

Long Mach

Class: CS 372

Project 3

1- Instruction:

a. Introduction:

This project includes 1 file:

- Traceroute.py (that implements a traceroute app using ICMP request and reply messages with raw sockets)

b. Requirements: Use python 3

c. Testing:

- To test the project, cd to the folder that contains the file then run the following command in the terminal: python3 Traceroute.py.

2- Screenshots:

Host: oregonstate.edu (location: USA)

```
1  errorCode = TTL expired in transit  minRtt = 3 ms  maxRtt = 5 ms  aveRtt = 4 ms  192.168.0.1  packetLoss = 0.0
2  errorCode = TTL expired in transit  minRtt = 13 ms  maxRtt = 142 ms  aveRtt = 77 ms  99.227.86.1  packetLoss = 0.0
3  errorCode = TTL expired in transit  minRtt = 11 ms  maxRtt = 15 ms  aveRtt = 13 ms  24.156.143.73  packetLoss = 0.0
4  errorCode = TTL expired in transit  minRtt = 14 ms  maxRtt = 16 ms  aveRtt = 15 ms  209.148.237.86  packetLoss = 0.0
5  errorCode = TTL expired in transit  minRtt = 10 ms  maxRtt = 15 ms  aveRtt = 13 ms  69.63.248.205  packetLoss = 0.0
6  errorCode = TTL expired in transit  minRtt = 21 ms  maxRtt = 27 ms  aveRtt = 25 ms  209.148.237.21  packetLoss = 0.0
7  errorCode = TTL expired in transit  minRtt = 21 ms  maxRtt = 23 ms  aveRtt = 22 ms  154.54.9.9  packetLoss = 0.0
8  errorCode = TTL expired in transit  minRtt = 22 ms  maxRtt = 26 ms  aveRtt = 23 ms  154.54.46.177  packetLoss = 0.0
9  errorCode = TTL expired in transit  minRtt = 34 ms  maxRtt = 40 ms  aveRtt = 37 ms  154.54.44.169  packetLoss = 0.0
10 errorCode = TTL expired in transit  minRtt = 47 ms  maxRtt = 49 ms  aveRtt = 49 ms  154.54.31.89  packetLoss = 0.0
11 errorCode = TTL expired in transit  minRtt = 57 ms  maxRtt = 60 ms  aveRtt = 58 ms  154.54.42.97  packetLoss = 0.0
12 errorCode = TTL expired in transit  minRtt = 72 ms  maxRtt = 82 ms  aveRtt = 78 ms  154.54.44.141  packetLoss = 0.0
13 errorCode = TTL expired in transit  minRtt = 73 ms  maxRtt = 75 ms  aveRtt = 74 ms  154.54.43.14  packetLoss = 0.0
14 errorCode = TTL expired in transit  minRtt = 74 ms  maxRtt = 81 ms  aveRtt = 76 ms  38.88.224.218  packetLoss = 0.0
15 errorCode = TTL expired in transit  packetLoss = 100.0
16 errorCode = TTL expired in transit  packetLoss = 100.0
17 errorCode = TTL expired in transit  packetLoss = 100.0
18 errorCode = TTL expired in transit  packetLoss = 100.0
19 errorCode = TTL expired in transit  packetLoss = 100.0
20 errorCode = TTL expired in transit  packetLoss = 100.0
21 errorCode = TTL expired in transit  packetLoss = 100.0
22 errorCode = TTL expired in transit  packetLoss = 100.0
23 errorCode = TTL expired in transit  packetLoss = 100.0
24 errorCode = TTL expired in transit  packetLoss = 100.0
25 errorCode = TTL expired in transit  packetLoss = 100.0
26 errorCode = TTL expired in transit  packetLoss = 100.0
27 errorCode = TTL expired in transit  packetLoss = 100.0
28 errorCode = TTL expired in transit  packetLoss = 100.0
29 errorCode = TTL expired in transit  packetLoss = 100.0
30 errorCode = TTL expired in transit  packetLoss = 100.0
31 errorCode = TTL expired in transit  packetLoss = 100.0
32 errorCode = TTL expired in transit  packetLoss = 100.0
33 errorCode = TTL expired in transit  packetLoss = 100.0
34 errorCode = TTL expired in transit  packetLoss = 100.0
35 errorCode = TTL expired in transit  packetLoss = 100.0
36 errorCode = Echo reply  minRtt = 86 ms  maxRtt = 93 ms  aveRtt = 89 ms  35.161.98.54  packetLoss = 0.0
```

Process finished with exit code 0

Host: gaia.cs.umass.edu (location: USA)

1	errorCode = TTL expired in transit	minRtt = 3 ms	maxRtt = 19 ms	aveRtt = 12 ms	192.168.0.1	packetLoss = 0.0
2	errorCode = TTL expired in transit	minRtt = 16 ms	maxRtt = 16 ms	aveRtt = 16 ms	99.227.86.1	packetLoss = 66.7
3	errorCode = TTL expired in transit	minRtt = 14 ms	maxRtt = 32 ms	aveRtt = 20 ms	24.156.143.73	packetLoss = 0.0
4	errorCode = TTL expired in transit	minRtt = 12 ms	maxRtt = 22 ms	aveRtt = 17 ms	209.148.237.86	packetLoss = 0.0
5	errorCode = TTL expired in transit	minRtt = 14 ms	maxRtt = 21 ms	aveRtt = 17 ms	69.63.248.205	packetLoss = 0.0
6	errorCode = TTL expired in transit	minRtt = 23 ms	maxRtt = 32 ms	aveRtt = 28 ms	209.148.237.21	packetLoss = 0.0
7	errorCode = TTL expired in transit	minRtt = 23 ms	maxRtt = 28 ms	aveRtt = 25 ms	75.149.228.121	packetLoss = 0.0
8	errorCode = TTL expired in transit	minRtt = 26 ms	maxRtt = 32 ms	aveRtt = 29 ms	96.110.37.5	packetLoss = 0.0
9	errorCode = TTL expired in transit	minRtt = 24 ms	maxRtt = 28 ms	aveRtt = 26 ms	96.110.36.102	packetLoss = 0.0
10	errorCode = TTL expired in transit	minRtt = 37 ms	maxRtt = 39 ms	aveRtt = 38 ms	68.86.85.201	packetLoss = 0.0
11	errorCode = TTL expired in transit	minRtt = 35 ms	maxRtt = 45 ms	aveRtt = 38 ms	96.110.38.37	packetLoss = 0.0
12	errorCode = TTL expired in transit	minRtt = 38 ms	maxRtt = 51 ms	aveRtt = 43 ms	96.110.42.6	packetLoss = 0.0
13	errorCode = TTL expired in transit	minRtt = 42 ms	maxRtt = 51 ms	aveRtt = 45 ms	162.151.53.214	packetLoss = 0.0
14	errorCode = TTL expired in transit	minRtt = 44 ms	maxRtt = 49 ms	aveRtt = 47 ms	96.108.44.226	packetLoss = 0.0
15	errorCode = TTL expired in transit					packetLoss = 100.0
16	errorCode = TTL expired in transit	minRtt = 47 ms	maxRtt = 54 ms	aveRtt = 50 ms	192.80.83.113	packetLoss = 0.0
17	errorCode = TTL expired in transit	minRtt = 48 ms	maxRtt = 54 ms	aveRtt = 51 ms	128.119.0.10	packetLoss = 0.0
18	errorCode = TTL expired in transit	minRtt = 43 ms	maxRtt = 63 ms	aveRtt = 50 ms	128.119.3.32	packetLoss = 0.0
19	errorCode = TTL expired in transit	minRtt = 47 ms	maxRtt = 56 ms	aveRtt = 50 ms	128.119.240.253	packetLoss = 0.0
20	errorCode = Echo reply	minRtt = 48 ms	maxRtt = 51 ms	aveRtt = 49 ms	128.119.245.12	packetLoss = 0.0

Process finished with exit code 0

Host: vnexpress.net (location: Vietnam, Asia)

1	errorCode = TTL expired in transit	minRtt = 4 ms	maxRtt = 16 ms	aveRtt = 10 ms	192.168.0.1	packetLoss = 33.3
2	errorCode = TTL expired in transit	minRtt = 25 ms	maxRtt = 25 ms	aveRtt = 25 ms	99.227.86.1	packetLoss = 66.7
3	errorCode = TTL expired in transit	minRtt = 14 ms	maxRtt = 17 ms	aveRtt = 16 ms	24.156.143.73	packetLoss = 0.0
4	errorCode = TTL expired in transit	minRtt = 13 ms	maxRtt = 18 ms	aveRtt = 15 ms	209.148.237.86	packetLoss = 0.0
5	errorCode = TTL expired in transit	minRtt = 11 ms	maxRtt = 25 ms	aveRtt = 18 ms	209.148.237.41	packetLoss = 0.0
6	errorCode = TTL expired in transit	minRtt = 24 ms	maxRtt = 29 ms	aveRtt = 26 ms	209.148.237.21	packetLoss = 0.0
7	errorCode = TTL expired in transit					packetLoss = 100.0
8	errorCode = TTL expired in transit	minRtt = 71 ms	maxRtt = 81 ms	aveRtt = 76 ms	195.2.31.10	packetLoss = 0.0
9	errorCode = TTL expired in transit	minRtt = 225 ms	maxRtt = 232 ms	aveRtt = 228 ms	195.2.8.141	packetLoss = 0.0
10	errorCode = TTL expired in transit	minRtt = 221 ms	maxRtt = 234 ms	aveRtt = 226 ms	213.185.219.66	packetLoss = 0.0
11	errorCode = TTL expired in transit	minRtt = 239 ms	maxRtt = 244 ms	aveRtt = 242 ms	118.69.163.78	packetLoss = 0.0
12	errorCode = TTL expired in transit	minRtt = 243 ms	maxRtt = 252 ms	aveRtt = 246 ms	42.119.253.190	packetLoss = 0.0
13	errorCode = TTL expired in transit	minRtt = 249 ms	maxRtt = 251 ms	aveRtt = 250 ms	42.112.0.226	packetLoss = 0.0
14	errorCode = TTL expired in transit	minRtt = 247 ms	maxRtt = 250 ms	aveRtt = 248 ms	42.118.36.6	packetLoss = 0.0
15	errorCode = TTL expired in transit					packetLoss = 100.0
16	errorCode = TTL expired in transit					packetLoss = 100.0
17	errorCode = Echo reply	minRtt = 246 ms	maxRtt = 253 ms	aveRtt = 249 ms	111.65.250.2	packetLoss = 0.0

Process finished with exit code 0

Host: europa.eu (location: Luxembourg, EU)

```
1  errorCode = TTL expired in transit    minRtt = 3 ms    maxRtt = 4 ms    aveRtt = 4 ms    192.168.0.1    packetLoss = 0.0
2  errorCode = TTL expired in transit    minRtt = 13 ms   maxRtt = 16 ms   aveRtt = 15 ms   99.227.86.1    packetLoss = 0.0
3  errorCode = TTL expired in transit    minRtt = 18 ms   maxRtt = 20 ms   aveRtt = 18 ms   24.156.143.77  packetLoss = 0.0
4  errorCode = TTL expired in transit    minRtt = 11 ms   maxRtt = 21 ms   aveRtt = 14 ms   209.148.237.85 packetLoss = 0.0
5  errorCode = TTL expired in transit    minRtt = 12 ms   maxRtt = 14 ms   aveRtt = 13 ms   209.148.237.77 packetLoss = 0.0
6  errorCode = TTL expired in transit    minRtt = 13 ms   maxRtt = 21 ms   aveRtt = 16 ms   209.148.233.94 packetLoss = 0.0
7  errorCode = TTL expired in transit    minRtt = 28 ms   maxRtt = 34 ms   aveRtt = 32 ms   209.148.233.102 packetLoss = 0.0
8  errorCode = TTL expired in transit    minRtt = 29 ms   maxRtt = 32 ms   aveRtt = 31 ms   206.126.236.140 packetLoss = 0.0
9  errorCode = TTL expired in transit    minRtt = 110 ms  maxRtt = 114 ms  aveRtt = 112 ms  166.49.208.42  packetLoss = 0.0
10 errorCode = TTL expired in transit    minRtt = 108 ms  maxRtt = 112 ms  aveRtt = 110 ms  166.49.164.245 packetLoss = 0.0
11 errorCode = TTL expired in transit    minRtt = 118 ms  maxRtt = 128 ms  aveRtt = 124 ms  166.49.195.101 packetLoss = 0.0
12 errorCode = TTL expired in transit    minRtt = 125 ms  maxRtt = 129 ms  aveRtt = 126 ms  166.49.208.133 packetLoss = 0.0
13 errorCode = TTL expired in transit    minRtt = 127 ms  maxRtt = 134 ms  aveRtt = 131 ms  166.49.153.70  packetLoss = 0.0
14 errorCode = TTL expired in transit    minRtt = 129 ms  maxRtt = 135 ms  aveRtt = 132 ms  213.236.64.229 packetLoss = 0.0
15 errorCode = TTL expired in transit                                packetLoss = 100.0
16 errorCode = TTL expired in transit                                packetLoss = 100.0
17 errorCode = TTL expired in transit                                packetLoss = 100.0
18 errorCode = TTL expired in transit                                packetLoss = 100.0
19 errorCode = TTL expired in transit                                packetLoss = 100.0
20 errorCode = TTL expired in transit                                packetLoss = 100.0
21 errorCode = TTL expired in transit                                packetLoss = 100.0
22 errorCode = TTL expired in transit                                packetLoss = 100.0
23 errorCode = TTL expired in transit                                packetLoss = 100.0
24 errorCode = TTL expired in transit                                packetLoss = 100.0
25 errorCode = TTL expired in transit                                packetLoss = 100.0
26 errorCode = TTL expired in transit                                packetLoss = 100.0
27 errorCode = TTL expired in transit                                packetLoss = 100.0
28 errorCode = TTL expired in transit                                packetLoss = 100.0
29 errorCode = TTL expired in transit                                packetLoss = 100.0
30 errorCode = TTL expired in transit                                packetLoss = 100.0
31 errorCode = TTL expired in transit                                packetLoss = 100.0
32 errorCode = TTL expired in transit                                packetLoss = 100.0
33 errorCode = TTL expired in transit                                packetLoss = 100.0
34 errorCode = TTL expired in transit                                packetLoss = 100.0
35 errorCode = TTL expired in transit                                packetLoss = 100.0
36 errorCode = TTL expired in transit                                packetLoss = 100.0
37 errorCode = TTL expired in transit                                packetLoss = 100.0
38 errorCode = TTL expired in transit                                packetLoss = 100.0
39 errorCode = TTL expired in transit                                packetLoss = 100.0
```

Process finished with exit code 0

5- Comments, Questions:

I worked on both extra credit parts.