

Fundamentals of computing(4CS015)

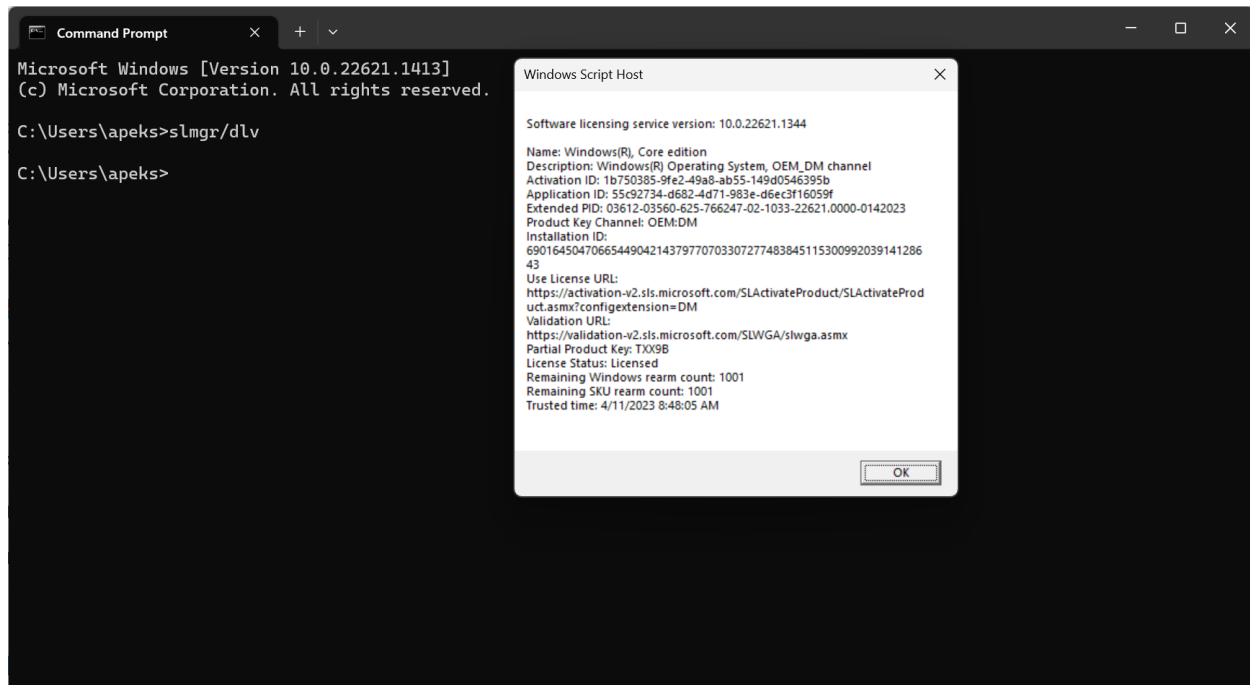
Workshop : Week 7

Apeksha Khanal

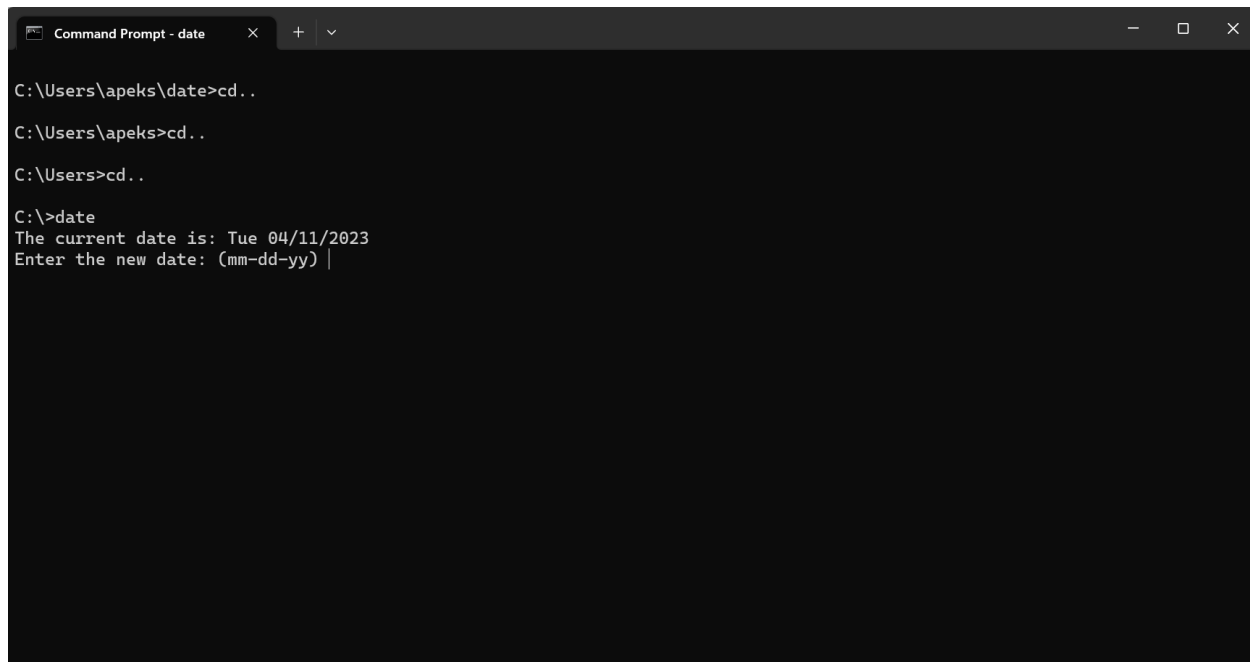
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Attempt all questions

1. Write a command to check our windows version.



2. Show the current date of your system using the command.



3. Create the directory date. Within that directory create a text file to show the current system date.

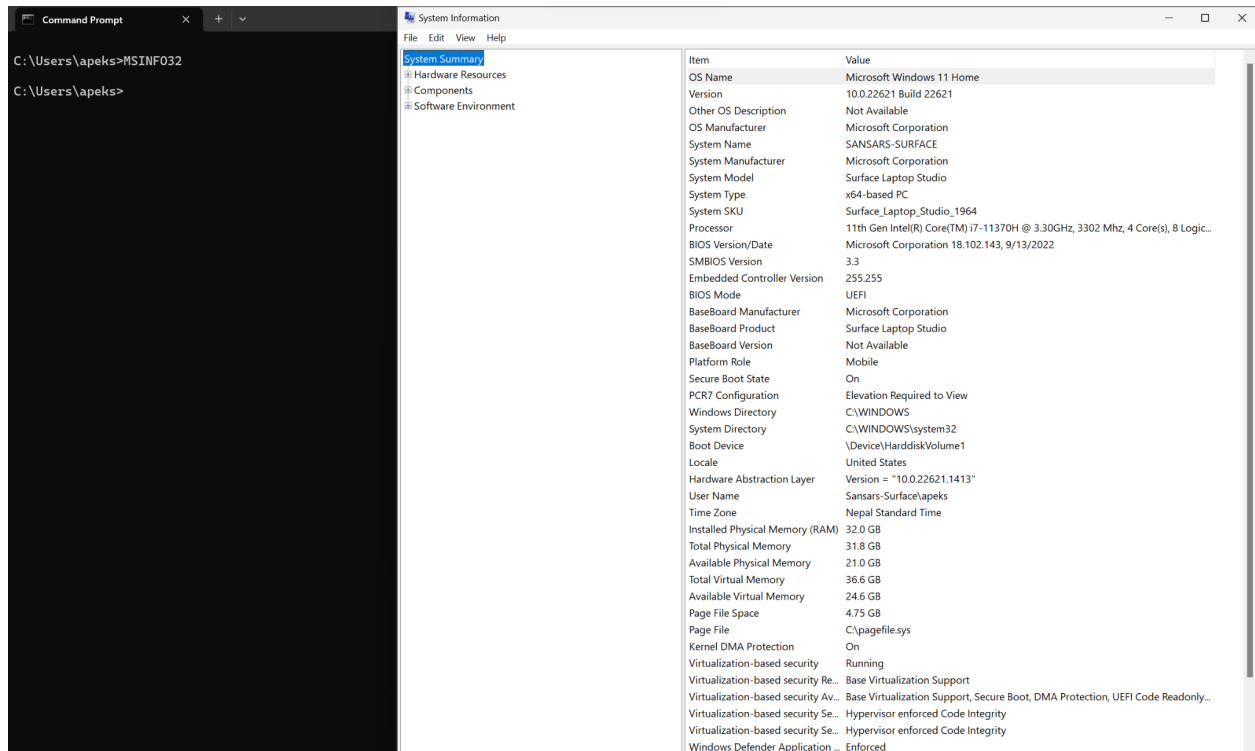
```
Command Prompt
C:\>cd users
C:\Users>cd apeks
C:\Users\apeks>mkdir Date
C:\Users\apeks>dir
Volume in drive C is Local Disk
Volume Serial Number is 3ECA-C8D9

Directory of C:\Users\apeks

04/11/2023  08:56 AM  <DIR>          .
01/14/2023  05:01 PM  <DIR>          ..
03/13/2023  01:25 PM                432 .bash_history
03/13/2023  09:01 PM  <DIR>          .dbus-keyrings
03/20/2023  11:12 AM                187 .gitconfig
03/10/2023  11:53 AM  <DIR>          .idlerc
03/14/2023  10:56 AM  <DIR>          .logsim
01/10/2023  09:52 AM  <DIR>          .lucid
01/10/2023  09:52 AM  <DIR>          .lucid-keys
01/22/2023  11:28 AM  <DIR>          .ms-ad
02/27/2023  11:18 AM  <DIR>          .vscode
04/09/2023  08:31 AM  <DIR>          college
04/09/2023  09:06 AM                0 Command
01/14/2023  05:14 PM  <DIR>          Contacts
04/11/2023  08:32 AM  <DIR>          Creative Cloud Files
04/11/2023  08:56 AM  <DIR>          Date
04/09/2023  08:59 AM                0 dir
04/09/2023  04:34 PM  <DIR>          Documents
04/09/2023  12:20 PM  <DIR>          Downloads
01/14/2023  05:14 PM  <DIR>          Favorites
04/09/2023  04:58 PM  <DIR>          HCK
01/14/2023  05:14 PM  <DIR>          Links
01/14/2023  05:14 PM  <DIR>          Music
02/27/2023  11:21 AM                0 new
04/11/2023  08:33 AM  <DIR>          OneDrive
04/11/2023  08:33 AM  <DIR>          OneDrive - University of Wolverhampton
01/14/2023  05:14 PM  <DIR>          Saved Games
01/14/2023  05:14 PM  <DIR>          Searches
01/14/2023  05:15 PM  <DIR>          Videos
                    5 File(s)                619 bytes
                   24 Dir(s)  184,385,789,952 bytes free

C:\Users\apeks>cd date
C:\Users\apeks\Date>echo %date% >date.txt
C:\Users\apeks\Date>
```

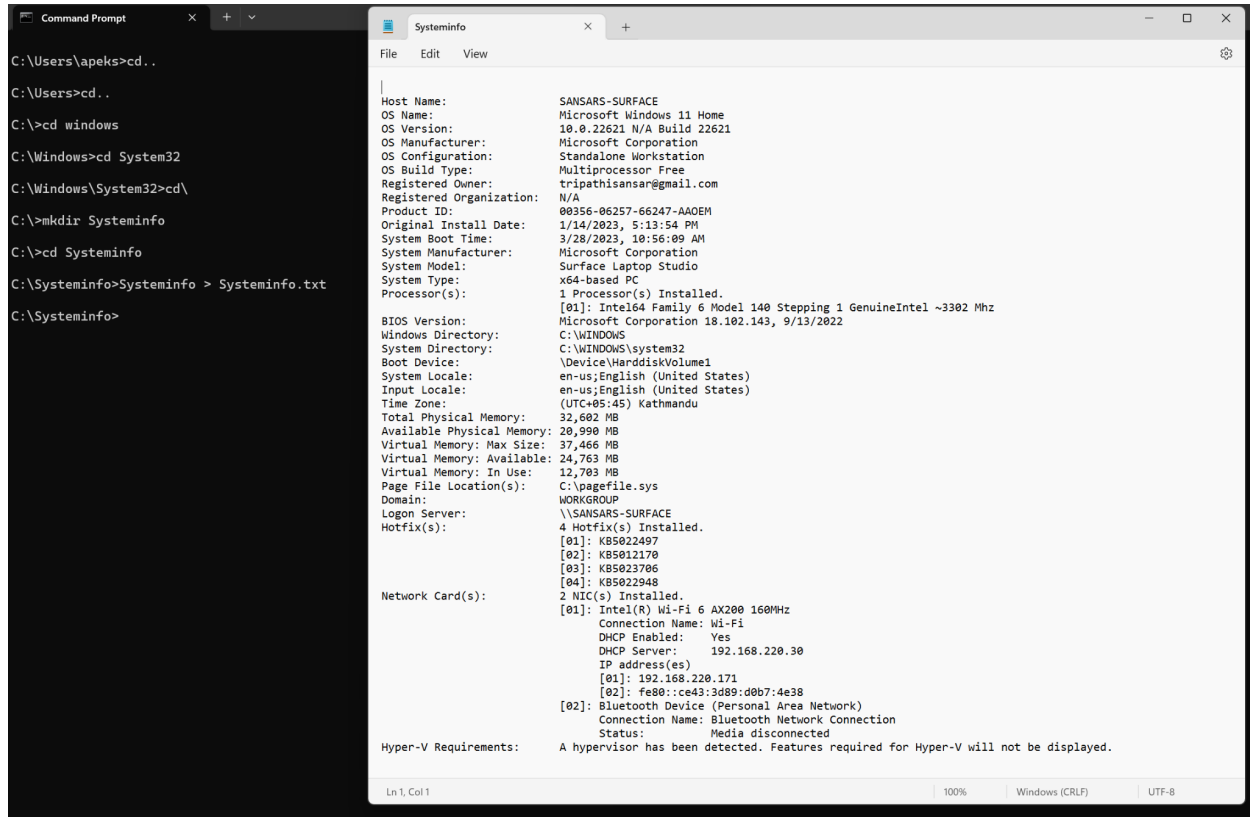
4. Show the system information using the command.



The screenshot displays two windows side-by-side. On the left is a Command Prompt window with the command `C:\Users\apeks>MSINFO32` entered. On the right is the System Information window, which shows a tree view on the left with 'System Summary' selected. The main pane on the right lists various system details in a table format.

Item	Value
OS Name	Microsoft Windows 11 Home
Version	10.0.22621 Build 22621
Other OS Description	Not Available
OS Manufacturer	Microsoft Corporation
System Name	SANSARS-SURFACE
System Manufacturer	Microsoft Corporation
System Model	Surface Laptop Studio
System Type	x64-based PC
System SKU	Surface_Laptop_Studio_1964
Processor	11th Gen Intel(R) Core(TM) i7-11370H @ 3.30GHz, 3302 Mhz, 4 Core(s), 8 Logic...
BIOS Version/Date	Microsoft Corporation 18.102.143, 9/13/2022
SMBIOS Version	3.3
Embedded Controller Version	255.255
BIOS Mode	UEFI
BaseBoard Manufacturer	Microsoft Corporation
BaseBoard Product	Surface Laptop Studio
BaseBoard Version	Not Available
Platform Role	Mobile
Secure Boot State	On
PCR7 Configuration	Elevation Required to View
Windows Directory	C:\WINDOWS
System Directory	C:\WINDOWS\system32
Boot Device	\Device\HarddiskVolume1
Locale	United States
Hardware Abstraction Layer	Version = "10.0.22621.1413"
User Name	Sansars-Surface\apeks
Time Zone	Nepal Standard Time
Installed Physical Memory (RAM)	32.0 GB
Total Physical Memory	31.8 GB
Available Physical Memory	21.0 GB
Total Virtual Memory	36.6 GB
Available Virtual Memory	24.6 GB
Page File Space	4.75 GB
Page File	C:\pagefile.sys
Kernel DMA Protection	On
Virtualization-based security	Running
Virtualization-based security Re...	Base Virtualization Support
Virtualization-based security Av...	Base Virtualization Support, Secure Boot, DMA Protection, UEFI Code Readonly...
Virtualization-based security Se...	Hypervisor enforced Code Integrity
Virtualization-based security Se...	Hypervisor enforced Code Integrity
Windows Defender Application ...	Enforced

5. Create the directory called **systemInfo** and create the file name **systemInfo.txt**. In that file all your system information should be auto generated using the command.



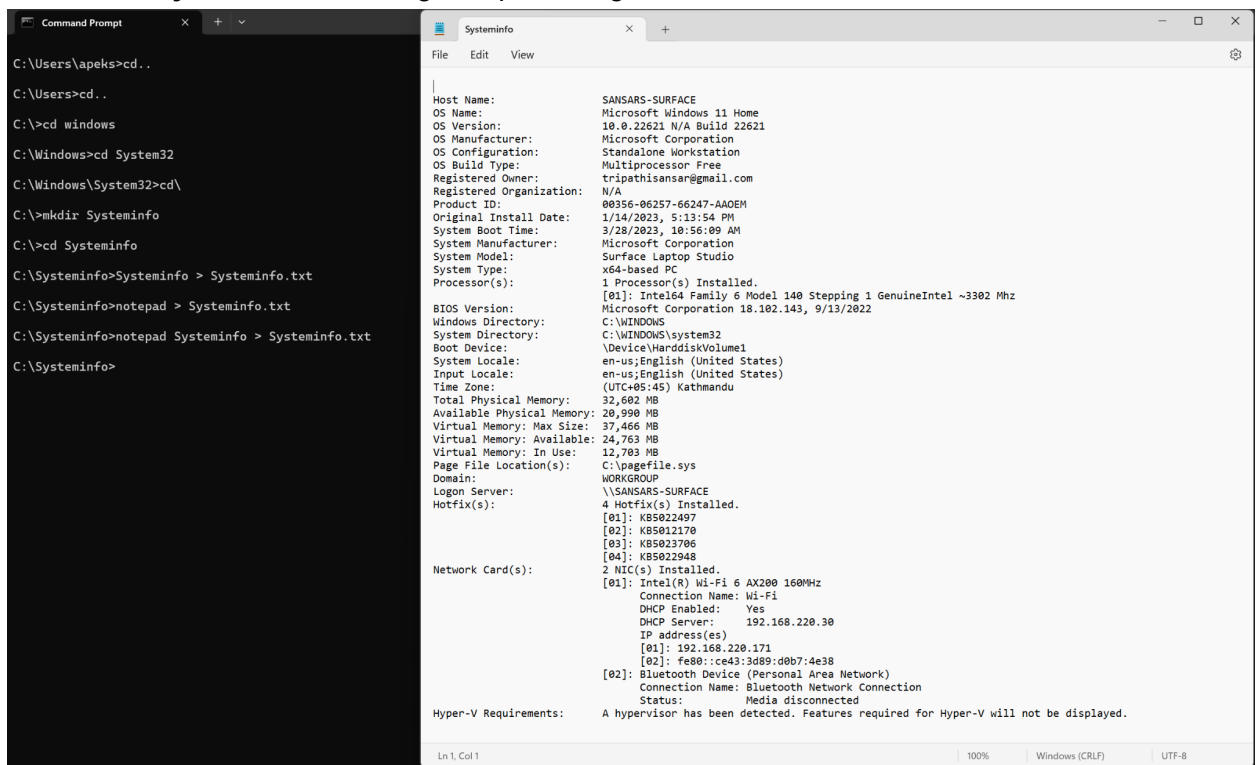
The screenshot shows a Windows Command Prompt window on the left and a Notepad window titled 'Systeminfo' on the right. The Command Prompt shows the following commands and output:

```
C:\Users\apeks>cd..
C:\Users>cd..
C:\>cd windows
C:\Windows>cd System32
C:\Windows\System32>cd\
C:\>mkdir Systeminfo
C:\>cd Systeminfo
C:\Systeminfo>Systeminfo > Systeminfo.txt
C:\Systeminfo>
```

The Notepad window displays the output of the 'Systeminfo' command, which provides detailed system information including host name, OS version, manufacturer, configuration, and hardware details.

```
Host Name: SANSARS-SURFACE
OS Name: Microsoft Windows 11 Home
OS Version: 10.0.22621 N/A Build 22621
OS Manufacturer: Microsoft Corporation
OS Configuration: Standalone Workstation
OS Build Type: Multiprocessor Free
Registered Owner: tripathisansar@gmail.com
Registered Organization: N/A
Product ID: 00356-06257-66247-AAOEH
Original Install Date: 1/14/2023, 5:13:54 PM
System Boot Time: 3/28/2023, 10:56:09 AM
System Manufacturer: Microsoft Corporation
System Model: Surface Laptop Studio
System Type: x64-based PC
Processor(s): 1 Processor(s) Installed.
[01]: Intel64 Family 6 Model 140 Stepping 1 GenuineIntel ~3302 Mhz
BIOS Version: Microsoft Corporation 18.102.143, 9/13/2022
Windows Directory: C:\WINDOWS
System Directory: C:\WINDOWS\system32
Boot Device: \Device\HarddiskVolume1
System Locale: en-us;English (United States)
Input Locale: en-us;English (United States)
Time Zone: (UTC+05:45) Kathmandu
Total Physical Memory: 32,602 MB
Available Physical Memory: 20,990 MB
Virtual Memory: Max Size: 37,466 MB
Virtual Memory: Available: 24,763 MB
Virtual Memory: In Use: 12,703 MB
Page File Location(s): C:\pagefile.sys
Domain: WORKGROUP
Logon Server: \SANSARS-SURFACE
Hotfix(s): 4 Hotfix(s) Installed.
[01]: KB5022497
[02]: KB5012170
[03]: KB5023706
[04]: KB5022948
Network Card(s): 2 NIC(s) Installed.
[01]: Intel(R) Wi-Fi 6 AX200 160MHz
Connection Name: Wi-Fi
DHCP Enabled: Yes
DHCP Server: 192.168.220.30
IP address(es)
[01]: 192.168.220.171
[02]: fe80::ce43:3d89:d0b7:4e38
[02]: Bluetooth Device (Personal Area Network)
Connection Name: Bluetooth Network Connection
Status: Media disconnected
Hyper-V Requirements: A hypervisor has been detected. Features required for Hyper-V will not be displayed.
```

6. Launch the **systeminfo.txt** using notepad using the command.



```
Command Prompt
C:\Users\apeks>cd..
C:\Users>cd..
C:\>cd windows
C:\Windows>cd System32
C:\Windows\System32>cd\
C:\>mkdir Systeminfo
C:\>cd Systeminfo
C:\Systeminfo>Systeminfo > Systeminfo.txt
C:\Systeminfo>notepad > Systeminfo.txt
C:\Systeminfo>notepad Systeminfo > Systeminfo.txt
C:\Systeminfo>
```

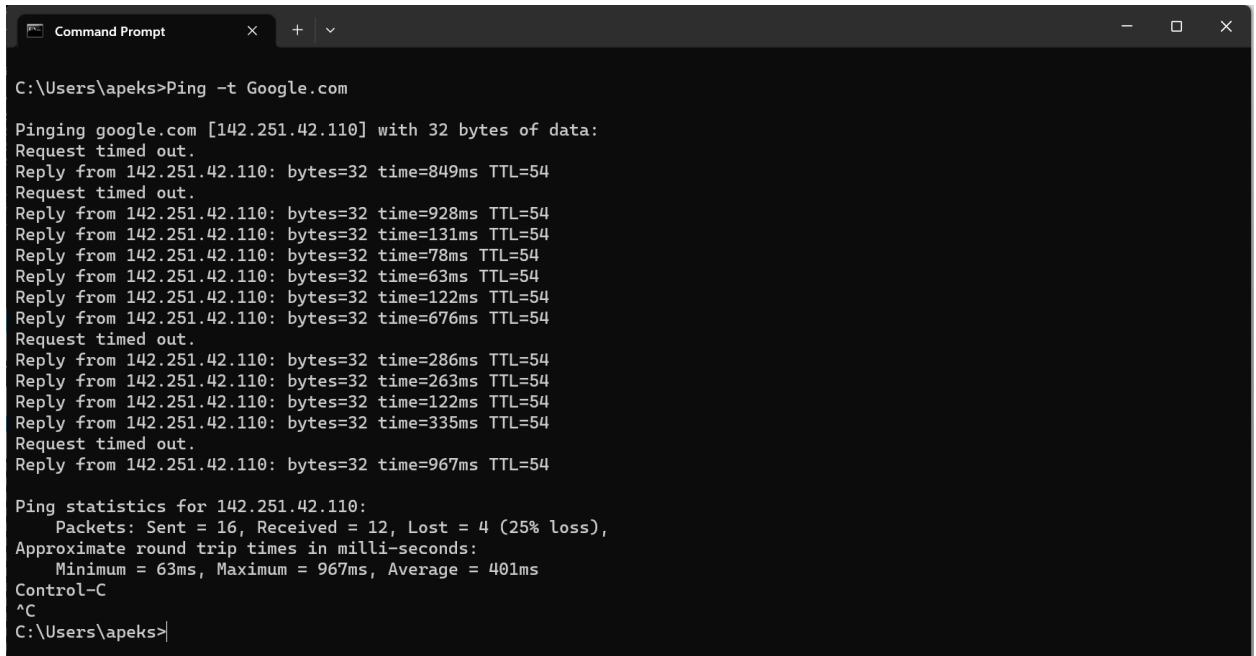
Systeminfo

Host Name: SANSARS-SURFACE
OS Name: Microsoft Windows 11 Home
OS Version: 10.0.22621 N/A Build 22621
OS Manufacturer: Microsoft Corporation
OS Configuration: Standalone Workstation
OS Build Type: Multiprocessor Free
Registered Owner: tripathisansar@gmail.com
Registered Organization: N/A
Product ID: 00356-06257-66247-AADEM
Original Install Date: 1/14/2023, 5:13:54 PM
System Boot Time: 3/28/2023, 10:56:09 AM
System Manufacturer: Microsoft Corporation
System Model: Surface Laptop Studio
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BIOS Version: Microsoft Corporation 18.102.143, 9/13/2022
Windows Directory: C:\WINDOWS
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System Locale: en-us;English (United States)
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Total Physical Memory: 32,602 MB
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Page File Location(s): C:\pagefile.sys
Domain: WORKGROUP
Logon Server: \\SANSARS-SURFACE
Hotfix(s): 4 Hotfix(s) Installed.
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7. Briefly explain about the Ping, getmac, ipconfig, powercfg command.

- The Ping command is a network troubleshooting tool. This command checks the connectivity with other devices by sending a message request called ICMP(Internet Control Message Protocol). Its syntax is: ping <options> <host>
- The getmac command is used to get the mac addresses for all the network cards on the computer or in the network. Its syntax is: getmac <options>
- The ipconfig command is used to show all the current IP network configuration information. Its syntax is: ipconfig <options>
- The powercfg command is used to control the systems power plans and it also helps to troubleshoot battery life. Its syntax is: powercfg <options> <arguments>

8. Ping the google domain and paste the screenshot.



```
Command Prompt
C:\Users\apeks>Ping -t Google.com

Pinging google.com [142.251.42.110] with 32 bytes of data:
Request timed out.
Reply from 142.251.42.110: bytes=32 time=849ms TTL=54
Request timed out.
Reply from 142.251.42.110: bytes=32 time=928ms TTL=54
Reply from 142.251.42.110: bytes=32 time=131ms TTL=54
Reply from 142.251.42.110: bytes=32 time=78ms TTL=54
Reply from 142.251.42.110: bytes=32 time=63ms TTL=54
Reply from 142.251.42.110: bytes=32 time=122ms TTL=54
Reply from 142.251.42.110: bytes=32 time=676ms TTL=54
Request timed out.
Reply from 142.251.42.110: bytes=32 time=286ms TTL=54
Reply from 142.251.42.110: bytes=32 time=263ms TTL=54
Reply from 142.251.42.110: bytes=32 time=122ms TTL=54
Reply from 142.251.42.110: bytes=32 time=335ms TTL=54
Request timed out.
Reply from 142.251.42.110: bytes=32 time=967ms TTL=54

Ping statistics for 142.251.42.110:
    Packets: Sent = 16, Received = 12, Lost = 4 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 63ms, Maximum = 967ms, Average = 401ms
Control-C
^C
C:\Users\apeks>
```

9. Show the ip address of your device.

```
Command Prompt
C:\Users\apeks>ipconfig/all

Windows IP Configuration

    Host Name . . . . . : Sansars-Surface
    Primary Dns Suffix . . . . . :
    Node Type . . . . . : Hybrid
    IP Routing Enabled. . . . . : No
    WINS Proxy Enabled. . . . . : No

Wireless LAN adapter Local Area Connection* 1:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :
    Description . . . . . : Microsoft Wi-Fi Direct Virtual Adapter
    Physical Address. . . . . : 6C-A1-00-06-5F-3A
    DHCP Enabled. . . . . : Yes
    Autoconfiguration Enabled . . . . : Yes

Wireless LAN adapter Local Area Connection* 2:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :
    Description . . . . . : Microsoft Wi-Fi Direct Virtual Adapter #2
    Physical Address. . . . . : 6E-A1-00-06-5F-39
    DHCP Enabled. . . . . : No
    Autoconfiguration Enabled . . . . : Yes

Ethernet adapter Bluetooth Network Connection:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :
    Description . . . . . : Bluetooth Device (Personal Area Network)
    Physical Address. . . . . : 6C-A1-00-06-5F-3D
    DHCP Enabled. . . . . : Yes
    Autoconfiguration Enabled . . . . : Yes

Wireless LAN adapter Wi-Fi:

    Connection-specific DNS Suffix  . :
    Description . . . . . : Intel(R) Wi-Fi 6 AX200 160MHz
    Physical Address. . . . . : 6C-A1-00-06-5F-39
    DHCP Enabled. . . . . : Yes
    Autoconfiguration Enabled . . . . : Yes
    Link-local IPv6 Address . . . . . : fe80::ce43:3d89:d0b7:4e38%8(Preferred)
    IPv4 Address. . . . . : 100.22.137.229(Preferred)
    Subnet Mask . . . . . : 255.255.0.0
    Lease Obtained. . . . . : Tuesday, April 11, 2023 8:32:12 AM
    Lease Expires . . . . . : Tuesday, April 11, 2023 10:25:29 AM
```

10. What is the use of the FC command?

- The FC command is used to compare two or more files. The output prints the contents if there is any difference between the files. Its syntax is:
 <fc> <options> <file1> <file2>

11. Create the directory called difference. In that directory create two files File1.txt and File2.txt. Add contents in 2 files and perform the ascii comparison of these 2 files.

```
Command Prompt
C:\Users\apeks>mkdir difference
C:\Users\apeks>cd difference
C:\Users\apeks\difference>echo Hello World >File1.txt
C:\Users\apeks\difference>echo Hello World! >File2.txt
C:\Users\apeks\difference>fc /L filename1.txt filename2.txt
FC: cannot open FILENAME1.TXT - No such file or folder

C:\Users\apeks\difference>fc /L File1.txt File2.txt
Comparing files File1.txt and FILE2.TXT
***** File1.txt
Hello World
***** FILE2.TXT
Hello World!
*****

C:\Users\apeks\difference>
```

12. Generate the power efficiency diagnostics report using the command.

```
Command Prompt
C:\Users\apeks>powercfg /energy
Enabling tracing for 60 seconds...
Observing system behavior...

C:\Users\apeks>powercfg -energy
Enabling tracing for 60 seconds...
Observing system behavior...

C:\Users\apeks>
```

13. What does the CHKDSK do?
- The CHKDSK commands scans the local file system as well as metadata to find any errors. Its syntax is: `chkdsk <volume> <options>`

14. Use the command in no.13 to check your disk space and repair any problem if it exists.

Administrator: Command Prompt

```
C:\Windows\System32>chkdsk
The type of the file system is NTFS.
Volume label is Local Disk.

WARNING! /F parameter not specified.
Running CHKDSK in read-only mode.

Stage 1: Examining basic file system structure ...
  2042368 file records processed.
File verification completed.
  Phase duration (File record verification): 16.64 seconds.
  15791 large file records processed.
  Phase duration (Orphan file record recovery): 9.04 milliseconds.
  0 bad file records processed.
  Phase duration (Bad file record checking): 0.47 milliseconds.

Stage 2: Examining file name linkage ...
  7083 reparse records processed.
  2415348 index entries processed.
Index verification completed.
  Phase duration (Index verification): 42.49 seconds.
  0 unindexed files scanned.
  Phase duration (Orphan reconnection): 17.91 seconds.
  0 unindexed files recovered to lost and found.
  Phase duration (Orphan recovery to lost and found): 0.76 milliseconds.
  7083 reparse records processed.
  Phase duration (Reparse point and Object ID verification): 43.46 milliseconds.

Stage 3: Examining security descriptors ...
Security descriptor verification completed.
  Phase duration (Security descriptor verification): 81.29 milliseconds.
  186491 data files processed.
  Phase duration (Data attribute verification): 0.63 milliseconds.
CHKDSK is verifying Usn Journal...
  40659864 USN bytes processed.
Usn Journal verification completed.
  Phase duration (USN journal verification): 108.89 milliseconds.

Windows has scanned the file system and found no problems.
No further action is required.

736844799 KB total disk space.
549872716 KB in 1384323 files.
  645104 KB in 186492 indexes.
    0 KB in bad sectors.
  2182463 KB in use by the system.
   65536 KB occupied by the log file.
184144516 KB available on disk.

    4096 bytes in each allocation unit.
184211199 total allocation units on disk.
 46036129 allocation units available on disk.
Total duration: 1.28 minutes (77305 ms).

C:\Windows\System32>
C:\Windows\System32>
```

15. Explain doskey /history command.

- The doskey/history command starts the program for previously entered commands. It helps to recall command history. Its syntax is: doskey/history