Target list:

facebook.com
leetcode.com
yahoo.com
google.co.jp
apple.com
Twitter.com

Output:

```
eecs-user@ip-10-4-3-53:~/project2$ sudo python3 distMeasurement.py
Target: facebook.com:31.13.66.35; Hops: 12; RTT: 1.1491775512695312ms; Matched on: 10.4.3.53,6387,33434
Target: leetcode.com:104.26.8.101; Hops: 18; RTT: 1.1856555938720703ms; Matched on: 10.4.3.53,6387,33434
Target: apple.com:17.253.144.10; Hops: 13; RTT: 1.4421939849853516ms; Matched on: 10.4.3.53,6387,33434
Target: google.co.jp:172.217.13.227; Hops: 22; RTT: 1.7087459564208984ms; Matched on: 10.4.3.53,6387,33434
Target: Twitter.com:104.244.42.129; Hops: 16; RTT: 28.35822105407715ms; Matched on: 10.4.3.53,6387,33434
Target: yahoo.com:74.6.231.21; Hops: 16; RTT: 50.39024353027344ms; Matched on: 10.4.3.53,6387,33434
Total time taken: 0.0596926212310791
eecs-user@ip-10-4-3-53:~/project2$ sudo python3 distMeasurement.py
Target: facebook.com:31.13.66.35; Hops: 12; RTT: 1.140594482421875ms; Matched on: 10.4.3.53,7987,33434
Target: leetcode.com:104.26.8.101; Hops: 18; RTT: 1.42669677734375ms; Matched on: 10.4.3.53,7987,33434
Target: google.co.jp:172.217.13.227; Hops: 22; RTT: 2.4390220642089844ms; Matched on: 10.4.3.53,7988,33434
Target: apple.com:17.253.144.10; Hops: 13; RTT: 2.4018287658691406ms; Matched on: 10.4.3.53,7988,33434
Target: Twitter.com:104.244.42.129; Hops: 16; RTT: 31.37040138244629ms; Matched on: 10.4.3.53,7988,33434
Target: yahoo.com:74.6.231.21; Hops: 16; RTT: 32.90915489196777ms; Matched on: 10.4.3.53,7987,33434
Total time taken: 0.04388904571533203
eecs-user@ip-10-4-3-53:~/project2$ sudo python3 distMeasurement.py
Target: facebook.com:31.13.66.35; Hops: 12; RTT: 1.1417865753173828ms; Matched on: 10.4.3.53,9214,33434
Target: leetcode.com:104.26.8.101; Hops: 18; RTT: 1.1777877807617188ms; Matched on: 10.4.3.53,9214,33434
Target: apple.com:17.253.144.10; Hops: 13; RTT: 1.5196800231933594ms; Matched on: 10.4.3.53,9215,33434
Target: google.co.jp:172.217.13.227; Hops: 22; RTT: 1.6815662384033203ms; Matched on: 10.4.3.53,9215,33434
Target: Twitter.com:104.244.42.129; Hops: 16; RTT: 26.088476181030273ms; Matched on: 10.4.3.53,9215,33434
Target: yahoo.com:74.6.231.21; Hops: 16; RTT: 32.93752670288086ms; Matched on: 10.4.3.53,9214,33434
Total time taken: 0.03986763954162598
eecs-user@ip-10-4-3-53:~/project2$ sudo python3 distMeasurement.py
Target: facebook.com:31.13.66.35; Hops: 12; RTT: 1.1887550354003906ms; Matched on: 10.4.3.53,10208,33434
Target: leetcode.com:104.26.8.101; Hops: 18; RTT: 1.2011528015136719ms; Matched on: 10.4.3.53,10208,33434
Target: apple.com:17.253.144.10; Hops: 13; RTT: 1.1723041534423828ms; Matched on: 10.4.3.53,10209,33434
Target: google.co.jp:172.217.13.227; Hops: 22; RTT: 2.2029876708984375ms; Matched on: 10.4.3.53,10208,33434
Target: Twitter.com:104.244.42.129; Hops: 16; RTT: 25.656461715698242ms; Matched on: 10.4.3.53,10209,33434
Target: yahoo.com:74.6.231.21; Hops: 16; RTT: 32.970428466796875ms; Matched on: 10.4.3.53,10208,33434
Total time taken: 0.03463912010192871
```

Conclusion:
In this project, I implemented an enhanced ping and tested it for six websites. Some websites such as “binaryhexconverter.com” do not work because the socket cannot get their IP by name. From the output, we could find a pattern between the number of hops and RTT that more hops usually lead to larger RTT. The reason is that more hops lead to more processing times, thus higher RTT. There are also some exceptions, such as in the last test case, leetcode.com has 18 hops and the RTT is around 1.2ms, while yahoo.com has only 16 hops but the RTT is around 32.97ms. The reason for having fewer hops but larger RTT is that the path might be different, and some intermediate hops may have a high delay. All in all, the general trend is that: more hops lead to higher RTT.