Anees Ziafat
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Programming Assignment 3 Report

A) Pinging localhost:

```
PS C:\Users\Anees\Desktop\310\hw3> python pinger.py 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=0.0 ms
36 bytes from 127.0.0.1; time=0.0 ms
36 bytes from 127.0.0.1; time=0.0 ms
36 bytes from 127.0.0.1; time=0.0 ms
36 bytes from 127.0.0.1; time=0.0 ms
round-trip min/avg/max 0.0/0.0/0.0 ms
```

B) Pinging cs.stonybrook.edu

```
PS C:\Users\Anees\Desktop\310\hw3> python pinger.py cs.stonybrook.edu
Pinging 23.185.0.2 using Python:
36 bytes from 23.185.0.2; time=5.0 ms
36 bytes from 23.185.0.2; time=5.0 ms
36 bytes from 23.185.0.2; time=3.8 ms
36 bytes from 23.185.0.2; time=20.8 ms
36 bytes from 23.185.0.2; time=4.0 ms
36 bytes from 23.185.0.2; time=4.5 ms
round-trip min/avg/max 3.834/7.176/20.754 ms
```

C) Pinging utoronto.ca (Canada):

```
PS C:\Users\Anees\Desktop\310\hw3> python pinger.py utoronto.ca
Pinging 128.100.166.120 using Python:
36 bytes from 128.100.166.120; time=30.0 ms
36 bytes from 128.100.166.120; time=29.2 ms
36 bytes from 128.100.166.120; time=29.0 ms
36 bytes from 128.100.166.120; time=29.2 ms
36 bytes from 128.100.166.120; time=29.3 ms
36 bytes from 128.100.166.120; time=30.0 ms
round-trip min/avg/max 29.03/29.457/30.028 ms
```

Pinging sussex.ac.uk (**United Kingdom**):

```
PS C:\Users\Anees\Desktop\310\hw3> python pinger.py ox.ac.uk
Pinging 151.101.194.216 using Python:
36 bytes from 151.101.194.216; time=10.0 ms
36 bytes from 151.101.194.216; time=9.5 ms
36 bytes from 151.101.194.216; time=9.6 ms
36 bytes from 151.101.194.216; time=9.6 ms
36 bytes from 151.101.194.216; time=10.0 ms
36 bytes from 151.101.194.216; time=10.0 ms
round-trip min/avg/max 9.521/9.794/10.012 ms
```

Pinging hse.ru (**Russia**):

```
PS C:\Users\Anees\Desktop\310\hw3> python pinger.py hse.ru
Pinging 178.248.234.104 using Python:
36 bytes from 178.248.234.104; time=11.0 ms
36 bytes from 178.248.234.104; time=12.0 ms
36 bytes from 178.248.234.104; time=12.6 ms
36 bytes from 178.248.234.104; time=11.0 ms
36 bytes from 178.248.234.104; time=12.0 ms
36 bytes from 178.248.234.104; time=12.0 ms
round-trip min/avg/max 11.009/11.769/12.608 ms
```

Pinging unimelb.edu.au (Australia):

```
PS C:\Users\Anees\Desktop\310\hw3> python pinger.py unimelb.edu.au
Pinging 43.245.43.59 using Python:
36 bytes from 43.245.43.59; time=75.2 ms
36 bytes from 43.245.43.59; time=75.4 ms
36 bytes from 43.245.43.59; time=74.9 ms
36 bytes from 43.245.43.59; time=74.4 ms
36 bytes from 43.245.43.59; time=74.5 ms
36 bytes from 43.245.43.59; time=74.5 ms
round-trip min/avg/max 74.443/74.818/75.371 ms
```

D)

The minimum RTT was lowest at 0 when pinging localhost which makes sense because it's your own local device and there's very little expected delay. The highest minimum RTT time was when pinging an Australian university at 74.443 ms which is most likely due to the big distance between New York and Australia. The minimum RTT was 3.834 ms when pinging cs.stonybrook.edu. This was the closest location to me aside from localhost so it makes sense it is also the lowest minimum RTT time aside from localhost.

However, distance is not the only factor in RTT times as seen by the 29.03 minimum RTT time from Toronto, Canada which is higher than the times reported by the Russian and British website which were 9.521 and 11.009 respectively. This is likely due to the differences in latency of the websites' servers due to the efficiency of their

architecture. It could be the case that University of Toronto's servers were slower than the British/Russian University websites at the time of testing. Another factor could be that some of these websites like University of Oxford actually have servers set up in multiple countries outside their own.