Ex.No: 13
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Secure Coding

Lab experiment – Automated Vulnerability Analysis and Patch Management

Experiment and Analysis

- **Deploy Windows Exploit Suggester - Next Generation (WES-NG)**
- **Obtain the system information and check for any reported vulnerabilities.**
- **If any vulnerabilities are reported, apply patches and make your system safe.**
- **Submit the auto-generated report using pwndoc.**

1) Clone the Windows Exploit Suggester repo and run the wes.py

```
C:\Users\ganga>cd C:\Users\ganga\Downloads\wesng-master\wesng-master

C:\Users\ganga\Downloads\wesng-master\wesng-master>.\wes.py
WARNING:root:chardet module not installed. In case of encoding errors, install chardet using: pip3 install chardet
usage: wes.py [-u] [--update-wes] [--version]
              [--definitions [DEFINITIONS]]
              [-p INSTALLEDPATCH [INSTALLEDPATCH ...]] [-d] [-e]
              [--hide HIDDENVULN [HIDDENVULN ...]]
              [-i IMPACTS [IMPACTS ...]]
              [-s SEVERITIES [SEVERITIES ...]] [-o [OUTPUTFILE]]
              [--muc-lookup] [-h]
              systeminfo [qfefile]
```

```
C:\Users\ganga>cd C:\Users\ganga\Downloads\wesng-master\wesng-master

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              [-p INSTALLEDPATCH [INSTALLEDPATCH ...]] [-d] [-e]
              [--hide HIDDENVULN [HIDDENVULN ...]]
              [-i IMPACTS [IMPACTS ...]]
              [-s SEVERITIES [SEVERITIES ...]] [-o [OUTPUTFILE]]
              [--muc-lookup] [-h]
              systeminfo [qfefile]

Windows Exploit Suggester 0.98 ( https://github.com/bitsadmin/wesng/ )

positional arguments:
  systeminfo            Specify systeminfo.txt file
  qfefile               Specify the file containing the output of the
                        'wmic qfe' command

optional arguments:
  -u, --update          Download latest list of CVEs
  --update-wes          Download latest version of wes.py
  --version             Show version information
  --definitions [DEFINITIONS]
                        Definitions zip file (default:
                        definitions.zip)
  -p INSTALLEDPATCH [INSTALLEDPATCH ...], --patches INSTALLEDPATCH [INSTALLEDPATCH ...]
                        Manually specify installed patches in addition
                        to the ones listed in the systeminfo.txt file
  -d, --usekbdate       Filter out vulnerabilities of KBs published
                        before the publishing date of the most recent
                        KB installed
```

2) Output your system info with this command

```
C:\Users\ganga\Downloads\wesng-master\wesng-master>systeminfo>sys.txt
```

sys - Notepad

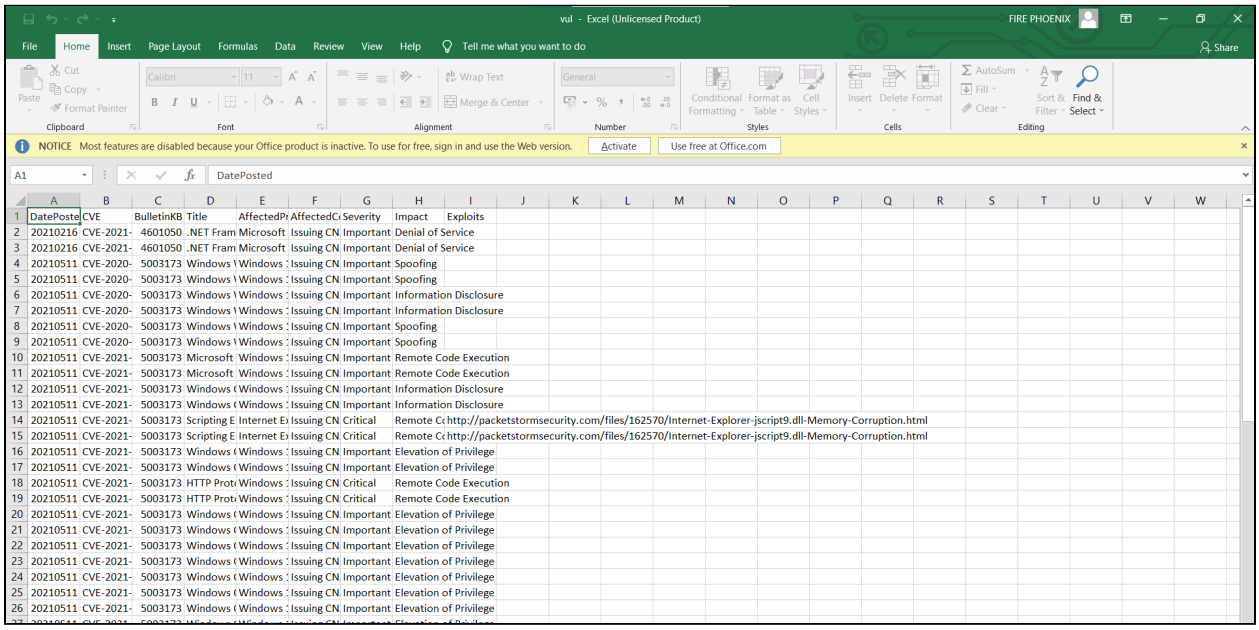
File Edit Format View Help

```
Host Name:                 LAPTOP-VMTQ6TRH
OS Name:                   Microsoft Windows 10 Home
OS Version:                10.0.19042 N/A Build 19042
OS Manufacturer:           Microsoft Corporation
OS Configuration:          Standalone Workstation
OS Build Type:             Multiprocessor Free
Registered Owner:          gangasuresh2000@gmail.com
Registered Organization:   HP
Product ID:                00325-81260-68063-AAOEM
Original Install Date:     23-04-2021, 22:32:43
System Boot Time:          11-06-2021, 09:19:05
System Manufacturer:       HP
System Model:              HP Pavilion Gaming Laptop 15-cx0xxx
System Type:               x64-based PC
Processor(s):              1 Processor(s) Installed.
                           [01]: Intel64 Family 6 Model 158 Stepping 10 GenuineIntel ~2208 Mhz
BIOS Version:              Insyde F.12, 11-10-2018
Windows Directory:         C:\WINDOWS
System Directory:          C:\WINDOWS\system32
Boot Device:               \Device\HarddiskVolume3
System Locale:             en-gb;English (United Kingdom)
Input Locale:              00004009
Time Zone:                 (UTC+05:30) Chennai, Kolkata, Mumbai, New Delhi
Total Physical Memory:     16,272 MB
Available Physical Memory: 8,046 MB
Virtual Memory: Max Size:  18,704 MB
Virtual Memory: Available: 6,887 MB
Virtual Memory: In Use:    11,817 MB
Page File Location(s):     C:\pagefile.sys
Domain:                    WORKGROUP
Logon Server:              \\LAPTOP-VMTQ6TRH
Hotfix(s):                 7 Hotfix(s) Installed.
                           [01]: KB5003254
```

3) Now look for vulnerabilities using your last txt file output

```
C:\Users\ganga\Downloads\wesng-master\wesng-master>python wes.py sys.txt --output vul.csv
Windows Exploit Suggester 0.98 ( https://github.com/bitsadmin/wesng/ )
[+] Parsing systeminfo output
[+] Operating System
    - Name: Windows 10 Version 20H2 for x64-based Systems
    - Generation: 10
    - Build: 19042
    - Version: 20H2
    - Architecture: x64-based
    - Installed hotfixes (7): KB5003254, KB4562830, KB4577586, KB4580325, KB5001679, KB5003637, KB5003503
[+] Loading definitions
    - Creation date of definitions: 20210607
[+] Determining missing patches
[+] Found vulnerabilities
[+] Writing 52 results to vul.csv
```

4) All vulnerabilities in your system are shown in vul.csv



vul - Excel (Unlicensed Product) — FIRE PHOENIX

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Clipboard Font Alignment Number Styles Cells Editing

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A1 DatePosted

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
1	DatePoste	CVE	BulletinKB	Title	AffectedPr	AffectedC	Severity	Impact	Exploits														
2	20210216	CVE-2021-	4601050	.NET Fram	Microsoft	Issuing CN	Important	Denial of Service															
3	20210216	CVE-2021-	4601050	.NET Fram	Microsoft	Issuing CN	Important	Denial of Service															
4	20210511	CVE-2020-	5003173	Windows \	Windows 1	Issuing CN	Important	Spoofing															
5	20210511	CVE-2020-	5003173	Windows \	Windows 1	Issuing CN	Important	Spoofing															
6	20210511	CVE-2020-	5003173	Windows \	Windows 1	Issuing CN	Important	Information Disclosure															
7	20210511	CVE-2020-	5003173	Windows \	Windows 1	Issuing CN	Important	Information Disclosure															
8	20210511	CVE-2020-	5003173	Windows \	Windows 1	Issuing CN	Important	Spoofing															
9	20210511	CVE-2020-	5003173	Windows \	Windows 1	Issuing CN	Important	Spoofing															
10	20210511	CVE-2021-	5003173	Microsoft	Windows 1	Issuing CN	Important	Remote Code Execution															
11	20210511	CVE-2021-	5003173	Microsoft	Windows 1	Issuing CN	Important	Remote Code Execution															
12	20210511	CVE-2021-	5003173	Windows (	Windows 1	Issuing CN	Important	Information Disclosure															
13	20210511	CVE-2021-	5003173	Windows (	Windows 1	Issuing CN	Important	Information Disclosure															
14	20210511	CVE-2021-	5003173	Scripting E	Internet E	Issuing CN	Critical	Remote C	http://packetstormsecurity.com/files/162570/Internet-Explorer-jscript9.dll-Memory-Corruption.html														
15	20210511	CVE-2021-	5003173	Scripting E	Internet E	Issuing CN	Critical	Remote C	http://packetstormsecurity.com/files/162570/Internet-Explorer-jscript9.dll-Memory-Corruption.html														
16	20210511	CVE-2021-	5003173	Windows (	Windows 1	Issuing CN	Important	Elevation of Privilege															
17	20210511	CVE-2021-	5003173	Windows (	Windows 1	Issuing CN	Important	Elevation of Privilege															
18	20210511	CVE-2021-	5003173	HTTP Prot	Windows 1	Issuing CN	Critical	Remote Code Execution															
19	20210511	CVE-2021-	5003173	HTTP Prot	Windows 1	Issuing CN	Critical	Remote Code Execution															
20	20210511	CVE-2021-	5003173	Windows (	Windows 1	Issuing CN	Important	Elevation of Privilege															
21	20210511	CVE-2021-	5003173	Windows (	Windows 1	Issuing CN	Important	Elevation of Privilege															
22	20210511	CVE-2021-	5003173	Windows (	Windows 1	Issuing CN	Important	Elevation of Privilege															
23	20210511	CVE-2021-	5003173	Windows (	Windows 1	Issuing CN	Important	Elevation of Privilege															
24	20210511	CVE-2021-	5003173	Windows (	Windows 1	Issuing CN	Important	Elevation of Privilege															
25	20210511	CVE-2021-	5003173	Windows (	Windows 1	Issuing CN	Important	Elevation of Privilege															
26	20210511	CVE-2021-	5003173	Windows (	Windows 1	Issuing CN	Important	Elevation of Privilege															