**Linux & Terminal Commands**

**Why use command line?**

**More control over your machine**Mastering the command line gives you far greater control over your machine.

You can run commands to change permissions, view hidden files, interact with database, start servers, manage processes, etc.  
  
**And it’s faster**  
Once you learn the basic commands and commit them to memory, you can perform tasks much faster than you could using a GUI.  
There is a bit of learning curve, but it’s 100% worth it.

**Needed for cloud computing**   
Most cloud services are operated via a command line interface. If you plan on running any projects in the cloud or using cloud resource, you’ll need command line skills.

**So, what is Unix?**

**Unix** was an operating system developed at Bell labs in the mid-1960s.  
**Unix** is the “grandfather” of many modern operating systems that we frequently use today.

**GNU**

**Richard Stallman** was a leader in the group pf developers who aimed to create free software alternative to Unix.

In 1984, he began work on the GNU project, with the goal of creating an operating system that included “everything that normally comes with a Unix system so that one could get along without any software that is not Free”

Graphical user interface

Description automatically generated**The Linux Kernel**

Another developer, Linux Torvalds, was   
working on creating his own Kerner known as Linux.

The Kernel is the part of an OS that facilities interactions between hardware and software.

At that time, many GNU “pieces” were complete, but it lacked a kernel.  
Torvalds combined his kernel with the existing GNU components to create a full operating system.

**Linux Distributions**

A Linux distribution bundles together the Linux Kernel, GNU tools, documentation, a package manager, a window system, and desktop environment.

Graphical user interface

Description automatically generated**Shell**

A shell is a computer interface to an operating system.  
Shells expose the os’s services to human users or other programs.

The shell takes our commands and gives them to the operating system to perform.

**Terminal**

A terminal ia a program that runs a shell.  
  
**How to use Linux on windows?**

* Windows subsystem for Linux.
* Virtual machine.

Graphical user interface

Description automatically generated

Graphical user interface

Description automatically generated

**Commands**

1. **Whoami**Type whoami to print the username currently logged in to the terminal.
2. **whatis**To display what the command does.
3. **whereis**   
   To get the full path of the command.
4. **Cd**used to change the directory.
5. **Man**Get the manual page if you don’t know how to use a command.  
   man <command>

man -k passwd 🡪 to search with keyword of the passwd

1. **Clear or Clear + x**To clear all the previous that were ran in the current terminal.  
   Short cut: ctrl + L
2. **Pwd**View the current working directory.
3. **Ls**list all the files that the folder contains.  
   ls   
   ls -l 🡪 information about the file.  
   ls -a   
   ls -al 🡪 long format, more information.

if you add a folder name or path, it will print that folder contents:  
ls /bin

1. **Mkdir**

Make directory/ folder.

Mkdir a

Mkdir a b

Mkdir a/b 🡪 create folder b inside folder a  
Mkdir -p W/S/L 🡪 if S is not existing it would be an error, but **p** tells to create any needed directory to create **L.**

1. **Touch**

Create file.  
if created an existed file, it would change the timestamp of it.

1. **Rmdir**Delete empty directory.

Rmdir -p W/S/L 🡪 remove the empty directory and subdirectories.

1. **Rm**Delete files and directories.

rm -v file 🡪 it tells what is deleted.  
 rm -r folder 🡪 remove entire folder and its files.  
 rm -ir folder 🡪 asked for the file you want to delete.

rm -rv folder 🡪 remove entire folder and its files, telling what is deleted.  
rm -r folder 🡪 to force remove the folder.

1. **Open** This command lets you open a file and directory.  
     
    open <filename>  
    open <directory name>
2. **Mv**Move and rename files and directories.  
     
   mv fileDirectory newfilename  
   mv fileDirectory newFileDirectory
3. **Date**To know the date.
4. **File**

Display the type of the file.

file filename

1. **Cat** To read the file(display all)
2. **More** To read the file and divide it into pages.
3. **Wc**

Count lines of files.

1. **head**

To display first lines.

head fileDirectory 🡪 display first 10 lines.

head -4 fileDirectory 🡪 display first 4 lines.

1. **tail**

To display last lines.

tail fileDirectory 🡪 display last 10 lines.

tail -4 fileDirectory 🡪 display last 4 lines.

1. **Cp**

Copy files and directories.

Cp directory newDirectory

1. **Ps** To see the current process that the user is running.