Sockets

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Summary

This program is an example of a simple TCP socket written in Python. The client takes user input and checks that is matches the format required by the server for math (x op y =, with no whitespace). If the input format is invalid, the user is asked to input a new string. If it is valid, the program creates a socket, connects to the server, and send the server the input string. The server takes the string, performs the mathematical operation, sends the result to the client, and closes the socket. Entering the exit string "0/0=" ends the program on both the client and the server.

Running the Program

To run the client program, execute `python client.py` from the command line of Eustis.

To run the server program, execute `python server.py` from the command line of Eustis3.

Client is designed to run on Eustis and connect to Eustis3 on port 5408.

Screenshots

Client output:

```
ow376671@net1547:~/4704HW1$ python client.py
Enter an expression: 1+1=
Connected with server on: 10.173.204.63
Result from server: 2.0
Enter an expression: 5*5=
Connected with server on: 10.173.204.63
Result from server: 25.0
Enter an expression: 8*2=
Connected with server on: 10.173.204.63
Result from server: 16.0
Enter an expression: 8/7=
Connected with server on: 10.173.204.63
Result from server: 1.1428571428571428
Enter an expression: 9-8=
Connected with server on: 10.173.204.63
Result from server: 1.0
Enter an expression: 0/0=
Connected with server on: 10.173.204.63
Exiting
ow376671@net1547:~/4704HW1$
```

Server output:

```
ow376671@eustis3:~$ python server.py
The server is ready to receive
Connected with client on: 127.0.1.1
Received question " 1+1= "; send back answer  2.0
Connected with client on: 127.0.1.1
Received question " 5*5= "; send back answer  25.0
Connected with client on: 127.0.1.1
Received question " 8*2= "; send back answer  16.0
Connected with client on: 127.0.1.1
Received question " 8/7= "; send back answer  1.1428571428571428
Connected with client on: 127.0.1.1
Received question " 9-8= "; send back answer  1.0
Connected with client on: 127.0.1.1
Received question " 0/0= "; end the server program
ow376671@eustis3:~$
```