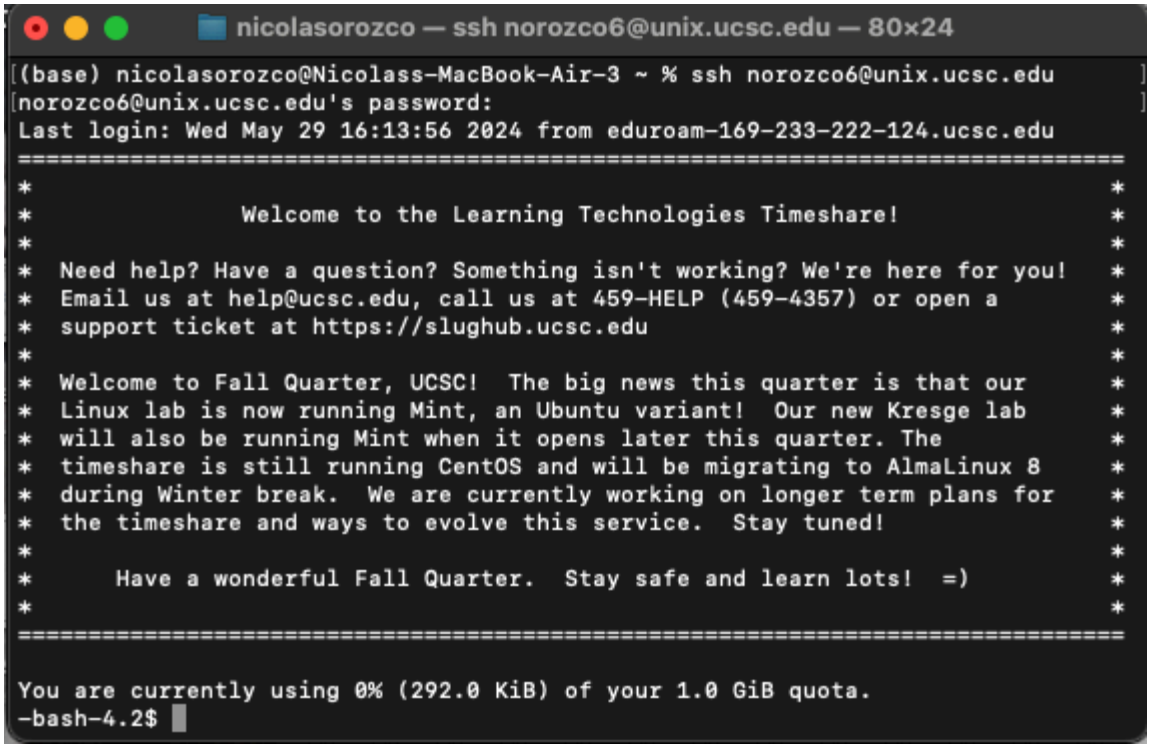
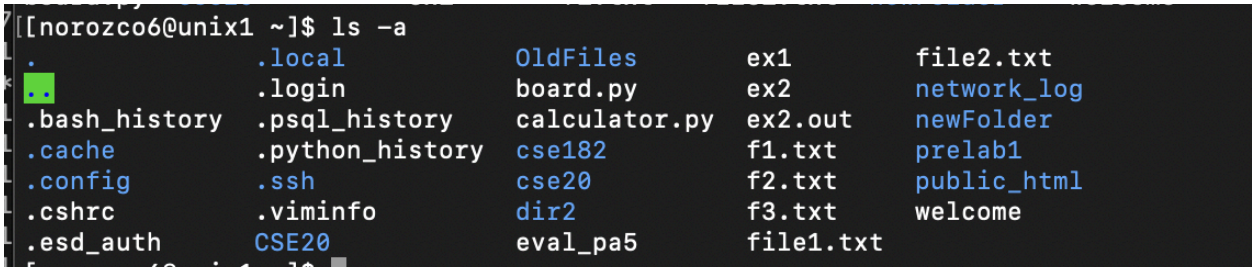
1.)

```
nicolasorozco — ssh norozco6@unix.ucsc.edu — 80×24
(base) nicolasorozco@Nicolass-MacBook-Air-3 ~ % ssh norozco6@unix.ucsc.edu
norozco6@unix.ucsc.edu's password:
Last login: Wed May 29 16:13:56 2024 from eduroam-169-233-222-124.ucsc.edu
==============================================================================
*                                                                            *
*               Welcome to the Learning Technologies Timeshare!              *
*                                                                            *
*  Need help? Have a question? Something isn't working? We're here for you!  *
*  Email us at help@ucsc.edu, call us at 459-HELP (459-4357) or open a       *
*  support ticket at https://slughub.ucsc.edu                                *
*                                                                            *
*  Welcome to Fall Quarter, UCSC!  The big news this quarter is that our     *
*  Linux lab is now running Mint, an Ubuntu variant!  Our new Kresge lab     *
*  will also be running Mint when it opens later this quarter. The           *
*  timeshare is still running CentOS and will be migrating to AlmaLinux 8    *
*  during Winter break.  We are currently working on longer term plans for   *
*  the timeshare and ways to evolve this service.  Stay tuned!               *
*                                                                            *
*      Have a wonderful Fall Quarter.  Stay safe and learn lots!  =)         *
*                                                                            *
==============================================================================

You are currently using 0% (292.0 KiB) of your 1.0 GiB quota.
-bash-4.2$
```



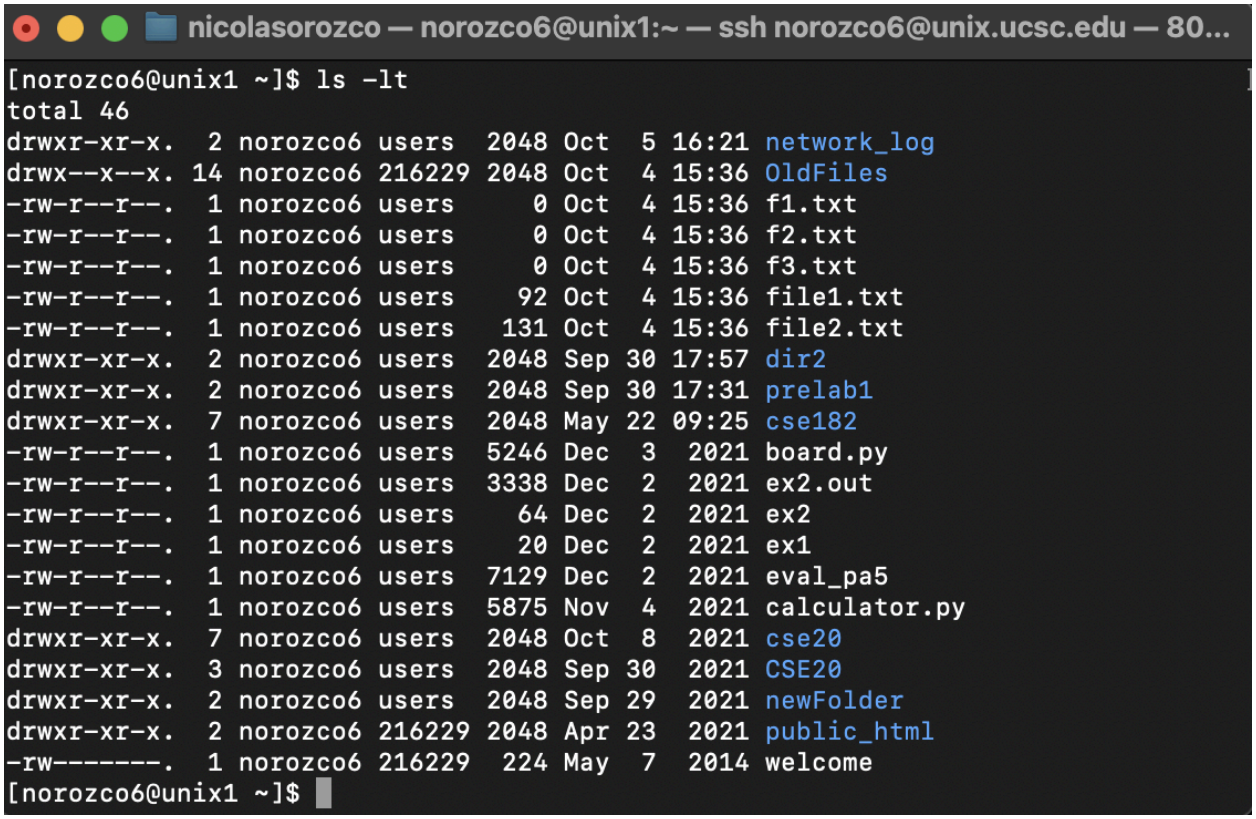
a.) ssh norozco6@unix.ucsc.edu

b.)ls -a



```
[norozco6@unix1 ~]$ ls -a
.               .local            OldFiles        ex1         file2.txt
..              .login            board.py        ex2         network_log
.bash_history   .psql_history     calculator.py   ex2.out     newFolder
.cache          .python_history   cse182          f1.txt      prelab1
.config         .ssh              cse20           f2.txt      public_html
.cshrc          .viminfo          dir2            f3.txt      welcome
.esd_auth       CSE20             eval_pa5        file1.txt
```

c.)



d.). pwd

e.) mkdir ~/prelab\ 1, /afs/cats.ucsc.edu/n/norozco6/prelab1

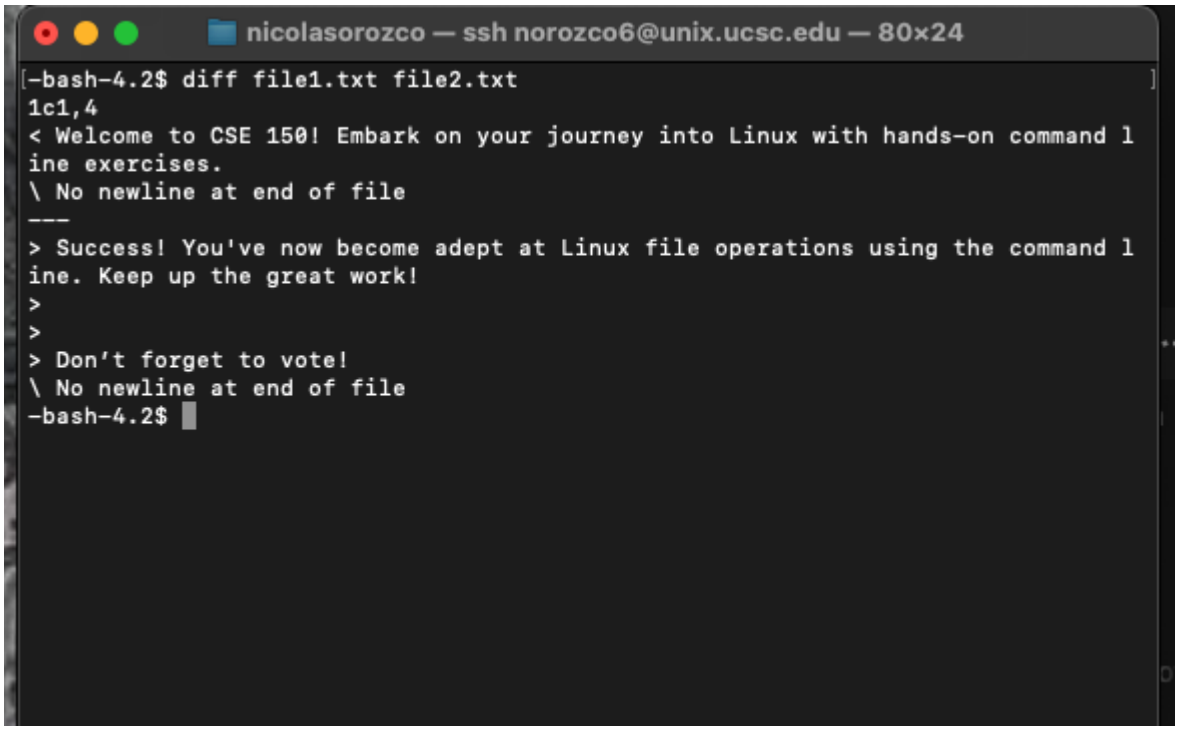
f.) cd /

2.)

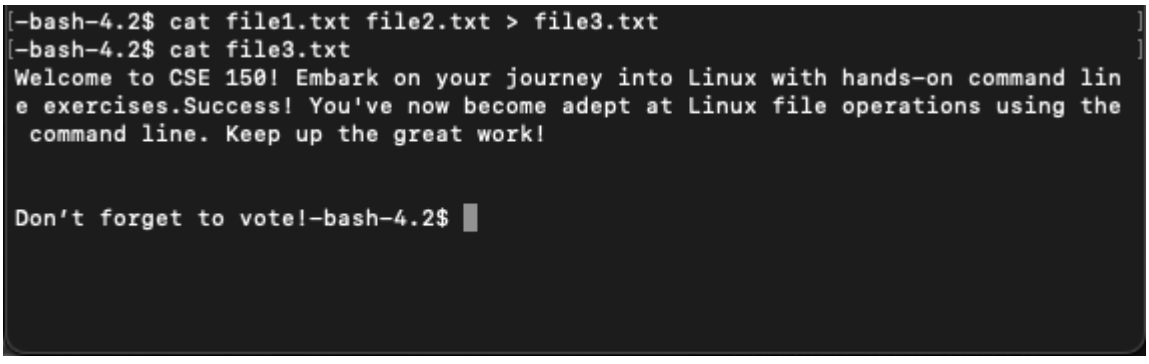
a.) cat file1.txt file2.txt

```
[norozco6@unix1 ~]$ cat file1.txt file2.txt
Welcome to CSE 150! Embark on your journey into Linux with hands-on command line exercises.
Success! You've now become adept at Linux file operations using the command line. Keep up the great work!


Don?t forget to vote!

[norozco6@unix1 ~]$
```

b.)



c.)

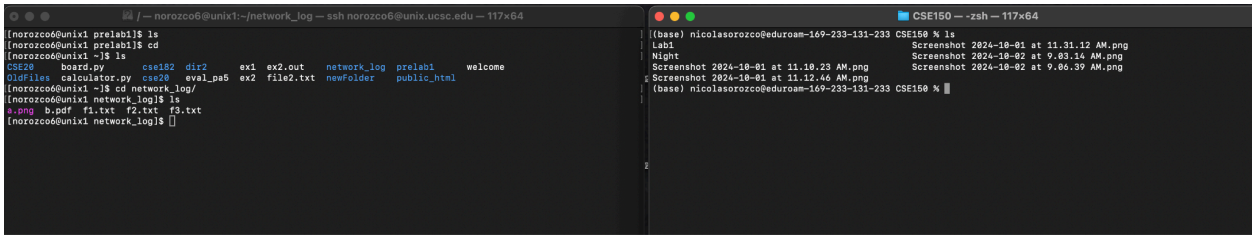


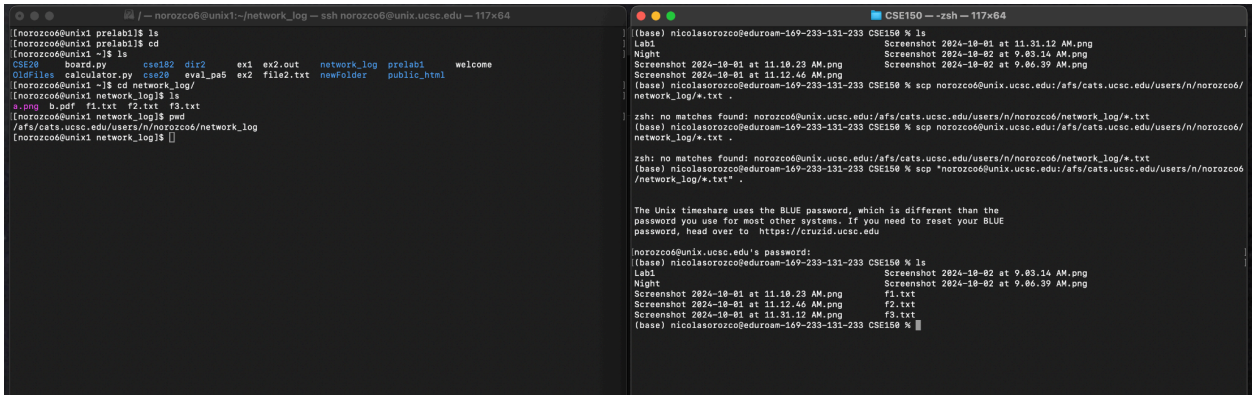
d.) mv file3.txt dir2

e.) rm file.txt, it cannot be recovered as it removes the file's directory entry, telling the file system that the space occupied by the file is now free for new data

f.) grep "vote" /afs/cats.ucsc.edu/n/norozco6/file3.txt

3.)





scp "norozco6@unix.ucsc.edu:/afs/cats.ucsc.edu/users/n/norozco6/network_log/*.txt" .

4.)

a.) Each numbered line represents each router the probe jumped to

b.) First is the router name, Router IP Address, Time it to the probe to reach the router

c.) Initially I expected the 2nd router to take longer as the probe has to travel farther, but however this can be explain due to the congestion in my network, my network in the first router was congested and being heavily used, #2 the router was less congested, therefore faster to reach it

d.) Hop count is the number of routers the probe had to travel to reach the desired destination, being 9

5.) b.) The number of routers on the path didn't change, this is because google has optimized this path for my location therefore it will stick to it as long as none of the routers are down.

5. [10 pts] North America: Run Traceroute between your computer and a destination on this continent (North America) at three different run times: morning, mid-day and night. Make sure that you are in the SAME location - i.e. at home or at school etc. for each of the runs. Record your results in the table below capturing the time to reach the final destination.

a) Include a **screenshot** of Run #1 (only) and circle all data used to calculate the average RTT to the destination host.

Destination Hostname: dns.google		**Location**: Mountain View A tool such as IP Location Finder can be used to determine the approximate geographic location of a host.				
		Time to reach final destination				
Run #	Execution Time	RTT 1	RTT 2	RTT 3	Average RTT to final destination	# hops
1 (morning)	9:03am	8.521ms	7.208 m/s	5.124 m/s	6.951 m/s	8
2 (mid-day)	11:33am	175.77 ms	14.89 m/s	11.851 ms	67.24 ms	8
3 (night)	7:12pm	12.63 ms	13.03 ms	12626 ms	38.22	8

b) Did the number of routers in the path change during your 3 different runs? If so, why do you think it changed? If not, why do you think it didn't?

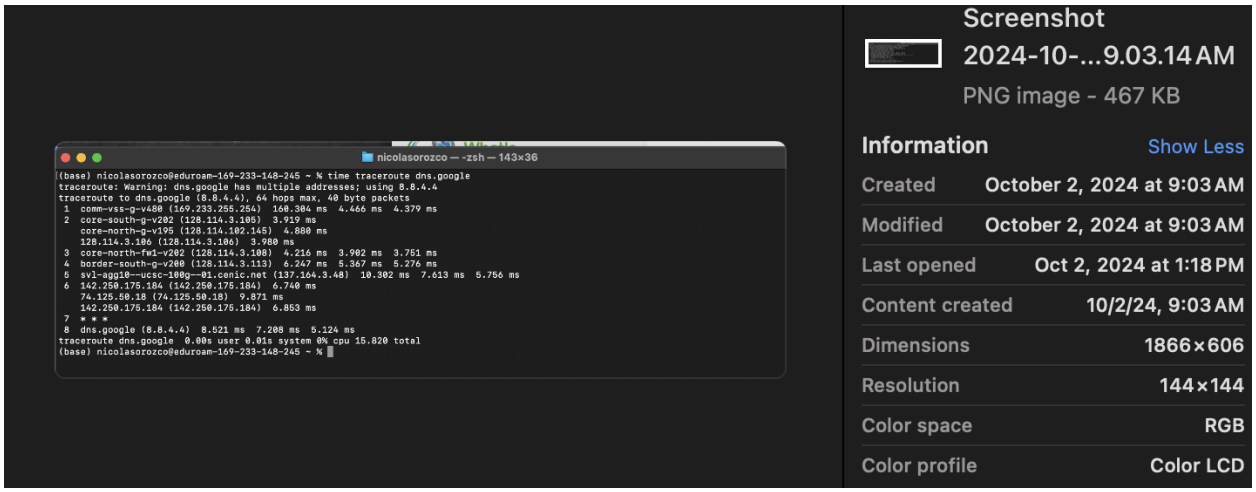
6. [5 pts] Different Continent: Repeat process to a destination on a different continent.

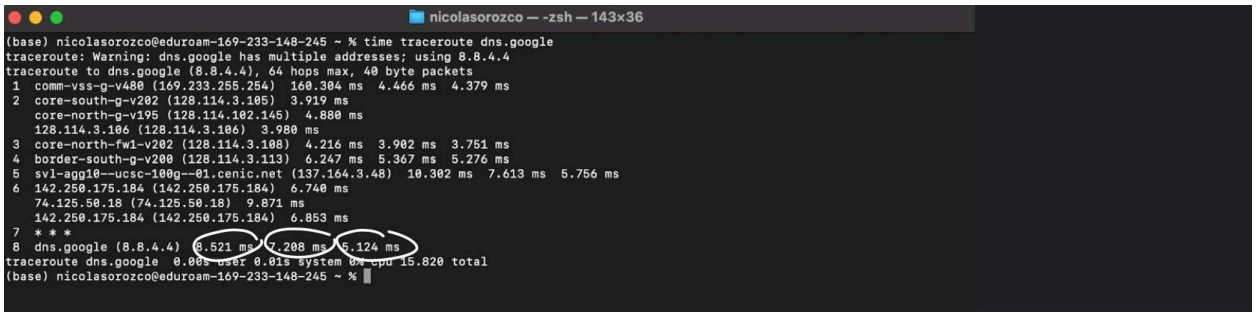
Destination Hostname: 102.217.107.0						
Location of host: Ukraine						
		Time to reach final destination				
Run #	Execution Time	RTT 1	RTT 2	RTT 3	Average RTT to final destination	# hops
1 (morning)	6:06am	245.152 m/s	169.115 m/s	165.125m/s	193.13 m/s	17
2 (mid-day)	11:42am	621.441 ms	503.343 ms	578.068 ms	567.617ms	17
3 (night)	7:13pm	184.009 ms	175.787 ms	187.36 ms	182.38 ms	25

9:03am ↑ 11:42am ←

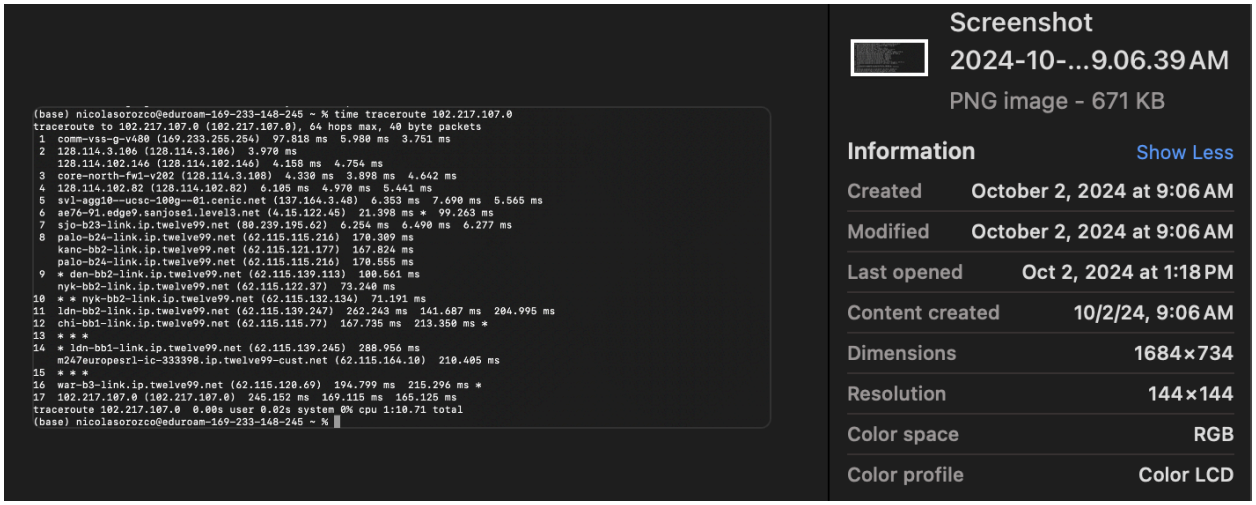
b.)The number of router on the path didn't change, this due to the fact that google has optimized this path for my location therefore it will stick to it as long as none of the routers are down.

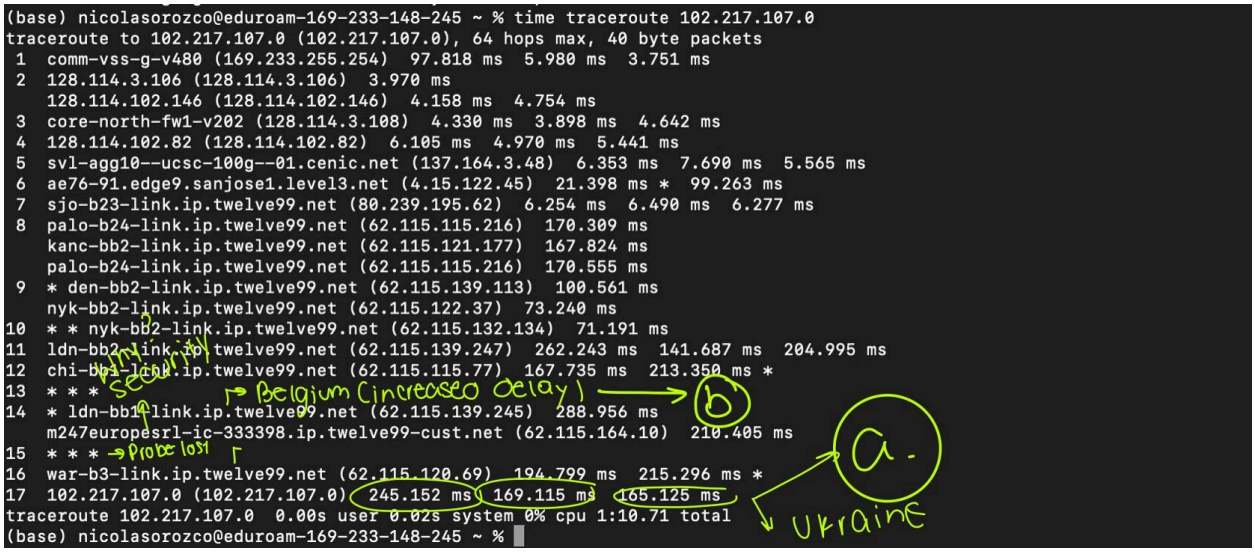
(Proof of screenshot time)





6.)(Proof of screenshot time)

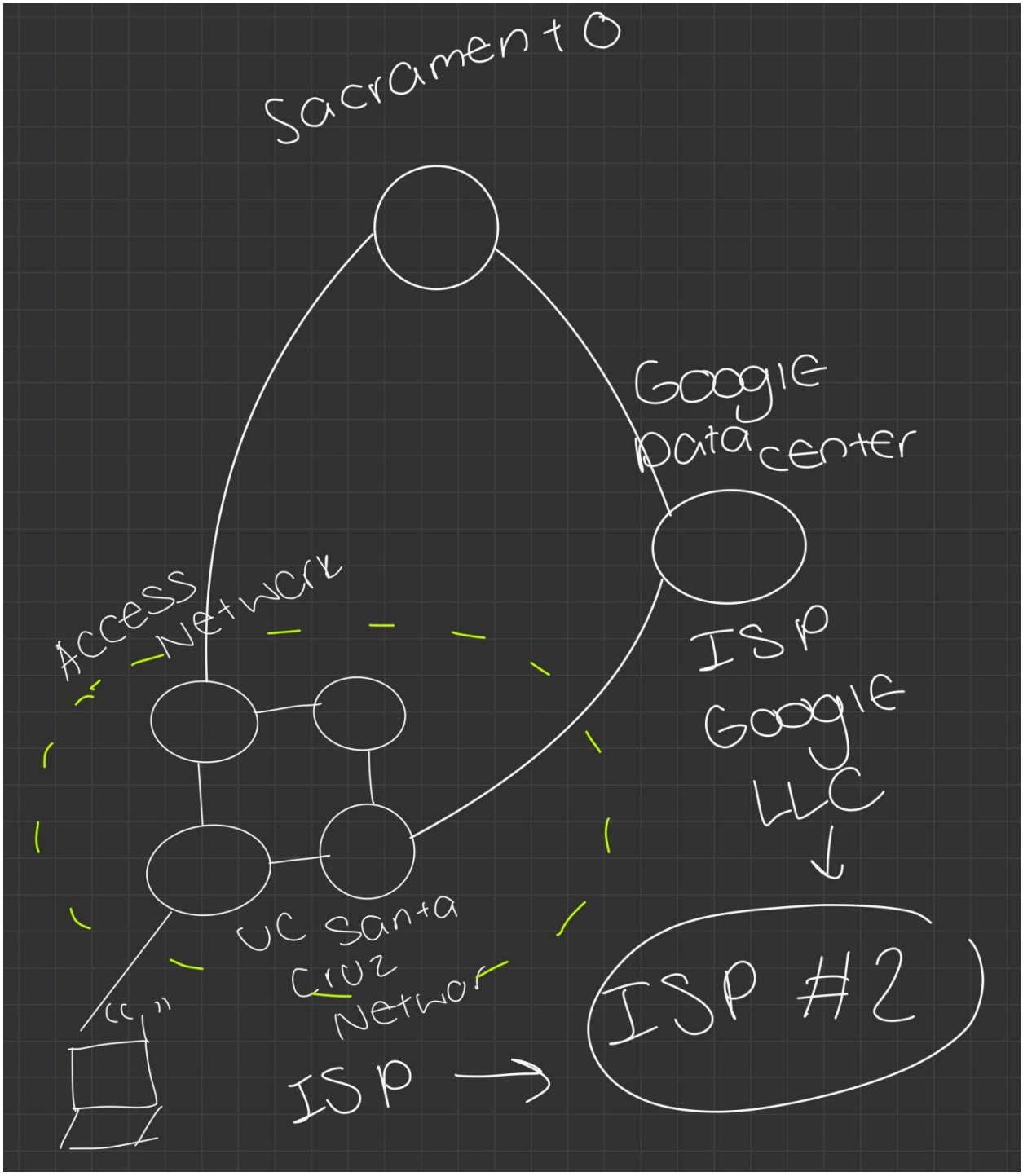


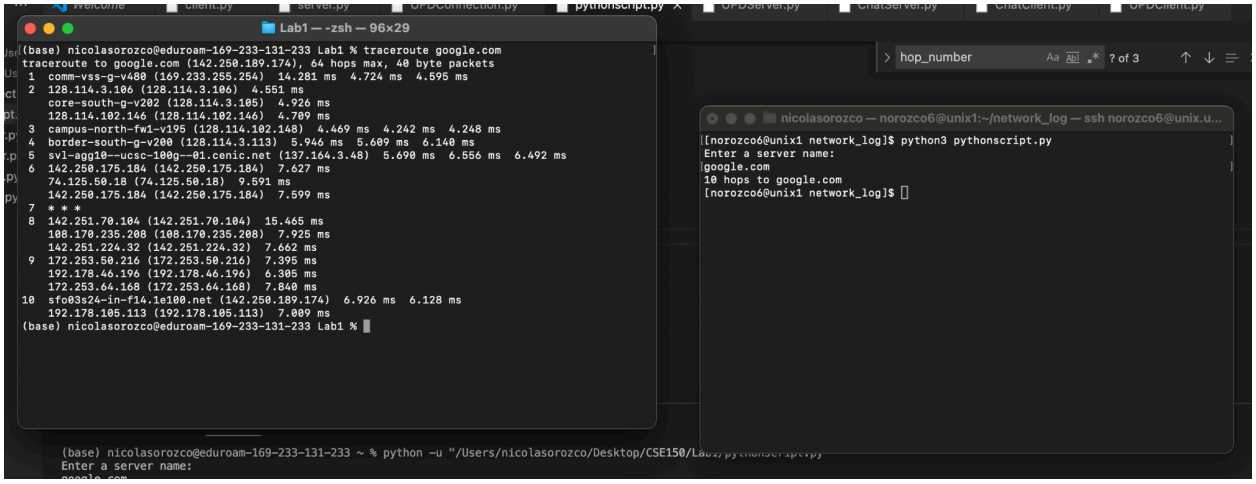


7.)

a.) Yes my results are what I expected as the intra-continent has to travel less distance and the intercontinental has to travel more space therefore having to travel more router and introducing more delay

b.) For my end system to google dns server, the 2nd row was different in the RTT values this is due to the increase demand on the server side as more clients/users are active in the mid-day


Sacramento
Google
data center
Access
Network
ISP
Google
LLC
UC Santa
Cruz
Networ
ISP
ISP #2



9.) The difference in output is my script contains less information regarding on the hops it went to, and it took 20 seconds longer due to the wait time.