CSE 232: Assignment 1

Q1. a)

IP address of my network interface using “ifconfig” command :
IPv4: 10.0.2.15
IPv6: fe80::d0e9:de2f:eaee:35d3

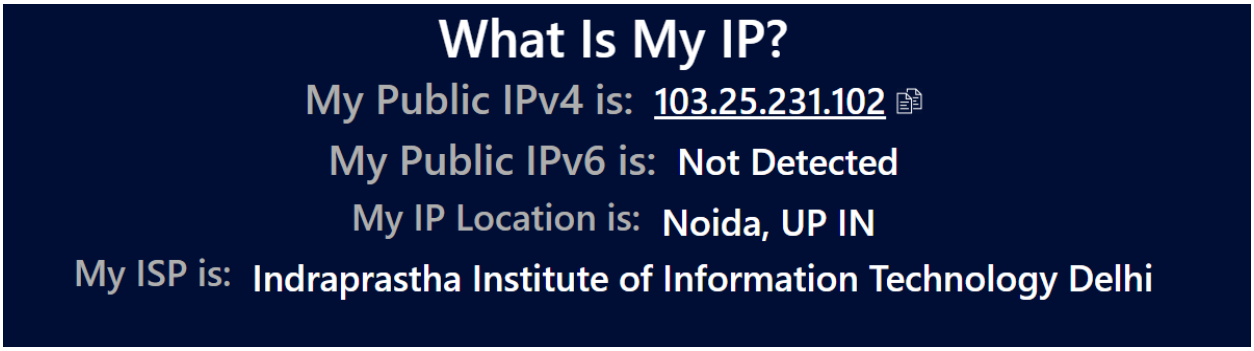
Screenshot :

```
vansh@vansh-VirtualBox:~$ ifconfig
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 10.0.2.15  netmask 255.255.255.0  broadcast 10.0.2.255
        inet6 fe80::d0e9:de2f:eaee:35d3  prefixlen 64  scopeid 0x20<link>
        ether 08:00:27:55:6c:95  txqueuelen 1000  (Ethernet)
        RX packets 222  bytes 276347 (276.3 KB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 141  bytes 15248 (15.2 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
        inet 127.0.0.1  netmask 255.0.0.0
        inet6 ::1  prefixlen 128  scopeid 0x10<host>
        loop  txqueuelen 1000  (Local Loopback)
        RX packets 130  bytes 11014 (11.0 KB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 130  bytes 11014 (11.0 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

vansh@vansh-VirtualBox:~$
```

b)

They are different. It is because the IP shown for my machine on “https://www.whatismyip.co m” is the public IP address. Whereas, the IP address of my network interface using the “ifconfig” command is the private IP of my local machine.

Screenshot :



Q2. a) Screenshot of an Authoritative result for “google.in” using nslookup :

```
vansh@vansh-VirtualBox:~$ nslookup -type=any google.in
Server:         127.0.0.53
Address:        127.0.0.53#53

Non-authoritative answer:
Name:   google.in
Address: 142.250.192.228
google.in       nameserver = ns3.google.com.
google.in       nameserver = ns4.google.com.
google.in       nameserver = ns2.google.com.
google.in       nameserver = ns1.google.com.
google.in
        origin = ns1.google.com
        mail addr = dns-admin.google.com
        serial = 558736483
        refresh = 900
        retry = 900
        expire = 1800
        minimum = 60
google.in       mail exchanger = 0 .
google.in       text = "v=spf1 -all"
Name:   google.in
Address: 2404:6800:4002:81d::2004
google.in       rdata_257 = 0 issue "pki.goog"

Authoritative answers can be found from:
ns3.google.com  internet address = 216.239.36.10
ns3.google.com  has AAAA address 2001:4860:4802:36::a
ns4.google.com  internet address = 216.239.38.10
ns4.google.com  has AAAA address 2001:4860:4802:38::a
ns2.google.com  internet address = 216.239.34.10
ns2.google.com  has AAAA address 2001:4860:4802:34::a
ns1.google.com  internet address = 216.239.32.10
ns1.google.com  has AAAA address 2001:4860:4802:32::a
```

```
vansh@vansh-VirtualBox:~$ nslookup google.in ns1.google.com
Server:         ns1.google.com
Address:        216.239.32.10#53

Name:   google.in
Address: 172.217.167.228
Name:   google.in
Address: 2404:6800:4002:80f::2004
```

How I did it : nslookup is a command used to get information about any site from the DNS server. When we directly use “nslookup google.in” it plays an Non-unauthorized result. So, to get an authorized result we have to do two things. Firstly, using the flag “-type=any” we have to get all the accessible DNS servers. Secondly, we have to use any server name to get the authorized result.

b)
Screenshot :

```
vansh@vansh-VirtualBox:~$ nslookup -debug google.in
Server:         127.0.0.53
Address:        127.0.0.53#53

------------
    QUESTIONS:
        google.in, type = A, class = IN
    ANSWERS:
    ->  google.in
        internet address = 142.250.207.196
        ttl = 300
    AUTHORITY RECORDS:
    ADDITIONAL RECORDS:
------------
Non-authoritative answer:
Name:   google.in
Address: 142.250.207.196
------------
    QUESTIONS:
        google.in, type = AAAA, class = IN
    ANSWERS:
    ->  google.in
        has AAAA address 2404:6800:4002:82e::2004
        ttl = 300
    AUTHORITY RECORDS:
    ADDITIONAL RECORDS:
------------
Name:   google.in
Address: 2404:6800:4002:82e::2004

vansh@vansh-VirtualBox:~$
```

We have used the “nslookup -debug google.in” command to get the TTL of the site. TTL for IPv4 and IPv6 are 300 seconds(5 minutes) and 300 second(5 minutes) respectively. We can see that TTL is many times shorter since that is the best number for dispersing the heap across demands and the DNS server.

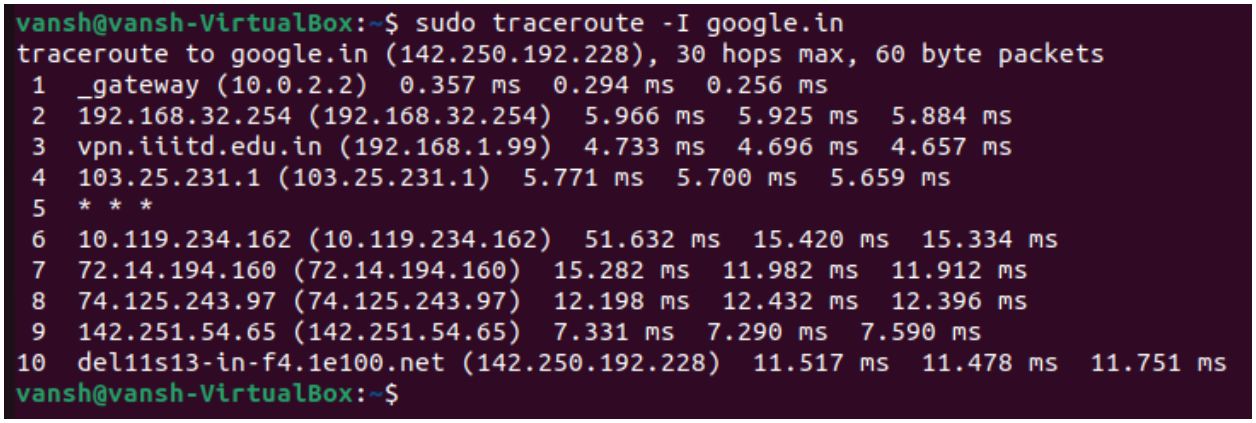
Q3.

a)

Number of intermediate hosts seen : 10

1. IP address: 10.0.2.2, Average latency: (0.357+0.294+0.256)/3 = 0.302 ms
2. IP address: 192.168.32.254, Average latency: (5.966+5.925+5.884)/3 = 5.925 ms
3. IP address: 192.168.1.99, Average latency: (4.733+4.696+4.657)/3 = 4.965 ms
4. IP address: 103.25.231.1, Average latency: (5.771+5.700+5.659)/3 = 5.71 ms
5. “***”
6. IP address: 10.119.234.162, Average latency: (51.632+15.420+15.334)/3 = 27.462 ms
7. IP address: 72.14.194.160, Average latency: (15.282+11.982+11.912)/3 = 13.058 ms
8. IP address: 74.125.243.97, Average latency: (12.198+12.432+12.396)/3 = 12.342 ms
9. IP address: 142.251.54.65, Average latency: (7.331+7.290+7.590)/3 = 7.403 ms
10. IP address: 142.250.192.228, Average latency: (11.517+11.478+11.751)/3 = 11.582 ms

Screenshot :



b) Average Latency : 16.025 ms and the command used is “ping -c 50 google.in”

Screenshot :

```
vansh@vansh-VirtualBox:~$ ping -c 50 google.in
PING google.in (142.250.192.228) 56(84) bytes of data.
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=1 ttl=117 time=8.54 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=2 ttl=117 time=38.8 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=3 ttl=117 time=6.11 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=4 ttl=117 time=6.50 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=5 ttl=117 time=22.5 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=6 ttl=117 time=6.87 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=7 ttl=117 time=7.30 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=8 ttl=117 time=7.24 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=9 ttl=117 time=7.93 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=10 ttl=117 time=11.8 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=11 ttl=117 time=7.33 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=12 ttl=117 time=40.8 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=13 ttl=117 time=59.0 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=14 ttl=117 time=6.98 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=15 ttl=117 time=8.67 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=16 ttl=117 time=6.99 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=17 ttl=117 time=50.3 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=18 ttl=117 time=32.9 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=19 ttl=117 time=7.92 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=20 ttl=117 time=9.30 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=21 ttl=117 time=8.86 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=22 ttl=117 time=9.06 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=23 ttl=117 time=17.6 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=24 ttl=117 time=7.15 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=25 ttl=117 time=7.93 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=26 ttl=117 time=7.46 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=27 ttl=117 time=7.01 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=28 ttl=117 time=15.8 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=29 ttl=117 time=6.77 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=30 ttl=117 time=41.7 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=31 ttl=117 time=6.98 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=32 ttl=117 time=6.38 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=33 ttl=117 time=10.5 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=34 ttl=117 time=14.6 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=35 ttl=117 time=15.3 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=36 ttl=117 time=21.7 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=37 ttl=117 time=25.0 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=38 ttl=117 time=7.84 ms
```

```
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=39 ttl=117 time=6.84 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=40 ttl=117 time=38.0 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=41 ttl=117 time=53.1 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=42 ttl=117 time=6.34 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=43 ttl=117 time=21.2 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=44 ttl=117 time=8.13 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=45 ttl=117 time=8.38 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=46 ttl=117 time=7.57 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=47 ttl=117 time=7.03 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=48 ttl=117 time=6.09 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=49 ttl=117 time=6.76 ms
64 bytes from del11s13-in-f4.1e100.net (142.250.192.228): icmp_seq=50 ttl=117 time=40.2 ms

--- google.in ping statistics ---
50 packets transmitted, 50 received, 0% packet loss, time 63739ms
rtt min/avg/max/mdev = 6.090/16.025/59.023/14.211 ms
vansh@vansh-VirtualBox:~$
```

c)

The ping latency in part (b) is 16.025 which is less than the ping latency in part(a) which is 88.746. This is because of the way that sending information straightforwardly utilizing ping doesn't require pausing, but sending information by using traceroute requires holding up at every one of the intermediary destinations.

d)

The maximum ping latency in part(a) is 27.462 which is greater than the latency in part (b) which is 16.025. This is because it is consistently feasible for a single data packet to travel the course faster than the typical speed of information parcels.

e)

It occurs because of extreme traffic volume and burden-adjusting procedures. At the point when there is a ton of traffic, the switch conveys packets from various pathways, bringing about numerous sections in a single hop.

f) Average Latency : 329.124 ms and the command used is “ping -c 50 stanford.edu”.

```
vansh@vansh-VirtualBox:~$ ping -c 50 stanford.edu
PING stanford.edu (171.67.215.200) 56(84) bytes of data.
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=1 ttl=230 time=325 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=2 ttl=230 time=338 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=3 ttl=230 time=329 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=4 ttl=230 time=326 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=5 ttl=230 time=332 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=6 ttl=230 time=322 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=7 ttl=230 time=322 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=8 ttl=230 time=324 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=9 ttl=230 time=341 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=10 ttl=230 time=339 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=11 ttl=230 time=325 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=12 ttl=230 time=323 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=13 ttl=230 time=324 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=14 ttl=230 time=338 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=15 ttl=230 time=323 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=16 ttl=230 time=327 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=17 ttl=230 time=322 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=18 ttl=230 time=323 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=19 ttl=230 time=325 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=20 ttl=230 time=321 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=21 ttl=230 time=347 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=22 ttl=230 time=321 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=23 ttl=230 time=324 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=24 ttl=230 time=332 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=25 ttl=230 time=347 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=26 ttl=230 time=329 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=27 ttl=230 time=321 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=28 ttl=230 time=324 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=29 ttl=230 time=322 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=30 ttl=230 time=322 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=31 ttl=230 time=352 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=32 ttl=230 time=336 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=33 ttl=230 time=322 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=34 ttl=230 time=326 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=35 ttl=230 time=342 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=36 ttl=230 time=323 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=37 ttl=230 time=326 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=38 ttl=230 time=322 ms
```

```
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=39 ttl=230 time=323 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=40 ttl=230 time=322 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=41 ttl=230 time=323 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=42 ttl=230 time=323 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=43 ttl=230 time=336 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=44 ttl=230 time=349 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=45 ttl=230 time=327 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=46 ttl=230 time=323 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=47 ttl=230 time=332 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=48 ttl=230 time=368 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=49 ttl=230 time=322 ms
64 bytes from web.stanford.edu (171.67.215.200): icmp_seq=50 ttl=230 time=322 ms

--- stanford.edu ping statistics ---
50 packets transmitted, 50 received, 0% packet loss, time 50733ms
rtt min/avg/max/mdev = 321.184/329.124/368.135/9.945 ms
vansh@vansh-VirtualBox:~$
```

g)

We can observe that the number of hops in stanford.edu are more than the hops in google.in. There are 27 hops in stanford.edu whereas in google.in there are only 10 hops.

```
vansh@vansh-VirtualBox:~$ sudo traceroute -I stanford.edu
traceroute to stanford.edu (171.67.215.200), 30 hops max, 60 byte packets
 1  _gateway (10.0.2.2)  0.301 ms  0.213 ms  0.206 ms
 2  192.168.32.254 (192.168.32.254)  35.705 ms  35.449 ms  35.730 ms
 3  auth.iiitd.edu.in (192.168.1.99)  21.768 ms  21.517 ms  21.251 ms
 4  103.25.231.1 (103.25.231.1)  20.368 ms  20.219 ms  20.396 ms
 5  10.1.209.201 (10.1.209.201)  46.655 ms  46.619 ms  46.582 ms
 6  10.1.200.137 (10.1.200.137)  51.170 ms  33.772 ms  34.392 ms
 7  10.255.238.254 (10.255.238.254)  34.345 ms  35.166 ms  35.135 ms
 8  180.149.48.18 (180.149.48.18)  28.618 ms  28.587 ms  29.628 ms
 9  180.149.48.6 (180.149.48.6)  179.616 ms  180.141 ms  180.079 ms
10  180.149.48.20 (180.149.48.20)  173.156 ms  170.524 ms  170.467 ms
11  180.149.48.13 (180.149.48.13)  252.305 ms  252.275 ms  262.879 ms
12  fourhundredge-0-0-0-2.4079.core1.ashb.net.internet2.edu (163.253.1.116)  323.964 ms  323.924 ms  323.886 ms
13  fourhundredge-0-0-0-1.4079.core1.clev.net.internet2.edu (163.253.1.123)  321.671 ms  321.633 ms  321.591 ms
14  fourhundredge-0-0-0-2.4079.core1.eqch.net.internet2.edu (163.253.1.211)  321.557 ms  323.128 ms  319.623 ms
15  fourhundredge-0-0-0-1.4079.core1.chic.net.internet2.edu (163.253.1.206)  325.343 ms  325.248 ms  324.117 ms
16  fourhundredge-0-0-0-1.4079.core2.kans.net.internet2.edu (163.253.2.29)  340.270 ms  331.833 ms  331.763 ms
17  fourhundredge-0-0-0-1.4079.core2.denv.net.internet2.edu (163.253.1.250)  326.286 ms  326.258 ms  326.170 ms
18  fourhundredge-0-0-0-3.4079.core2.salt.net.internet2.edu (163.253.1.169)  339.529 ms  339.497 ms  343.630 ms
19  fourhundredge-0-0-0-2.4079.core2.sacr.net.internet2.edu (163.253.1.186)  325.875 ms  325.828 ms  328.331 ms
20  fourhundredge-0-0-0-21.4079.core1.sacr.net.internet2.edu (163.253.1.34)  318.260 ms  322.210 ms  321.730 ms
21  fourhundredge-0-0-0-0.4079.core1.sunn.net.internet2.edu (163.253.1.193)  331.587 ms  325.011 ms  326.624 ms
22  137.164.26.126 (137.164.26.126)  380.243 ms  358.468 ms  380.110 ms
23  hpr-oak-agg8--svl-hpr3-100g.cenic.net (137.164.25.95)  320.295 ms  317.631 ms  317.516 ms
24  137.164.26.241 (137.164.26.241)  366.180 ms  366.564 ms  359.960 ms
25  woa-west-rtr-vl3.SUNet (171.66.255.132)  326.596 ms  324.557 ms  325.385 ms
26  * * *
27  web.stanford.edu (171.67.215.200)  320.744 ms  321.827 ms  321.137 ms
vansh@vansh-VirtualBox:~$
```

h)

The latency difference between both the sites is because of the fact that the stanford.edu is an educational website which can have some sort of delay which will not affect anything but the google.in is a search engine that should be faster than the stanford.edu website. There are many factors that affect latency and hops which are, propagation delay, distance factor. Also the

fact that stanford.edu has more intermediate routers than google.in and hence have larger latency and high number of hops.

Q4.

It has been done using the command “ifconfig” to turn off the loopback interface using interface configuration. We have used the command “sudo ifconfig lo down” to do this task. After using this command when using command “ping -c 1 127.0.0.1” we will see a 100% packet loss.

Screenshot :

```
vansh@vansh-VirtualBox:~$ ping -c 1 127.0.0.1
PING 127.0.0.1 (127.0.0.1) 56(84) bytes of data.
64 bytes from 127.0.0.1: icmp_seq=1 ttl=64 time=0.031 ms

--- 127.0.0.1 ping statistics ---
1 packets transmitted, 1 received, 0% packet loss, time 0ms
rtt min/avg/max/mdev = 0.031/0.031/0.031/0.000 ms
vansh@vansh-VirtualBox:~$ sudo ifconfig lo down
[sudo] password for vansh:
vansh@vansh-VirtualBox:~$ ping -c 1 127.0.0.1
PING 127.0.0.1 (127.0.0.1) 56(84) bytes of data.

--- 127.0.0.1 ping statistics ---
1 packets transmitted, 0 received, 100% packet loss, time 0ms

vansh@vansh-VirtualBox:~$
```

Q5.
Value of the X-secret : U2FsdGVkX19gsdmhIVNXEQRdUPSqON+pCV0jQWEoxHSNZ3r /b1inWza2H6+UGVX0

```
vansh@vansh-VirtualBox:~$ telnet 192.168.24.12 9900
Trying 192.168.24.12...
Connected to 192.168.24.12.
Escape character is '^]'.
GET /secret HTTP/1.1
Host: 192.168.24.12

HTTP/1.1 200 OK
Content-Type: text/plain
ip: 192.168.45.60
X-secret: U2FsdGVkX19gsdmhIVNXEQRdUPSqON+pCV0jQWEoxHSNZ3r/b1inWza2H6+UGVx0
Date: Tue, 22 Aug 2023 16:51:57 GMT
Connection: keep-alive
Keep-Alive: timeout=5
Content-Length: 8

Success
Connection closed by foreign host.
vansh@vansh-VirtualBox:~$
```

Q6.

Id of the message : A7CE96F643A5

Screenshot for step 1 to 6 :

```
vansh@vansh-VirtualBox:~$ telnet 192.168.24.12 smtp
Trying 192.168.24.12...
Connected to 192.168.24.12.
Escape character is '^]'.
220 Welcome to CSE232 Mail Server
helo cse232.com
250 xeon01-rs-iiitd.iiitd.edu.in
mail from: 21363@cse232.com
250 2.1.0 Ok
rcpt to: 21331@cse232.com
250 2.1.5 Ok
data
354 End data with <CR><LF>.<CR><LF>
Subject: Checking mail
Thank you
.
250 2.0.0 Ok: queued as A7CE96F643A5
quit
221 2.0.0 Bye
Connection closed by foreign host.
vansh@vansh-VirtualBox:~$
```

Screenshot for step 7 :

```
From 21363@cse232.com  Tue Aug 22 21:53:48 2023
Return-Path: <21363@cse232.com>
X-Original-To: 21331@cse232.com
Delivered-To: 21331@cse232.com
Received: from cse232.com (unknown [192.168.45.60])
        by xeon01-rs-iiitd.iiitd.edu.in (Postfix) with SMTP id A7CE96F643A5
        for <21331@cse232.com>; Tue, 22 Aug 2023 21:52:35 +0530 (IST)
Subject: Checking mail

Thank you
```