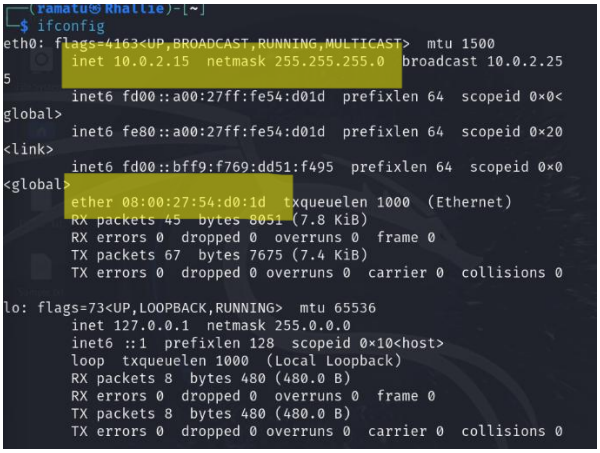
TASK A

1. Use the correct ifconfig command to display the current network configuration. Highlight your IP address, MAC address, and the network mask.



2. Use the correct route command to display the current routing table.



3. Use the netstat command to list current TCP connections.



4. Use the ping command to determine if the ubuntu.com system is accessible via the network. (Use the correct option to send 10 ping requests only.)

```
┌──(ramatu㉿Rhallie)-[~]
└─$ ping -c 10 ubuntu.com
PING ubuntu.com (185.125.190.29) 56(84) bytes of data.
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29
): icmp_seq=1 ttl=255 time=96.5 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29
): icmp_seq=2 ttl=255 time=96.5 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29
): icmp_seq=3 ttl=255 time=97.5 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29
): icmp_seq=4 ttl=255 time=96.8 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29
): icmp_seq=5 ttl=255 time=97.4 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29
): icmp_seq=6 ttl=255 time=97.1 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29
): icmp_seq=7 ttl=255 time=96.8 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29
): icmp_seq=8 ttl=255 time=171 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29
): icmp_seq=9 ttl=255 time=135 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29
): icmp_seq=10 ttl=255 time=101 ms

── ubuntu.com ping statistics ──
10 packets transmitted, 10 received, 0% packet loss, time 9011ms
rtt min/avg/max/mdev = 96.459/108.526/170.711/23.530 ms
```

5. Use the host command to perform a DNS query on www.odu.edu

```
┌──(ramatu㉿Rhallie)-[~]
└─$ host www.odu.edu
www.odu.edu has address 35.170.140.174
```

6. Use the cat command to display the contents of the file that contains the system's hostname.

```
┌──(ramatu㉿Rhallie)-[~]
└─$ cat /etc/hostname
Rhallie
```

7. Use the cat command to display the contents of the file that contains the DNS servers for this system.

```
┌──(ramatu㉿Rhallie)-[~]
└─$ cat /etc/resolv.conf
# Generated by NetworkManager
search wlan.odu.edu
nameserver 10.0.2.3
```

8. Edit the same file you display in the previous step, set the system's hostname to your MIDAS ID permanently. Reboot system and repeat step 6.

```
┌──(ramatu㉿Rhallie01261751)-[~]
└─$ cat /etc/hostname
^\ 01261751
```

Task B – A Different Network Setting (3 * 20 = 60 Points)

1. Change the VM network connection from NAT to the bridge mode (you will lose your Internet
connection if you are connected to the ODU campus Wi-Fi network, but it is okay).
2. Reboot your system, then repeat Steps 1 – 7 in Task A.
3. Highlight the differences at the end of each step and discuss what do you find.

```
┌──(ramatu㉿01261751)-[~]
└─$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu
1500
        inet 10.254.115.209  netmask 255.255.0.0  broa
dcast 10.254.255.255
        inet6 fe80::a00:27ff:fe54:d01d  prefixlen 64
scopeid 0x20<link>
        ether 08:00:27:54:d0:1d  txqueuelen 1000  (Eth
ernet)
        RX packets 6  bytes 1488 (1.4 KiB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 28  bytes 4226 (4.1 KiB)
        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 8  bytes 480 (480.0 B)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 8  bytes 480 (480.0 B)
        TX errors 0  dropped 0 overruns 0  carrier 0
collisions 0
```

```
┌──(ramatu㉿01261751)-[~]
└─$ route -n
Kernel IP routing table
Destination     Gateway         Genmask         Flags Metric Ref    Use
 Iface
0.0.0.0         10.254.0.1      0.0.0.0         UG    100    0        0
 eth0
10.254.0.0      0.0.0.0         255.255.0.0     U     100    0        0
 eth0
```

```
┌──(ramatu㉿01261751)-[~]
└─$ netstat -tn
Active Internet connections (w/o servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         Sta
te
```

```
┌──(ramatu㉿01261751)-[~]
└─$ ping -c 10 ubuntu.com
PING ubuntu.com (185.125.190.29) 56(84) bytes of data.
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29
): icmp_seq=1 ttl=50 time=128 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29
): icmp_seq=2 ttl=50 time=118 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29
): icmp_seq=3 ttl=50 time=85.7 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29
): icmp_seq=4 ttl=50 time=95.9 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29
): icmp_seq=5 ttl=50 time=87.5 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29
): icmp_seq=6 ttl=50 time=84.4 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29
): icmp_seq=7 ttl=50 time=85.2 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29
): icmp_seq=8 ttl=50 time=84.4 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29
): icmp_seq=9 ttl=50 time=84.2 ms
64 bytes from website-content-cache-3.ps5.canonical.com (185.125.190.29
): icmp_seq=10 ttl=50 time=84.2 ms

── ubuntu.com ping statistics ──
10 packets transmitted, 10 received, 0% packet loss, time 9012ms
rtt min/avg/max/mdev = 84.183/93.703/127.814/15.079 ms
```

```
┌──(ramatu㉿01261751)-[~]
└─$ host www.odu.edu
www.odu.edu has address 35.170.140.174
```

```
┌──(ramatu㉿01261751)-[~]
└─$ cat /etc/resolv.conf
# Generated by NetworkManager
search wlan.odu.edu
nameserver 128.82.95.20
```