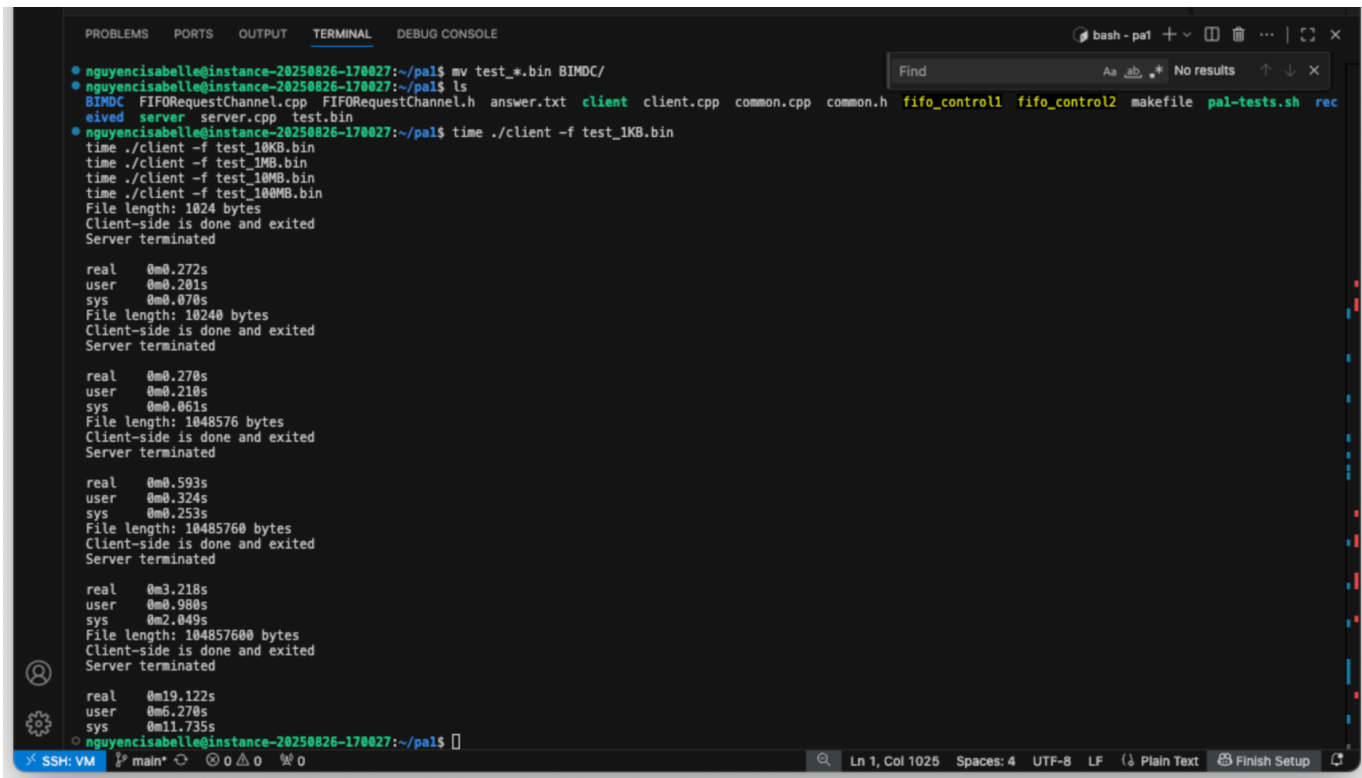


Lab 1 Report CSCE 313 - Isabelle Nguyen

File size	File length	Time taken to transfer
1 KB	1024 bytes	0.272 sec
10 KB	10240 bytes	0.270 sec
1 MB	1048576 bytes	0.593 sec
10 MB	10485760 bytes	3.218 sec
100 MB	104857600 bytes	19.122 sec

The trend between file size vs time taken to transfer makes sense. Bigger files have more bytes, so they would take a longer time to transfer all of those bytes. This is demonstrated by the time difference for the 1 MB and 100 MB files: 0.593 sec vs 19.122 sec.

The main bottleneck that prevents the code from transferring faster is the fact that the client transfers a max of 256 bytes at a time. The 100 MB file takes much longer because the client needs to transfer 104857600 bytes at a rate of 256 bytes per transfer.



```
nguyencisabelle@instance-20250826-170027:~/pal$ mv test_*.bin BIMDC/
nguyencisabelle@instance-20250826-170027:~/pal$ ls
BIMDC  FIFORequestChannel.cpp  FIFORequestChannel.h  answer.txt  client  client.cpp  common.cpp  common.h  fifo_control1  fifo_control2  makefile  pal-tests.sh  rec
eived  server  server.cpp  test.bin
nguyencisabelle@instance-20250826-170027:~/pal$ time ./client -f test_1KB.bin
time ./client -f test_1KB.bin
time ./client -f test_10KB.bin
time ./client -f test_1MB.bin
time ./client -f test_10MB.bin
time ./client -f test_100MB.bin
File length: 1024 bytes
Client-side is done and exited
Server terminated

real    0m0.272s
user    0m0.201s
sys      0m0.070s
File length: 10240 bytes
Client-side is done and exited
Server terminated

real    0m0.270s
user    0m0.210s
sys      0m0.061s
File length: 1048576 bytes
Client-side is done and exited
Server terminated

real    0m0.593s
user    0m0.324s
sys      0m0.253s
File length: 10485760 bytes
Client-side is done and exited
Server terminated

real    0m3.218s
user    0m0.980s
sys      0m2.049s
File length: 104857600 bytes
Client-side is done and exited
Server terminated

real    0m19.122s
user    0m6.270s
sys      0m11.735s
nguyencisabelle@instance-20250826-170027:~/pal$
```