Task-13

💛 **Create a Setup so that you can ping google but not able to ping Facebook from same system** 💛

Initially can ping both the websites using ping command

Default gateway rule

Delete default gateway rule

Screen 1: rhel8-3 [Running] - Oracle VM VirtualBox

```
[root@localhost ~]# route -n
Kernel IP routing table
Destination     Gateway         Genmask         Flags Metric Ref    Use Iface
0.0.0.0         192.168.0.1     0.0.0.0         UG    0      0        0 enp0s3
172.17.0.0      0.0.0.0         255.255.0.0     U     0      0        0 docker0
192.168.0.0     0.0.0.0         255.255.255.0   U     100    0        0 enp0s3
[root@localhost ~]# route del -net 0.0.0.0
[root@localhost ~]# route -n
Kernel IP routing table
Destination     Gateway         Genmask         Flags Metric Ref    Use Iface
172.17.0.0      0.0.0.0         255.255.0.0     U     0      0        0 docker0
192.168.0.0     0.0.0.0         255.255.255.0   U     100    0        0 enp0s3
[root@localhost ~]# ^C^C
[root@localhost ~]# ping www.google.com
PING www.google.com(del03s06-in-x04.1e100.net (2404:6800:4002:805::2004)) 56 data bytes
From _gateway (fe80::c6e9:aff:fe5c:e876%enp0s3): icmp_seq=1 Destination unreachable: No route
From _gateway (fe80::c6e9:aff:fe5c:e876%enp0s3): icmp_seq=2 Destination unreachable: No route
From _gateway (fe80::c6e9:aff:fe5c:e876%enp0s3): icmp_seq=3 Destination unreachable: No route
From _gateway (fe80::c6e9:aff:fe5c:e876%enp0s3): icmp_seq=4 Destination unreachable: No route
From _gateway (fe80::c6e9:aff:fe5c:e876%enp0s3): icmp_seq=5 Destination unreachable: No route
^C
--- www.google.com ping statistics ---
5 packets transmitted, 0 received, +5 errors, 100% packet loss, time 147ms

[root@localhost ~]# ping www.facebook.com
PING www.facebook.com(edge-star-mini6-shv-01-any2.facebook.com (2a03:2880:f1ff:83:face:b00c:0:25de))
 56 data bytes
From _gateway (fe80::c6e9:aff:fe5c:e876%enp0s3): icmp_seq=1 Destination unreachable: No route
From _gateway (fe80::c6e9:aff:fe5c:e876%enp0s3): icmp_seq=2 Destination unreachable: No route
From _gateway (fe80::c6e9:aff:fe5c:e876%enp0s3): icmp_seq=3 Destination unreachable: No route
From _gateway (fe80::c6e9:aff:fe5c:e876%enp0s3): icmp_seq=4 Destination unreachable: No route
^C
--- www.facebook.com ping statistics ---
4 packets transmitted, 0 received, +4 errors, 100% packet loss, time 781ms

[root@localhost ~]#
```

Annotation: After removing default gateway rule, unable to ping both the websites.

Screen 2: rhel8-3 [Running] - Oracle VM VirtualBox

```
[root@localhost ~]# nslookup www.google.com
Server:         192.168.0.1
Address:        192.168.0.1#53

Non-authoritative answer:
Name:   www.google.com
Address: 172.217.166.4
Name:   www.google.com
Address: 2404:6800:4002:812::2004
[root@localhost ~]# route add -net 172.217.166.0 netmask 255.255.255.0 gw 192.168.0.1
[root@localhost ~]# route -n
Kernel IP routing table
Destination     Gateway         Genmask         Flags Metric Ref    Use Iface
172.17.0.0      0.0.0.0         255.255.0.0     U     0      0        0 docker0
172.217.166.0   192.168.0.1     255.255.255.0   UG    0      0        0 enp0s3
192.168.0.0     0.0.0.0         255.255.255.0   U     100    0        0 enp0s3
[root@localhost ~]# ping www.google.com
PING www.google.com (172.217.166.4) 56(84) bytes of data.
64 bytes from del03s17-in-f4.1e100.net (172.217.166.4): icmp_seq=1 ttl=117 time=20.7 ms
64 bytes from del03s17-in-f4.1e100.net (172.217.166.4): icmp_seq=2 ttl=117 time=21.1 ms
64 bytes from del03s17-in-f4.1e100.net (172.217.166.4): icmp_seq=3 ttl=117 time=29.6 ms
64 bytes from del03s17-in-f4.1e100.net (172.217.166.4): icmp_seq=4 ttl=117 time=21.3 ms
64 bytes from del03s17-in-f4.1e100.net (172.217.166.4): icmp_seq=5 ttl=117 time=23.4 ms
^C
--- www.google.com ping statistics ---
6 packets transmitted, 5 received, 16.6667% packet loss, time 13ms
rtt min/avg/max/mdev = 20.673/23.193/29.558/3.316 ms
```

Annotation: The IP address of google server is -> 172.217.166.4

Annotation: Added rule in routing table, that will allow the OS to create data packets for all the IP adresses in the network
-> Network name- 172.217.166.0
-> Netmask- 255.255.255.0
And IP address of the google server lie in this network.

Annotation: Now can ping to Google.

rhel8-3 [Running] - Oracle VM VirtualBox

```
Kernel IP routing table
Destination     Gateway         Genmask         Flags Metric Ref    Use Iface
172.17.0.0      0.0.0.0         255.255.0.0     U     0      0        0 docker0
172.217.166.0   192.168.0.1     255.255.255.0   UG    0      0        0 enp0s3
192.168.0.0     0.0.0.0         255.255.255.0   U     100    0        0 enp0s3
[root@localhost ~]# ping www.google.com
PING www.google.com (172.217.166.4) 56(84) bytes of data.
64 bytes from del03s17-in-f4.1e100.net (172.217.166.4): icmp_seq=1 ttl=117 time=20.7 ms
64 bytes from del03s17-in-f4.1e100.net (172.217.166.4): icmp_seq=2 ttl=117 time=21.1 ms
64 bytes from del03s17-in-f4.1e100.net (172.217.166.4): icmp_seq=3 ttl=117 time=29.6 ms
64 bytes from del03s17-in-f4.1e100.net (172.217.166.4): icmp_seq=4 ttl=117 time=21.3 ms
64 bytes from del03s17-in-f4.1e100.net (172.217.166.4): icmp_seq=5 ttl=117 time=23.4 ms
^C
--- www.google.com ping statistics ---
6 packets transmitted, 5 received, 16.6667% packet loss, time 13ms          But still can't add ping facebook
rtt min/avg/max/mdev = 20.673/23.193/29.558/3.316 ms
[root@localhost ~]# ping www.facebook.com
PING www.facebook.com(edge-star-mini6-shv-01-any2.facebook.com (2a03:2880:f1ff:83:face:b00c:0:25de))
 56 data bytes
From _gateway (fe80::c6e9:aff:fe5c:e876%enp0s3): icmp_seq=1 Destination unreachable: No route
From _gateway (fe80::c6e9:aff:fe5c:e876%enp0s3): icmp_seq=2 Destination unreachable: No route
From _gateway (fe80::c6e9:aff:fe5c:e876%enp0s3): icmp_seq=3 Destination unreachable: No route
From _gateway (fe80::c6e9:aff:fe5c:e876%enp0s3): icmp_seq=4 Destination unreachable: No route
From _gateway (fe80::c6e9:aff:fe5c:e876%enp0s3): icmp_seq=5 Destination unreachable: No route
From _gateway (fe80::c6e9:aff:fe5c:e876%enp0s3): icmp_seq=6 Destination unreachable: No route
From _gateway (fe80::c6e9:aff:fe5c:e876%enp0s3): icmp_seq=7 Destination unreachable: No route
From _gateway (fe80::c6e9:aff:fe5c:e876%enp0s3): icmp_seq=8 Destination unreachable: No route
From _gateway (fe80::c6e9:aff:fe5c:e876%enp0s3): icmp_seq=9 Destination unreachable: No route
From _gateway (fe80::c6e9:aff:fe5c:e876%enp0s3): icmp_seq=10 Destination unreachable: No route
From _gateway (fe80::c6e9:aff:fe5c:e876%enp0s3): icmp_seq=11 Destination unreachable: No route
From _gateway (fe80::c6e9:aff:fe5c:e876%enp0s3): icmp_seq=12 Destination unreachable: No route
From _gateway (fe80::c6e9:aff:fe5c:e876%enp0s3): icmp_seq=13 Destination unreachable: No route
^C
--- www.facebook.com ping statistics ---
13 packets transmitted, 0 received, +13 errors, 100% packet loss, time 110ms
```