CHAPTER IV: UNIX COMMANDS

I/ Unix command syntax:

The shell is a command interpreter: it enables the user to communicate with the system. It is the program usually run when a user logs on. It displays a "prompt" and waits for commands from the user. The shell is also a powerful interpreted programming language. It provides the user with an environment consisting of a set of variables and aliases, and a command language.

Each command entered on the keyboard must be validated by a "return" (Enter) to be executed.

Username$ command -options <arguments>

command : what we want to do

options (optional) : how it's done

arguments (any) : on what we do it (files..)

The command name -- This describes the action we want the computer to perform. The system offers a fairly large number of commands (thousands).

Each command offers options that can modify its behavior. Options are often named by a single letter and preceded by a hyphen ("-").

Few commands absolutely require options: most can be run without specifying any.

Most of the time, the order in which options are given is not important. Most commands allow you to group options together: **ls -l -a** is equivalent to **ls -la**.

A very common option is -help (with two dashes); this option tells the command not to run and to describe all possible options.

Many commands apply to something (often a file). For example, the command to delete a file needs to know which file to delete: the file name is given as parameter.

II/ Unix control commands:

exit	exit (end of session)
CTRL-D	exit (equivalent to logout at prompt)
CTRL-U	cancel current line (e.g. wrong password)
CTRL-C	process interruption
CTRL-Z	process suspension (bg, background send)
CTRL-S CTRL-Q	flow control (stop and resume editing)

II/ Unix basic commands:

1. **ls** – lists a directory's content.
2. **pwd** – shows the current working directory's path.
3. **cd** – changes the working directory.
4. **mkdir** – creates a new directory.
5. **rmdir** – removes a folder or path.
6. **rm** – deletes a file.
7. **cp** – copies files and directories, including their content.
8. **mv** – moves or renames files and directories.
9. **touch** – creates a new empty file.
10. **file** – checks a file's type.
11. **zip and unzip** – creates and extracts a ZIP archive.
12. **tar** – archives files without compression in a TAR format.
13. **nano, vi, and jed** – edits a file with a text editor.
14. **cat** – lists, combines, and writes a file's content as a standard output.
15. **grep** – searches a string within a file.
16. **sed** – finds, replaces, or deletes patterns in a file.
17. **head** – displays a file's first ten lines.
18. **tail** – prints a file's last ten lines.
19. **awk** – finds and manipulates patterns in a file.
20. **sort** – reorders a file's content.
21. **cut** – sections and prints lines from a file.
22. **diff** – compares two files' content and their differences.
23. **tee** – prints command outputs in Terminal and a file.
24. **locate** – finds files in a system's database.

25. **find** – outputs a file or folder's location.
26. **sudo** – runs a command as a superuser.
27. **su** – runs programs in the current shell as another user.
28. **chmod** – modifies a file's read, write, and execute permissions.
29. **chown** – changes a file, directory, or symbolic link's ownership.
30. **useradd and userdel** – creates and removes a user account.
31. **df** – displays the system's overall disk space usage.
32. **du** – checks a file or directory's storage consumption.
33. **top** – displays running processes and the system's resource usage.
34. **htop** – works like **top** but with an interactive user interface.
35. **ps** – creates a snapshot of all running processes.
36. **uname** – prints information about your machine's kernel, name, and hardware.
37. **hostname** – shows your system's hostname.
38. **time** – calculates commands' execution time.
39. **systemctl** – manages system services.
40. **watch** – runs another command continuously.
41. **jobs** – displays a shell's running processes with their statuses.
42. **kill** – terminates a running process.
43. **shutdown** – turns off or restarts the system.
44. **ping** – checks the system's network connectivity.
45. **wget** – downloads files from a URL.
46. **curl** – transmits data between servers using URLs.
47. **scp** – securely copies files or directories to another system.
48. **rsync** – synchronizes content between directories or machines.
49. **Ifconfig** – displays the system's network interfaces and their configurations.
50. **netstat –** shows the system's network information, like routing and sockets.

51. **traceroute** – tracks a packet's hops to its destination.
52. **nslookup** – queries a domain's IP address and vice versa.
53. **dig** – displays DNS information, including record types.
54. **history** – lists previously run commands.
55. **man** – shows a command's manual.
56. **echo** – prints a message as a standard output.
57. **ln** – links files or directories.
58. **alias and unalias** – sets and removes an alias for a file or command.
59. **cal** – displays a calendar in Terminal.
60. **apt-get** – manages Debian-based distros package libraries.