

Subject: Operating Systems	Subject Code: 22413
Semester: 5 th Semester	Course: Computer Engineering
Laboratory No: L001C	Name of Subject Teacher: Vijay Patil
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Experiment No:	04
Title of Experiment	Work with multiple Linux terminals and basic commands.

X. PROGRAM CODE:

- Check all the permissions started on your system. Stop the services which are not required for long time?

ANSWER:

Start:

Sudo service ssh start

Stop:

Sudo service ssh stop

Restart:

Sudo service ssh restart

List all services:

Service –status-all

```

(mc@kali)-[~]
$ service --status-all
[ - ] apache-htcacheclean
[ - ] apache2
[ - ] apparmor
[ - ] atftpd
[ - ] bluetooth
[ - ] console-setup.sh
[ + ] cron
[ - ] cryptdisks
[ - ] cryptdisks-early
[ + ] dbus
[ - ] dns2tcp
[ - ] exim4
[ + ] gdm3
[ + ] haveged
[ - ] inetsim
[ - ] iodined
[ - ] keyboard-setup.sh
[ + ] kmod
[ - ] mariadb
[ - ] miredo
[ - ] mosquitto
[ + ] networking
[ - ] nfs-common
[ - ] nginx
[ - ] nmbd
[ - ] openvpn
[ + ] pcscd
[ - ] plymouth
[ + ] plymouth-log
[ - ] postgresql
[ + ] procps
[ - ] ptunnel
[ - ] redis-server
[ - ] redsocks
[ - ] rpcbind
[ - ] rsync
[ - ] rwhod
[ - ] samba-ad-dc
[ - ] saned
[ - ] screen-cleanup
[ - ] smartmontools
[ - ] smbd
[ - ] snmpd
[ - ] speech-dispatcher
[ - ] ssh
[ - ] sslh
[ - ] stunnel4
[ - ] sudo
[ - ] sysstat
[ + ] virtualbox-guest-utils
[ - ] x11-common

(mc@kali)-[~]
$ sudo service sysstat start

(mc@kali)-[~]
$ service --status-all
[ - ] apache-htcacheclean
[ - ] apache2
[ - ] apparmor
[ - ] atftpd
[ - ] bluetooth
[ - ] console-setup.sh
[ + ] cron
[ - ] cryptdisks
[ - ] cryptdisks-early
[ + ] dbus
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[ - ] speech-dispatcher
[ - ] ssh
[ - ] sslh
[ - ] stunnel4
[ - ] sudo
[ + ] sysstat
[ + ] virtualbox-guest-utils
[ - ] x11-common

```

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$ sudo service sysstat stop
(mc@kali)-[~]
$ service --status-all
[ - ] apache-htcacheclean
[ - ] apache2
[ - ] apparmor
[ - ] atftpd
[ - ] bluetooth
[ - ] console-setup.sh
[ + ] cron
[ - ] cryptdisks
[ - ] cryptdisks-early
[ + ] dbus
[ - ] dns2tcp
[ - ] exim4
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[ - ] snmpd
[ - ] speech-dispatcher
[ - ] ssh
[ - ] sslh
[ - ] stunnel4
[ - ] sudo
[ - ] sysstat
[ + ] virtualbox-guest-utils
[ - ] x11-common

(mc@kali)-[~]
$ sudo service sysstat restart
(mc@kali)-[~]
$ service --status-all
[ - ] apache-htcacheclean
[ - ] apache2
[ - ] apparmor
[ - ] atftpd
[ - ] bluetooth
[ - ] console-setup.sh
[ + ] cron
[ - ] cryptdisks
[ - ] cryptdisks-early
[ + ] dbus
[ - ] dns2tcp
[ - ] exim4
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[ - ] sudo
[ + ] sysstat
[ + ] virtualbox-guest-utils
[ - ] x11-common

```

XI. Practical Related Questions

1. List various menus you observed on your system?

ANS:

File manager
Firefox web
Libre office writer
Libre office calc
Libre office impress
Ubuntu software
Amazon

System settings
Backup
Floppy disk
Trash

2. STUDY THE GUI OF YOUR LINUX SYSTEM?

ANS:

Ubuntu's GUI is clean and user-friendly, primarily using the GNOME desktop environment. At the top of the screen, you'll find a bar with system menus and status icons, while the Activities Overview lets you manage windows and launch apps. The left side features an app launcher and dock for quick access. Nautilus serves as the file manager for browsing and managing files. Overall, the interface is designed to be intuitive and straightforward, making navigation easy for both new and experienced users.

3. Differentiate between CLI and GUI?

ANS:

S.NO	CLI	GUI
1.	CLI is difficult to use.	Whereas it is easy to use.
2.	It consumes low memory.	While consuming more memory.
3.	In CLI we can obtain high precision.	While in it, low precision is obtained.
4.	CLI is faster than GUI.	The speed of GUI is slower than CLI.
5.	CLI operating system needs only a keyboard.	While GUI operating system needs both a mouse and keyboard.
6.	CLI's appearance can not be modified or changed.	While its appearance can be modified or changed.
7.	In CLI, input is entered only at a command prompt.	While in GUI, the input can be entered anywhere on the screen.

S.NO	CLI	GUI
8.	In CLI, the information is shown or presented to the user in plain text and files.	While in GUI, the information is shown or presented to the user in any form such as: plain text, videos, images, etc.
9.	In CLI, there are no menus provided.	While in GUI, menus are provided.
10.	There are no graphics in CLI.	While in GUI, graphics are used.
11.	CLI do not use any pointing devices.	While it uses pointing devices for selecting and choosing items.
12.	In CLI, spelling mistakes and typing errors are not avoided.	Whereas in GUI, spelling mistakes and typing errors are avoided.
13.	Some command-line environments provide multitasking but it is complicated to see several things on one screen.	GUI enables a user to easily observe and operate various things at once.
14.	CLI enables a user to simply script a series of instructions to carry out a task or execute a program.	GUI does not provide the facility to script a sequence of commands.

XIII. EXERCISE

1.What are the system calls provided by file management?

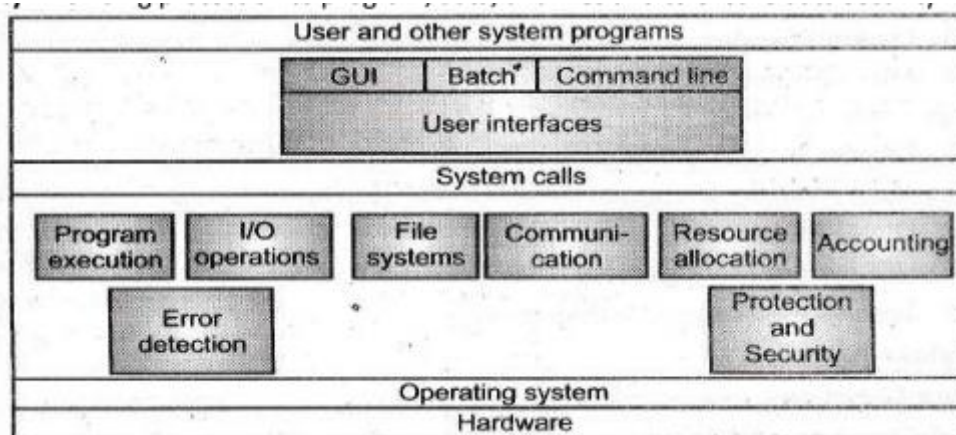
ANS:

- Create file, Delete file
- Open a file, Close a file
- Create directory
- Read, Write, Reposition
- Get file attributes, Set file attributes
- Create a link
- Change working directory

2.Draw and explain services provided by operating system?

ANS:

- Program Execution: system capability to load a program into memory and to run it.
- I/O operations: since user programs cannot execute I/O operations directly, the operating system must provide some means to perform I/O.
- File-system manipulation: program capability to read, write, create, and delete files. Maintain details of files or directories with their respective details.
- Communications: exchange of information between processes executing either on the same computer or on different systems tied together by a network. Implemented via shared memory or message passing.
- Error Detection: ensure correct computing by detecting errors in the CPU and memory hardware, in I/O devices, or in user programs.
- Resource Allocation: allocating resources to multiple users or multiple jobs running at the same time. Coordinating among peripherals.
- Accounting: keep track of and record which users use how much and what kinds of computer resources for account billing or for accumulating usage statistics.
- Protection: ensuring that all access to system resources is controlled.
- Security: Providing protection to program, data, and files and to ensure data security.



3. What are the system component of operating system?

ANS:

- Process management
- Files management
- Command Interpreter
- System calls
- Signals
- Network management
- Security management
- I/O device management
- Secondary storage management
- Main memory management