Secure Coding Lab - 13

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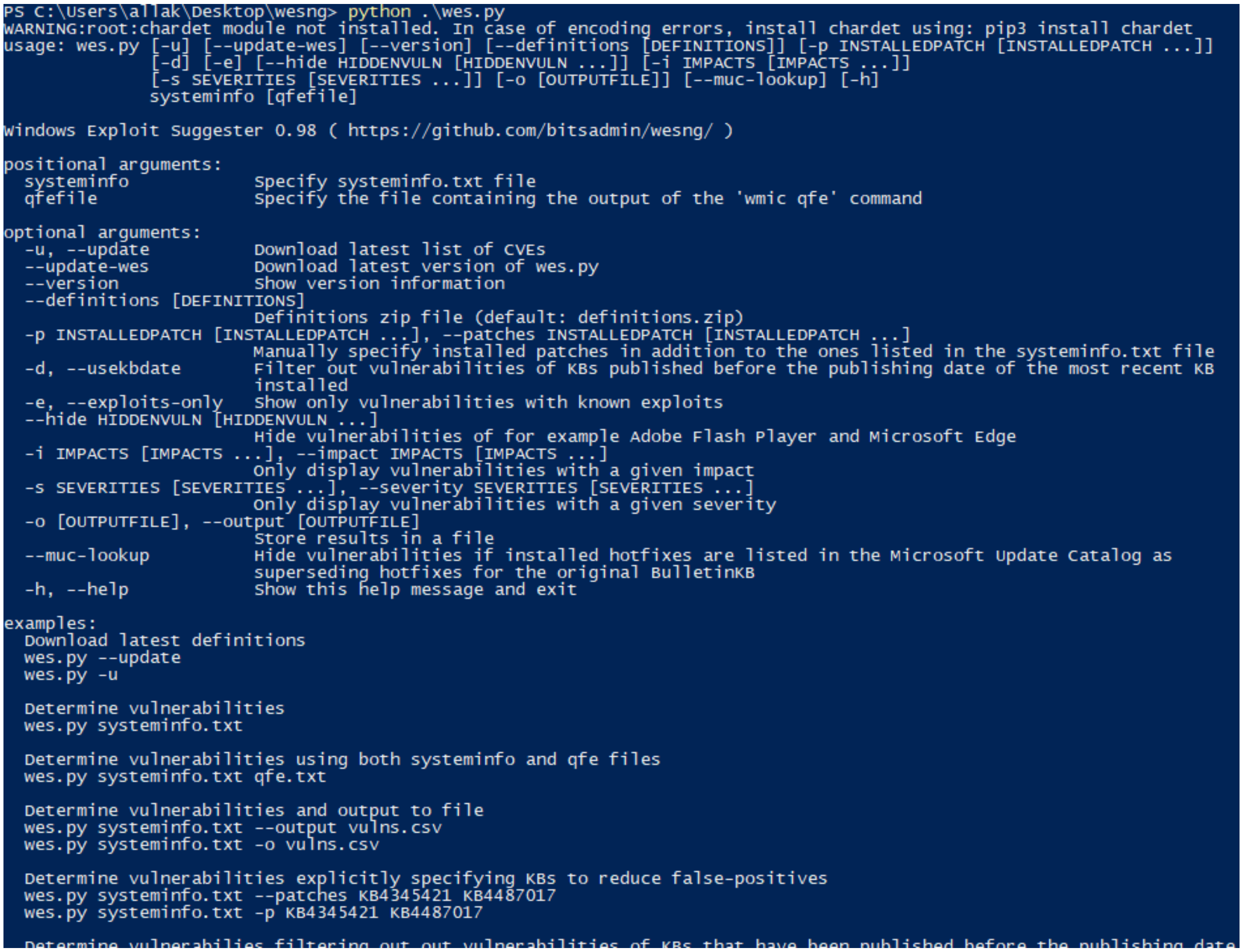
Experiment and Analysis

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

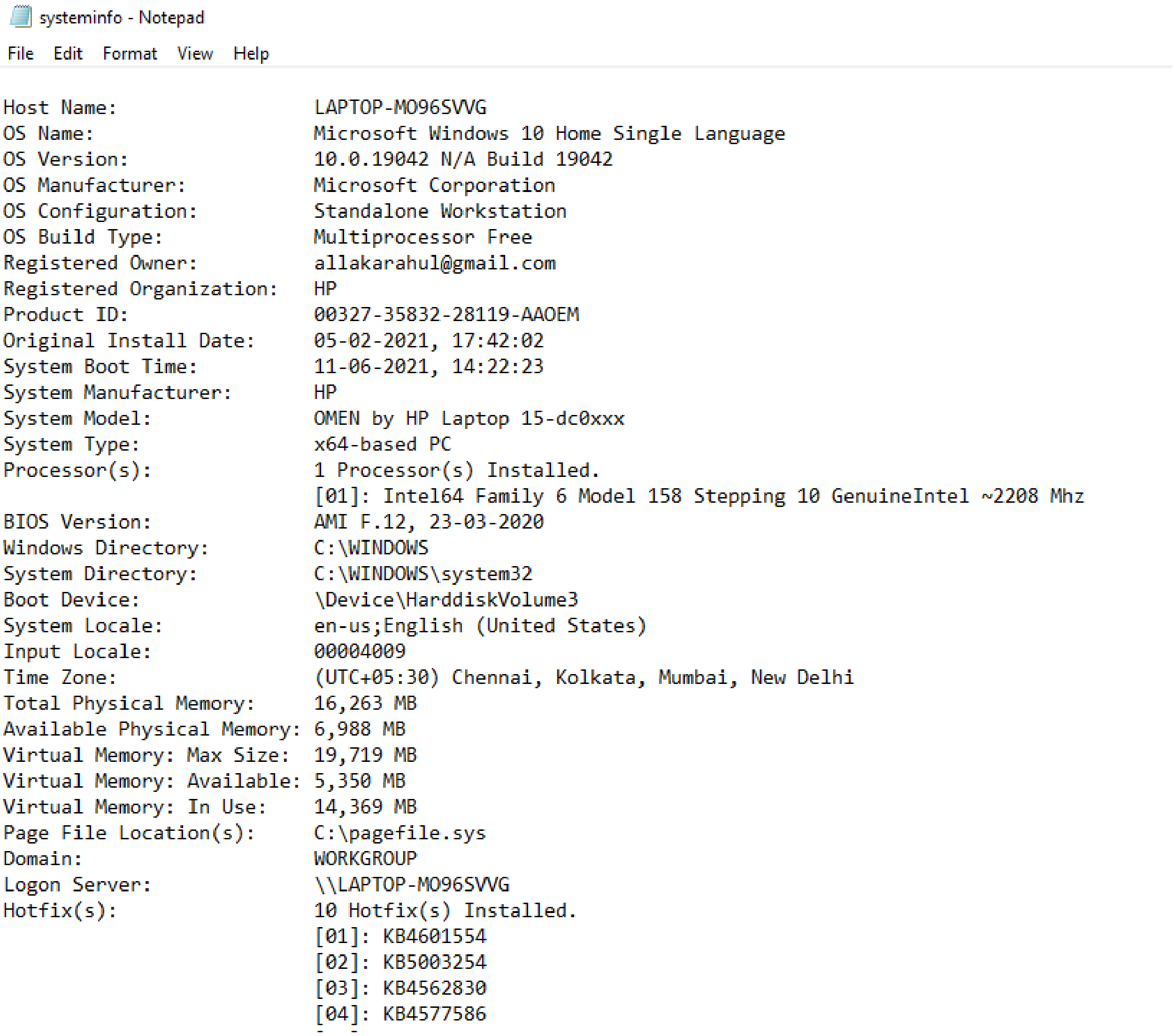
1) Clone the Windows Exploit Suggester repo and run the wes.py



```
PS C:\Users\allak\Desktop\wesng> python .\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]

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
  -e, --exploits-only   Show only vulnerabilities with known exploits
  --hide HIDDENVULN [HIDDENVULN ...]
                        Hide vulnerabilities of for example Adobe Flash Player and Microsoft Edge
  -i IMPACTS [IMPACTS ...], --impact IMPACTS [IMPACTS ...]
                        Only display vulnerabilities with a given impact
  -s SEVERITIES [SEVERITIES ...], --severity SEVERITIES [SEVERITIES ...]
                        Only display vulnerabilities with a given severity
  -o [OUTPUTFILE], --output [OUTPUTFILE]
                        Store results in a file
  --muc-lookup          Hide vulnerabilities if installed hotfixes are listed in the Microsoft Update Catalog as
                        superseding hotfixes for the original BulletinKB
  -h, --help            Show this help message and exit

examples:
  Download latest definitions
  wes.py --update
  wes.py -u

  Determine vulnerabilities
  wes.py systeminfo.txt

  Determine vulnerabilities using both systeminfo and qfe files
  wes.py systeminfo.txt qfe.txt

  Determine vulnerabilities and output to file
  wes.py systeminfo.txt --output vulns.csv
  wes.py systeminfo.txt -o vulns.csv

  Determine vulnerabilities explicitly specifying KBs to reduce false-positives
  wes.py systeminfo.txt --patches KB4345421 KB4487017
  wes.py systeminfo.txt -p KB4345421 KB4487017

  Determine vulnerabilies filtering out out vulnerabilities of KBs that have been published before the publishing date
```

2) Output your system info with this command

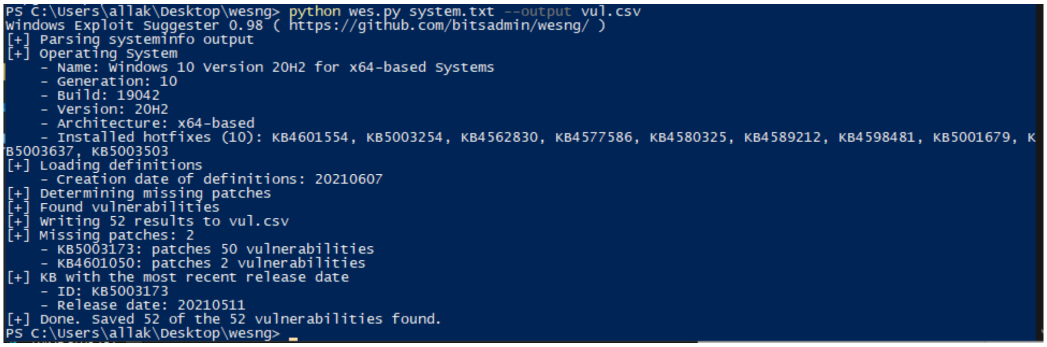
“systeminfo> systeminfo.txt “



```
Host Name:                 LAPTOP-MO96SVVG
OS Name:                   Microsoft Windows 10 Home Single Language
OS Version:                10.0.19042 N/A Build 19042
OS Manufacturer:           Microsoft Corporation
OS Configuration:          Standalone Workstation
OS Build Type:             Multiprocessor Free
Registered Owner:          allakarahul@gmail.com
Registered Organization:   HP
Product ID:                00327-35832-28119-AAOEM
Original Install Date:     05-02-2021, 17:42:02
System Boot Time:          11-06-2021, 14:22:23
System Manufacturer:       HP
System Model:              OMEN by HP Laptop 15-dc0xxx
System Type:               x64-based PC
Processor(s):              1 Processor(s) Installed.
                           [01]: Intel64 Family 6 Model 158 Stepping 10 GenuineIntel ~2208 Mhz
BIOS Version:              AMI F.12, 23-03-2020
Windows Directory:         C:\WINDOWS
System Directory:          C:\WINDOWS\system32
Boot Device:               \Device\HarddiskVolume3
System Locale:             en-us;English (United States)
Input Locale:              00004009
Time Zone:                 (UTC+05:30) Chennai, Kolkata, Mumbai, New Delhi
Total Physical Memory:     16,263 MB
Available Physical Memory: 6,988 MB
Virtual Memory: Max Size:  19,719 MB
Virtual Memory: Available: 5,350 MB
Virtual Memory: In Use:    14,369 MB
Page File Location(s):     C:\pagefile.sys
Domain:                    WORKGROUP
Logon Server:              \\LAPTOP-MO96SVVG
Hotfix(s):                 10 Hotfix(s) Installed.
                           [01]: KB4601554
                           [02]: KB5003254
                           [03]: KB4562830
                           [04]: KB4577586
```

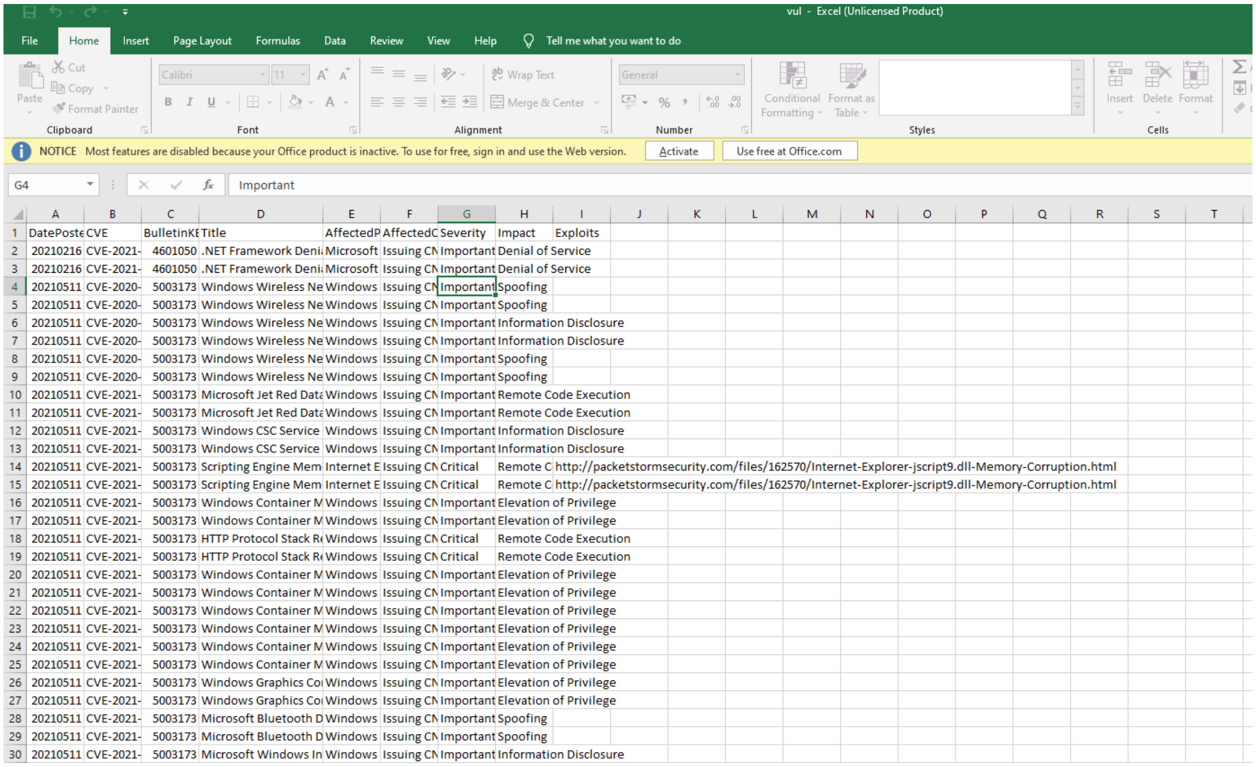
3) Now look for vulnerabilities using your last txt file output

“ wes.py systeminfo.txt --output vul.csv”



```
PS C:\Users\allak\Desktop\wesng> python wes.py system.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 (10): KB4601554, KB5003254, KB4562830, KB4577586, KB4580325, KB4589212, KB4598481, KB5001679, K
B5003637, KB5003503
[+] Loading definitions
    - Creation date of definitions: 20210607
[+] Determining missing patches
[+] Found vulnerabilities
[+] Writing 52 results to vul.csv
[+] Missing patches: 2
    - KB5003173: patches 50 vulnerabilities
    - KB4601050: patches 2 vulnerabilities
[+] KB with the most recent release date
    - ID: KB5003173
    - Release date: 20210511
[+] Done. Saved 52 of the 52 vulnerabilities found.
PS C:\Users\allak\Desktop\wesng> _
```

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



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G4 Important

	A	B	C	D	E	F	G	H	I
1	DatePoste	CVE	BulletinKE	Title	AffectedP	AffectedC	Severity	Impact	Exploits
2	20210216	CVE-2021-	4601050	.NET Framework Deni	Microsoft	Issuing CN	Important	Denial of Service	
3	20210216	CVE-2021-	4601050	.NET Framework Deni	Microsoft	Issuing CN	Important	Denial of Service	
4	20210511	CVE-2020-	5003173	Windows Wireless Ne	Windows	Issuing CN	Important	Spoofing	
5	20210511	CVE-2020-	5003173	Windows Wireless Ne	Windows	Issuing CN	Important	Spoofing	
6	20210511	CVE-2020-	5003173	Windows Wireless Ne	Windows	Issuing CN	Important	Information Disclosure	
7	20210511	CVE-2020-	5003173	Windows Wireless Ne	Windows	Issuing CN	Important	Information Disclosure	
8	20210511	CVE-2020-	5003173	Windows Wireless Ne	Windows	Issuing CN	Important	Spoofing	
9	20210511	CVE-2020-	5003173	Windows Wireless Ne	Windows	Issuing CN	Important	Spoofing	
10	20210511	CVE-2021-	5003173	Microsoft Jet Red Data	Windows	Issuing CN	Important	Remote Code Execution	
11	20210511	CVE-2021-	5003173	Microsoft Jet Red Data	Windows	Issuing CN	Important	Remote Code Execution	
12	20210511	CVE-2021-	5003173	Windows CSC Service	Windows	Issuing CN	Important	Information Disclosure	
13	20210511	CVE-2021-	5003173	Windows CSC Service	Windows	Issuing CN	Important	Information Disclosure	
14	20210511	CVE-2021-	5003173	Scripting Engine Mem	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 Engine Mem	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 Container M	Windows	Issuing CN	Important	Elevation of Privilege	
17	20210511	CVE-2021-	5003173	Windows Container M	Windows	Issuing CN	Important	Elevation of Privilege	
18	20210511	CVE-2021-	5003173	HTTP Protocol Stack R	Windows	Issuing CN	Critical	Remote Code Execution	
19	20210511	CVE-2021-	5003173	HTTP Protocol Stack R	Windows	Issuing CN	Critical	Remote Code Execution	
20	20210511	CVE-2021-	5003173	Windows Container M	Windows	Issuing CN	Important	Elevation of Privilege	
21	20210511	CVE-2021-	5003173	Windows Container M	Windows	Issuing CN	Important	Elevation of Privilege	
22	20210511	CVE-2021-	5003173	Windows Container M	Windows	Issuing CN	Important	Elevation of Privilege	
23	20210511	CVE-2021-	5003173	Windows Container M	Windows	Issuing CN	Important	Elevation of Privilege	
24	20210511	CVE-2021-	5003173	Windows Container M	Windows	Issuing CN	Important	Elevation of Privilege	
25	20210511	CVE-2021-	5003173	Windows Container M	Windows	Issuing CN	Important	Elevation of Privilege	
26	20210511	CVE-2021-	5003173	Windows Graphics Co	Windows	Issuing CN	Important	Elevation of Privilege	
27	20210511	CVE-2021-	5003173	Windows Graphics Co	Windows	Issuing CN	Important	Elevation of Privilege	
28	20210511	CVE-2021-	5003173	Microsoft Bluetooth D	Windows	Issuing CN	Important	Spoofing	
29	20210511	CVE-2021-	5003173	Microsoft Bluetooth D	Windows	Issuing CN	Important	Spoofing	
30	20210511	CVE-2021-	5003173	Microsoft Windows In	Windows	Issuing CN	Important	Information Disclosure	