

MAWLANA BHASHANI SCIENCE AND TECHNOLOGY UNIVERSITY

SANTOSH, TANGAIL-1902



DEPARTMENT OF INFORMATION AND COMMUNICATION TECHNOLOGY

Lab Report

Lab Report No : 02

Lab Report on : Windows Command Practice

Course Title : Operating System Lab

Course Code : ICT-2202

Submitted By	Submitted To
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Date of Performance: 18/11/24

Date of Submission: 25/11/24

Introduction:

The Windows Command line interface (CLI) serves as a powerful tool for interacting with the operating system through text-based commands. It is accessible via command prompt or PowerShell, enabling users to execute a variety of commands for administrative tasks, troubleshooting, file management, networking, and automation. Gaining proficiency in using these commands can enhance productivity, streamline system management, and sharpen technical skills.

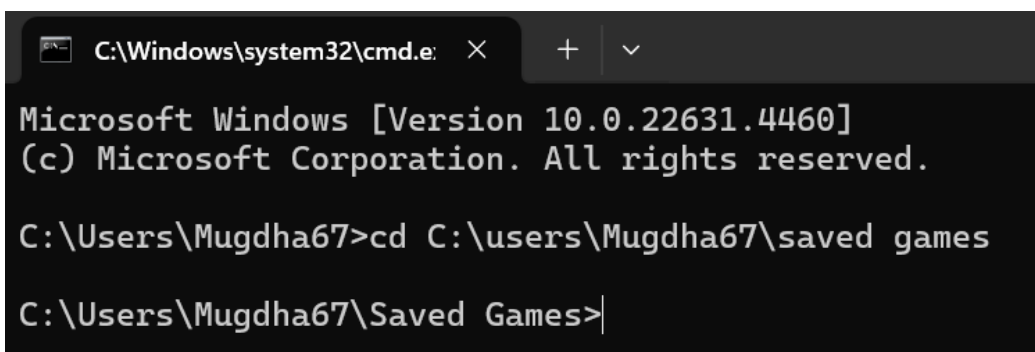
Objectives:

- **Learn Basic Commands:** Understand foundational commands for file and directory management.
- **Master Administrative Commands:** Explore commands used for system configurations and user management.
- **Troubleshoot with System Commands:** Use diagnostic and monitoring commands to identify and resolve issues.
- **Automate Tasks:** Learn how commands can be combined into scripts for repetitive tasks.
- **Enhance Networking Knowledge:** Explore network-related commands for communication and troubleshooting.
- **Develop Command-Line Proficiency:** Build confidence in using the CLI for routine and advanced tasks.

All windows command and their execution on command prompts:

1. **Cls:** Clears the Command Prompt screen.

2. **Cd:** Changes the current directory.



```
C:\Windows\system32\cmd.e: X + v
Microsoft Windows [Version 10.0.22631.4460]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Mugdha67>cd C:\users\Mugdha67\saved games
C:\Users\Mugdha67\Saved Games>
```

3. Help: Lists all available commands in the Command Prompt with a brief description.

```
C:\Users\Mugdha67>help
For more information on a specific command, type HELP command-name
ASSOC          Displays or modifies file extension associations.
ATTRIB         Displays or changes file attributes.
BREAK          Sets or clears extended CTRL+C checking.
BCDEDIT        Sets properties in boot database to control boot loading.
CACLS          Displays or modifies access control lists (ACLs) of files.
CALL           Calls one batch program from another.
CD             Displays the name of or changes the current directory.
CHCP           Displays or sets the active code page number.
CHDIR          Displays the name of or changes the current directory.
CHKDSK         Checks a disk and displays a status report.
CHKNTFS        Displays or modifies the checking of disk at boot time.
CLS            Clears the screen.
CMD            Starts a new instance of the Windows command interpreter.
COLOR          Sets the default console foreground and background colors.
COMP           Compares the contents of two files or sets of files.
COMPACT        Displays or alters the compression of files on NTFS partitions.
CONVERT        Converts FAT volumes to NTFS. You cannot convert the
               current drive.
COPY           Copies one or more files to another location.
DATE           Displays or sets the date.
DEL            Deletes one or more files.
DIR            Displays a list of files and subdirectories in a directory.
DISKPART       Displays or configures Disk Partition properties.
DOSKEY         Edits command lines, recalls Windows commands, and
               creates macros.
DRIVERQUERY    Displays current device driver status and properties.
ECHO           Displays messages, or turns command echoing on or off.
```

4. Dir: Lists all files and folders in the current directory.

```
C:\Users\Mugdha67>dir
Volume in drive C has no label.
Volume Serial Number is 8448-E3CA

Directory of C:\Users\Mugdha67

11/25/2024  03:32 PM    <DIR>          .
11/15/2024  12:42 PM    <DIR>          ..
10/21/2024  05:21 PM    <DIR>          .compile-run2
10/21/2024  05:04 PM    <DIR>          193 .gitconfig
11/25/2024  02:28 PM    <DIR>          .jdk
12/01/2024  11:11 AM    <DIR>          .VirtualBox
10/16/2024  11:13 PM    <DIR>          .vscode
10/17/2024  06:25 AM    <DIR>          Contacts
10/18/2024  03:36 PM    <DIR>          Documents
12/01/2024  04:18 PM    <DIR>          Downloads
10/17/2024  06:25 AM    <DIR>          Favorites
11/25/2024  03:32 PM    <DIR>          IdeaSnapshots
10/17/2024  06:25 AM    <DIR>          Links
10/17/2024  06:25 AM    <DIR>          Music
12/01/2024  06:30 PM    <DIR>          OneDrive
10/17/2024  06:25 AM    <DIR>          Saved Games
10/16/2024  05:42 PM    <DIR>          Searches
10/20/2024  10:52 PM    <DIR>          Videos
               1 File(s)              193 bytes
               17 Dir(s)  151,167,262,720 bytes free
```

5. Copy: Copies files from one location to another.

```
C:\Users\Mugdha67>copy C:\Users\Mugdha67\OneDrive\Documents\document.docx d:\
1 file(s) copied.
```

6. Move: Moves files from one location to another.

```
C:\Users\Mugdha67>move C:\Users\Mugdha67\OneDrive\Documents\document.docx d:\
1 file(s) moved.
```

7. Del: Deletes one or more files.

```
C:\Users\Mugdha67>del C:\Users\Mugdha67\OneDrive\Documents\delete.txt
C:\Users\Mugdha67>
```

8. Mkdir: Creates a new directory.

```
C:\Users\Mugdha67>mkdir C:\Users\Mugdha67\OneDrive\Documents\lalala.txt
```

9. Rmdir: Deletes a directory (folder).

```
C:\Users\Mugdha67\OneDrive\Documents>rmdir C:\Users\Mugdha67\OneDrive\Documents\lalala.txt
```

10. Ipconfig: Shows network configuration details, such as IP address and subnet mask.

```
C:\Users\Mugdha67>ipconfig

Windows IP Configuration

Ethernet adapter Ethernet:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . : Home

Ethernet adapter Ethernet 2:

    Connection-specific DNS Suffix  . :
    Link-local IPv6 Address . . . . . : fe80::629d:6dc1:839e:a053%7
    IPv4 Address. . . . . : 192.168.56.1
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . :

Wireless LAN adapter Local Area Connection* 1:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

Wireless LAN adapter Local Area Connection* 10:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :
```

11. Ping: Tests network connectivity to a remote host.

```
C:\Users\Mugdha67>ping youtube.com

Pinging youtube.com [142.250.194.110] with 32 bytes of data:
Reply from 142.250.194.110: bytes=32 time=47ms TTL=115
Reply from 142.250.194.110: bytes=32 time=36ms TTL=115
Reply from 142.250.194.110: bytes=32 time=36ms TTL=115
Reply from 142.250.194.110: bytes=32 time=36ms TTL=115

Ping statistics for 142.250.194.110:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 36ms, Maximum = 47ms, Average = 38ms
```

12. Tracert: Shows the path taken to a destination IP address.

```
C:\Users\Mugdha67>tracert youtube.com

Tracing route to youtube.com [142.250.194.110]
over a maximum of 30 hops:

  0  1 ms    1 ms    2 ms  192.168.1.1
  1  5 ms    1 ms    1 ms  10.167.220.1
  2  3 ms    1 ms    1 ms  10.20.108.113
  3  *        *        *    Request timed out.
  4  5 ms    3 ms    4 ms  10.10.100.89
  5  6 ms    3 ms    3 ms  10.14.14.45
  6  6 ms    4 ms    4 ms  103.26.244.28.summitgw.net [103.26.244.28]
  7  7 ms    4 ms    5 ms  103.26.244.23.summitgw.net [103.26.244.23]
  8  39 ms   36 ms   37 ms  142.250.173.40
  9  36 ms   35 ms   36 ms  142.251.77.27
 10  35 ms   37 ms   35 ms  142.251.52.225
 11  37 ms   37 ms   36 ms  del12s04-in-f14.1e100.net [142.250.194.110]

Trace complete.
```

13. Netstat: Displays active network connections and listening ports.

```
C:\Users\Mugdha67>netstat -an

Active Connections

Proto Local Address           Foreign Address         State
TCP   0.0.0.0:135              0.0.0.0:0               LISTENING
TCP   0.0.0.0:445              0.0.0.0:0               LISTENING
TCP   0.0.0.0:5040             0.0.0.0:0               LISTENING
TCP   0.0.0.0:7680             0.0.0.0:0               LISTENING
TCP   0.0.0.0:49664            0.0.0.0:0               LISTENING
TCP   0.0.0.0:49665            0.0.0.0:0               LISTENING
TCP   0.0.0.0:49666            0.0.0.0:0               LISTENING
TCP   0.0.0.0:49667            0.0.0.0:0               LISTENING
TCP   0.0.0.0:49668            0.0.0.0:0               LISTENING
TCP   0.0.0.0:49670            0.0.0.0:0               LISTENING
TCP   127.0.0.1:49272          0.0.0.0:0               LISTENING
TCP   127.0.0.1:49285          0.0.0.0:0               LISTENING
TCP   127.0.0.1:50346          0.0.0.0:0               LISTENING
TCP   127.0.0.1:50346          127.0.0.1:54575         ESTABLISHED
TCP   127.0.0.1:54570          127.0.0.1:54571         ESTABLISHED
```

14. Systeminfo: Shows detailed system information.

```
C:\Users\Mugdha67>systeminfo

Host Name:                MUGDHA67
OS Name:                  Microsoft Windows 11 Home Single Language
OS Version:               10.0.22631 N/A Build 22631
OS Manufacturer:         Microsoft Corporation
OS Configuration:        Standalone Workstation
OS Build Type:             Multiprocessor Free
Registered Owner:         Mugdha67
Registered Organization:
Product ID:                00327-70000-00001-AA982
Original Install Date:     10/17/2024, 6:22:42 AM
System Boot Time:          11/30/2024, 9:00:03 PM
System Manufacturer:       HP
System Model:              HP ProBook 440 G8 Notebook PC
System Type:               x64-based PC
Processor(s):               1 Processor(s) Installed.
                           [01]: Intel(R) Family 6 Model 140 Stepping
```

15. Sfc /scannow: Scans and repairs corrupted system files.

```
C:\Users\Mugdha67> sfc /scannow

You must be an administrator running a console session in order to
use the sfc utility.
```

16. Diskpart: Manages disks, partitions, and volumes.

17. Format: Formats a disk for use with Windows.

18. Shutdown: Shuts down, restarts, or logs off the computer.

19. Hostname: Displays the computer's hostname.

```
C:\Users\Mugdha67>diskpart

C:\Users\Mugdha67> hostname
Mugdha67
```

20. Date: Displays or sets the current date.

```
C:\Users\Mugdha67>date
The current date is: Sun 12/01/2024
Enter the new date: (mm-dd-yy) |
```

21. Time: Displays or sets the current time.

```
C:\Users\Mugdha67>time
The current time is: 20:42:56.38
Enter the new time: |
```

22. Echo: Displays a line of text.

```
C:\Users\Mugdha67>echo Kuldip is a good boy
Kuldip is a good boy
```

23. Pause: Pauses execution in a batch file.

```
C:\Users\Mugdha67>pause
Press any key to continue . . . |
```

24. Attrib: Displays or changes file attributes.

```
C:\Users\Mugdha67\OneDrive\Documents>attrib +r haldu.txt

C:\Users\Mugdha67\OneDrive\Documents>attrib haldu.txt
A      R             C:\Users\Mugdha67\OneDrive\Documents\haldu.txt
```

25. Assoc: Displays or modifies file type associations.

```
C:\Users\Mugdha67\OneDrive\Documents> assoc
.001=WinRAR
.386=vxdfile
.3g2=WMP11.AssocFile.3G2
.3gp=WMP11.AssocFile.3GP
.3gp2=WMP11.AssocFile.3G2
.3gpp=WMP11.AssocFile.3GP
.7z=ArchiveFolder
.8ba=Photoshop.PlugIn
.8bc=Photoshop.PlugIn
.8be=Photoshop.PlugIn
.8bf=Photoshop.PlugIn
.8bi=Photoshop.PlugIn
.8bp=Photoshop.PlugIn
.8bs=Photoshop.PlugIn
.8bx=Photoshop.PlugIn
.8by=Photoshop.PlugIn
```

26. Find: Searches for text within files.

```
C:\Users\Mugdha67\OneDrive\Documents>find /I "Eda" haldu.txt

----- HALDU.TXT
Eda Mone
```

27. Shutdown /s /f /t 0: Instantly shuts down the computer.

28. Title: Sets the Command Prompt window title.

29. Fc: Compares two files and displays differences.

```
C:\Users\Mugdha67\OneDrive\Documents>fc haldu.txt ramslow.txt
Comparing files haldu.txt and RAMSLOW.TXT
FC: no differences encountered
```

30. Schtasks: Manages scheduled tasks.

```
C:\Users\Mugdha67\OneDrive\Documents>schtasks /query

Folder: \
TaskName
=====
Adobe Acrobat Update Task      12/2/2024 4:00:00 AM  Ready
OneDrive Reporting Task-S-1-5-21-4136961 12/2/2024 11:36:20 AM Ready
OneDrive Standalone Update Task-S-1-5-21 12/2/2024 1:57:36 PM  Ready
ZoomUpdateTaskUser-S-1-5-21-4136961116-1 12/1/2024 9:26:00 PM  Ready

Folder: \GoogleSystem
TaskName
=====
INFO: There are no scheduled tasks presently available at your access level.

Folder: \Microsoft
TaskName
=====
```

31. Wmic: Windows Management Instrumentation Command-line to get system info.

```
C:\Users\Mugdha67\OneDrive\Documents> wmic os get name
Name
Microsoft Windows 11 Home Single Language|C:\Windows|\Device\Harddisk0\Partition3
```

32. Whoami: Displays the current user and domain.

```
C:\Users\Mugdha67\OneDrive\Documents>whoami
mugdha67\mugdha67
```

33. Route: Displays and modifies the IP routing table.

```
C:\Users\Mugdha67\OneDrive\Documents>route print
=====
Interface List
 4...50 81 40 95 a6 81 .....Realtek PCIe GbE Family Controller
 7...0a 00 27 00 00 07 .....VirtualBox Host-Only Ethernet Adapter
19...80 b6 55 25 6f df .....Microsoft Wi-Fi Direct Virtual Adapter
14...82 b6 55 25 6f de .....Microsoft Wi-Fi Direct Virtual Adapter #2
 6...80 b6 55 25 6f de .....Intel(R) Wi-Fi 6 AX201 160MHz
12...80 b6 55 25 6f e2 .....Bluetooth Device (Personal Area Network)
 1.....Software Loopback Interface 1
=====

IPv4 Route Table
=====
Active Routes:
Network Destination        Netmask          Gateway          Interface        Metric
0.0.0.0                    0.0.0.0          192.168.1.1      192.168.1.102    50
```


34. Pathping: Combines ping and tracert for a detailed path analysis.

```
C:\Users\Mugdha67\OneDrive\Documents>pathping codeforces.com

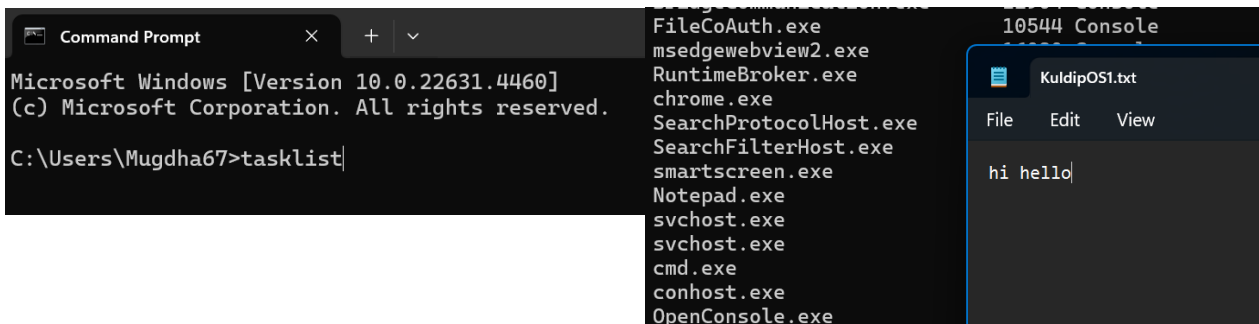
Tracing route to codeforces.com [104.26.7.164]
over a maximum of 30 hops:
  0  Mugdha67 [192.168.1.102]
  1  192.168.1.1
  2  10.167.220.1
  3  10.20.108.113
  4  *          10.20.242.85
  5  100.64.170.22
  6  100.64.170.38
  7  10.4.150.57
  8  172.27.1.9
  9  180.211.200.3
 10  104.26.7.164
```

35. Tasklist: Lists all running processes on the system.

```
C:\Users\Mugdha67>tasklist
```

Image Name	PID	Session Name	Session#	Mem Usage
System Idle Process	0	Services	0	8 K
System	4	Services	0	152 K
Secure System	108	Services	0	46,948 K
Registry	160	Services	0	58,268 K
smss.exe	576	Services	0	1,276 K
csrss.exe	892	Services	0	5,480 K
wininit.exe	988	Services	0	6,620 K
csrss.exe	1008	Console	1	6,576 K
services.exe	684	Services	0	11,164 K
winlogon.exe	8	Console	1	11,260 K
LsaIso.exe	1028	Services	0	3,880 K
lsass.exe	1052	Services	0	29,956 K
svchost.exe	1180	Services	0	33,296 K
fontdrvhost.exe	1216	Console	1	22,580 K
fontdrvhost.exe	1212	Services	0	13,164 K
WUDFHost.exe	1236	Services	0	7,396 K
svchost.exe	1364	Services	0	17,612 K
svchost.exe	1412	Services	0	10,500 K
WUDFHost.exe	1444	Services	0	8,764 K

36. Taskkill: Ends a running process by its name or PID.



The screenshot shows a Windows Task Manager window with the 'Processes' tab selected, displaying a list of running applications including FileCoAuth.exe, msedgeview2.exe, RuntimeBroker.exe, chrome.exe, SearchProtocolHost.exe, SearchFilterHost.exe, smartscreen.exe, Notepad.exe, svchost.exe, cmd.exe, conhost.exe, and OpenConsole.exe. In the background, a Command Prompt window is open, showing the command 'tasklist' being entered at the prompt 'C:\Users\Mugdha67>'. The Command Prompt also displays the Windows version '10.0.22631.4460' and the user 'Mugdha67'.

```
C:\Users\Mugdha67>taskkill /IM notepad.exe  
SUCCESS: Sent termination signal to the process "Notepad.exe" with PID 13764.
```

37. Chkdsk: Checks for disk errors and repairs them.

```
C:\Users\Mugdha67>chkdsk c: /f  
Access Denied as you do not have sufficient privileges or  
the disk may be locked by another process.  
You have to invoke this utility running in elevated mode  
and make sure the disk is unlocked.
```

38. Powercfg: Configures power settings and displays energy efficiency details.

```
C:\Users\Mugdha67>powercfg /hibernate on  
This command requires administrator privileges and must be executed from an elevated command prompt.
```

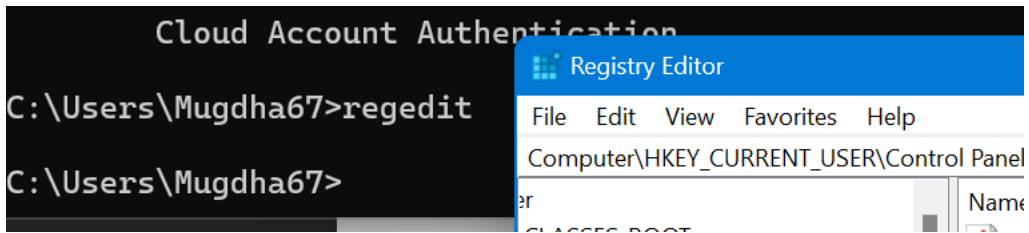
39. Gpupdate: Forces a Group Policy update.

```
C:\Users\Mugdha67>gpupdate /force  
Updating policy...  
  
Computer Policy update has completed successfully.
```

40. Gpresult: Displays applied Group Policy settings.

```
C:\Users\Mugdha67>gpresult /R  
  
Microsoft (R) Windows (R) Operating System Group Policy Result tool v2.0  
© Microsoft Corporation. All rights reserved.  
  
Created on 12/ 1/ 2024 at 10:34:36 PM  
  
RSOP data for MUGDHA67\Mugdha67 on MUGDHA67 : Logging Mode  
-----  
  
OS Configuration: Standalone Workstation  
OS Version: 10.0.22631  
Site Name: N/A  
Roaming Profile: N/A  
Local Profile: C:\Users\Mugdha67  
Connected over a slow link?: No  
  
USER SETTINGS  
-----  
  
Last time Group Policy was applied: 12/1/2024 at 10:31:00 PM  
Group Policy was applied from: N/A  
Group Policy slow link threshold: 500 kbps  
Domain Name: RABIUL  
Domain Type: WindowsNT 4
```

41. Regedit: Opens the Windows Registry Editor.



Discussion:

The Windows Command-Line Interface is an invaluable resource for performing system-related tasks efficiently. By learning a wide range of commands, users can optimize workflows, improve their troubleshooting capabilities, and master essential administrative operations. Developing command-line expertise empowers users to work faster, solve problems effectively, and fully harness the capabilities of the Windows operating system.