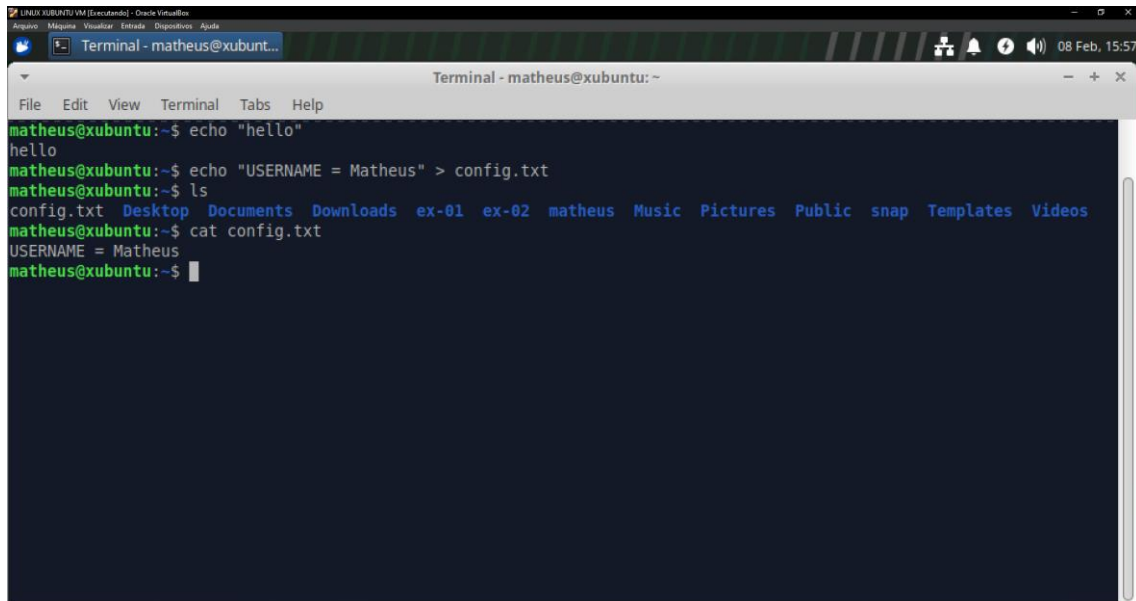
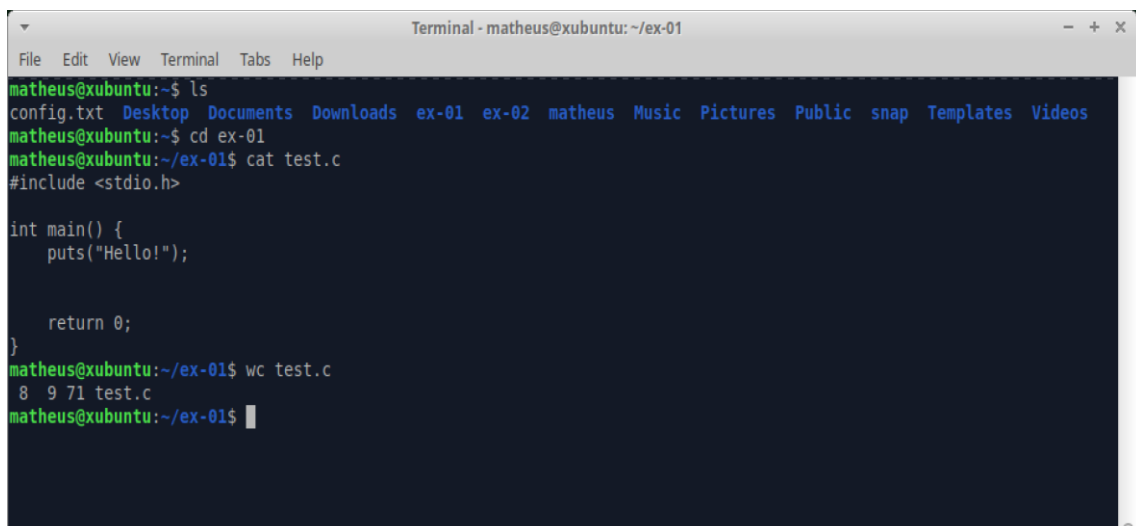


- Echo: “prints to the output the argument passed to it. We can append the output to a file”

A terminal window titled "Terminal - matheus@xubuntu: ~" showing the execution of the echo command. The user enters "echo 'hello'" and the output "hello" is displayed. Then, the user enters "echo 'USERNAME = Matheus' > config.txt" to create a file. Finally, the user runs "cat config.txt" and the output "USERNAME = Matheus" is shown. The terminal window has a menu bar with File, Edit, View, Terminal, Tabs, and Help. The status bar at the bottom shows the date and time as 08 Feb, 15:57.

```
matheus@xubuntu:~$ echo "hello"
hello
matheus@xubuntu:~$ echo "USERNAME = Matheus" > config.txt
matheus@xubuntu:~$ ls
config.txt Desktop Documents Downloads ex-01 ex-02 matheus Music Pictures Public snap Templates Videos
matheus@xubuntu:~$ cat config.txt
USERNAME = Matheus
matheus@xubuntu:~$
```

- WC: “gives us useful information about a file or input it receives via pipes”
Print newline, word, and byte counts for each file

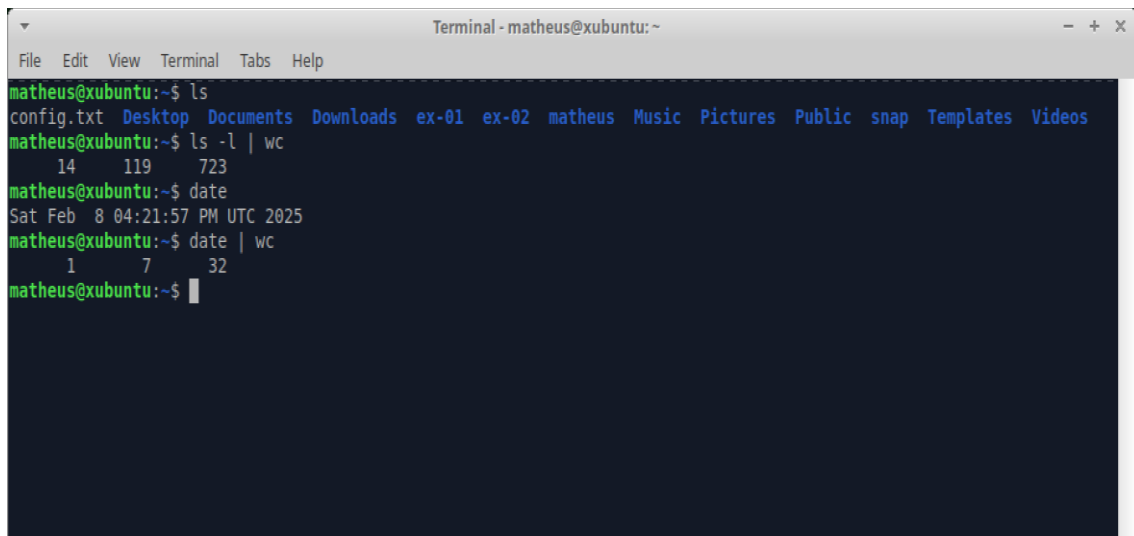
A terminal window titled "Terminal - matheus@xubuntu: ~/ex-01" showing the execution of the wc command. The user navigates to the "ex-01" directory and runs "cat test.c" to display the contents of a C program. Then, the user runs "wc test.c" and the output "8 9 71 test.c" is shown, indicating 8 lines, 9 words, and 71 bytes. The terminal window has a menu bar with File, Edit, View, Terminal, Tabs, and Help.

```
matheus@xubuntu:~$ ls
config.txt Desktop Documents Downloads ex-01 ex-02 matheus Music Pictures Public snap Templates Videos
matheus@xubuntu:~$ cd ex-01
matheus@xubuntu:~/ex-01$ cat test.c
#include <stdio.h>

int main() {
    puts("Hello!");

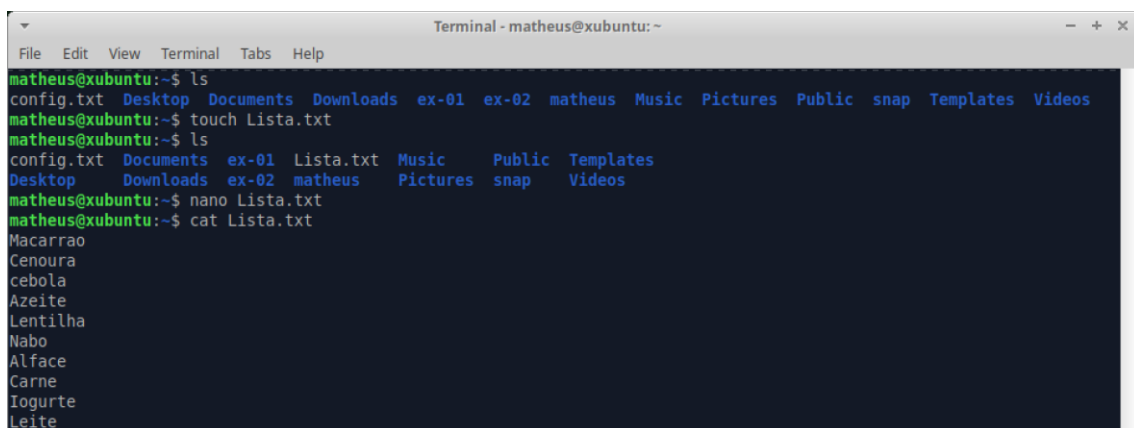
    return 0;
}
matheus@xubuntu:~/ex-01$ wc test.c
 8  9 71 test.c
matheus@xubuntu:~/ex-01$
```

- Piping: “|”



```
Terminal - matheus@xubuntu: ~
File Edit View Terminal Tabs Help
matheus@xubuntu:~$ ls
config.txt Desktop Documents Downloads ex-01 ex-02 matheus Music Pictures Public snap Templates Videos
matheus@xubuntu:~$ ls -l | wc
 14   119   723
matheus@xubuntu:~$ date
Sat Feb  8 04:21:57 PM UTC 2025
matheus@xubuntu:~$ date | wc
   1     7    32
matheus@xubuntu:~$
```

- Sort: Organizar, Classificar



```
Terminal - matheus@xubuntu: ~
File Edit View Terminal Tabs Help
matheus@xubuntu:~$ ls
config.txt Desktop Documents Downloads ex-01 ex-02 matheus Music Pictures Public snap Templates Videos
matheus@xubuntu:~$ touch Lista.txt
matheus@xubuntu:~$ ls
config.txt Documents ex-01 Lista.txt Music Public Templates
Desktop Downloads ex-02 matheus Pictures snap Videos
matheus@xubuntu:~$ nano Lista.txt
matheus@xubuntu:~$ cat Lista.txt
Macarrao
Cenoura
cebola
Azeite
Lentilha
Nabo
Alface
Carne
Iogurte
Leite
```

Primeiramente criei um arquivo de texto chamado Lista.txt utilizando o comando “touch” e depois simulei uma lista de compras com o comando “nano”. O conteúdo do arquivo Lista.txt pode ser verificado com o comando “cat”.

```
Terminal - matheus@xubuntu: ~
File Edit View Terminal Tabs Help
matheus@xubuntu:~$ nano Lista.txt
matheus@xubuntu:~$ cat Lista.txt
Macarrao
Cenoura
cebola
Azeite
Lentilha
Nabo
Alface
Carne
Iogurte
Leite
matheus@xubuntu:~$ sort Lista.txt
Alface
Azeite
Carne
cebola
Cenoura
Iogurte
Leite
Lentilha
Macarrao
Nabo
matheus@xubuntu:~$
```

Comando “sort” classificando a lista por ordem alfabética.

- Uniq: “report or omit repeated lines”

```
Terminal - matheus@xubuntu: ~
File Edit View Terminal Tabs Help
UNIQ(1) User Commands UNIQ(1)
NAME
    uniq - report or omit repeated lines
SYNOPSIS
    uniq [OPTION]... [INPUT [OUTPUT]]
DESCRIPTION
    Filter adjacent matching lines from INPUT (or standard input), writing to OUTPUT (or standard output).
    With no options, matching lines are merged to the first occurrence.
    Mandatory arguments to long options are mandatory for short options too.
    -c, --count
        prefix lines by the number of occurrences
    -d, --repeated
        only print duplicate lines, one for each group
    -D
        print all duplicate lines
```

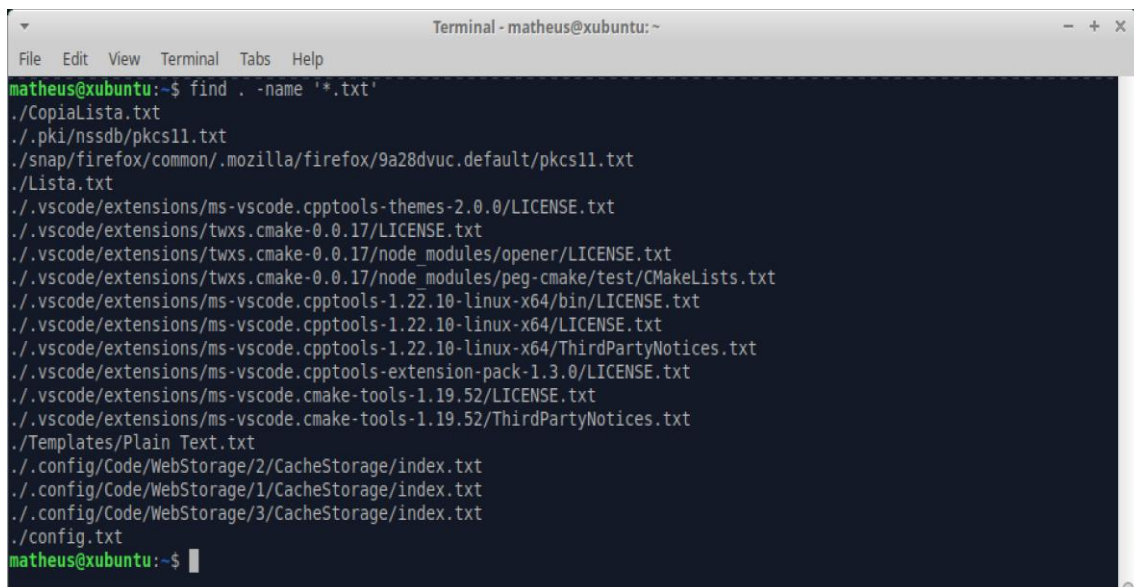
- Expansions (echo):

```
Terminal - matheus@xubuntu: ~
File Edit View Terminal Tabs Help
matheus@xubuntu:~$ ls
config.txt  Documents  ex-01  Lista.txt  Music  Public  Templates
Desktop    Downloads  ex-02  matheus    Pictures snap    Videos
matheus@xubuntu:~$ echo *.txt
config.txt Lista.txt
matheus@xubuntu:~$ echo *.??
*.??
matheus@xubuntu:~$ echo *????
config.txt Desktop Documents ex-01 ex-02 Lista.txt matheus Music Pictures Public snap Templates Videos
matheus@xubuntu:~$
```

- Diff: diferenças entre arquivos similares

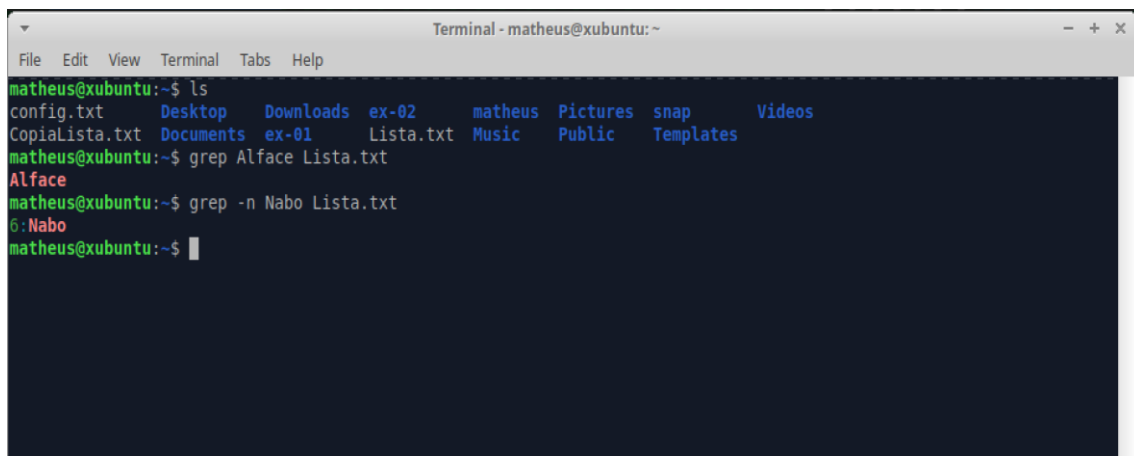
```
Terminal - matheus@xubuntu: ~
File Edit View Terminal Tabs Help
matheus@xubuntu:~$ ls
config.txt  Desktop  Downloads  ex-02  matheus  Pictures  snap  Videos
CopiaLista.txt Documents ex-01  Lista.txt Music  Public  Templates
matheus@xubuntu:~$ cp Lista.txt CopiaLista.txt
matheus@xubuntu:~$ ls
config.txt  Desktop  Downloads  ex-02  matheus  Pictures  snap  Videos
CopiaLista.txt Documents ex-01  Lista.txt Music  Public  Templates
matheus@xubuntu:~$ echo "Beterraba" >> CopiaLista.txt
matheus@xubuntu:~$ diff Lista.txt CopiaLista.txt
10a11
> Beterraba
matheus@xubuntu:~$
```

- Find: “command used to find files or folders matching a particular search pattern”



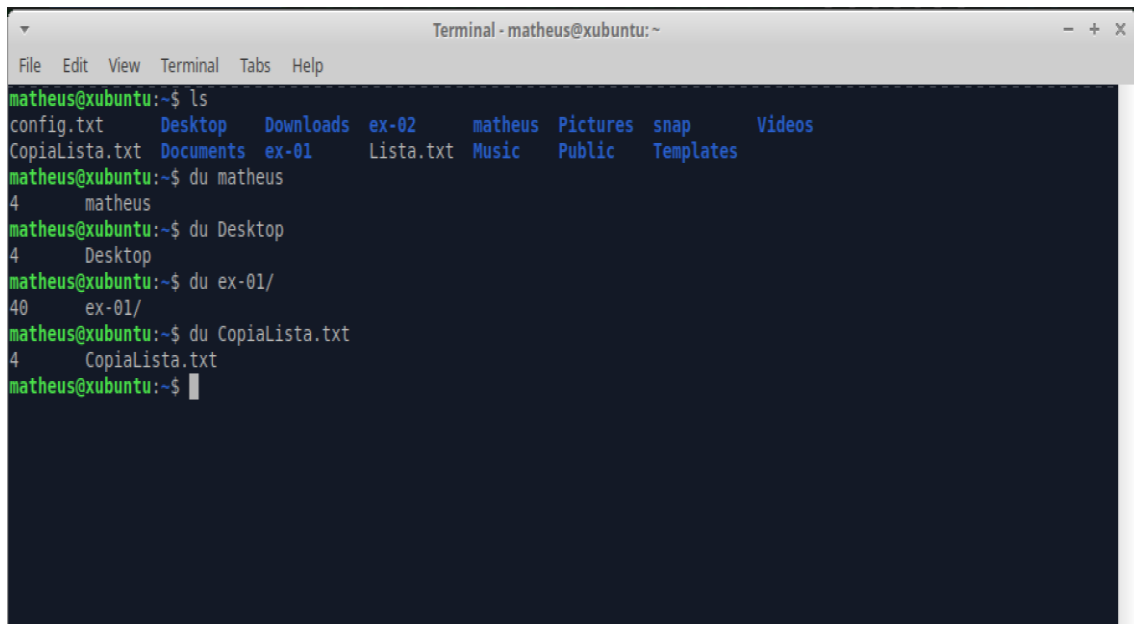
```
Terminal - matheus@xubuntu: ~
File Edit View Terminal Tabs Help
matheus@xubuntu:~$ find . -name '*.txt'
./CopiaLista.txt
./pki/nssdb/pkcs11.txt
./snap/firefox/common/.mozilla/firefox/9a28dvuc.default/pkcs11.txt
./Lista.txt
./vscode/extensions/ms-vscode.cpptools-themes-2.0.0/LICENSE.txt
./vscode/extensions/twxs.cmake-0.0.17/LICENSE.txt
./vscode/extensions/twxs.cmake-0.0.17/node_modules/opener/LICENSE.txt
./vscode/extensions/twxs.cmake-0.0.17/node_modules/peg-cmake/test/CMakeLists.txt
./vscode/extensions/ms-vscode.cpptools-1.22.10-linux-x64/bin/LICENSE.txt
./vscode/extensions/ms-vscode.cpptools-1.22.10-linux-x64/LICENSE.txt
./vscode/extensions/ms-vscode.cpptools-1.22.10-linux-x64/ThirdPartyNotices.txt
./vscode/extensions/ms-vscode.cpptools-extension-pack-1.3.0/LICENSE.txt
./vscode/extensions/ms-vscode.cmake-tools-1.19.52/LICENSE.txt
./vscode/extensions/ms-vscode.cmake-tools-1.19.52/ThirdPartyNotices.txt
./Templates/Plain Text.txt
./config/Code/WebStorage/2/CacheStorage/index.txt
./config/Code/WebStorage/1/CacheStorage/index.txt
./config/Code/WebStorage/3/CacheStorage/index.txt
./config.txt
matheus@xubuntu:~$
```

- Grep: “helps us find a text inside of files”



```
Terminal - matheus@xubuntu: ~
File Edit View Terminal Tabs Help
matheus@xubuntu:~$ ls
config.txt  Desktop  Downloads  ex-02  matheus  Pictures  snap  Videos
CopiaLista.txt  Documents  ex-01  Lista.txt  Music  Public  Templates
matheus@xubuntu:~$ grep Alfaca Lista.txt
Alfaca
matheus@xubuntu:~$ grep -n Nabu Lista.txt
6:Nabu
matheus@xubuntu:~$
```

- Du: “calculate the size of a directory as a whole”



A terminal window titled "Terminal - matheus@xubuntu: ~" showing the output of the 'du' command. The user first runs 'ls' to list files and directories. Then, they run 'du' on 'matheus', 'Desktop', 'ex-01/', and 'CopiaLista.txt'. The output shows the disk usage in kilobytes for each item.

```
matheus@xubuntu:~$ ls
config.txt  Desktop  Downloads  ex-02  matheus  Pictures  snap  Videos
CopiaLista.txt  Documents  ex-01  Lista.txt  Music  Public  Templates

matheus@xubuntu:~$ du matheus
4      matheus

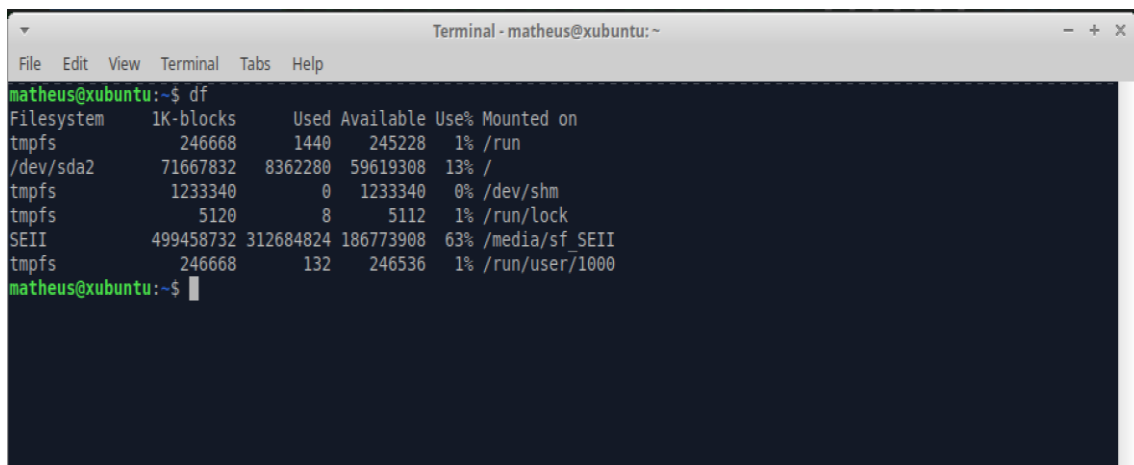
matheus@xubuntu:~$ du Desktop
4      Desktop

matheus@xubuntu:~$ du ex-01/
40     ex-01/

matheus@xubuntu:~$ du CopiaLista.txt
4      CopiaLista.txt

matheus@xubuntu:~$
```

- Df: “used to get disk usage info”



A terminal window titled "Terminal - matheus@xubuntu: ~" showing the output of the 'df' command. The output is a table with columns: Filesystem, 1K-blocks, Used, Available, Use%, and Mounted on.

```
matheus@xubuntu:~$ df
Filesystem      1K-blocks    Used Available Use% Mounted on
tmpfs           246668      1440   245228    1% /run
/dev/sda2       71667832  8362280  59619308   13% /
tmpfs          1233340         0  1233340    0% /dev/shm
tmpfs           5120         8     5112    1% /run/lock
SEII            499458732 312684824 186773908   63% /media/sf_SEII
tmpfs           246668      132   246536    1% /run/user/1000

matheus@xubuntu:~$
```

- Ps: “to inspect all the processes running”

```

Terminal - matheus@xubuntu: ~
File Edit View Terminal Tabs Help
matheus@xubuntu:~$ ps
  PID TTY          TIME CMD
  4610 pts/0    00:00:00 bash
  4723 pts/0    00:00:00 ps
matheus@xubuntu:~$

```

- Top: “display and update sorted information about processes”

```

Terminal - matheus@xubuntu: ~
File Edit View Terminal Tabs Help
top - 20:44:16 up 3:44, 1 user, load average: 0.00, 0.00, 0.00
Tasks: 172 total, 1 running, 171 sleeping, 0 stopped, 0 zombie
%Cpu(s): 0.2 us, 0.3 sy, 0.0 ni, 99.5 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st
MiB Mem : 2408.9 total, 271.1 free, 809.6 used, 1491.4 buff/cache
MiB Swap: 0.0 total, 0.0 free, 0.0 used, 1599.3 avail Mem

  PID USER      PR  NI   VIRT   RES   SHR  S  %CPU  %MEM     TIME+ COMMAND
 1308 root        20   0 332544 83928 50324 S   1.7   3.4   0:18.31 Xorg
 1808 matheus    20   0 215524 3104  2688 S   0.3   0.1   0:13.30 VBoxClient
 4601 matheus    20   0 507116 51804 39048 S   0.3   2.1   0:01.48 xfce4-terminal
    1 root         0   0  22960 13912  9432 S   0.0   0.6   0:02.63 systemd
    2 root         0   0      0     0     0 S   0.0   0.0   0:00.00 kthreadd
    3 root         0   0      0     0     0 S   0.0   0.0   0:00.00 pool workqueue_release
    4 root         0 -20     0     0     0 I   0.0   0.0   0:00.00 kworker/R-rcu_g
    5 root         0 -20     0     0     0 I   0.0   0.0   0:00.00 kworker/R-rcu_p
    6 root         0 -20     0     0     0 I   0.0   0.0   0:00.00 kworker/R-slub
    7 root         0 -20     0     0     0 I   0.0   0.0   0:00.00 kworker/R-netns
    9 root        20   0      0     0     0 I   0.0   0.0   0:02.81 kworker/0:1-events
   10 root         0 -20     0     0     0 I   0.0   0.0   0:00.00 kworker/0:0H-kblockd
   12 root         0 -20     0     0     0 I   0.0   0.0   0:00.00 kworker/R-mm_pe
   13 root        20   0      0     0     0 I   0.0   0.0   0:00.00 rcu_tasks_kthread
   14 root        20   0      0     0     0 I   0.0   0.0   0:00.00 rcu_tasks_rude_kthread
   15 root        20   0      0     0     0 I   0.0   0.0   0:00.00 rcu_tasks_trace_kthread
   16 root        20   0      0     0     0 S   0.0   0.0   0:00.00 ksoftirqd/0

```

- Kill

```

Terminal - matheus@xubuntu: ~
File Edit View Terminal Tabs Help

KILL(1)                                User Commands                                KILL(1)

NAME
    kill - send a signal to a process

SYNOPSIS
    kill [options] <pid> [...]

DESCRIPTION
    The default signal for kill is TERM. Use -l or -L to list available signals. Particularly useful signals include HUP, INT, KILL, STOP, CONT, and 0. Alternate signals may be specified in three ways: -9, -SIGKILL or -KILL. Negative PID values may be used to choose whole process groups; see the PGID column in ps command output. A PID of -1 is special; it indicates all processes except the kill process itself and init.

OPTIONS
    <pid> [...]
        Send signal to every <pid> listed.

    -<signal>
    -s <signal>
    --signal <signal>
        Specify the signal to be sent. The signal can be specified by using name or number. The behavior of signals is explained in signal(7) manual page.

Manual page kill(1) line 1 (press h for help or q to quit)

```

- Jobs, fg, bg: “No manual entry for ...”
- Gzip: “protocol to compress files”
- Gunzip: equivalente ao ‘gzip -d filename.gz’ / unzip a compressed file

```

Terminal - matheus@xubuntu: ~
File Edit View Terminal Tabs Help

matheus@xubuntu:~$ ls
config.txt  Desktop  Downloads  ex-02  matheus  Pictures  snap  Videos
CopiaLista.txt  Documents  ex-01  Lista.txt  Music  Public  Templates
matheus@xubuntu:~$ gzip -k CopiaLista.txt
matheus@xubuntu:~$ ls
config.txt  CopiaLista.txt.gz  Documents  ex-01  Lista.txt  Music  Public  Templates
CopiaLista.txt  Desktop  Downloads  ex-02  matheus  Pictures  snap  Videos
matheus@xubuntu:~$ rm CopiaLista.txt
matheus@xubuntu:~$ ls
config.txt  Desktop  Downloads  ex-02  matheus  Pictures  snap  Videos
CopiaLista.txt.gz  Documents  ex-01  Lista.txt  Music  Public  Templates
matheus@xubuntu:~$ gunzip CopiaLista.txt.gz
matheus@xubuntu:~$ ls
config.txt  Desktop  Downloads  ex-02  matheus  Pictures  snap  Videos
CopiaLista.txt  Documents  ex-01  Lista.txt  Music  Public  Templates
matheus@xubuntu:~$

```


- Tar: command used to create an archive, grouping multiple files in a single file”

```

Terminal - matheus@xubuntu: ~/ex-01
File Edit View Terminal Tabs Help

matheus@xubuntu:~$ ls
config.txt  Desktop  Downloads  ex-02  matheus  Pictures  snap  Videos
CopiaLista.txt  Documents  ex-01  Lista.txt  Music  Public  Templates

matheus@xubuntu:~$ cd ex-01
matheus@xubuntu:~/ex-01$ ls
qualquer_coisa  test  test.c
matheus@xubuntu:~/ex-01$ tar -cf arquivo.tar qualquer_coisa test test.c
matheus@xubuntu:~/ex-01$ ls
arquivo.tar  qualquer_coisa  test  test.c

```

- Alias:

```

Terminal - matheus@xubuntu: ~
File Edit View Terminal Tabs Help

matheus@xubuntu:~$ alias myls='ls -la'
matheus@xubuntu:~$ myls
total 184
drwxr-x--- 21 matheus matheus 4096 Feb  8 21:00 .
drwxr-xr-x  3 root    root    4096 Sep 22 19:38 ..
-rw-r----- 1 matheus matheus 2466 Feb  8 19:10 .bash_history
-rw-r----- 1 matheus matheus 220 Mar 31 2024 .bash_logout
-rw-r----- 1 matheus matheus 3771 Mar 31 2024 .bashrc
drwxrwxr-x 10 matheus matheus 4096 Nov  4 15:51 .cache
drwxr-xr-x 15 matheus matheus 4096 Nov  4 15:51 .config
-rw-rw-r--  1 matheus matheus  19 Feb  8 15:55 config.txt
-rw-rw-r--  1 matheus matheus  82 Feb  8 16:51 CopiaLista.txt
drwxr-xr-x  2 matheus matheus 4096 Oct  6 20:55 Desktop
-rw-r----- 1 matheus matheus  26 Sep 22 19:39 .dmrc
drwxr-xr-x  2 matheus matheus 4096 Nov  3 20:18 Documents
drwxrwxr-x  3 matheus matheus 4096 Nov  4 15:53 .dotnet
drwxr-xr-x  2 matheus matheus 4096 Sep 22 19:39 Downloads
drwxrwxr-x  2 matheus matheus 4096 Feb  8 21:06 ex-01
drwxrwxr-x  2 matheus matheus 4096 Nov  6 00:22 ex-02
-rw-r----- 1 matheus matheus   0 Sep 22 19:39 .ICEauthority
-rw-r----- 1 matheus matheus  20 Feb  8 20:48 .lessht
-rw-rw-r--  1 matheus matheus  72 Feb  8 16:34 Lista.txt
drwx----- 4 matheus matheus 4096 Sep 22 19:39 .local
drwxrwxr-x  2 matheus matheus 4096 Sep 22 23:31 matheus

```

- Xargs:

```

Terminal - matheus@xubuntu: ~
File Edit View Terminal Tabs Help
XARGS(1) General Commands Manual XARGS(1)

NAME
    xargs - build and execute command lines from standard input

SYNOPSIS
    xargs [options] [command [initial-arguments]]

DESCRIPTION
    This manual page documents the GNU version of xargs. xargs reads items from the standard input, delimited by blanks (which can be protected with double or single quotes or a backslash) or newlines, and executes the command (default is echo) one or more times with any initial-arguments followed by items read from standard input. Blank lines on the standard input are ignored.

    The command line for command is built up until it reaches a system-defined limit (unless the -n and -L options are used). The specified command will be invoked as many times as necessary to use up the list of input items. In general, there will be many fewer invocations of command than there were items in the input. This will normally have significant performance benefits. Some commands can usefully be executed in parallel too; see the -P option.

    Because Unix filenames can contain blanks and newlines, this default behaviour is often problematic; filenames containing blanks and/or newlines are incorrectly processed by xargs. In these situations it is better to use the -0 option, which prevents such problems. When using this option you will need to ensure
Manual page xargs(1) line 1 (press h for help or q to quit)

```

- Ln: “used to create links”

```

Terminal - matheus@xubuntu: ~/ex-02
File Edit View Terminal Tabs Help

matheus@xubuntu:~/ex-02$ echo "I AM ORIGINAL" > original.txt
matheus@xubuntu:~/ex-02$ cat original.txt
I AM ORIGINAL
matheus@xubuntu:~/ex-02$ ln original.txt hardlink.txt
matheus@xubuntu:~/ex-02$ cat hardlink.txt
I AM ORIGINAL
matheus@xubuntu:~/ex-02$ echo "MORE STUFF" >> original.txt
matheus@xubuntu:~/ex-02$ cat original.txt
I AM ORIGINAL
MORE STUFF
matheus@xubuntu:~/ex-02$ cat hardlink.txt
I AM ORIGINAL
MORE STUFF
matheus@xubuntu:~/ex-02$ echo "CHANGE FROM HARDLINK!!!" >> hardlink.txt
echo "CHANGE FROM HARDLINKcat hardlink.txt !" >> hardlink.txt
matheus@xubuntu:~/ex-02$ cat hardlink.txt
I AM ORIGINAL
MORE STUFF
CHANGE FROM HARDLINKcat hardlink.txt !
matheus@xubuntu:~/ex-02$ cat original.txt
I AM ORIGINAL
MORE STUFF
CHANGE FROM HARDLINKcat hardlink.txt !
matheus@xubuntu:~/ex-02$

```

- Who: displays the users logged in to the system
- Su: to switch users
- Sudo:

```

Terminal - matheus@xubuntu: ~
File Edit View Terminal Tabs Help
SUDO(8) System Manager's Manual SUDO(8)

NAME
    sudo, sudoedit - execute a command as another user

SYNOPSIS
    sudo -h | -K | -k | -V
    sudo -v [-ABkNnS] [-g group] [-h host] [-p prompt] [-u user]
    sudo -l [-ABkNnS] [-g group] [-h host] [-p prompt] [-U user] [-u user] [command [arg ...]]
    sudo [-ABbEHnPS] [-C num] [-D directory] [-g group] [-h host] [-p prompt] [-R directory] [-r role]
        [-t type] [-T timeout] [-u user] [VAR=value] [-i | -s] [command [arg ...]]
    sudoedit [-ABkNnS] [-C num] [-D directory] [-g group] [-h host] [-p prompt] [-R directory] [-r role]
        [-t type] [-T timeout] [-u user] file ...

DESCRIPTION
    sudo allows a permitted user to execute a command as the superuser or another user, as specified by the security policy. The invoking user's real (not effective) user-ID is used to determine the user name with which to query the security policy.

    sudo supports a plugin architecture for security policies, auditing, and input/output logging. Third parties can develop and distribute their own plugins to work seamlessly with the sudo front-end. The default security policy is sudoers, which is configured via the file /etc/sudoers, or via LDAP. See the "Plugins" section for more information.

Manual page sudo(8) line 1 (press h for help or q to quit)

```

- Passwd: command to change the user password
- Chown: change ownership

```

Terminal - matheus@xubuntu: ~
File Edit View Terminal Tabs Help
CHOWN(1) User Commands CHOWN(1)

NAME
    chown - change file owner and group

SYNOPSIS
    chown [OPTION]... [OWNER][:GROUP] FILE...
    chown [OPTION]... --reference=RFILE FILE...

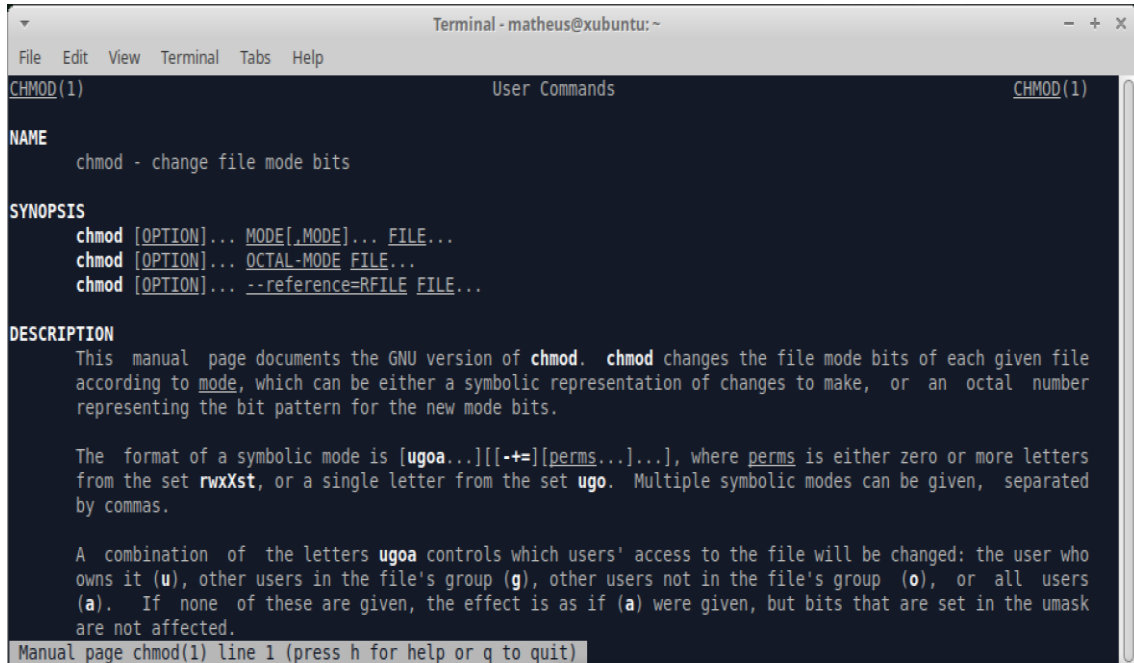
DESCRIPTION
    This manual page documents the GNU version of chown. chown changes the user and/or group ownership of each given file. If only an owner (a user name or numeric user ID) is given, that user is made the owner of each given file, and the files' group is not changed. If the owner is followed by a colon and a group name (or numeric group ID), with no spaces between them, the group ownership of the files is changed as well. If a colon but no group name follows the user name, that user is made the owner of the files and the group of the files is changed to that user's login group. If the colon and group are given, but the owner is omitted, only the group of the files is changed; in this case, chown performs the same function as chgrp. If only a colon is given, or if the entire operand is empty, neither the owner nor the group is changed.

OPTIONS
    Change the owner and/or group of each FILE to OWNER and/or GROUP. With --reference, change the owner and group of each FILE to those of RFILE.

Manual page chown(1) line 1 (press h for help or q to quit)

```

- Chmod: change permissions of a file or directory. Need to specify the permissions (Who/What/Which)



```
Terminal - matheus@xubuntu: ~
File Edit View Terminal Tabs Help
CHMOD(1) User Commands CHMOD(1)

NAME
  chmod - change file mode bits

SYNOPSIS
  chmod [OPTION]... MODE[,MODE]... FILE...
  chmod [OPTION]... OCTAL-MODE FILE...
  chmod [OPTION]... --reference=RFILE FILE...

DESCRIPTION
  This manual page documents the GNU version of chmod. chmod changes the file mode bits of each given file according to mode, which can be either a symbolic representation of changes to make, or an octal number representing the bit pattern for the new mode bits.

  The format of a symbolic mode is [ugoa...][[-+=][perms...]...], where perms is either zero or more letters from the set rwXst, or a single letter from the set ugo. Multiple symbolic modes can be given, separated by commas.

  A combination of the letters ugoa controls which users' access to the file will be changed: the user who owns it (u), other users in the file's group (g), other users not in the file's group (o), or all users (a). If none of these are given, the effect is as if (a) were given, but bits that are set in the umask are not affected.

Manual page chmod(1) line 1 (press h for help or q to quit)
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