

Adam Alberski

112890087

CSE 310

Programming Assignment #3

Part A Trials

Pinging localhost (127.0.0.1)

```
Pinging 127.0.0.1 using Python:  
36 bytes from 127.0.0.1; time=0.0 ms  
36 bytes from 127.0.0.1; time=0.1 ms  
36 bytes from 127.0.0.1; time=0.1 ms  
36 bytes from 127.0.0.1; time=0.0 ms  
36 bytes from 127.0.0.1; time=0.0 ms  
^C--- 127.0.0.1 ping statistics ---  
round-trip min/avg/max 0.0/0.024/0.064 ms
```

Pinging cs.stonybrook.edu

```
Pinging 23.185.0.2 using Python:  
36 bytes from 23.185.0.2; time=1.7 ms  
36 bytes from 23.185.0.2; time=1.8 ms  
36 bytes from 23.185.0.2; time=1.9 ms  
36 bytes from 23.185.0.2; time=1.9 ms  
36 bytes from 23.185.0.2; time=1.7 ms  
^C--- 23.185.0.2 ping statistics ---  
round-trip min/avg/max 1.701/1.787/1.877 ms
```

Pinging root server I (192.36.148.17) Sweden

```
Pinging 192.36.148.17 using Python:  
36 bytes from 192.36.148.17; time=10.8 ms  
36 bytes from 192.36.148.17; time=12.6 ms  
36 bytes from 192.36.148.17; time=10.2 ms  
36 bytes from 192.36.148.17; time=11.1 ms  
36 bytes from 192.36.148.17; time=10.4 ms  
^C--- 192.36.148.17 ping statistics ---  
round-trip min/avg/max 10.217/11.015/12.572 ms
```

Pinging root server K (193.0.14.129) Netherlands

```
Pinging 193.0.14.129 using Python:
36 bytes from 193.0.14.129; time=5.6 ms
36 bytes from 193.0.14.129; time=5.7 ms
36 bytes from 193.0.14.129; time=5.6 ms
36 bytes from 193.0.14.129; time=5.7 ms
36 bytes from 193.0.14.129; time=5.6 ms
^C--- 193.0.14.129 ping statistics ---
round-trip min/avg/max 5.585/5.629/5.684 ms
```

Pinging root server M (202.12.27.33) Japan

```
Pinging 202.12.27.33 using Python:
36 bytes from 202.12.27.33; time=8.9 ms
36 bytes from 202.12.27.33; time=8.5 ms
36 bytes from 202.12.27.33; time=13.5 ms
36 bytes from 202.12.27.33; time=9.2 ms
36 bytes from 202.12.27.33; time=8.7 ms
^C--- 202.12.27.33 ping statistics ---
round-trip min/avg/max 8.477/9.763/13.492 ms
```

Pinging root server A (198.41.0.4) Virginia, not enough root servers outside of US

```
Pinging 198.41.0.4 using Python:
36 bytes from 198.41.0.4; time=2.4 ms
36 bytes from 198.41.0.4; time=2.3 ms
36 bytes from 198.41.0.4; time=3.1 ms
36 bytes from 198.41.0.4; time=3.2 ms
36 bytes from 198.41.0.4; time=2.4 ms
^C--- 198.41.0.4 ping statistics ---
round-trip min/avg/max 2.294/2.667/3.191 ms
```

Explanation: The reason for the differences in time between pings is primarily due to the distance between machines. It is important to note that I tested all of these servers while at home in Albany, New York. Pinging localhost is the same as pinging my own computer, so the pinger is able to receive a response almost immediately. When pinging cs.stonybrook.edu, my computer was a good 100 miles away from Stony Brook so it took a bit longer. When going through the root servers, the minimum ping time increased significantly the further the servers were located. For example, it took longer to reach the Sweden server than the Netherlands as the former is a few hundred miles further from Albany than the latter. However, connecting to the root server in Japan was also faster than the server in Sweden, albeit it being almost double the

distance away. This could be due to other factors, such as stronger routing to the Japan server. Finally, the root server in Virginia was able to ping in a relatively similar speed to `cs.stonybrook.edu`, given the server's closer proximity to Albany.