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CS 372

01 December 2024

<div align="center">Traceroute Portfolio Project</div>

This program is simple to run. All that is required is that the user runs a line of code similar to this one in the main function.

```
icmpHelperPing.sendPing("www.governo.it")
```

```
679   #                                                                                                    #
680   #                                                                                                    #
681   #                                                                                                    #
682   # ################################################################################################## #
683   def main():
684       icmpHelperPing = IcmpHelperLibrary()
685
686
687       # Choose one of the following by uncommenting out the line
688       # icmpHelperPing.sendPing("www.cityoflondon.gov.uk")
689       # icmpHelperPing.sendPing("www.governo.it")
690       # icmpHelperPing.sendPing("www.crunchyroll.com")
691       icmpHelperPing.sendPing("www.google.com")
692       # icmpHelperPing.sendPing("gaia.cs.umass.edu")
693       # icmpHelperPing.traceRoute("164.151.129.20")
694       # icmpHelperPing.traceRoute("122.56.99.243")
695
696
697   if __name__ == "__main__":
698       main()
699
```

TERMINAL   PROBLEMS 24   OUTPUT   DEBUG CONSOLE   PORTS   JUPYTER

```
  Packets Recieved: 4
  Loss Rate: 0%
  rtt Stats: Min 14.76ms, Max 19.76ms, Avg 17.13ms
● PS G:\CS_372\Traceroute> g:; cd 'g:\CS_372\Traceroute'; & 'c:\Users\bspie\AppData\Local\Programs\Python\Python311\python.exe' 'c:\Users\bspie\.vscode\extensions\ms
  Pinging (www.google.com) 142.251.211.228
  Valid icmp Reply Packet: True
    Sequence Number: Valid = True, Sent = 0, Recieved = 0
    Packet ID Number: Valid = True, Sent = 45532, Recieved = 45532
    Data: Valid = True, Sent = ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz, Recieved = ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz

  Pinging (www.google.com) 142.251.211.228
  Valid icmp Reply Packet: True
    Sequence Number: Valid = True, Sent = 1, Recieved = 1
    Packet ID Number: Valid = True, Sent = 45532, Recieved = 45532
    Data: Valid = True, Sent = ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz, Recieved = ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz

  Pinging (www.google.com) 142.251.211.228
  Valid icmp Reply Packet: True
    Sequence Number: Valid = True, Sent = 2, Recieved = 2
    Packet ID Number: Valid = True, Sent = 45532, Recieved = 45532
    Data: Valid = True, Sent = ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz, Recieved = ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz

  Pinging (www.google.com) 142.251.211.228
  Valid icmp Reply Packet: True
    Sequence Number: Valid = True, Sent = 3, Recieved = 3
    Packet ID Number: Valid = True, Sent = 45532, Recieved = 45532
    Data: Valid = True, Sent = ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz, Recieved = ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz

  www.google.com Ping Stats
  Packets Sent: 4
  Packets Recieved: 4
  Loss Rate: 0%
  rtt Stats: Min 17.11ms, Max 21.15ms, Avg 19.32ms
○ PS G:\CS_372\Traceroute>
```

```
681    #
682    # ##########################################################################################
683    def main():
684        icmpHelperPing = IcmpHelperLibrary()
685
686
687        # Choose one of the following by uncommenting out the line
688        # icmpHelperPing.sendPing("www.cityoflondon.gov.uk")
689        # icmpHelperPing.sendPing("www.governo.it")
690        icmpHelperPing.sendPing("www.crunchyroll.com")
691        # icmpHelperPing.sendPing("www.google.com")
692        # icmpHelperPing.sendPing("gaia.cs.umass.edu")
693        # icmpHelperPing.traceRoute("164.151.129.20")
694        # icmpHelperPing.traceRoute("122.56.99.243")
695
696
697    if __name__ == "__main__":
698        main()
699
```

TERMINAL   PROBLEMS (24)   OUTPUT   DEBUG CONSOLE   PORTS   JUPYTER

```
 Packets Recieved: 4
 Loss Rate: 0%
 rtt Stats: Min 159.15ms, Max 159.92ms, Avg 159.62ms
● PS G:\CS_372\Traceroute> g:; cd 'g:\CS_372\Traceroute'; & 'c:\Users\bspie\AppData\Local\Programs\Python\Python311\python.exe' 'c:\U
Pinging (www.crunchyroll.com) 104.18.34.202
Valid icmp Reply Packet: True
  Sequence Number: Valid = True, Sent = 0, Recieved = 0
  Packet ID Number: Valid = True, Sent = 21104, Recieved = 21104
  Data: Valid = True, Sent = ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz, Recieved = ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijkln

Pinging (www.crunchyroll.com) 104.18.34.202
Valid icmp Reply Packet: True
  Sequence Number: Valid = True, Sent = 1, Recieved = 1
  Packet ID Number: Valid = True, Sent = 21104, Recieved = 21104
  Data: Valid = True, Sent = ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz, Recieved = ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijkln

Pinging (www.crunchyroll.com) 104.18.34.202
Valid icmp Reply Packet: True
  Sequence Number: Valid = True, Sent = 2, Recieved = 2
  Packet ID Number: Valid = True, Sent = 21104, Recieved = 21104
  Data: Valid = True, Sent = ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz, Recieved = ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijkln

Pinging (www.crunchyroll.com) 104.18.34.202
Valid icmp Reply Packet: True
  Sequence Number: Valid = True, Sent = 3, Recieved = 3
  Packet ID Number: Valid = True, Sent = 21104, Recieved = 21104
  Data: Valid = True, Sent = ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz, Recieved = ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijkln

www.crunchyroll.com Ping Stats
 Packets Sent: 4
 Packets Recieved: 4
 Loss Rate: 0%
 rtt Stats: Min 14.76ms, Max 19.76ms, Avg 17.13ms
○ PS G:\CS_372\Traceroute>
```

```
686
687         # Choose one of the following by uncommenting out the line
688         icmpHelperPing.sendPing("www.cityoflondon.gov.uk")
689         # icmpHelperPing.sendPing("www.www.governo.it.com")
690         # icmpHelperPing.sendPing("www.crunchyroll.com")
691         # icmpHelperPing.sendPing("www.google.com")
692         # icmpHelperPing.sendPing("gaia.cs.umass.edu")
693         # icmpHelperPing.traceRoute("164.151.129.20")
694         # icmpHelperPing.traceRoute("122.56.99.243")
695
696
697     if __name__ == "__main__":
698         main()
699
```

TERMINAL   PROBLEMS 24   OUTPUT   DEBUG CONSOLE   PORTS   JUPYTER

```
PS G:\CS_372\Traceroute> & 'c:\Users\bspie\AppData\Local\Programs\Python\Python311\python.exe' 'c:\User
Pinging (www.cityoflondon.gov.uk) 172.67.142.25463409ef
Valid icmp Reply Packet: True
  Sequence Number: Valid = True, Sent = 0, Recieved = 0
  Packet ID Number: Valid = True, Sent = 36488, Recieved = 36488
  Data: Valid = True, Sent = ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz, Recieved = ABCDEFGHI

Pinging (www.cityoflondon.gov.uk) 172.67.142.254
Valid icmp Reply Packet: True
  Sequence Number: Valid = True, Sent = 1, Recieved = 1
  Packet ID Number: Valid = True, Sent = 36488, Recieved = 36488
  Data: Valid = True, Sent = ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz, Recieved = ABCDEFGHI

Pinging (www.cityoflondon.gov.uk) 172.67.142.254
Valid icmp Reply Packet: True
  Sequence Number: Valid = True, Sent = 2, Recieved = 2
  Packet ID Number: Valid = True, Sent = 36488, Recieved = 36488
  Data: Valid = True, Sent = ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz, Recieved = ABCDEFGHI

Pinging (www.cityoflondon.gov.uk) 172.67.142.254
Valid icmp Reply Packet: True
  Sequence Number: Valid = True, Sent = 3, Recieved = 3
  Packet ID Number: Valid = True, Sent = 36488, Recieved = 36488
  Data: Valid = True, Sent = ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz, Recieved = ABCDEFGHI

www.cityoflondon.gov.uk Ping Stats
 Packets Sent: 4
 Packets Recieved: 4
 Loss Rate: 0%
 rtt Stats: Min 15.00ms, Max 20.03ms, Avg 17.99ms
PS G:\CS_372\Traceroute>
```