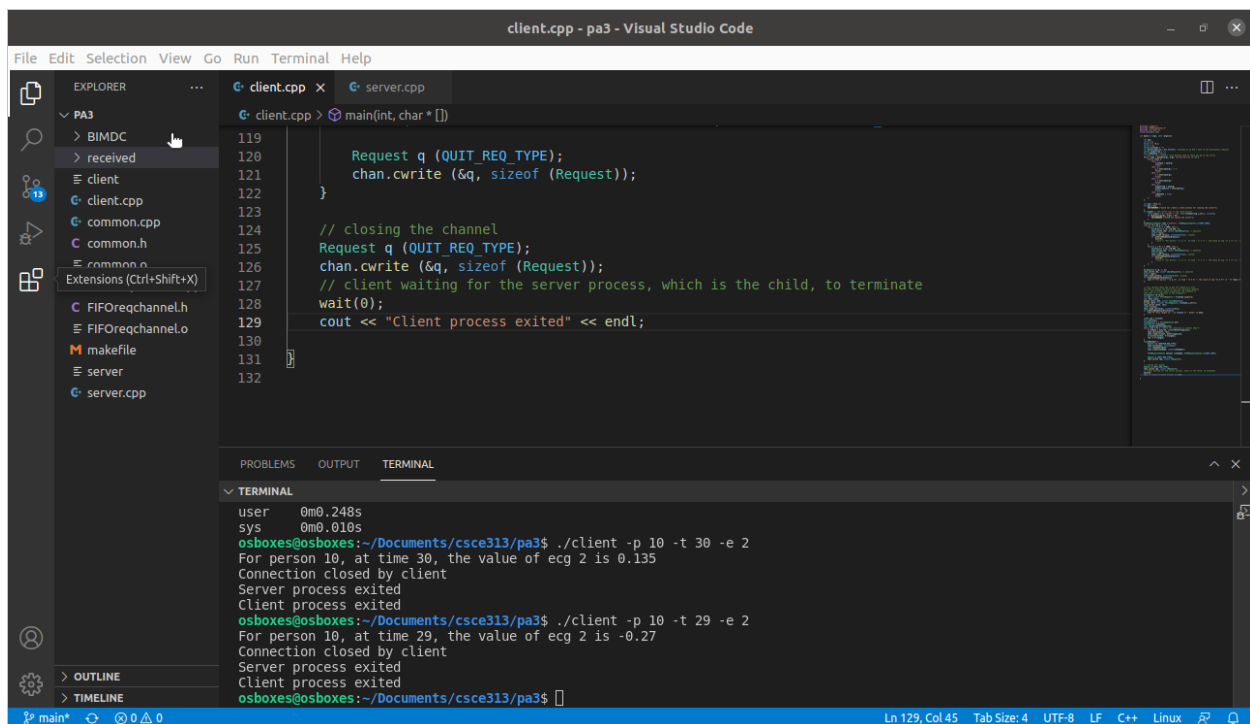


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## PA3 - A Client Program Speaking to a Server

The goal of PA3 is to design a program that can connect to a server. The client (you) will request for data from the server using special commands. The design includes being able to request certain data points, creating a new channel, file transfers, and other various requests/response functionalities.

My program is able to request a certain patient's ecg value at a specific time as shown below.



The screenshot displays the Visual Studio Code editor with the 'client.cpp' file open. The code in the editor shows a client program that sends a 'QUIT\_REQ' request to a server and then waits for a response. The terminal window at the bottom shows the execution of the client program with the following output:

```
user 0m0.248s
sys 0m0.010s
osboxes@osboxes:~/Documents/csce313/pa3$ ./client -p 10 -t 30 -e 2
For person 10, at time 30, the value of ecg 2 is 0.135
Connection closed by client
Server process exited
Client process exited
osboxes@osboxes:~/Documents/csce313/pa3$ ./client -p 10 -t 29 -e 2
For person 10, at time 29, the value of ecg 2 is -0.27
Connection closed by client
Server process exited
Client process exited
osboxes@osboxes:~/Documents/csce313/pa3$
```

When requesting for a certain file, it returns the values from the default arguments specified in the program as shown below.

The screenshot shows the Visual Studio Code editor with the file `client.cpp` open. The Explorer sidebar on the left shows a project structure for `PA3` with files like `received`, `client`, `common.cpp`, `common.h`, `common.o`, `FIFOreqchannel.cpp`, `FIFOreqchannel.h`, `FIFOreqchannel.o`, `makefile`, `server`, and `server.cpp`. The `client.cpp` file is open in the editor, showing the following code:

```
119 Request q (QUIT_REQ_TYPE);
120 chan.cwrite (&q, sizeof (Request));
121 }
122
123 // closing the channel
124 Request q (QUIT_REQ_TYPE);
125 chan.cwrite (&q, sizeof (Request));
126 // client waiting for the server process, which is the child, to terminate
127 wait(0);
128 cout << "Client process exited" << endl;
129
130
131
132
```

The TERMINAL panel at the bottom shows the execution of the client process. It runs the command `./client -f 15.csv` and `./client -f 7.csv`. The output for each run is:

```
osboxes@osboxes:~/Documents/csce313/pa3$ ./client -f 15.csv
For person 1, at time 0, the value of ecg 1 is 0.635
File length is: 276981 bytes
Connection closed by client
Server process exited
Client process exited
osboxes@osboxes:~/Documents/csce313/pa3$ ./client -f 7.csv
For person 1, at time 0, the value of ecg 1 is 0.635
File length is: 289849 bytes
Connection closed by client
Server process exited
Client process exited
osboxes@osboxes:~/Documents/csce313/pa3$
```

I don't really know how to change the amount of data requested, the file size, or the buffer size unless I need to hardcode it in the program itself but I'm assuming that I'm not supposed to be doing that. I could also create my own files, but I think we have everything we need already. Also finding the time it takes to do these things is not possible, because I couldn't do those things. The only time I could really find is shown below.

The screenshot shows the Visual Studio Code editor with the file `client.cpp` open. The Explorer sidebar on the left shows a project structure for `PA3` with files like `received`, `client`, `common.cpp`, `common.h`, `common.o`, `FIFOreqchannel.cpp`, `FIFOreqchannel.h`, `FIFOreqchannel.o`, `makefile`, `server`, and `server.cpp`. The `client.cpp` file is open in the editor, showing the following code:

```
123 // closing the channel
124 Request q (QUIT_REQ_TYPE);
125 chan.cwrite (&q, sizeof (Request));
126 // client waiting for the server process, which is the child, to terminate
127 wait(0);
128
```

The TERMINAL panel at the bottom shows the execution of the client process with timing information. It runs the command `time ./client -f 5.csv` and `time ./client -f 4.csv`. The output for each run is:

```
osboxes@osboxes:~/Documents/csce313/pa3$ time ./client -f 5.csv
For person 1, at time 0, the value of ecg 1 is 0.635
File length is: 282335 bytes
Connection closed by client
Server process exited
Client process exited

real    0m0.875s
user    0m0.279s
sys     0m0.035s
osboxes@osboxes:~/Documents/csce313/pa3$ time ./client -f 4.csv
For person 1, at time 0, the value of ecg 1 is 0.635
File length is: 291035 bytes
Connection closed by client
Server process exited
Client process exited

real    0m0.529s
user    0m0.250s
sys     0m0.013s
osboxes@osboxes:~/Documents/csce313/pa3$
```