Experiment 5: Implement a firewall for an organization.

```
┌──(kali㉿kali)-[~]
└─$ sudo service apache2 start
[sudo] password for kali:
```

```
┌──(kali㉿kali)-[~]
└─$ sudo service mysql start
```

Check ip address in kali

```
┌──(kali㉿kali)-[~]
└─$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 192.168.23.128  netmask 255.255.255.0  broadcast 192.168.23.255
        inet6 fe80::20c:29ff:fe0b:96d0  prefixlen 64  scopeid 0x20<link>
        ether 00:0c:29:0b:96:d0  txqueuelen 1000  (Ethernet)
        RX packets 109  bytes 39332 (38.4 KiB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 133  bytes 24038 (23.4 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 171  bytes 37444 (36.5 KiB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 171  bytes 37444 (36.5 KiB)
```

Check ip address for windows in command prompt

```
Command Prompt
Microsoft Windows [Version 10.0.22000.739]
(c) Microsoft Corporation. All rights reserved.

C:\Users\student>ipconfig

Windows IP Configuration


Ethernet adapter Ethernet:

   Connection-specific DNS Suffix  . :
   Link-local IPv6 Address . . . . . : fe80::bd09:f0d:fe31:fa37%15
   IPv4 Address. . . . . . . . . . . : 172.16.242.8
   Subnet Mask . . . . . . . . . . . : 255.255.0.0
   Default Gateway . . . . . . . . . : 172.16.242.254

Wireless LAN adapter Wi-Fi:

   Media State . . . . . . . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :

Wireless LAN adapter Local Area Connection* 1:

   Media State . . . . . . . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :

Wireless LAN adapter Local Area Connection* 2:

   Media State . . . . . . . . . . . : Media disconnected
```

Connect windows and kali using command prompt in windows

```
C:\Users\student>ping 192.168.23.128

Pinging 192.168.23.128 with 32 bytes of data:
Reply from 192.168.23.128: bytes=32 time<1ms TTL=64
Reply from 192.168.23.128: bytes=32 time<1ms TTL=64
Reply from 192.168.23.128: bytes=32 time<1ms TTL=64
Reply from 192.168.23.128: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.23.128:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

To block pinging of windows system use the following command(should consider only IP

```
┌──(kali㉿kali)-[~]
└─$ sudo iptables -A INPUT -s 192.168.23.1 -j DROP
```

address not ethernet's address)

Now check whether ping requests are allowed in windows

```
C:\Users\student>ping 192.168.23.128

Pinging 192.168.23.128 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.23.128:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

This way we can block ping packets.

To unblock the ping packets use the commands

```
┌──(kali㉿kali)-[~]
└─$ sudo iptables -D INPUT -s 192.168.23.1 -j DROP
```

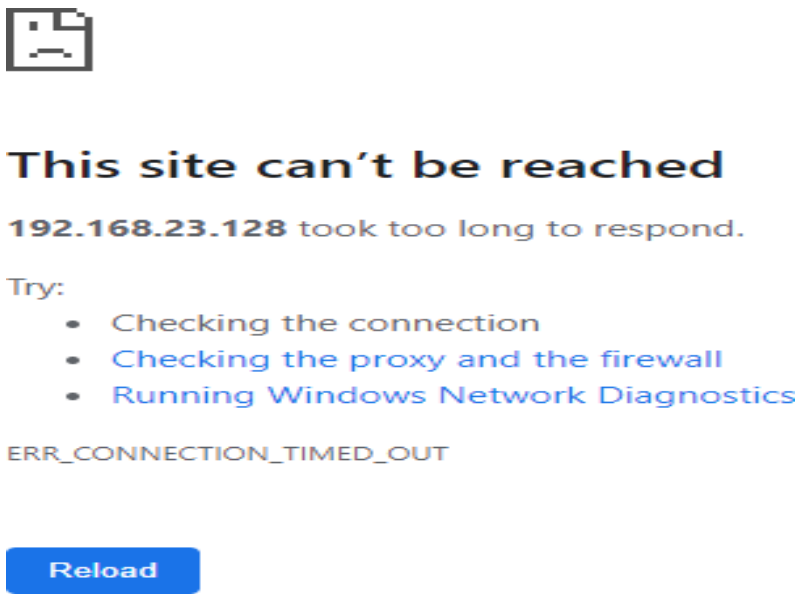
Let's check its unblocking the ping packets in the windows command prompt

```
C:\Users\student>ping 192.168.23.128

Pinging 192.168.23.128 with 32 bytes of data:
Reply from 192.168.23.128: bytes=32 time<1ms TTL=64
Reply from 192.168.23.128: bytes=32 time<1ms TTL=64
Reply from 192.168.23.128: bytes=32 time<1ms TTL=64
Reply from 192.168.23.128: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.23.128:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

```
┌──(kali㉿kali)-[~]
└─$ sudo iptables -A  INPUT -s 192.168.23.1 -p tcp --destination-port 80 -j DROP
```

Task 2: Block the port numbers

Open browser in windows and search for its ip address in the address of kali linux bar – it opens the web page.



We need to block the availability of port 80.

Instead of -A use -D

```
┌──(kali㉿kali)-[~]
└─$ sudo iptables -D  INPUT -s 192.168.23.1 -p tcp --destination-port 80 -j DROP
```

Now check the ip address of the kali linux in windows

Result:

Thus the implement a firewall for an organization completed suceessfuly.