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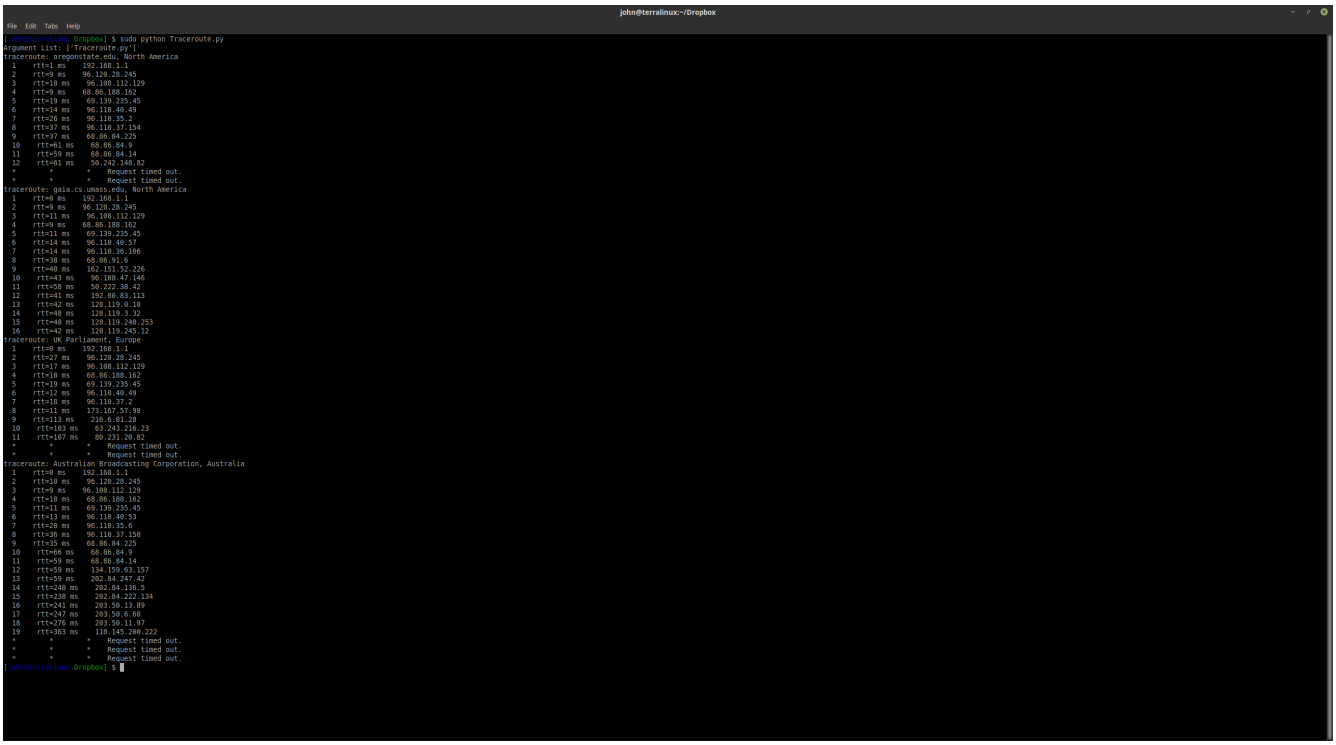
CS372
Project 3

A) This is written in python3. I ran it in Fedora 32 Linux, and it required that firewalld be disabled to prevent timeouts as well as superuser privileges. All you have to do is invoke the python3 command and the filename. IE, in Fedora 32, it would be python traceroute.py, but in CentOS7, it would be python3 traceroute.py

B)

Here it is running to OregonState (US West Coast), Umass (US East Coast), the UK Parliament Site (UK, Europe), and Australian Broadcasting Corporation (Australia).



C)

If you are able to answer, I was wondering on one topic. I had a lot of trouble with it never completing anything, and just constantly timing out without any break, and I found a very curious way of making it work. On my machine, running Fedora 32 Linux, it would constantly not complete on OSU's site unless I had Plex Media Player running. Plex Media Player runs on my PC as an AppImage, and it uses port 32400 for streaming. I had it on one of my other monitors as I was watching something while I was working, and it suddenly worked. I made a recording of it here: https://www.youtube.com/watch?v=XFHLgdZNjYo&feature=youtu.be

This was with firewalld disabled via systemctl stop. Other background apps running were Firefox, Thunderbird, Discord, Steam, and Slack, none of which should interfere. I also tried it with the adblocking on my PiHole DNS server disabled, and that did not affect it. When I was running wireshark I'd sometimes see ICMP with a destination of 192.168.1.5, which is the IP of my Plex server. The same thing would happen on my Plex server itself (Fedora 30) when I tested, never completing, though it's text-only, so I couldn't test the AppImage (but the actual Plex Media Server software was running on it). I also did not turn off the firewall, since I have it actively forwarded to the internet for Plex/SSH/nginx. I asked some of my friends I used to work with as well as my father, who holds a CISSP, and all of them were dumbfounded and couldn't come up with any plausible explanation for how another application could affect a traceroute (no code was shared, just asking if they had ever seen a situation like that before).

As for other comments, I would recommend that this project be tweaked for the future. I think it is a bad practice to instruct students to turn off their firewalls and AV programs. It's easy to forget you turned it off after working on it for some time. If raw sockets continue to be used, perhaps something set up specifically for the class like CS344's OS1 or CS475's Rabbit could be utilized?

I'd also suggest that the program directions and skeleton code be explicitly written to use Python3. Myself and others had issues with the ord() calls not working properly and differences in how to use pack/unpack.

As for the actual program itself, I am reasonably certain my results are accurate, as I get many of the same IP routes when I use the traceroute that bash uses.

D) I did not.