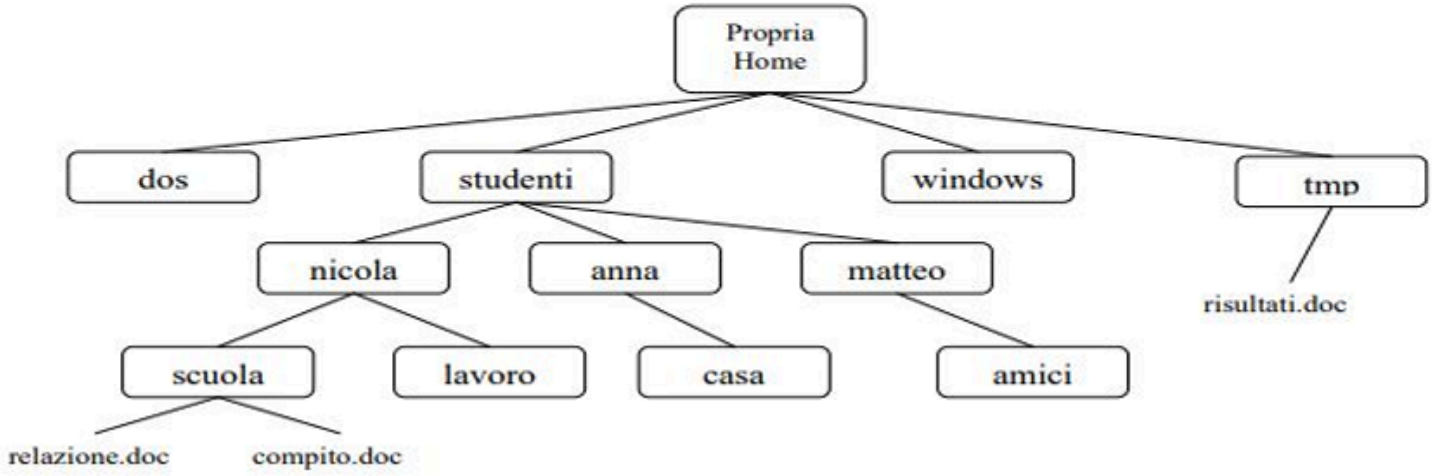
Esercizio 1 - Esercizi Shell

1. Creazione directories e files come da albero mostrato in figura

Esercizio 1
Come prima cosa creare le seguenti cartelle e sottocartelle (usando i comandi "terminale" mkdir cd rmdir … a partire dalla propria HOME e visualizzarle a video:
(Per "Propria home" si intende il posto dove vi posiziona quanto aprite il terminale!)



Directories presenti nella home corrente

```
┌──(kali㉿kali)-[~]
└─$ pwd
/home/kali

┌──(kali㉿kali)-[~]
└─$ ls
Desktop  Documents  Downloads  interfaces  Music  Pictures  pt  Public  Templates  Videos
```

Creazione directories e subfolders

```
┌──(kali㉿kali)-[/home]
└─$ mkdir -p dos studenti/{nicola/{scuola,lavoro},anna/casa,matteo/amici} windows tmp
```

```
┌──(kali㉿kali)-[~]
└─$ ls
Desktop  Documents  dos  Downloads  interfaces  Music  Pictures  pt  Public  studenti  Templates  t
```

```
┌──(kali㉿kali)-[~]
└─$ cd studenti

┌──(kali㉿kali)-[~/studenti]
└─$ ls
anna  matteo  nicola

┌──(kali㉿kali)-[~/studenti]
└─$ cd nicola

┌──(kali㉿kali)-[~/studenti/nicola]
└─$ ls
lavoro  scuola
```

```
┌──(kali㉿kali)-[~/studenti/nicola]
└─$ cd ../anna

┌──(kali㉿kali)-[~/studenti/anna]
└─$ ls
casa
```

```
┌──(kali㉿kali)-[~/studenti/anna]
└─$ cd ../matteo

┌──(kali㉿kali)-[~/studenti/matteo]
└─$ ls
amici
```

Creazione file in cartella scuola:

```
┌──(kali㉿kali)-[~/studenti/matteo]
└─$ cd ../nicola/scuola

┌──(kali㉿kali)-[~/studenti/nicola/scuola]
└─$ touch relazione.doc compito.doc

┌──(kali㉿kali)-[~/studenti/nicola/scuola]
└─$ ls
compito.doc  relazione.doc
```

```
┌──(kali㉿kali)-[~/studenti/nicola/scuola]
└─$ ls -alt
total 8
drwxr-xr-x 2 kali kali 4096 Jun  4 03:24 .
-rw-r--r-- 1 kali kali    0 Jun  4 03:24 compito.doc
-rw-r--r-- 1 kali kali    0 Jun  4 03:24 relazione.doc
drwxr-xr-x 4 kali kali 4096 Jun  4 03:07 ..
```

Creazione file in cartella tmp:

```
┌──(kali㉿kali)-[~/studenti/nicola/scuola]
└─$ cd ../../../tmp

┌──(kali㉿kali)-[~/tmp]
└─$ ls

┌──(kali㉿kali)-[~/tmp]
└─$ touch risultati.doc

┌──(kali㉿kali)-[~/tmp]
└─$ ls -alt
total 8
drwxr-xr-x  2 kali kali 4096 Jun  4 03:27 .
-rw-r--r--  1 kali kali    0 Jun  4 03:27 risultati.doc
drwxr-xr-x 22 kali kali 4096 Jun  4 03:07 ..
```

2. Svolgimento esercizio

1) Da directory lavoro scrivere comando per passare alla directory casa con percorso relativo e percorso assoluto

```
┌──(kali㉿kali)-[~/studenti/nicola/lavoro]
└─$ pwd
/home/kali/studenti/nicola/lavoro
```

```
┌──(kali㉿kali)-[~/studenti/nicola/lavoro]
└─$ cd ../../anna/casa

┌──(kali㉿kali)-[~/studenti/anna/casa]
└─$ pwd
/home/kali/studenti/anna/casa
```

a) Copia file compito.doc da directory scuola nella directory corrente

```
┌──(kali㉿kali)-[~/studenti/anna/casa]
└─$ cp ~/studenti/nicola/scuola/compito.doc .

┌──(kali㉿kali)-[~/studenti/anna/casa]
└─$ ls -alt
total 8
drwxr-xr-x 2 kali kali 4096 Jun  4 04:01 .
-rw-r--r-- 1 kali kali    0 Jun  4 04:01 compito.doc
drwxr-xr-x 3 kali kali 4096 Jun  4 03:12 ..
```

b) Sposta il file relazione.doc nella directory corrente (casa)

```
┌──(kali㉿kali)-[~/studenti/anna/casa]
└─$ mv ~/studenti/nicola/scuola/relazione.doc .

┌──(kali㉿kali)-[~/studenti/anna/casa]
└─$ ls
compito.doc  relazione.doc
```

Il file era prima nella cartella scuola, ora è stato spostato:

```
┌──(kali㉿kali)-[~/studenti/anna/casa]
└─$ cd ../../nicola/scuola

┌──(kali㉿kali)-[~/studenti/nicola/scuola]
└─$ ls
compito.doc
```

c) Cancella cartella /tmp

```
┌──(kali㉿kali)-[~]
└─$ rmdir -r tmp
rmdir: invalid option -- 'r'
Try 'rmdir --help' for more information.

┌──(kali㉿kali)-[~]
└─$ rm -r tmp

┌──(kali㉿kali)-[~]
└─$ ls
Desktop  Documents  dos  Downloads  interfaces  Music  Pictures  pt  Public  studenti  Templates  Videos  windows
```

```
┌──(kali㉿kali)-[~/tmp]
└─$ rmdir --help
Usage: rmdir [OPTION]... DIRECTORY...
Remove the DIRECTORY(ies), if they are empty.

      --ignore-fail-on-non-empty
                  ignore each failure to remove a non-empty directory
  -p, --parents   remove DIRECTORY and its ancestors;
                  e.g., 'rmdir -p a/b' is similar to 'rmdir a/b a'

  -v, --verbose   output a diagnostic for every directory processed
      --help      display this help and exit
      --version   output version information and exit

GNU coreutils online help: <https://www.gnu.org/software/coreutils/>
Full documentation <https://www.gnu.org/software/coreutils/rmdir>
or available locally via: info '(coreutils) rmdir invocation'
```

d) Creare file pippo.txt nella cartella lavoro

```
┌──(kali㉿kali)-[~]
└─$ touch ~/studenti/nicola/lavoro/pippo.txt
```

```
┌──(kali㉿kali)-[~]
└─$ cd studenti/nicola/lavoro

┌──(kali㉿kali)-[~/studenti/nicola/lavoro]
└─$ ls -alt
total 8
drwxr-xr-x 2 kali kali 4096 Jun  4 04:16 .
-rw-r--r-- 1 kali kali    0 Jun  4 04:16 pippo.txt
drwxr-xr-x 4 kali kali 4096 Jun  4 03:07 ..
```

d) Cambiare attributi del file pippo.txt e renderlo scrivibile e leggibile solo per il proprietario. Per tutti gli altri solo leggibile

Il file pippo.txt è già scrivibile e leggibile solo per il proprietario, e solo leggibile per tutti gli altri, come da screenshot sopra.

f) Nascondere il contenuto della cartella anna

```
┌──(kali㉿kali)-[~/studenti/nicola/lavoro]
└─$ mv ~/studenti/anna/casa .casa
```

```
┌──(kali㉿kali)-[~/studenti/nicola/lavoro]
└─$ cd ../../anna

┌──(kali㉿kali)-[~/studenti/anna]
└─$ ls -alt
total 8
drwxr-xr-x 2 kali kali 4096 Jun  4 04:23 .
drwxr-xr-x 5 kali kali 4096 Jun  4 03:07 ..
```

La cartella casa non è più visibile. Lo era invece in precedenza:

```
┌──(kali㉿kali)-[~/studenti/nicola]
└─$ cd ../anna

┌──(kali㉿kali)-[~/studenti/anna]
└─$ ls
casa
```

g) Spostarsi nella cartella lavoro e visualizzare il contenuto del file pippo.txt

```
┌──(kali㉿kali)-[~/studenti/anna]
└─$ cd ../nicola/lavoro

┌──(kali㉿kali)-[~/studenti/nicola/lavoro]
└─$ cat pippo.txt
```

Il file pippo.txt è vuoto, ma è presente nella cartella lavoro

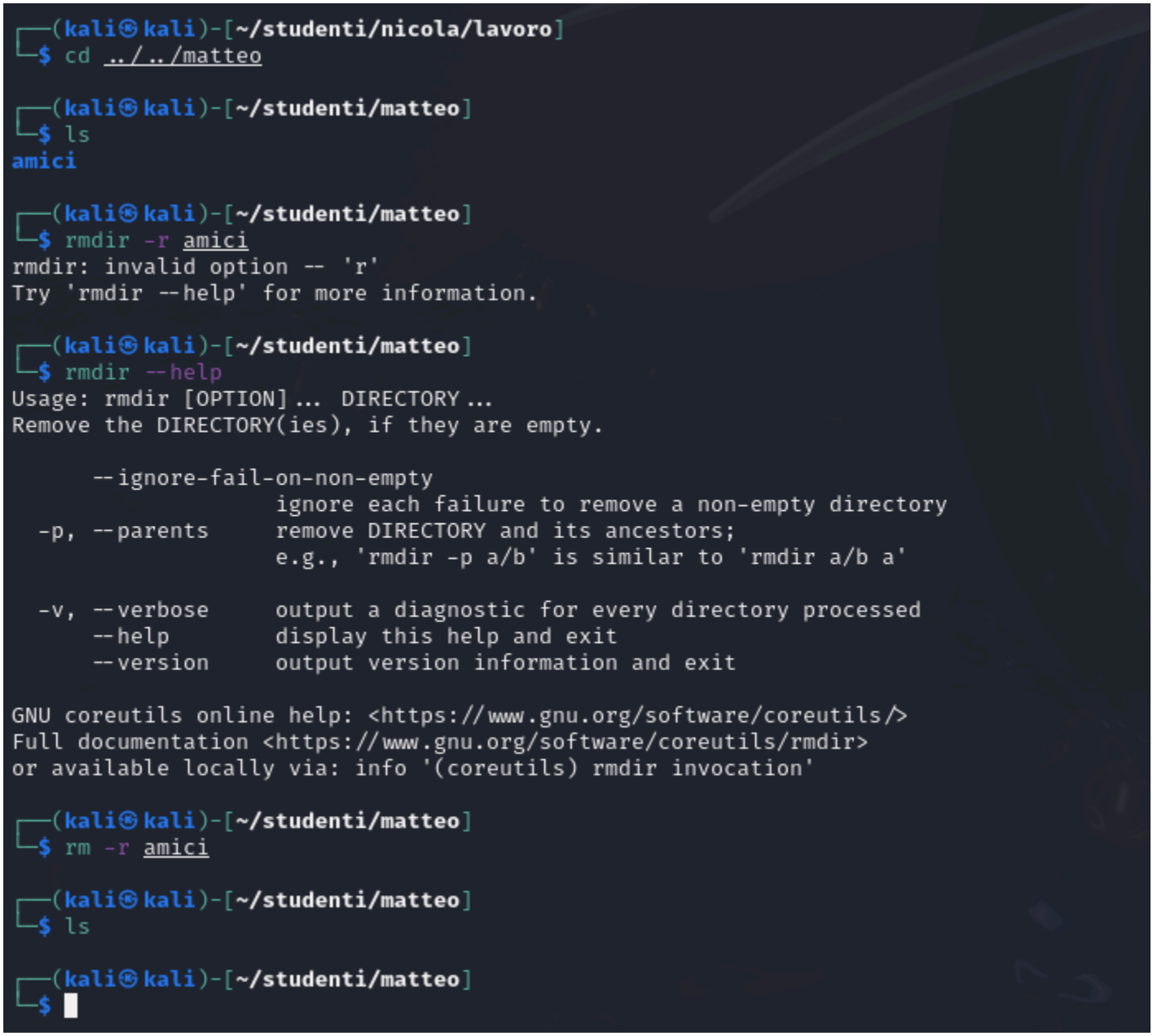
```
┌──(kali㉿kali)-[~/studenti/nicola/lavoro]
└─$ ls
pippo.txt
```

Si può aggiungere contenuto a un file con il comando “echo”

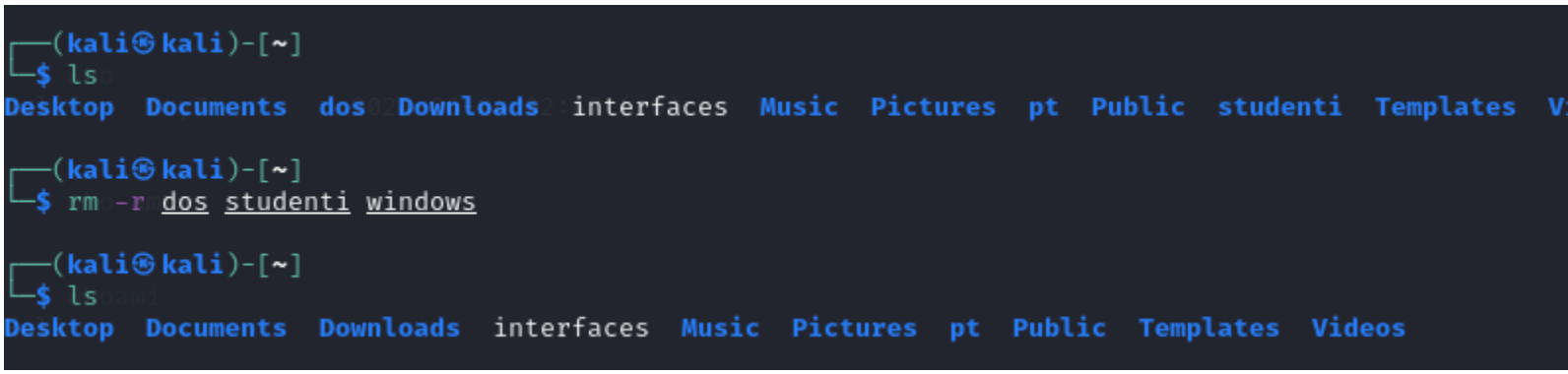
```
┌──(kali㉿kali)-[~/studenti/nicola/lavoro]
└─$ echo "Ciao sono Pippo" >> pippo.txt

┌──(kali㉿kali)-[~/studenti/nicola/lavoro]
└─$ cat pippo.txt
Ciao sono Pippo
```

```
┌──(kali㉿kali)-[~/studenti/nicola/lavoro]
└─$ echo "Mi piace il gelato" >> pippo.txt | cat pippo.txt
Ciao sono Pippo
Mi piace il gelato
```

h) Rimuovere la cartella amici

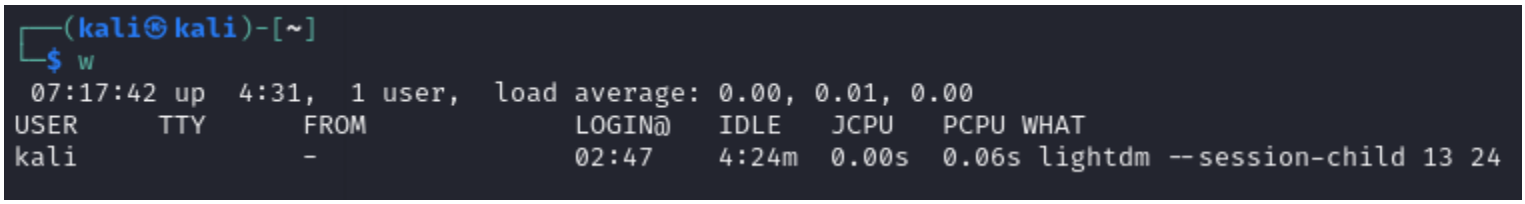


i) Rimuovere tutte le cartelle precedentemente create (la cartella tmp è già stata rimossa al passo c)



Esercizio 2

1. **Prova comando w:**
    - fornisce informazioni su chi sta utilizzando la macchina (USER),
    - il terminale in utilizzo (tty),
    - indica il remote host o indirizzi IP a cui è collegato l'utente (FROM),
    - l'ora di login (LOGIN@),
    - la durata dell'inattività dell'utente dall'ultima interazione (IDLE),
    - CPU utilizzata da tutti gli utenti collegati alla sessione in corso (JCPU),
    - la CPU utilizzata dal processo corrente (PCPU),
    - fornisce informazioni sul comando/processo in corso nella sessione (WHAT)

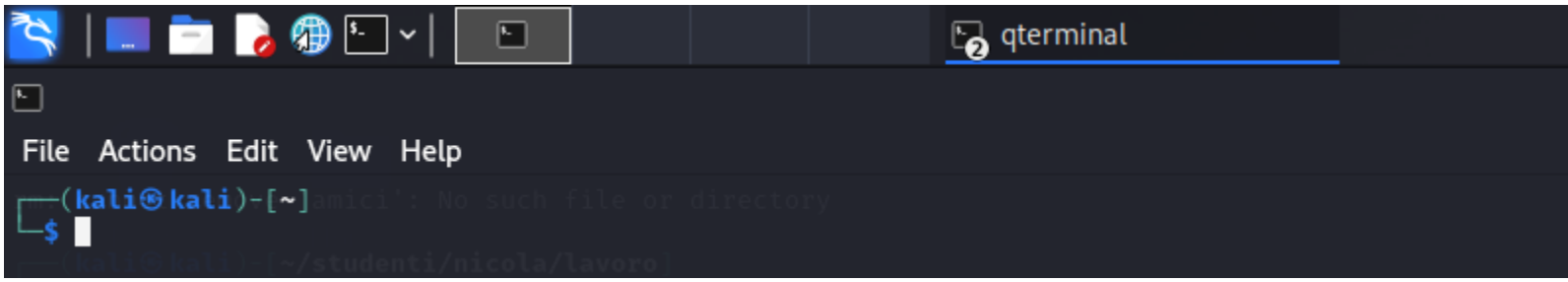


2. **prova comando who - fornisce una lista degli utenti collegati. Le informazioni mostrate sono il nome utente (kali), il terminal di login (tty7), oltre al giorno e l'ora di login**

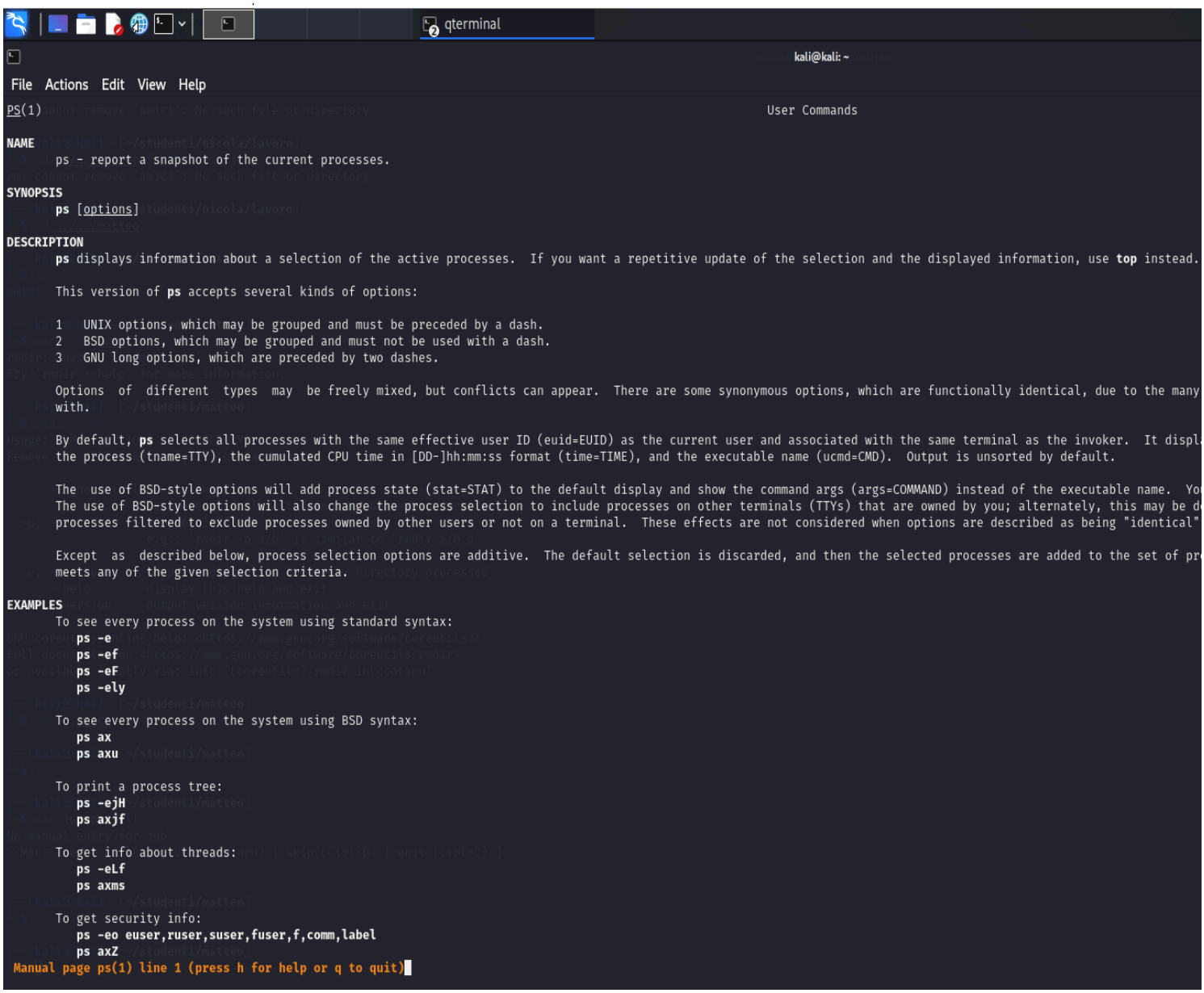
3. **prova comando whoami - mostra nome utente**

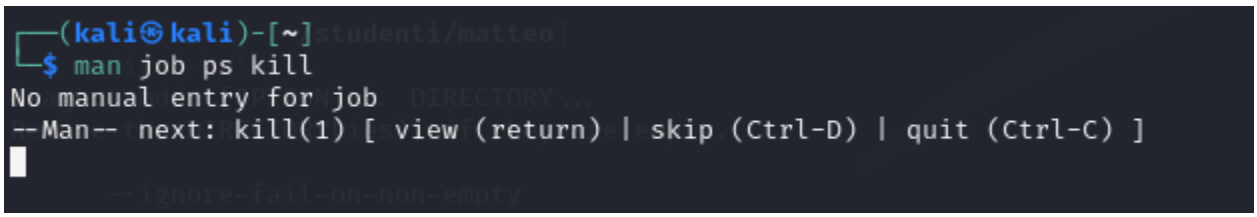
ESERCIZI - PROCESSI

1) Aprire un terminale

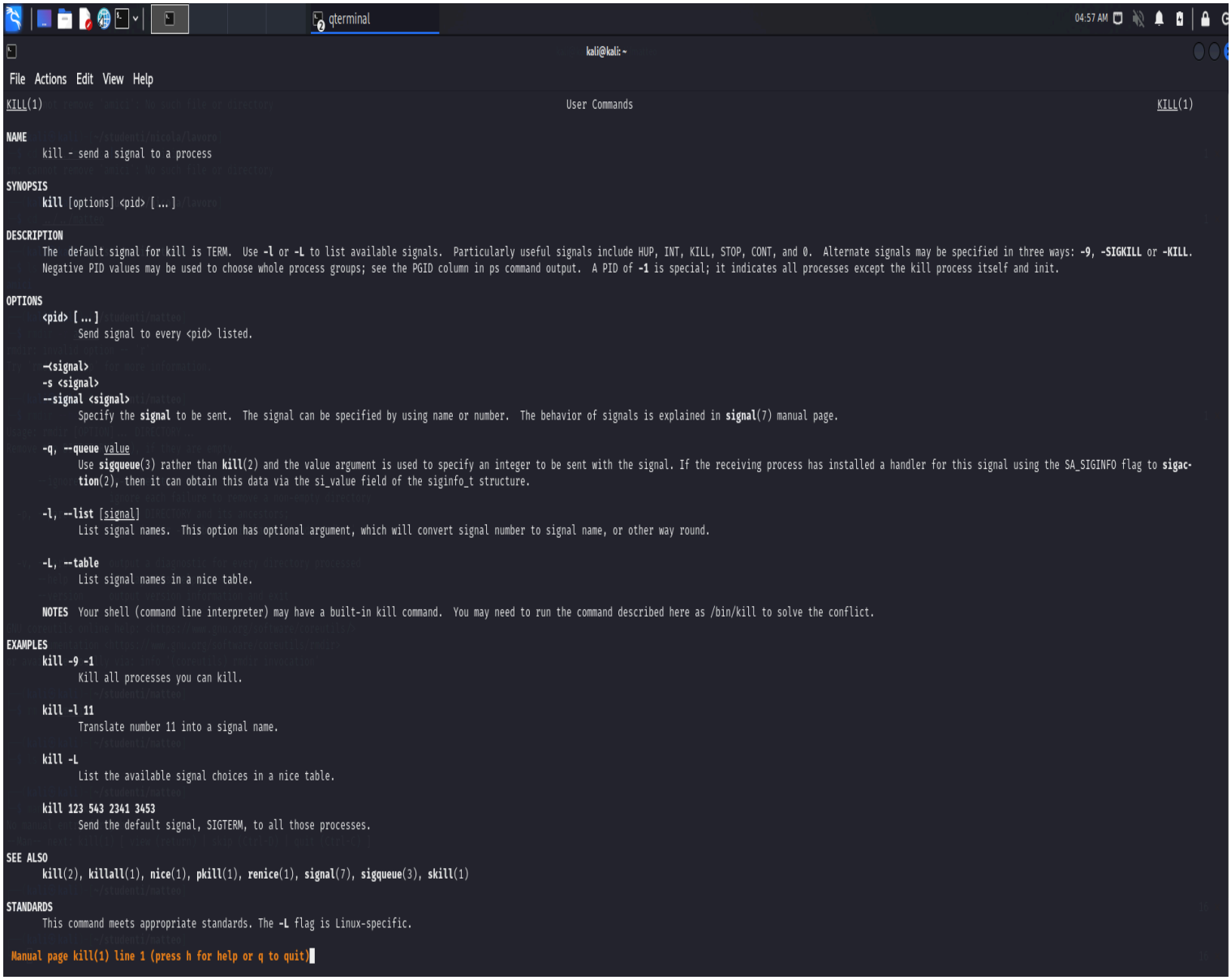


2) **Leggere il manuale del comando job, ps e kill**





La zsh ci avvisa che non esiste un manuale salvato per il comando job. Premendo enter si può accedere al seguente manuale, quello del comando kill


qterminal
04:57 AM
kali@kali: ~
File Actions Edit View 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.
-q, --queue value
Use sigqueue(3) rather than kill(2) and the value argument is used to specify an integer to be sent with the signal. If the receiving process has installed a handler for this signal using the SA_SIGINFO flag to sigaction(2), then it can obtain this data via the si_value field of the siginfo_t structure.
-l, --list [signal]
List signal names. This option has optional argument, which will convert signal number to signal name, or other way round.
-L, --table
List signal names in a nice table.
NOTES Your shell (command line interpreter) may have a built-in kill command. You may need to run the command described here as /bin/kill to solve the conflict.
EXAMPLES
kill -9 -1
Kill all processes you can kill.
kill -l 11
Translate number 11 into a signal name.
kill -L
List the available signal choices in a nice table.
kill 123 543 2341 3453
Send the default signal, SIGTERM, to all those processes.
SEE ALSO
kill(2), killall(1), nice(1), pkill(1), renice(1), signal(7), sigqueue(3), skill(1)
STANDARDS
This command meets appropriate standards. The -L flag is Linux-specific.
Manual page kill(1) line 1 (press h for help or q to quit)


(kali㉿kali)-[~]
$ whatis job
job: nothing appropriate.
(kali㉿kali)-[~]
$ whatis kill
kill (1) - send a signal to a process
(kali㉿kali)-[~]
$ whatis ps
ps (1) - report a snapshot of the current processes.

```
┌──(kali㉿kali)-[~]
└─$ man -f job ls
ls (1)               - list directory contents
job: nothing appropriate.
┌──(kali㉿kali)-[~]
└─$ man -k job
job: nothing appropriate.
```

Neanche il comando info mostra informazioni sul comando jobs

```
┌──(kali㉿kali)-[~]
└─$ info jobs
info: No menu item 'jobs' in node '(dir)Top'

┌──(kali㉿kali)-[~]
└─$ info job
info: No menu item 'job' in node '(dir)Top'
```

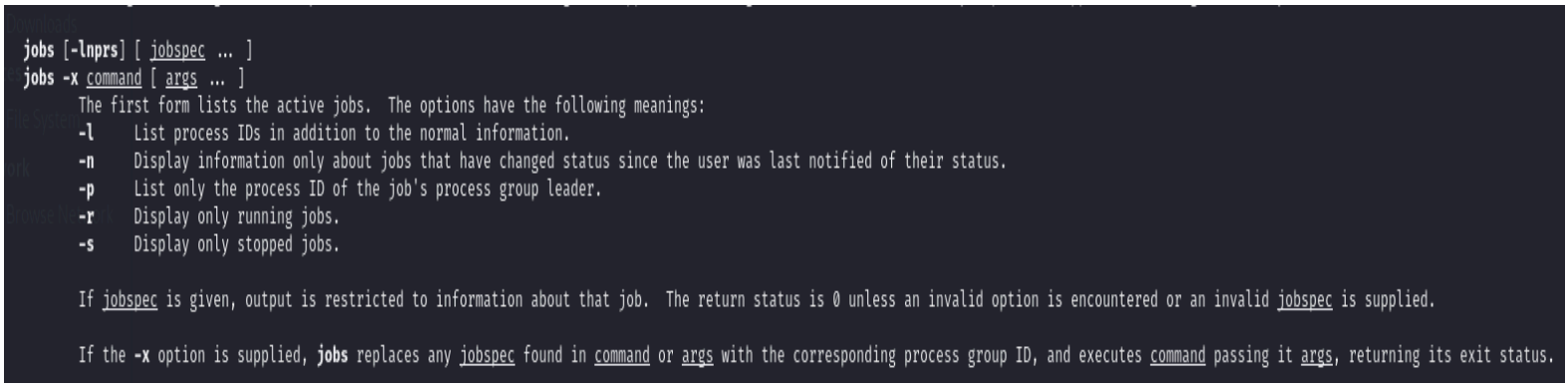
```
┌──(kali㉿kali)-[~]
└─$ apropos job
job: nothing appropriate.

┌──(kali㉿kali)-[~]
└─$ apropos jobs
jobs: nothing appropriate.
```

Jobs è uno shell builtin command, dunque il manuale del comando è integrato nel manuale della bash:

```
┌──(kali㉿kali)-[~]
└─$ man jobs
No manual entry for jobs
┌──(kali㉿kali)-[~]
└─$ type -a jobs
jobs is a shell builtin
```

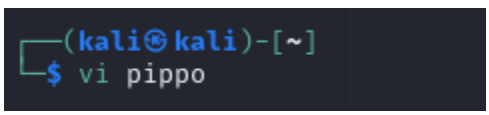
```
┌──(kali㉿kali)-[~]
└─$ man bash | grep 'jobs'
       •      various process IDs, including those of background jobs, the value of $$, and the value of PPID
       The shell exits by default upon receipt of a SIGHUP.  Before exiting, an interactive shell resends the SIGHUP to all jobs, running or stopped.  Stopped jobs are sent SIGCONT to ensure that they receive the SIGHUP.  To prevent the
       shell from sending the signal to a particular job, it should be removed from the jobs table with the disown builtin (see SHELL BUILTIN COMMANDS below) or marked to not receive SIGHUP using disown -h.
       If the huponexit shell option has been set with shopt, bash sends a SIGHUP to all jobs when an interactive login shell exits.
       The shell associates a job with each pipeline.  It keeps a table of currently executing jobs, which may be listed with the jobs command.  When bash starts a job asynchronously (in the background), it  prints  a  line  that  looks
       There are a number of ways to refer to a job in the shell.  The character % introduces a job specification (jobspec).  Job number n may be referred to as %n.  A job may also be referred to using a prefix of the name used to start
       job stopped while it was in the foreground or started in the background.  The previous job may be referenced using %-.  If there is only a single job, %+ and %- can both be used to refer to that job.  In output pertaining to jobs
       (e.g., the output of the jobs command), the current job is always flagged with a +, and the previous job with a -.  A single % (with no accompanying job specification) also refers to the current job.
       If  an  attempt to exit bash is made while jobs are stopped (or, if the checkjobs shell option has been enabled using the shopt builtin, running), the shell prints a warning message, and, if the checkjobs option is enabled, lists
       the jobs and their statuses.  The jobs command may then be used to inspect their status.  If a second attempt to exit is made without an intervening command, the shell does not print another warning, and any stopped jobs are ter-
              \j     the number of jobs currently managed by the shell
       bg [jobspec ...]
              Resume each suspended job jobspec in the background, as if it had been started with &.  If jobspec is not present, the shell's notion of the current job is used.  bg jobspec returns 0 unless run when job  control  is  dis-
              abled or, when run with job control enabled, any specified jobspec was not found or was started without job control.
                     running Names of running jobs, if job control is active.
                     stopped Names of stopped jobs, if job control is active.
       disown [-ar] [-h] [jobspec ... | pid ... ]
              Without options, remove each jobspec from the table of active jobs.  If jobspec is not present, and neither the -a nor the -r option is supplied, the current job is used.  If the -h option is given, each jobspec is not re-
              moved from the table, but is marked so that SIGHUP is not sent to the job if the shell receives a SIGHUP.  If no jobspec is supplied, the -a option means to remove or mark all jobs; the -r option without a jobspec argument
              restricts operation to running jobs.  The return value is 0 unless a jobspec does not specify a valid job.
       fg [jobspec]
              Resume jobspec in the foreground, and make it the current job.  If jobspec is not present, the shell's notion of the current job is used.  The return value is that of the command placed into the foreground, or  failure  if
              run when job control is disabled or, when run with job control enabled, if jobspec does not specify a valid job or jobspec specifies a job that was started without job control.
       jobs [-lnprs] [ jobspec ... ]
       jobs -x command [ args ... ]
              The first form lists the active jobs.  The options have the following meanings:
              -n     Display information only about jobs that have changed status since the user was last notified of their status.
              -r     Display only running jobs.
              -s     Display only stopped jobs.
              If jobspec is given, output is restricted to information about that job.  The return status is 0 unless an invalid option is encountered or an invalid jobspec is supplied.
              If the -x option is supplied, jobs replaces any jobspec found in command or args with the corresponding process group ID, and executes command passing it args, returning its exit status.
       kill [-s sigspec | -n signum | -sigspec] [pid | jobspec] ...
              Send the signal named by sigspec or signum to the processes named by pid or jobspec.  sigspec is either a case-insensitive signal name such as SIGKILL (with or without the SIG prefix) or a signal number; signum is a signal
              -b      Report the status of terminated background jobs immediately, rather than before the next primary prompt.  This is effective only when job control is enabled.
              checkjobs
                      If set, bash lists the status of any stopped and running jobs before exiting an interactive shell.  If any jobs are running, this causes the exit to be deferred until a second exit is attempted without an interven-
                      ing command (see JOB CONTROL above).  The shell always postpones exiting if any jobs are stopped.
                      If set, bash will send SIGHUP to all jobs when an interactive login shell exits.
              given, wait waits for all running background jobs and the last-executed process substitution, if its process id is the same as $!, and the return status is zero.  If the -n option is supplied, wait waits for a  single  job
```

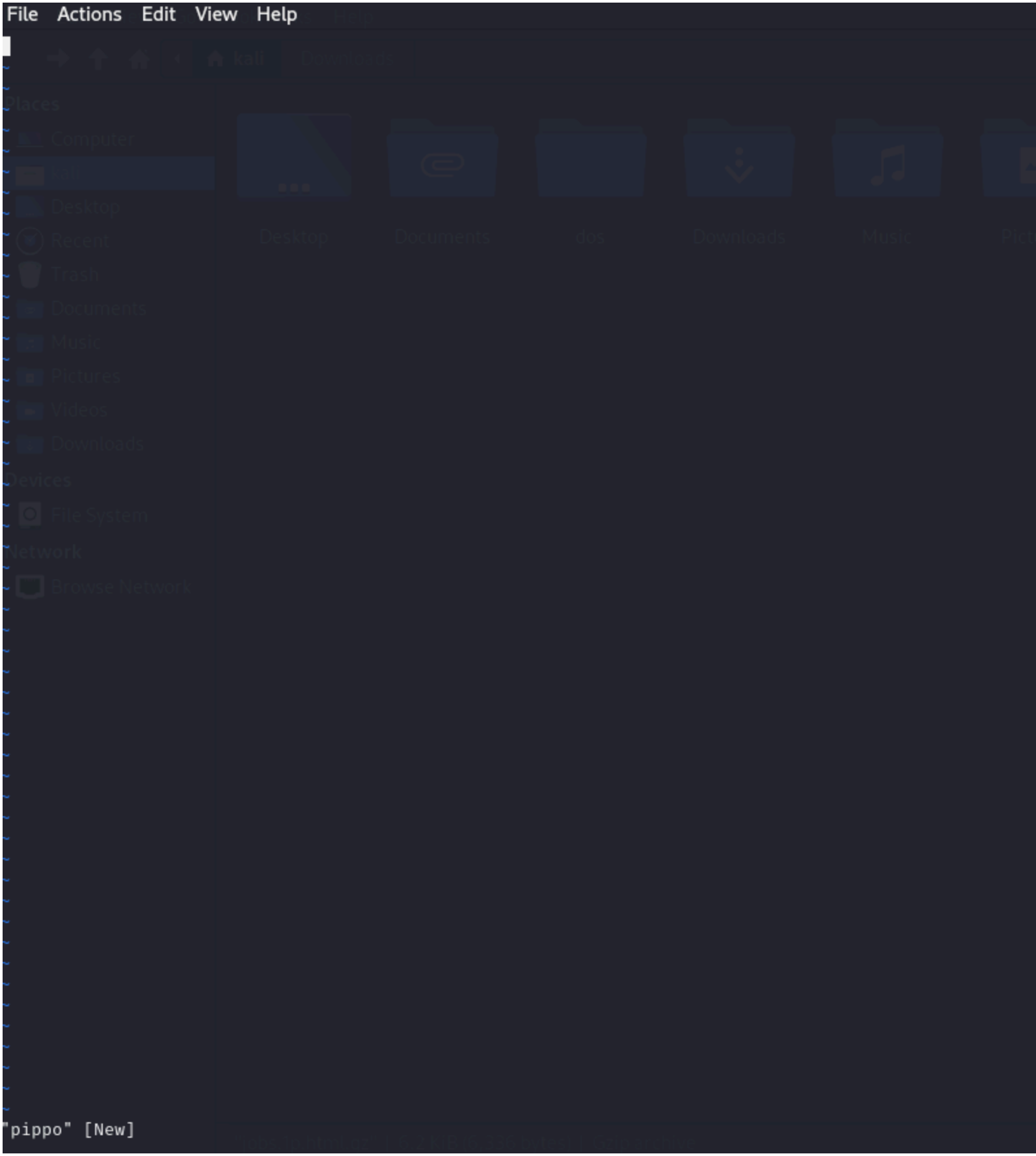
```
JOB CONTROL
       Job  control  refers  to  the  ability to selectively stop (suspend) the execution of processes and contir
       jointly by the operating system kernel's terminal driver and bash.

       The shell associates a job with each pipeline.  It keeps a table of currently executing jobs, which may be
       like:

              [1] 25647

       indicating  that  this  job is job number 1 and that the process ID of the last process in the pipeline as
       abstraction as the basis for job control.

       To facilitate the implementation of the user interface to job control, the operating system maintains the
       the current terminal process group ID) receive keyboard-generated signals such as SIGINT.  These processes
       processes are immune to keyboard-generated signals.  Only foreground processes are allowed to read from or
       to when stty tostop is in effect) the terminal are sent a SIGTTIN (SIGTTOU) signal by the kernel's termina

       If the operating system on which bash is running supports job control, bash contains facilities to use it.
       returns  control  to  bash.  Typing the delayed suspend character (typically ^Y, Control-Y) causes the pro
       manipulate the state of this job, using the bg command to continue it in the background, the fg command to
       effect of causing pending output and typeahead to be discarded.

       There are a number of ways to refer to a job in the shell.  The character % introduces a job specificatior
       it, or using a substring that appears in its command line.  For example, %ce refers to a stopped job whose
       hand,  refers  to  any job containing the string ce in its command line.  If the substring matches more th
       job stopped while it was in the foreground or started in the background.  The previous job may be referenc
       (e.g., the output of the jobs command), the current job is always flagged with a +, and the previous job w

       Simply naming a job can be used to bring it into the foreground: %1 is a synonym for ``fg %1'', bringing j
       %1''.

       The shell learns immediately whenever a job changes state.  Normally, bash waits until it is about to prir
       builtin command is enabled, bash reports such changes immediately.  Any trap on SIGCHLD is executed for ea

       If  an  attempt to exit bash is made while jobs are stopped (or, if the checkjobs shell option has been er
       the jobs and their statuses.  The jobs command may then be used to inspect their status.  If a second atte
       minated.

       When the shell is waiting for a job or process using the wait builtin, and job control is enabled, wait wi
       ing.
```



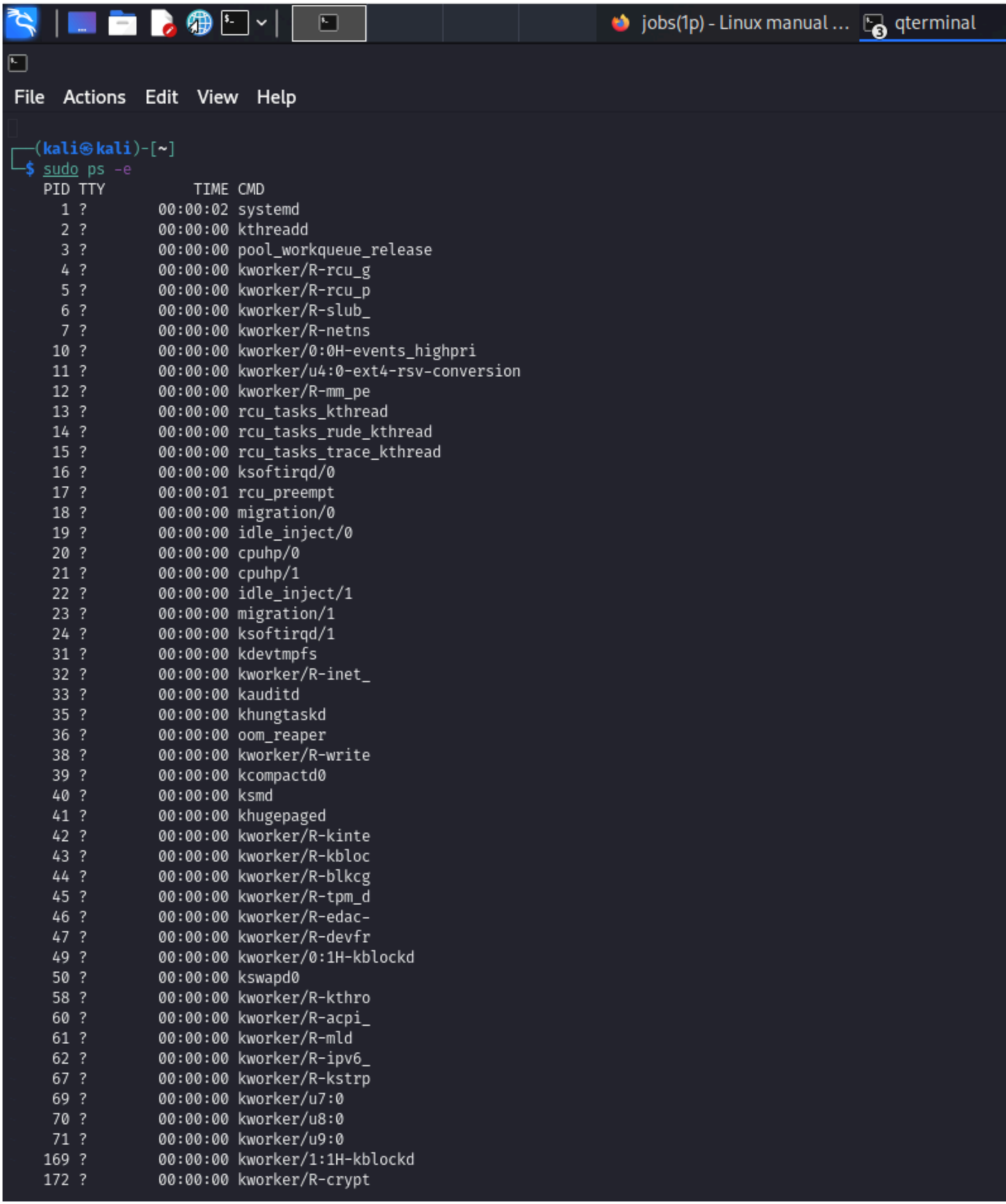
Installando le manpages-posix manualmente, si può comunque installare il manuale del comando jobs(POSIX) e ad accedere al manuale del comando jobs:

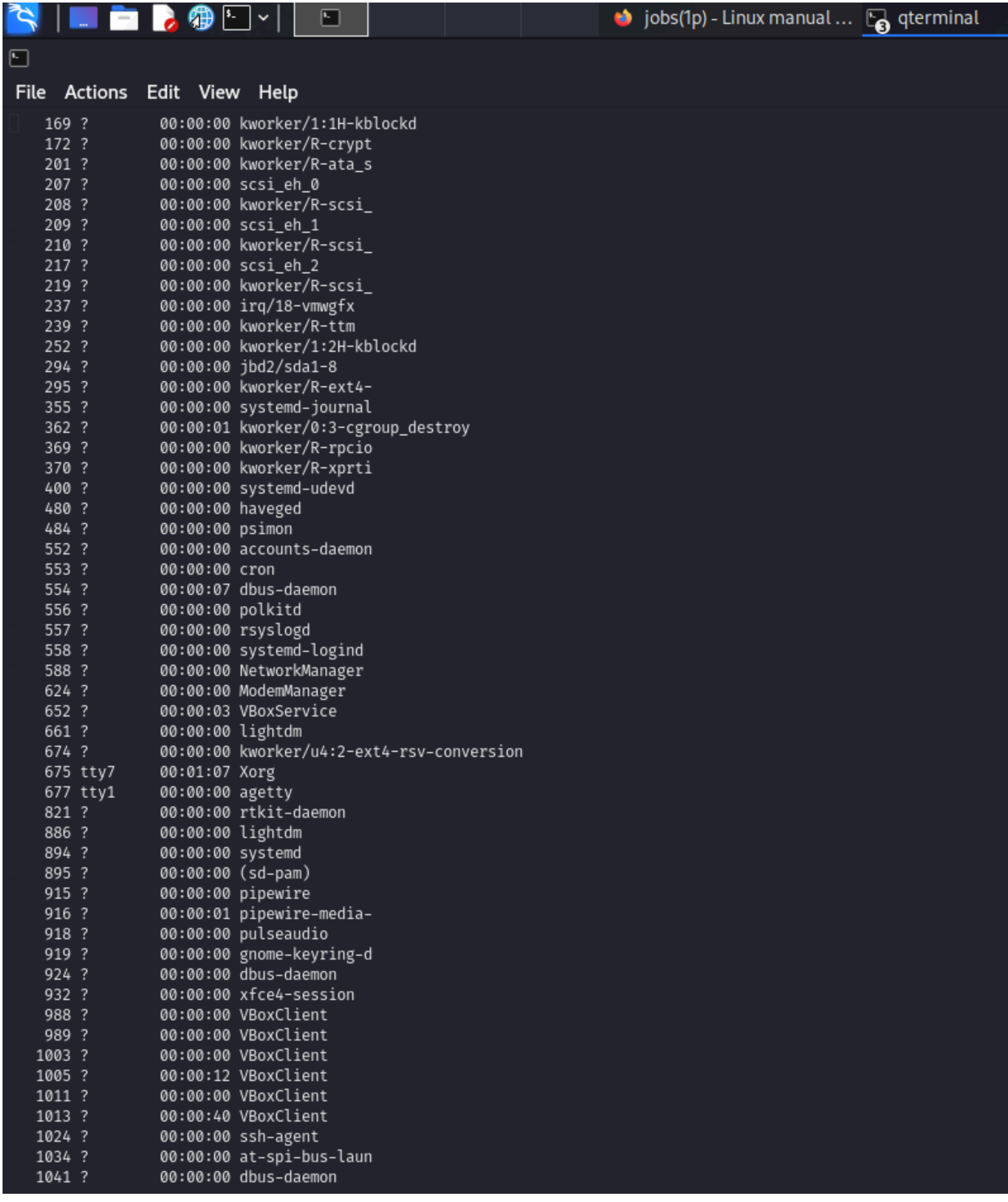
3) Lanciare il comando vi pippo

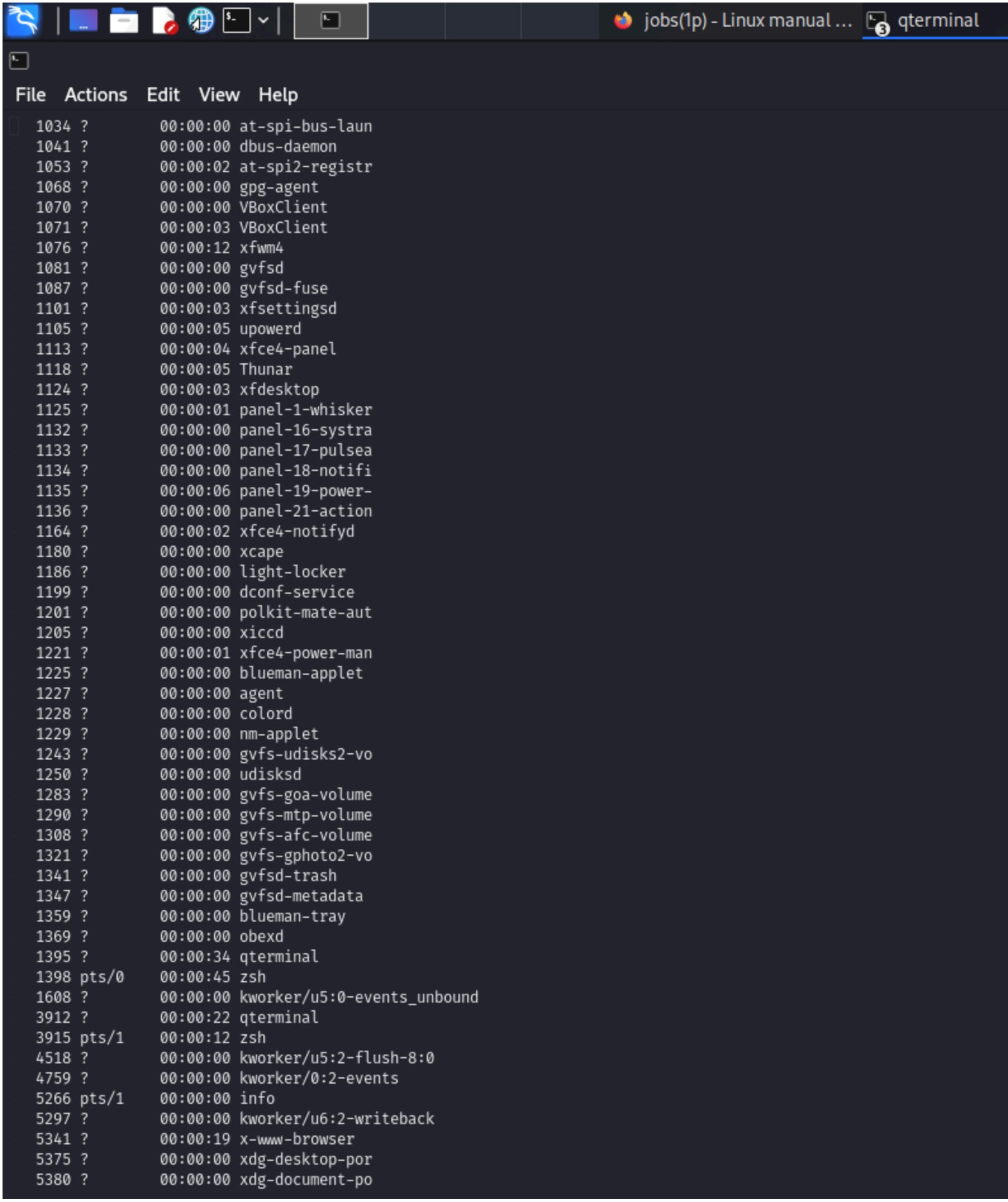


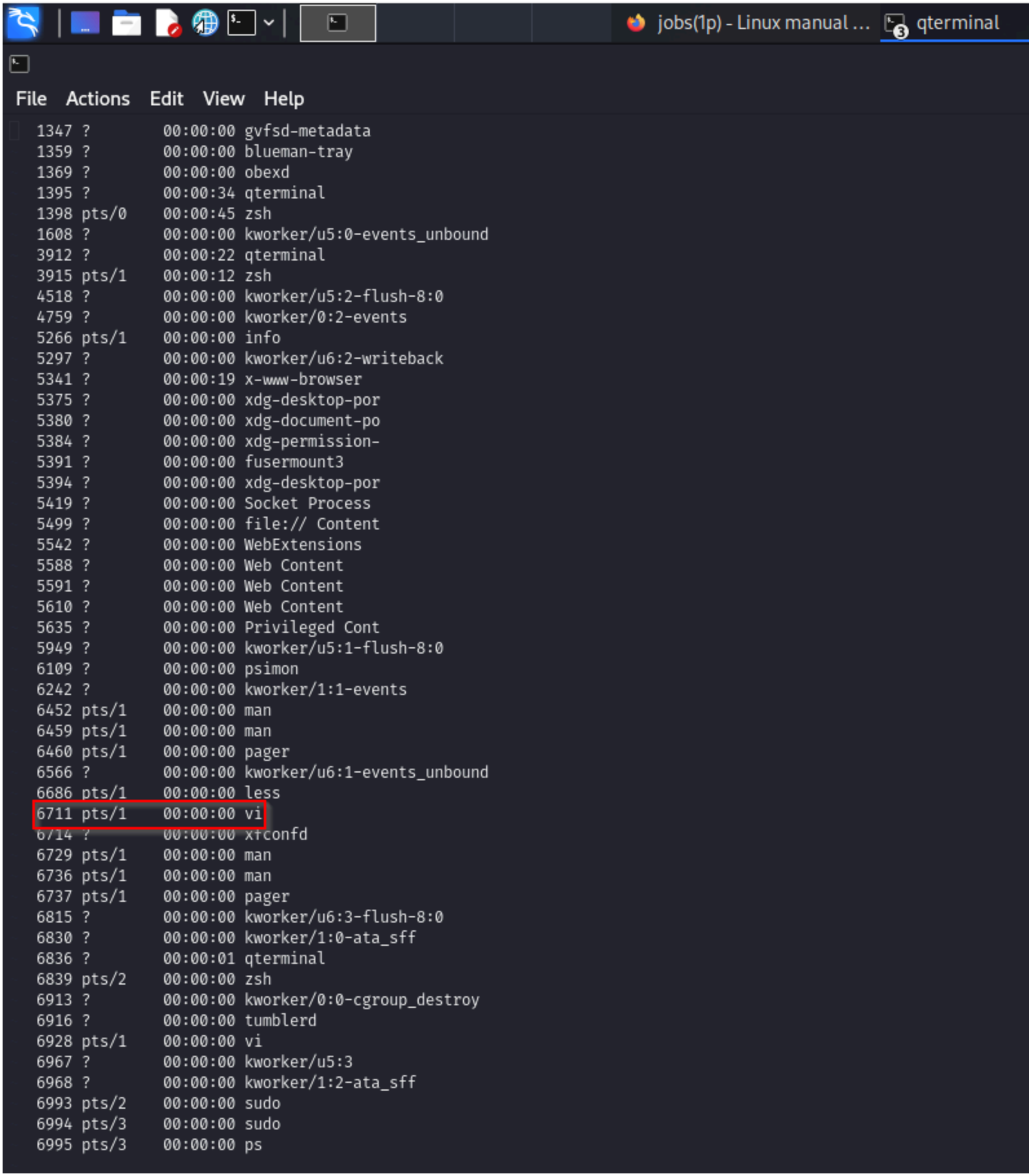

File Actions Edit View Help
kali
Downloads
Places
Computer
kali
Desktop
Recent
Trash
Documents
Music
Pictures
Videos
Downloads
Devices
File System
Network
Browse Network
Desktop
Documents
dos
Downloads
Music
"pippo" [New]

4) Aprire un nuovo terminale e visualizzare tutti i propri processi


jobs(1p) - Linux manual ...
qterminal
File Actions Edit View Help
(kali㉿kali)-[~]
$ sudo ps -e
PID TTY TIME CMD
1 ? 00:00:02 systemd
2 ? 00:00:00 kthreadd
3 ? 00:00:00 pool_workqueue_release
4 ? 00:00:00 kworker/R-rcu_g
5 ? 00:00:00 kworker/R-rcu_p
6 ? 00:00:00 kworker/R-slub_
7 ? 00:00:00 kworker/R-netns
10 ? 00:00:00 kworker/0:0H-events_highpri
11 ? 00:00:00 kworker/u4:0-ext4-rsv-conversion
12 ? 00:00:00 kworker/R-mm_pe
13 ? 00:00:00 rcu_tasks_kthread
14 ? 00:00:00 rcu_tasks_rude_kthread
15 ? 00:00:00 rcu_tasks_trace_kthread
16 ? 00:00:00 ksoftirqd/0
17 ? 00:00:01 rcu_preempt
18 ? 00:00:00 migration/0
19 ? 00:00:00 idle_inject/0
20 ? 00:00:00 cpuhp/0
21 ? 00:00:00 cpuhp/1
22 ? 00:00:00 idle_inject/1
23 ? 00:00:00 migration/1
24 ? 00:00:00 ksoftirqd/1
31 ? 00:00:00 kdevtmpfs
32 ? 00:00:00 kworker/R-inet_
33 ? 00:00:00 kauditd
35 ? 00:00:00 khungtaskd
36 ? 00:00:00 oom_reaper
38 ? 00:00:00 kworker/R-write
39 ? 00:00:00 kcompactd0
40 ? 00:00:00 ksmd
41 ? 00:00:00 khugepaged
42 ? 00:00:00 kworker/R-kinte
43 ? 00:00:00 kworker/R-kbloc
44 ? 00:00:00 kworker/R-blkcg
45 ? 00:00:00 kworker/R-tpm_d
46 ? 00:00:00 kworker/R-edac-
47 ? 00:00:00 kworker/R-devfr
49 ? 00:00:00 kworker/0:1H-kblockd
50 ? 00:00:00 kswapd0
58 ? 00:00:00 kworker/R-kthro
60 ? 00:00:00 kworker/R-acpi_
61 ? 00:00:00 kworker/R-mld
62 ? 00:00:00 kworker/R-ipv6_
67 ? 00:00:00 kworker/R-kstrp
69 ? 00:00:00 kworker/u7:0
70 ? 00:00:00 kworker/u8:0
71 ? 00:00:00 kworker/u9:0
169 ? 00:00:00 kworker/1:1H-kblockd
172 ? 00:00:00 kworker/R-crypt


jobs(1p) - Linux manual ...
qterminal
File Actions Edit View Help
169 ? 00:00:00 kworker/1:1H-kblockd
172 ? 00:00:00 kworker/R-crypt
201 ? 00:00:00 kworker/R-ata_s
207 ? 00:00:00 scsi_eh_0
208 ? 00:00:00 kworker/R-scsi_
209 ? 00:00:00 scsi_eh_1
210 ? 00:00:00 kworker/R-scsi_
217 ? 00:00:00 scsi_eh_2
219 ? 00:00:00 kworker/R-scsi_
237 ? 00:00:00 irq/18-vmwgfx
239 ? 00:00:00 kworker/R-ttm
252 ? 00:00:00 kworker/1:2H-kblockd
294 ? 00:00:00 jbd2/sda1-8
295 ? 00:00:00 kworker/R-ext4-
355 ? 00:00:00 systemd-journal
362 ? 00:00:01 kworker/0:3-cgroup_destroy
369 ? 00:00:00 kworker/R-rpcio
370 ? 00:00:00 kworker/R-xprti
400 ? 00:00:00 systemd-udevd
480 ? 00:00:00 haveged
484 ? 00:00:00 psimon
552 ? 00:00:00 accounts-daemon
553 ? 00:00:00 cron
554 ? 00:00:07 dbus-daemon
556 ? 00:00:00 polkitd
557 ? 00:00:00 rsyslogd
558 ? 00:00:00 systemd-logind
588 ? 00:00:00 NetworkManager
624 ? 00:00:00 ModemManager
652 ? 00:00:03 VBoxService
661 ? 00:00:00 lightdm
674 ? 00:00:00 kworker/u4:2-ext4-rsv-conversion
675 tty7 00:01:07 Xorg
677 tty1 00:00:00 agetty
821 ? 00:00:00 rtkit-daemon
886 ? 00:00:00 lightdm
894 ? 00:00:00 systemd
895 ? 00:00:00 (sd-pam)
915 ? 00:00:00 pipewire
916 ? 00:00:01 pipewire-media-
918 ? 00:00:00 pulseaudio
919 ? 00:00:00 gnome-keyring-d
924 ? 00:00:00 dbus-daemon
932 ? 00:00:00 xfce4-session
988 ? 00:00:00 VBoxClient
989 ? 00:00:00 VBoxClient
1003 ? 00:00:00 VBoxClient
1005 ? 00:00:12 VBoxClient
1011 ? 00:00:00 VBoxClient
1013 ? 00:00:40 VBoxClient
1024 ? 00:00:00 ssh-agent
1034 ? 00:00:00 at-spi-bus-laun
1041 ? 00:00:00 dbus-daemon


jobs(1p) - Linux manual ...
qterminal
File Actions Edit View Help
1034 ? 00:00:00 at-spi-bus-laun
1041 ? 00:00:00 dbus-daemon
1053 ? 00:00:02 at-spi2-registr
1068 ? 00:00:00 gpg-agent
1070 ? 00:00:00 VBoxClient
1071 ? 00:00:03 VBoxClient
1076 ? 00:00:12 xfwm4
1081 ? 00:00:00 gvfsd
1087 ? 00:00:00 gvfsd-fuse
1101 ? 00:00:03 xfsettingsd
1105 ? 00:00:05 upowerd
1113 ? 00:00:04 xfce4-panel
1118 ? 00:00:05 Thunar
1124 ? 00:00:03 xfdesktop
1125 ? 00:00:01 panel-1-whisker
1132 ? 00:00:00 panel-16-systra
1133 ? 00:00:00 panel-17-pulsea
1134 ? 00:00:00 panel-18-notifi
1135 ? 00:00:06 panel-19-power-
1136 ? 00:00:00 panel-21-action
1164 ? 00:00:02 xfce4-notifyd
1180 ? 00:00:00 xcape
1186 ? 00:00:00 light-locker
1199 ? 00:00:00 dconf-service
1201 ? 00:00:00 polkit-mate-aut
1205 ? 00:00:00 xiccd
1221 ? 00:00:01 xfce4-power-man
1225 ? 00:00:00 blueman-applet
1227 ? 00:00:00 agent
1228 ? 00:00:00 colord
1229 ? 00:00:00 nm-applet
1243 ? 00:00:00 gvfs-udisks2-vo
1250 ? 00:00:00 udisksd
1283 ? 00:00:00 gvfs-goa-volume
1290 ? 00:00:00 gvfs-mtp-volume
1308 ? 00:00:00 gvfs-afc-volume
1321 ? 00:00:00 gvfs-gphoto2-vo
1341 ? 00:00:00 gvfsd-trash
1347 ? 00:00:00 gvfsd-metadata
1359 ? 00:00:00 blueman-tray
1369 ? 00:00:00 obexd
1395 ? 00:00:34 qterminal
1398 pts/0 00:00:45 zsh
1608 ? 00:00:00 kworker/u5:0-events_unbound
3912 ? 00:00:22 qterminal
3915 pts/1 00:00:12 zsh
4518 ? 00:00:00 kworker/u5:2-flush-8:0
4759 ? 00:00:00 kworker/0:2-events
5266 pts/1 00:00:00 info
5297 ? 00:00:00 kworker/u6:2-writeback
5341 ? 00:00:19 x-www-browser
5375 ? 00:00:00 xdg-desktop-por
5380 ? 00:00:00 xdg-document-po


jobs(1p) - Linux manual ...
qterminal
File Actions Edit View Help
1347 ? 00:00:00 gvfsd-metadata
1359 ? 00:00:00 blueman-tray
1369 ? 00:00:00 obexd
1395 ? 00:00:34 qterminal
1398 pts/0 00:00:45 zsh
1608 ? 00:00:00 kworker/u5:0-events_unbound
3912 ? 00:00:22 qterminal
3915 pts/1 00:00:12 zsh
4518 ? 00:00:00 kworker/u5:2-flush-8:0
4759 ? 00:00:00 kworker/0:2-events
5266 pts/1 00:00:00 info
5297 ? 00:00:00 kworker/u6:2-writeback
5341 ? 00:00:19 x-www-browser
5375 ? 00:00:00 xdg-desktop-por
5380 ? 00:00:00 xdg-document-po
5384 ? 00:00:00 xdg-permission-
5391 ? 00:00:00 fusermount3
5394 ? 00:00:00 xdg-desktop-por
5419 ? 00:00:00 Socket Process
5499 ? 00:00:00 file:// Content
5542 ? 00:00:00 WebExtensions
5588 ? 00:00:00 Web Content
5591 ? 00:00:00 Web Content
5610 ? 00:00:00 Web Content
5635 ? 00:00:00 Privileged Cont
5949 ? 00:00:00 kworker/u5:1-flush-8:0
6109 ? 00:00:00 psimon
6242 ? 00:00:00 kworker/1:1-events
6452 pts/1 00:00:00 man
6459 pts/1 00:00:00 man
6460 pts/1 00:00:00 pager
6566 ? 00:00:00 kworker/u6:1-events_unbound
6686 pts/1 00:00:00 less
6711 pts/1 00:00:00 vi
6714 ? 00:00:00 xfconfd
6729 pts/1 00:00:00 man
6736 pts/1 00:00:00 man
6737 pts/1 00:00:00 pager
6815 ? 00:00:00 kworker/u6:3-flush-8:0
6830 ? 00:00:00 kworker/1:0-ata_sff
6836 ? 00:00:01 qterminal
6839 pts/2 00:00:00 zsh
6913 ? 00:00:00 kworker/0:0-cgroup_destroy
6916 ? 00:00:00 tumblerd
6928 pts/1 00:00:00 vi
6967 ? 00:00:00 kworker/u5:3
6968 ? 00:00:00 kworker/1:2-ata_sff
6993 pts/2 00:00:00 sudo
6994 pts/3 00:00:00 sudo
6995 pts/3 00:00:00 ps

Con il comando ps -aux si possono visualizzare invece tutti i processi attivi per tutti gli utenti, inclusi i processi non attivi sul proprio terminale

```
┌──(kali㉿kali)-[~]
└─$ ps aux
USER         PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root           1  0.0  0.6  22724 13272 ?        Ss   02:46   0:02 /sbin/init splash
root           2  0.0  0.0      0     0 ?        S    02:46   0:00 [kthreadd]
root           3  0.0  0.0      0     0 ?        S    02:46   0:00 [pool_workqueue_release]
root           4  0.0  0.0      0     0 ?        I<   02:46   0:00 [kworker/R-rcu_g]
root           5  0.0  0.0      0     0 ?        I<   02:46   0:00 [kworker/R-rcu_p]
root           6  0.0  0.0      0     0 ?        I<   02:46   0:00 [kworker/R-slub_]
root           7  0.0  0.0      0     0 ?        I<   02:46   0:00 [kworker/R-netns]
root          10  0.0  0.0      0     0 ?        I<   02:46   0:00 [kworker/0:0H-events_highpri]
root          12  0.0  0.0      0     0 ?        I<   02:46   0:00 [kworker/R-mm_pe]
root          13  0.0  0.0      0     0 ?        I    02:46   0:00 [rcu_tasks_kthread]
root          14  0.0  0.0      0     0 ?        I    02:46   0:00 [rcu_tasks_rude_kthread]
root          15  0.0  0.0      0     0 ?        I    02:46   0:00 [rcu_tasks_trace_kthread]
root          16  0.0  0.0      0     0 ?        S    02:46   0:00 [ksoftirqd/0]
root          17  0.0  0.0      0     0 ?        I    02:46   0:01 [rcu_preempt]
root          18  0.0  0.0      0     0 ?        S    02:46   0:00 [migration/0]
root          19  0.0  0.0      0     0 ?        S    02:46   0:00 [idle_inject/0]
root          20  0.0  0.0      0     0 ?        S    02:46   0:00 [cpuhp/0]
root          21  0.0  0.0      0     0 ?        S    02:46   0:00 [cpuhp/1]
root          22  0.0  0.0      0     0 ?        S    02:46   0:00 [idle_inject/1]
root          23  0.0  0.0      0     0 ?        S    02:46   0:00 [migration/1]
root          24  0.0  0.0      0     0 ?        S    02:46   0:00 [ksoftirqd/1]
root          31  0.0  0.0      0     0 ?        S    02:46   0:00 [kdevtmpfs]
root          32  0.0  0.0      0     0 ?        I<   02:46   0:00 [kworker/R-inet_]
root          33  0.0  0.0      0     0 ?        S    02:46   0:00 [kauditd]
root          35  0.0  0.0      0     0 ?        S    02:46   0:00 [khungtaskd]
root          36  0.0  0.0      0     0 ?        S    02:46   0:00 [oom_reaper]
root          38  0.0  0.0      0     0 ?        I<   02:46   0:00 [kworker/R-write]
root          39  0.0  0.0      0     0 ?        S    02:46   0:00 [kcompactd0]
root          40  0.0  0.0      0     0 ?        SN   02:46   0:00 [ksmd]
root          41  0.0  0.0      0     0 ?        SN   02:46   0:00 [khugepaged]
root          42  0.0  0.0      0     0 ?        I<   02:46   0:00 [kworker/R-kinte]
root          43  0.0  0.0      0     0 ?        I<   02:46   0:00 [kworker/R-kbloc]
root          44  0.0  0.0      0     0 ?        I<   02:46   0:00 [kworker/R-blkcg]
root          45  0.0  0.0      0     0 ?        I<   02:46   0:00 [kworker/R-tpm_d]
root          46  0.0  0.0      0     0 ?        I<   02:46   0:00 [kworker/R-edac-]
root          47  0.0  0.0      0     0 ?        I<   02:46   0:00 [kworker/R-devfr]
root          49  0.0  0.0      0     0 ?        I<   02:46   0:00 [kworker/0:1H-kblockd]
root          50  0.0  0.0      0     0 ?        S    02:46   0:00 [kswapd0]
root          58  0.0  0.0      0     0 ?        I<   02:46   0:00 [kworker/R-kthro]
root          60  0.0  0.0      0     0 ?        I<   02:46   0:00 [kworker/R-acpi_]
root          61  0.0  0.0      0     0 ?        I<   02:46   0:00 [kworker/R-mld]
root          62  0.0  0.0      0     0 ?        I<   02:46   0:00 [kworker/R-ipv6_]
root          67  0.0  0.0      0     0 ?        I<   02:46   0:00 [kworker/R-kstrp]
root          69  0.0  0.0      0     0 ?        I<   02:46   0:00 [kworker/u7:0]
root          70  0.0  0.0      0     0 ?        I<   02:46   0:00 [kworker/u8:0]
root          71  0.0  0.0      0     0 ?        I<   02:46   0:00 [kworker/u9:0]
root         169  0.0  0.0      0     0 ?        I<   02:46   0:00 [kworker/1:1H-kblockd]
root         172  0.0  0.0      0     0 ?        I<   02:46   0:00 [kworker/R-crypt]
```

5) Cercare di terminare (killare) il processo vi per sbloccare il terminale precedente

```
┌──(kali㉿kali)-[~]
└─$ kill 6928
```

```
┌──(kali㉿kali)-[~]
└─$ vi pippo
Vim: Caught deadly signal TERM
Vim: Finished.

zsh: terminated  vi pippo
```

6) Lanciare il comando firefox in background

```
┌──(kali㉿kali)-[~]
└─$ firefox &
[1] 7581

┌──(kali㉿kali)-[~]
└─$ jobs
[1]  + running    firefox
```

7) Portarlo in background

```
┌──(kali㉿kali)-[~]
└─$ firefox bg
```

```
7512 pts/1    00:00:01 zsh
7554 ?        00:00:00 tumblerd
7566 ?        00:00:00 kworker/u4:1-ext4-rsv-conversion
7568 ?        00:00:00 kworker/1:3-events
7570 ?        00:00:00 kworker/0:0-inet_frag_wq
7581 pts/1    00:00:05 firefox-esr
7629 pts/1    00:00:00 Socket Process
7643 pts/1    00:00:00 Privileged Cont
7673 pts/1    00:00:00 file:// Content
7703 pts/1    00:00:00 WebExtensions
7744 pts/1    00:00:00 Isolated Web Co
7747 pts/1    00:00:00 Web Content
7780 pts/1    00:00:00 Web Content
7845 pts/1    00:00:00 Web Content
7872 pts/1    00:00:00 ps
```

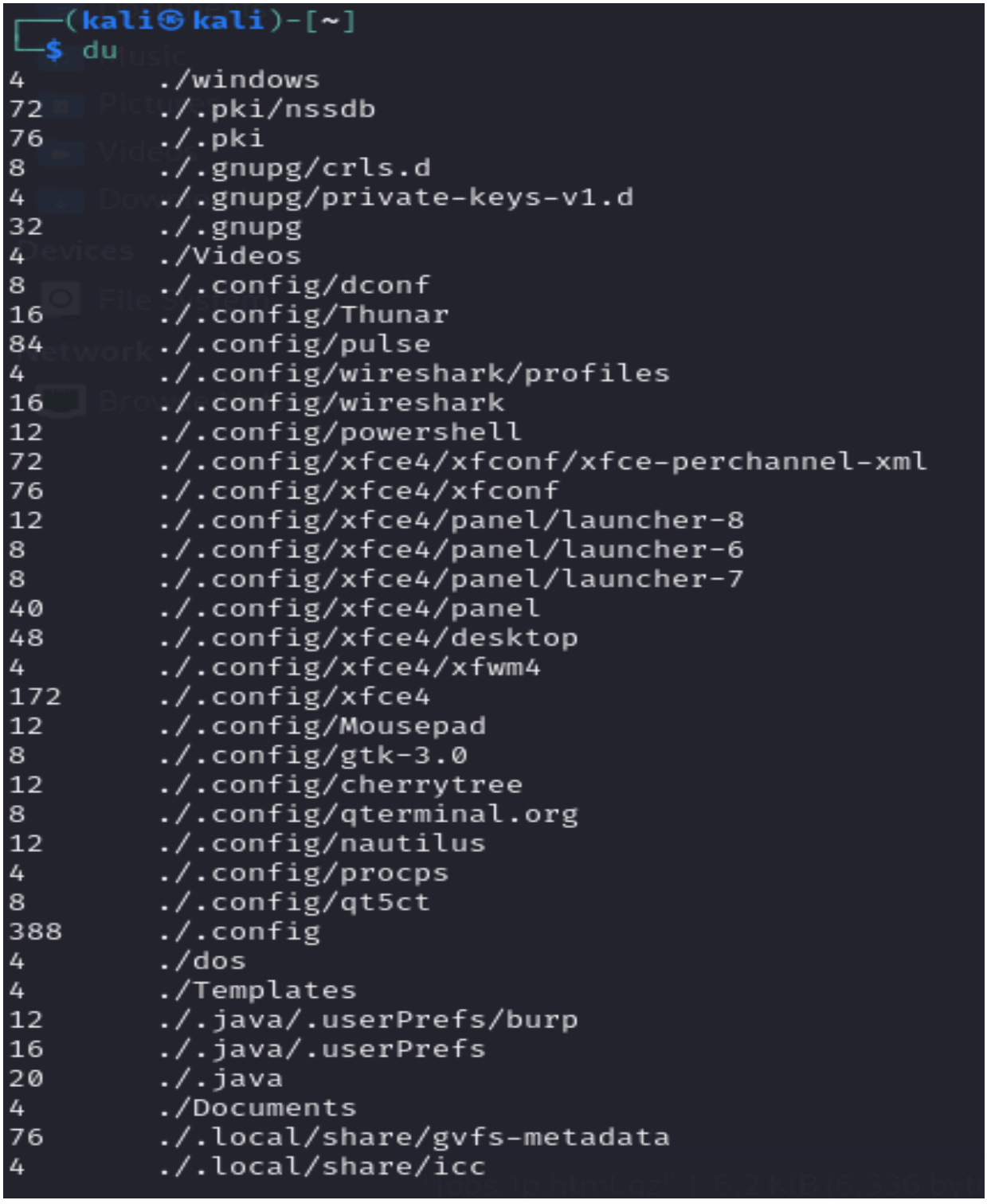
8) Cercare di terminare il processo firefox

```
┌──(kali㉿kali)-[~]
└─$ kill 7581

Exiting due to channel error.
Exiting due to channel error.
Exiting due to channel error.
Exiting due to channel error.
Exiting due to channel error.
[1]  + terminated  firefox
Exiting due to channel error.
Exiting due to channel error.
Exiting due to channel error.
```

9) Verificare quanto spazio si sta occupando su disco

```
┌──(kali㉿kali)-[~]
└─$ df -H
Filesystem      Size  Used Avail Use% Mounted on
udev            998M     0  998M   0% /dev
tmpfs           208M  1.1M  207M   1% /run
/dev/sda1        83G   19G   61G  24% /
tmpfs           1.1G     0  1.1G   0% /dev/shm
tmpfs           5.3M     0  5.3M   0% /run/lock
tmpfs           208M  111k  208M   1% /run/user/1000
```

Il comando ‘du’ mostra invece quanto spazio su disco viene utilizzato dalle directories



```
12      ./.local/share/keyrings
4       ./.local/share/nano
8       ./.local/share/Mousepad
300     ./.local/share/Cisco Packet Tracer/QtWebEngine/Default/GPUCache
20      ./.local/share/Cisco Packet Tracer/QtWebEngine/Default/Session Storage
4       ./.local/share/Cisco Packet Tracer/QtWebEngine/Default/blob_storage/0a410cb6-369a-4d4a-9495-b42e77bba318
8       ./.local/share/Cisco Packet Tracer/QtWebEngine/Default/blob_storage
16      ./.local/share/Cisco Packet Tracer/QtWebEngine/Default/Platform Notifications
20      ./.local/share/Cisco Packet Tracer/QtWebEngine/Default/Local Storage/leveldb
24      ./.local/share/Cisco Packet Tracer/QtWebEngine/Default/Local Storage
528     ./.local/share/Cisco Packet Tracer/QtWebEngine/Default
532     ./.local/share/Cisco Packet Tracer/QtWebEngine
536     ./.local/share/Cisco Packet Tracer
4       ./.local/share/Trash/expunged
8       ./.local/share/Trash/info
108     ./.local/share/Trash/files
124     ./.local/share/Trash
12      ./.local/share/nautilus/scripts
16      ./.local/share/nautilus
800     ./.local/share
804     ./.local
4       ./studenti/anna
4       ./studenti/nicola/lavoro/.casa
12      ./studenti/nicola/lavoro
4       ./studenti/nicola/scuola
20      ./studenti/nicola
4       ./studenti/matteo
32      ./studenti
20      ./.mozilla/firefox/427stb2z.default-esr/sessionstore-backups
4       ./.mozilla/firefox/427stb2z.default-esr/features
4       ./.mozilla/firefox/427stb2z.default-esr/storage/to-be-removed
4       ./.mozilla/firefox/427stb2z.default-esr/storage/temporary
4       ./.mozilla/firefox/427stb2z.default-esr/storage/default/moz-extension+++36c3683c-6240-4d87-931b-4c362eea6113^userContextId=4294967295/idb/3647222921wleabcEoxlt-eengsairo.files
52      ./.mozilla/firefox/427stb2z.default-esr/storage/default/moz-extension+++36c3683c-6240-4d87-931b-4c362eea6113^userContextId=4294967295/idb
60      ./.mozilla/firefox/427stb2z.default-esr/storage/default/moz-extension+++36c3683c-6240-4d87-931b-4c362eea6113^userContextId=4294967295
16      ./.mozilla/firefox/427stb2z.default-esr/storage/default/file++++home+kali+jobs.1p.html/ls
24      ./.mozilla/firefox/427stb2z.default-esr/storage/default/file++++home+kali+jobs.1p.html
16      ./.mozilla/firefox/427stb2z.default-esr/storage/default/https+++id.cisco.com/ls
24      ./.mozilla/firefox/427stb2z.default-esr/storage/default/https+++id.cisco.com
16      ./.mozilla/firefox/427stb2z.default-esr/storage/default/https+++www.exploit-db.com/ls
24      ./.mozilla/firefox/427stb2z.default-esr/storage/default/https+++www.exploit-db.com
52      ./.mozilla/firefox/427stb2z.default-esr/storage/default/https+++www.google.com/ls
60      ./.mozilla/firefox/427stb2z.default-esr/storage/default/https+++www.google.com
196     ./.mozilla/firefox/427stb2z.default-esr/storage/default
4       ./.mozilla/firefox/427stb2z.default-esr/storage/permanent/chrome/idb/3870112724rsegmnoittet-es.files/journals
```

```
4       ./.mozilla/firefox/427stb2z.default-esr/storage/permanent/chrome/idb/1657114595AmcateirvtiSty.files
4       ./.mozilla/firefox/427stb2z.default-esr/storage/permanent/chrome/idb/1451318868ntouromlalnodry--epcr.files
4       ./.mozilla/firefox/427stb2z.default-esr/storage/permanent/chrome/idb/2823318777ntouromlalnodry--naod.files
4       ./.mozilla/firefox/427stb2z.default-esr/storage/permanent/chrome/idb/3561288849sdhlie.files
4       ./.mozilla/firefox/427stb2z.default-esr/storage/permanent/chrome/idb/2918063365piupsah.files
11672   ./.mozilla/firefox/427stb2z.default-esr/storage/permanent/chrome/idb
11680   ./.mozilla/firefox/427stb2z.default-esr/storage/permanent/chrome
11684   ./.mozilla/firefox/427stb2z.default-esr/storage/permanent
12116   ./.mozilla/firefox/427stb2z.default-esr/storage
4       ./.mozilla/firefox/427stb2z.default-esr/extensions
8       ./.mozilla/firefox/427stb2z.default-esr/datareporting/glean/db
4       ./.mozilla/firefox/427stb2z.default-esr/datareporting/glean/pending_pings
4       ./.mozilla/firefox/427stb2z.default-esr/datareporting/glean/events
20      ./.mozilla/firefox/427stb2z.default-esr/datareporting/glean
80      ./.mozilla/firefox/427stb2z.default-esr/datareporting
8       ./.mozilla/firefox/427stb2z.default-esr/settings
4       ./.mozilla/firefox/427stb2z.default-esr/crashes/events
12      ./.mozilla/firefox/427stb2z.default-esr/crashes
3260    ./.mozilla/firefox/427stb2z.default-esr/security_state
4       ./.mozilla/firefox/427stb2z.default-esr/minidumps
1360    ./.mozilla/firefox/427stb2z.default-esr/gmp-gmpopenh264/1.8.1.2
1364    ./.mozilla/firefox/427stb2z.default-esr/gmp-gmpopenh264
12      ./.mozilla/firefox/427stb2z.default-esr/bookmarkbackups
29088   ./.mozilla/firefox/427stb2z.default-esr
8       ./.mozilla/firefox/7z5buf0w.default
4       ./.mozilla/firefox/Pending Pings
4       ./.mozilla/firefox/Crash Reports/events
16      ./.mozilla/firefox/Crash Reports
29128   ./.mozilla/firefox
4       ./.mozilla/extensions
4       ./.mozilla/systemextensionsdev
29140   ./.mozilla
4       ./Pictures
436     ./.cache/mozilla/firefox/427stb2z.default-esr/cache2/doomed
66428   ./.cache/mozilla/firefox/427stb2z.default-esr/cache2/entries
66988   ./.cache/mozilla/firefox/427stb2z.default-esr/cache2
12672   ./.cache/mozilla/firefox/427stb2z.default-esr/safebrowsing/google4
14832   ./.cache/mozilla/firefox/427stb2z.default-esr/safebrowsing
260     ./.cache/mozilla/firefox/427stb2z.default-esr/OfflineCache
136     ./.cache/mozilla/firefox/427stb2z.default-esr/thumbnails
12      ./.cache/mozilla/firefox/427stb2z.default-esr/settings/main/ms-language-packs/browser/newtab
16      ./.cache/mozilla/firefox/427stb2z.default-esr/settings/main/ms-language-packs/browser
28      ./.cache/mozilla/firefox/427stb2z.default-esr/settings/main/ms-language-packs
32      ./.cache/mozilla/firefox/427stb2z.default-esr/settings/main
36      ./.cache/mozilla/firefox/427stb2z.default-esr/settings
12720   ./.cache/mozilla/firefox/427stb2z.default-esr/startupCache
94976   ./.cache/mozilla/firefox/427stb2z.default-esr
4       ./.cache/mozilla/firefox/7z5buf0w.default
94984   ./.cache/mozilla/firefox
94988   ./.cache/mozilla
```

```
24      ./.cache/xfce4/notifyd
28      ./.cache/xfce4
544     ./.cache/thumbnails/normal
548     ./.cache/thumbnails
3560    ./.cache/fontconfig
12      ./.cache/sessions/thumbs-kali:0
20      ./.cache/sessions
8       ./.cache/Cisco Packet Tracer/QtWebEngine/Default/Cache/index-dir
2240    ./.cache/Cisco Packet Tracer/QtWebEngine/Default/Cache
2244    ./.cache/Cisco Packet Tracer/QtWebEngine/Default
2248    ./.cache/Cisco Packet Tracer/QtWebEngine
2252    ./.cache/Cisco Packet Tracer
448     ./.cache/samba
4       ./.cache/obexd
8       ./.cache/mesa_shader_cache/89
8       ./.cache/mesa_shader_cache/79
8       ./.cache/mesa_shader_cache/be
8       ./.cache/mesa_shader_cache/0a
44      ./.cache/mesa_shader_cache
2368    ./.cache/gstreamer-1.0
104336  ./.cache
4       ./Music
4       ./Desktop
4       ./pt/saves
4       ./pt/templates
44      ./pt/logs
4       ./pt/extensions
80      ./pt
4       ./Public
24      ./Downloads/libxcb-xinerama0_1.15-1_amd64/DEBIAN
8       ./Downloads/libxcb-xinerama0_1.15-1_amd64/usr/share/doc/libxcb-xinerama0
12      ./Downloads/libxcb-xinerama0_1.15-1_amd64/usr/share/doc
16      ./Downloads/libxcb-xinerama0_1.15-1_amd64/usr/share
20      ./Downloads/libxcb-xinerama0_1.15-1_amd64/usr/lib/x86_64-linux-gnu
24      ./Downloads/libxcb-xinerama0_1.15-1_amd64/usr/lib
44      ./Downloads/libxcb-xinerama0_1.15-1_amd64/usr
72      ./Downloads/libxcb-xinerama0_1.15-1_amd64
276972  ./Downloads
412112  .
```

Con il comando ‘top’ si verifica l’utilizzo della CPU:

```
┌──(kali㉿kali)-[~]
└─$ top
top - 06:59:55 up  4:13,  1 user,  load average: 0.01, 0.03, 0.00
Tasks: 162 total,   2 running, 160 sleeping,   0 stopped,   0 zombie
%Cpu(s):  1.0 us,  0.3 sy,  0.0 ni, 98.6 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   1976.7 total,    564.6 free,    749.3 used,    831.6 buff/cache
MiB Swap:    975.0 total,    849.8 free,    125.2 used.   1227.4 avail Mem

    PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM     TIME+ COMMAND
   7509 kali      20   0  469764  95464  80768 S   1.7   4.7   0:03.26 qterminal
    675 root      20   0  471452 178248  66380 S   1.0   8.8   1:26.50 Xorg
   1005 kali      20   0  215428   3072   2816 S   0.7   0.2   0:14.94 VBoxClient
   7972 kali      20   0   11768   5632   3456 R   0.7   0.3   0:00.06 top
   1359 kali      20   0  430252  43572  23680 S   0.3   2.2   0:00.59 blueman-tray
      1 root      20   0   22724  13272   9688 S   0.0   0.7   0:02.30 systemd
      2 root      20   0       0      0      0 S   0.0   0.0   0:00.01 kthreadd
      3 root      20   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
     10 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 kworker/0:0H-events_highpri
     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   0:00.20 ksoftirqd/0
     17 root      20   0       0      0      0 I   0.0   0.0   0:01.98 rcu_preempt
     18 root      rt   0       0      0      0 S   0.0   0.0   0:00.14 migration/0
     19 root     -51   0       0      0      0 S   0.0   0.0   0:00.00 idle_inject/0
     20 root      20   0       0      0      0 S   0.0   0.0   0:00.00 cpuhp/0
     21 root      20   0       0      0      0 S   0.0   0.0   0:00.00 cpuhp/1
     22 root     -51   0       0      0      0 S   0.0   0.0   0:00.00 idle_inject/1
     23 root      rt   0       0      0      0 S   0.0   0.0   0:00.27 migration/1
     24 root      20   0       0      0      0 S   0.0   0.0   0:00.35 ksoftirqd/1
     31 root      20   0       0      0      0 S   0.0   0.0   0:00.00 kdevtmpfs
     32 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 kworker/R-inet_
     33 root      20   0       0      0      0 S   0.0   0.0   0:00.00 kauditd
     35 root      20   0       0      0      0 S   0.0   0.0   0:00.01 khungtaskd
     36 root      20   0       0      0      0 S   0.0   0.0   0:00.00 oom_reaper
     38 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 kworker/R-write
     39 root      20   0       0      0      0 S   0.0   0.0   0:00.93 kcompactd0
     40 root      25   5       0      0      0 S   0.0   0.0   0:00.00 ksmd
     41 root      39  19       0      0      0 S   0.0   0.0   0:00.63 khugepaged
     42 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 kworker/R-kinte
     43 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 kworker/R-kbloc
     44 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 kworker/R-blkcg
     45 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 kworker/R-tpm_d
     46 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 kworker/R-edac-
```