

Introduction

In order to work with the operating system I must know how to interact with it and which commands I can use in the terminal in order to do some actions. The files are structured in a tree file system separated by a slash / and everything's starts from the root that is named "/".

◆ The gcc compiler

This compiler is the most used by beginners and it is one of the most performant compilers for C programming. I will use it to compile and see the errors of the code I wrote.

◆ How to use it

```
gcc -Wall app.c -o app
```

```
./app arg1 arg2 ...
```

◆ Ways to debug the code

- Use printf between the code
- use the gdb command, but it has a disadvantage as it is a little complex and hard to use from the terminal
- others: valgrind, strace (I personally didn't use them so far)

It is recommended to add the -g flag to gcc when I want to debug a C program.

```
gcc -Wall -g app.c -o app
```

◆ The user interface commands

◆ File and Directory Management

- pwd — Prints the current working directory.
- cd <directory> — Changes the current working directory.
- ls [-adgilrst] <file> — Lists directory contents with optional details.
- mkdir <directory> — Creates a new directory.
- rmdir <directory> — Removes an empty directory.
- rm [options] <file> — Deletes specified files.
- mv <source> <destination> — Renames or moves a file/directory.
- cp <source> <destination> — Copies a file or directory.
- ln <file1> [file2] — Creates a hard link (or symbolic link with -s).

◆ File Viewing and Processing

- cat <file> — Displays file contents.
- od [options] <file> — Displays file content in octal, hex, ASCII, etc.
- grep [options] <pattern> <file> — Searches for lines matching a pattern.
- wc [options] <file> — Counts characters, words, and lines in a file.
- find <directory> <condition> — Searches for files matching conditions.

◆ Disk and Storage Management

- df [filesystem] — Displays disk space usage information.
- du [options] [directory] — Shows space usage for files and directories.

◆ **Process Management**

- `ps [options] [process]` — Displays running processes and statuses.
- `kill <process_id>` — Terminates a process using its PID.

◆ **System and User Management**

- `who [am I]` — Displays currently logged-in users.
- `login <user>` — Logs in as a specific user.
- `logout` — Logs out from the system.

◆ **System Utilities**

- `date` — Prints the current date and time.
- `echo [-n] <message>` — Displays a message to the terminal.
- `chmod <permissions> <file>` — Changes file permissions.

◆ **Printing and Output Handling**

- `lpr [options] <file>` — Sends a file to the printer.

◆ **Conditional Execution and Testing**

- `test <expression>` — Evaluates an expression and returns success (0) or failure (1).