

Semana_1b

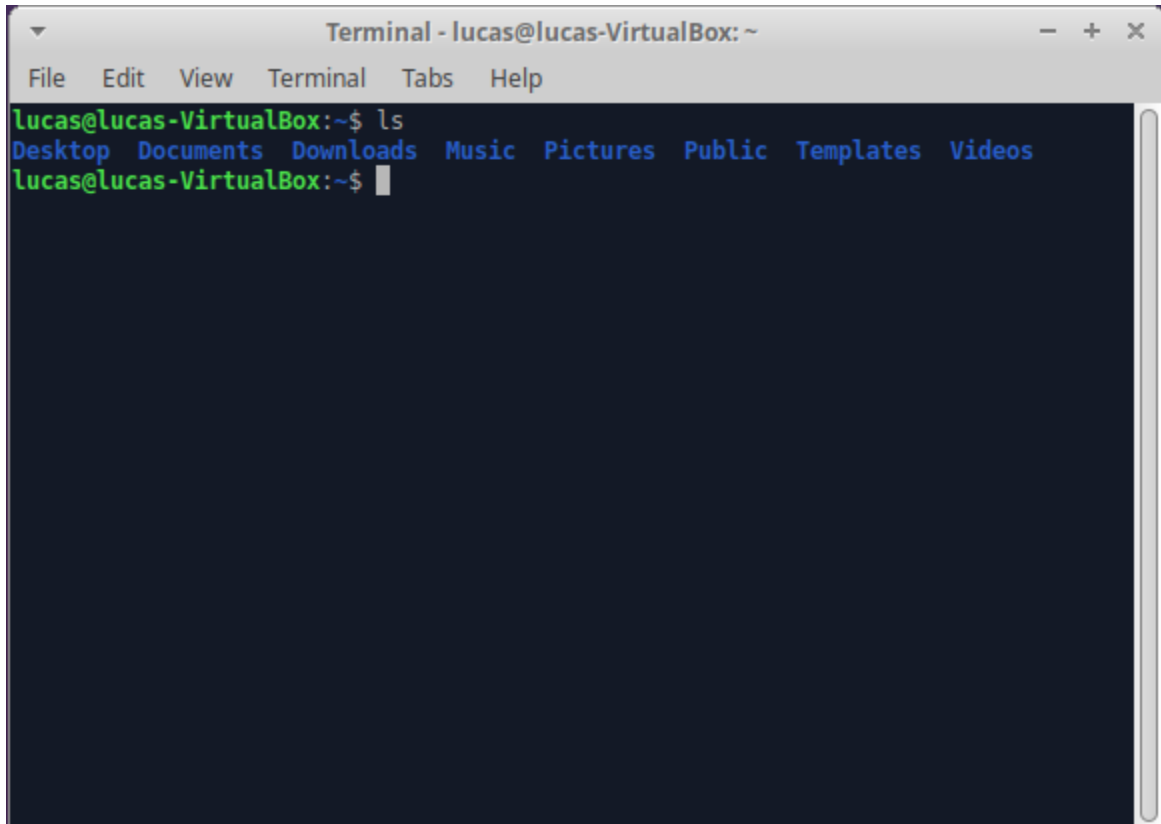
Link deste documento no Google Docs para melhor visualização com os outlines

https://docs.google.com/document/d/1UTeeS-IWKxPAvj380uhWvBRtYPqQo_tsDj9FwVslgg/edit?usp=sharing

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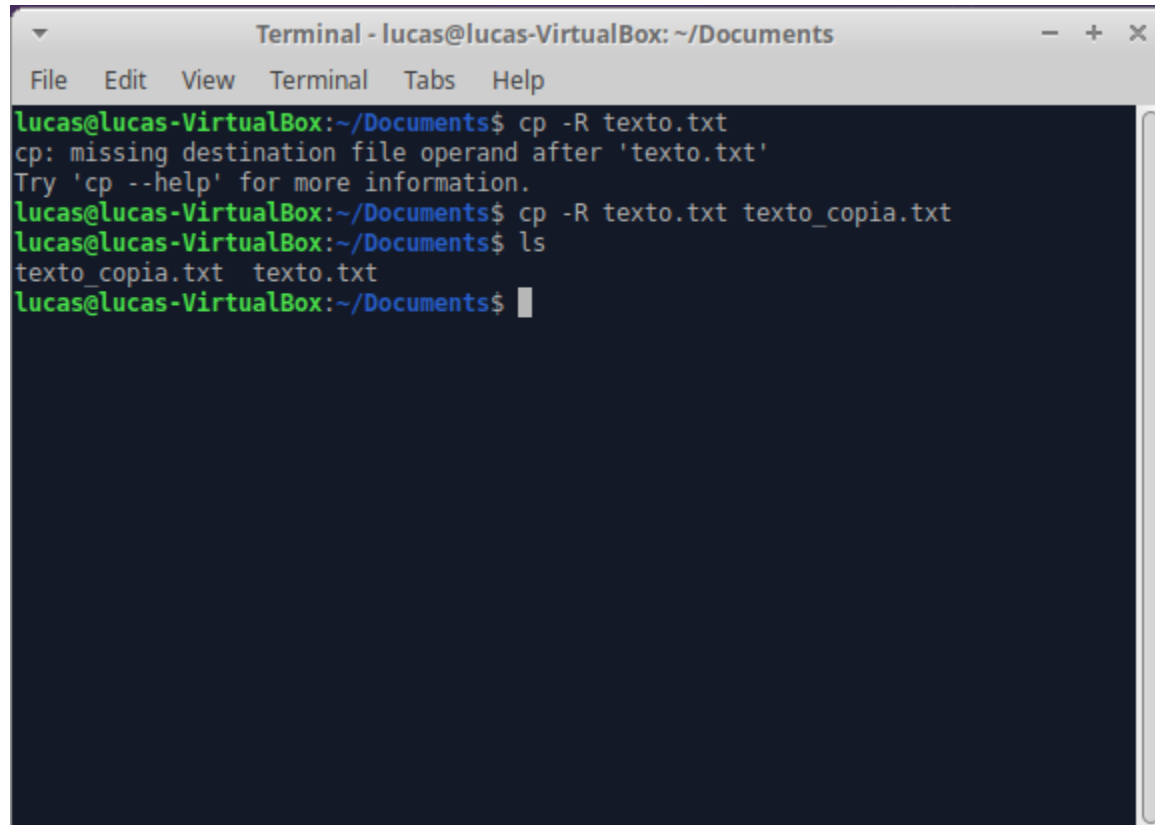
Capítulo 1

Comando: ls

A screenshot of a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows the prompt "lucas@lucas-VirtualBox:~\$" followed by the command "ls". The output of the command is displayed on the next line: "Desktop Documents Downloads Music Pictures Public Templates Videos". The prompt "lucas@lucas-VirtualBox:~\$" is shown again on the third line, followed by a cursor. The terminal has a dark background and a light-colored scrollbar on the right side.

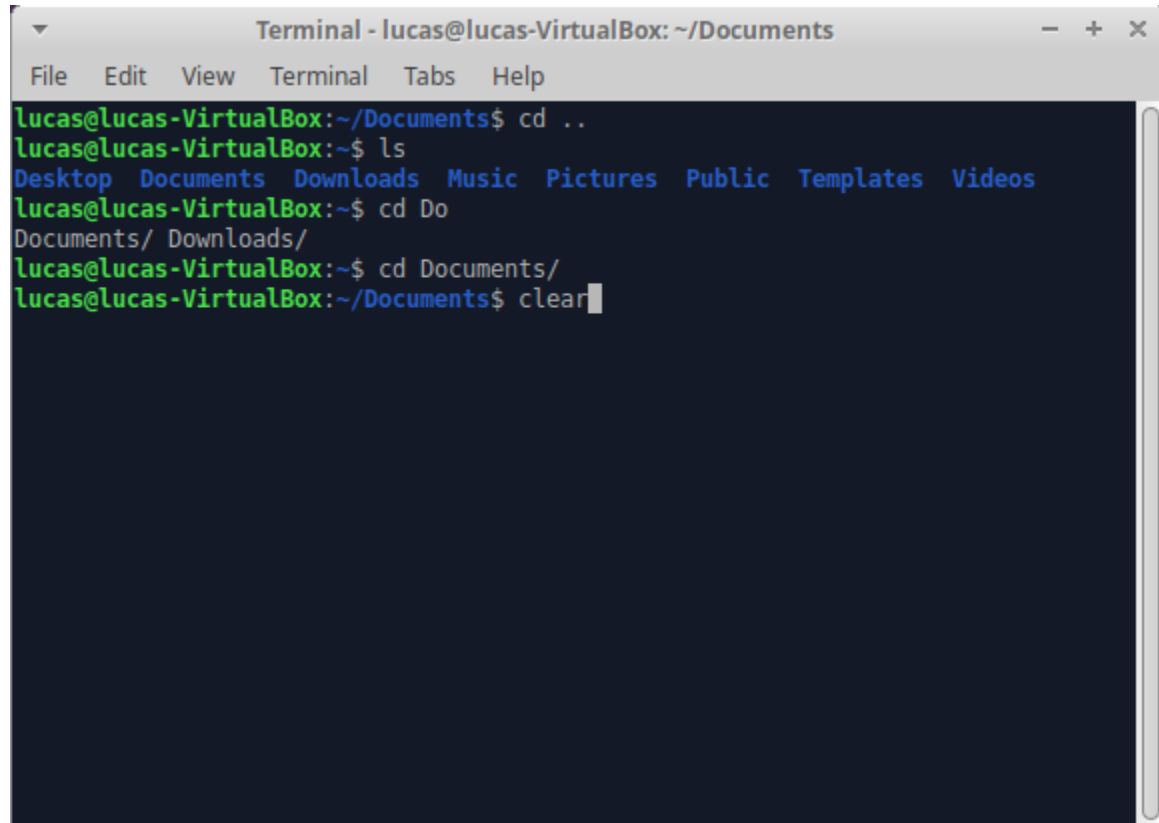
```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ ls
Desktop Documents Downloads Music Pictures Public Templates Videos
lucas@lucas-VirtualBox:~$
```

Comando: cp

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The terminal shows the following commands and output:

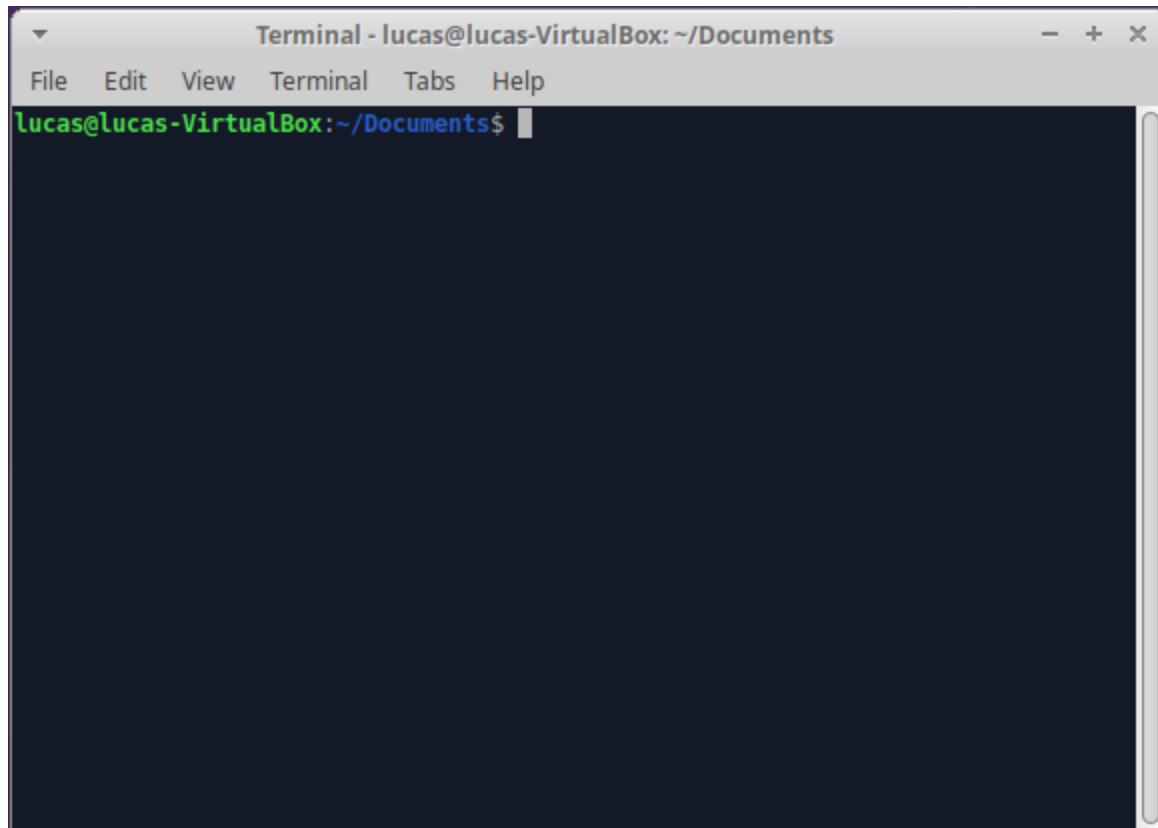
```
lucas@lucas-VirtualBox:~/Documents$ cp -R texto.txt
cp: missing destination file operand after 'texto.txt'
Try 'cp --help' for more information.
lucas@lucas-VirtualBox:~/Documents$ cp -R texto.txt texto_copia.txt
lucas@lucas-VirtualBox:~/Documents$ ls
texto_copia.txt  texto.txt
lucas@lucas-VirtualBox:~/Documents$
```

Comandos: cd e clear

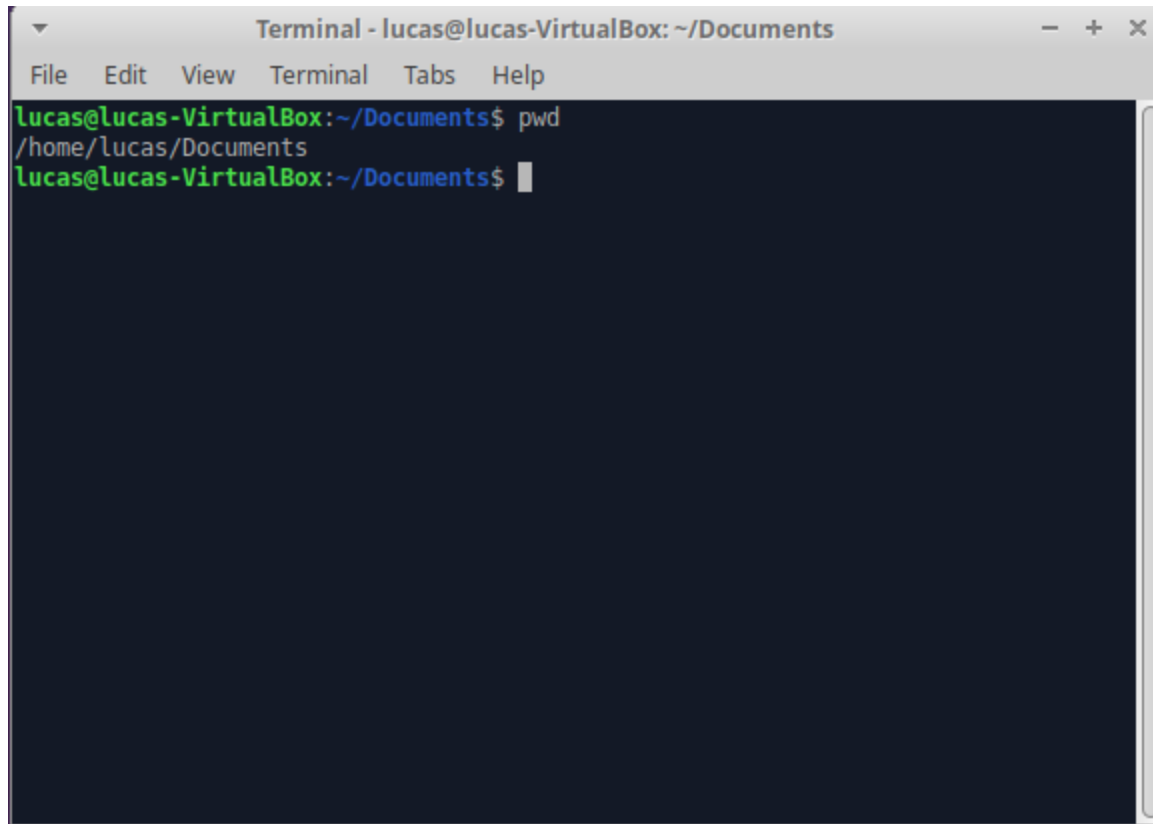
A screenshot of a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows a series of commands and their outputs:

```
lucas@lucas-VirtualBox:~/Documents$ cd ..  
lucas@lucas-VirtualBox:~$ ls  
Desktop  Documents  Downloads  Music  Pictures  Public  Templates  Videos  
lucas@lucas-VirtualBox:~$ cd Do  
Documents/ Downloads/  
lucas@lucas-VirtualBox:~$ cd Documents/  
lucas@lucas-VirtualBox:~/Documents$ clear
```

 The prompt changes from `~/Documents$` to `~$` after the first `cd ..` command. The `clear` command is entered at the end, and the cursor is at the end of the line.



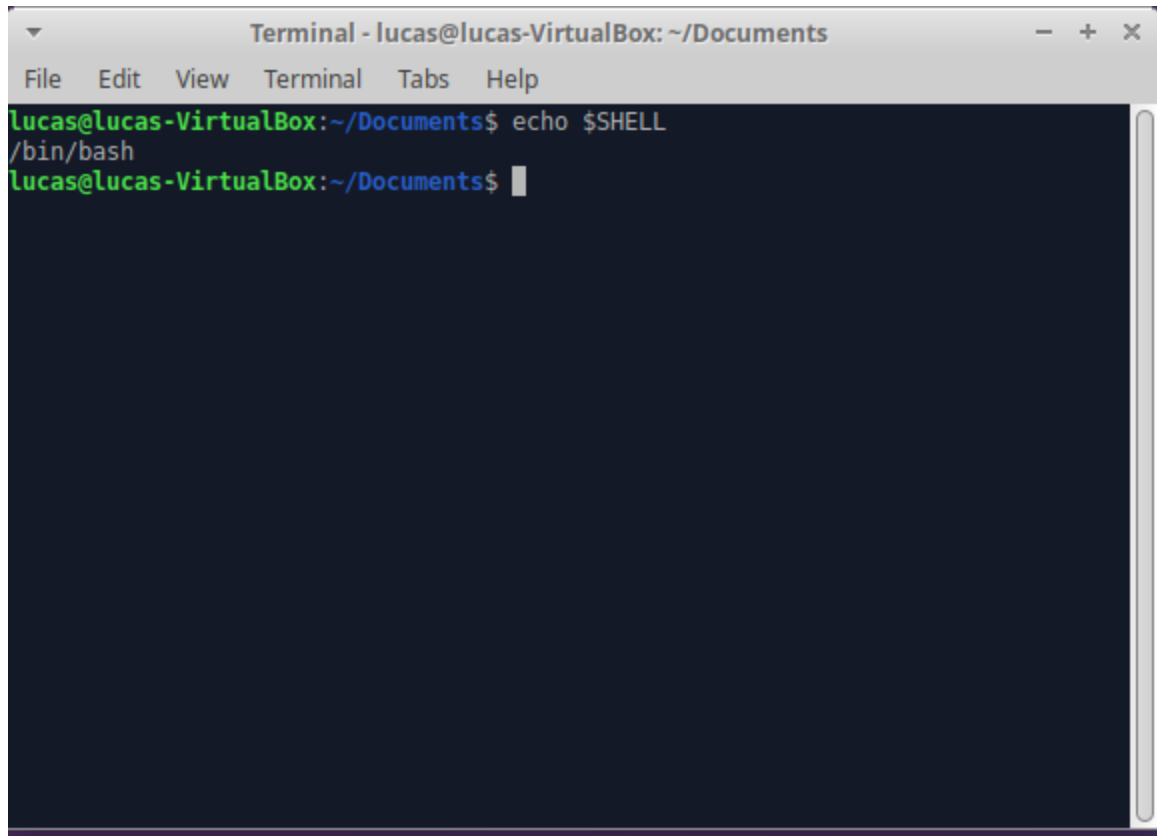
Comando: pwd

A screenshot of a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows the user "lucas" at the prompt "lucas@lucas-VirtualBox:~/Documents\$". The user enters the command "pwd", and the terminal outputs the path "/home/lucas/Documents". The prompt then changes to "lucas@lucas-VirtualBox:~/Documents\$" with a cursor. A vertical scrollbar is visible on the right side of the terminal area.

```
Terminal - lucas@lucas-VirtualBox: ~/Documents
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~/Documents$ pwd
/home/lucas/Documents
lucas@lucas-VirtualBox:~/Documents$
```

Comando: echo

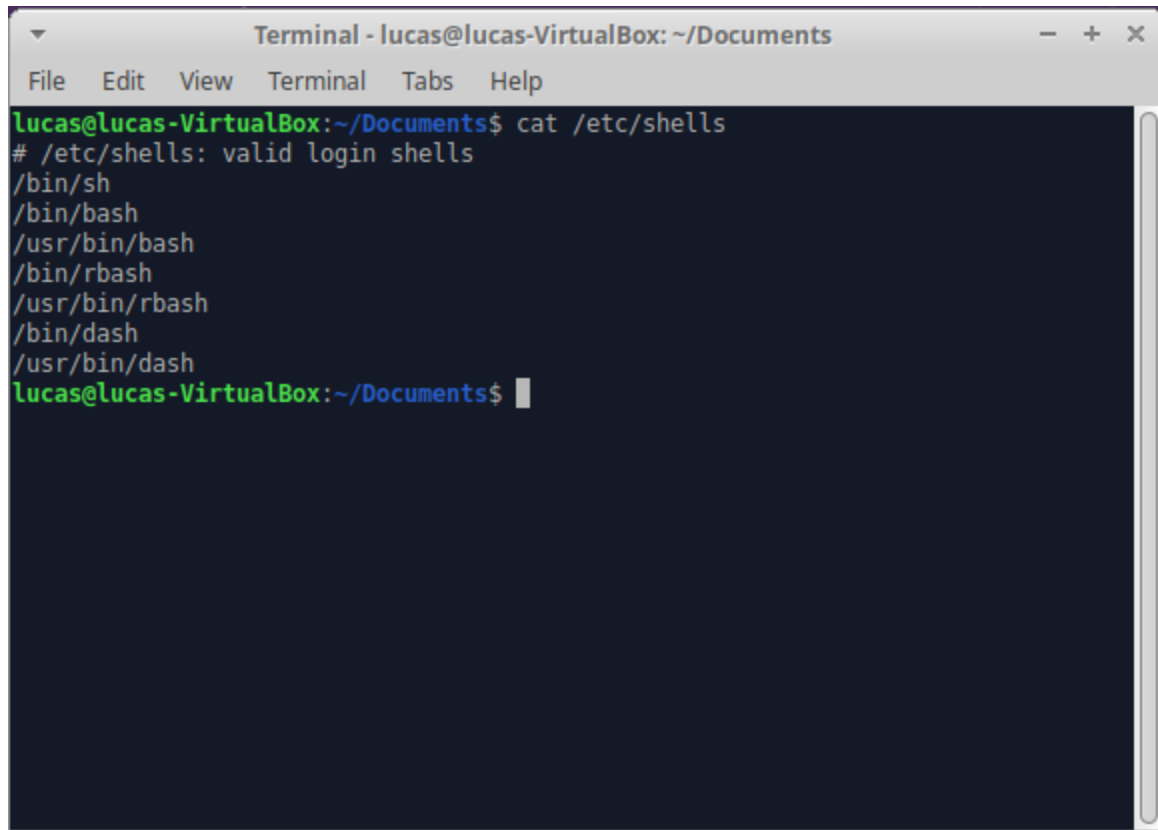
O comando echo é utilizado para imprimir variáveis de ambiente ou textos no terminal.

A screenshot of a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows a prompt "lucas@lucas-VirtualBox:~/Documents\$" followed by the command "echo \$SHELL". The output is "/bin/bash", and the prompt repeats. A vertical scrollbar is on the right side of the terminal area.

```
Terminal - lucas@lucas-VirtualBox: ~/Documents
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~/Documents$ echo $SHELL
/bin/bash
lucas@lucas-VirtualBox:~/Documents$
```

Comando: cat

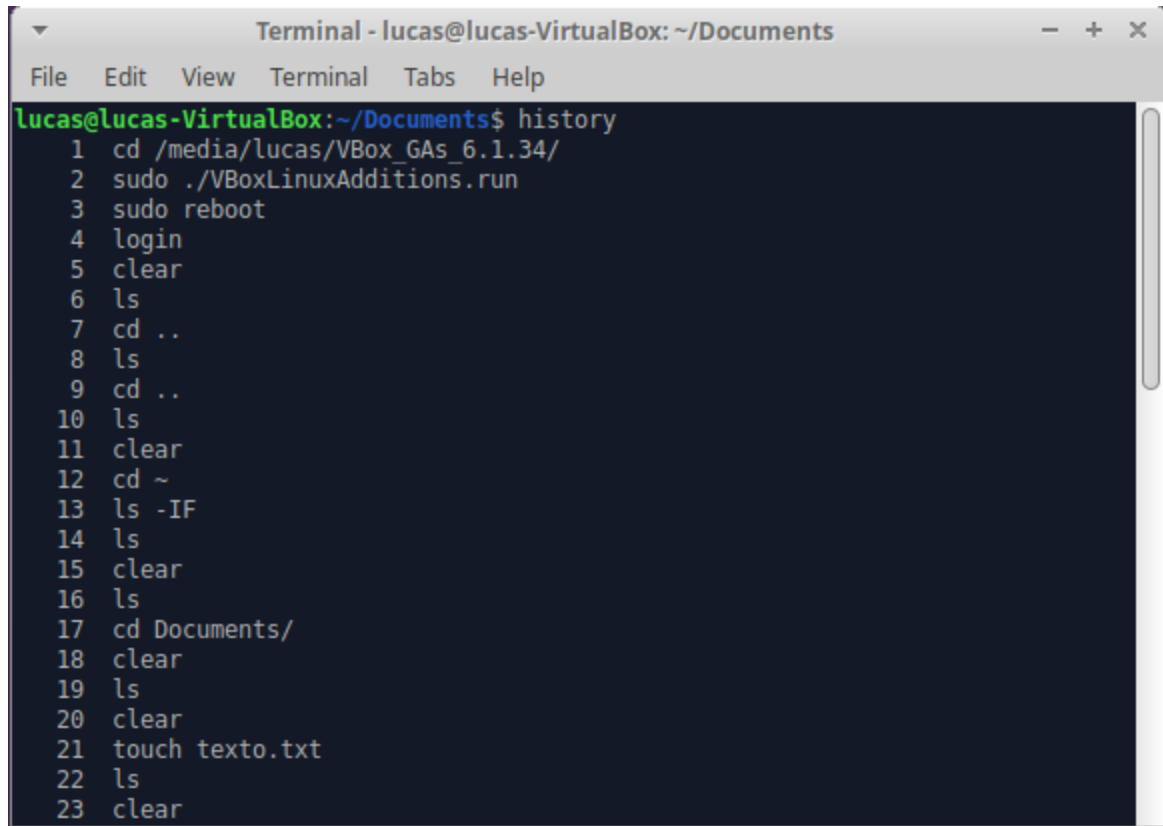
O comando cat é utilizado para concatenar arquivos, ou entrada padrão, e imprimir o resultado na saída padrão, sendo, muitas vezes utilizado para ler conteúdos de arquivos,visualizando-os no terminal

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows the command "cat /etc/shells" being executed, which lists valid login shells: "/bin/sh", "/bin/bash", "/usr/bin/bash", "/bin/rbash", "/usr/bin/rbash", "/bin/dash", and "/usr/bin/dash". The prompt "lucas@lucas-VirtualBox:~/Documents\$" is visible at the bottom.

```
Terminal - lucas@lucas-VirtualBox: ~/Documents
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~/Documents$ cat /etc/shells
# /etc/shells: valid login shells
/bin/sh
/bin/bash
/usr/bin/bash
/bin/rbash
/usr/bin/rbash
/bin/dash
/usr/bin/dash
lucas@lucas-VirtualBox:~/Documents$
```

Comando: history

O comando history pode ser executado para listar o histórico de comandos utilizados no Terminal.

A screenshot of a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows the command "history" being executed, which lists 23 previous commands in a numbered list. The commands include navigating directories, running scripts, rebooting, logging in, clearing the screen, listing files, and creating a new file.

```
lucas@lucas-VirtualBox:~/Documents$ history
1 cd /media/lucas/VBox_GAs_6.1.34/
2 sudo ./VBoxLinuxAdditions.run
3 sudo reboot
4 login
5 clear
6 ls
7 cd ..
8 ls
9 cd ..
10 ls
11 clear
12 cd ~
13 ls -lF
14 ls
15 clear
16 ls
17 cd Documents/
18 clear
19 ls
20 clear
21 touch texto.txt
22 ls
23 clear
```

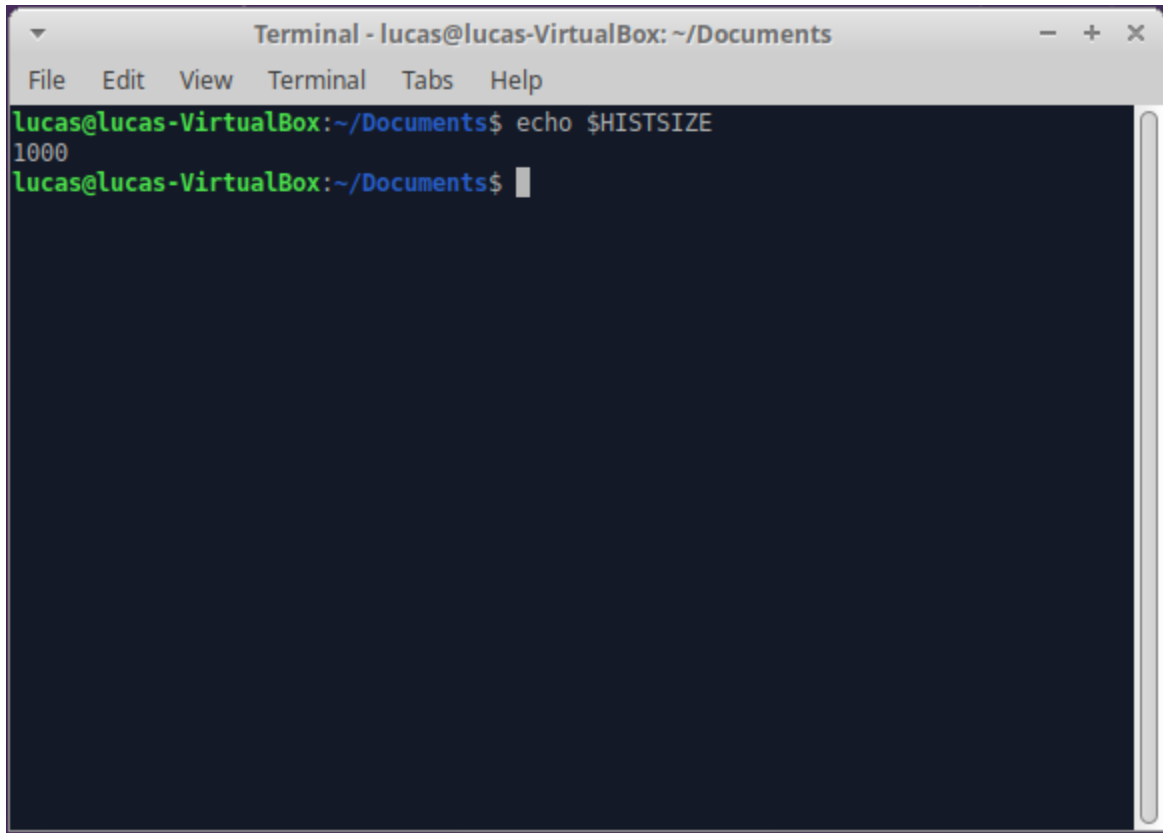
Comando: `history | grep ${COMANDO}`

Para procurar um determinado comando no history, basta usá-lo em combinação com o comando `grep`.


```
Terminal - lucas@lucas-VirtualBox: ~/Documents
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~/Documents$ history | grep touch
21 touch texto.txt
59 history | grep touch
lucas@lucas-VirtualBox:~/Documents$
```

Comando: echo \$HISTSIZE

Para listar o valor atual da variável de ambiente que define o tamanho máximo utiliza-se o comando echo para printar o valor da variável \$HISTSIZE

A screenshot of a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows the command "lucas@lucas-VirtualBox:~/Documents\$ echo \$HISTSIZE" being executed, followed by the output "1000". The prompt "lucas@lucas-VirtualBox:~/Documents\$" is shown again on the next line with a cursor. A vertical scrollbar is visible on the right side of the terminal area.

```
Terminal - lucas@lucas-VirtualBox: ~/Documents
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~/Documents$ echo $HISTSIZE
1000
lucas@lucas-VirtualBox:~/Documents$
```

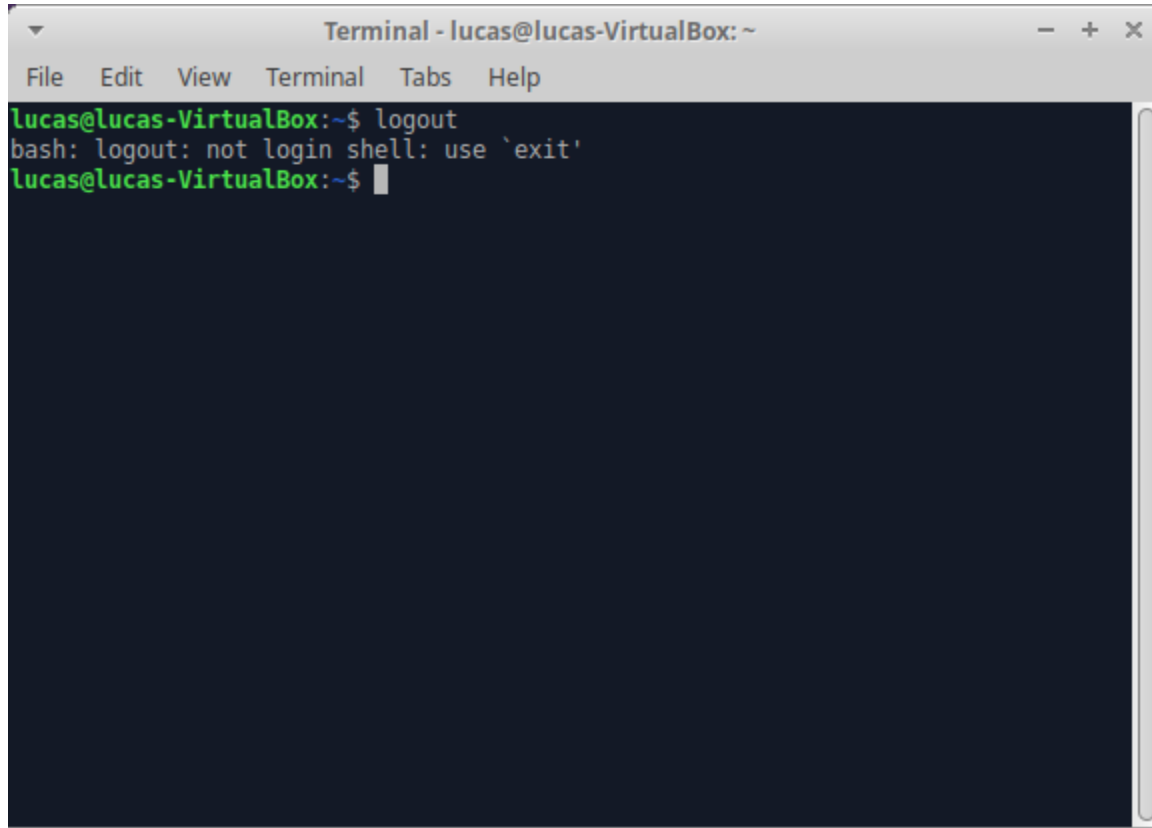
Comando: apt install

```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ sudo apt install vim
[sudo] password for lucas:
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  vim-runtime
Suggested packages:
  ctags vim-doc vim-scripts
The following NEW packages will be installed:
  vim vim-runtime
0 upgraded, 2 newly installed, 0 to remove and 145 not upgraded.
Need to get 7.110 kB of archives.
After this operation, 34,6 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://br.archive.ubuntu.com/ubuntu focal-updates/main amd64 vim-runtime a
ll 2:8.1.2269-1ubuntu5.7 [5.872 kB]
Get:2 http://br.archive.ubuntu.com/ubuntu focal-updates/main amd64 vim amd64 2:8
.1.2269-1ubuntu5.7 [1.238 kB]
Fetched 7.110 kB in 9s (813 kB/s)
Selecting previously unselected package vim-runtime.
(Reading database ... 196968 files and directories currently installed.)
Preparing to unpack .../vim-runtime_2%3a8.1.2269-1ubuntu5.7_all.deb ...
Adding 'diversion of /usr/share/vim/vim81/doc/help.txt to /usr/share/vim/vim81/d
```

```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
Adding 'diversion of /usr/share/vim/vim81/doc/tags to /usr/share/vim/vim81/doc/t
ags.vim-tiny by vim-runtime'
Unpacking vim-runtime (2:8.1.2269-lubuntu5.7) ...
Selecting previously unselected package vim.
Preparing to unpack .../vim_2%3a8.1.2269-lubuntu5.7_amd64.deb ...
Unpacking vim (2:8.1.2269-lubuntu5.7) ...
Setting up vim-runtime (2:8.1.2269-lubuntu5.7) ...
Setting up vim (2:8.1.2269-lubuntu5.7) ...
update-alternatives: using /usr/bin/vim.basic to provide /usr/bin/vim (vim) in a
uto mode
update-alternatives: using /usr/bin/vim.basic to provide /usr/bin/vimdiff (vimdi
ff) in auto mode
update-alternatives: using /usr/bin/vim.basic to provide /usr/bin/rvim (rvim) in
auto mode
update-alternatives: using /usr/bin/vim.basic to provide /usr/bin/rview (rview)
in auto mode
update-alternatives: using /usr/bin/vim.basic to provide /usr/bin/vi (vi) in aut
o mode
update-alternatives: using /usr/bin/vim.basic to provide /usr/bin/view (view) in
auto mode
update-alternatives: using /usr/bin/vim.basic to provide /usr/bin/ex (ex) in aut
o mode
Processing triggers for man-db (2.9.1-1) ...
lucas@lucas-VirtualBox:~$
```

Capítulo 2

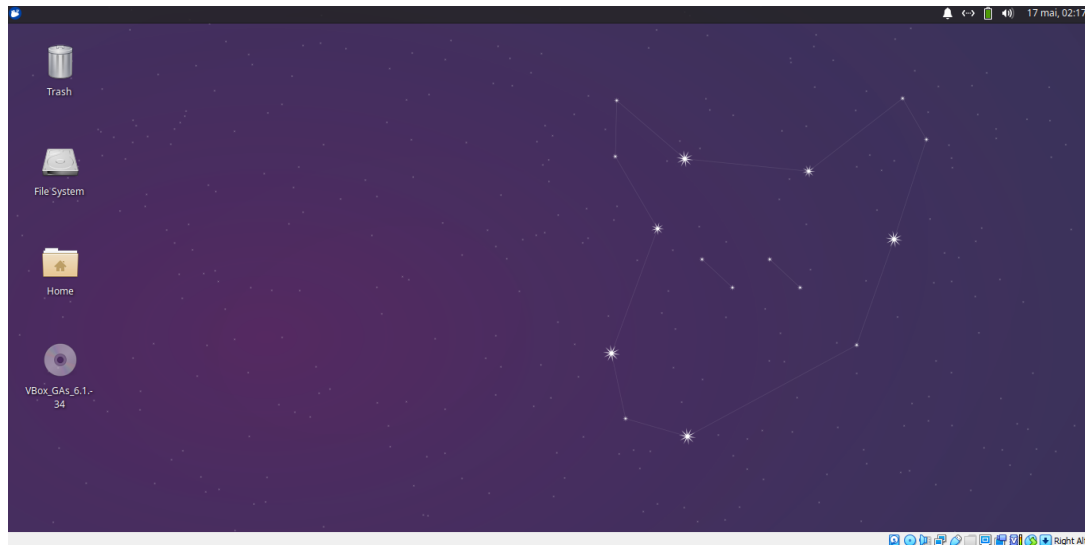
Comando: logout

A screenshot of a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows a user prompt "lucas@lucas-VirtualBox:~\$" followed by the command "logout". The output is "bash: logout: not login shell: use 'exit'", followed by another user prompt "lucas@lucas-VirtualBox:~\$" with a cursor. The terminal has a dark background and a scrollbar on the right.

```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ logout
bash: logout: not login shell: use 'exit'
lucas@lucas-VirtualBox:~$
```

Comando: exit

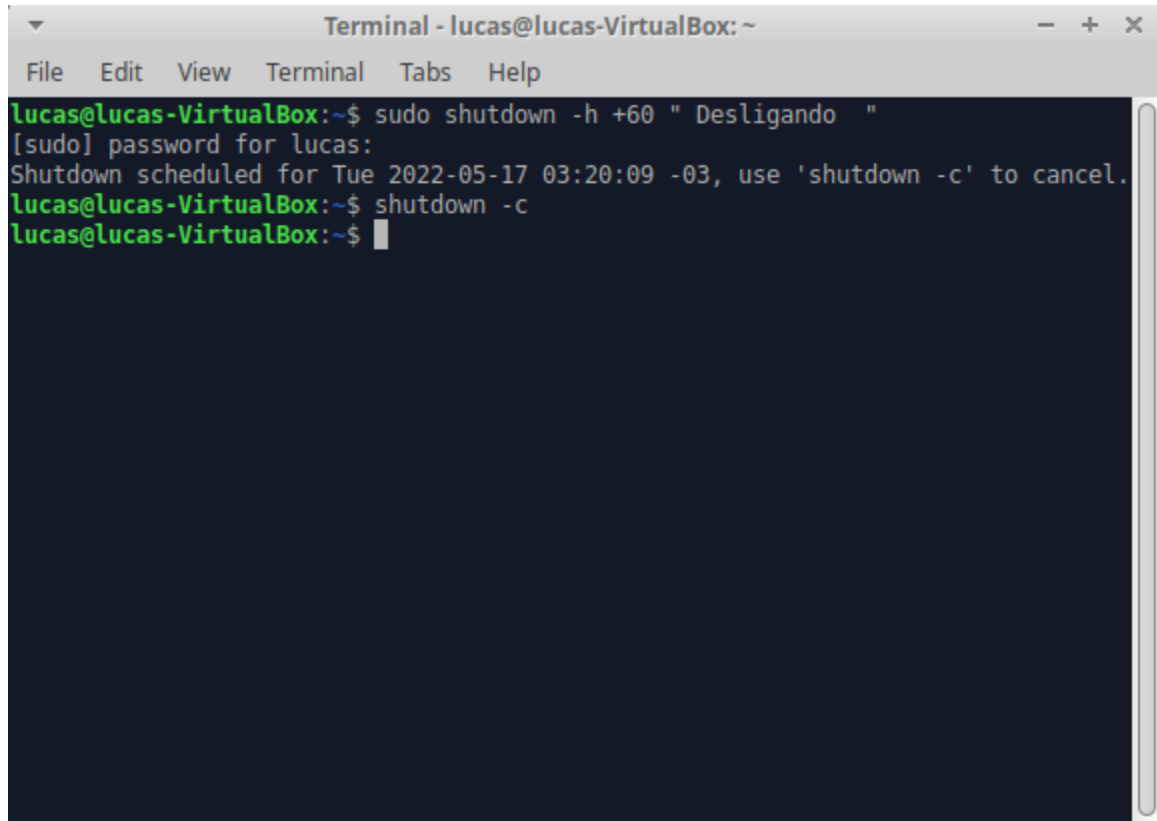
Após executar o comando no shell, o shell foi fechado



Comando: `sudo shutdown -h +60 " Desligando "`

```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ sudo shutdown -h +60 " Desligando "
[sudo] password for lucas:
Shutdown scheduled for Tue 2022-05-17 03:20:09 -03, use 'shutdown -c' to cancel.
lucas@lucas-VirtualBox:~$
```

Comando: shutdown -c

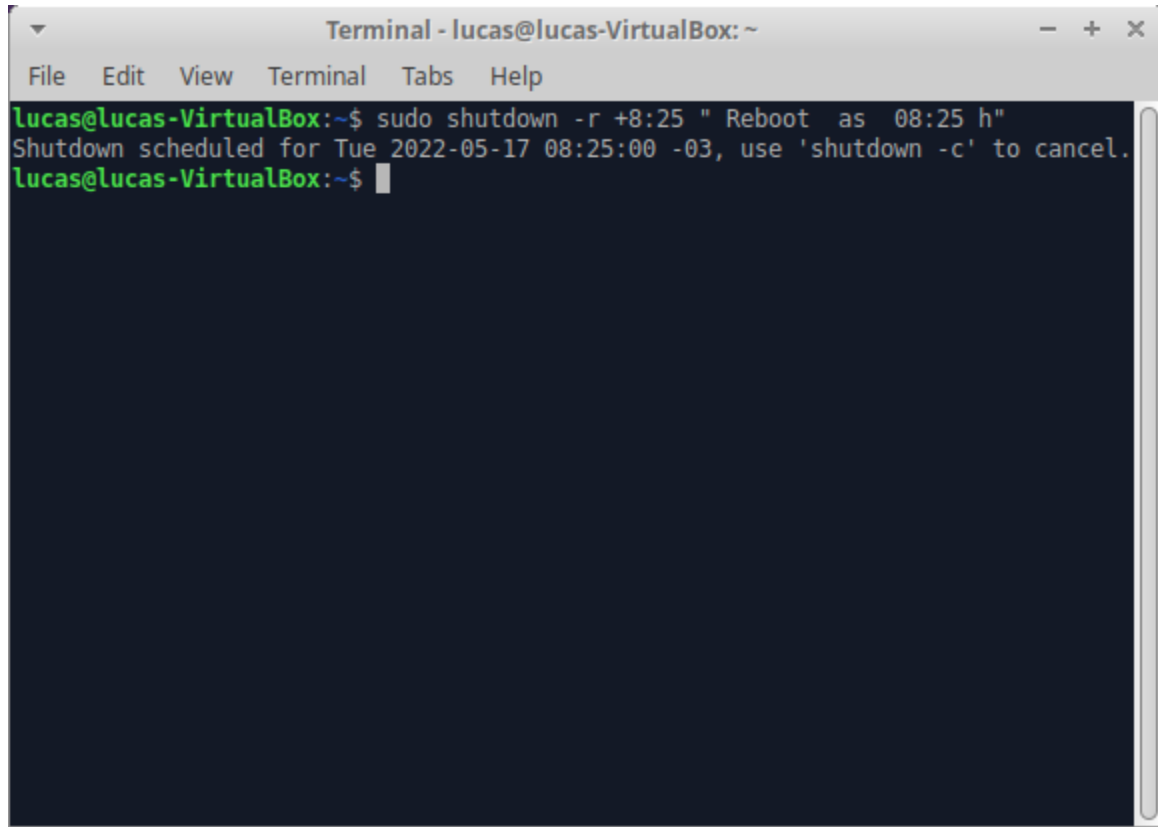
A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The terminal shows the following commands and output:

```
lucas@lucas-VirtualBox:~$ sudo shutdown -h +60 " Desligando  "  
[sudo] password for lucas:  
Shutdown scheduled for Tue 2022-05-17 03:20:09 -03, use 'shutdown -c' to cancel.  
lucas@lucas-VirtualBox:~$ shutdown -c  
lucas@lucas-VirtualBox:~$
```

Comando: shutdown -r +3 " Reboot em 3 minutos "

```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ shutdown -r +3 " Reboot em 3 minutos "
Shutdown scheduled for Tue 2022-05-17 02:25:23 -03, use 'shutdown -c' to cancel.
lucas@lucas-VirtualBox:~$
```

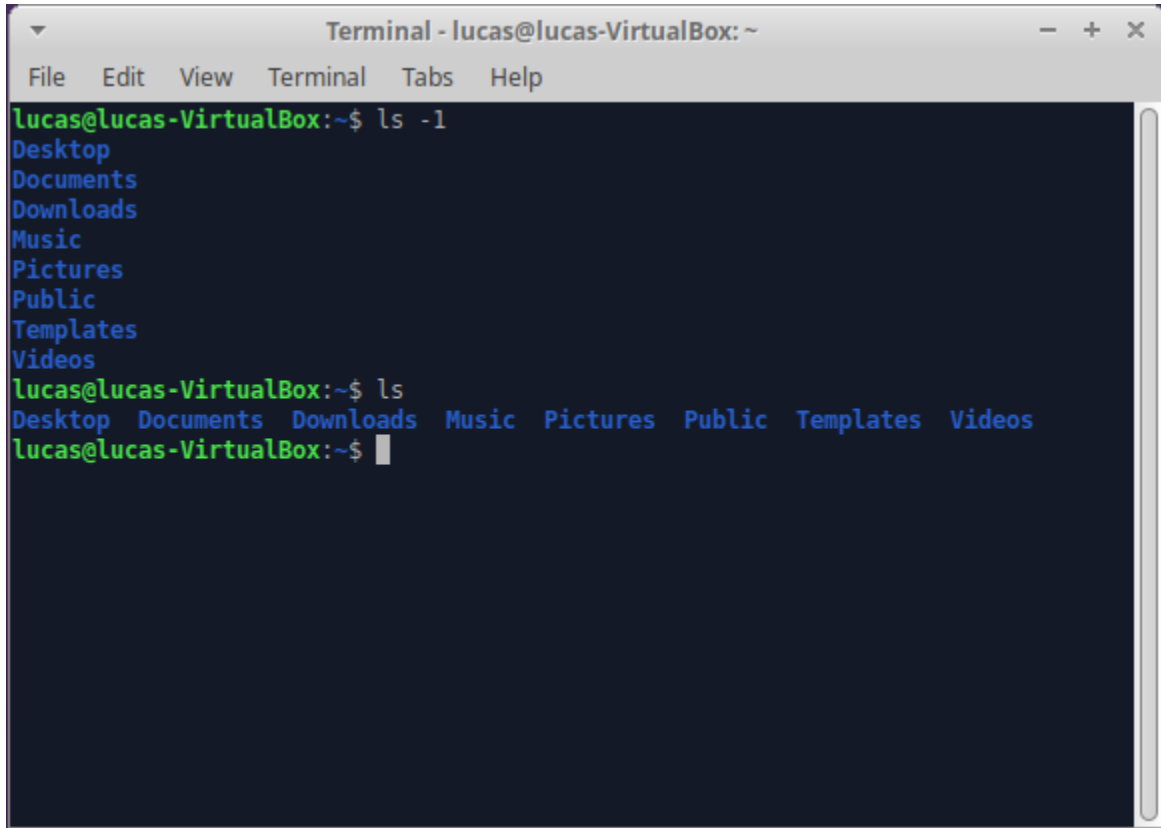

Comando: `sudo shutdown -r +8:25 " Reboot as 08:25 h"`

A screenshot of a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows the command `lucas@lucas-VirtualBox:~$ sudo shutdown -r +8:25 " Reboot as 08:25 h"` being entered. The output is `Shutdown scheduled for Tue 2022-05-17 08:25:00 -03, use 'shutdown -c' to cancel.` followed by a new prompt `lucas@lucas-VirtualBox:~$` with a cursor. A vertical scrollbar is visible on the right side of the terminal window.

```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ sudo shutdown -r +8:25 " Reboot as 08:25 h"
Shutdown scheduled for Tue 2022-05-17 08:25:00 -03, use 'shutdown -c' to cancel.
lucas@lucas-VirtualBox:~$
```

Capítulo 3

Comando: ls -l

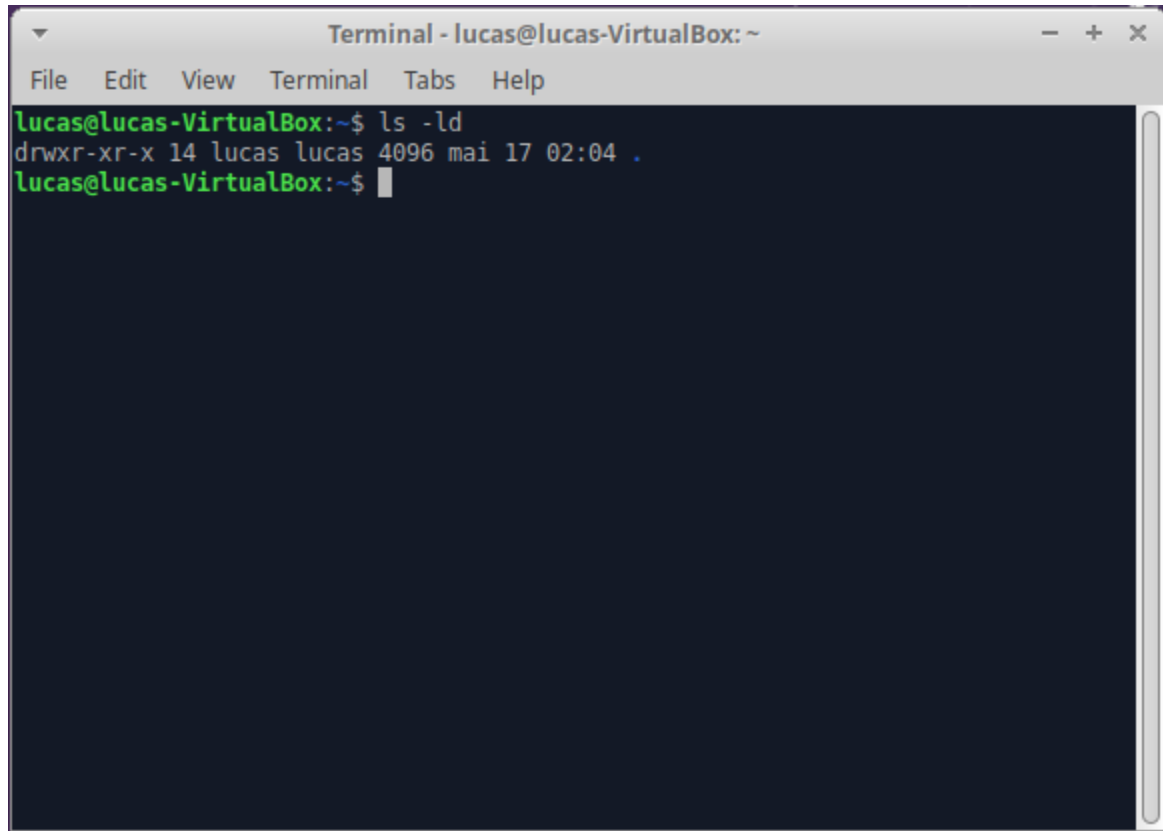
A screenshot of a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal shows the command "lucas@lucas-VirtualBox:~\$ ls -l" and its output: "Desktop", "Documents", "Downloads", "Music", "Pictures", "Public", "Templates", and "Videos". Each output line is preceded by a green prompt "lucas@lucas-VirtualBox:~\$". The second command "lucas@lucas-VirtualBox:~\$ ls" is also shown, with its output "Desktop Documents Downloads Music Pictures Public Templates Videos" displayed on the next line. The terminal has a dark background and a vertical scrollbar on the right side.

```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ ls -l
Desktop
Documents
Downloads
Music
Pictures
Public
Templates
Videos
lucas@lucas-VirtualBox:~$ ls
Desktop Documents Downloads Music Pictures Public Templates Videos
lucas@lucas-VirtualBox:~$
```

Comando: ls -l

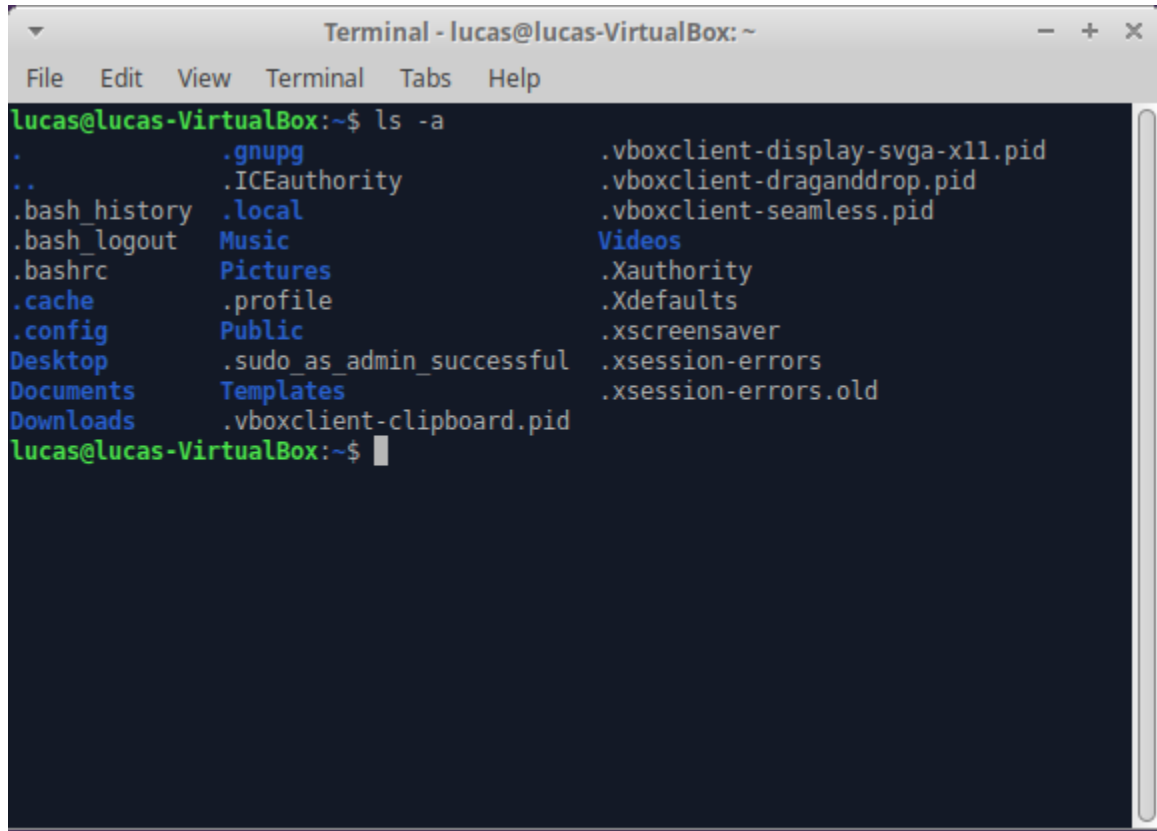
```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ ls -l
total 32
drwxr-xr-x 2 lucas lucas 4096 mai 16 02:19 Desktop
drwxr-xr-x 2 lucas lucas 4096 mai 16 15:40 Documents
drwxr-xr-x 2 lucas lucas 4096 mai 16 02:19 Downloads
drwxr-xr-x 2 lucas lucas 4096 mai 16 02:19 Music
drwxr-xr-x 2 lucas lucas 4096 mai 16 02:19 Pictures
drwxr-xr-x 2 lucas lucas 4096 mai 16 02:19 Public
drwxr-xr-x 2 lucas lucas 4096 mai 16 02:20 Templates
drwxr-xr-x 2 lucas lucas 4096 mai 16 02:19 Videos
lucas@lucas-VirtualBox:~$
```

Comando: ls -ld

A screenshot of a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows the command "ls -ld" being executed, resulting in the output "drwxr-xr-x 14 lucas lucas 4096 mai 17 02:04 .". The prompt "lucas@lucas-VirtualBox:~\$" is visible on both lines.

```
Terminal - lucas@lucas-VirtualBox: ~  
File Edit View Terminal Tabs Help  
lucas@lucas-VirtualBox:~$ ls -ld  
drwxr-xr-x 14 lucas lucas 4096 mai 17 02:04 .  
lucas@lucas-VirtualBox:~$
```

Comando: ls -a



A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The terminal shows the command "ls -a" and its output, which lists hidden files and directories in three columns. The output is as follows:

```
lucas@lucas-VirtualBox:~$ ls -a
.          .gnupg          .vboxclient-display-svga-x11.pid
..         .ICEauthority  .vboxclient-draganddrop.pid
.bash_history .local         .vboxclient-seamless.pid
.bash_logout Music          Videos
.bashrc     Pictures
.cache     .profile
.config    Public
Desktop    .sudo_as_admin_successful
Documents  Templates
Downloads  .vboxclient-clipboard.pid
lucas@lucas-VirtualBox:~$
```

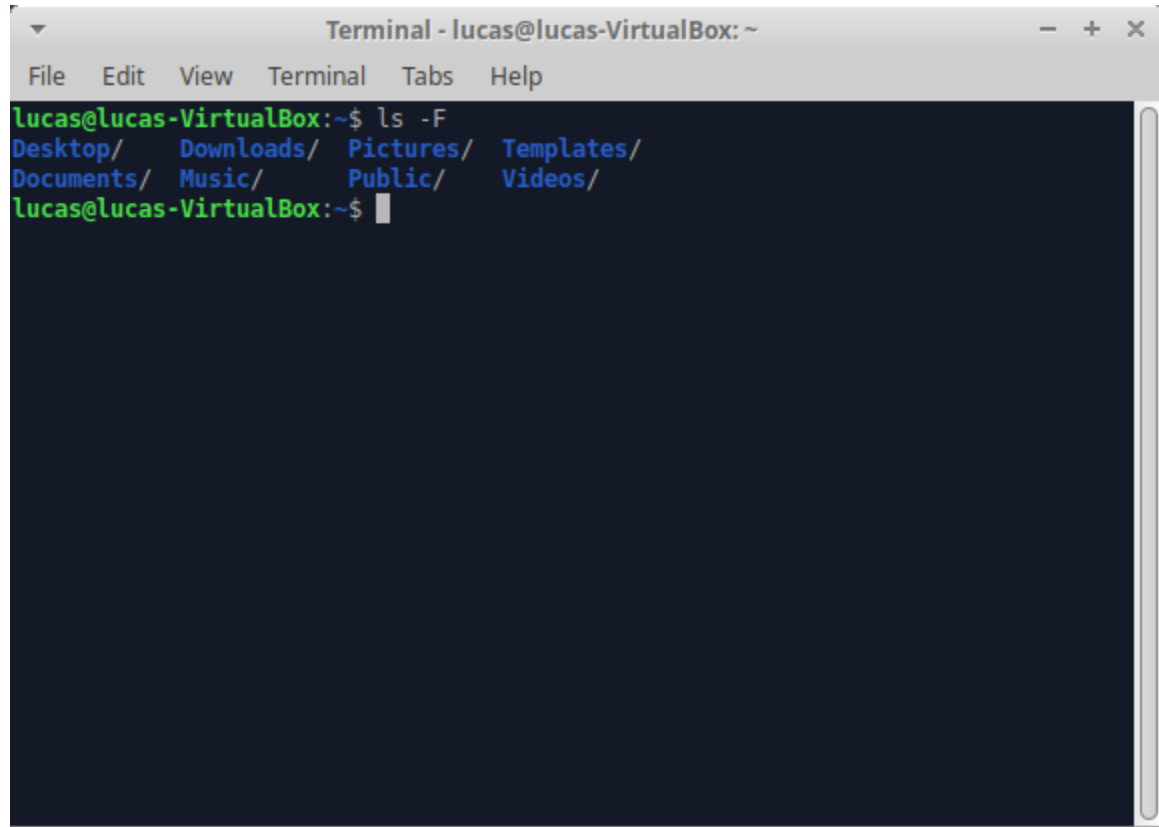
Comando: ls -all

```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ ls -all
total 116
drwxr-xr-x 14 lucas lucas 4096 mai 17 02:04 .
drwxr-xr-x  3 root  root  4096 mai 16 01:31 ..
-rw-r----- 1 lucas lucas  688 mai 17 02:17 .bash_history
-rw-r--r--  1 lucas lucas  220 mai 16 01:31 .bash_logout
-rw-r--r--  1 lucas lucas 3771 mai 16 01:31 .bashrc
drwxrwxr-x  9 lucas lucas 4096 mai 17 02:04 .cache
drwxr-xr-x 11 lucas lucas 4096 mai 16 02:55 .config
drwxr-xr-x  2 lucas lucas 4096 mai 16 02:19 Desktop
drwxr-xr-x  2 lucas lucas 4096 mai 16 15:40 Documents
drwxr-xr-x  2 lucas lucas 4096 mai 16 02:19 Downloads
drwx----- 3 lucas lucas 4096 mai 16 02:19 .gnupg
-rw-r----- 1 lucas lucas    0 mai 16 02:19 .ICEauthority
drwxrwxr-x  3 lucas lucas 4096 mai 16 02:19 .local
drwxr-xr-x  2 lucas lucas 4096 mai 16 02:19 Music
drwxr-xr-x  2 lucas lucas 4096 mai 16 02:19 Pictures
-rw-r--r--  1 lucas lucas  807 mai 16 01:31 .profile
drwxr-xr-x  2 lucas lucas 4096 mai 16 02:19 Public
-rw-r--r--  1 lucas lucas    0 mai 16 02:56 .sudo_as_admin_successful
drwxr-xr-x  2 lucas lucas 4096 mai 16 02:20 Templates
-rw-r----- 1 lucas lucas    5 mai 17 02:04 .vboxclient-clipboard.pid
-rw-r----- 1 lucas lucas    5 mai 17 02:04 .vboxclient-display-svgx-x11.pid
-rw-r----- 1 lucas lucas    5 mai 17 02:04 .vboxclient-draganddrop.pid
```

Comando: ls -ls .?*

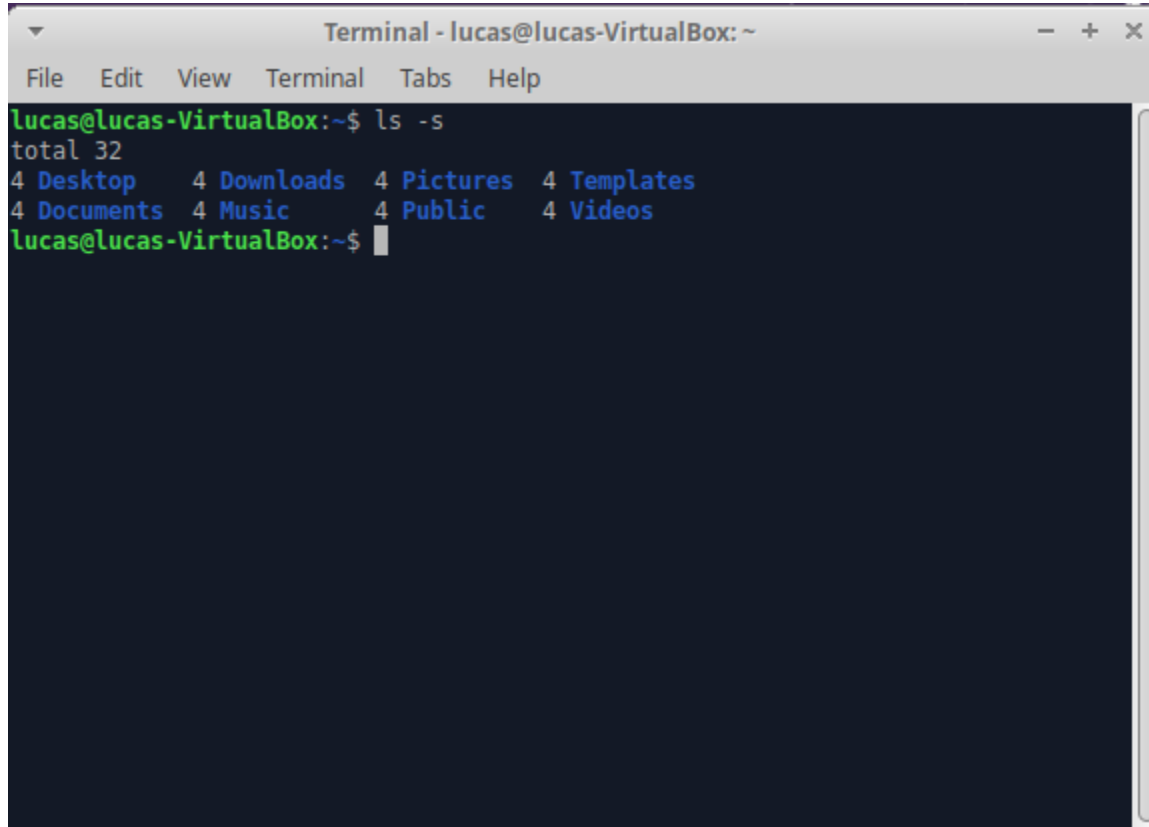
```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ ls -ld .*
drwxr-xr-x  3 root  root  4096 mai 16 01:31 ..
-rw-----  1 lucas lucas   688 mai 17 02:17 .bash_history
-rw-r--r--  1 lucas lucas   220 mai 16 01:31 .bash_logout
-rw-r--r--  1 lucas lucas  3771 mai 16 01:31 .bashrc
drwxrwxr-x  9 lucas lucas  4096 mai 17 02:04 .cache
drwxr-xr-x 11 lucas lucas  4096 mai 16 02:55 .config
drwx-----  3 lucas lucas  4096 mai 16 02:19 .gnupg
-rw-----  1 lucas lucas     0 mai 16 02:19 .ICEauthority
drwxrwxr-x  3 lucas lucas  4096 mai 16 02:19 .local
-rw-r--r--  1 lucas lucas   807 mai 16 01:31 .profile
-rw-r--r--  1 lucas lucas     0 mai 16 02:56 .sudo_as_admin_successful
-rw-r-----  1 lucas lucas     5 mai 17 02:04 .vboxclient-clipboard.pid
-rw-r-----  1 lucas lucas     5 mai 17 02:04 .vboxclient-display-svgx-x11.pid
-rw-r-----  1 lucas lucas     5 mai 17 02:04 .vboxclient-draganddrop.pid
-rw-r-----  1 lucas lucas     5 mai 17 02:04 .vboxclient-seamless.pid
-rw-----  1 lucas lucas    61 mai 17 02:04 .Xauthority
-rw-r--r--  1 lucas lucas  1600 mai 16 01:31 .Xdefaults
-rw-r--r--  1 lucas lucas    14 mai 16 01:31 .xscreensaver
-rw-----  1 lucas lucas  6259 mai 17 02:04 .xsession-errors
-rw-----  1 lucas lucas  6375 mai 16 17:04 .xsession-errors.old
lucas@lucas-VirtualBox:~$
```

Comando: ls -F

A screenshot of a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows the command "ls -F" being executed, resulting in a list of directories: "Desktop/", "Downloads/", "Pictures/", "Templates/", "Documents/", "Music/", "Public/", and "Videos/". Each directory name is followed by a forward slash. The prompt "lucas@lucas-VirtualBox:~\$" is visible at the bottom of the terminal, with a cursor at the end of the line.

```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ ls -F
Desktop/  Downloads/  Pictures/  Templates/
Documents/ Music/      Public/    Videos/
lucas@lucas-VirtualBox:~$
```


Comando: ls -s

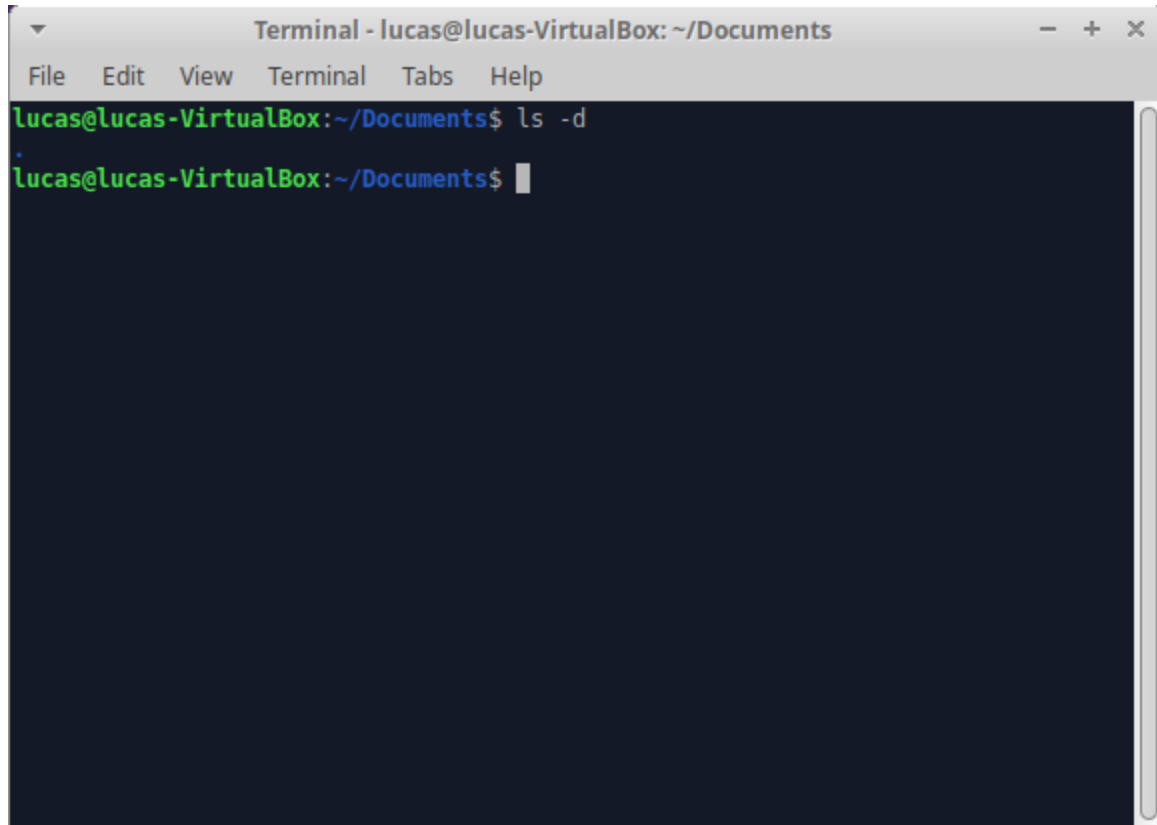
A screenshot of a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows the command "ls -s" being executed, resulting in the output "total 32" followed by a list of directories: "4 Desktop", "4 Downloads", "4 Pictures", "4 Templates", "4 Documents", "4 Music", "4 Public", and "4 Videos". The prompt "lucas@lucas-VirtualBox:~\$" is visible at the bottom of the terminal area.

```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ ls -s
total 32
4 Desktop    4 Downloads  4 Pictures    4 Templates
4 Documents  4 Music      4 Public      4 Videos
lucas@lucas-VirtualBox:~$
```

Comando: ls -alF

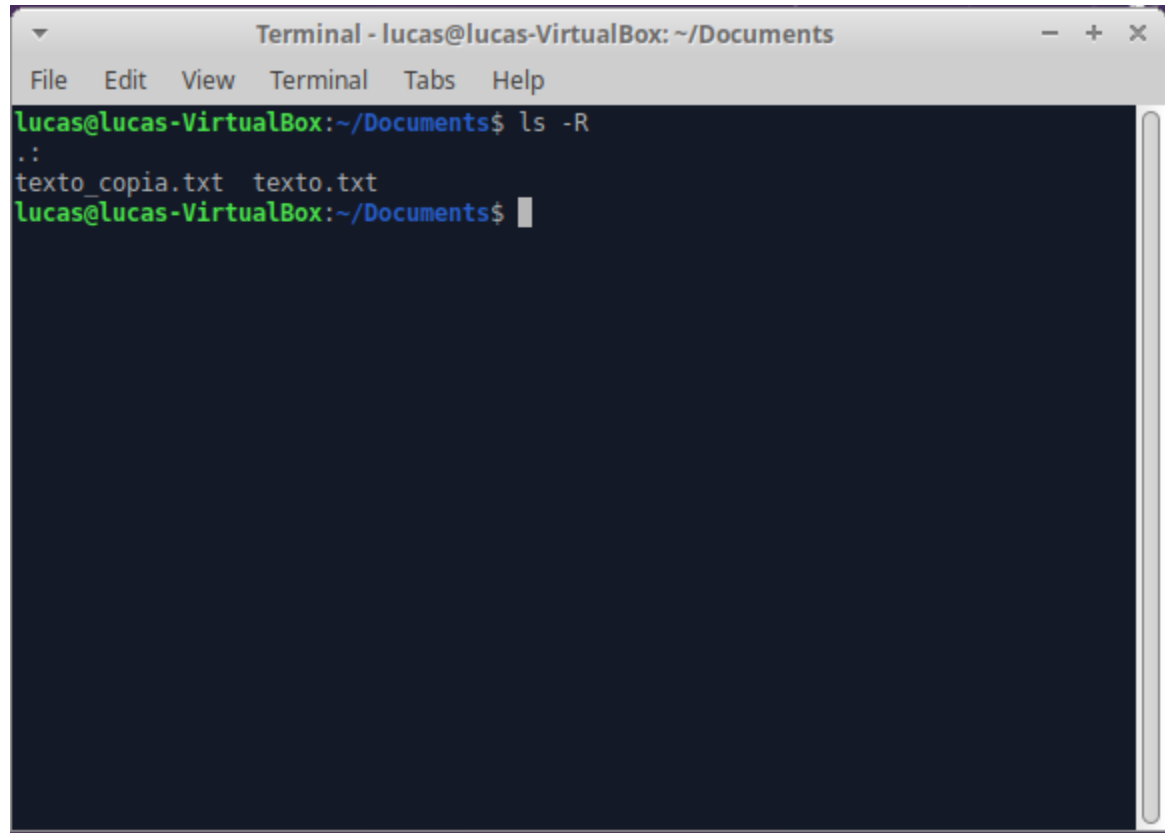
```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ ls -alF
total 116
drwxr-xr-x 14 lucas lucas 4096 mai 17 02:04 ./
drwxr-xr-x  3 root  root  4096 mai 16 01:31 ../
-rw-r----- 1 lucas lucas  688 mai 17 02:17 .bash_history
-rw-r--r--  1 lucas lucas  220 mai 16 01:31 .bash_logout
-rw-r--r--  1 lucas lucas 3771 mai 16 01:31 .bashrc
drwxrwxr-x  9 lucas lucas 4096 mai 17 02:04 .cache/
drwxr-xr-x 11 lucas lucas 4096 mai 16 02:55 .config/
drwxr-xr-x  2 lucas lucas 4096 mai 16 02:19 Desktop/
drwxr-xr-x  2 lucas lucas 4096 mai 16 15:40 Documents/
drwxr-xr-x  2 lucas lucas 4096 mai 16 02:19 Downloads/
drwx----- 3 lucas lucas 4096 mai 16 02:19 .gnupg/
-rw-r----- 1 lucas lucas    0 mai 16 02:19 .ICEauthority
drwxrwxr-x  3 lucas lucas 4096 mai 16 02:19 .local/
drwxr-xr-x  2 lucas lucas 4096 mai 16 02:19 Music/
drwxr-xr-x  2 lucas lucas 4096 mai 16 02:19 Pictures/
-rw-r--r--  1 lucas lucas  807 mai 16 01:31 .profile
drwxr-xr-x  2 lucas lucas 4096 mai 16 02:19 Public/
-rw-r--r--  1 lucas lucas    0 mai 16 02:56 .sudo_as_admin_successful
drwxr-xr-x  2 lucas lucas 4096 mai 16 02:20 Templates/
-rw-r----- 1 lucas lucas    5 mai 17 02:04 .vboxclient-clipboard.pid
-rw-r----- 1 lucas lucas    5 mai 17 02:04 .vboxclient-display-svga-x11.pid
-rw-r----- 1 lucas lucas    5 mai 17 02:04 .vboxclient-draganddrop.pid
```

Comando: ls -d

A screenshot of a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows the prompt "lucas@lucas-VirtualBox:~/Documents\$" followed by the command "ls -d" on the first line. On the second line, the prompt "lucas@lucas-VirtualBox:~/Documents\$" is shown again with a cursor, indicating the command has been executed. The terminal background is dark blue, and the text is green. A vertical scrollbar is visible on the right side of the terminal area.

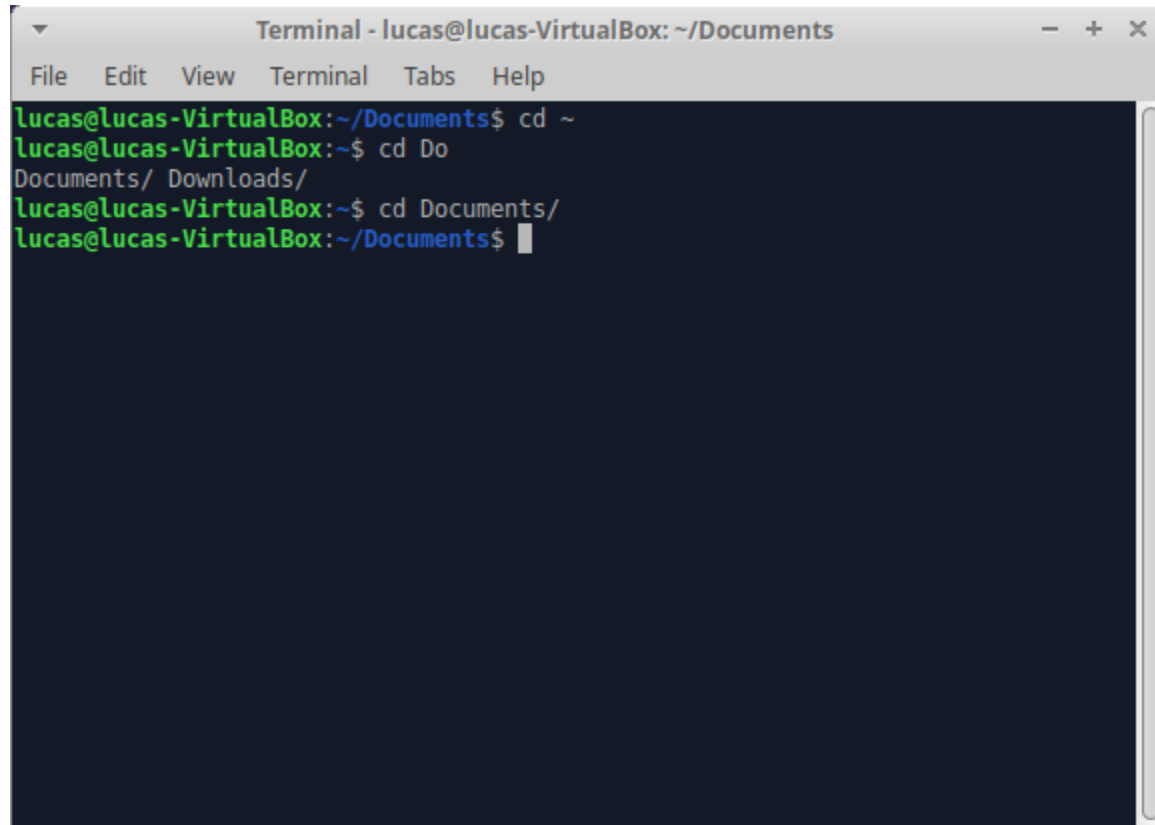
```
Terminal - lucas@lucas-VirtualBox: ~/Documents
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~/Documents$ ls -d
lucas@lucas-VirtualBox:~/Documents$
```

Comando: ls -R

A screenshot of a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows the command "ls -R" being executed, resulting in the output ".:" followed by "texto_copia.txt texto.txt" on the next line. The prompt "lucas@lucas-VirtualBox:~/Documents\$" is visible at the end of the line.

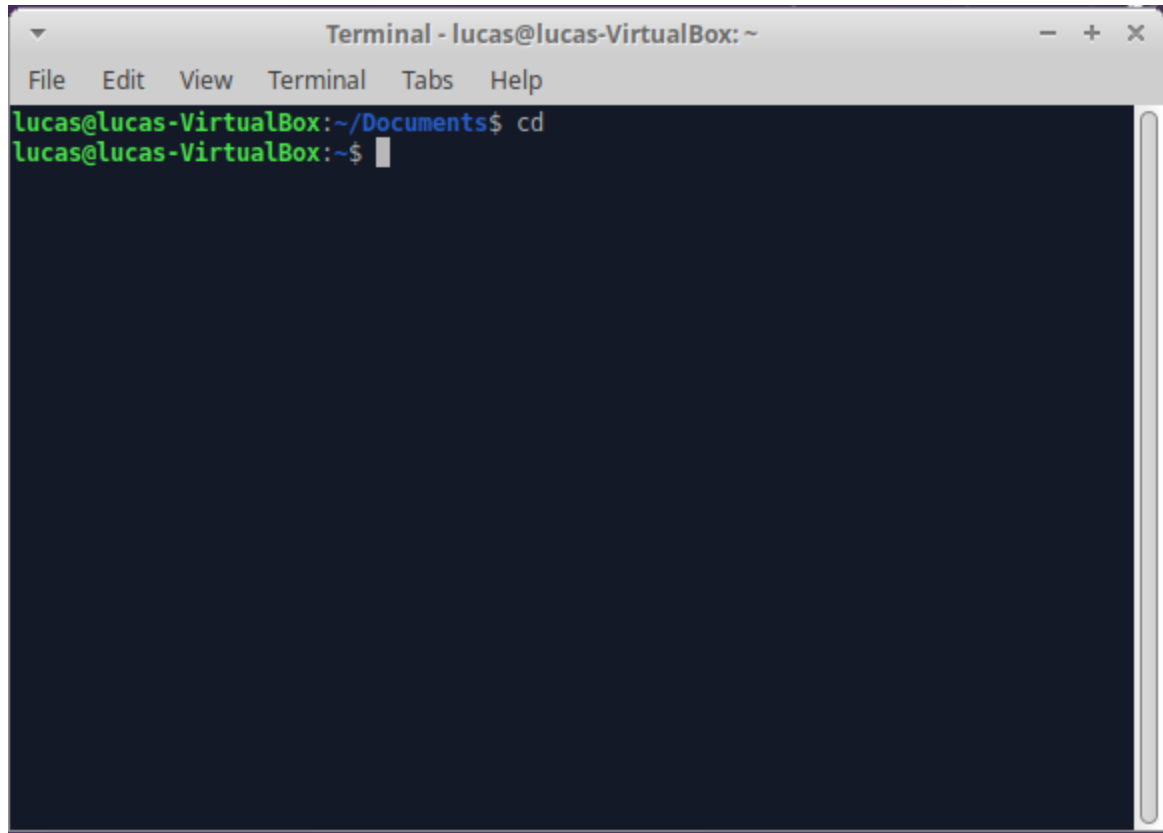
```
Terminal - lucas@lucas-VirtualBox: ~/Documents
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~/Documents$ ls -R
.:
texto_copia.txt texto.txt
lucas@lucas-VirtualBox:~/Documents$
```

Comando: cd ~

A screenshot of a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows a series of commands and their outputs: the prompt "lucas@lucas-VirtualBox:~/Documents\$" followed by "cd ~", then "lucas@lucas-VirtualBox:~\$ cd Do", then "Documents/ Downloads/" on a new line, then "lucas@lucas-VirtualBox:~\$ cd Documents/", and finally "lucas@lucas-VirtualBox:~/Documents\$" with a cursor. The text is in a monospaced font with green for the prompt and blue for the command.

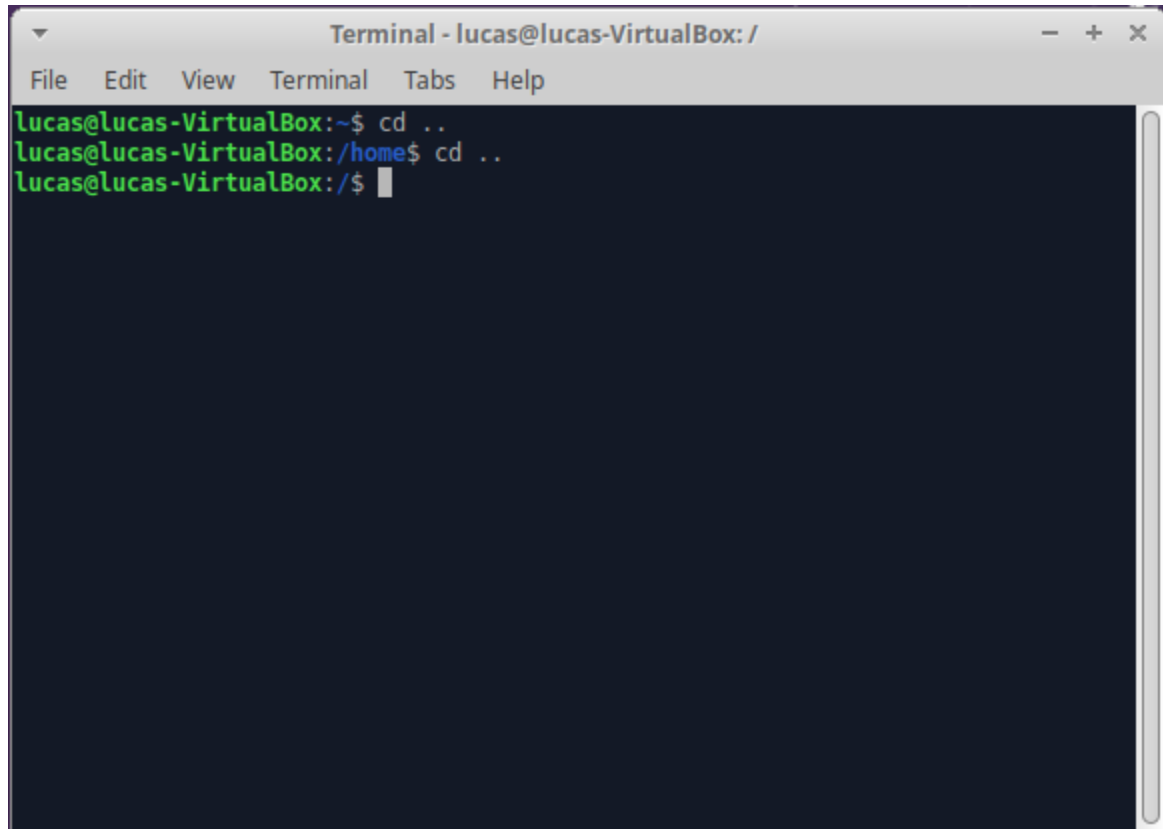
```
Terminal - lucas@lucas-VirtualBox: ~/Documents
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~/Documents$ cd ~
lucas@lucas-VirtualBox:~$ cd Do
Documents/ Downloads/
lucas@lucas-VirtualBox:~$ cd Documents/
lucas@lucas-VirtualBox:~/Documents$
```

Comando: cd

A screenshot of a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal shows the prompt "lucas@lucas-VirtualBox:~/Documents\$" followed by the command "cd". The next line shows the prompt "lucas@lucas-VirtualBox:~\$" with a cursor, indicating the command was successful. The terminal background is dark blue, and the text is green.

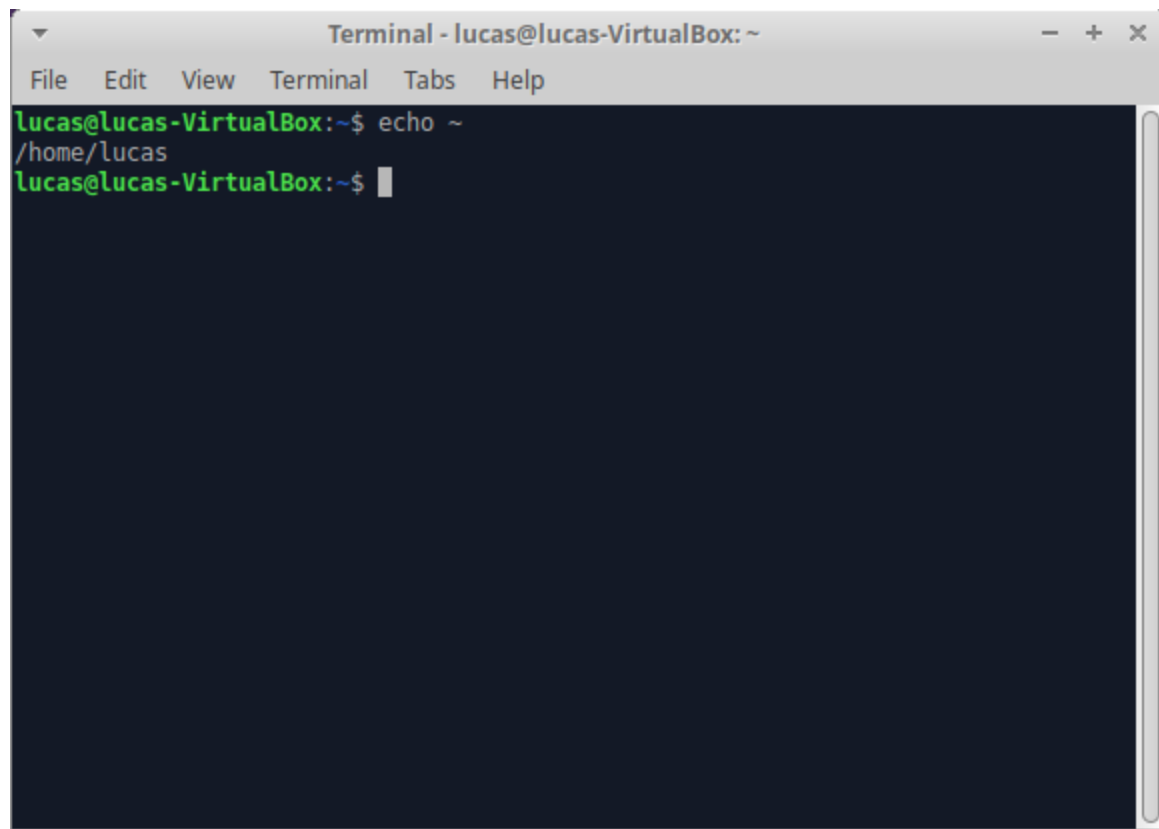
```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~/Documents$ cd
lucas@lucas-VirtualBox:~$
```

Comando: cd ..

A screenshot of a terminal window titled "Terminal - lucas@lucas-VirtualBox: /". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows three lines of commands and their outputs: 1. "lucas@lucas-VirtualBox:~\$ cd .." followed by a new line. 2. "lucas@lucas-VirtualBox:/home\$ cd .." followed by a new line. 3. "lucas@lucas-VirtualBox:/\$" followed by a cursor. The terminal has a dark background and green text. A vertical scrollbar is visible on the right side of the terminal area.

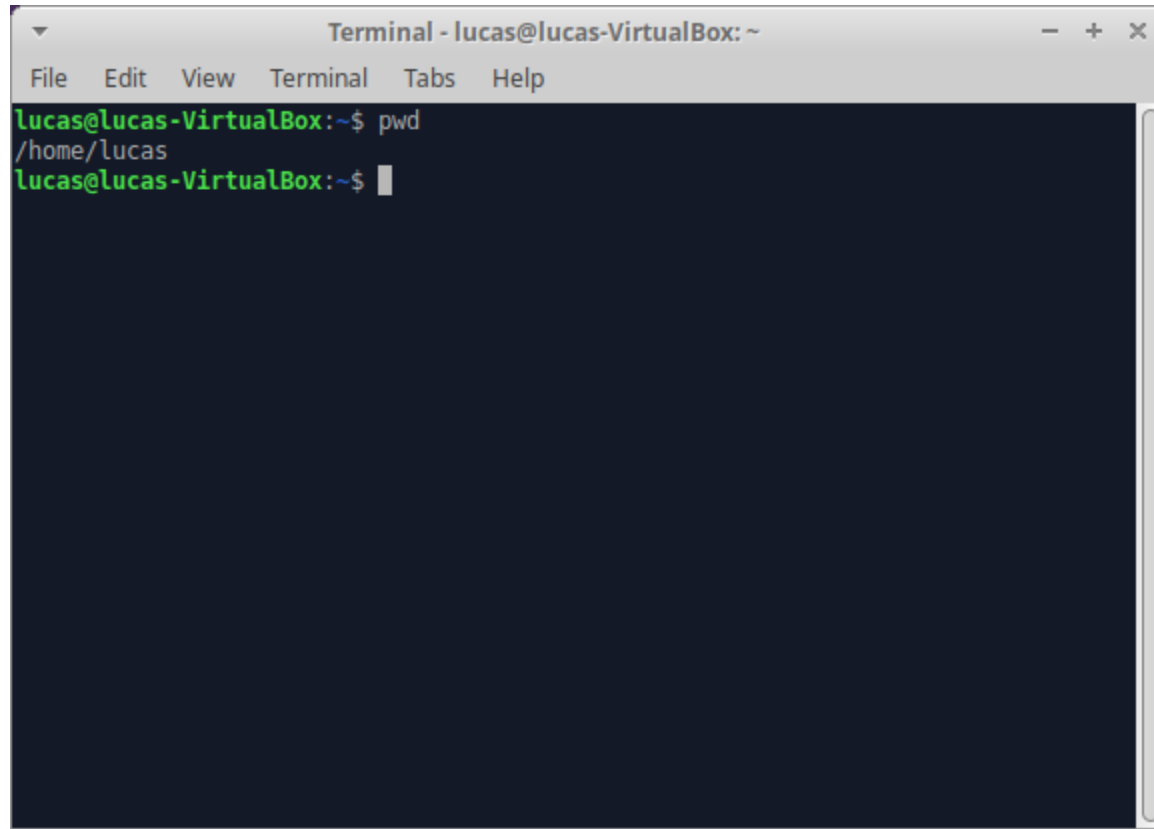
```
Terminal - lucas@lucas-VirtualBox: /
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ cd ..
lucas@lucas-VirtualBox:/home$ cd ..
lucas@lucas-VirtualBox:/$
```

Comando: echo ~

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~" with a menu bar containing "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal has a dark blue background and green text. It shows the command "echo ~" being executed, which outputs "/home/lucas". The prompt "lucas@lucas-VirtualBox:~\$" is visible at the start of each line.

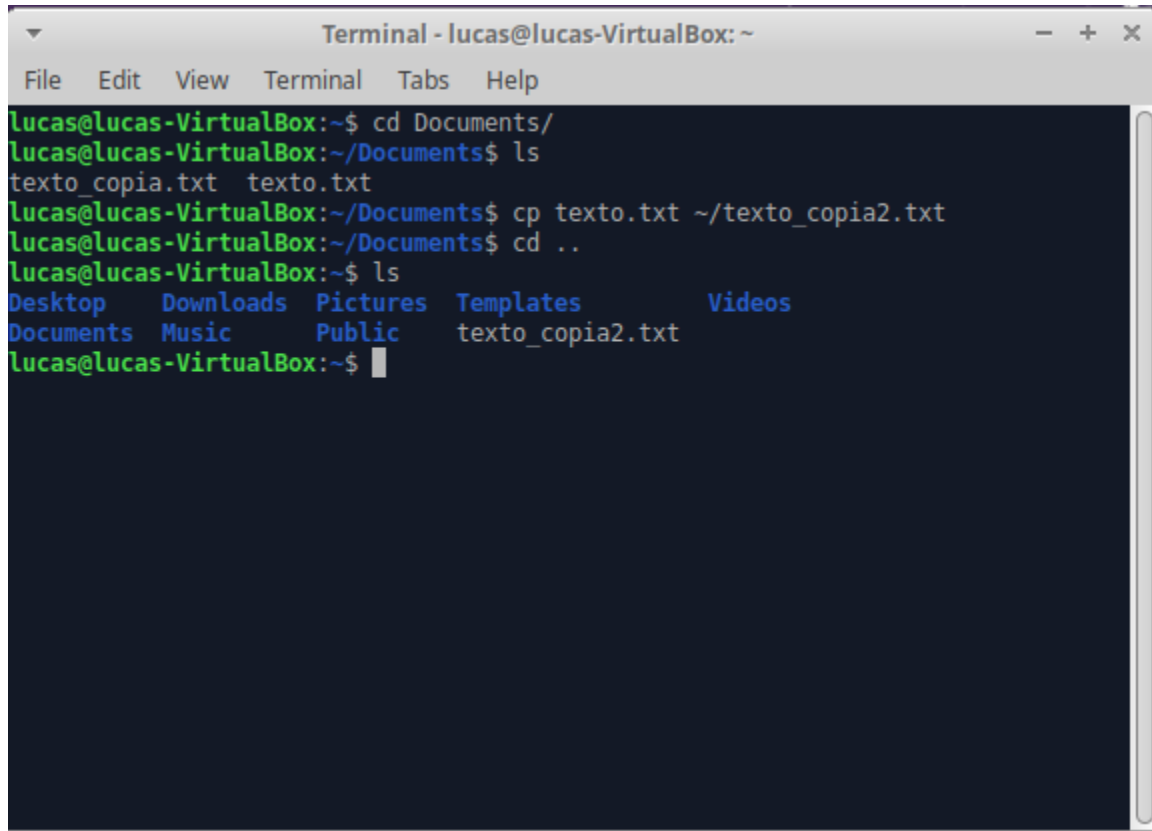
```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ echo ~
/home/lucas
lucas@lucas-VirtualBox:~$
```


Comando: pwd

A screenshot of a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows the user "lucas@lucas-VirtualBox" at the prompt "~\$". The user enters the command "pwd", and the terminal outputs the path "/home/lucas". The prompt then returns to "~\$" with a cursor. A vertical scrollbar is visible on the right side of the terminal area.

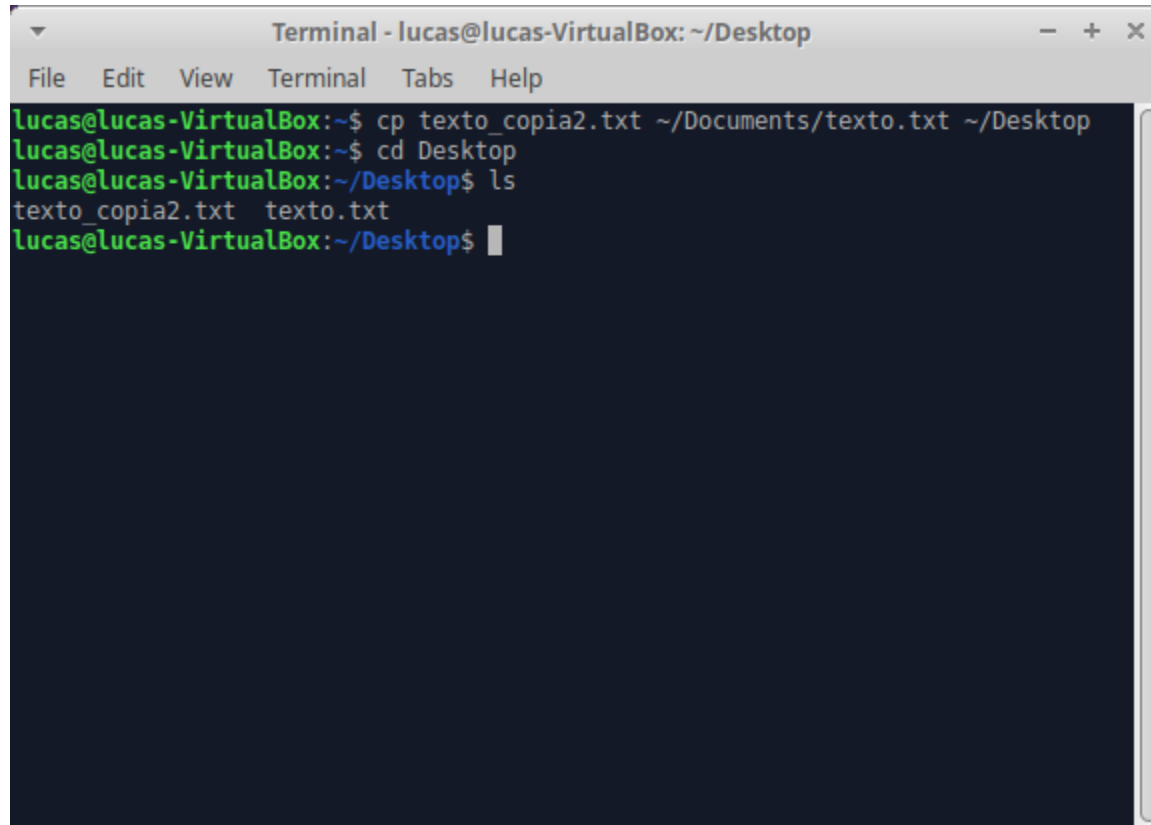
```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ pwd
/home/lucas
lucas@lucas-VirtualBox:~$
```

Comando: cp texto.txt ~/texto_copia2.txt

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The terminal shows a sequence of commands: "cd Documents/", "ls" (outputting "texto_copia.txt" and "texto.txt"), "cp texto.txt ~/texto_copia2.txt", "cd ..", and "ls" (outputting a directory listing including Desktop, Downloads, Pictures, Templates, Videos, Documents, Music, Public, and "texto_copia2.txt").

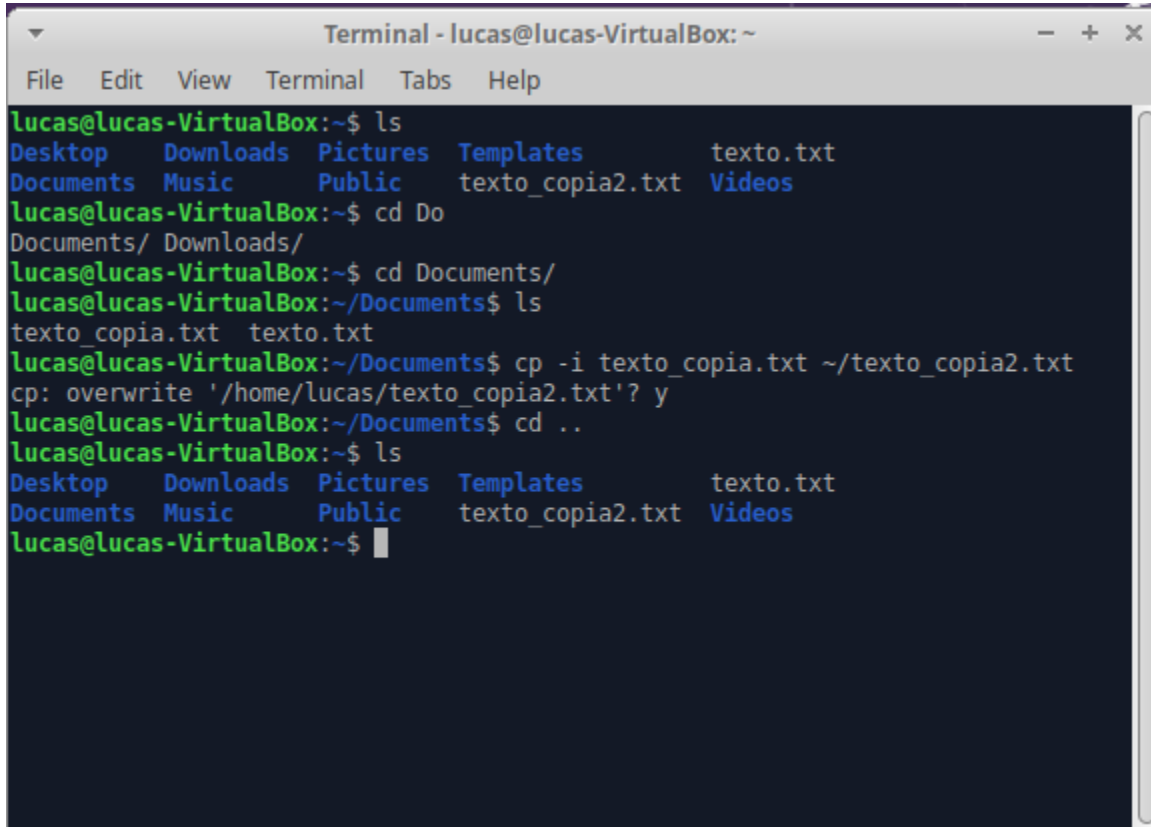
```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ cd Documents/
lucas@lucas-VirtualBox:~/Documents$ ls
texto_copia.txt  texto.txt
lucas@lucas-VirtualBox:~/Documents$ cp texto.txt ~/texto_copia2.txt
lucas@lucas-VirtualBox:~/Documents$ cd ..
lucas@lucas-VirtualBox:~$ ls
Desktop  Downloads  Pictures  Templates  Videos
Documents Music      Public    texto_copia2.txt
lucas@lucas-VirtualBox:~$
```

Comando: cp texto_copia2.txt ~/Documents/texto.txt ~/Desktop

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Desktop" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The terminal shows the following commands and output:

```
lucas@lucas-VirtualBox:~$ cp texto_copia2.txt ~/Documents/texto.txt ~/Desktop
lucas@lucas-VirtualBox:~$ cd Desktop
lucas@lucas-VirtualBox:~/Desktop$ ls
texto_copia2.txt  texto.txt
lucas@lucas-VirtualBox:~/Desktop$
```

Comando: `cp -i texto_copia.txt ~/texto_copia2.txt`



```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help

lucas@lucas-VirtualBox:~$ ls
Desktop  Downloads  Pictures  Templates  texto.txt
Documents Music      Public   texto_copia2.txt  Videos

lucas@lucas-VirtualBox:~$ cd Do
Documents/ Downloads/

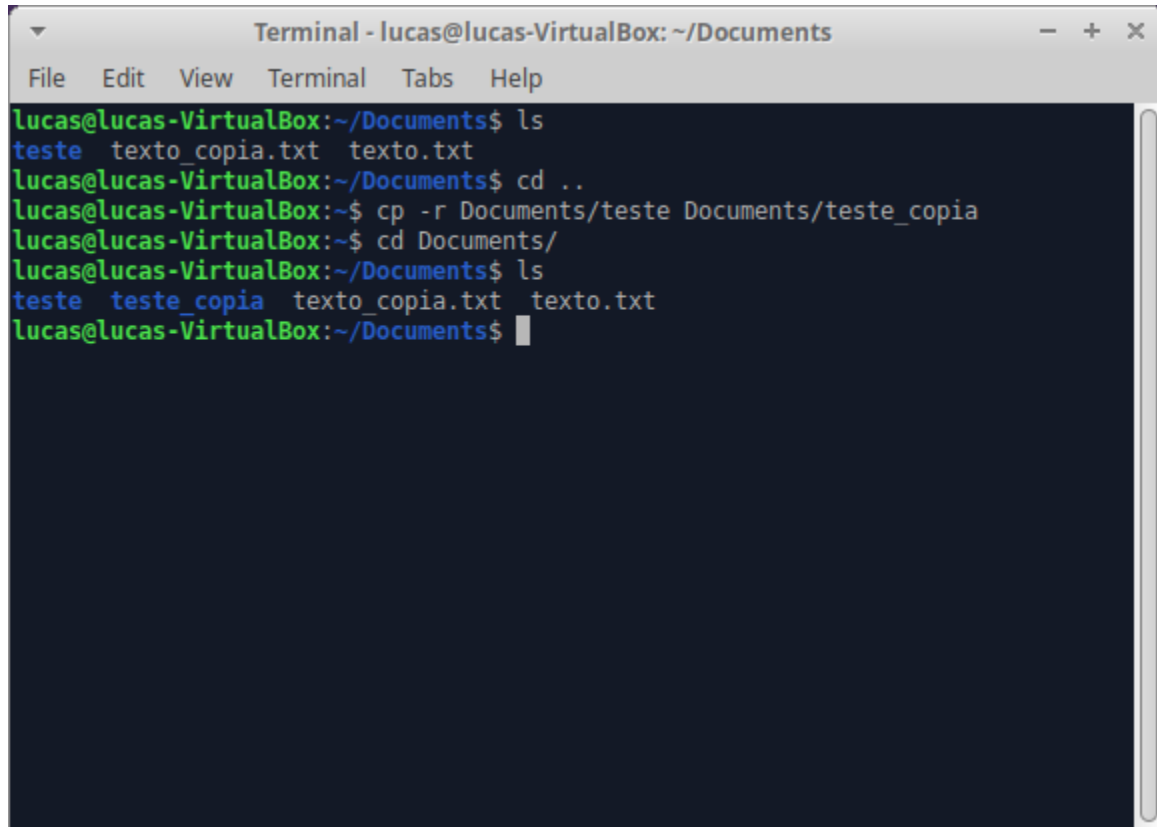
lucas@lucas-VirtualBox:~$ cd Documents/
lucas@lucas-VirtualBox:~/Documents$ ls
texto_copia.txt  texto.txt

lucas@lucas-VirtualBox:~/Documents$ cp -i texto_copia.txt ~/texto_copia2.txt
cp: overwrite '/home/lucas/texto_copia2.txt'? y

lucas@lucas-VirtualBox:~/Documents$ cd ..
lucas@lucas-VirtualBox:~$ ls
Desktop  Downloads  Pictures  Templates  texto.txt
Documents Music      Public   texto_copia2.txt  Videos

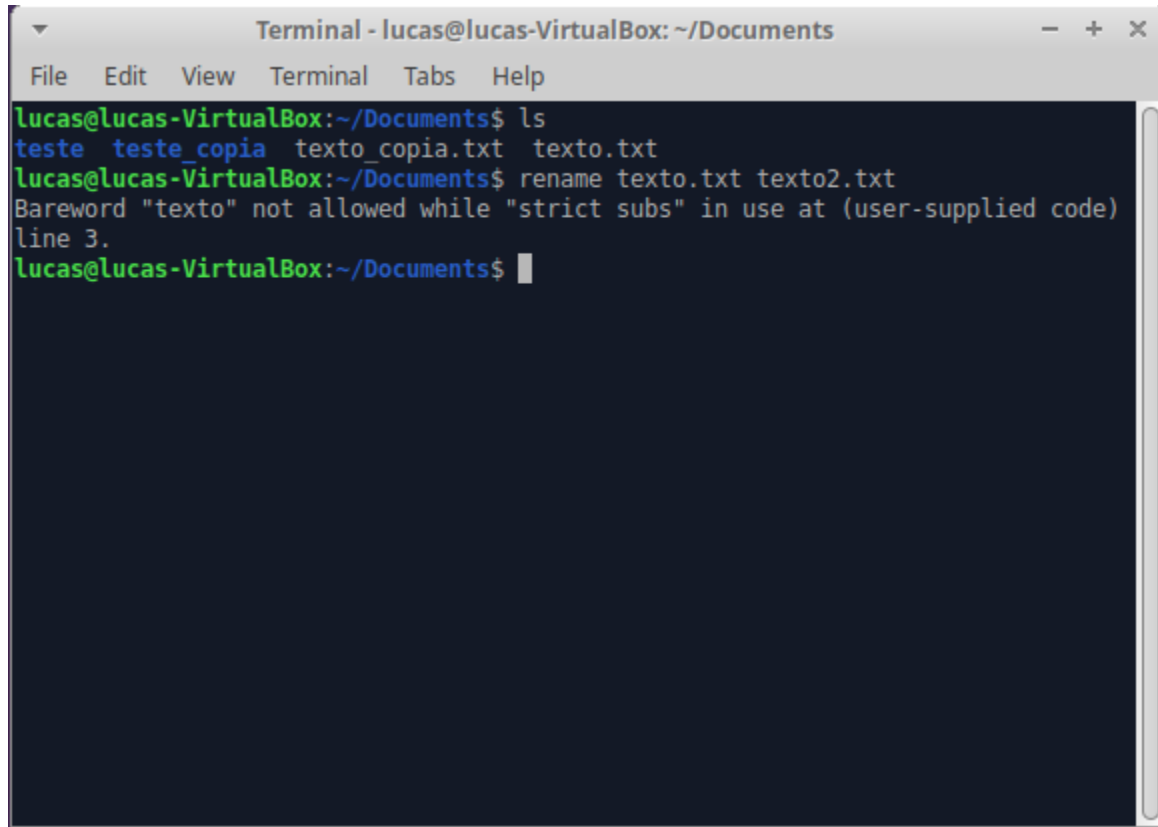
lucas@lucas-VirtualBox:~$
```

Comando: `cp -r teste teste_copia`



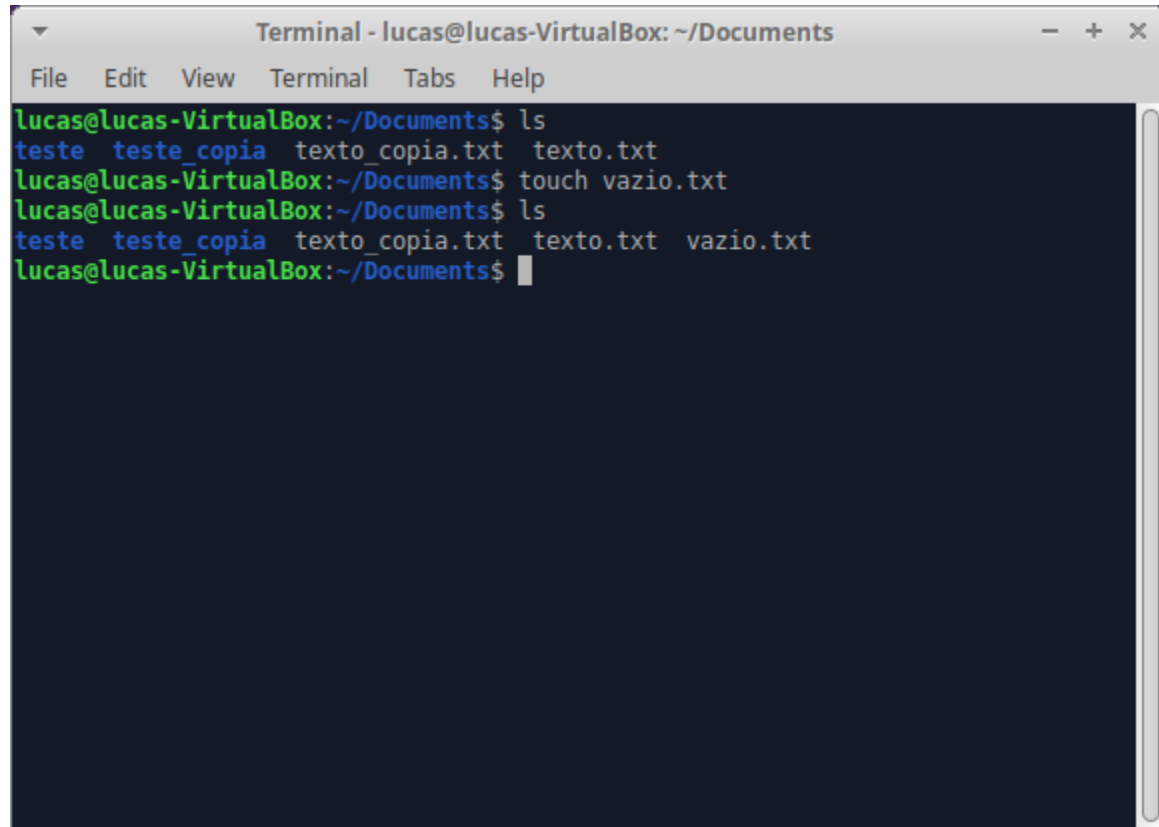
```
Terminal - lucas@lucas-VirtualBox: ~/Documents
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~/Documents$ ls
teste  texto_copia.txt  texto.txt
lucas@lucas-VirtualBox:~/Documents$ cd ..
lucas@lucas-VirtualBox:~$ cp -r Documents/teste Documents/teste_copia
lucas@lucas-VirtualBox:~$ cd Documents/
lucas@lucas-VirtualBox:~/Documents$ ls
teste  teste_copia  texto_copia.txt  texto.txt
lucas@lucas-VirtualBox:~/Documents$
```

Comando: rename texto.txt texto2.txt

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The terminal shows the following commands and output:

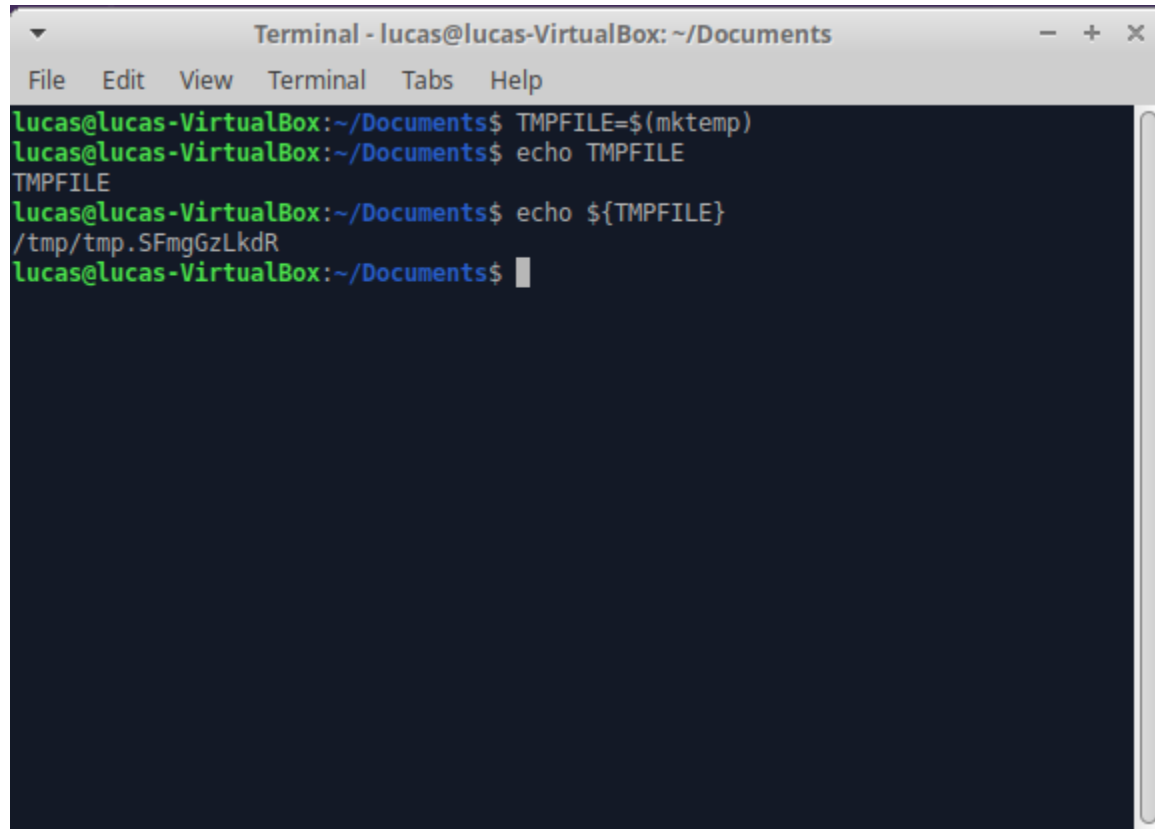
```
lucas@lucas-VirtualBox:~/Documents$ ls
teste  teste_copia  texto_copia.txt  texto.txt
lucas@lucas-VirtualBox:~/Documents$ rename texto.txt texto2.txt
Bareword "texto" not allowed while "strict subs" in use at (user-supplied code)
line 3.
lucas@lucas-VirtualBox:~/Documents$
```

Comando: touch vazio.txt

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The terminal shows a sequence of commands and their outputs. The user runs 'ls', which lists 'teste', 'teste_copia', 'texto_copia.txt', and 'texto.txt'. Then, the user runs 'touch vazio.txt'. Finally, the user runs 'ls' again, which now lists 'teste', 'teste_copia', 'texto_copia.txt', 'texto.txt', and 'vazio.txt'.

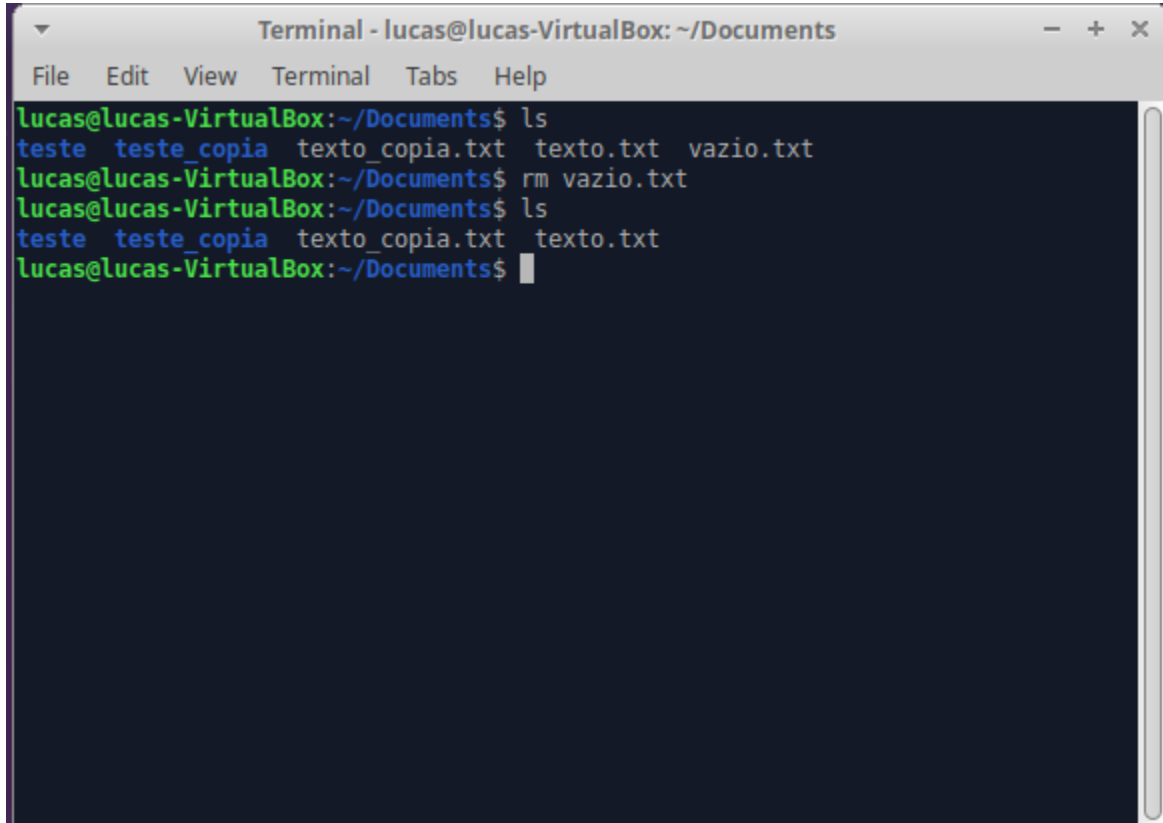
```
lucas@lucas-VirtualBox:~/Documents$ ls
teste  teste_copia  texto_copia.txt  texto.txt
lucas@lucas-VirtualBox:~/Documents$ touch vazio.txt
lucas@lucas-VirtualBox:~/Documents$ ls
teste  teste_copia  texto_copia.txt  texto.txt  vazio.txt
lucas@lucas-VirtualBox:~/Documents$
```

Comando: mktemp

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The terminal shows the following commands and output:

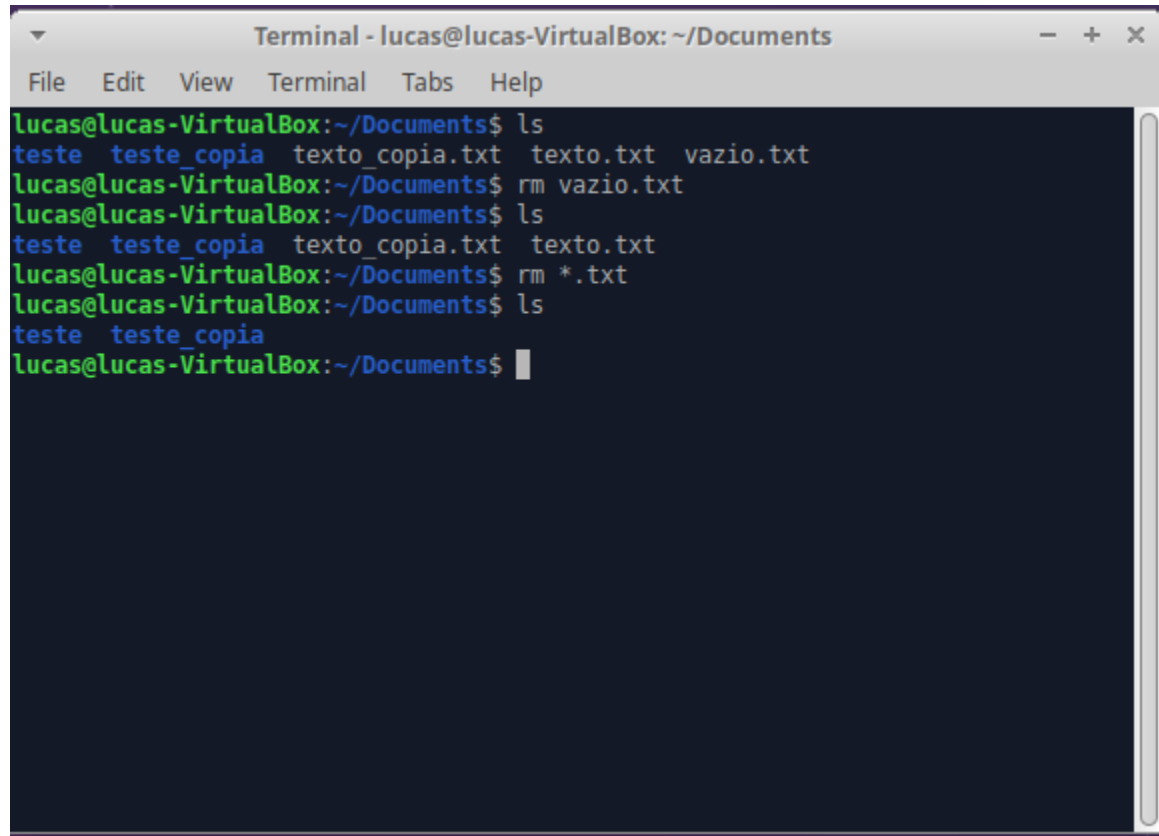
```
lucas@lucas-VirtualBox:~/Documents$ TMPFILE=$(mktemp)
lucas@lucas-VirtualBox:~/Documents$ echo TMPFILE
TMPFILE
lucas@lucas-VirtualBox:~/Documents$ echo ${TMPFILE}
/tmp/tmp.SFmgGzLkdR
lucas@lucas-VirtualBox:~/Documents$
```


Comando: rm

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The terminal shows a sequence of commands and their outputs. The user runs 'ls' and sees three files: 'teste_copia', 'texto_copia.txt', and 'texto.txt'. Then, the user runs 'rm vazio.txt' to delete a file. Finally, the user runs 'ls' again and sees only 'teste_copia', 'texto_copia.txt', and 'texto.txt', confirming the deletion of 'vazio.txt'.

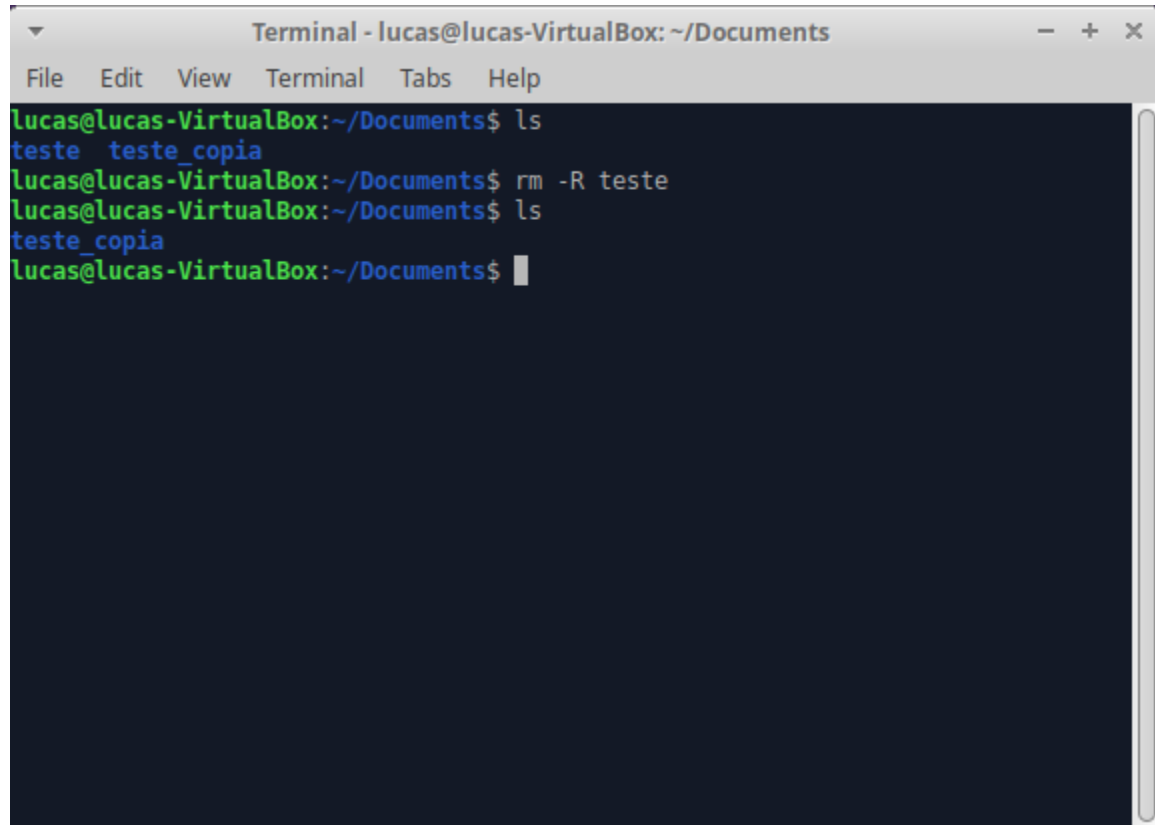
```
lucas@lucas-VirtualBox:~/Documents$ ls
teste  teste_copia  texto_copia.txt  texto.txt  vazio.txt
lucas@lucas-VirtualBox:~/Documents$ rm vazio.txt
lucas@lucas-VirtualBox:~/Documents$ ls
teste  teste_copia  texto_copia.txt  texto.txt
lucas@lucas-VirtualBox:~/Documents$
```

Comando: rm *.txt

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The terminal shows a sequence of commands and their outputs. The user lists files, removes 'vazio.txt', lists files again, removes all '.txt' files, and lists files a third time. The output shows that only 'teste' and 'teste_copia' remain.

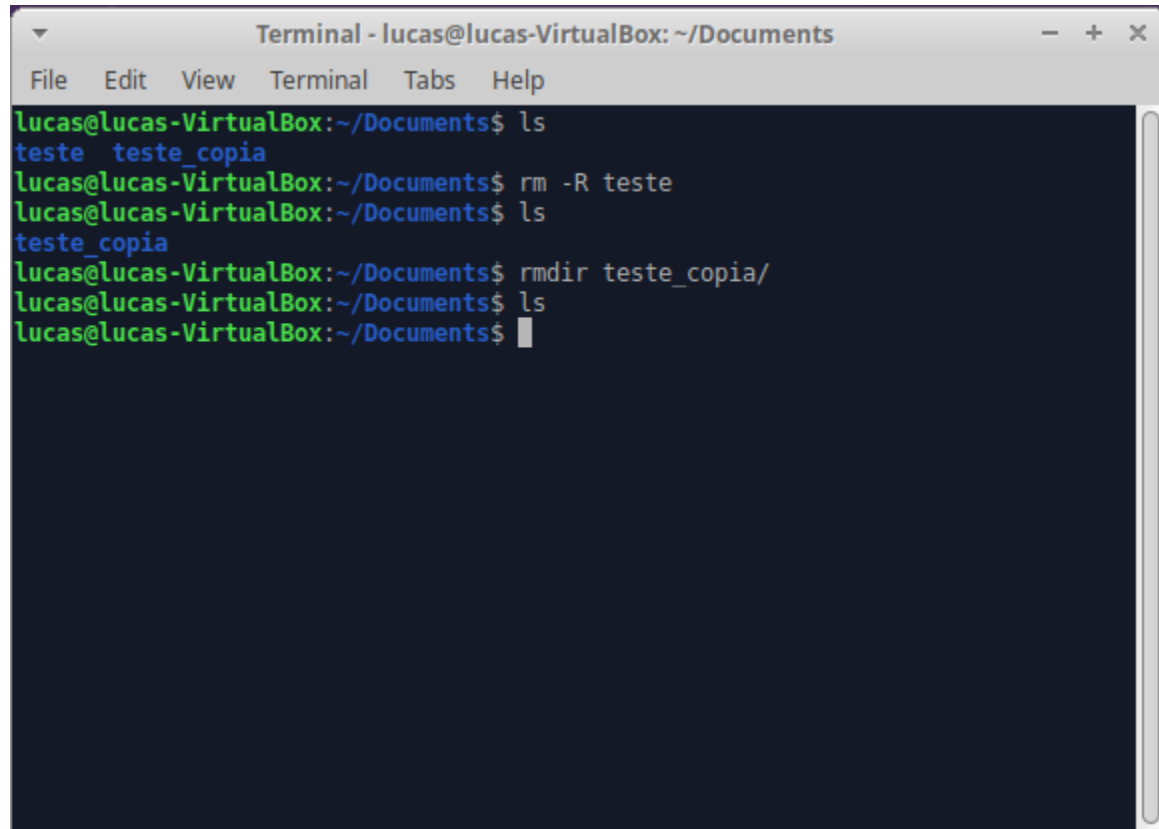
```
lucas@lucas-VirtualBox:~/Documents$ ls
teste  teste_copia  texto_copia.txt  texto.txt  vazio.txt
lucas@lucas-VirtualBox:~/Documents$ rm vazio.txt
lucas@lucas-VirtualBox:~/Documents$ ls
teste  teste_copia  texto_copia.txt  texto.txt
lucas@lucas-VirtualBox:~/Documents$ rm *.txt
lucas@lucas-VirtualBox:~/Documents$ ls
teste  teste_copia
lucas@lucas-VirtualBox:~/Documents$
```

Comando: rm -R



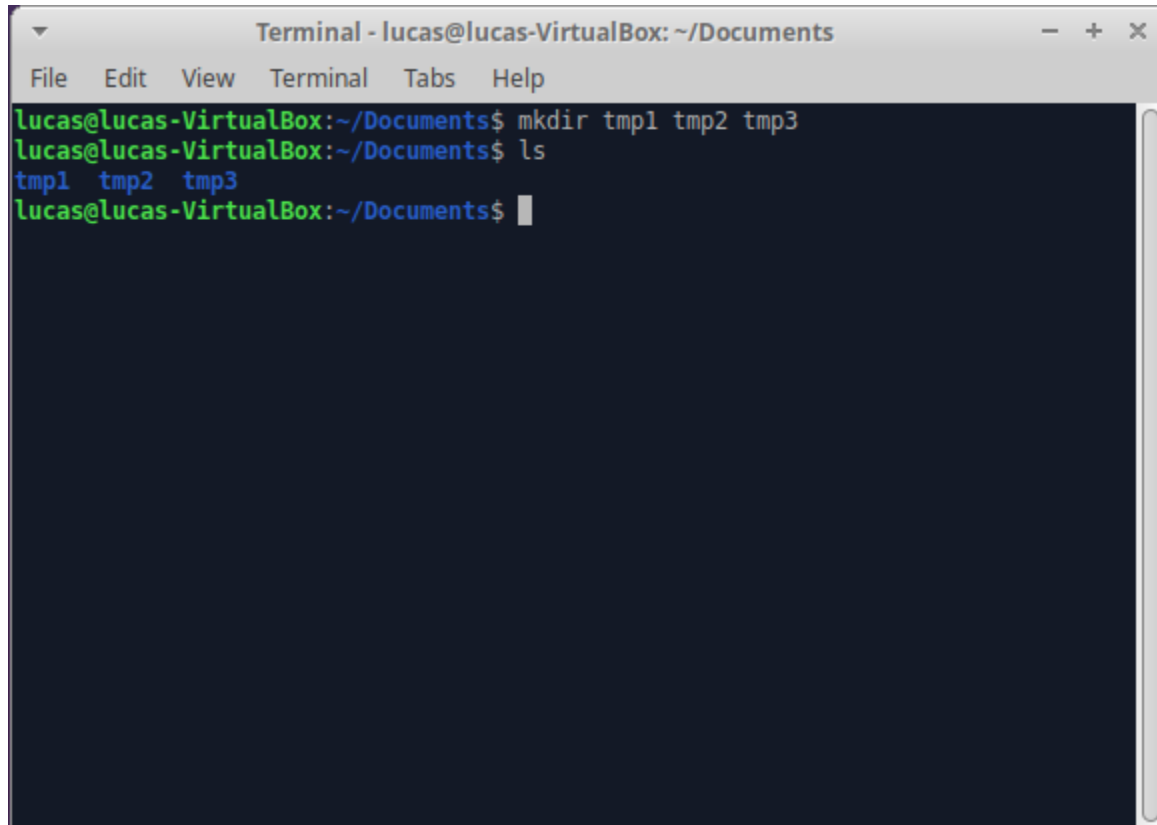
```
Terminal - lucas@lucas-VirtualBox: ~/Documents
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~/Documents$ ls
teste  teste_copia
lucas@lucas-VirtualBox:~/Documents$ rm -R teste
lucas@lucas-VirtualBox:~/Documents$ ls
teste_copia
lucas@lucas-VirtualBox:~/Documents$
```

Comando: rmdir

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The terminal shows a sequence of commands and their outputs. The user first runs 'ls' and sees 'teste' and 'teste_copia'. Then they run 'rm -R teste' and run 'ls' again, still seeing 'teste_copia'. Finally, they run 'rmdir teste_copia/' and run 'ls' again, which shows no output, indicating the directory has been removed. The prompt is 'lucas@lucas-VirtualBox:~/Documents\$' and the cursor is at the end of the last line.

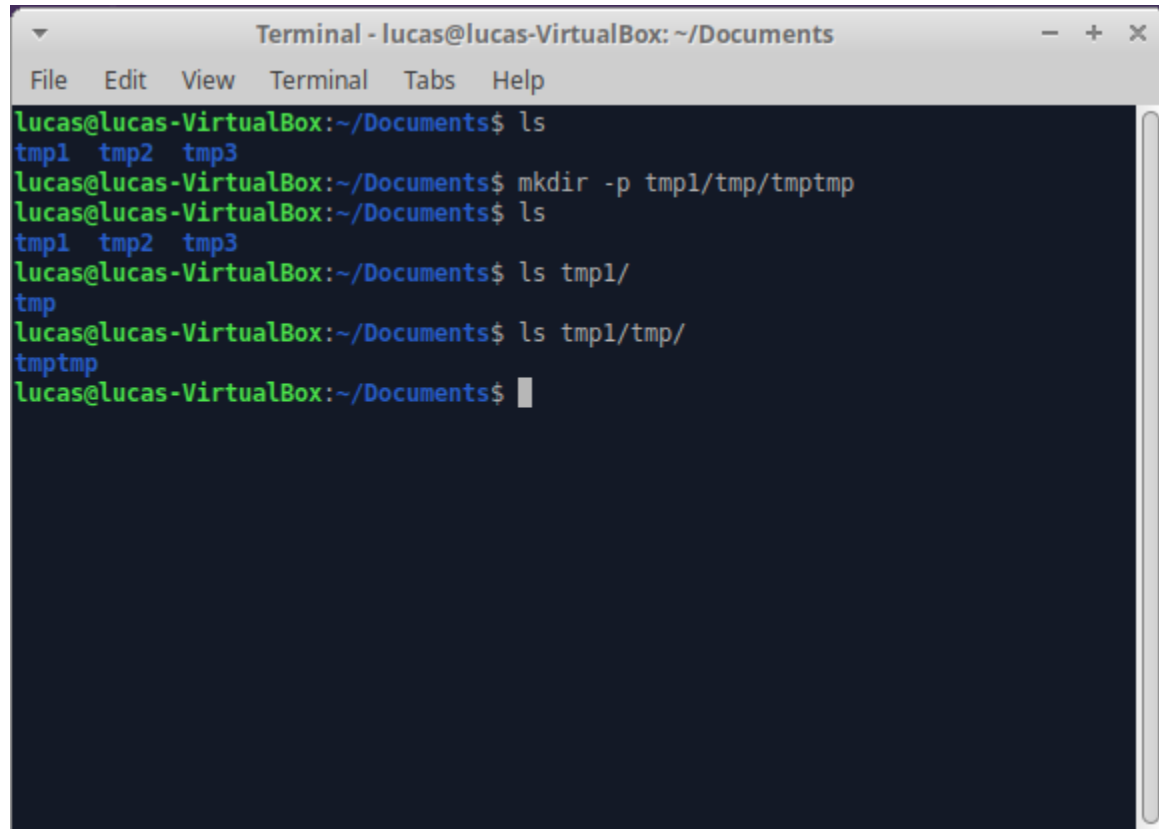
```
lucas@lucas-VirtualBox:~/Documents$ ls
teste  teste_copia
lucas@lucas-VirtualBox:~/Documents$ rm -R teste
lucas@lucas-VirtualBox:~/Documents$ ls
teste_copia
lucas@lucas-VirtualBox:~/Documents$ rmdir teste_copia/
lucas@lucas-VirtualBox:~/Documents$ ls
lucas@lucas-VirtualBox:~/Documents$
```

Comando: mkdir

A screenshot of a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows the user "lucas" at the prompt "lucas@lucas-VirtualBox:~/Documents\$". They enter the command "mkdir tmp1 tmp2 tmp3", followed by "ls", which outputs "tmp1 tmp2 tmp3". The prompt returns to "lucas@lucas-VirtualBox:~/Documents\$".

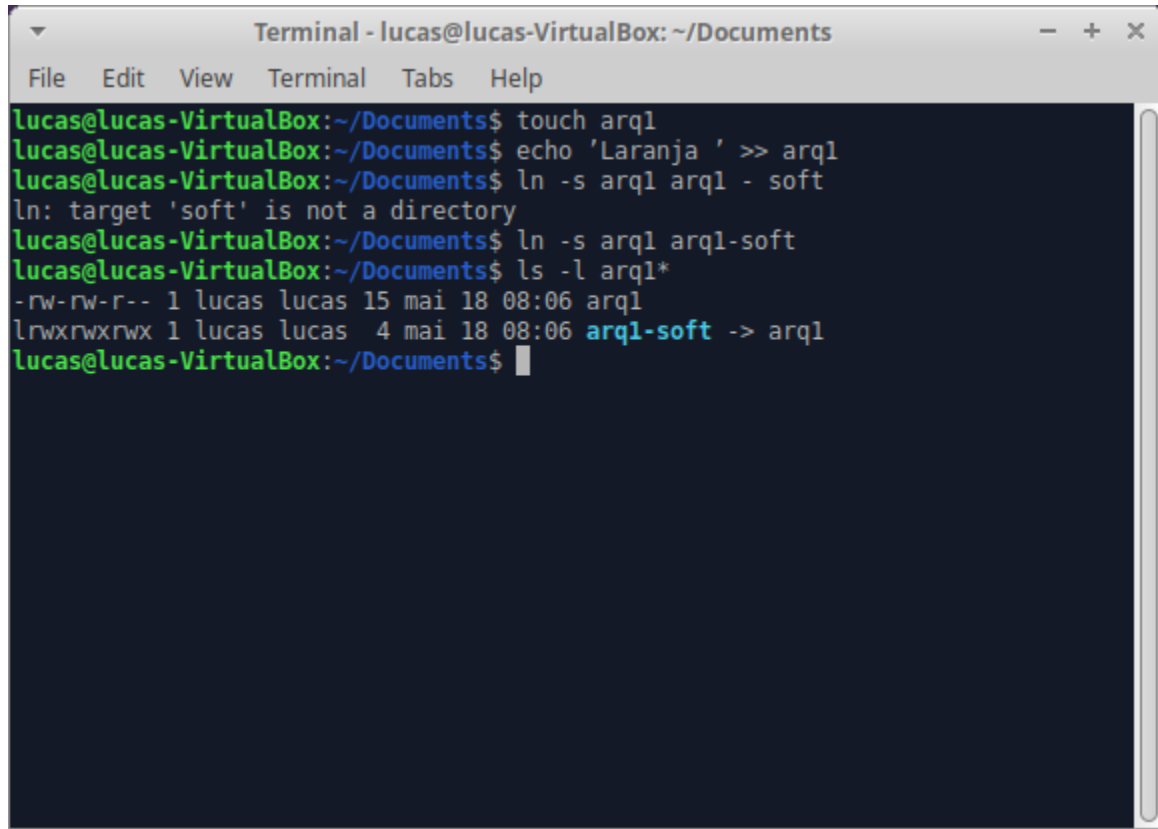
```
Terminal - lucas@lucas-VirtualBox: ~/Documents
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~/Documents$ mkdir tmp1 tmp2 tmp3
lucas@lucas-VirtualBox:~/Documents$ ls
tmp1 tmp2 tmp3
lucas@lucas-VirtualBox:~/Documents$
```

Comando: mkdir -p

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The terminal shows a sequence of commands and their outputs. The user lists files (tmp1, tmp2, tmp3), creates a nested directory structure (tmp1/tmp/tmp1tmp) using 'mkdir -p', and then lists the contents of the newly created directory, showing 'tmp1tmp'.

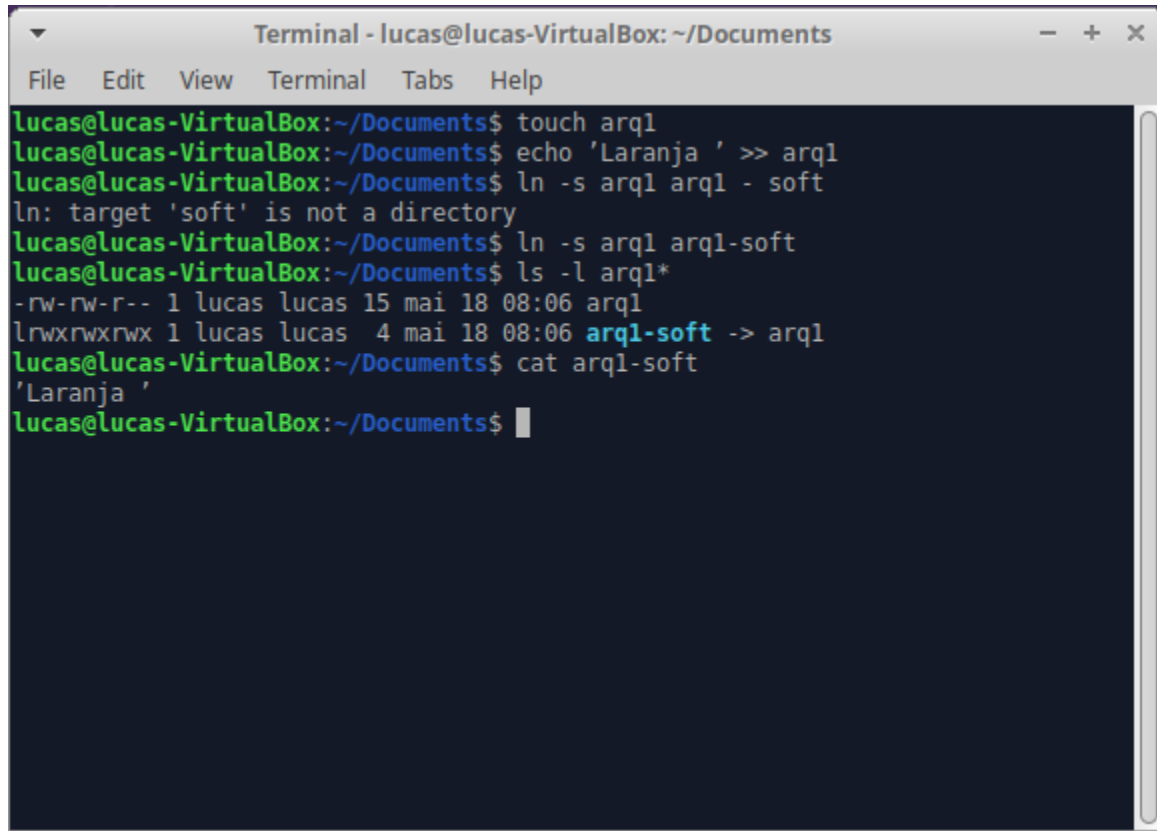
```
lucas@lucas-VirtualBox:~/Documents$ ls
tmp1 tmp2 tmp3
lucas@lucas-VirtualBox:~/Documents$ mkdir -p tmp1/tmp/tmp1tmp
lucas@lucas-VirtualBox:~/Documents$ ls
tmp1 tmp2 tmp3
lucas@lucas-VirtualBox:~/Documents$ ls tmp1/
tmp
lucas@lucas-VirtualBox:~/Documents$ ls tmp1/tmp/
tmp1tmp
lucas@lucas-VirtualBox:~/Documents$
```

Comando: ln -s



```
Terminal - lucas@lucas-VirtualBox: ~/Documents
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~/Documents$ touch arq1
lucas@lucas-VirtualBox:~/Documents$ echo 'Laranja ' >> arq1
lucas@lucas-VirtualBox:~/Documents$ ln -s arq1 arq1 - soft
ln: target 'soft' is not a directory
lucas@lucas-VirtualBox:~/Documents$ ln -s arq1 arq1-soft
lucas@lucas-VirtualBox:~/Documents$ ls -l arq1*
-rw-rw-r-- 1 lucas lucas 15 mai 18 08:06 arq1
lrwxrwxrwx 1 lucas lucas  4 mai 18 08:06 arq1-soft -> arq1
lucas@lucas-VirtualBox:~/Documents$
```

Comando: cat

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The terminal shows a series of commands and their outputs: creating a file 'arq1', appending text to it, attempting to create a soft link with an invalid target, then successfully creating a soft link 'arq1-soft' to 'arq1', listing the files, and finally displaying the content of 'arq1-soft' which is 'Laranja '.

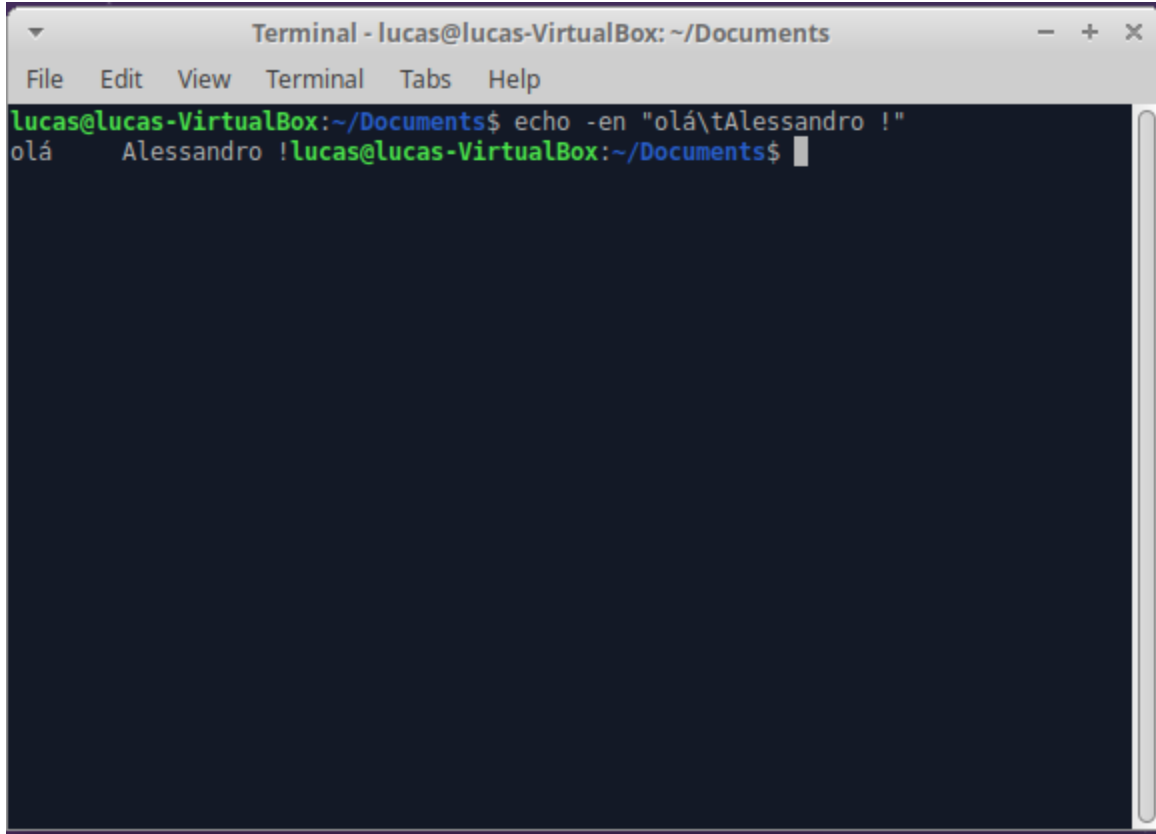
```
lucas@lucas-VirtualBox:~/Documents$ touch arq1
lucas@lucas-VirtualBox:~/Documents$ echo 'Laranja ' >> arq1
lucas@lucas-VirtualBox:~/Documents$ ln -s arq1 arq1 - soft
ln: target 'soft' is not a directory
lucas@lucas-VirtualBox:~/Documents$ ln -s arq1 arq1-soft
lucas@lucas-VirtualBox:~/Documents$ ls -l arq1*
-rw-rw-r-- 1 lucas lucas 15 mai 18 08:06 arq1
lrwxrwxrwx 1 lucas lucas  4 mai 18 08:06 arq1-soft -> arq1
lucas@lucas-VirtualBox:~/Documents$ cat arq1-soft
'Laranja '
lucas@lucas-VirtualBox:~/Documents$
```


Comando: mv

```
Terminal - lucas@lucas-VirtualBox: ~/Documents
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~/Documents$ touch arq1
lucas@lucas-VirtualBox:~/Documents$ echo 'Laranja ' >> arq1
lucas@lucas-VirtualBox:~/Documents$ ln -s arq1 arq1 - soft
ln: target 'soft' is not a directory
lucas@lucas-VirtualBox:~/Documents$ ln -s arq1 arq1-soft
lucas@lucas-VirtualBox:~/Documents$ ls -l arq1*
-rw-rw-r-- 1 lucas lucas 15 mai 18 08:06 arq1
lrwxrwxrwx 1 lucas lucas  4 mai 18 08:06 arq1-soft -> arq1
lucas@lucas-VirtualBox:~/Documents$ cat arq1-soft
'Laranja '
lucas@lucas-VirtualBox:~/Documents$ mv arq1 arq2
lucas@lucas-VirtualBox:~/Documents$ ls
arq1-soft arq2 tmp1 tmp2 tmp3
lucas@lucas-VirtualBox:~/Documents$
```

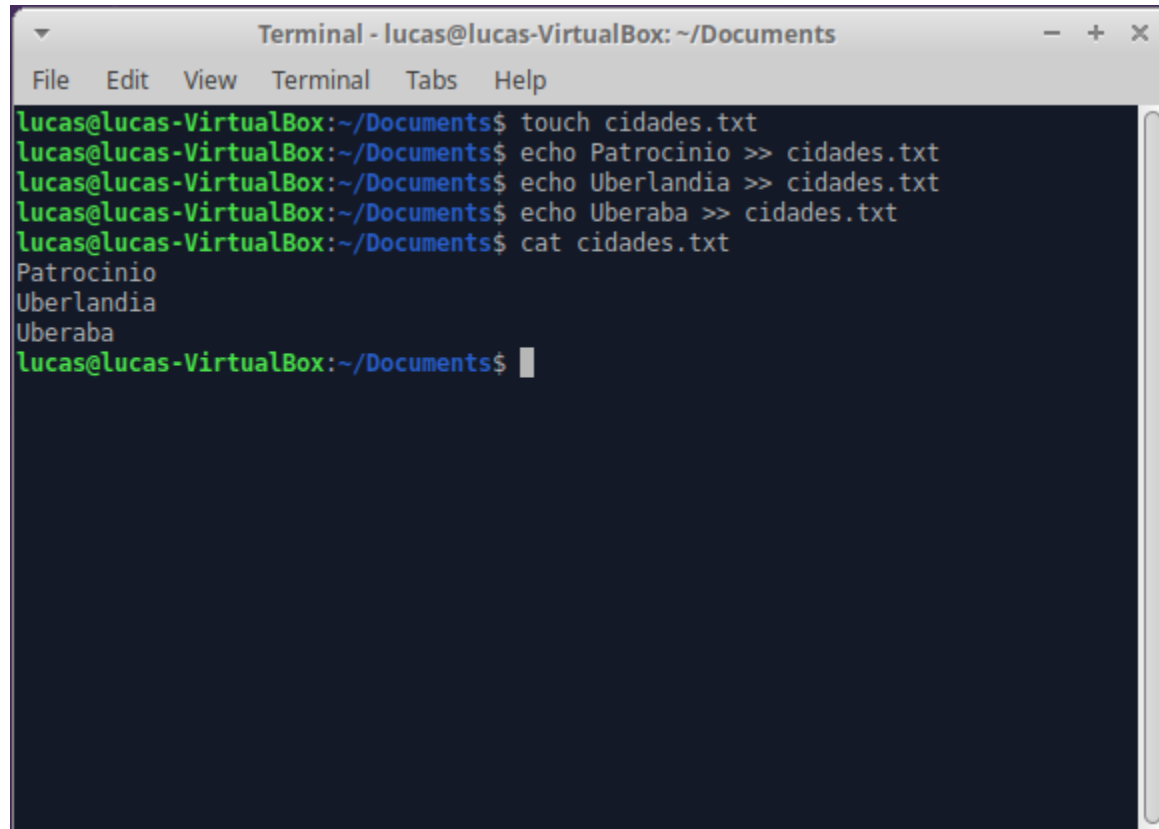
Capítulo 4

Comando: echo -en

A screenshot of a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows a prompt "lucas@lucas-VirtualBox:~/Documents\$" followed by the command "echo -en \"olá\\tAlessandro !\"". The output "olá\tAlessandro !" is displayed on the next line. The prompt is followed by a cursor. The terminal has a dark background and a light-colored scrollbar on the right.

```
Terminal - lucas@lucas-VirtualBox: ~/Documents
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~/Documents$ echo -en "olá\\tAlessandro !"
olá\tAlessandro !lucas@lucas-VirtualBox:~/Documents$
```

Comando: cat

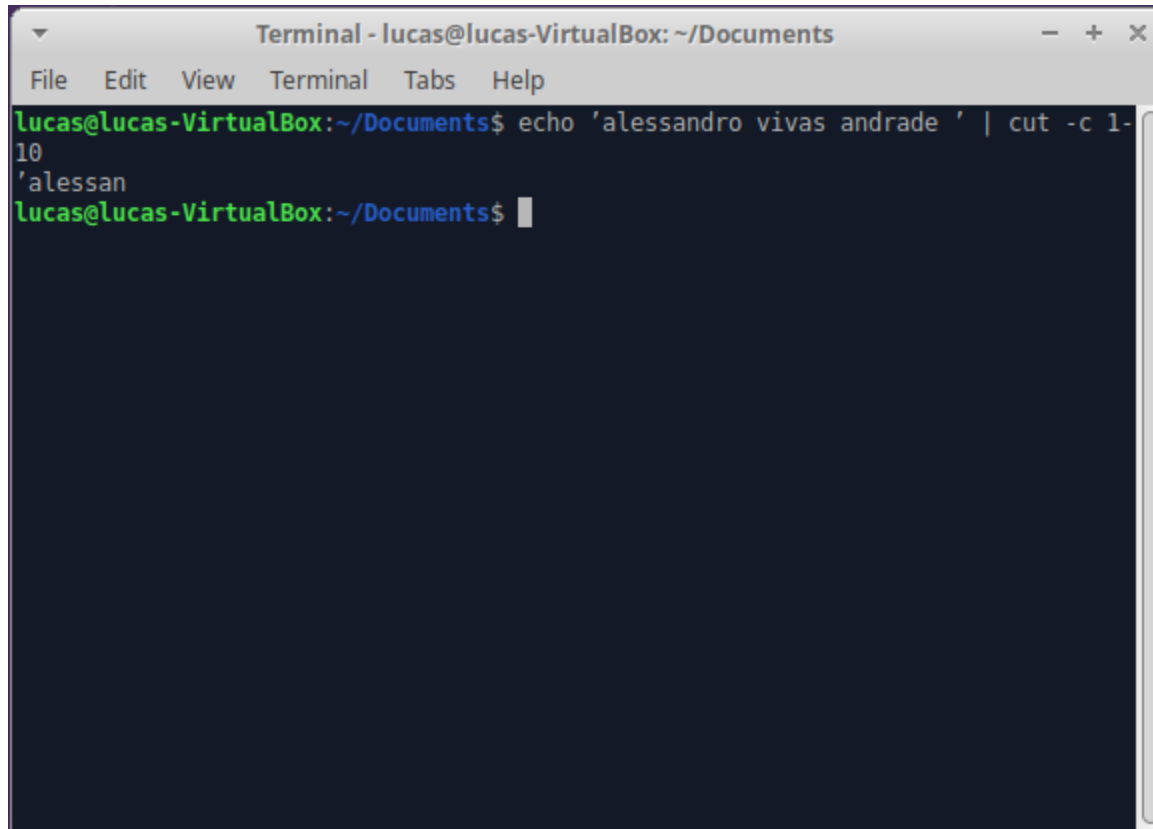


```
Terminal - lucas@lucas-VirtualBox: ~/Documents
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~/Documents$ touch cidades.txt
lucas@lucas-VirtualBox:~/Documents$ echo Patrocinio >> cidades.txt
lucas@lucas-VirtualBox:~/Documents$ echo Uberlandia >> cidades.txt
lucas@lucas-VirtualBox:~/Documents$ echo Uberaba >> cidades.txt
lucas@lucas-VirtualBox:~/Documents$ cat cidades.txt
Patrocinio
Uberlandia
Uberaba
lucas@lucas-VirtualBox:~/Documents$
```

Comando: set

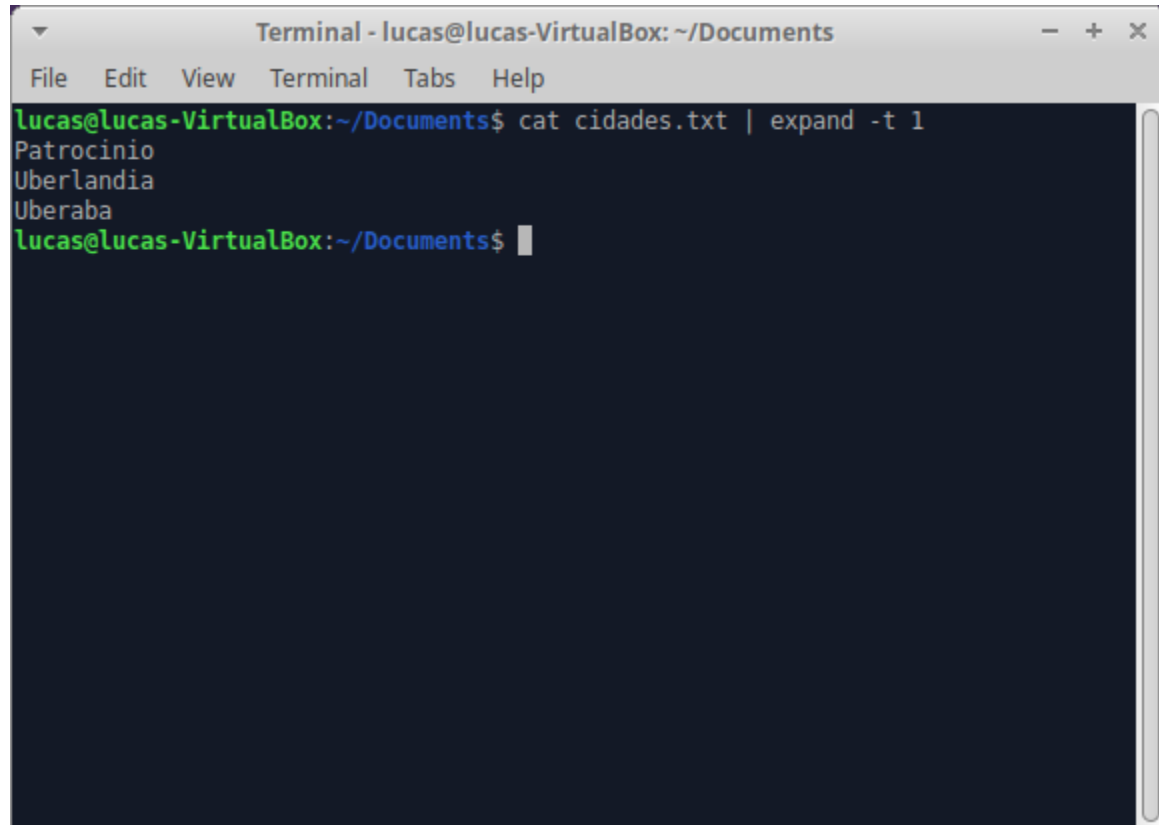
```
Terminal - lucas@lucas-VirtualBox: ~/Documents
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~/Documents$ touch cidades.txt
lucas@lucas-VirtualBox:~/Documents$ echo Patrocinio >> cidades.txt
lucas@lucas-VirtualBox:~/Documents$ echo Uberlandia >> cidades.txt
lucas@lucas-VirtualBox:~/Documents$ echo Uberaba >> cidades.txt
lucas@lucas-VirtualBox:~/Documents$ cat cidades.txt
Patrocinio
Uberlandia
Uberaba
lucas@lucas-VirtualBox:~/Documents$ seq 6 10 > arquivo.txt
lucas@lucas-VirtualBox:~/Documents$ cat arquivo.txt cidades.txt
6
7
8
9
10
Patrocinio
Uberlandia
Uberaba
lucas@lucas-VirtualBox:~/Documents$
```

Comando: cut

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents" with a menu bar containing "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal shows a command being executed: `lucas@lucas-VirtualBox:~/Documents$ echo 'alessandro vivas andrade ' | cut -c 1-10`. The output of the command is `'alessan`. The prompt `lucas@lucas-VirtualBox:~/Documents$` is shown again with a cursor.

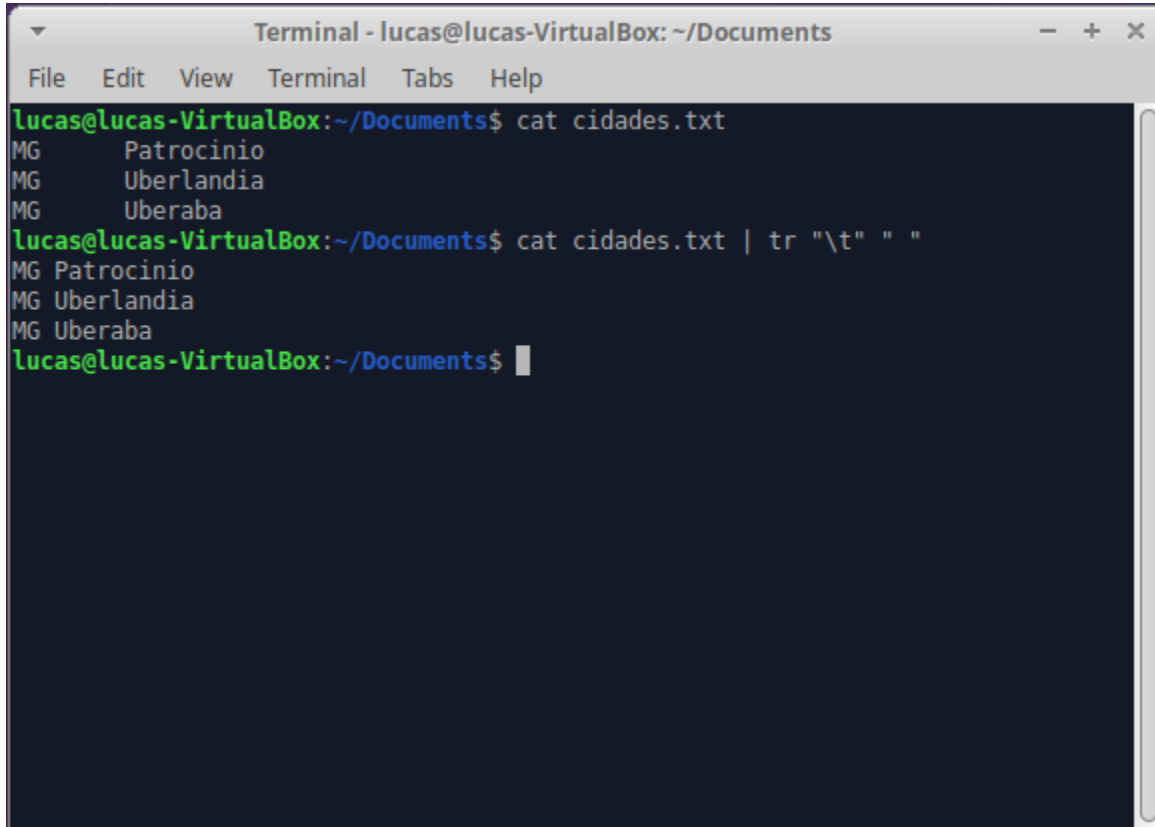
```
Terminal - lucas@lucas-VirtualBox: ~/Documents
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~/Documents$ echo 'alessandro vivas andrade ' | cut -c 1-10
'alessan
lucas@lucas-VirtualBox:~/Documents$
```

Comando: expand

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The prompt is "lucas@lucas-VirtualBox:~/Documents\$". The command "cat cidades.txt | expand -t 1" has been executed, resulting in the output: "Patrocinio", "Uberlandia", and "Uberaba". The prompt is now "lucas@lucas-VirtualBox:~/Documents\$" with a cursor.

```
Terminal - lucas@lucas-VirtualBox: ~/Documents
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~/Documents$ cat cidades.txt | expand -t 1
Patrocinio
Uberlandia
Uberaba
lucas@lucas-VirtualBox:~/Documents$
```

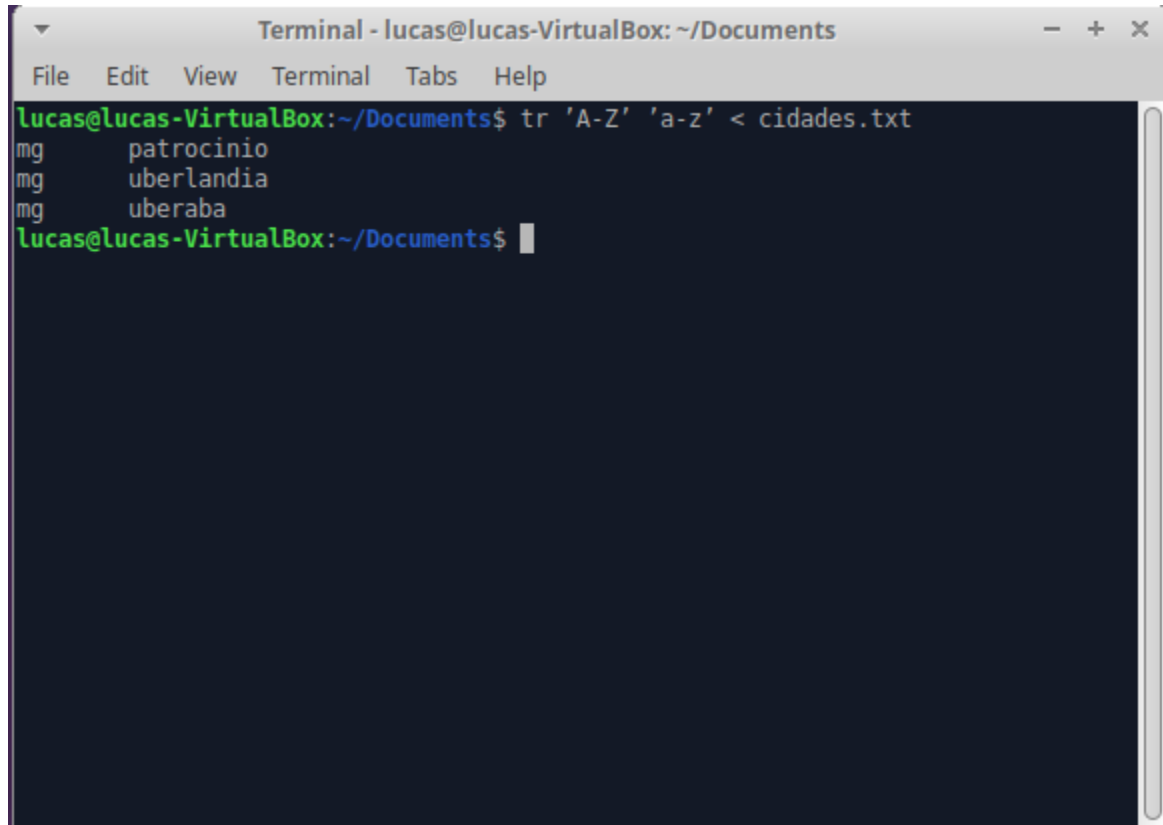
Comando: tr

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The terminal shows the following commands and output:

```
lucas@lucas-VirtualBox:~/Documents$ cat cidades.txt
MG      Patrocinio
MG      Uberlandia
MG      Uberaba
lucas@lucas-VirtualBox:~/Documents$ cat cidades.txt | tr "\t" " "
MG Patrocinio
MG Uberlandia
MG Uberaba
lucas@lucas-VirtualBox:~/Documents$
```

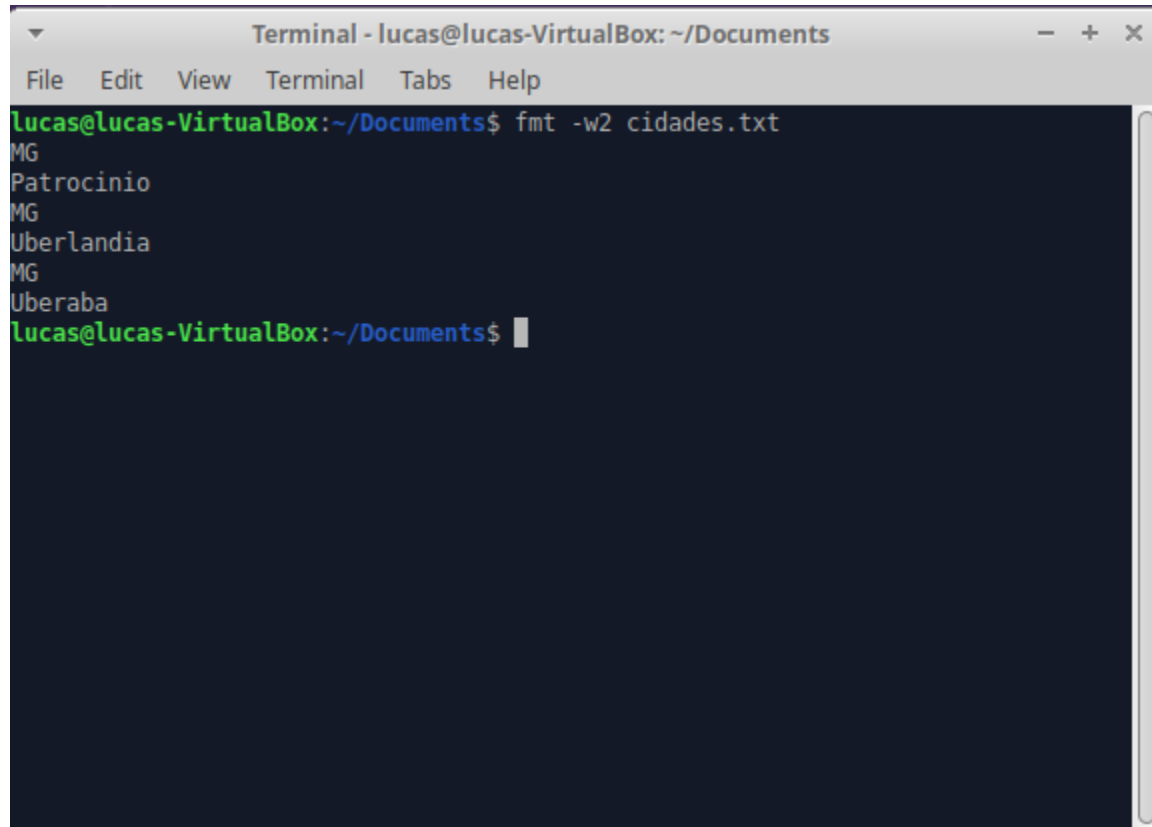
The terminal window has a title bar with a dropdown arrow, the title "Terminal - lucas@lucas-VirtualBox: ~/Documents", and window control buttons (minimize, maximize, close). The menu bar includes "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows a user named "lucas" in a directory "~/Documents". The first command is `cat cidades.txt`, which outputs three lines: "MG Patrocinio", "MG Uberlandia", and "MG Uberaba". The second command is `cat cidades.txt | tr "\t" " "`, which outputs the same three lines but with single spaces instead of tabs: "MG Patrocinio", "MG Uberlandia", and "MG Uberaba". The prompt `lucas@lucas-VirtualBox:~/Documents$` is shown at the end of the output.

Comando: tr 'A-Z' 'a-z'

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The prompt is "lucas@lucas-VirtualBox:~/Documents\$". The command "tr 'A-Z' 'a-z' < cidades.txt" has been executed, resulting in three lines of lowercase output: "mg", "patrocinio", "uberlandia", "mg", "uberaba", "mg", "uberaba". The prompt is now "lucas@lucas-VirtualBox:~/Documents\$" with a cursor.

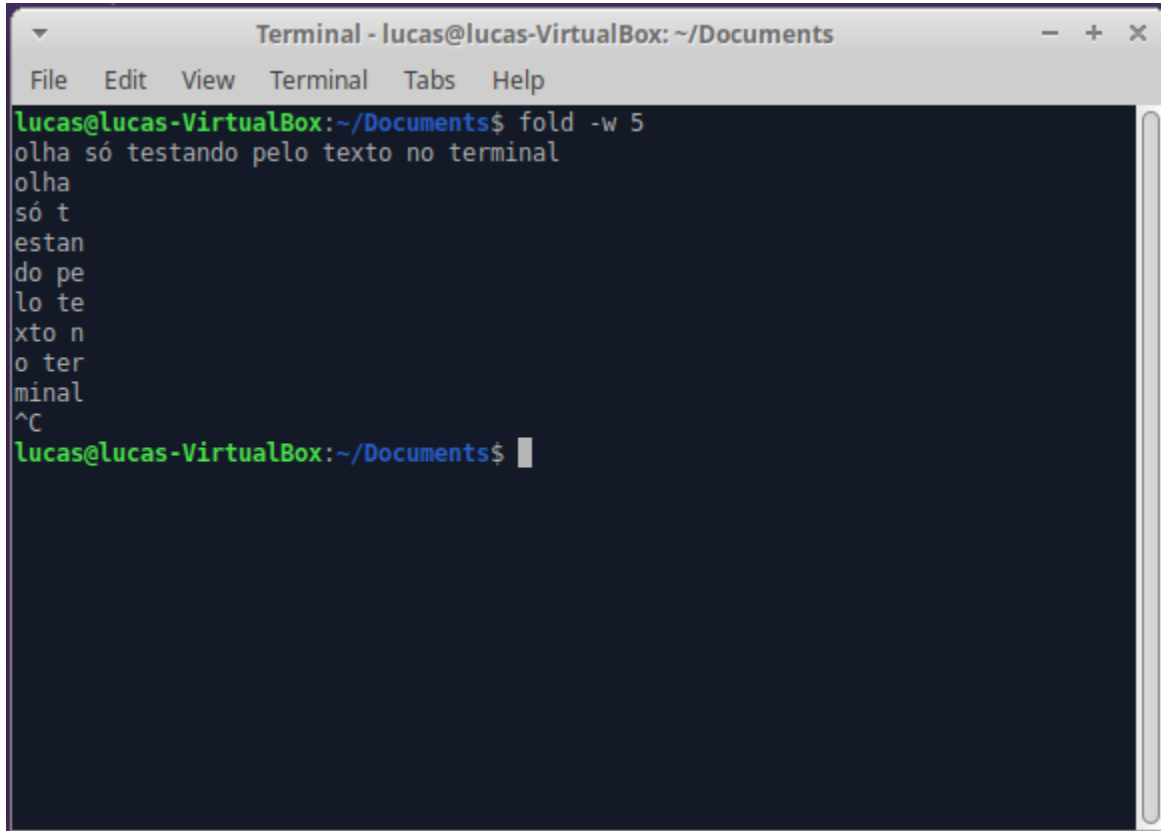
```
Terminal - lucas@lucas-VirtualBox: ~/Documents
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~/Documents$ tr 'A-Z' 'a-z' < cidades.txt
mg      patrocinio
mg      uberlandia
mg      uberaba
lucas@lucas-VirtualBox:~/Documents$
```


Comando: `fmt -w2`



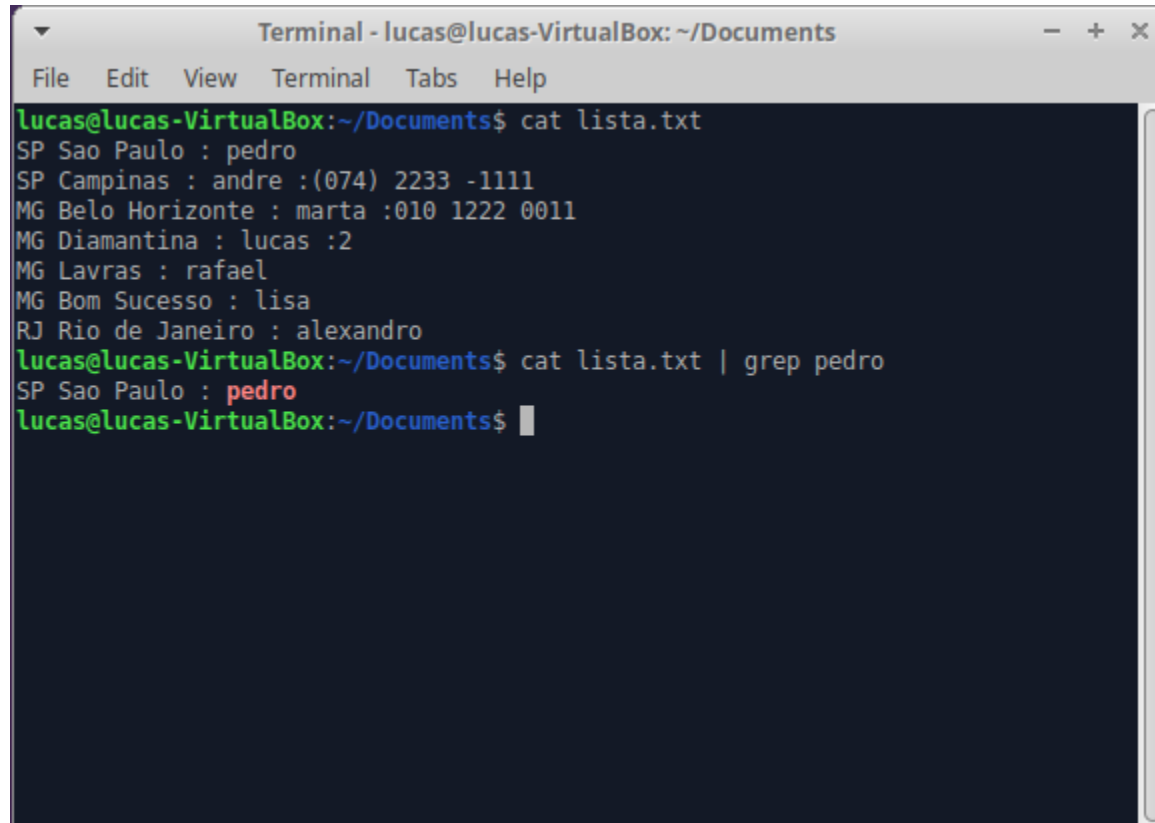
```
Terminal - lucas@lucas-VirtualBox: ~/Documents
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~/Documents$ fmt -w2 cidades.txt
MG
Patrocinio
MG
Uberlandia
MG
Uberaba
lucas@lucas-VirtualBox:~/Documents$
```

Comando: fold -w 5

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The prompt is "lucas@lucas-VirtualBox:~/Documents\$". The command "fold -w 5" has been executed, resulting in the text "olha só testando pelo texto no terminal" being wrapped into 5-character segments across 10 lines. The prompt is now "lucas@lucas-VirtualBox:~/Documents\$" with a cursor.

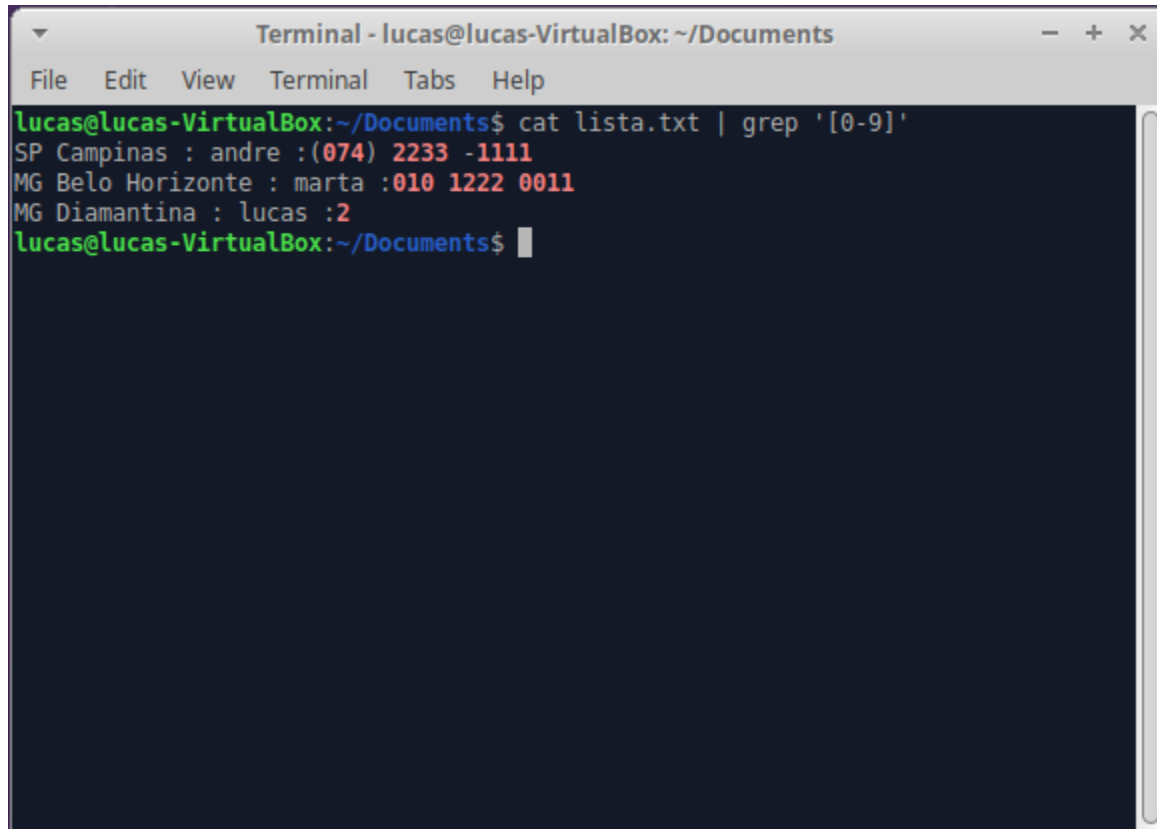
```
lucas@lucas-VirtualBox:~/Documents$ fold -w 5
olha só testando pelo texto no terminal
olha
só t
estan
do pe
lo te
xto n
o ter
minal
^C
lucas@lucas-VirtualBox:~/Documents$
```

Comando: grep



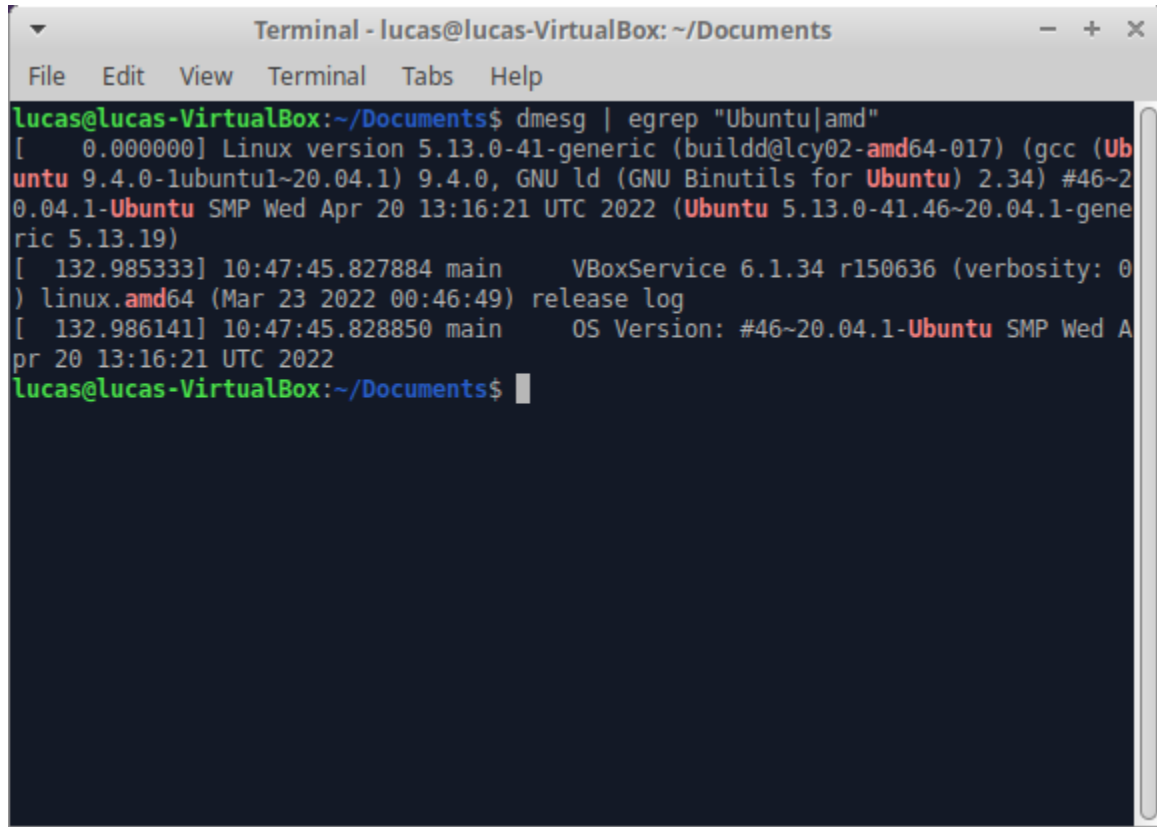
```
Terminal - lucas@lucas-VirtualBox: ~/Documents
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~/Documents$ cat lista.txt
SP Sao Paulo : pedro
SP Campinas : andre :(074) 2233 -1111
MG Belo Horizonte : marta :010 1222 0011
MG Diamantina : lucas :2
MG Lavras : rafael
MG Bom Sucesso : lisa
RJ Rio de Janeiro : alexandro
lucas@lucas-VirtualBox:~/Documents$ cat lista.txt | grep pedro
SP Sao Paulo : pedro
lucas@lucas-VirtualBox:~/Documents$
```

Comando: grep '[0-9]'

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The prompt is "lucas@lucas-VirtualBox:~/Documents\$". The command "cat lista.txt | grep '[0-9]'" has been executed. The output shows three lines of text with numbers highlighted in red: "SP Campinas : andre :(074) 2233 -1111", "MG Belo Horizonte : marta :010 1222 0011", and "MG Diamantina : lucas :2". The prompt "lucas@lucas-VirtualBox:~/Documents\$" is shown again with a cursor.

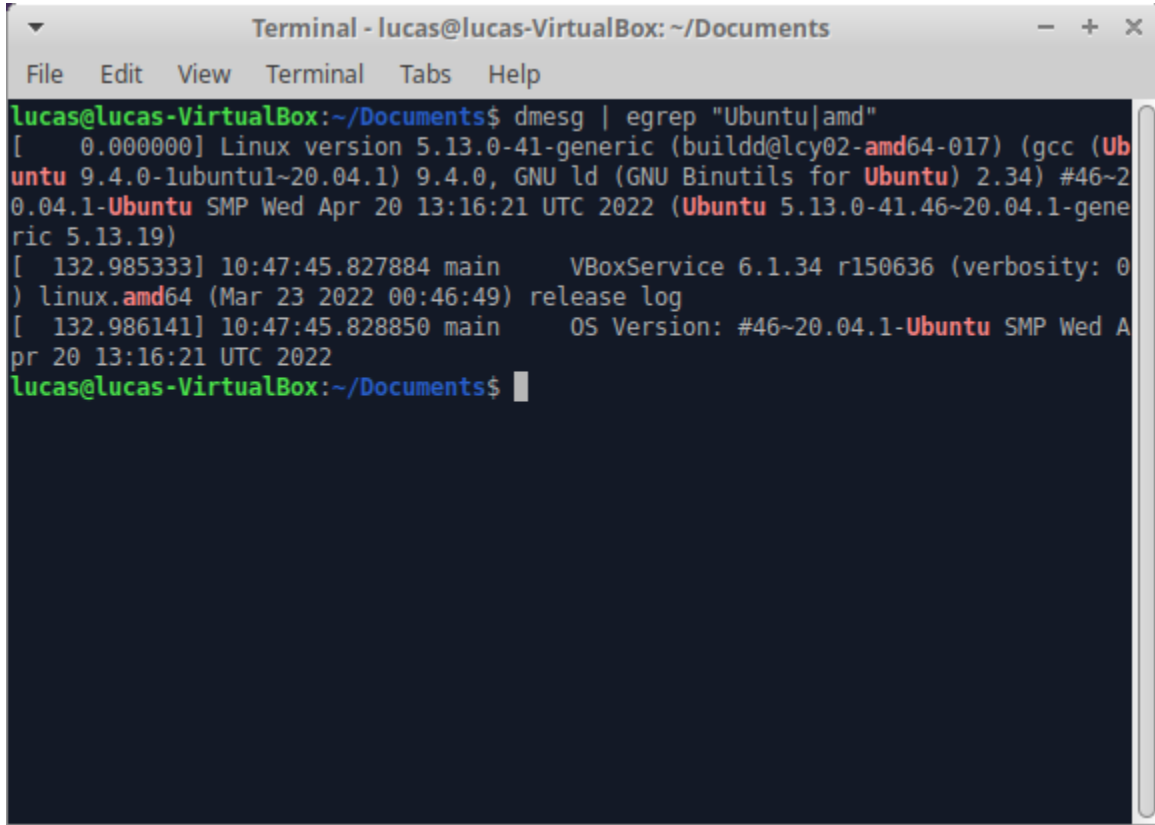
```
Terminal - lucas@lucas-VirtualBox: ~/Documents
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~/Documents$ cat lista.txt | grep '[0-9]'
SP Campinas : andre :(074) 2233 -1111
MG Belo Horizonte : marta :010 1222 0011
MG Diamantina : lucas :2
lucas@lucas-VirtualBox:~/Documents$
```

Comando: dmesg

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The prompt is "lucas@lucas-VirtualBox:~/Documents\$". The command "dmesg | egrep 'Ubuntu|amd'" has been executed, resulting in three lines of kernel log output. The first line shows the Linux version and build information. The second line shows the VBoxService release log. The third line shows the OS version. The prompt "lucas@lucas-VirtualBox:~/Documents\$" is visible at the bottom.

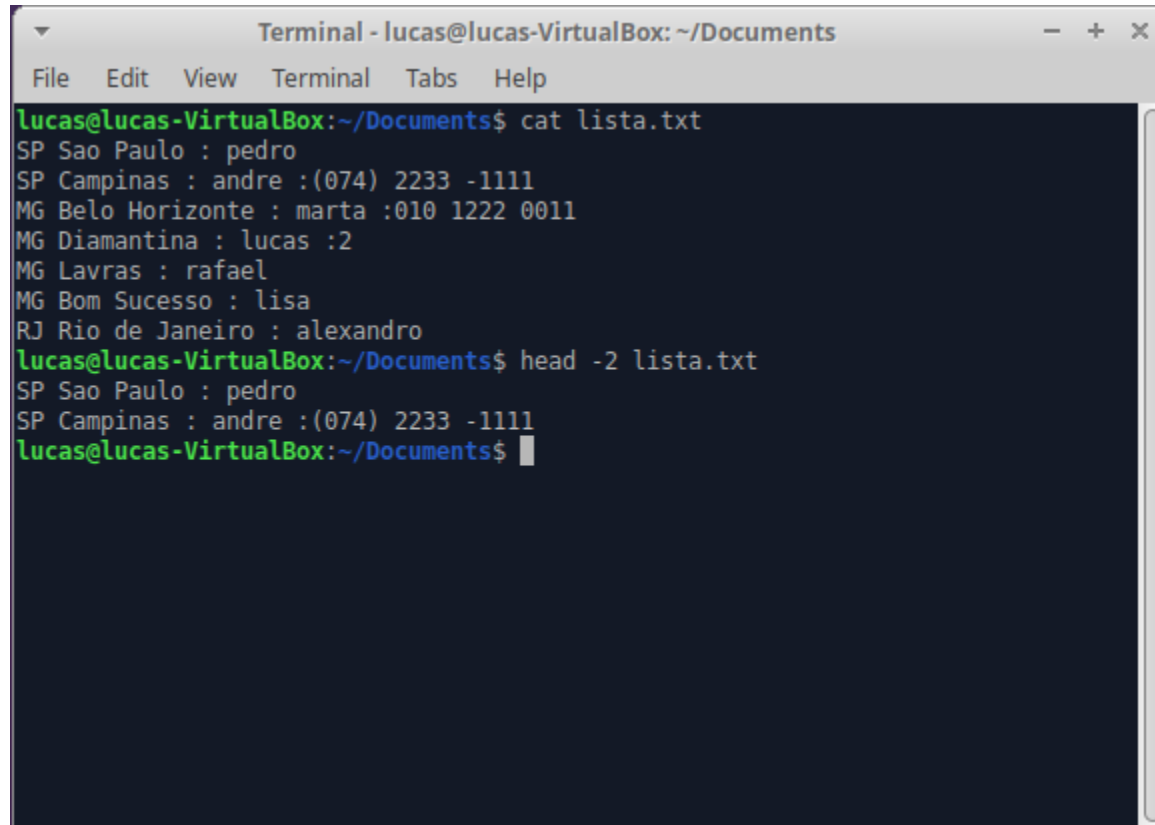
```
lucas@lucas-VirtualBox:~/Documents$ dmesg | egrep "Ubuntu|amd"
[    0.000000] Linux version 5.13.0-41-generic (buildd@lcy02-amd64-017) (gcc (Ub
untu 9.4.0-1ubuntu1~20.04.1) 9.4.0, GNU ld (GNU Binutils for Ubuntu) 2.34) #46~2
0.04.1-Ubuntu SMP Wed Apr 20 13:16:21 UTC 2022 (Ubuntu 5.13.0-41.46~20.04.1-gene
ric 5.13.19)
[  132.985333] 10:47:45.827884 main      VBoxService 6.1.34 r150636 (verbosity: 0
) linux.amd64 (Mar 23 2022 00:46:49) release log
[  132.986141] 10:47:45.828850 main      OS Version: #46~20.04.1-Ubuntu SMP Wed A
pr 20 13:16:21 UTC 2022
lucas@lucas-VirtualBox:~/Documents$
```

Comando: egrep

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The prompt is "lucas@lucas-VirtualBox:~/Documents\$". The command "dmesg | egrep \"Ubuntu|amd\"" has been entered. The output shows kernel messages filtered by "Ubuntu" or "amd".

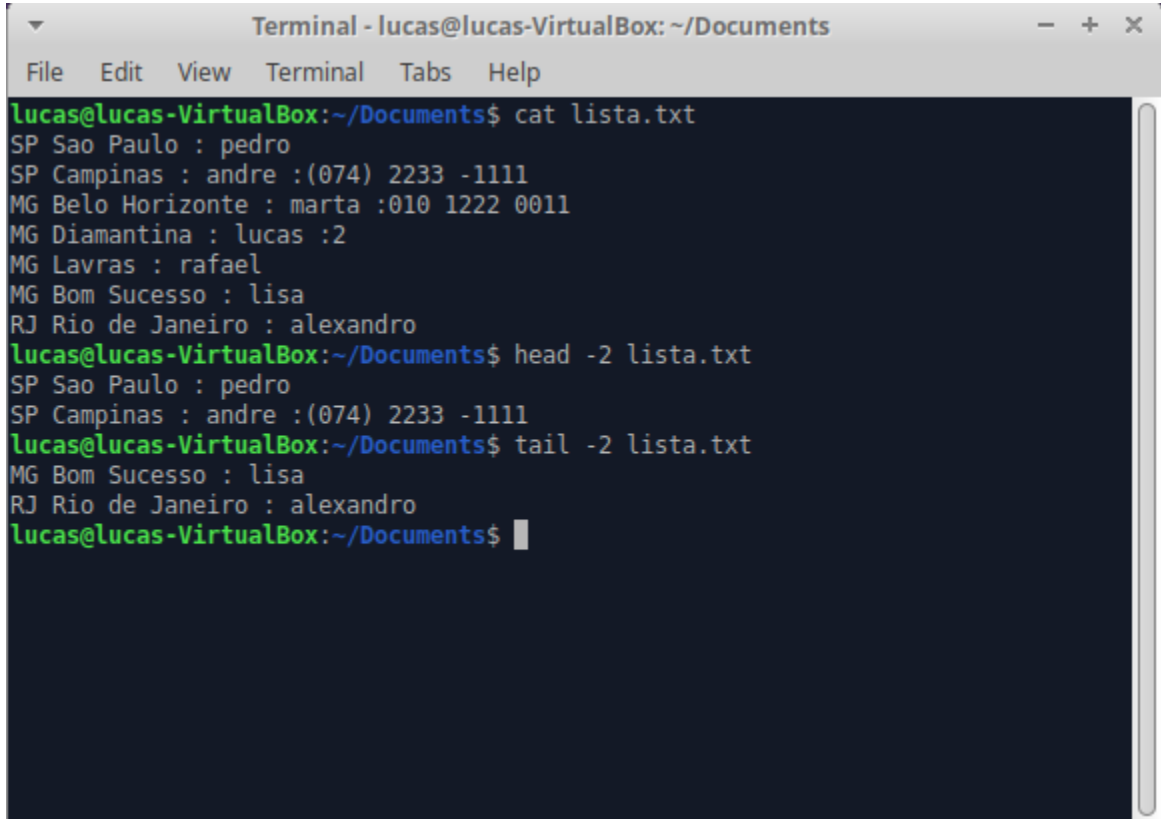
```
lucas@lucas-VirtualBox:~/Documents$ dmesg | egrep "Ubuntu|amd"
[  0.000000] Linux version 5.13.0-41-generic (buildd@lcy02-amd64-017) (gcc (Ub
untu 9.4.0-1ubuntu1~20.04.1) 9.4.0, GNU ld (GNU Binutils for Ubuntu) 2.34) #46~2
0.04.1-Ubuntu SMP Wed Apr 20 13:16:21 UTC 2022 (Ubuntu 5.13.0-41.46~20.04.1-gene
ric 5.13.19)
[ 132.985333] 10:47:45.827884 main      VBoxService 6.1.34 r150636 (verbosity: 0
) linux.amd64 (Mar 23 2022 00:46:49) release log
[ 132.986141] 10:47:45.828850 main      OS Version: #46~20.04.1-Ubuntu SMP Wed A
pr 20 13:16:21 UTC 2022
lucas@lucas-VirtualBox:~/Documents$
```

Comando: head

A screenshot of a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal shows the execution of two commands. First, "cat lista.txt" is run, displaying the contents of a file: "SP Sao Paulo : pedro", "SP Campinas : andre :(074) 2233 -1111", "MG Belo Horizonte : marta :010 1222 0011", "MG Diamantina : lucas :2", "MG Lavras : rafael", "MG Bom Sucesso : lisa", and "RJ Rio de Janeiro : alexandro". Then, "head -2 lista.txt" is run, displaying only the first two lines of the file: "SP Sao Paulo : pedro" and "SP Campinas : andre :(074) 2233 -1111". The prompt "lucas@lucas-VirtualBox:~/Documents\$" is visible at the end of the second command.

```
Terminal - lucas@lucas-VirtualBox: ~/Documents
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~/Documents$ cat lista.txt
SP Sao Paulo : pedro
SP Campinas : andre :(074) 2233 -1111
MG Belo Horizonte : marta :010 1222 0011
MG Diamantina : lucas :2
MG Lavras : rafael
MG Bom Sucesso : lisa
RJ Rio de Janeiro : alexandro
lucas@lucas-VirtualBox:~/Documents$ head -2 lista.txt
SP Sao Paulo : pedro
SP Campinas : andre :(074) 2233 -1111
lucas@lucas-VirtualBox:~/Documents$
```

Comando: tail

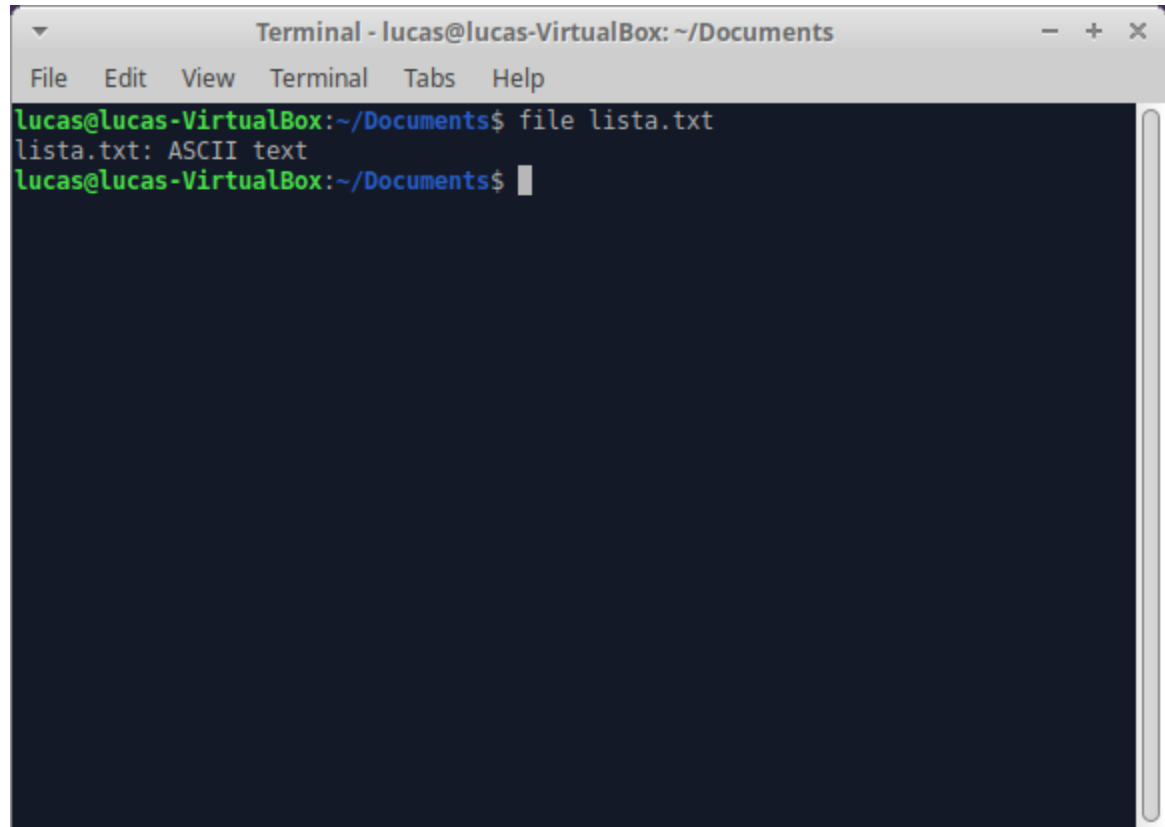
A screenshot of a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal shows the following commands and output:

```
lucas@lucas-VirtualBox:~/Documents$ cat lista.txt
SP Sao Paulo : pedro
SP Campinas : andre :(074) 2233 -1111
MG Belo Horizonte : marta :010 1222 0011
MG Diamantina : lucas :2
MG Lavras : rafael
MG Bom Sucesso : lisa
RJ Rio de Janeiro : alexandro
lucas@lucas-VirtualBox:~/Documents$ head -2 lista.txt
SP Sao Paulo : pedro
SP Campinas : andre :(074) 2233 -1111
lucas@lucas-VirtualBox:~/Documents$ tail -2 lista.txt
MG Bom Sucesso : lisa
RJ Rio de Janeiro : alexandro
lucas@lucas-VirtualBox:~/Documents$
```

The terminal output shows the contents of lista.txt, the first two lines using head, and the last two lines using tail. The prompt is green, and the output is white on a dark background. A vertical scrollbar is visible on the right side of the terminal window.

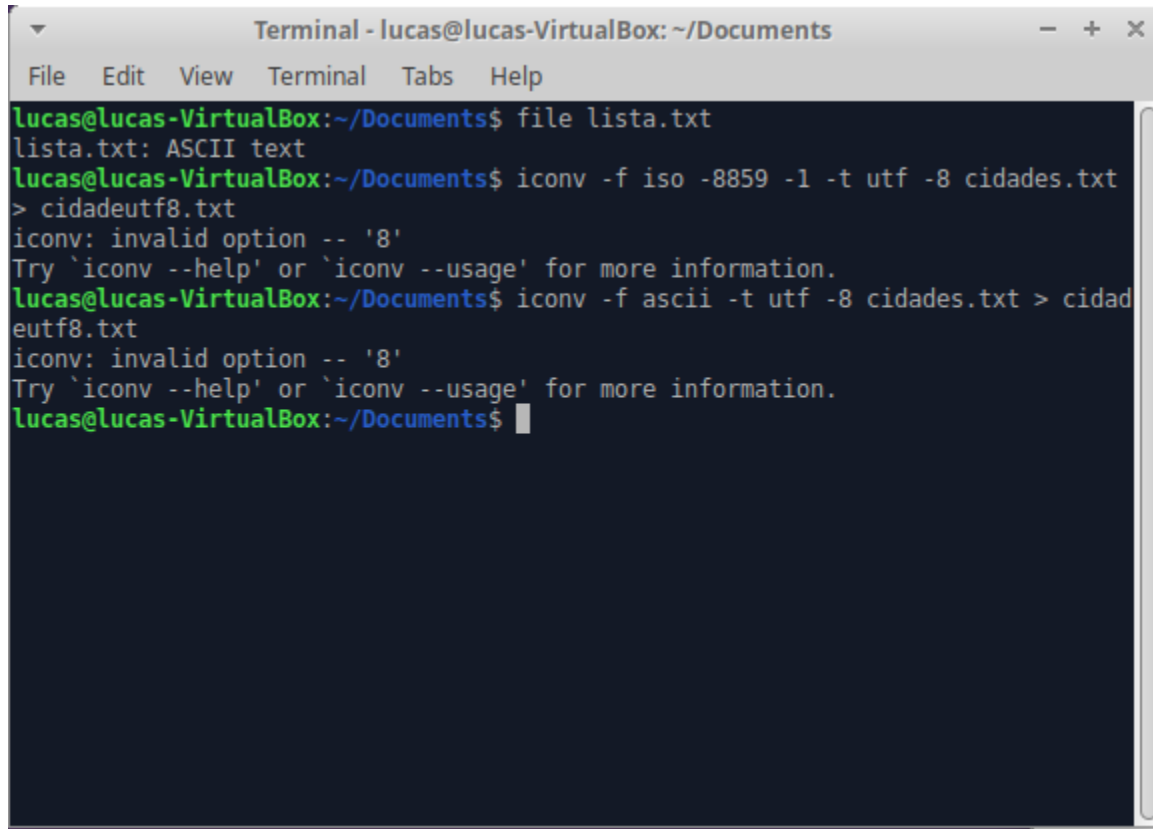
```
Terminal - lucas@lucas-VirtualBox: ~/Documents
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~/Documents$ cat lista.txt
SP Sao Paulo : pedro
SP Campinas : andre :(074) 2233 -1111
MG Belo Horizonte : marta :010 1222 0011
MG Diamantina : lucas :2
MG Lavras : rafael
MG Bom Sucesso : lisa
RJ Rio de Janeiro : alexandro
lucas@lucas-VirtualBox:~/Documents$ head -2 lista.txt
SP Sao Paulo : pedro
SP Campinas : andre :(074) 2233 -1111
lucas@lucas-VirtualBox:~/Documents$ tail -2 lista.txt
MG Bom Sucesso : lisa
RJ Rio de Janeiro : alexandro
lucas@lucas-VirtualBox:~/Documents$
```


Comando: file

A screenshot of a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows the command "file lista.txt" being executed, resulting in the output "lista.txt: ASCII text". The prompt "lucas@lucas-VirtualBox:~/Documents\$" is visible at the end of the line.

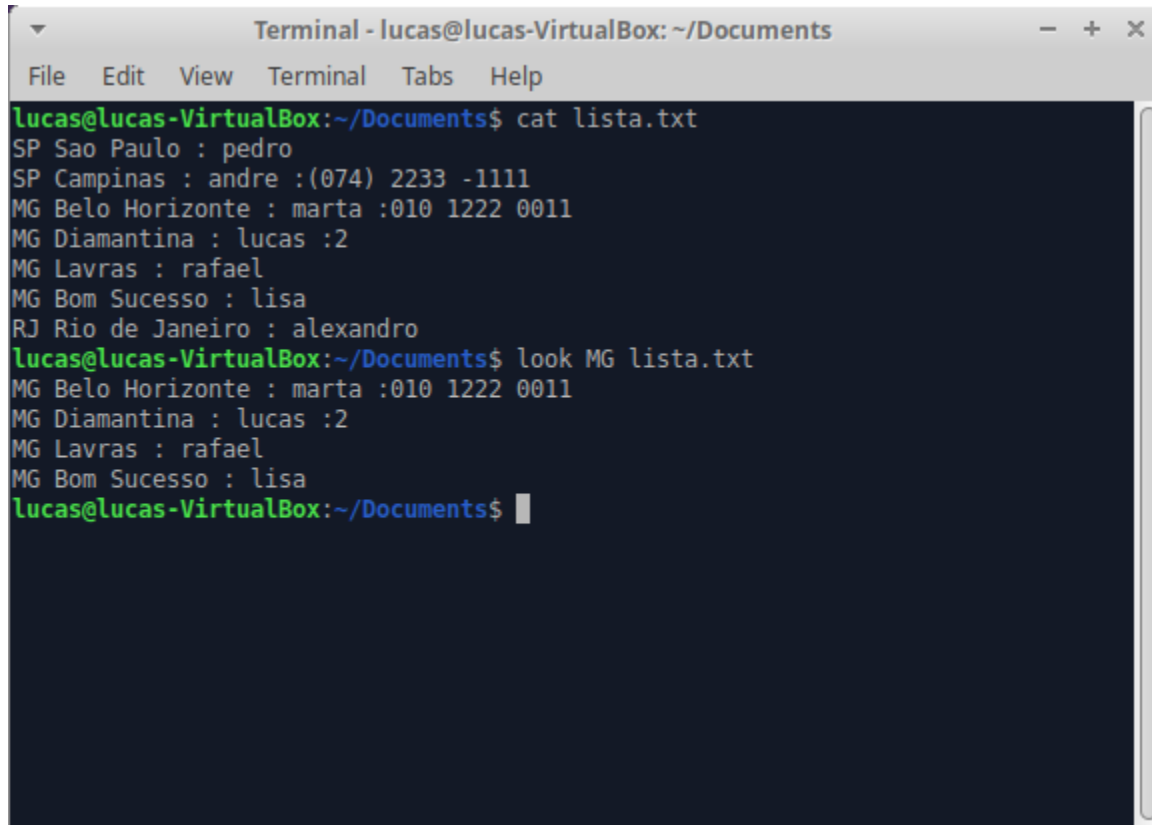
```
Terminal - lucas@lucas-VirtualBox: ~/Documents
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~/Documents$ file lista.txt
lista.txt: ASCII text
lucas@lucas-VirtualBox:~/Documents$
```

Comando: iconv

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The terminal shows the following commands and output:

```
lucas@lucas-VirtualBox:~/Documents$ file lista.txt
lista.txt: ASCII text
lucas@lucas-VirtualBox:~/Documents$ iconv -f iso -8859 -1 -t utf -8 cidades.txt
> cidadeutf8.txt
iconv: invalid option -- '8'
Try `iconv --help' or `iconv --usage' for more information.
lucas@lucas-VirtualBox:~/Documents$ iconv -f ascii -t utf -8 cidades.txt > cidadeutf8.txt
iconv: invalid option -- '8'
Try `iconv --help' or `iconv --usage' for more information.
lucas@lucas-VirtualBox:~/Documents$
```

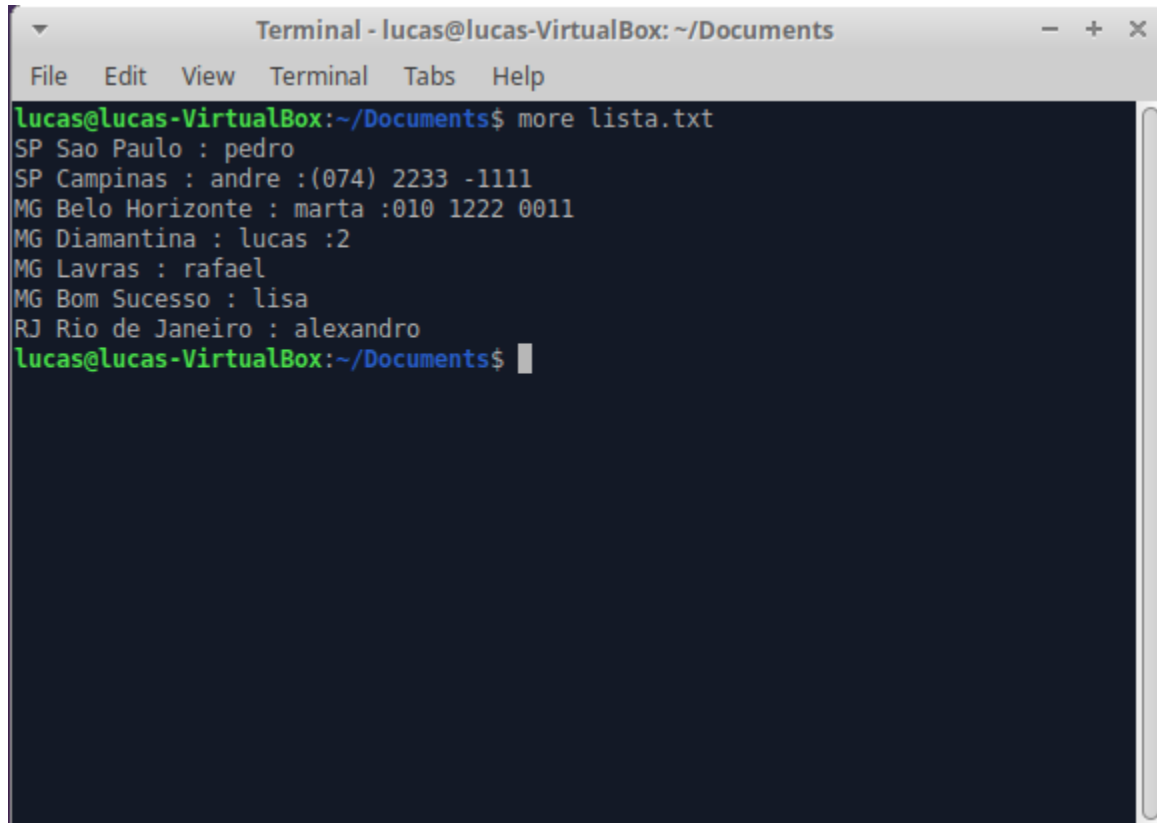
Comando: look



```
Terminal - lucas@lucas-VirtualBox: ~/Documents
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~/Documents$ cat lista.txt
SP Sao Paulo : pedro
SP Campinas : andre :(074) 2233 -1111
MG Belo Horizonte : marta :010 1222 0011
MG Diamantina : lucas :2
MG Lavras : rafael
MG Bom Sucesso : lisa
RJ Rio de Janeiro : alexandro
lucas@lucas-VirtualBox:~/Documents$ look MG lista.txt
MG Belo Horizonte : marta :010 1222 0011
MG Diamantina : lucas :2
MG Lavras : rafael
MG Bom Sucesso : lisa
lucas@lucas-VirtualBox:~/Documents$
```

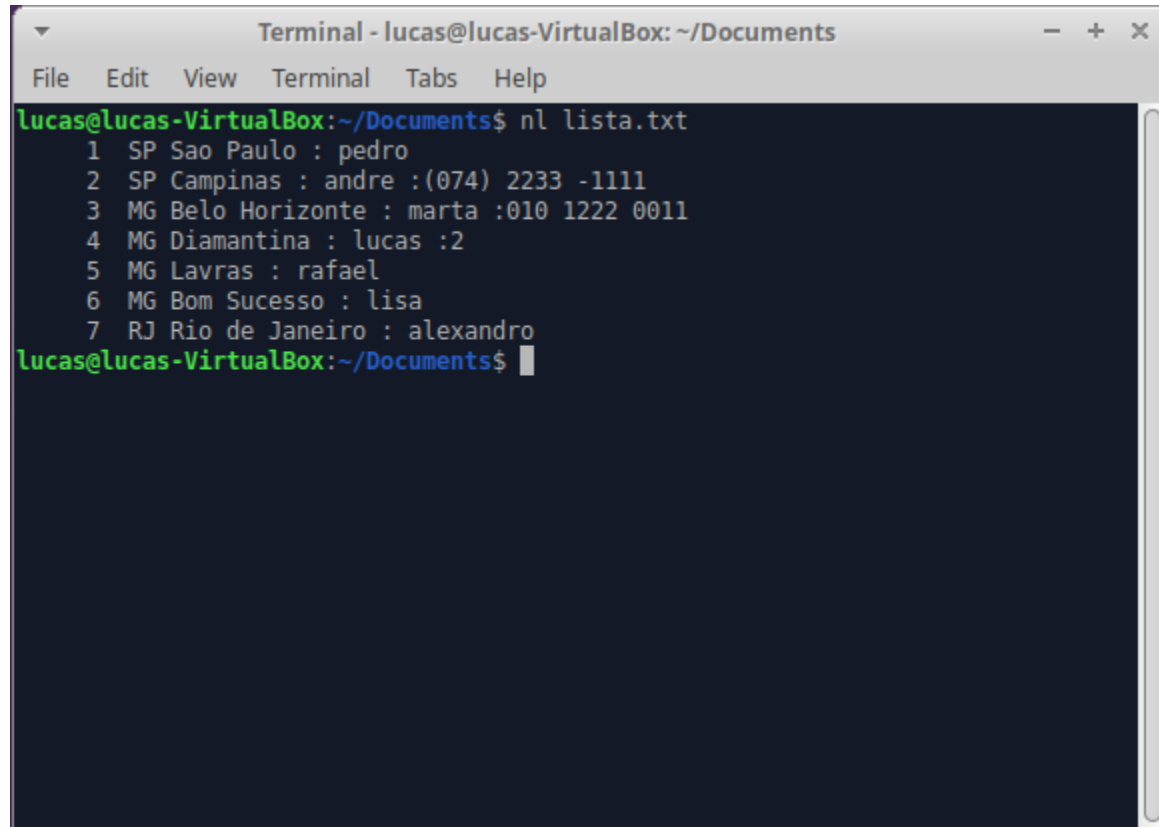
The image shows a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows the user running the command `cat lista.txt`, which displays a list of names and locations. Then, the user runs `look MG lista.txt`, which filters the output to show only lines starting with "MG". The prompt `lucas@lucas-VirtualBox:~/Documents$` is visible at the end of the command line.

Comando: more

A screenshot of a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows the command "more lista.txt" being executed, which displays the contents of the file "lista.txt" line by line. The output is: "SP Sao Paulo : pedro", "SP Campinas : andre :(074) 2233 -1111", "MG Belo Horizonte : marta :010 1222 0011", "MG Diamantina : lucas :2", "MG Lavras : rafael", "MG Bom Sucesso : lisa", and "RJ Rio de Janeiro : alexandro". The prompt "lucas@lucas-VirtualBox:~/Documents\$" is visible at the bottom of the terminal window.

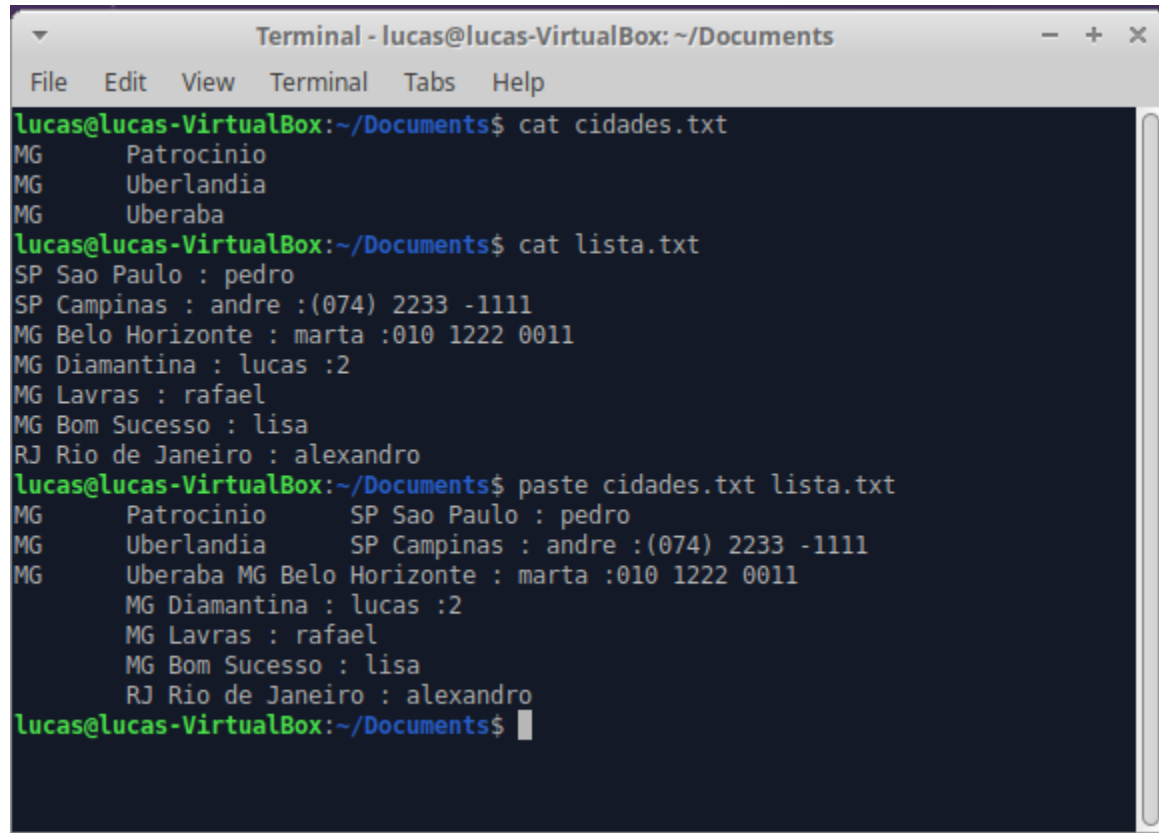
```
Terminal - lucas@lucas-VirtualBox: ~/Documents
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~/Documents$ more lista.txt
SP Sao Paulo : pedro
SP Campinas : andre :(074) 2233 -1111
MG Belo Horizonte : marta :010 1222 0011
MG Diamantina : lucas :2
MG Lavras : rafael
MG Bom Sucesso : lisa
RJ Rio de Janeiro : alexandro
lucas@lucas-VirtualBox:~/Documents$
```

Comando: nl

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The prompt is "lucas@lucas-VirtualBox:~/Documents\$". The command "nl lista.txt" has been executed, resulting in a numbered list of seven lines. The prompt is now "lucas@lucas-VirtualBox:~/Documents\$".

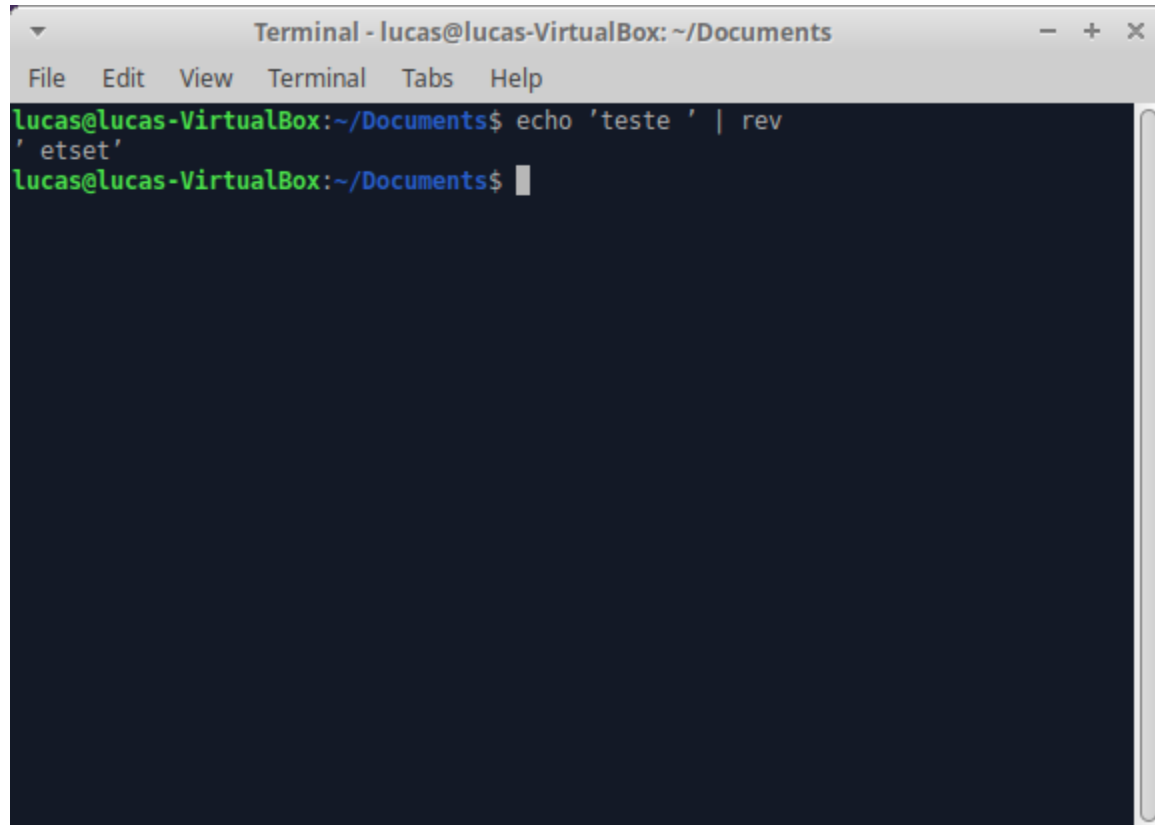
```
lucas@lucas-VirtualBox:~/Documents$ nl lista.txt
 1 SP Sao Paulo : pedro
 2 SP Campinas : andre :(074) 2233 -1111
 3 MG Belo Horizonte : marta :010 1222 0011
 4 MG Diamantina : lucas :2
 5 MG Lavras : rafael
 6 MG Bom Sucesso : lisa
 7 RJ Rio de Janeiro : alexandro
lucas@lucas-VirtualBox:~/Documents$
```

Comando: paste



```
Terminal - lucas@lucas-VirtualBox: ~/Documents
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~/Documents$ cat cidades.txt
MG      Patrocinio
MG      Uberlandia
MG      Uberaba
lucas@lucas-VirtualBox:~/Documents$ cat lista.txt
SP Sao Paulo : pedro
SP Campinas : andre :(074) 2233 -1111
MG Belo Horizonte : marta :010 1222 0011
MG Diamantina : lucas :2
MG Lavras : rafael
MG Bom Sucesso : lisa
RJ Rio de Janeiro : alexandro
lucas@lucas-VirtualBox:~/Documents$ paste cidades.txt lista.txt
MG      Patrocinio      SP Sao Paulo : pedro
MG      Uberlandia      SP Campinas : andre :(074) 2233 -1111
MG      Uberaba MG Belo Horizonte : marta :010 1222 0011
          MG Diamantina : lucas :2
          MG Lavras : rafael
          MG Bom Sucesso : lisa
          RJ Rio de Janeiro : alexandro
lucas@lucas-VirtualBox:~/Documents$
```

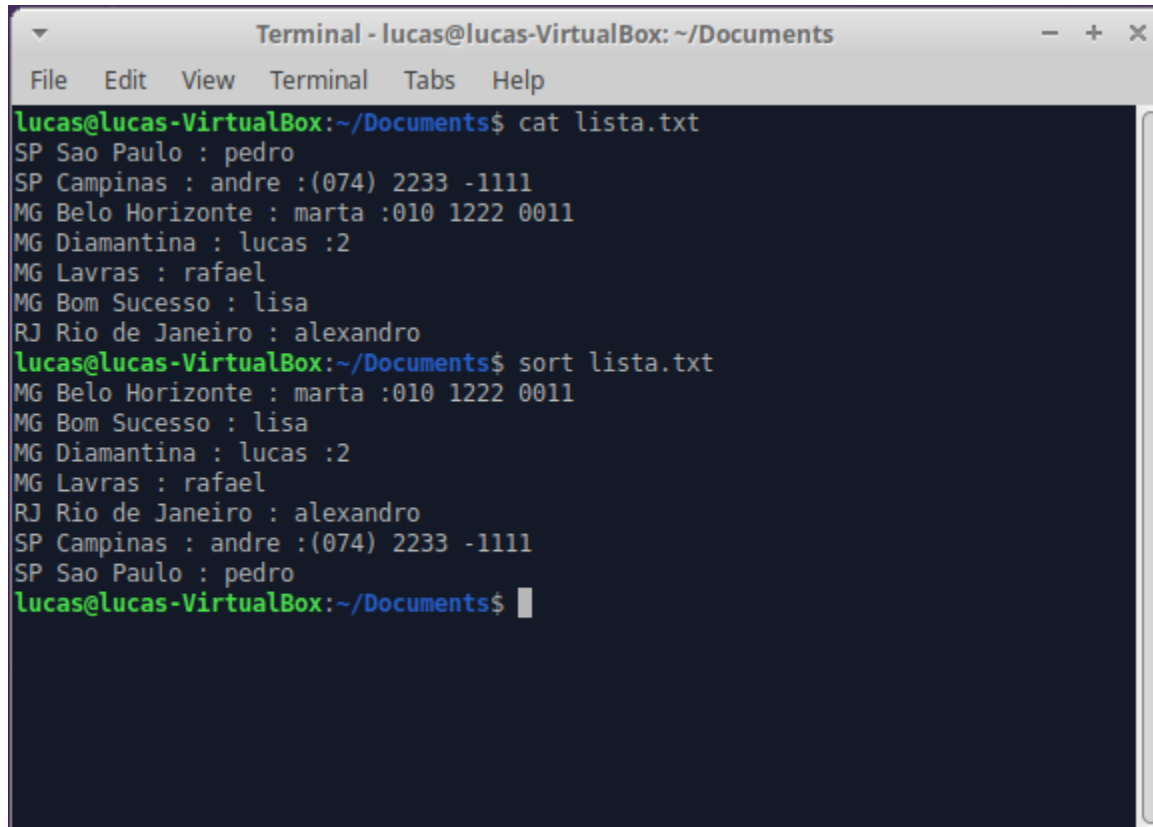
Comando: rev



```
Terminal - lucas@lucas-VirtualBox: ~/Documents
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~/Documents$ echo 'teste ' | rev
'etset'
lucas@lucas-VirtualBox:~/Documents$
```

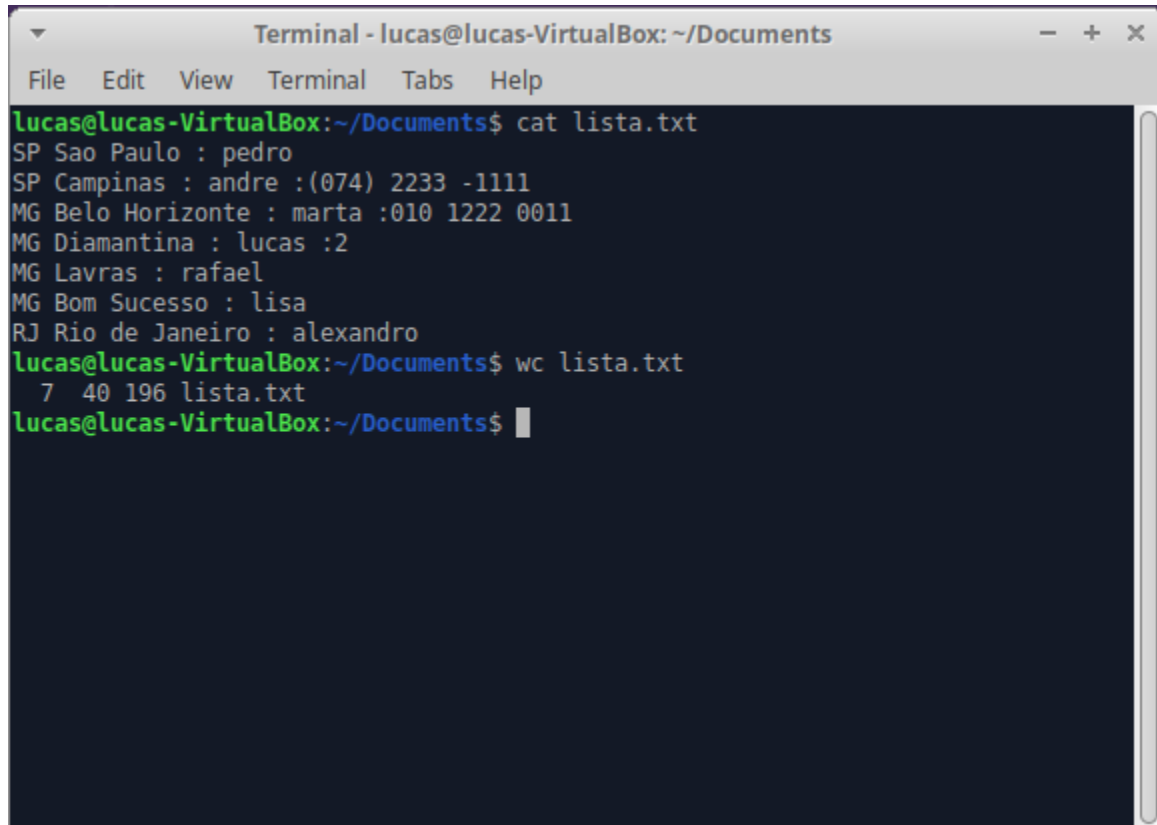
A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The terminal shows the command `echo 'teste ' | rev` being executed, which outputs `'etset'`. The prompt `lucas@lucas-VirtualBox:~/Documents$` is visible on the next line.

Comando: sort

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The prompt is "lucas@lucas-VirtualBox:~/Documents\$". The user enters "cat lista.txt", displaying a list of names and phone numbers. Then, the user enters "sort lista.txt", and the output is sorted alphabetically by the first field (city/state).

```
lucas@lucas-VirtualBox:~/Documents$ cat lista.txt
SP Sao Paulo : pedro
SP Campinas : andre :(074) 2233 -1111
MG Belo Horizonte : marta :010 1222 0011
MG Diamantina : lucas :2
MG Lavras : rafael
MG Bom Sucesso : lisa
RJ Rio de Janeiro : alexandro
lucas@lucas-VirtualBox:~/Documents$ sort lista.txt
MG Belo Horizonte : marta :010 1222 0011
MG Bom Sucesso : lisa
MG Diamantina : lucas :2
MG Lavras : rafael
RJ Rio de Janeiro : alexandro
SP Campinas : andre :(074) 2233 -1111
SP Sao Paulo : pedro
lucas@lucas-VirtualBox:~/Documents$
```

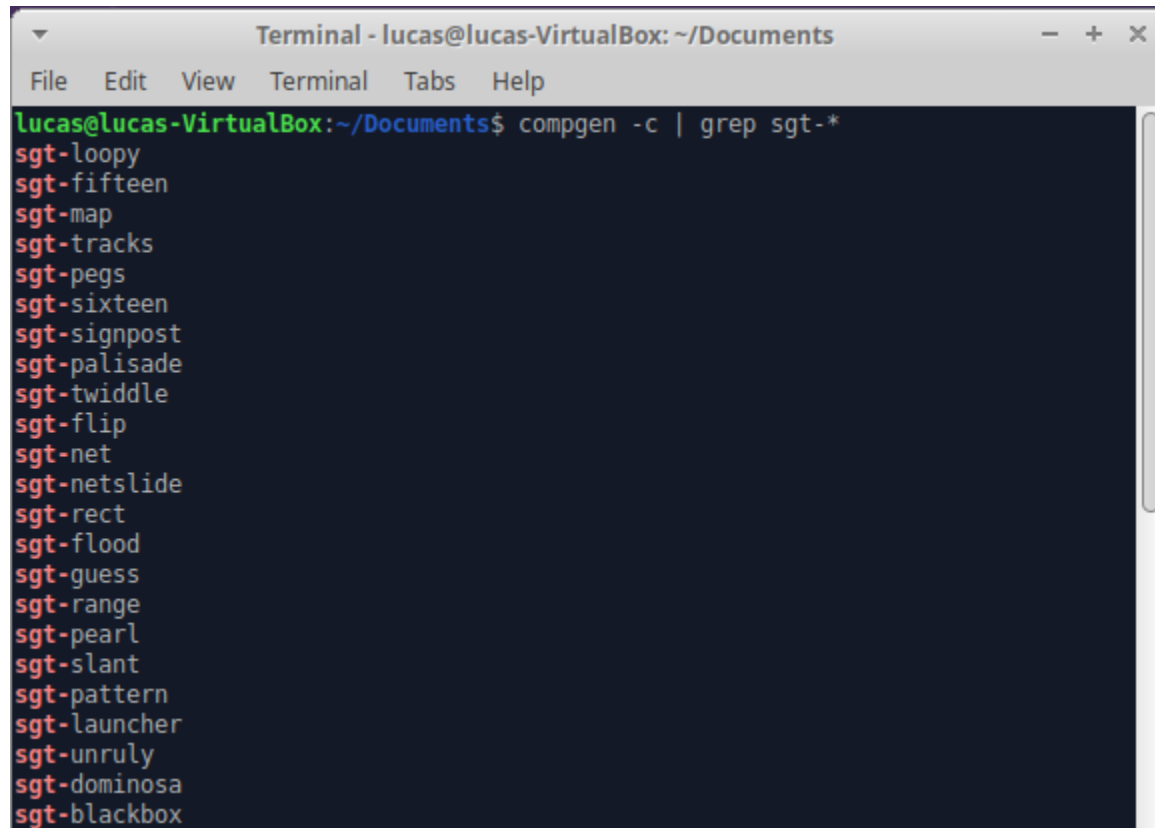

Comando: wc



```
Terminal - lucas@lucas-VirtualBox: ~/Documents
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~/Documents$ cat lista.txt
SP Sao Paulo : pedro
SP Campinas : andre :(074) 2233 -1111
MG Belo Horizonte : marta :010 1222 0011
MG Diamantina : lucas :2
MG Lavras : rafael
MG Bom Sucesso : lisa
RJ Rio de Janeiro : alexandro
lucas@lucas-VirtualBox:~/Documents$ wc lista.txt
 7  40 196 lista.txt
lucas@lucas-VirtualBox:~/Documents$
```

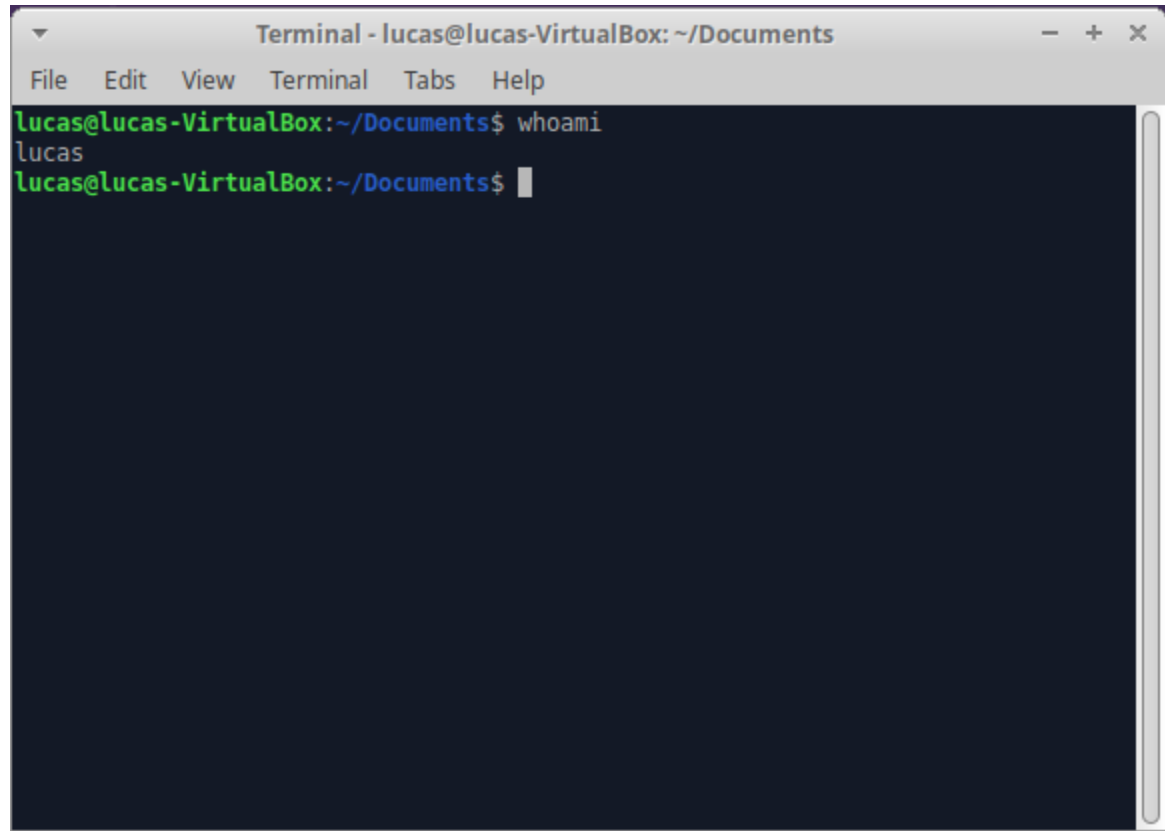
Capítulo 5

Comando: compgen -c



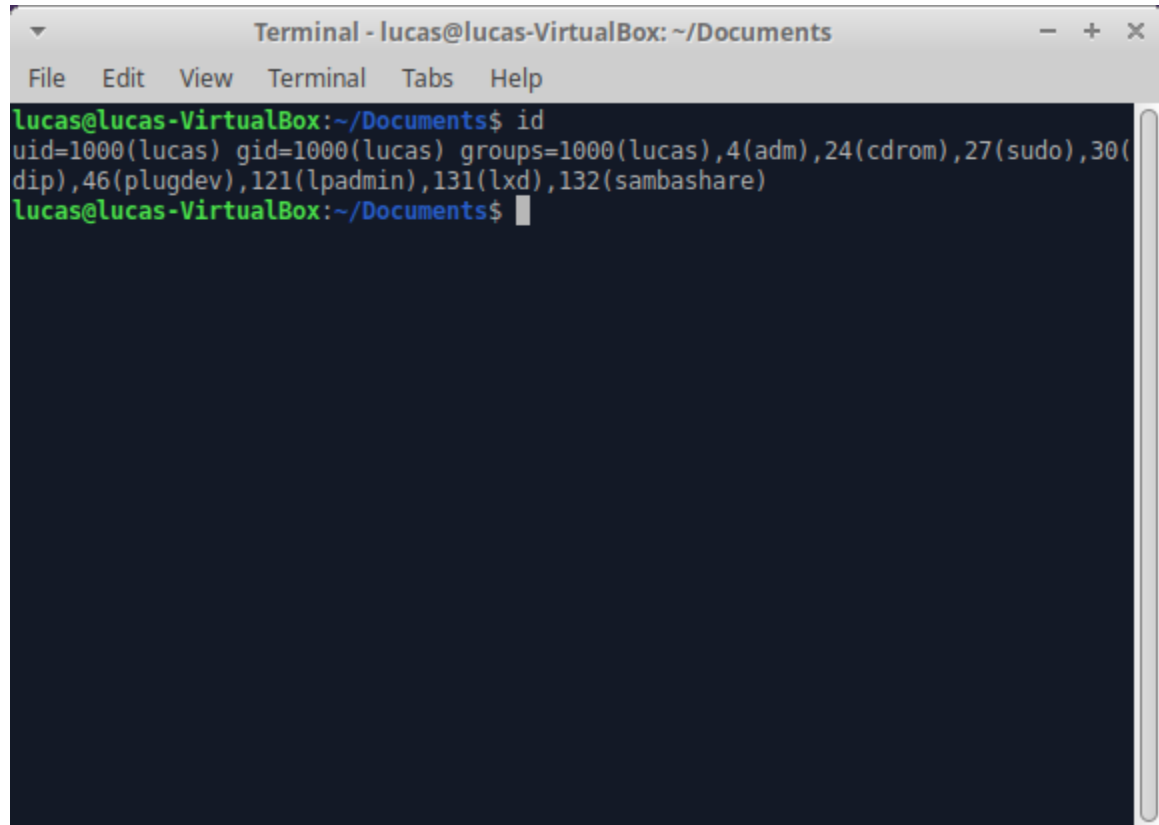
```
Terminal - lucas@lucas-VirtualBox: ~/Documents
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~/Documents$ compgen -c | grep sgt-*
sgt-loopy
sgt-fifteen
sgt-map
sgt-tracks
sgt-pegs
sgt-sixteen
sgt-signpost
sgt-palisade
sgt-twiddle
sgt-flip
sgt-net
sgt-netslide
sgt-rect
sgt-flood
sgt-guess
sgt-range
sgt-pearl
sgt-slant
sgt-pattern
sgt-launcher
sgt-unruly
sgt-dominosa
sgt-blackbox
```

Comando: whoami

A screenshot of a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows the prompt "lucas@lucas-VirtualBox:~/Documents\$" followed by the command "whoami". The output of the command is "lucas". The prompt is followed by a cursor. A vertical scrollbar is visible on the right side of the terminal area.

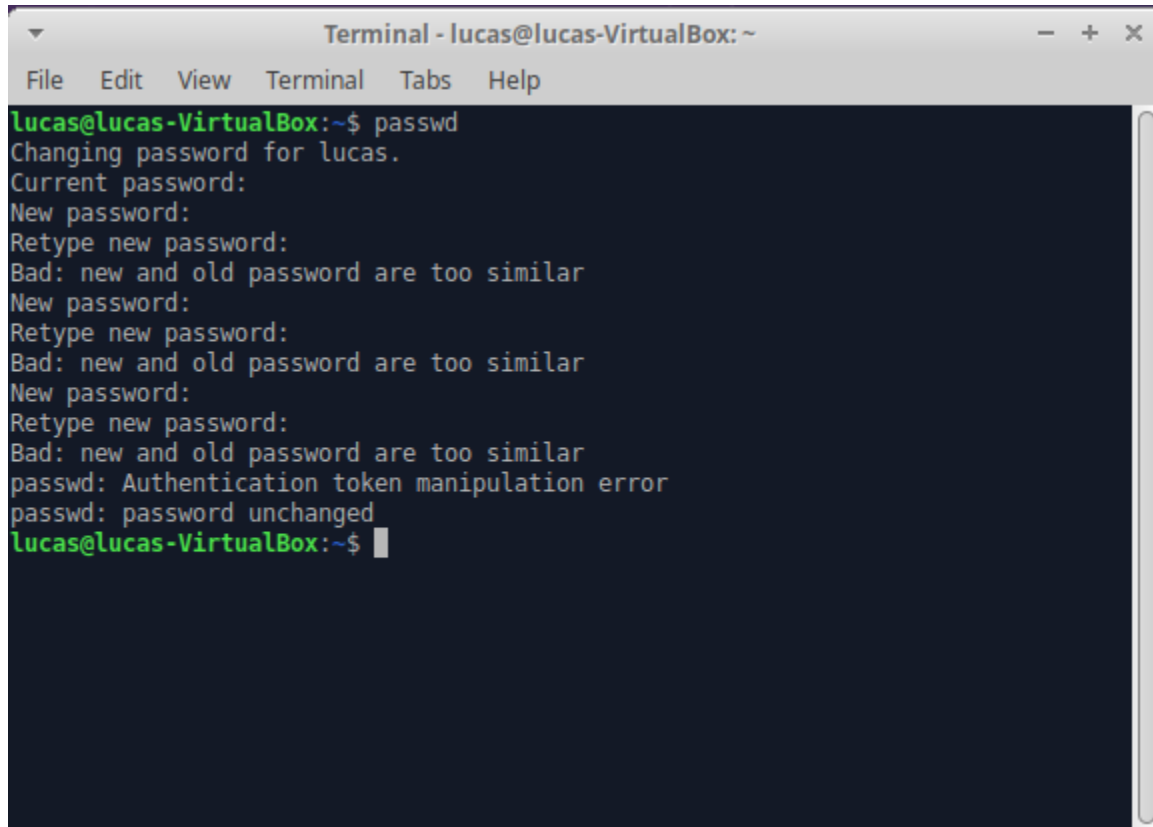
```
Terminal - lucas@lucas-VirtualBox: ~/Documents
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~/Documents$ whoami
lucas
lucas@lucas-VirtualBox:~/Documents$
```

Comando: id

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents" with a menu bar containing "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal shows the command "id" being executed, resulting in the output: "uid=1000(lucas) gid=1000(lucas) groups=1000(lucas),4(adm),24(cdrom),27(sudo),30(dip),46(plugdev),121(lpadmin),131(lxd),132(sambashare)". The prompt "lucas@lucas-VirtualBox:~/Documents\$" is visible at the end of the line.

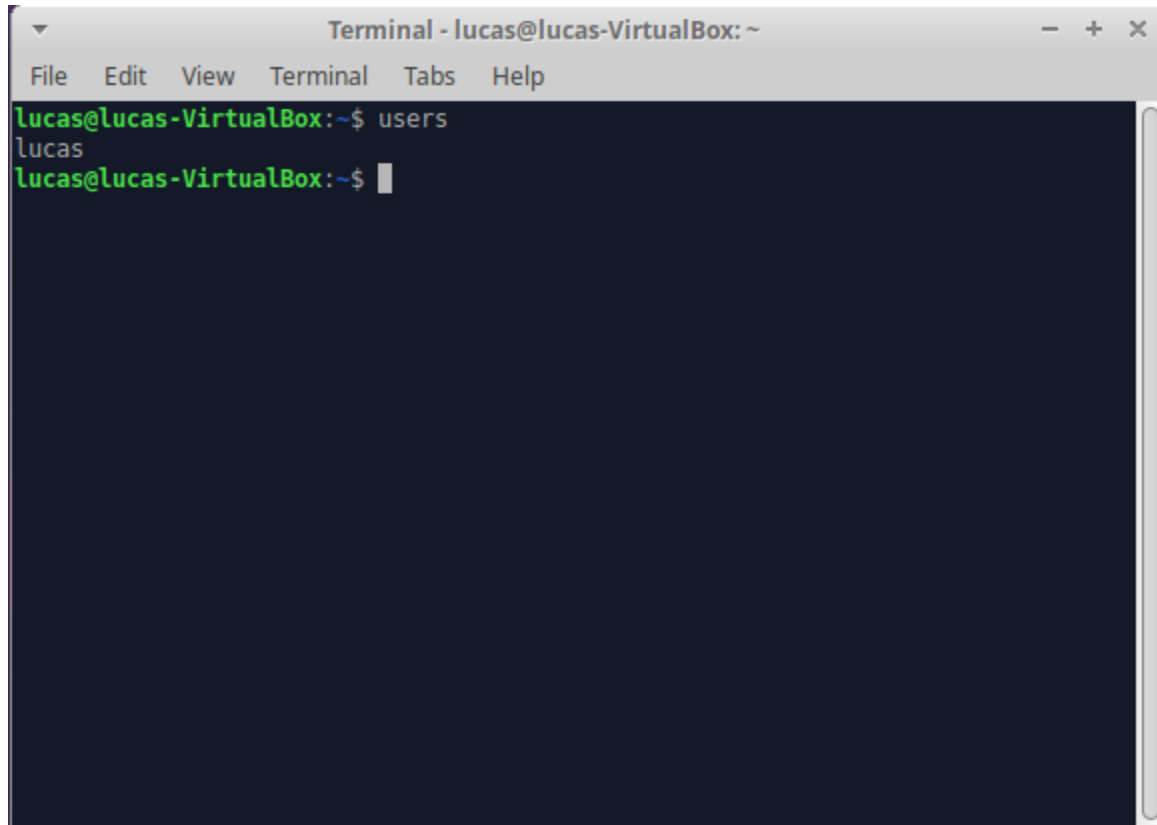
```
Terminal - lucas@lucas-VirtualBox: ~/Documents
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~/Documents$ id
uid=1000(lucas) gid=1000(lucas) groups=1000(lucas),4(adm),24(cdrom),27(sudo),30(dip),46(plugdev),121(lpadmin),131(lxd),132(sambashare)
lucas@lucas-VirtualBox:~/Documents$
```

Comando: passwd

A screenshot of a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows the user "lucas" at the prompt "lucas@lucas-VirtualBox:~\$ " typing the command "passwd". The system responds with "Changing password for lucas.", followed by prompts for "Current password:", "New password:", and "Retype new password:". The user enters a password, but the system rejects it with the message "Bad: new and old password are too similar". This process is repeated twice more. On the third attempt, the system displays "passwd: Authentication token manipulation error" and "passwd: password unchanged". Finally, the prompt returns to "lucas@lucas-VirtualBox:~\$ " with a cursor. A vertical scrollbar is visible on the right side of the terminal window.

```
lucas@lucas-VirtualBox:~$ passwd
Changing password for lucas.
Current password:
New password:
Retype new password:
Bad: new and old password are too similar
New password:
Retype new password:
Bad: new and old password are too similar
New password:
Retype new password:
Bad: new and old password are too similar
passwd: Authentication token manipulation error
passwd: password unchanged
lucas@lucas-VirtualBox:~$
```

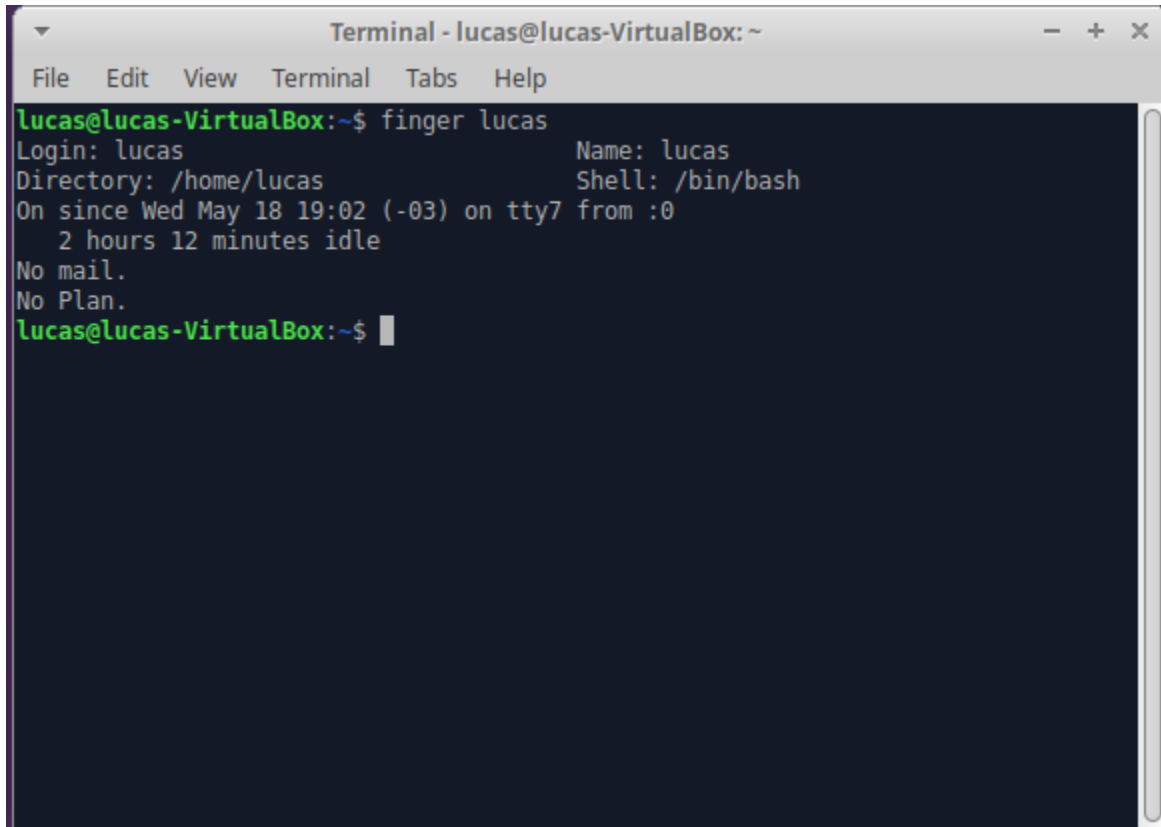
Comando: users



```
Terminal - lucas@lucas-VirtualBox: ~  
File Edit View Terminal Tabs Help  
lucas@lucas-VirtualBox:~$ users  
lucas  
lucas@lucas-VirtualBox:~$
```

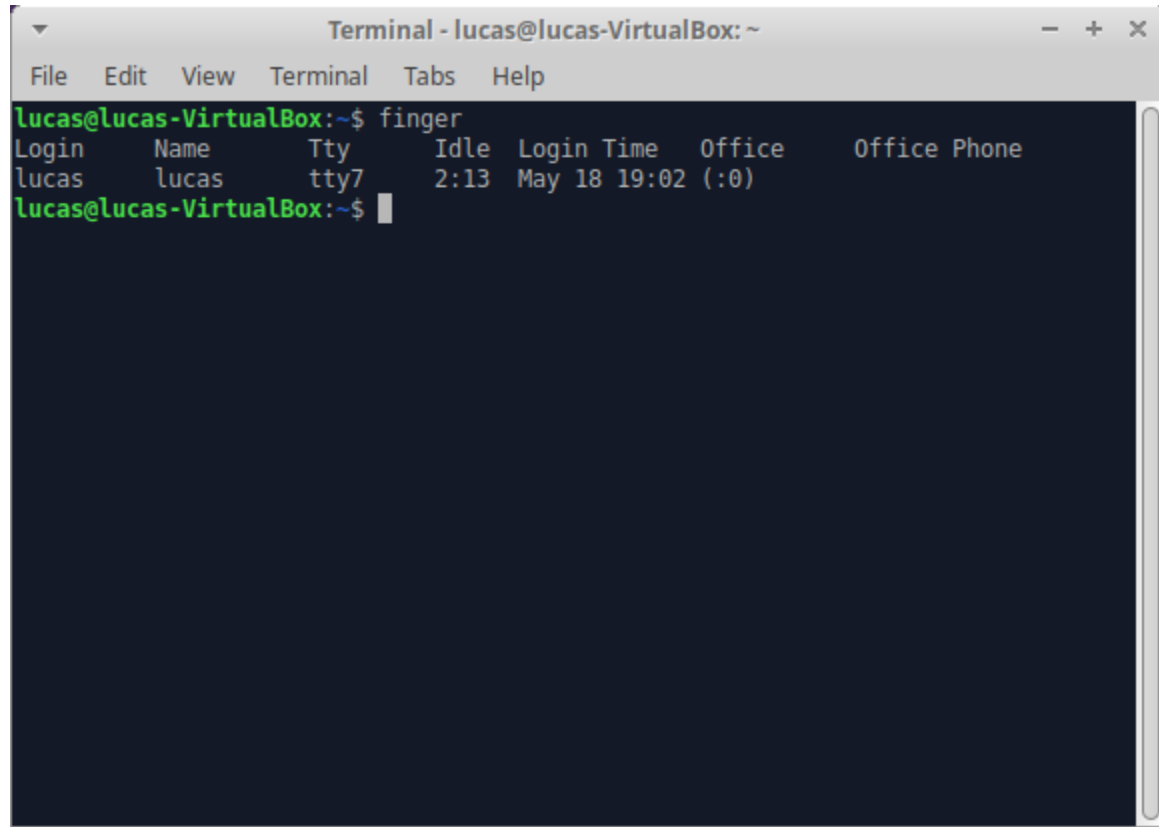
A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~" with a menu bar containing "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal shows the command "users" being executed, resulting in the output "lucas". The prompt "lucas@lucas-VirtualBox:~\$" is visible on the line following the output.

Comando: `finger ${USERNAME}`

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~" with a menu bar containing "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal shows the command "finger lucas" being executed. The output displays user information for 'lucas', including login name, directory, shell, login time, idle time, mail status, and plan status. The prompt "lucas@lucas-VirtualBox:~\$" is visible at the bottom.

```
lucas@lucas-VirtualBox:~$ finger lucas
Login: lucas                               Name: lucas
Directory: /home/lucas                     Shell: /bin/bash
On since Wed May 18 19:02 (-03) on tty7 from :0
      2 hours 12 minutes idle
No mail.
No Plan.
lucas@lucas-VirtualBox:~$
```

Comando: finger



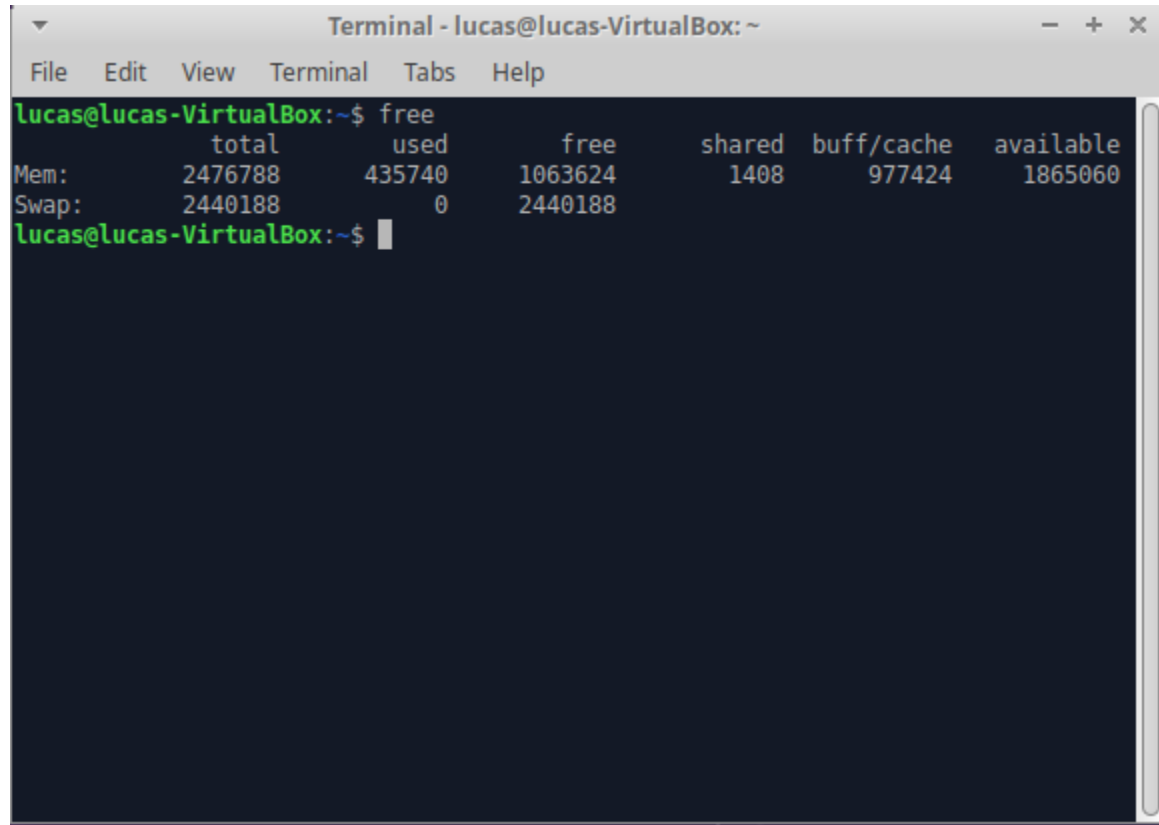
A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~" with a menu bar containing "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal shows the command "finger" being executed, resulting in a table of user information. The prompt "lucas@lucas-VirtualBox:~\$" is visible at the bottom.

```
lucas@lucas-VirtualBox:~$ finger
```

Login	Name	Tty	Idle	Login Time	Office	Office Phone
lucas	lucas	tty7	2:13	May 18 19:02	(:0)	

```
lucas@lucas-VirtualBox:~$
```

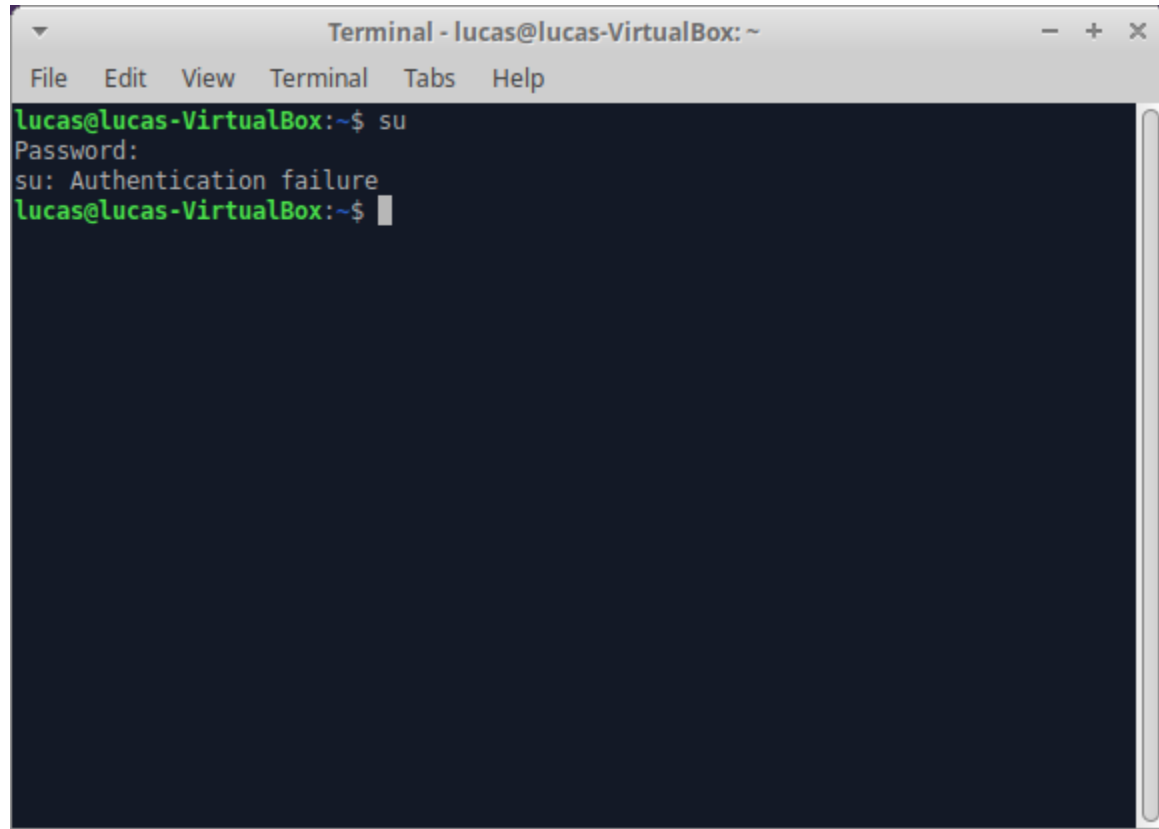

Comando: free

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~" with a menu bar containing "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal shows the command "free" being executed, resulting in a table of memory usage statistics. The prompt "lucas@lucas-VirtualBox:~\$" is shown in green text. A vertical scrollbar is visible on the right side of the terminal window.

```
lucas@lucas-VirtualBox:~$ free
              total        used        free      shared  buff/cache   available
Mem:          2476788      435740      1063624          1408        977424      1865060
Swap:          2440188           0        2440188
```

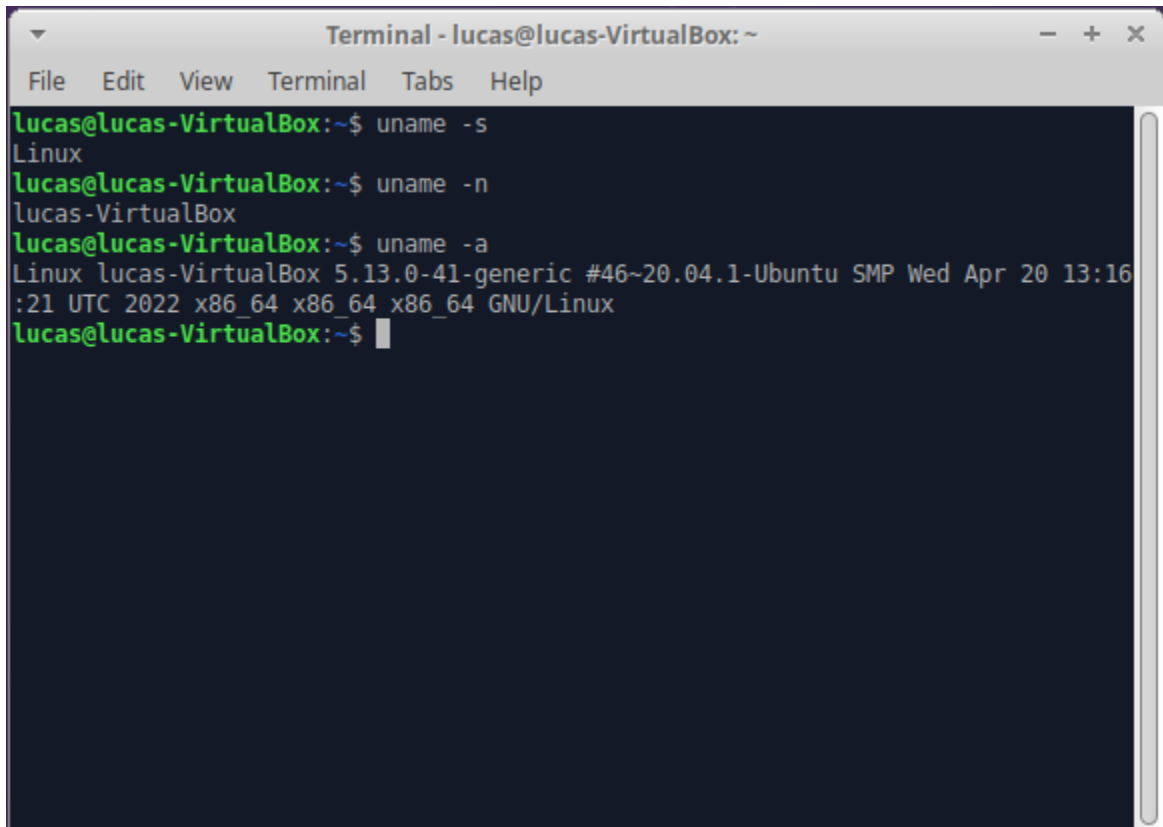
lucas@lucas-VirtualBox:~\$

Comando: su

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~" with a menu bar containing "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal has a dark blue background. The text displayed is: "lucas@lucas-VirtualBox:~\$ su", "Password:", "su: Authentication failure", and "lucas@lucas-VirtualBox:~\$ " followed by a cursor. A vertical scrollbar is on the right side of the terminal area.

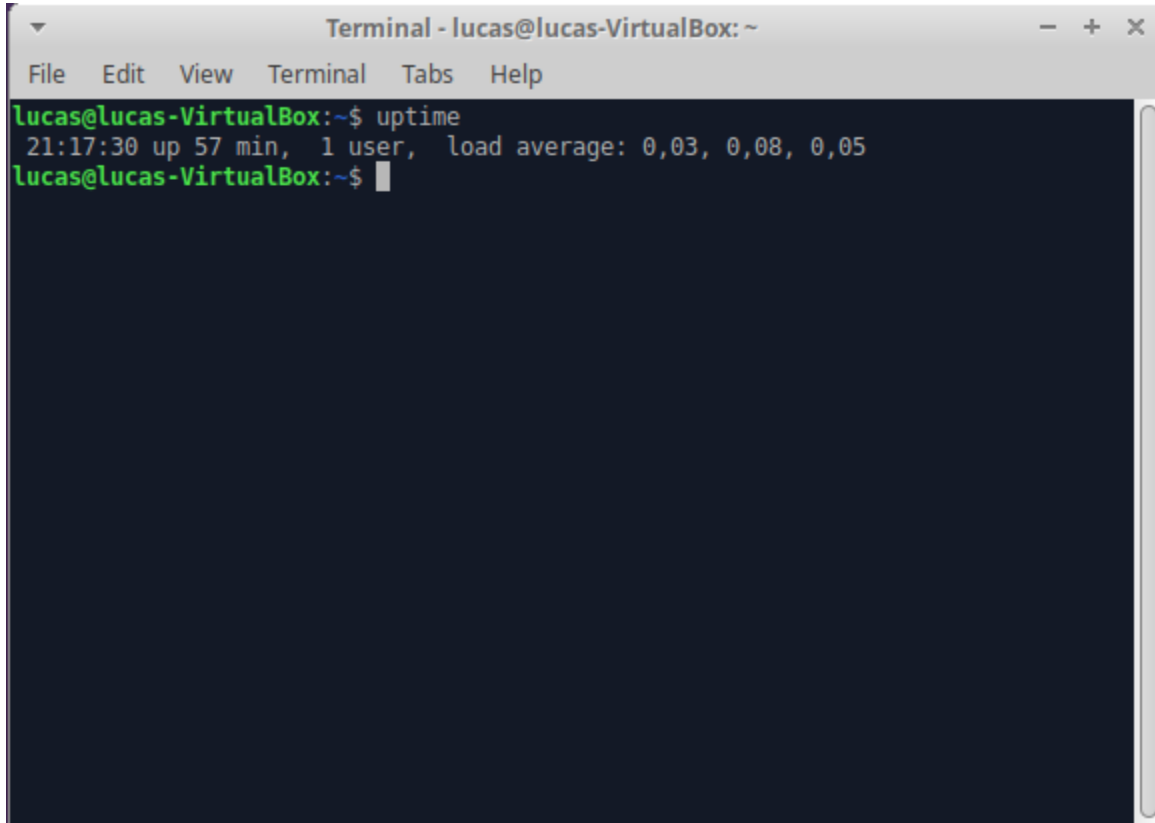
```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ su
Password:
su: Authentication failure
lucas@lucas-VirtualBox:~$
```

Comando: uname

A screenshot of a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows three commands and their outputs: "uname -s" returns "Linux", "uname -n" returns "lucas-VirtualBox", and "uname -a" returns "Linux lucas-VirtualBox 5.13.0-41-generic #46~20.04.1-Ubuntu SMP Wed Apr 20 13:16:21 UTC 2022 x86_64 x86_64 x86_64 GNU/Linux". The prompt "lucas@lucas-VirtualBox:~\$" is shown at the end of each line.

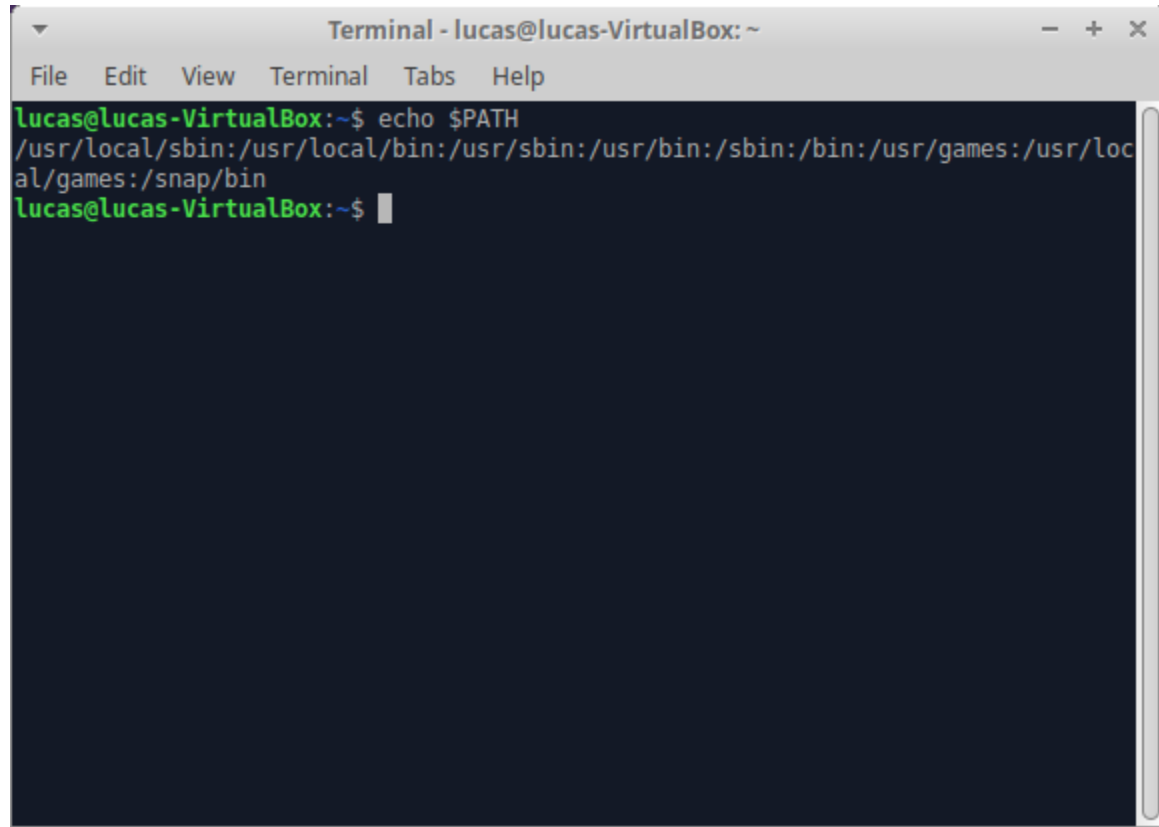
```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ uname -s
Linux
lucas@lucas-VirtualBox:~$ uname -n
lucas-VirtualBox
lucas@lucas-VirtualBox:~$ uname -a
Linux lucas-VirtualBox 5.13.0-41-generic #46~20.04.1-Ubuntu SMP Wed Apr 20 13:16:21 UTC 2022 x86_64 x86_64 x86_64 GNU/Linux
lucas@lucas-VirtualBox:~$
```

Comando: uptime

A screenshot of a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows the command "uptime" being executed, resulting in the output: "21:17:30 up 57 min, 1 user, load average: 0,03, 0,08, 0,05". The prompt "lucas@lucas-VirtualBox:~\$" is visible on the line below the output.

```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ uptime
21:17:30 up 57 min, 1 user, load average: 0,03, 0,08, 0,05
lucas@lucas-VirtualBox:~$
```

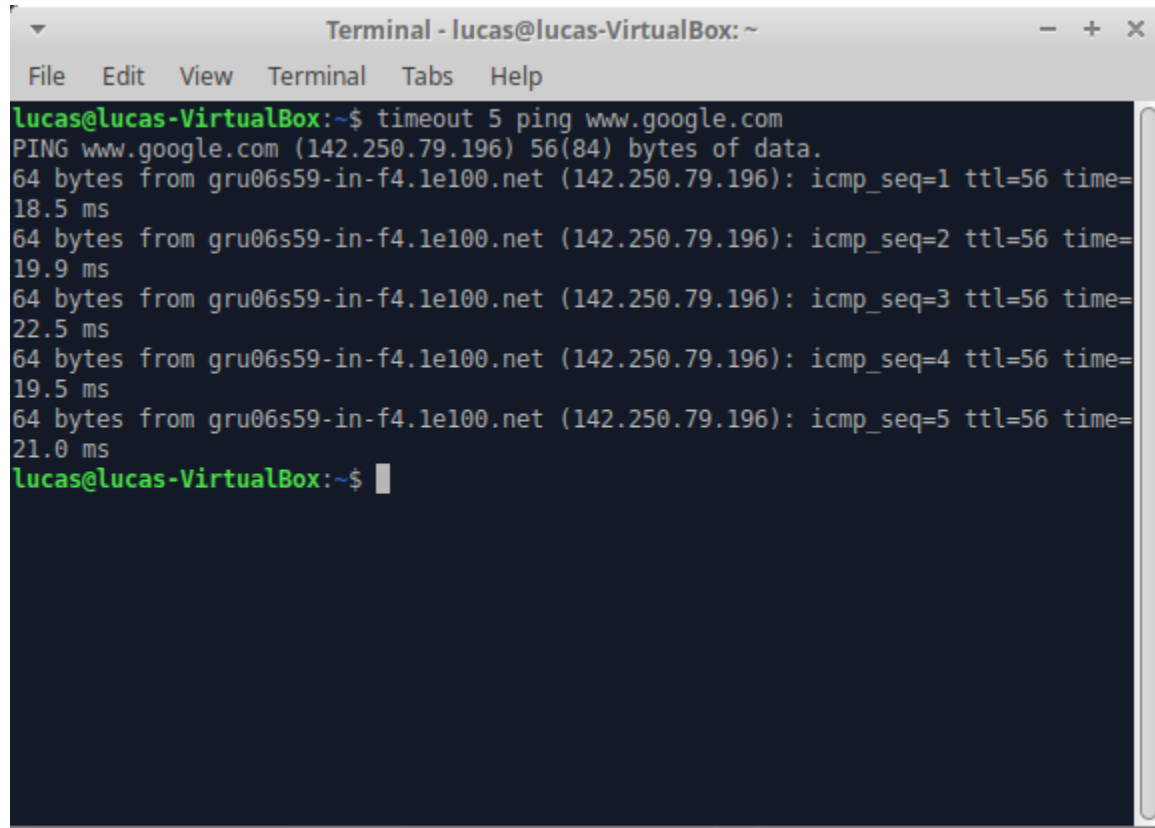
Comando: echo \$PATH

A screenshot of a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows a green prompt "lucas@lucas-VirtualBox:~\$" followed by the command "echo \$PATH". The output is displayed on the next line: "/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:/snap/bin". A second green prompt "lucas@lucas-VirtualBox:~\$" is visible on the line below, with a white cursor. A vertical scrollbar is on the right side of the terminal area.

```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ echo $PATH
/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:/snap/bin
lucas@lucas-VirtualBox:~$
```

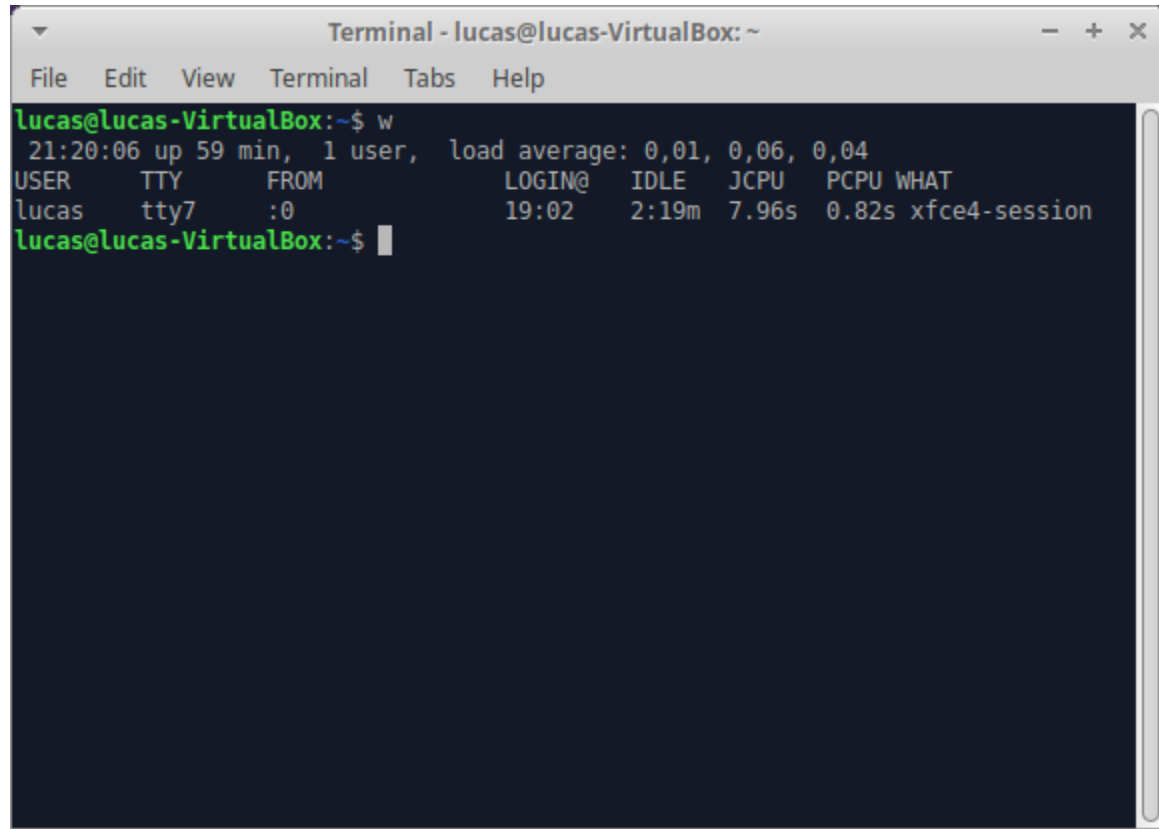
Comando: timeout

Comando: ping

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The terminal shows a command prompt "lucas@lucas-VirtualBox:~\$" followed by the command "timeout 5 ping www.google.com". The output shows a successful ping to www.google.com (142.250.79.196) with 56(84) bytes of data. Five ICMP echo requests are shown, each with a sequence number (icmp_seq=1 to 5), TTL=56, and response time (18.5 ms to 21.0 ms). The prompt "lucas@lucas-VirtualBox:~\$" is shown again at the bottom.

```
lucas@lucas-VirtualBox:~$ timeout 5 ping www.google.com
PING www.google.com (142.250.79.196) 56(84) bytes of data.
64 bytes from gru06s59-in-f4.1e100.net (142.250.79.196): icmp_seq=1 ttl=56 time=18.5 ms
64 bytes from gru06s59-in-f4.1e100.net (142.250.79.196): icmp_seq=2 ttl=56 time=19.9 ms
64 bytes from gru06s59-in-f4.1e100.net (142.250.79.196): icmp_seq=3 ttl=56 time=22.5 ms
64 bytes from gru06s59-in-f4.1e100.net (142.250.79.196): icmp_seq=4 ttl=56 time=19.5 ms
64 bytes from gru06s59-in-f4.1e100.net (142.250.79.196): icmp_seq=5 ttl=56 time=21.0 ms
lucas@lucas-VirtualBox:~$
```

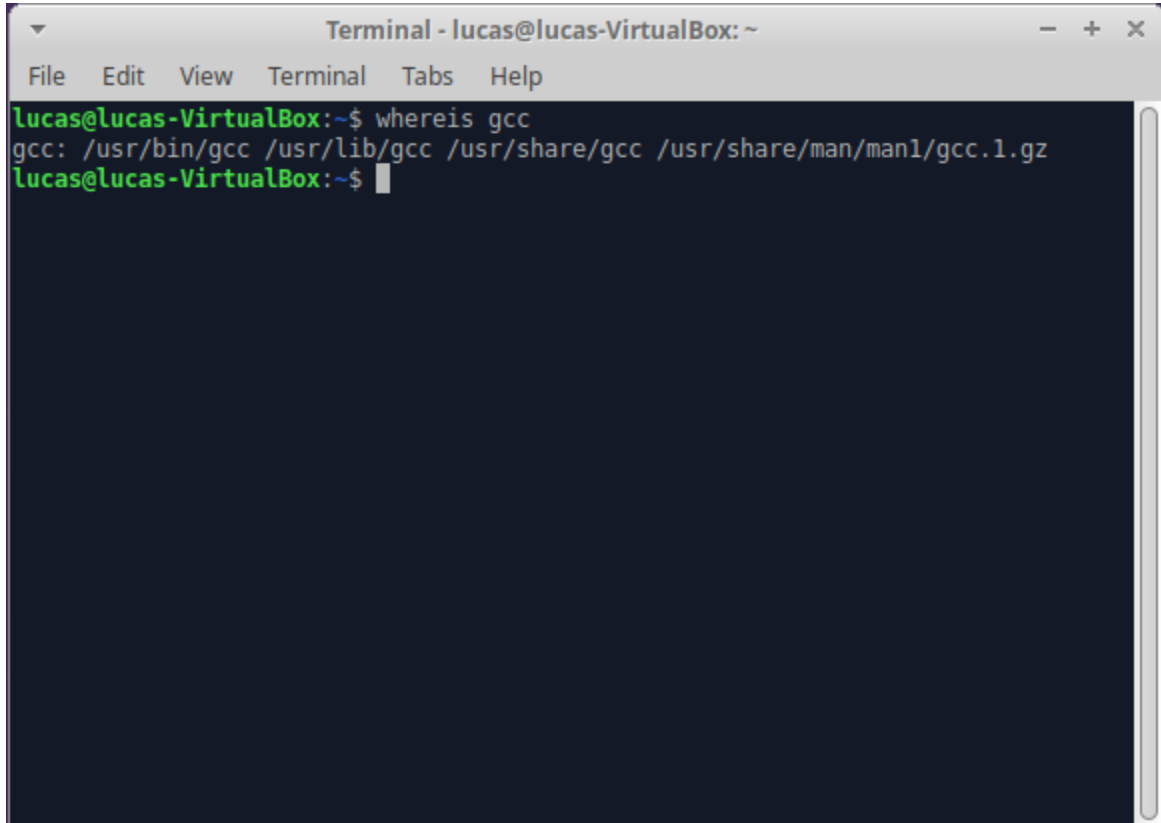
Comando: w



A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~" with a menu bar containing "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal shows the command "w" being executed, resulting in system status information and a table of active sessions.

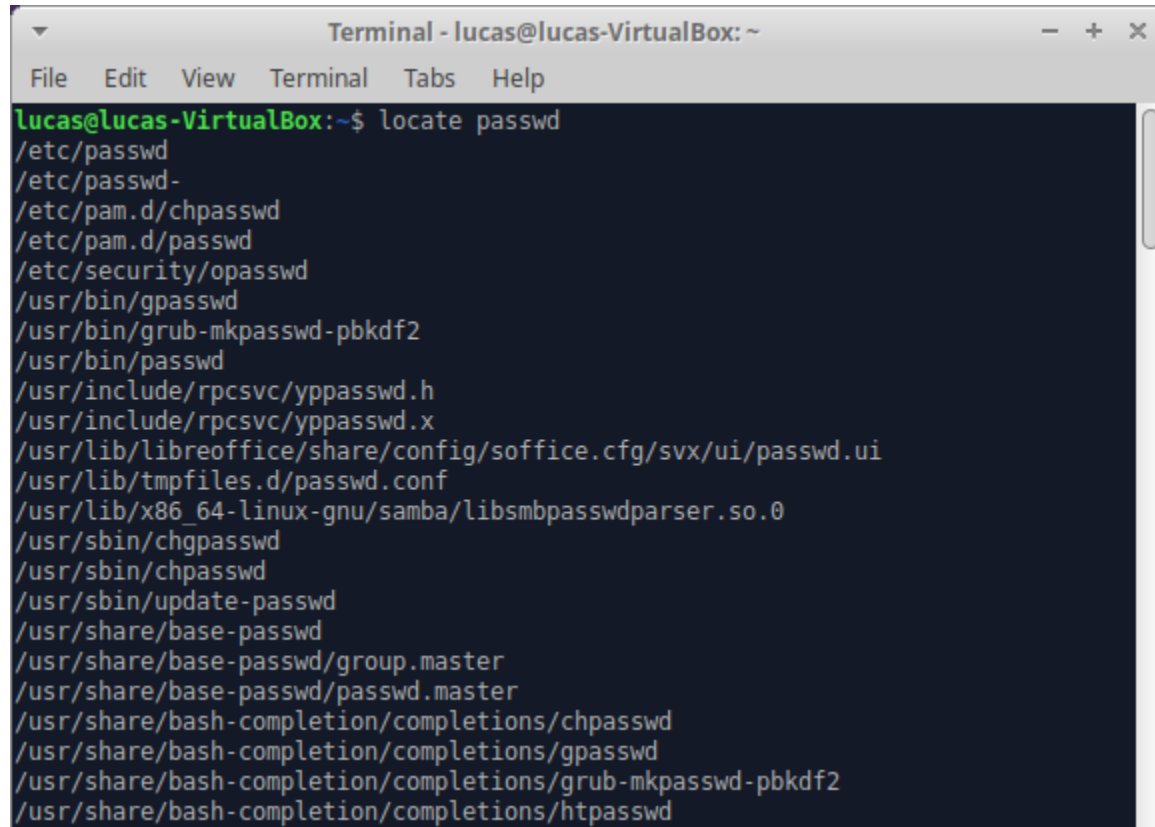
```
lucas@lucas-VirtualBox:~$ w
21:20:06 up 59 min,  1 user,  load average: 0,01, 0,06, 0,04
USER      TTY      FROM             LOGIN@   IDLE   JCPU   PCPU   WHAT
lucas     tty7     :0               19:02    2:19m  7.96s  0.82s  xfce4-session
lucas@lucas-VirtualBox:~$
```

Comando: whereis gcc

A screenshot of a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows the command "whereis gcc" being executed, resulting in the output: "gcc: /usr/bin/gcc /usr/lib/gcc /usr/share/gcc /usr/share/man/man1/gcc.1.gz". The prompt "lucas@lucas-VirtualBox:~\$" is visible at the end of the line.

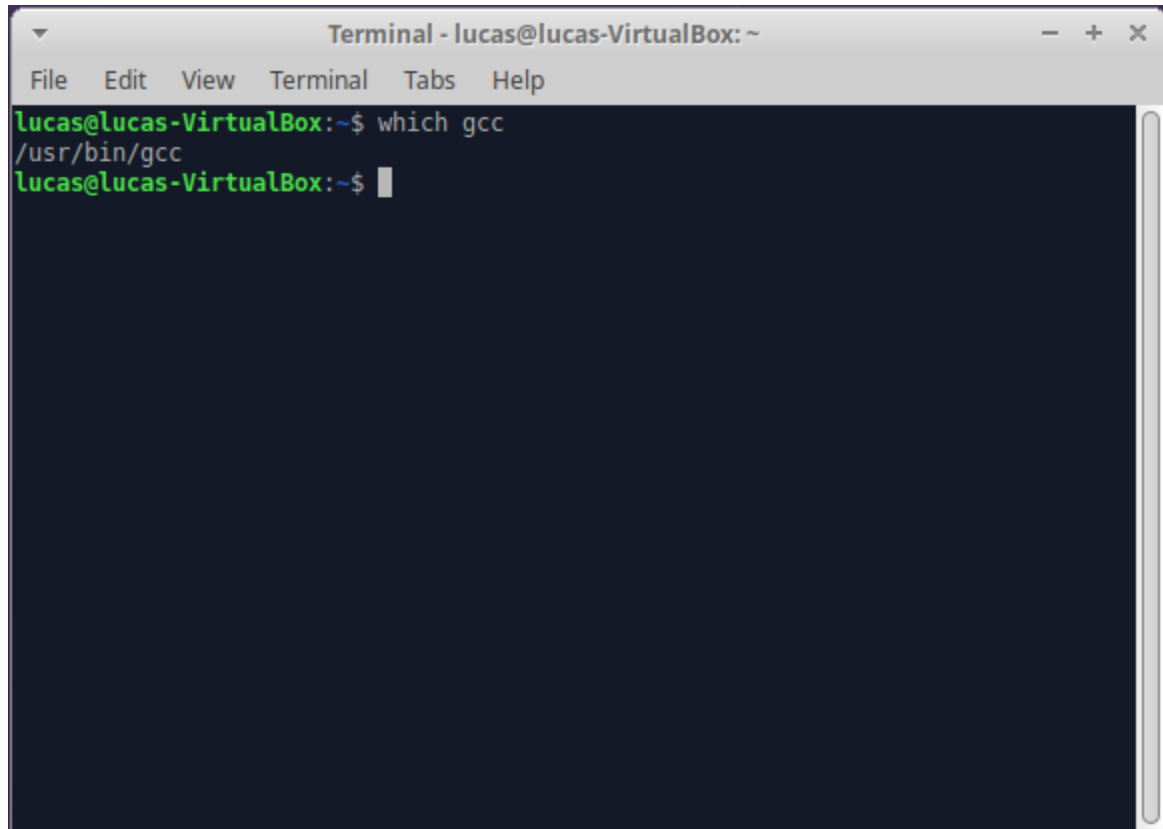
```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ whereis gcc
gcc: /usr/bin/gcc /usr/lib/gcc /usr/share/gcc /usr/share/man/man1/gcc.1.gz
lucas@lucas-VirtualBox:~$
```


Comando: locate

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~" with a menu bar containing "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal shows the command "locate passwd" being executed, resulting in a list of file paths related to password management. The output is as follows:

```
lucas@lucas-VirtualBox:~$ locate passwd
/etc/passwd
/etc/passwd-
/etc/pam.d/chpasswd
/etc/pam.d/passwd
/etc/security/opasswd
/usr/bin/gpasswd
/usr/bin/grub-mkpasswd-pbkdf2
/usr/bin/passwd
/usr/include/rpcsvc/yppasswd.h
/usr/include/rpcsvc/yppasswd.x
/usr/lib/libreoffice/share/config/soffice.cfg/svx/ui/passwd.ui
/usr/lib/tmpfiles.d/passwd.conf
/usr/lib/x86_64-linux-gnu/samba/libsmbspasswdparser.so.0
/usr/sbin/chgpasswd
/usr/sbin/chpasswd
/usr/sbin/update-passwd
/usr/share/base-passwd
/usr/share/base-passwd/group.master
/usr/share/base-passwd/passwd.master
/usr/share/bash-completion/completions/chpasswd
/usr/share/bash-completion/completions/gpasswd
/usr/share/bash-completion/completions/grub-mkpasswd-pbkdf2
/usr/share/bash-completion/completions/htpasswd
```

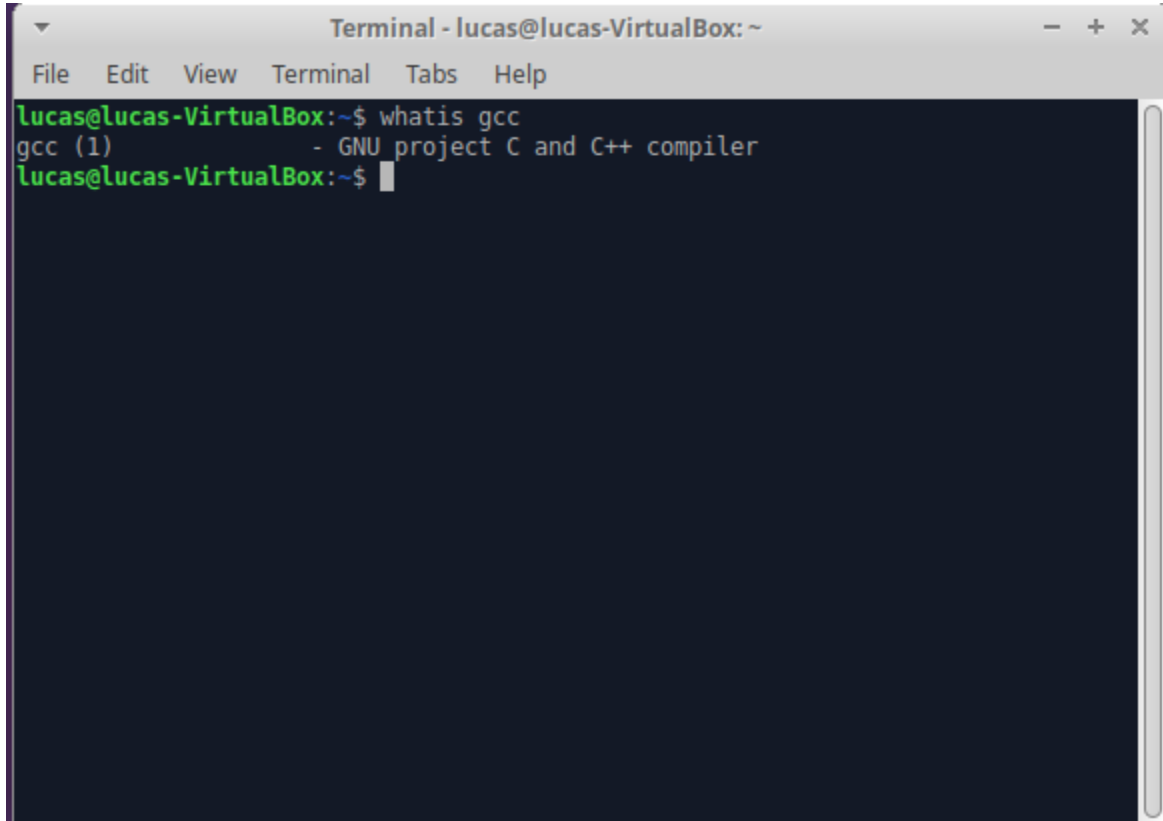
Comando: which



```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ which gcc
/usr/bin/gcc
lucas@lucas-VirtualBox:~$
```

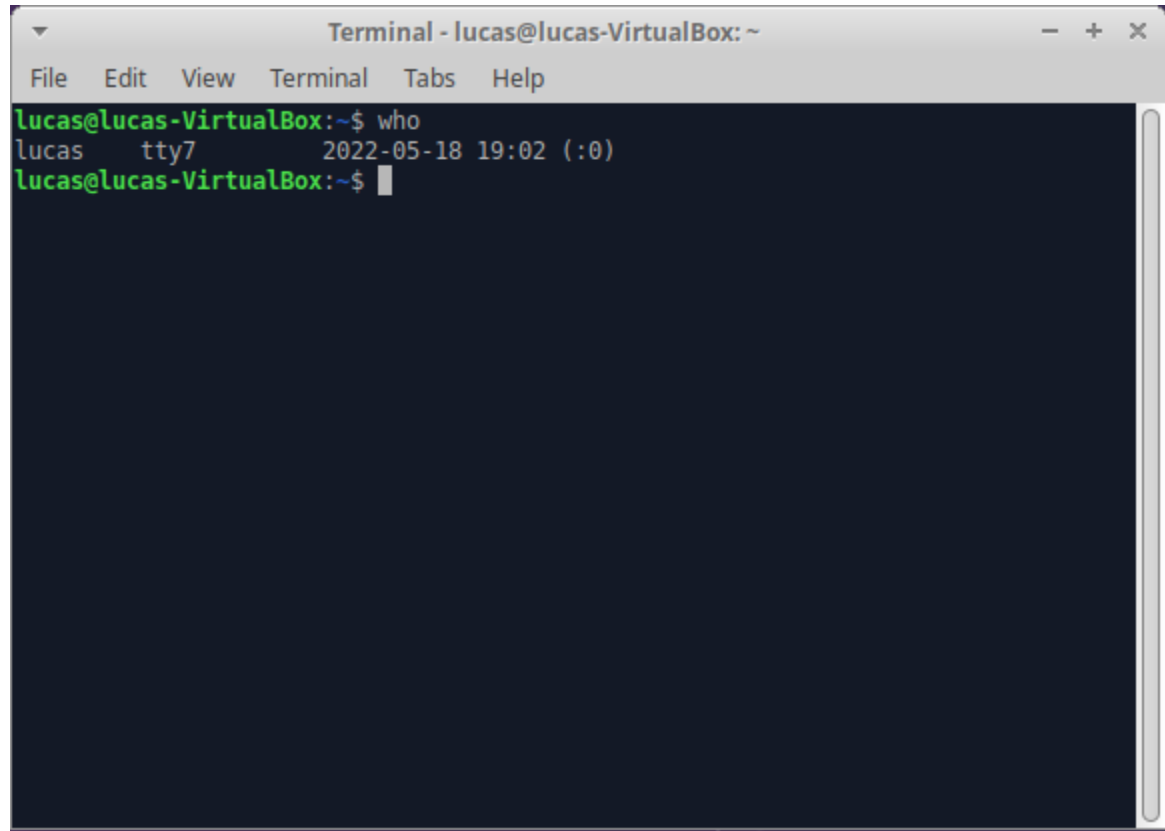
A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The terminal shows the command "which gcc" being executed, resulting in the output "/usr/bin/gcc". The prompt "lucas@lucas-VirtualBox:~\$" is visible at the bottom.

Comando: whatis

A screenshot of a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows the command "whatis gcc" being executed, resulting in the output "gcc (1) - GNU project C and C++ compiler". The prompt "lucas@lucas-VirtualBox:~\$" is visible at the end of the line.

```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ whatis gcc
gcc (1) - GNU project C and C++ compiler
lucas@lucas-VirtualBox:~$
```

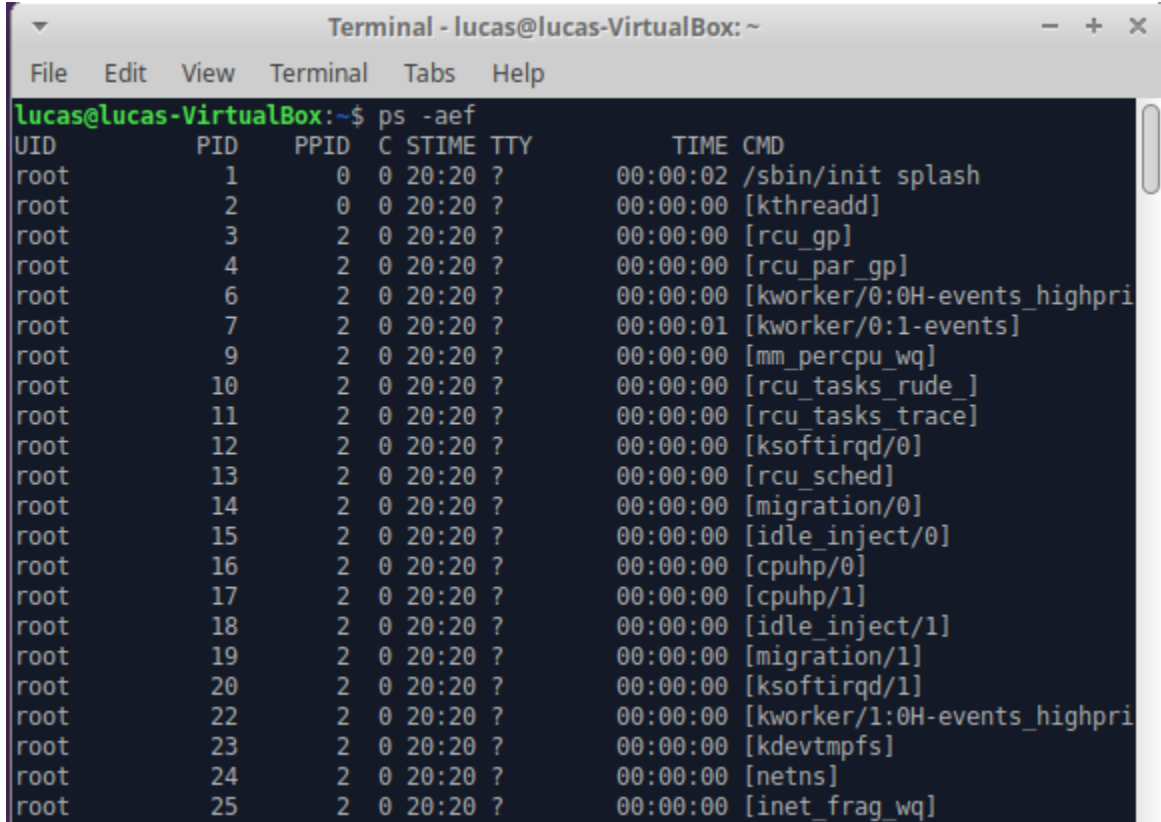
Comando: who

A screenshot of a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows the command "who" being executed, resulting in the output "lucas tty7 2022-05-18 19:02 (:0)". The prompt "lucas@lucas-VirtualBox:~\$" is visible on the line following the output. A vertical scrollbar is on the right side of the terminal area.

```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ who
lucas  tty7      2022-05-18 19:02 (:0)
lucas@lucas-VirtualBox:~$
```

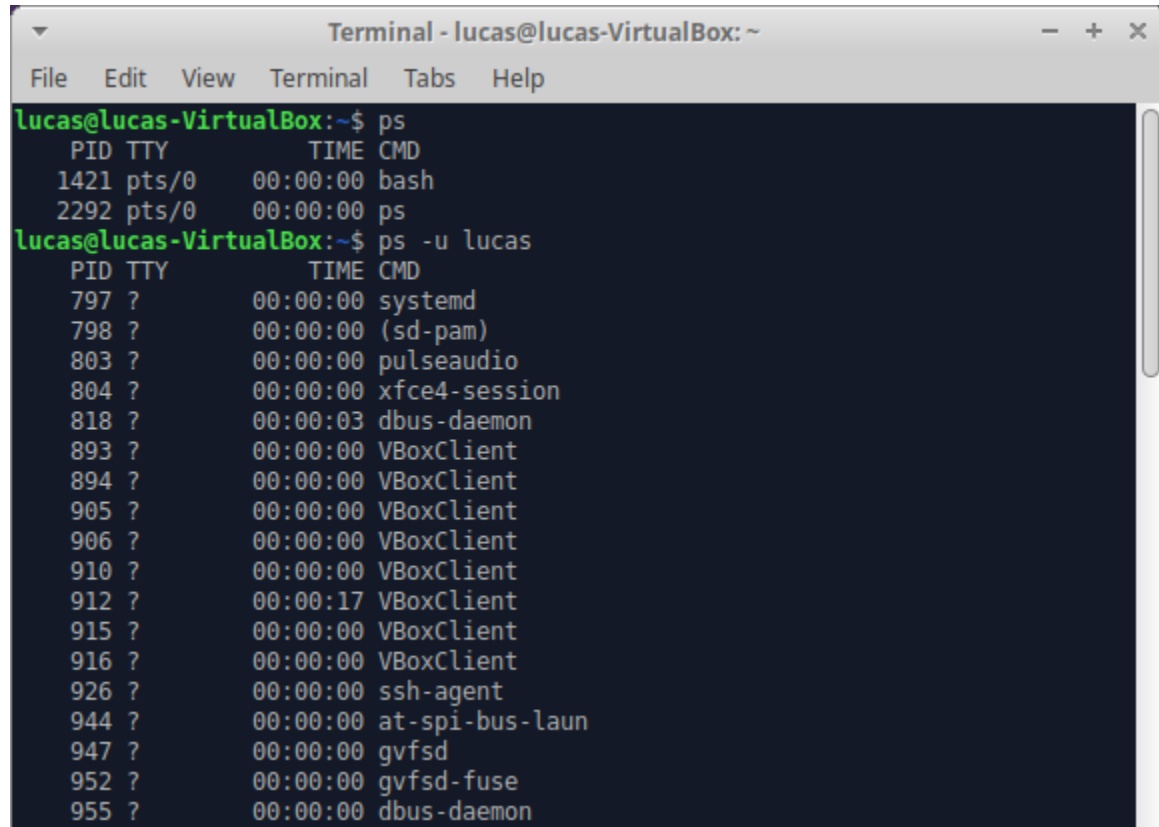
Capítulo 6

Comando: `ps -aef`

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The prompt is "lucas@lucas-VirtualBox:~\$". The command "ps -aef" has been executed, displaying a list of system processes. The output is a table with columns: UID, PID, PPID, C, STIME, TTY, TIME, and CMD. The processes listed include /sbin/init splash, [kthreadd], [rcu_gp], [rcu_par_gp], [kworker/0:0H-events_highpri], [kworker/0:1-events], [mm_percpu_wq], [rcu_tasks_rude_], [rcu_tasks_trace], [ksoftirqd/0], [rcu_sched], [migration/0], [idle_inject/0], [cpuhp/0], [cpuhp/1], [idle_inject/1], [migration/1], [ksoftirqd/1], [kworker/1:0H-events_highpri], [kdevtmpfs], [netns], and [inet_frag_wq].

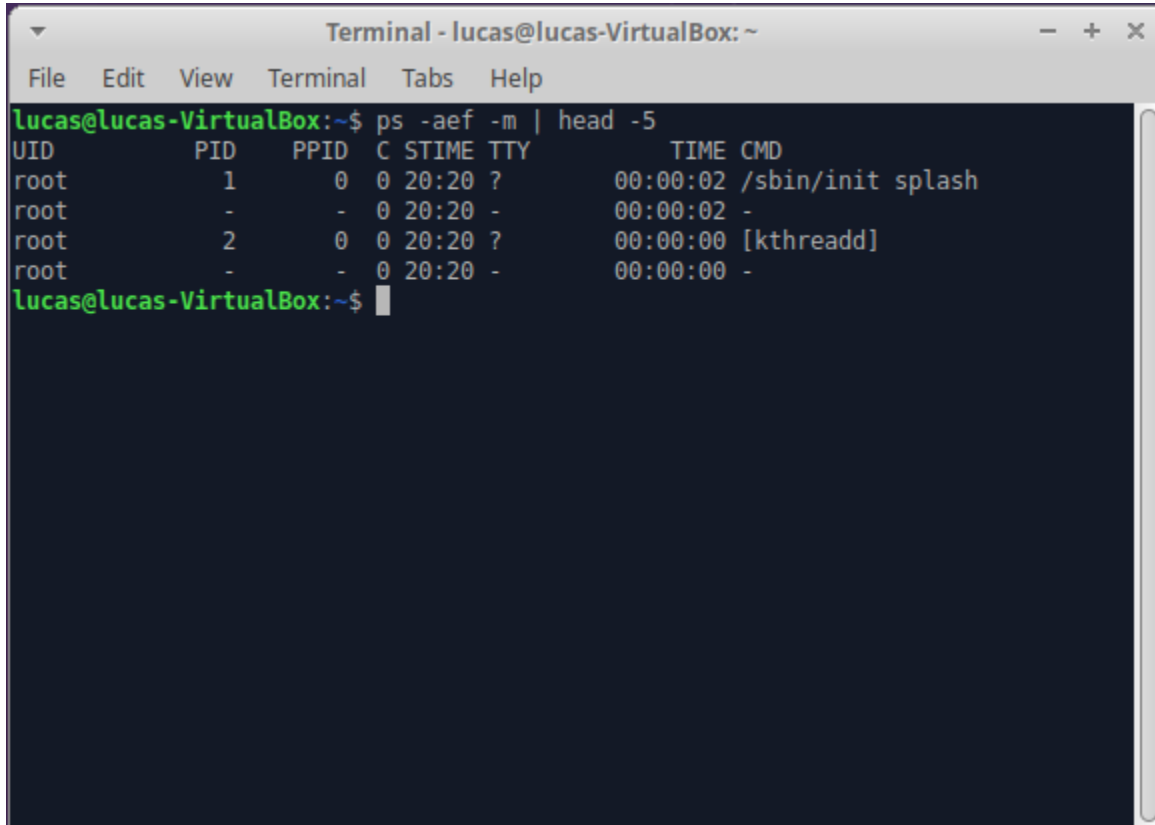
```
lucas@lucas-VirtualBox:~$ ps -aef
UID          PID    PPID  C  STIME TTY          TIME CMD
root           1        0  0  20:20 ?        00:00:02 /sbin/init splash
root           2        0  0  20:20 ?        00:00:00 [kthreadd]
root           3         2  0  20:20 ?        00:00:00 [rcu_gp]
root           4         2  0  20:20 ?        00:00:00 [rcu_par_gp]
root           6         2  0  20:20 ?        00:00:00 [kworker/0:0H-events_highpri]
root           7         2  0  20:20 ?        00:00:01 [kworker/0:1-events]
root           9         2  0  20:20 ?        00:00:00 [mm_percpu_wq]
root          10         2  0  20:20 ?        00:00:00 [rcu_tasks_rude_]
root          11         2  0  20:20 ?        00:00:00 [rcu_tasks_trace]
root          12         2  0  20:20 ?        00:00:00 [ksoftirqd/0]
root          13         2  0  20:20 ?        00:00:00 [rcu_sched]
root          14         2  0  20:20 ?        00:00:00 [migration/0]
root          15         2  0  20:20 ?        00:00:00 [idle_inject/0]
root          16         2  0  20:20 ?        00:00:00 [cpuhp/0]
root          17         2  0  20:20 ?        00:00:00 [cpuhp/1]
root          18         2  0  20:20 ?        00:00:00 [idle_inject/1]
root          19         2  0  20:20 ?        00:00:00 [migration/1]
root          20         2  0  20:20 ?        00:00:00 [ksoftirqd/1]
root          22         2  0  20:20 ?        00:00:00 [kworker/1:0H-events_highpri]
root          23         2  0  20:20 ?        00:00:00 [kdevtmpfs]
root          24         2  0  20:20 ?        00:00:00 [netns]
root          25         2  0  20:20 ?        00:00:00 [inet_frag_wq]
```

Comando: ps

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The prompt is "lucas@lucas-VirtualBox:~\$". The command "ps" is entered, and the output is a table of running processes. The prompt is then "lucas@lucas-VirtualBox:~\$ ps -u lucas", and the output is a table of processes owned by the user 'lucas'.

```
lucas@lucas-VirtualBox:~$ ps
  PID TTY          TIME CMD
 1421 pts/0    00:00:00 bash
 2292 pts/0    00:00:00 ps
lucas@lucas-VirtualBox:~$ ps -u lucas
  PID TTY          TIME CMD
  797 ?            00:00:00 systemd
  798 ?            00:00:00 (sd-pam)
  803 ?            00:00:00 pulseaudio
  804 ?            00:00:00 xfce4-session
  818 ?            00:00:03 dbus-daemon
  893 ?            00:00:00 VBoxClient
  894 ?            00:00:00 VBoxClient
  905 ?            00:00:00 VBoxClient
  906 ?            00:00:00 VBoxClient
  910 ?            00:00:00 VBoxClient
  912 ?            00:00:17 VBoxClient
  915 ?            00:00:00 VBoxClient
  916 ?            00:00:00 VBoxClient
  926 ?            00:00:00 ssh-agent
  944 ?            00:00:00 at-spi-bus-laun
  947 ?            00:00:00 gvfsd
  952 ?            00:00:00 gvfsd-fuse
  955 ?            00:00:00 dbus-daemon
```

Comando: ps -m | head -5



A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The prompt is "lucas@lucas-VirtualBox:~\$". The command "ps -aef -m | head -5" has been executed, displaying a table of process information. The table has columns: UID, PID, PPID, C, STIME, TTY, TIME, and CMD. The output shows four lines of process data, all with UID 'root' and STIME '20:20'.

UID	PID	PPID	C	STIME	TTY	TIME	CMD
root	1	0	0	20:20	?	00:00:02	/sbin/init splash
root	-	-	0	20:20	-	00:00:02	-
root	2	0	0	20:20	?	00:00:00	[kthreadd]
root	-	-	0	20:20	-	00:00:00	-

The prompt "lucas@lucas-VirtualBox:~\$" is visible again with a cursor.

Comando: pstree

```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ pstree
systemd--ModemManager--2*[{ModemManager}]
--NetworkManager--2*[{NetworkManager}]
--3*[VBoxClient--VBoxClient--2*[{VBoxClient}]]
--VBoxClient--VBoxClient--3*[{VBoxClient}]
--VBoxService--8*[{VBoxService}]
--accounts-daemon--2*[{accounts-daemon}]
--acpid
--agetty
--avahi-daemon--avahi-daemon
--blueman-tray--2*[{blueman-tray}]
--colord--2*[{colord}]
--cron
--cups-browsed--2*[{cups-browsed}]
--cupsd--dbus
--dbus-daemon
--gnome-keyring-d--3*[{gnome-keyring-d}]
--irqbalance--{irqbalance}
--2*[kerneloops]
--lightdm--Xorg--{Xorg}
--lightdm--xfce4-session--Thunar--2*[{Thunar}]
--lightdm--xfce4-session--applet.py
--lightdm--xfce4-session--blueman-applet--3*[{blueman-appl+
--lightdm--xfce4-session--nm-applet--3*[{nm-applet}]
```


Comando: top

```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help

top - 21:35:37 up 1:15, 1 user, load average: 0,06, 0,06, 0,04
Tasks: 165 total, 1 running, 164 sleeping, 0 stopped, 0 zombie
%Cpu(s): 6,7 us, 1,0 sy, 0,0 ni, 92,2 id, 0,0 wa, 0,0 hi, 0,2 si, 0,0 st
MiB Mem : 2418,7 total, 1035,7 free, 424,3 used, 958,8 buff/cache
MiB Swap: 2383,0 total, 2383,0 free, 0,0 used. 1821,0 avail Mem

  PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM    TIME+  COMMAND
  781 root        20   0   268820   80596   39372 S   9,8   3,3   0:15.06 Xorg
 1417 lucas       20   0   313360   38676   30272 S   3,6   1,6   0:07.02 xfce4-t+
2309 lucas     20   0   11860    3736    3236 R   1,3   0,2   0:00.14 top
 1036 lucas       20   0   311628   41928   28560 S   1,0   1,7   0:02.92 xfdesktop+
   912 lucas       20   0   155380    2728    2356 S   0,7   0,1   0:18.61 VBoxCli+
   985 lucas       20   0   749480   84556   62408 S   0,7   3,4   0:03.40 xfwm4
    7 root        20   0         0         0         0 I   0,3   0,0   0:01.40 kworker+
   366 root       -51   0         0         0         0 S   0,3   0,0   0:00.20 irq/18-+
  1010 lucas       20   0   316056   39176   30776 S   0,3   1,6   0:00.77 panel-1+
    1 root        20   0   101524   11128    8312 S   0,0   0,4   0:02.08 systemd
    2 root        20   0         0         0         0 S   0,0   0,0   0:00.00 kthreadd
    3 root         0 -20         0         0         0 I   0,0   0,0   0:00.00 rcu_gp
    4 root         0 -20         0         0         0 I   0,0   0,0   0:00.00 rcu_par+
    6 root         0 -20         0         0         0 I   0,0   0,0   0:00.00 kworker+
    9 root         0 -20         0         0         0 I   0,0   0,0   0:00.00 mm_perc+
   10 root        20   0         0         0         0 S   0,0   0,0   0:00.00 rcu_tas+
   11 root        20   0         0         0         0 S   0,0   0,0   0:00.00 rcu_tas+
```

Comando: kill -l

```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ kill -l
1) SIGHUP      2) SIGINT      3) SIGQUIT     4) SIGILL      5) SIGTRAP
6) SIGABRT     7) SIGBUS      8) SIGFPE      9) SIGKILL     10) SIGUSR1
11) SIGSEGV    12) SIGUSR2    13) SIGPIPE    14) SIGALRM     15) SIGTERM
16) SIGSTKFLT  17) SIGCHLD    18) SIGCONT    19) SIGSTOP     20) SIGTSTP
21) SIGTTIN    22) SIGTTOU    23) SIGURG     24) SIGXCPU    25) SIGXFSZ
26) SIGVTALRM  27) SIGPROF    28) SIGWINCH   29) SIGIO       30) SIGPWR
31) SIGSYS     34) SIGRTMIN   35) SIGRTMIN+1 36) SIGRTMIN+2 37) SIGRTMIN+3
38) SIGRTMIN+4 39) SIGRTMIN+5 40) SIGRTMIN+6 41) SIGRTMIN+7 42) SIGRTMIN+8
43) SIGRTMIN+9 44) SIGRTMIN+10 45) SIGRTMIN+11 46) SIGRTMIN+12 47) SIGRTMIN+13
48) SIGRTMIN+14 49) SIGRTMIN+15 50) SIGRTMAX-14 51) SIGRTMAX-13 52) SIGRTMAX-12
53) SIGRTMAX-11 54) SIGRTMAX-10 55) SIGRTMAX-9 56) SIGRTMAX-8 57) SIGRTMAX-7
58) SIGRTMAX-6 59) SIGRTMAX-5 60) SIGRTMAX-4 61) SIGRTMAX-3 62) SIGRTMAX-2
63) SIGRTMAX-1 64) SIGRTMAX
lucas@lucas-VirtualBox:~$
```

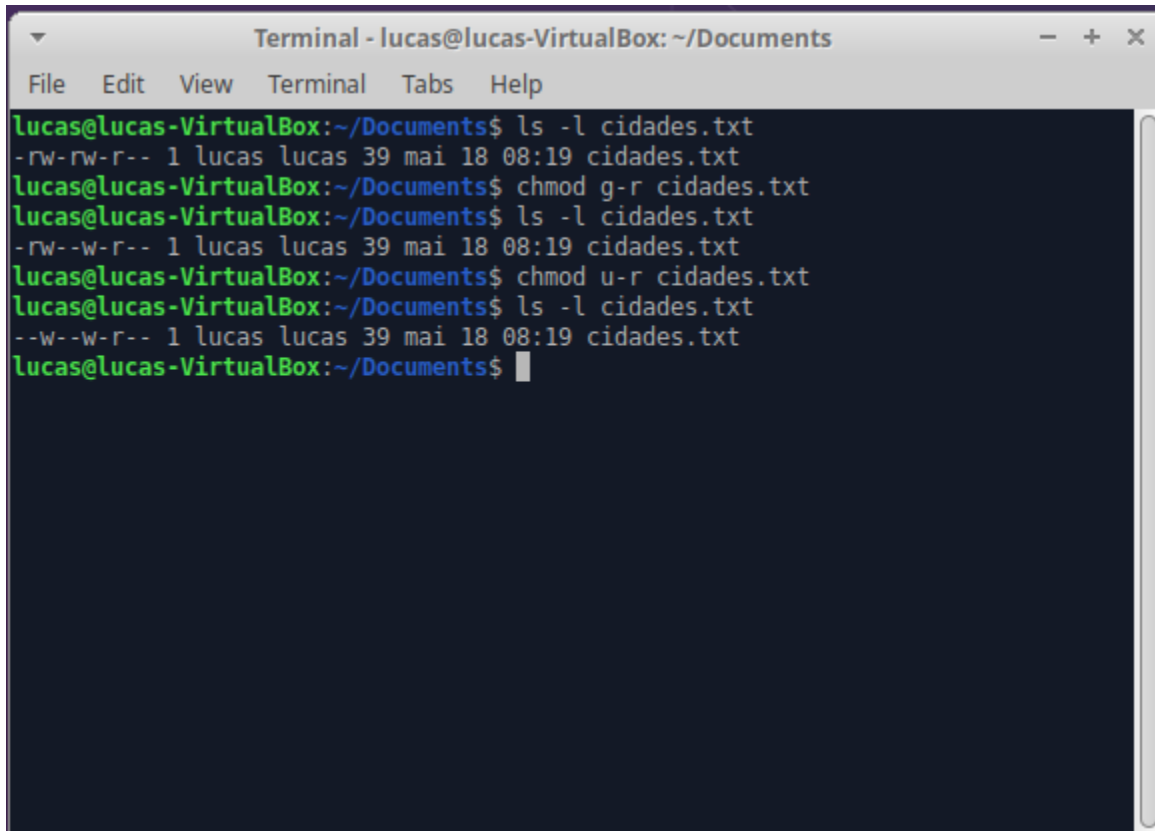
Comando: ps -x --forest

```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help

lucas@lucas-VirtualBox:~$ ps -x --forest
  PID TTY          STAT       TIME COMMAND
   804 ?        Ssl       0:00   xfce4-session
   926 ?        Ss        0:00   \_ /usr/bin/ssh-agent /usr/bin/im-launch startxfce
   985 ?        Sl        0:03   \_ xfwm4 --replace
   995 ?        Sl        0:00   \_ xfce4-panel
  1010 ?        Sl        0:00   | \_ /usr/lib/x86_64-linux-gnu/xfce4/panel/wrapp
  1016 ?        Sl        0:00   | \_ /usr/lib/x86_64-linux-gnu/xfce4/panel/wrapp
  1017 ?        Sl        0:00   | \_ /usr/lib/x86_64-linux-gnu/xfce4/panel/wrapp
  1018 ?        Sl        0:00   | \_ /usr/lib/x86_64-linux-gnu/xfce4/panel/wrapp
  1019 ?        Sl        0:00   | \_ /usr/lib/x86_64-linux-gnu/xfce4/panel/wrapp
  1022 ?        Sl        0:00   | \_ /usr/lib/x86_64-linux-gnu/xfce4/panel/wrapp
  1023 ?        Sl        0:12   | \_ /usr/lib/x86_64-linux-gnu/xfce4/panel/wrapp
  1011 ?        Sl        0:01   \_ Thunar --daemon
  1036 ?        Sl        0:03   \_ xfdesktop
  1061 ?        Sl        0:00   \_ nm-applet
  1088 ?        Sl        0:00   \_ update-notifier
  1093 ?        S         0:00   \_ /usr/bin/python3 /usr/share/system-config-print
  1123 ?        Sl        0:01   \_ /usr/bin/python3 /usr/bin/blueman-applet
  1127 ?        Sl        0:00   \_ /usr/lib/policykit-1-gnome/polkit-gnome-authent
  1128 ?        Sl        0:00   \_ xiccd
  1417 ?        Sl        0:07   /usr/bin/xfce4-terminal
  1421 pts/0    Ss        0:00   \_ bash
  2336 pts/0    R+       0:00   \_ ps -x --forest
```

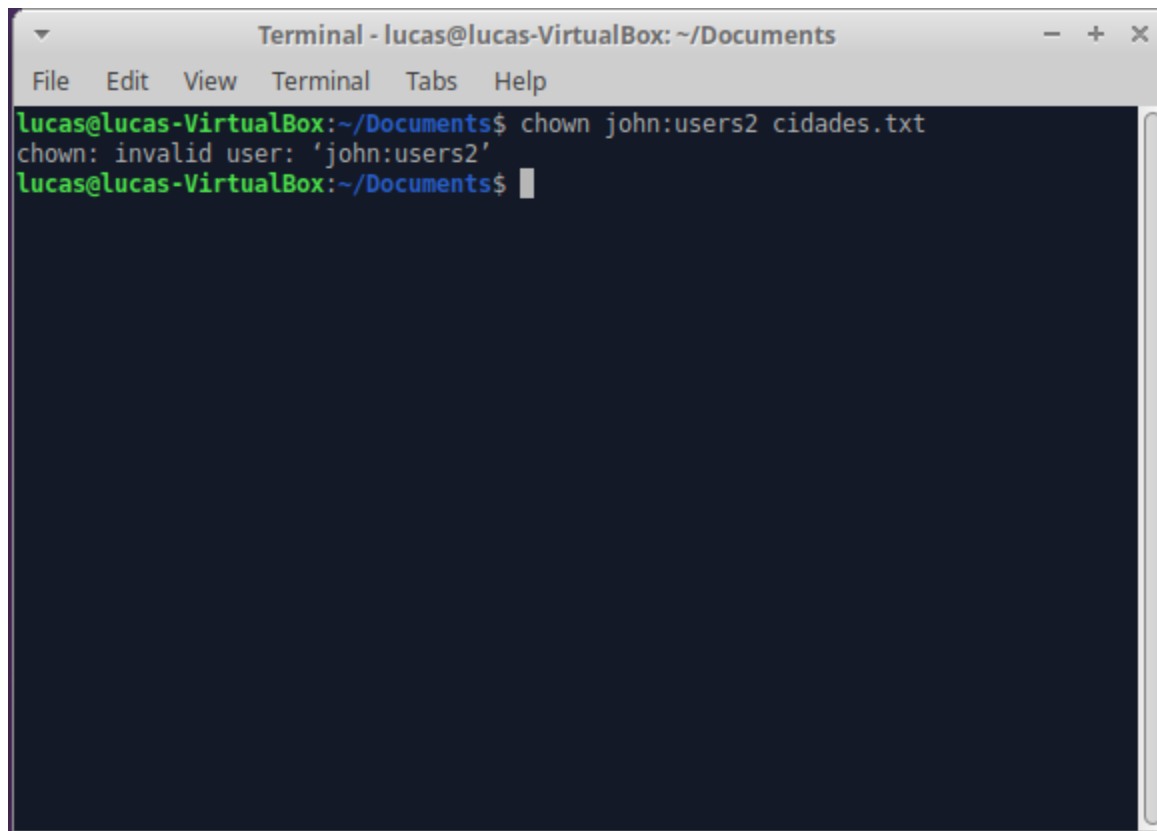
Capítulo 7

Comando: chmod

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The terminal shows a sequence of commands and their outputs. The user first runs 'ls -l cidades.txt', which shows permissions '-rw-rw-r--'. Then they run 'chmod g-r cidades.txt', and the next 'ls -l' shows '-rw--w-r--'. Finally, they run 'chmod u-r cidades.txt', and the next 'ls -l' shows '--w--w-r--'.

```
Terminal - lucas@lucas-VirtualBox: ~/Documents
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~/Documents$ ls -l cidades.txt
-rw-rw-r-- 1 lucas lucas 39 mai 18 08:19 cidades.txt
lucas@lucas-VirtualBox:~/Documents$ chmod g-r cidades.txt
lucas@lucas-VirtualBox:~/Documents$ ls -l cidades.txt
-rw--w-r-- 1 lucas lucas 39 mai 18 08:19 cidades.txt
lucas@lucas-VirtualBox:~/Documents$ chmod u-r cidades.txt
lucas@lucas-VirtualBox:~/Documents$ ls -l cidades.txt
--w--w-r-- 1 lucas lucas 39 mai 18 08:19 cidades.txt
lucas@lucas-VirtualBox:~/Documents$
```

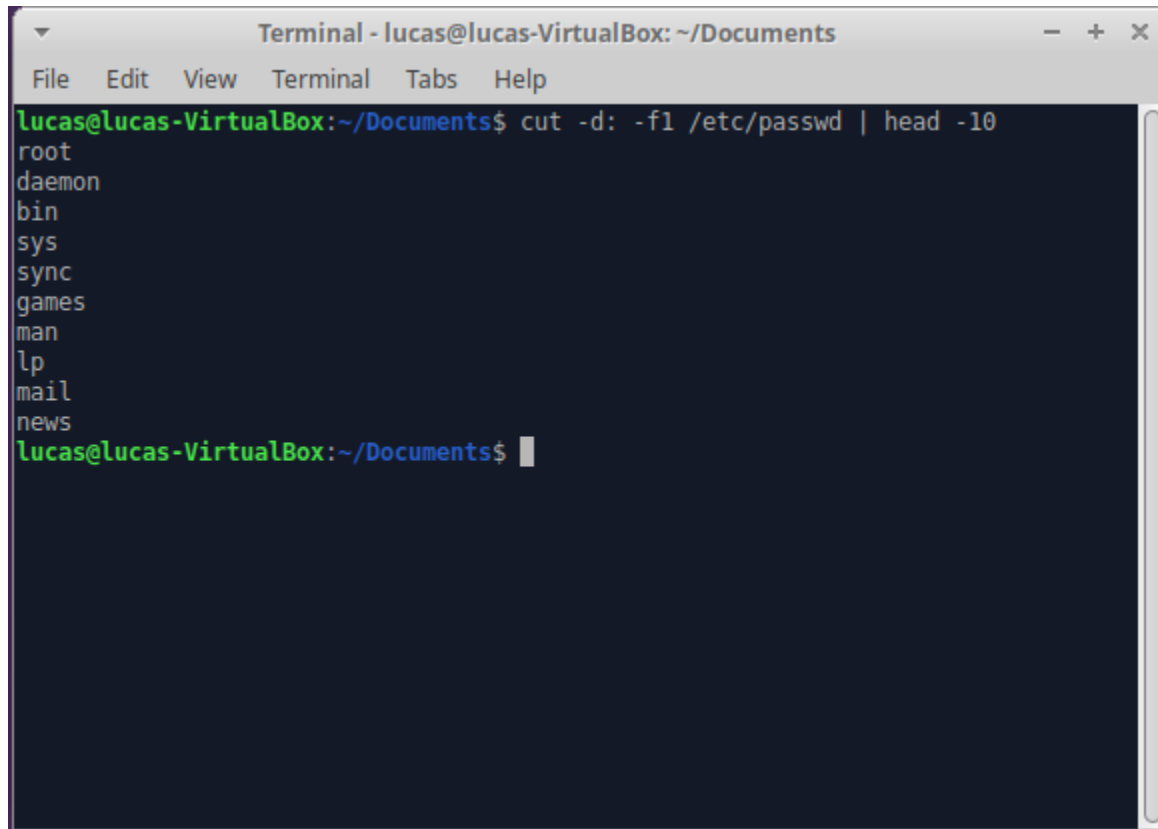
Comando: chown

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The prompt is "lucas@lucas-VirtualBox:~/Documents\$". The command "chown john:users2 cidades.txt" has been entered. The output is "chown: invalid user: 'john:users2'". The prompt is now "lucas@lucas-VirtualBox:~/Documents\$" with a cursor.

```
Terminal - lucas@lucas-VirtualBox: ~/Documents
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~/Documents$ chown john:users2 cidades.txt
chown: invalid user: 'john:users2'
lucas@lucas-VirtualBox:~/Documents$
```

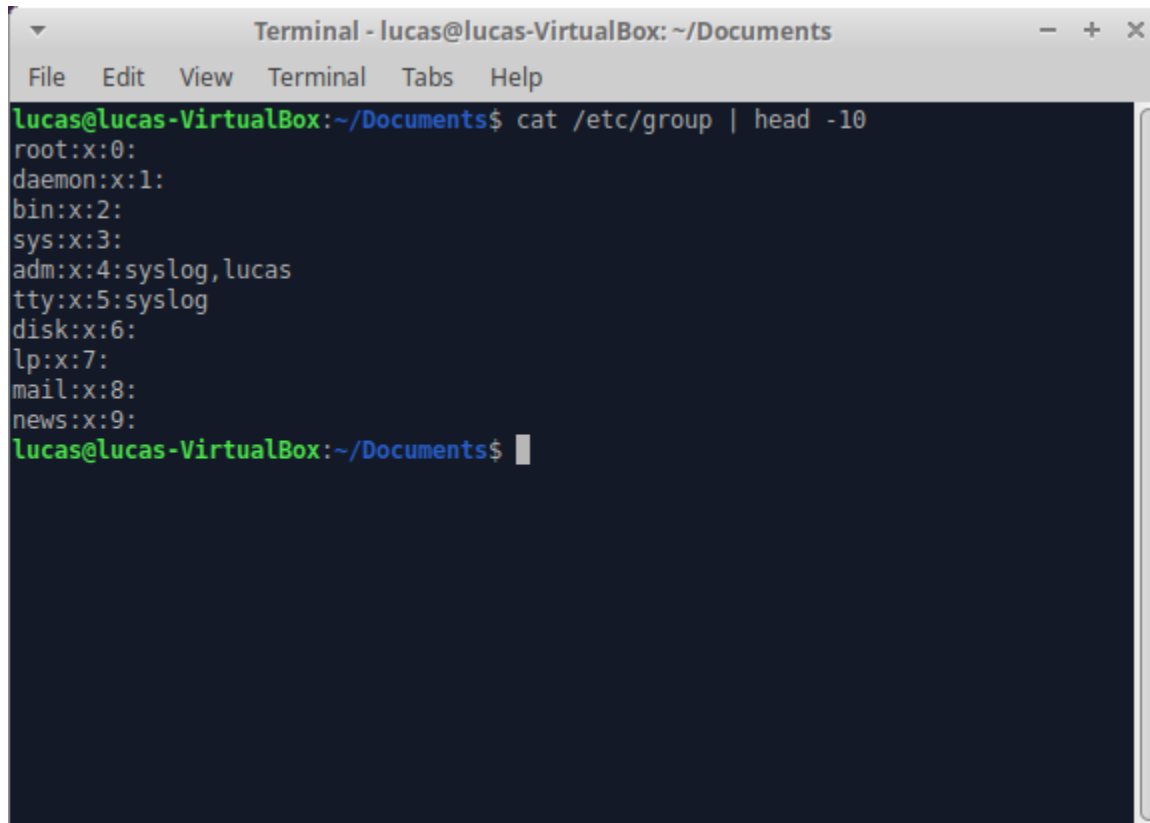
Capítulo 8

Comando: cut

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The prompt is "lucas@lucas-VirtualBox:~/Documents\$". The command "cut -d: -f1 /etc/passwd | head -10" has been executed, resulting in a list of usernames: root, daemon, bin, sys, sync, games, man, lp, mail, and news. The prompt is now "lucas@lucas-VirtualBox:~/Documents\$" with a cursor.

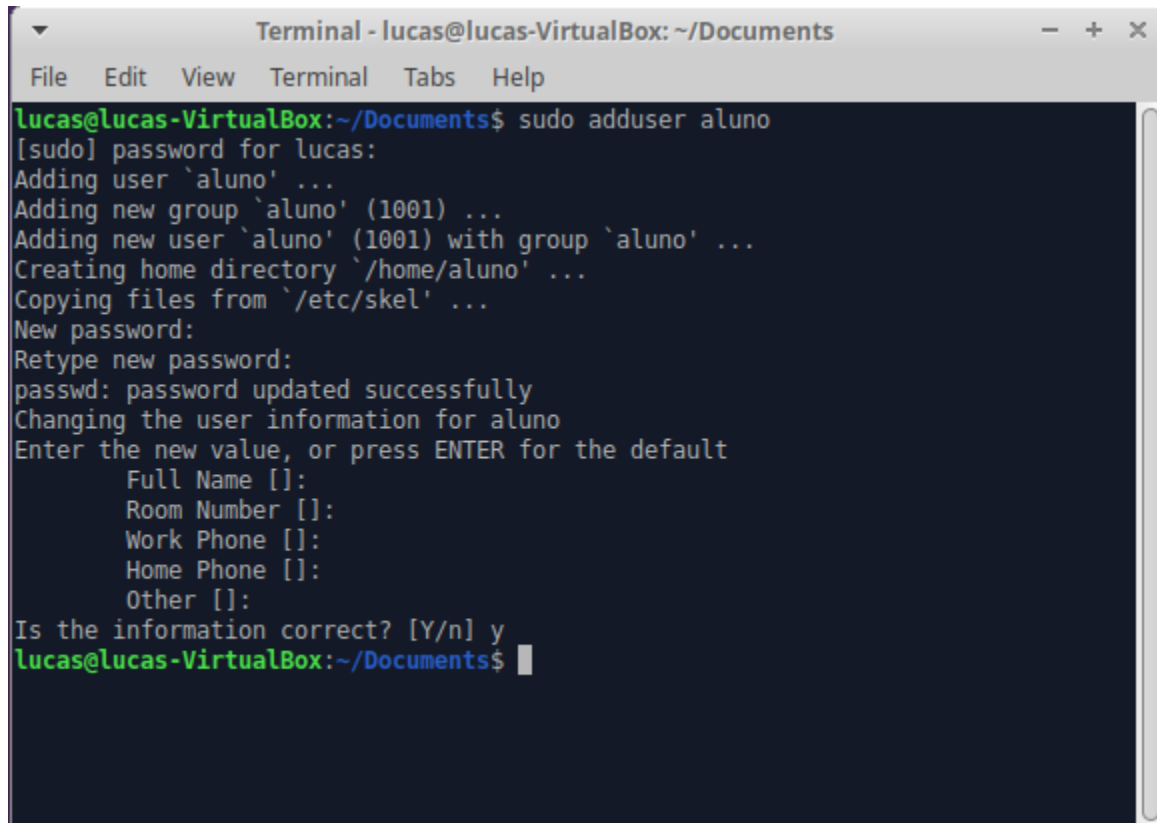
```
Terminal - lucas@lucas-VirtualBox: ~/Documents
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~/Documents$ cut -d: -f1 /etc/passwd | head -10
root
daemon
bin
sys
sync
games
man
lp
mail
news
lucas@lucas-VirtualBox:~/Documents$
```

Comando: cat /etc/group | head -10

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The terminal shows the command "cat /etc/group | head -10" being executed. The output lists the first ten entries from the /etc/group file, showing usernames, password fields (marked with 'x'), and group names. The entries are: root:x:0:, daemon:x:1:, bin:x:2:, sys:x:3:, adm:x:4:syslog,lucas, tty:x:5:syslog, disk:x:6:, lp:x:7:, mail:x:8:, and news:x:9:. The prompt "lucas@lucas-VirtualBox:~/Documents\$" is visible at the bottom.

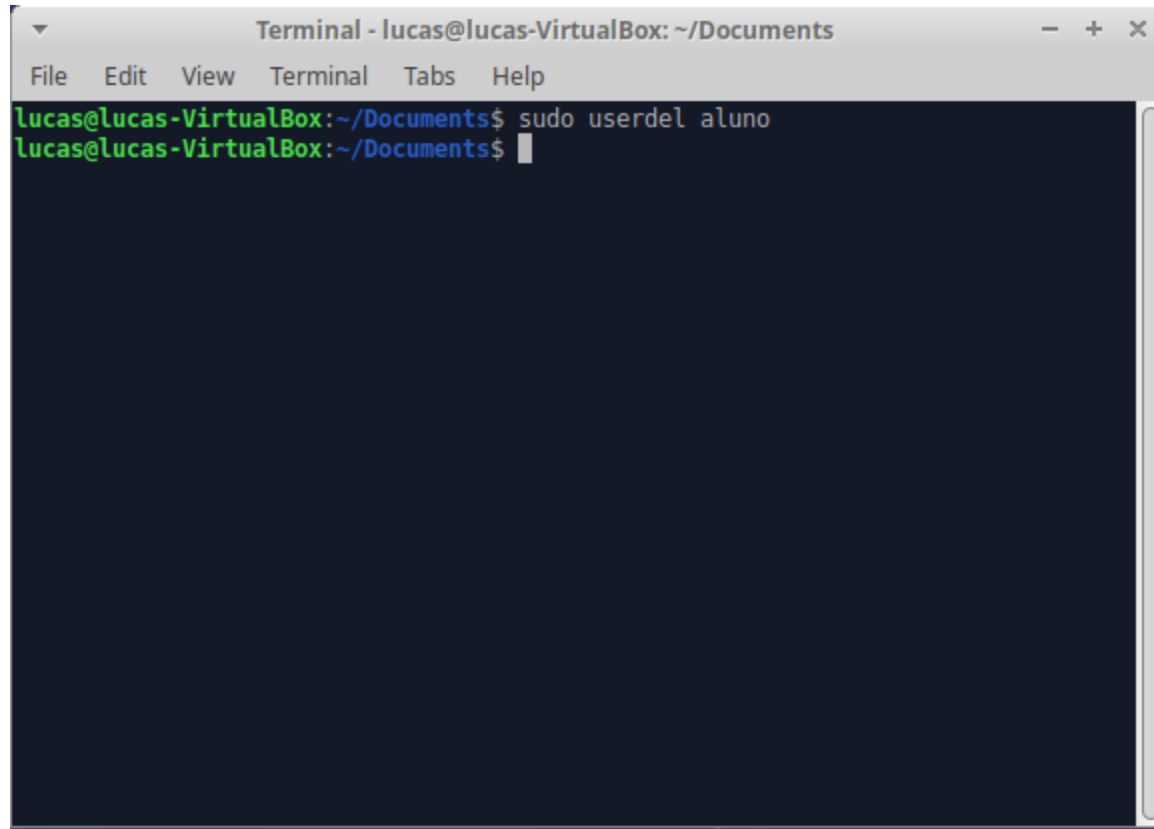
```
lucas@lucas-VirtualBox:~/Documents$ cat /etc/group | head -10
root:x:0:
daemon:x:1:
bin:x:2:
sys:x:3:
adm:x:4:syslog,lucas
tty:x:5:syslog
disk:x:6:
lp:x:7:
mail:x:8:
news:x:9:
lucas@lucas-VirtualBox:~/Documents$
```

Comando: adduser



```
Terminal - lucas@lucas-VirtualBox: ~/Documents
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~/Documents$ sudo adduser aluno
[sudo] password for lucas:
Adding user `aluno' ...
Adding new group `aluno' (1001) ...
Adding new user `aluno' (1001) with group `aluno' ...
Creating home directory `/home/aluno' ...
Copying files from `/etc/skel' ...
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for aluno
Enter the new value, or press ENTER for the default
    Full Name []:
    Room Number []:
    Work Phone []:
    Home Phone []:
    Other []:
Is the information correct? [Y/n] y
lucas@lucas-VirtualBox:~/Documents$
```

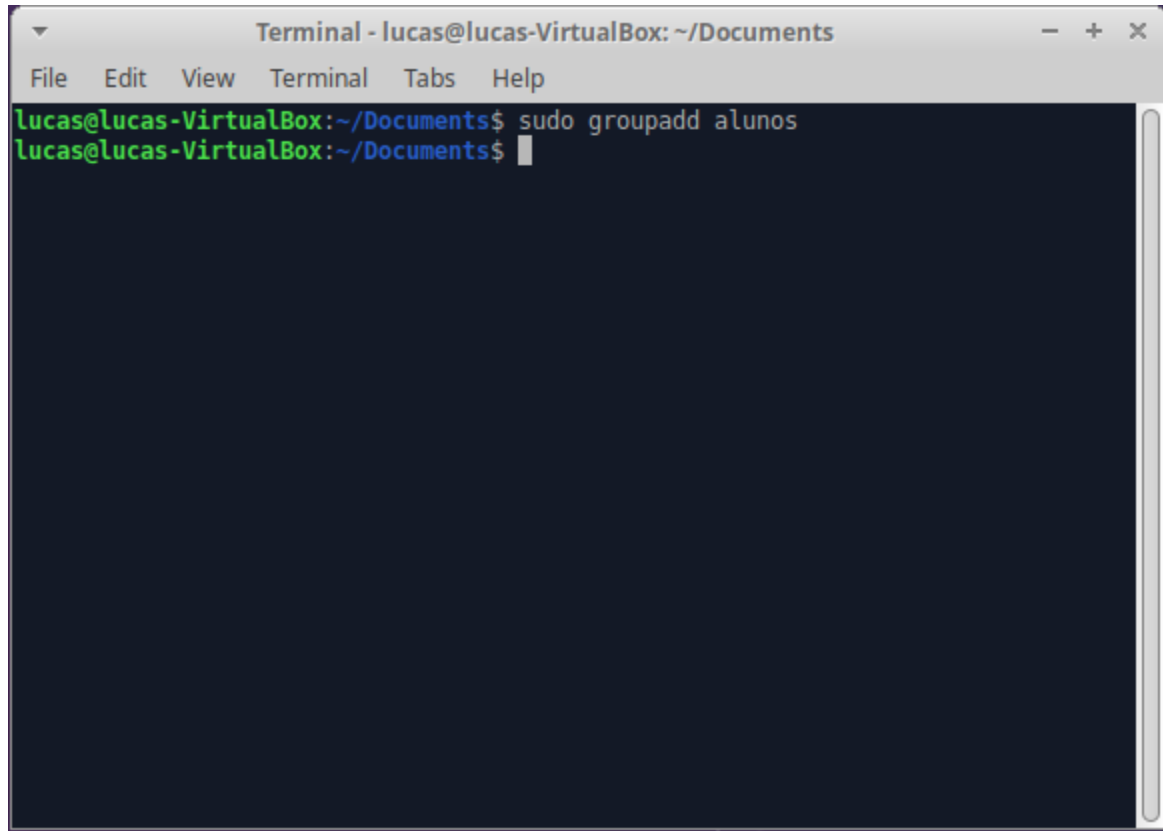

Comando: userdel



```
Terminal - lucas@lucas-VirtualBox: ~/Documents
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~/Documents$ sudo userdel aluno
lucas@lucas-VirtualBox:~/Documents$
```

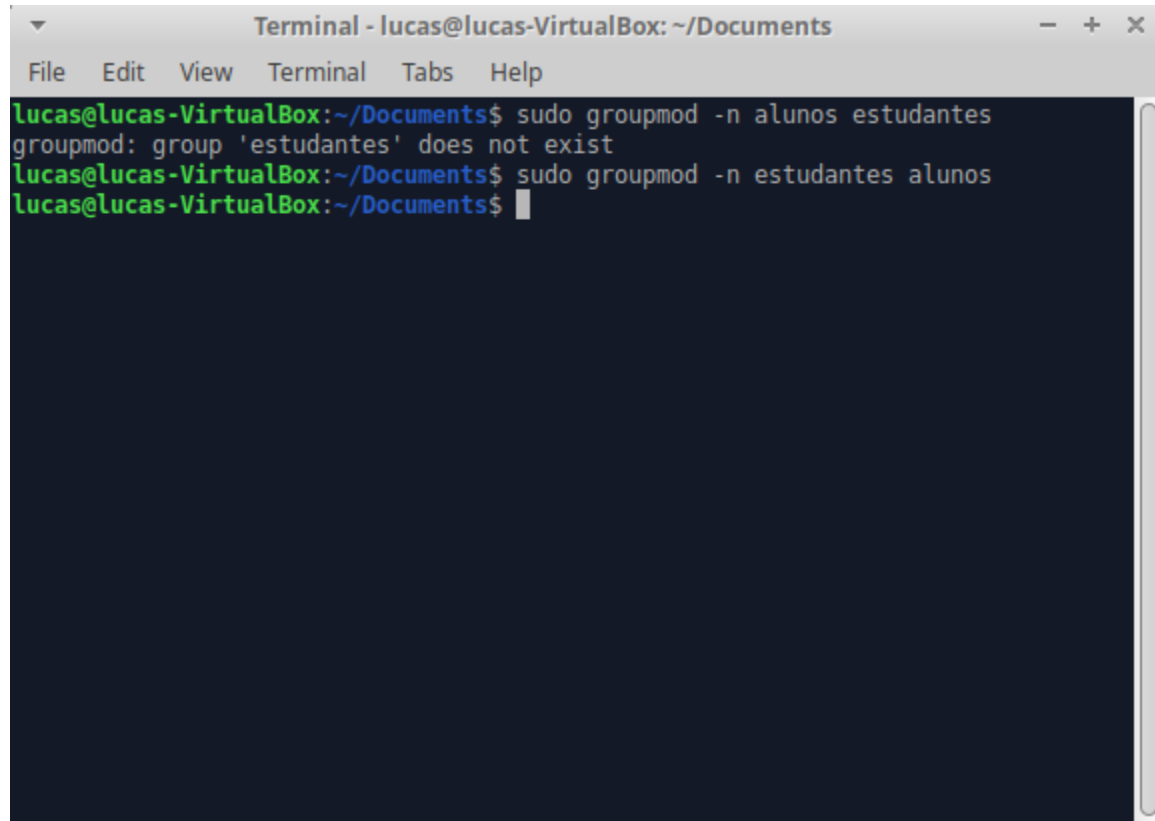
A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents" with a menu bar containing "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal shows the command "sudo userdel aluno" being executed, with the prompt "lucas@lucas-VirtualBox:~/Documents\$" appearing before and after the command. A vertical scrollbar is visible on the right side of the terminal window.

Comando: groupadd

A screenshot of a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows the user "lucas" at the prompt "lucas@lucas-VirtualBox:~/Documents\$". The user enters the command "sudo groupadd alunos", which is shown on the next line. The prompt returns to "lucas@lucas-VirtualBox:~/Documents\$". A vertical scrollbar is visible on the right side of the terminal area.

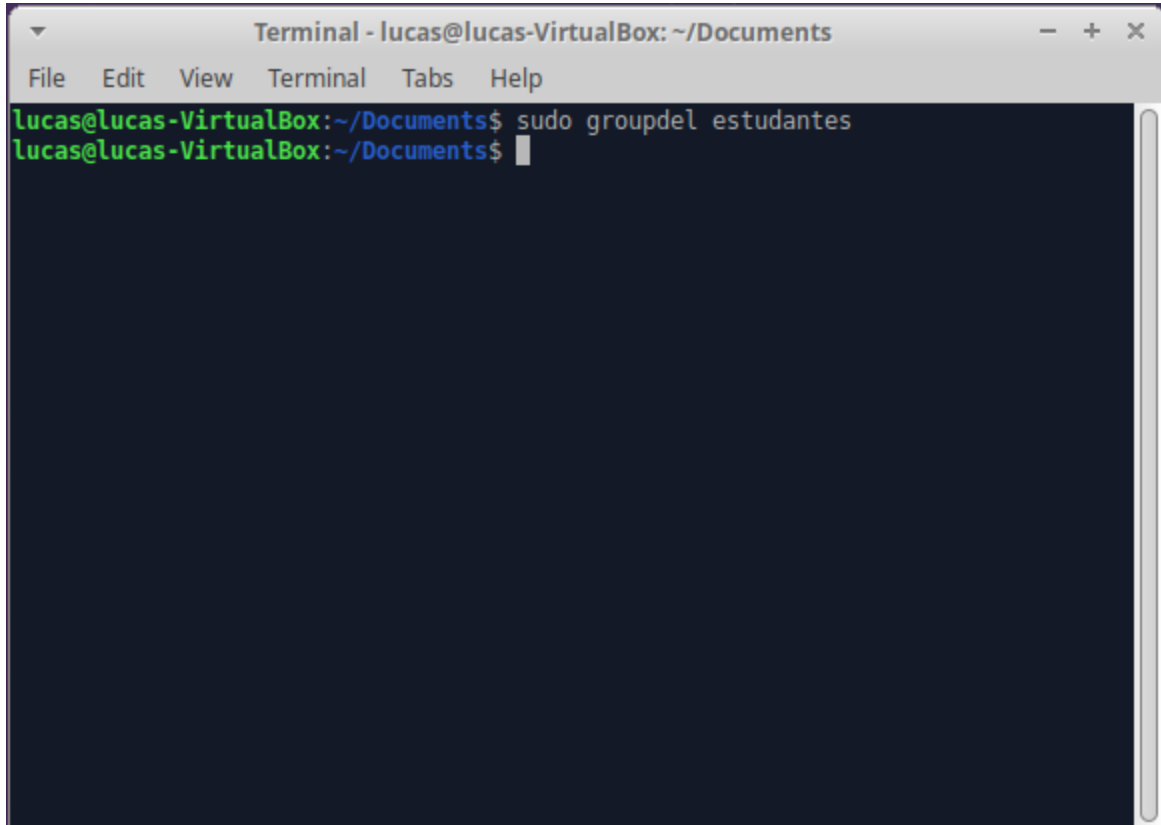
```
Terminal - lucas@lucas-VirtualBox: ~/Documents
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~/Documents$ sudo groupadd alunos
lucas@lucas-VirtualBox:~/Documents$
```

Comando: groupmod

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The terminal shows the execution of the groupmod command. The first command, "sudo groupmod -n alunos estudantes", results in an error: "groupmod: group 'estudantes' does not exist". The second command, "sudo groupmod -n estudantes alunos", is entered but its output is not visible. The prompt "lucas@lucas-VirtualBox:~/Documents\$" is shown at the end of the second line.

```
lucas@lucas-VirtualBox:~/Documents$ sudo groupmod -n alunos estudantes
groupmod: group 'estudantes' does not exist
lucas@lucas-VirtualBox:~/Documents$ sudo groupmod -n estudantes alunos
lucas@lucas-VirtualBox:~/Documents$
```

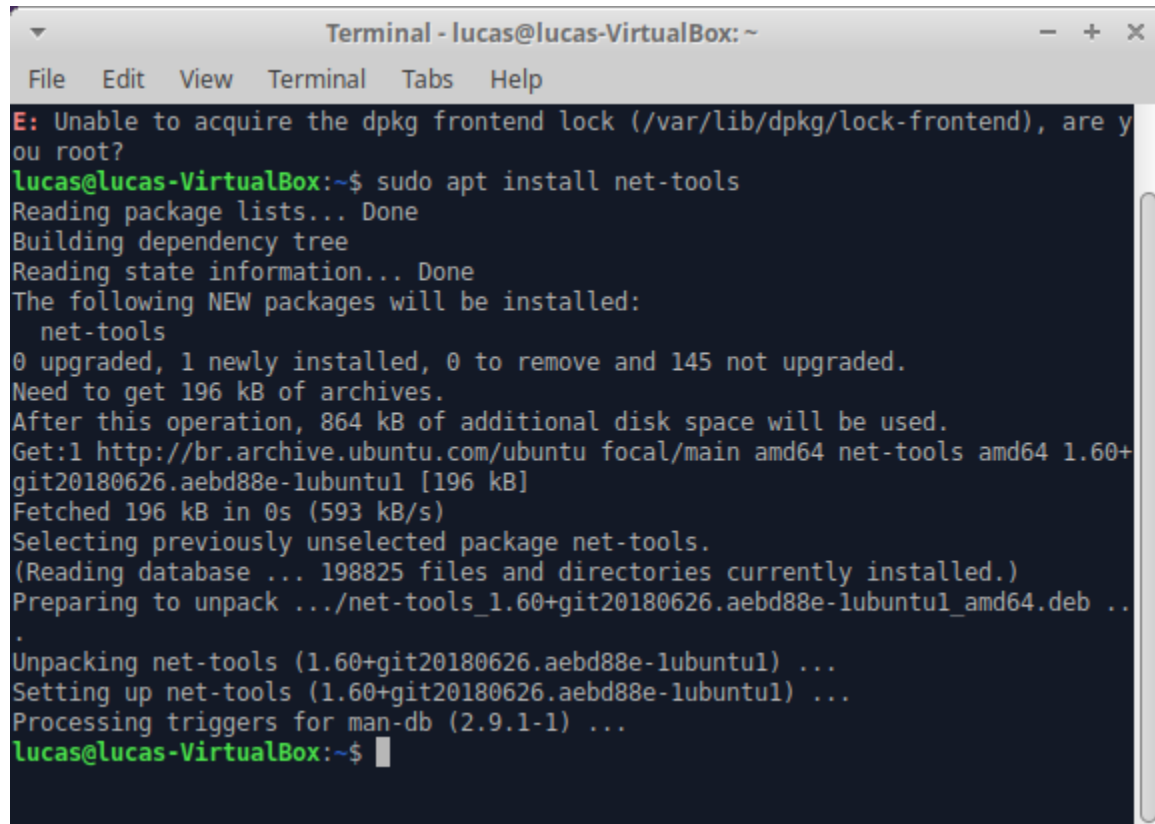
Comando: groupdel

A screenshot of a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~/Documents". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows the command "sudo groupdel estudiantes" being entered and executed. The prompt "lucas@lucas-VirtualBox:~/Documents\$" is visible before and after the command. A vertical scrollbar is on the right side of the terminal area.

```
Terminal - lucas@lucas-VirtualBox: ~/Documents
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~/Documents$ sudo groupdel estudiantes
lucas@lucas-VirtualBox:~/Documents$
```

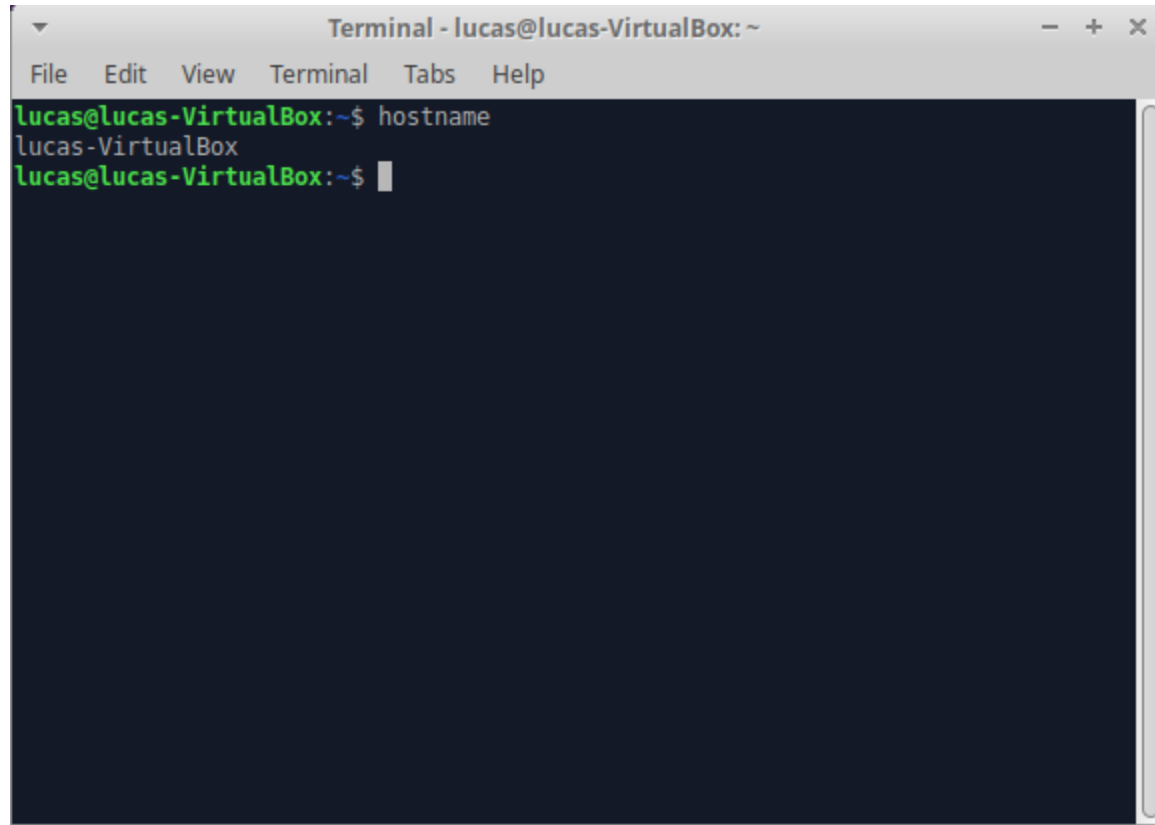
Capítulo 9

Comando: apt install net-tools

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The terminal output shows an error about the dpkg frontend lock, followed by the command "sudo apt install net-tools". The output continues with package list reading, dependency tree building, and disk space requirements. It then shows the fetching of the net-tools package and its installation. The prompt returns to "lucas@lucas-VirtualBox:~\$".

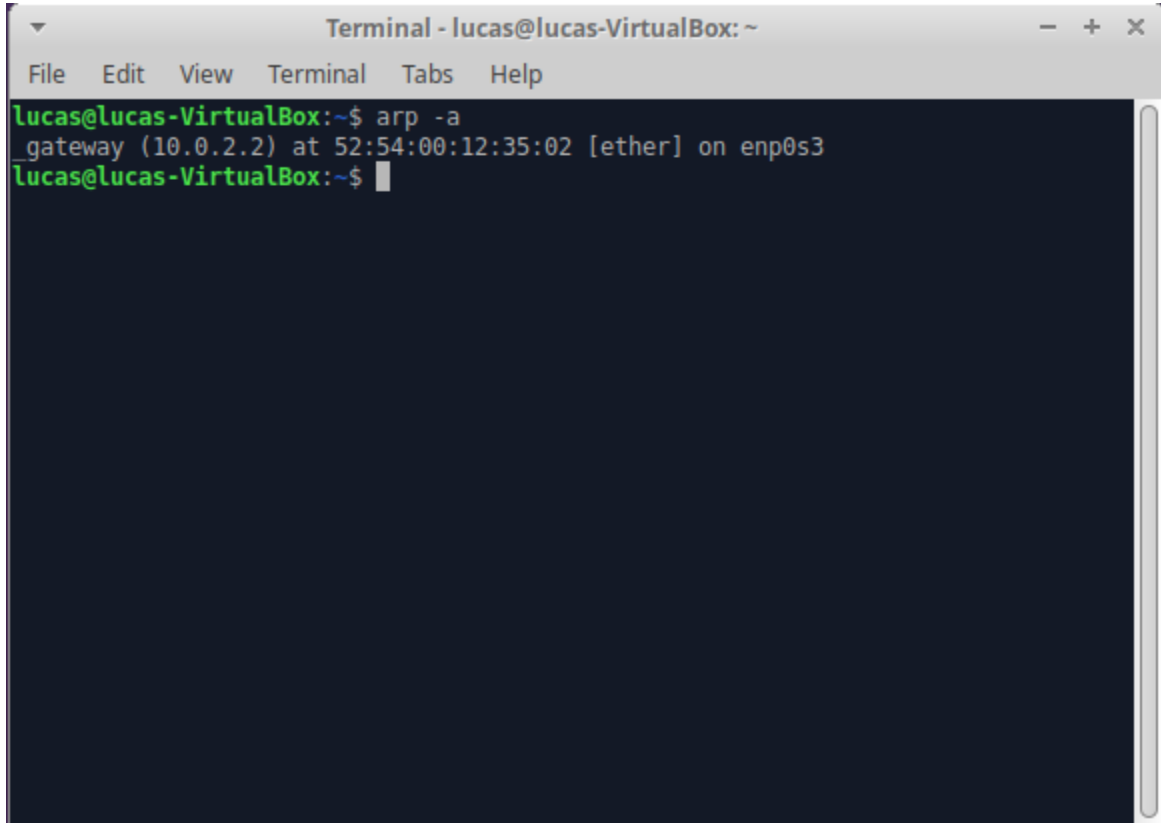
```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
E: Unable to acquire the dpkg frontend lock (/var/lib/dpkg/lock-frontent), are you root?
lucas@lucas-VirtualBox:~$ sudo apt install net-tools
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  net-tools
0 upgraded, 1 newly installed, 0 to remove and 145 not upgraded.
Need to get 196 kB of archives.
After this operation, 864 kB of additional disk space will be used.
Get:1 http://br.archive.ubuntu.com/ubuntu focal/main amd64 net-tools amd64 1.60+git20180626.aebd88e-lubuntul [196 kB]
Fetched 196 kB in 0s (593 kB/s)
Selecting previously unselected package net-tools.
(Reading database ... 198825 files and directories currently installed.)
Preparing to unpack .../net-tools_1.60+git20180626.aebd88e-lubuntul_amd64.deb ...
Unpacking net-tools (1.60+git20180626.aebd88e-lubuntul) ...
Setting up net-tools (1.60+git20180626.aebd88e-lubuntul) ...
Processing triggers for man-db (2.9.1-1) ...
lucas@lucas-VirtualBox:~$
```

Comando: hostname

A screenshot of a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows the command "hostname" being entered and executed, resulting in the output "lucas-VirtualBox". The prompt "lucas@lucas-VirtualBox:~\$" is visible at the end of the line.

```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ hostname
lucas-VirtualBox
lucas@lucas-VirtualBox:~$
```

Comando: arp -a

A screenshot of a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows the command "arp -a" being executed, resulting in the output "_gateway (10.0.2.2) at 52:54:00:12:35:02 [ether] on enp0s3". The prompt "lucas@lucas-VirtualBox:~\$" is visible at the end of the line.

```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ arp -a
_gateway (10.0.2.2) at 52:54:00:12:35:02 [ether] on enp0s3
lucas@lucas-VirtualBox:~$
```

Comando: ifconfig

```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help

lucas@lucas-VirtualBox:~$ ifconfig
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 10.0.2.15 netmask 255.255.255.0 broadcast 10.0.2.255
    inet6 fe80::80b2:9357:929e:33da prefixlen 64 scopeid 0x20<link>
    ether 08:00:27:06:27:4d txqueuelen 1000 (Ethernet)
    RX packets 256 bytes 240709 (240.7 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 204 bytes 20656 (20.6 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 162 bytes 13568 (13.5 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 162 bytes 13568 (13.5 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lucas@lucas-VirtualBox:~$ █
```


Comando: ifconfig mtu

```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help

lucas@lucas-VirtualBox:~$ ifconfig
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 10.0.2.15 netmask 255.255.255.0 broadcast 10.0.2.255
    inet6 fe80::80b2:9357:929e:33da prefixlen 64 scopeid 0x20<link>
    ether 08:00:27:06:27:4d txqueuelen 1000 (Ethernet)
    RX packets 256 bytes 240709 (240.7 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 204 bytes 20656 (20.6 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 162 bytes 13568 (13.5 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 162 bytes 13568 (13.5 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

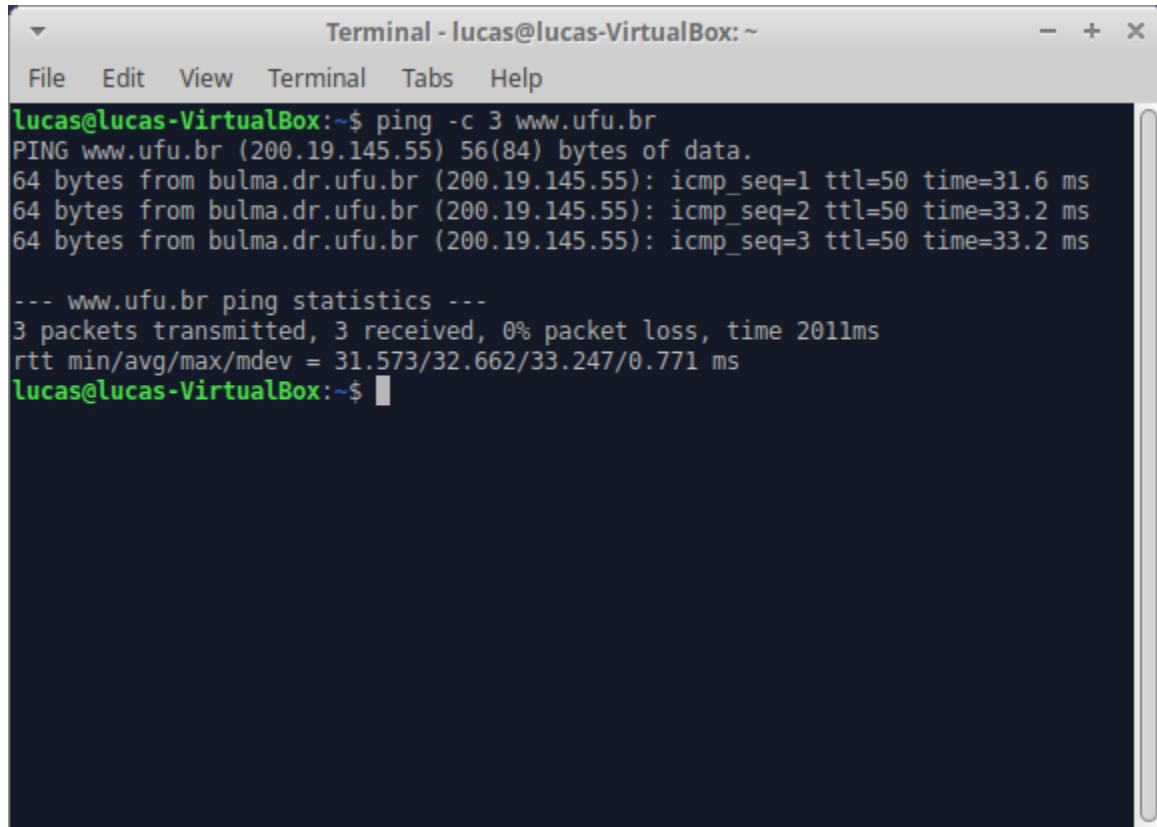
lucas@lucas-VirtualBox:~$ ifconfig enp0s3 mtu 1600
SIOCSIFMTU: Operation not permitted
lucas@lucas-VirtualBox:~$
```

Comando: ping

```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help

lucas@lucas-VirtualBox:~$ ping ww.ufu.com.br
PING ww.ufu.com.br (92.242.140.6) 56(84) bytes of data.
64 bytes from 92.242.140.6: icmp_seq=1 ttl=54 time=217 ms
64 bytes from 92.242.140.6: icmp_seq=2 ttl=54 time=217 ms
64 bytes from 92.242.140.6: icmp_seq=3 ttl=54 time=217 ms
64 bytes from 92.242.140.6: icmp_seq=4 ttl=54 time=216 ms
64 bytes from 92.242.140.6: icmp_seq=5 ttl=54 time=218 ms
64 bytes from 92.242.140.6: icmp_seq=6 ttl=54 time=216 ms
64 bytes from 92.242.140.6: icmp_seq=7 ttl=54 time=217 ms
64 bytes from 92.242.140.6: icmp_seq=8 ttl=54 time=219 ms
64 bytes from 92.242.140.6: icmp_seq=9 ttl=54 time=216 ms
64 bytes from 92.242.140.6: icmp_seq=10 ttl=54 time=218 ms
64 bytes from 92.242.140.6: icmp_seq=11 ttl=54 time=217 ms
64 bytes from 92.242.140.6: icmp_seq=12 ttl=54 time=216 ms
64 bytes from 92.242.140.6: icmp_seq=13 ttl=54 time=217 ms
64 bytes from 92.242.140.6: icmp_seq=14 ttl=54 time=218 ms
64 bytes from 92.242.140.6: icmp_seq=15 ttl=54 time=217 ms
64 bytes from 92.242.140.6: icmp_seq=16 ttl=54 time=217 ms
^C
--- ww.ufu.com.br ping statistics ---
16 packets transmitted, 16 received, 0% packet loss, time 15059ms
rtt min/avg/max/mdev = 216.000/216.947/218.608/0.695 ms
lucas@lucas-VirtualBox:~$
```

Comando: ping -c 3

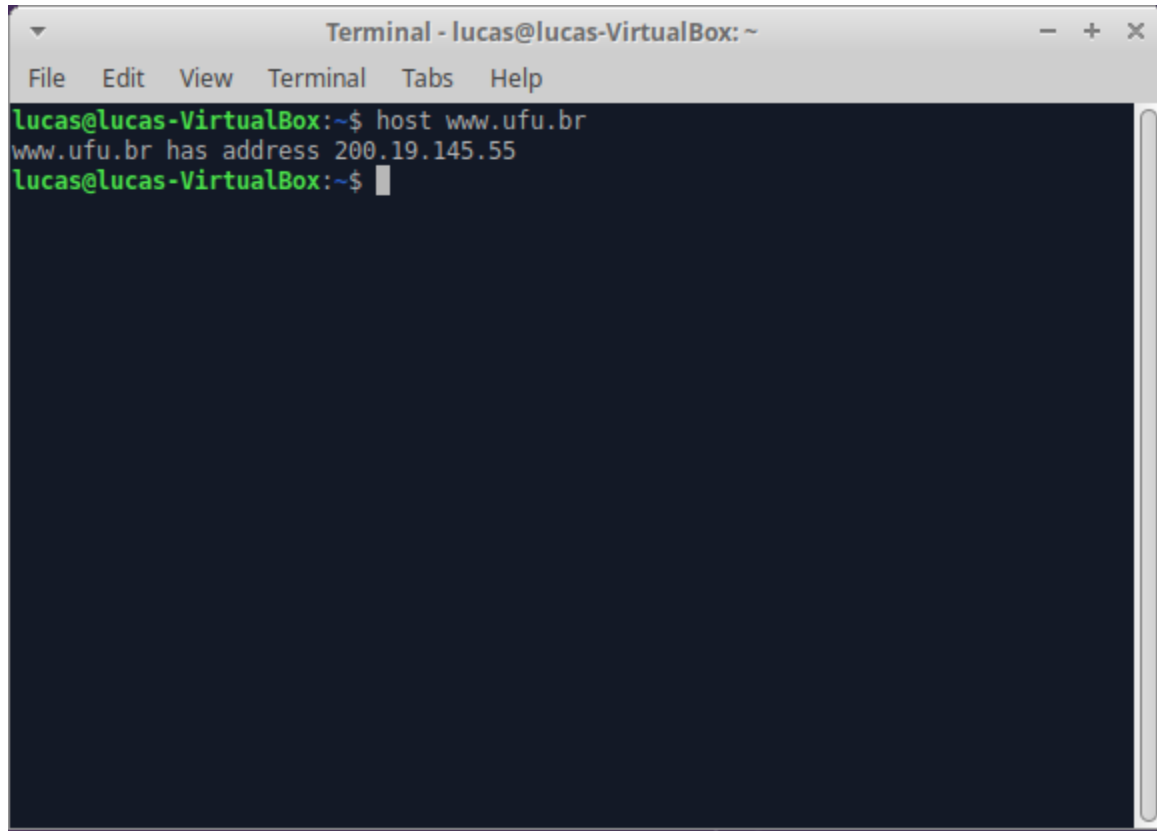
A screenshot of a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows a user typing the command "ping -c 3 www.ufu.br". The output shows three successful ping responses from "bulma.dr.ufu.br" (200.19.145.55) with varying times. It then displays ping statistics: 3 packets transmitted, 3 received, 0% packet loss, and a total time of 201ms. The terminal ends with the prompt "lucas@lucas-VirtualBox:~\$".

```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help

lucas@lucas-VirtualBox:~$ ping -c 3 www.ufu.br
PING www.ufu.br (200.19.145.55) 56(84) bytes of data.
64 bytes from bulma.dr.ufu.br (200.19.145.55): icmp_seq=1 ttl=50 time=31.6 ms
64 bytes from bulma.dr.ufu.br (200.19.145.55): icmp_seq=2 ttl=50 time=33.2 ms
64 bytes from bulma.dr.ufu.br (200.19.145.55): icmp_seq=3 ttl=50 time=33.2 ms

--- www.ufu.br ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 201ms
rtt min/avg/max/mdev = 31.573/32.662/33.247/0.771 ms
lucas@lucas-VirtualBox:~$
```

Comando: host \$SITE_ANDRESS

A screenshot of a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows a user prompt "lucas@lucas-VirtualBox:~\$" followed by the command "host www.ufu.br". The output is "www.ufu.br has address 200.19.145.55". Below the output, the prompt "lucas@lucas-VirtualBox:~\$" is shown again with a cursor. A vertical scrollbar is visible on the right side of the terminal area.

```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ host www.ufu.br
www.ufu.br has address 200.19.145.55
lucas@lucas-VirtualBox:~$
```

Comando: dig \$SITE_ANDRESS

```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ dig www.ufu.br

; <<>> DiG 9.16.1-Ubuntu <<>> www.ufu.br
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 43713
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

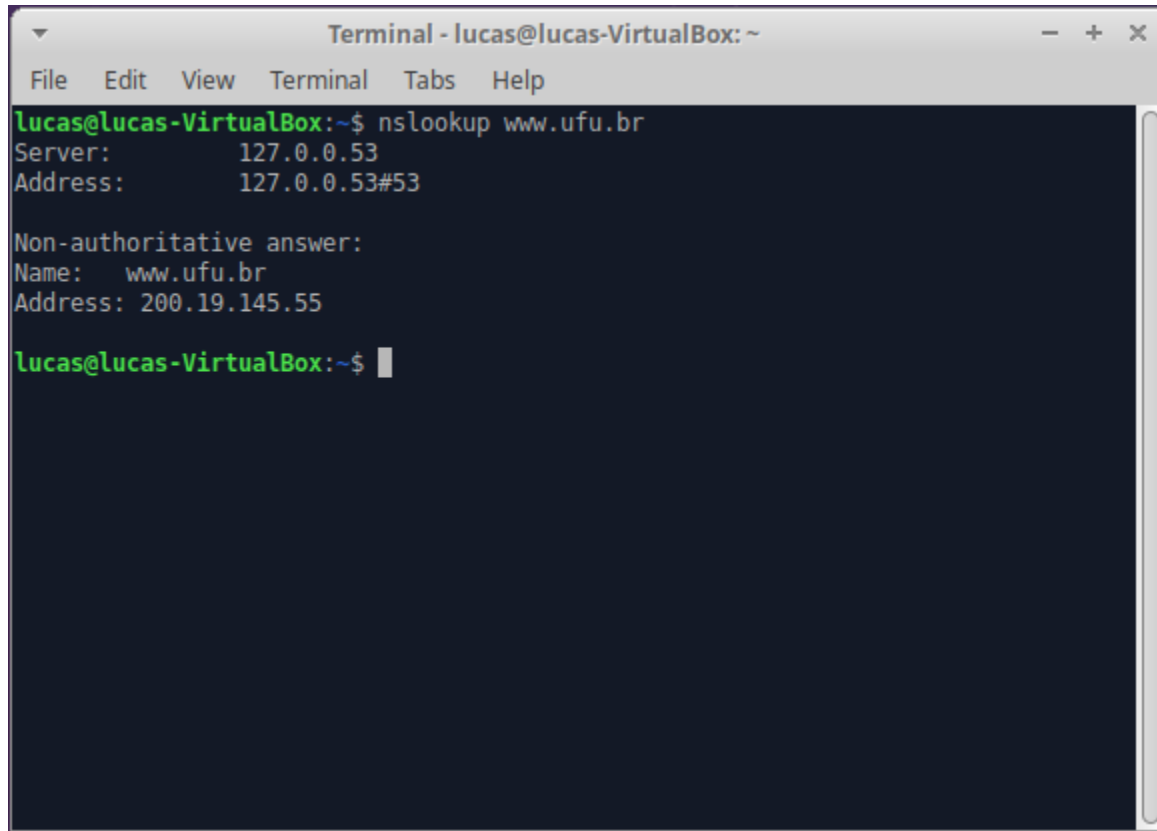
;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 65494
;; QUESTION SECTION:
;www.ufu.br.                IN      A

;; ANSWER SECTION:
www.ufu.br.                39      IN      A      200.19.145.55

;; Query time: 12 msec
;; SERVER: 127.0.0.53#53(127.0.0.53)
;; WHEN: qua mai 18 22:06:00 -03 2022
;; MSG SIZE rcvd: 55

lucas@lucas-VirtualBox:~$
```

Comando: nslookup \$SITE_ANDRESS

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The terminal shows the command "nslookup www.ufu.br" and its output. The output includes the server address (127.0.0.53), a non-authoritative answer for the name www.ufu.br with address 200.19.145.55, and a prompt for the next command.

```
lucas@lucas-VirtualBox:~$ nslookup www.ufu.br
Server:      127.0.0.53
Address:     127.0.0.53#53

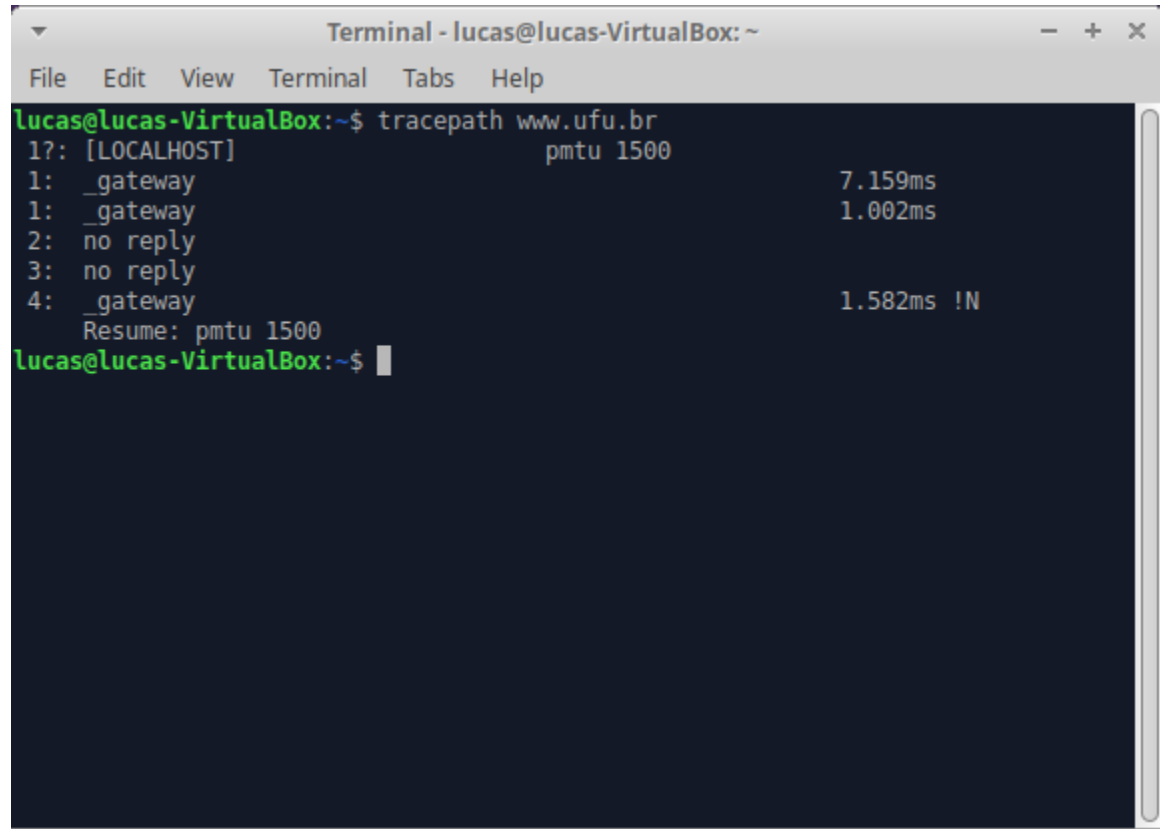
Non-authoritative answer:
Name:   www.ufu.br
Address: 200.19.145.55

lucas@lucas-VirtualBox:~$
```

Comando: traceroute \$SITE_ANDRESS

```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ traceroute www.ufu.br
traceroute to www.ufu.br (200.19.145.55), 30 hops max, 60 byte packets
 1 _gateway (10.0.2.2)  1.017 ms  0.981 ms  0.939 ms
 2 * * *
 3 * * *
 4 * * *
 5 * * *
 6 * * *
 7 * * *
 8 * * *
 9 * * *
10 * * *
11 * * *
12 * * *
13 * * *
14 * * *
15 * * *
16 * * *
17 * * *
18 * * *
19 * * *
20 * * *
21 * * *
22 * * *
```

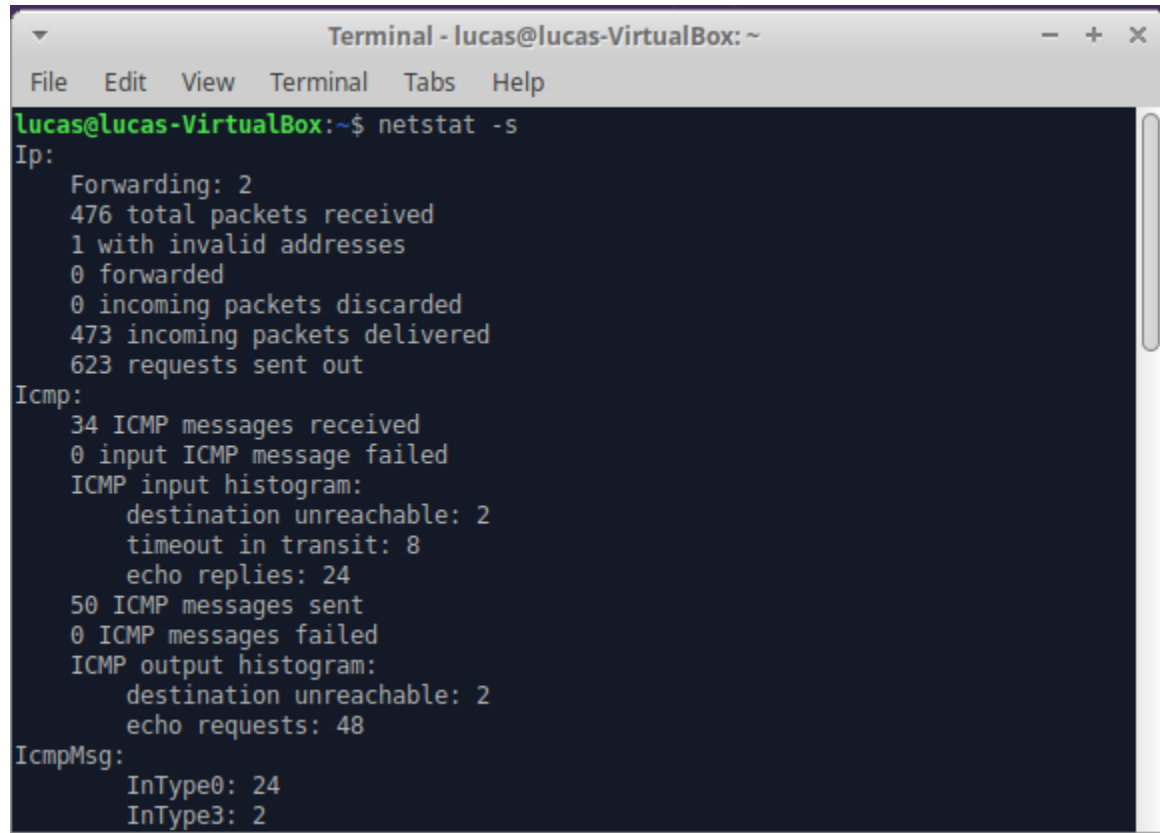
Comando: `tracert $SITE_ADDRESS`



The image shows a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows the execution of the command `tracert www.ufu.br`. The output is as follows:

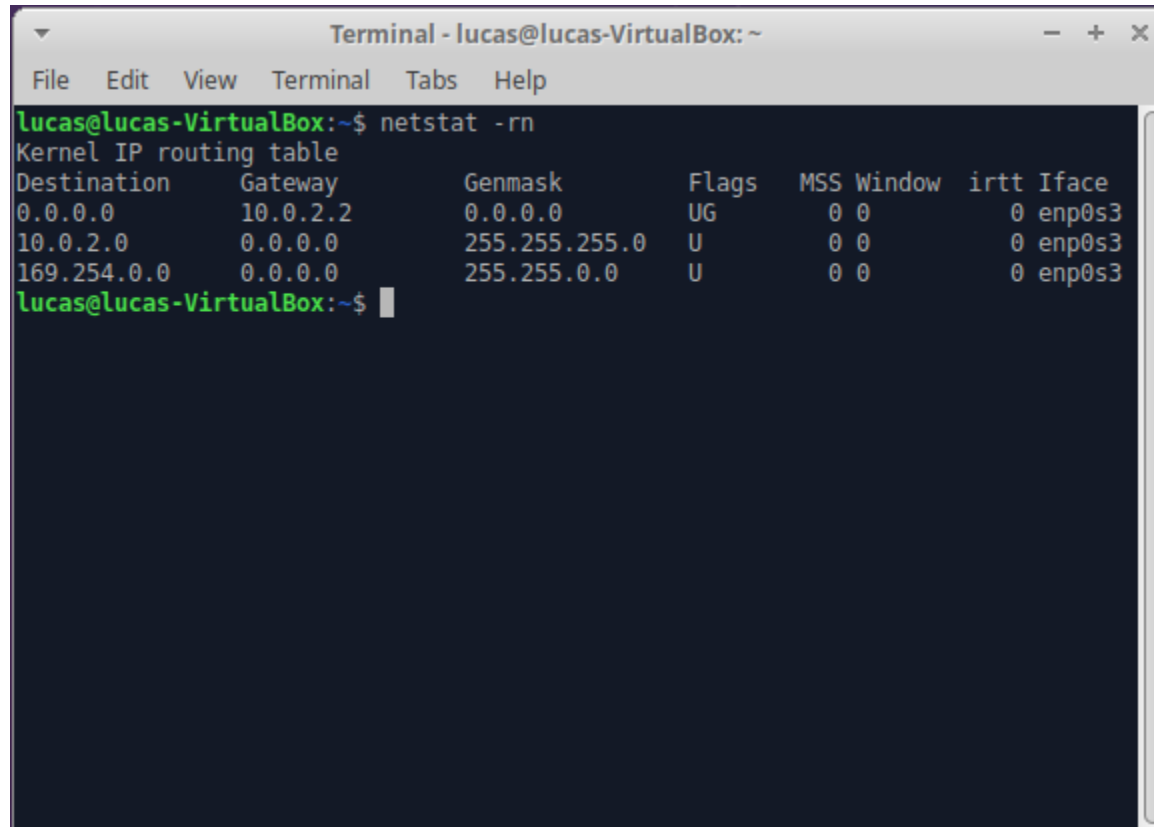
```
lucas@lucas-VirtualBox:~$ tracert www.ufu.br
1?: [LOCALHOST]          pmtu 1500
1:  _gateway              7.159ms
1:  _gateway              1.002ms
2:  no reply
3:  no reply
4:  _gateway              1.582ms !N
    Resume: pmtu 1500
lucas@lucas-VirtualBox:~$
```


Comando: netstat -s

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The command "netstat -s" has been executed, showing network statistics for IP, ICMP, and ICMPMsg. The output is as follows:

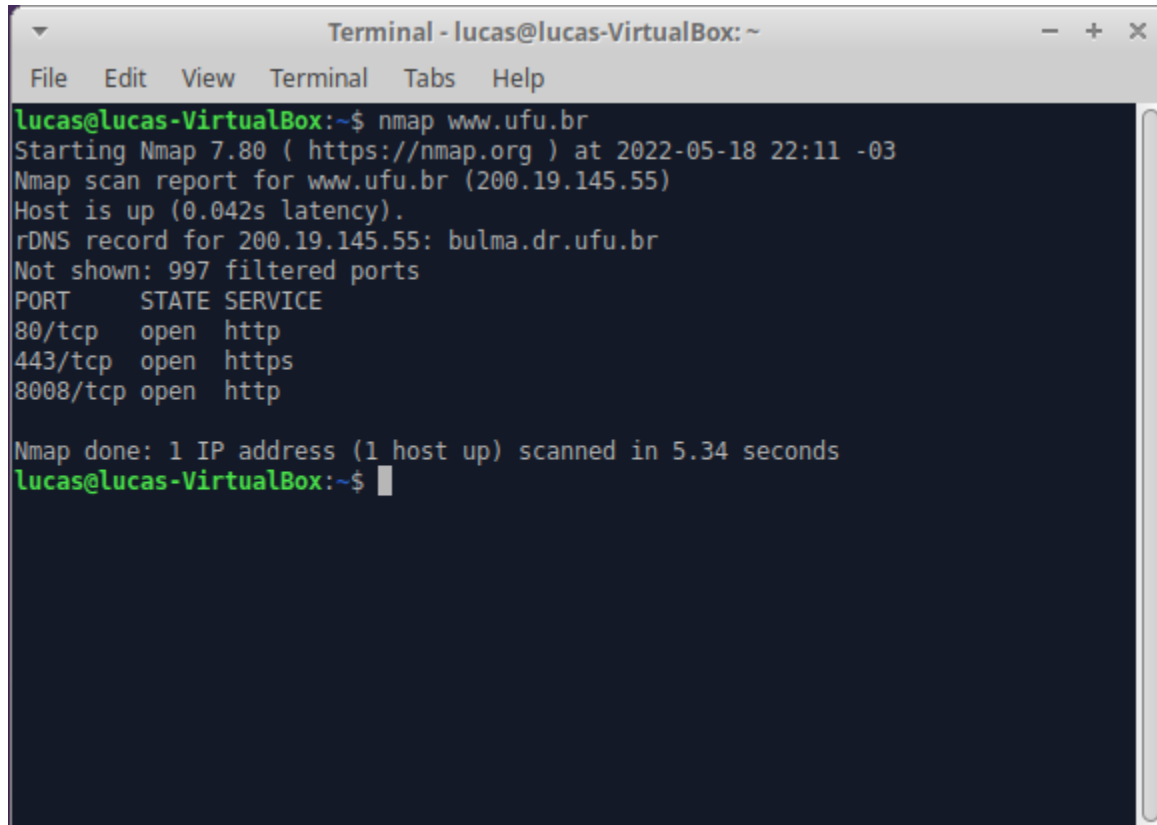
```
lucas@lucas-VirtualBox:~$ netstat -s
Ip:
  Forwarding: 2
  476 total packets received
  1 with invalid addresses
  0 forwarded
  0 incoming packets discarded
  473 incoming packets delivered
  623 requests sent out
Icmp:
  34 ICMP messages received
  0 input ICMP message failed
  ICMP input histogram:
    destination unreachable: 2
    timeout in transit: 8
    echo replies: 24
  50 ICMP messages sent
  0 ICMP messages failed
  ICMP output histogram:
    destination unreachable: 2
    echo requests: 48
IcmpMsg:
  InType0: 24
  InType3: 2
```

Comando: netstat -rn

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The command "netstat -rn" has been executed, displaying the kernel IP routing table. The output is a table with columns: Destination, Gateway, Genmask, Flags, MSS, Window, irtt, and Iface. The data shows three routes: 0.0.0.0 via 10.0.2.2, 10.0.2.0 via 0.0.0.0, and 169.254.0.0 via 0.0.0.0, all using the enp0s3 interface.

```
lucas@lucas-VirtualBox:~$ netstat -rn
Kernel IP routing table
Destination    Gateway         Genmask         Flags   MSS Window  irtt Iface
0.0.0.0        10.0.2.2        0.0.0.0         UG          0  0        0 enp0s3
10.0.2.0       0.0.0.0         255.255.255.0   U           0  0        0 enp0s3
169.254.0.0    0.0.0.0         255.255.0.0     U           0  0        0 enp0s3
lucas@lucas-VirtualBox:~$
```

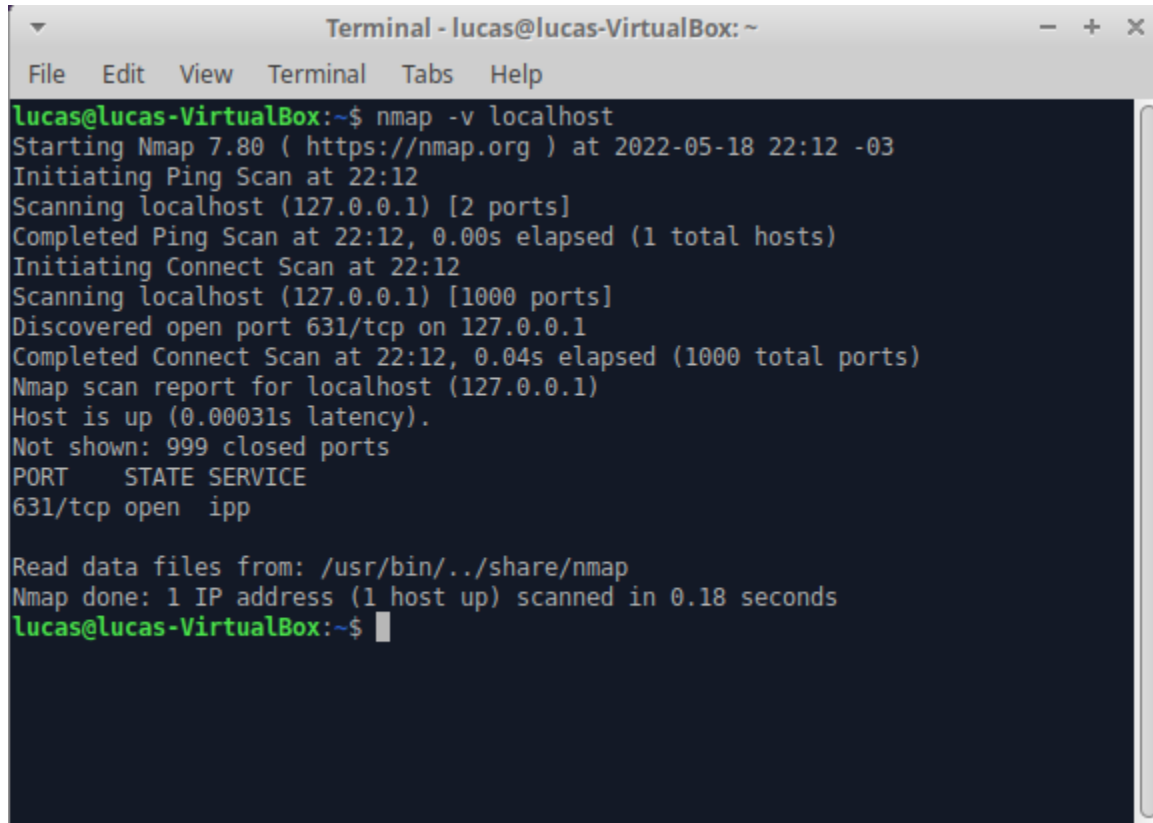
Comando: nmap \$SITE_ANDRESS

A screenshot of a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows an nmap scan of www.ufu.br. The output includes the nmap version (7.80), the target IP (200.19.145.55), a confirmation that the host is up, the rDNS record (bulma.dr.ufu.br), and a list of open ports (80/tcp, 443/tcp, 8008/tcp) with their respective services (http, https, http). The scan took 5.34 seconds to complete. The prompt "lucas@lucas-VirtualBox:~\$" is visible at the bottom.

```
lucas@lucas-VirtualBox:~$ nmap www.ufu.br
Starting Nmap 7.80 ( https://nmap.org ) at 2022-05-18 22:11 -03
Nmap scan report for www.ufu.br (200.19.145.55)
Host is up (0.042s latency).
rDNS record for 200.19.145.55: bulma.dr.ufu.br
Not shown: 997 filtered ports
PORT      STATE SERVICE
80/tcp    open  http
443/tcp   open  https
8008/tcp   open  http

Nmap done: 1 IP address (1 host up) scanned in 5.34 seconds
lucas@lucas-VirtualBox:~$
```

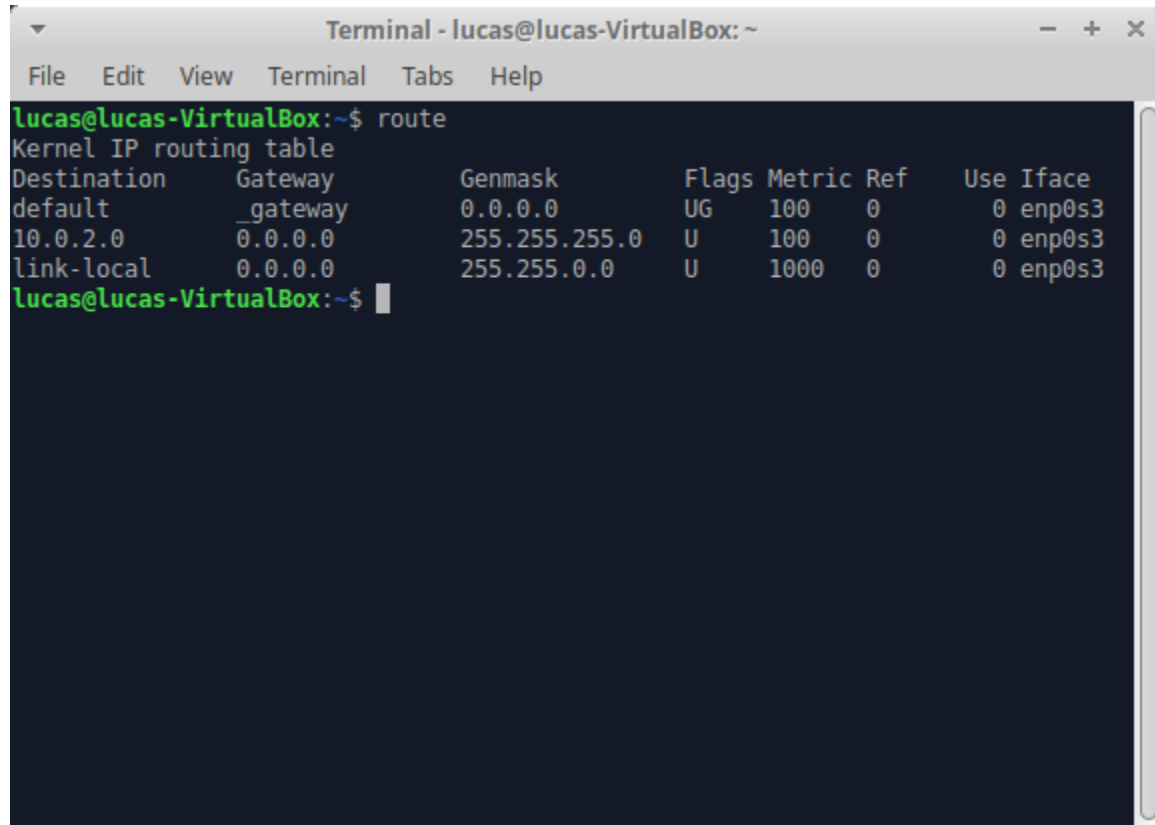
Comando: nmap -v localhost

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The terminal shows the execution of the command "nmap -v localhost". The output includes the Nmap version (7.80), the start time (2022-05-18 22:12 -03), a ping scan, a connect scan of 1000 ports, and the discovery of an open port 631/tcp. It also shows the number of closed ports (999) and the total scan time (0.18 seconds).

```
lucas@lucas-VirtualBox:~$ nmap -v localhost
Starting Nmap 7.80 ( https://nmap.org ) at 2022-05-18 22:12 -03
Initiating Ping Scan at 22:12
Scanning localhost (127.0.0.1) [2 ports]
Completed Ping Scan at 22:12, 0.00s elapsed (1 total hosts)
Initiating Connect Scan at 22:12
Scanning localhost (127.0.0.1) [1000 ports]
Discovered open port 631/tcp on 127.0.0.1
Completed Connect Scan at 22:12, 0.04s elapsed (1000 total ports)
Nmap scan report for localhost (127.0.0.1)
Host is up (0.00031s latency).
Not shown: 999 closed ports
PORT      STATE SERVICE
631/tcp   open ipp

Read data files from: /usr/bin/../../share/nmap
Nmap done: 1 IP address (1 host up) scanned in 0.18 seconds
lucas@lucas-VirtualBox:~$
```

Comando: route

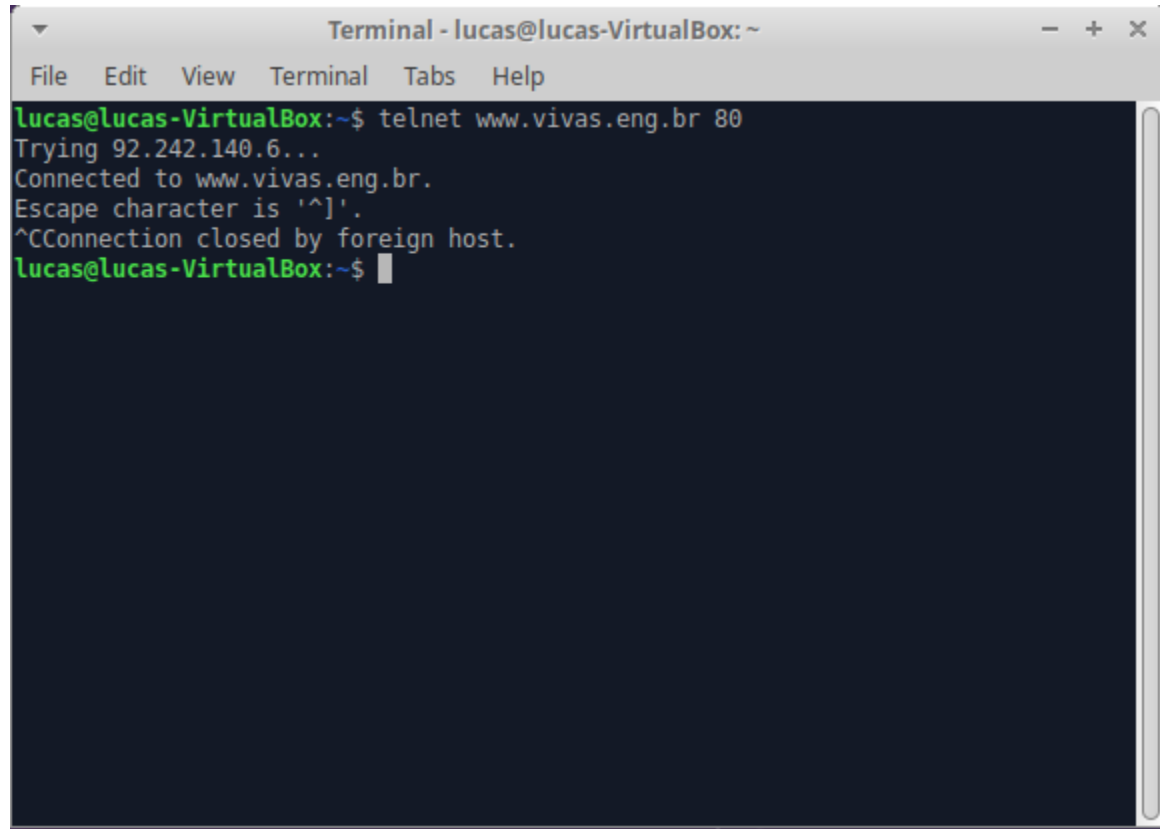


A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The prompt is "lucas@lucas-VirtualBox:~\$". The command "route" has been entered, and the output is displayed as follows:

```
Kernel IP routing table
Destination    Gateway         Genmask         Flags Metric Ref    Use Iface
default        _gateway        0.0.0.0         UG    100    0      0 enp0s3
10.0.2.0        0.0.0.0         255.255.255.0   U    100    0      0 enp0s3
link-local      0.0.0.0         255.255.0.0     U    1000   0      0 enp0s3
```

The prompt "lucas@lucas-VirtualBox:~\$" is shown again at the bottom of the output.

Comando: telnet

A screenshot of a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal output shows the command "telnet www.vivas.eng.br 80" being executed. The output includes "Trying 92.242.140.6...", "Connected to www.vivas.eng.br.", "Escape character is '^['.", and finally "Connection closed by foreign host." followed by a new prompt line.

```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ telnet www.vivas.eng.br 80
Trying 92.242.140.6...
Connected to www.vivas.eng.br.
Escape character is '^['.
^CConnection closed by foreign host.
lucas@lucas-VirtualBox:~$
```

Comando: lynx \$SITE_ANDRESS

```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help

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www.google.com.br cookie: 1P_JAR=2022-05-19-01 Allow? (Y/N/Always/neVer)
Arrow keys: Up and Down to move. Right to follow a link; Left to go back.
H)elp O)ptions P)rint G)o M)ain screen Q)uit /=search [delete]=history list
```

Capítulo 10

Comando: apt update

```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ sudo apt update
Hit:1 http://br.archive.ubuntu.com/ubuntu focal InRelease
Get:2 http://br.archive.ubuntu.com/ubuntu focal-updates InRelease [114 kB]
Get:3 http://br.archive.ubuntu.com/ubuntu focal-backports InRelease [108 kB]
Get:4 http://security.ubuntu.com/ubuntu focal-security InRelease [114 kB]
Get:5 http://br.archive.ubuntu.com/ubuntu focal-updates/main amd64 Packages [1.7
94 kB]
Get:6 http://security.ubuntu.com/ubuntu focal-security/main amd64 Packages [1.45
3 kB]
Get:7 http://br.archive.ubuntu.com/ubuntu focal-updates/main i386 Packages [652
kB]
Get:8 http://br.archive.ubuntu.com/ubuntu focal-updates/main Translation-en [330
kB]
Get:9 http://br.archive.ubuntu.com/ubuntu focal-updates/main amd64 DEP-11 Metada
ta [278 kB]
Get:10 http://security.ubuntu.com/ubuntu focal-security/main i386 Packages [434
kB]
Get:11 http://br.archive.ubuntu.com/ubuntu focal-updates/main amd64 c-n-f Metada
ta [15,2 kB]
Get:12 http://br.archive.ubuntu.com/ubuntu focal-updates/restricted i386 Package
s [24,3 kB]
Get:13 http://br.archive.ubuntu.com/ubuntu focal-updates/restricted amd64 Packag
es [976 kB]
Get:14 http://security.ubuntu.com/ubuntu focal-security/main Translation-en [250
```

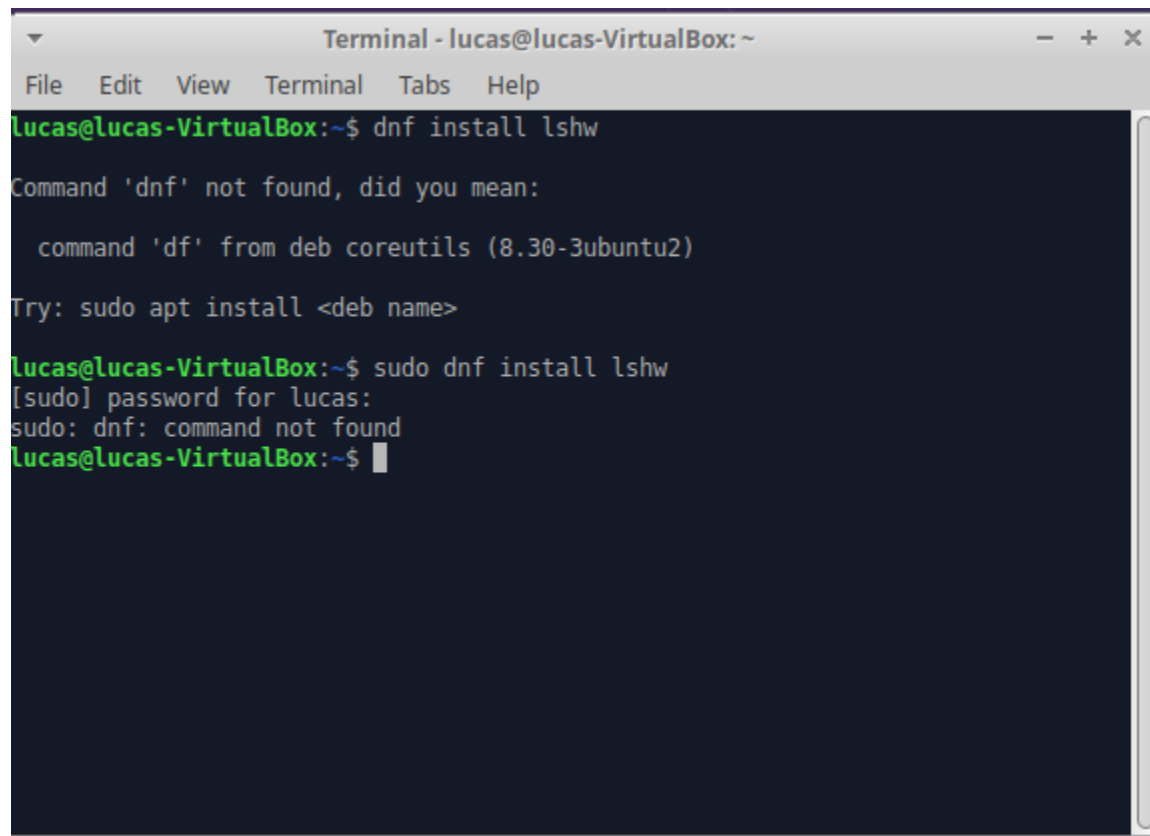

Comando: apt list --upgradable

```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ apt list --upgradable
Listing... Done
alsa-ucm-conf/focal-updates,focal-updates 1.2.2-1ubuntu0.13 all [upgradable from: 1.2.2-1ubuntu0.11]
appport-gtk/focal-updates,focal-updates,focal-security,focal-security 2.20.11-0ubuntu27.24 all [upgradable from: 2.20.11-0ubuntu27.21]
appport/focal-updates,focal-updates,focal-security,focal-security 2.20.11-0ubuntu27.24 all [upgradable from: 2.20.11-0ubuntu27.21]
apt-utils/focal-updates 2.0.8 amd64 [upgradable from: 2.0.6]
apt/focal-updates 2.0.8 amd64 [upgradable from: 2.0.6]
bash/focal-updates,focal-security 5.0-6ubuntu1.2 amd64 [upgradable from: 5.0-6ubuntu1.1]
bind9-dnsutils/focal-updates,focal-security 1:9.16.1-0ubuntu2.10 amd64 [upgradable from: 1:9.16.1-0ubuntu2.9]
bind9-host/focal-updates,focal-security 1:9.16.1-0ubuntu2.10 amd64 [upgradable from: 1:9.16.1-0ubuntu2.9]
bind9-libs/focal-updates,focal-security 1:9.16.1-0ubuntu2.10 amd64 [upgradable from: 1:9.16.1-0ubuntu2.9]
bolt/focal-updates 0.9.1-2-ubuntu20.04.1 amd64 [upgradable from: 0.8-4ubuntu1]
command-not-found/focal-updates,focal-updates 20.04.6 all [upgradable from: 20.04.5]
dbus-user-session/focal-updates,focal-security 1.12.16-2ubuntu2.2 amd64 [upgradable from: 1.12.16-2ubuntu2.1]
dbus-x11/focal-updates,focal-security 1.12.16-2ubuntu2.2 amd64 [upgradable from:
```

Comando: apt upgrade

```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ apt upgrade
E: Could not open lock file /var/lib/dpkg/lock-frontent - open (13: Permission denied)
E: Unable to acquire the dpkg frontend lock (/var/lib/dpkg/lock-frontent), are you root?
lucas@lucas-VirtualBox:~$ sudo apt upgrade
Reading package lists... Done
Building dependency tree
Reading state information... Done
Calculating upgrade... Done
The following package was automatically installed and is no longer required:
  libfwupdplugin1
Use 'sudo apt autoremove' to remove it.
The following NEW packages will be installed:
  libfwupdplugin5 libopengl0
The following packages will be upgraded:
  alsa-ucm-conf appport appport-gtk apt apt-utils bash bind9-dnsutils bind9-host
  bind9-libs bolt command-not-found dbus dbus-user-session dbus-x11
  distro-info-data dnsmasq-base firefox fonts-opensymbol fwupd fwupd-signed
  gir1.2-gtk-3.0 gir1.2-javascriptcoregtk-4.0 gir1.2-polkit-1.0
  gir1.2-webkit2-4.0 gtk-update-icon-cache gvfs gvfs-backends gvfs-common
  gvfs-daemons gvfs-fuse gvfs-libs gzip klibc-utils libapt-pkg6.0 libarchive13
  libc-bin libcurl3-gnutls libcurl4 libdbus-1-3 libdrm-amdgpu1 libdrm-common
  libdrm-intel1 libdrm-nouveau2 libdrm-radeon1 libdrm2 libegl-mesa0 libegl1
```

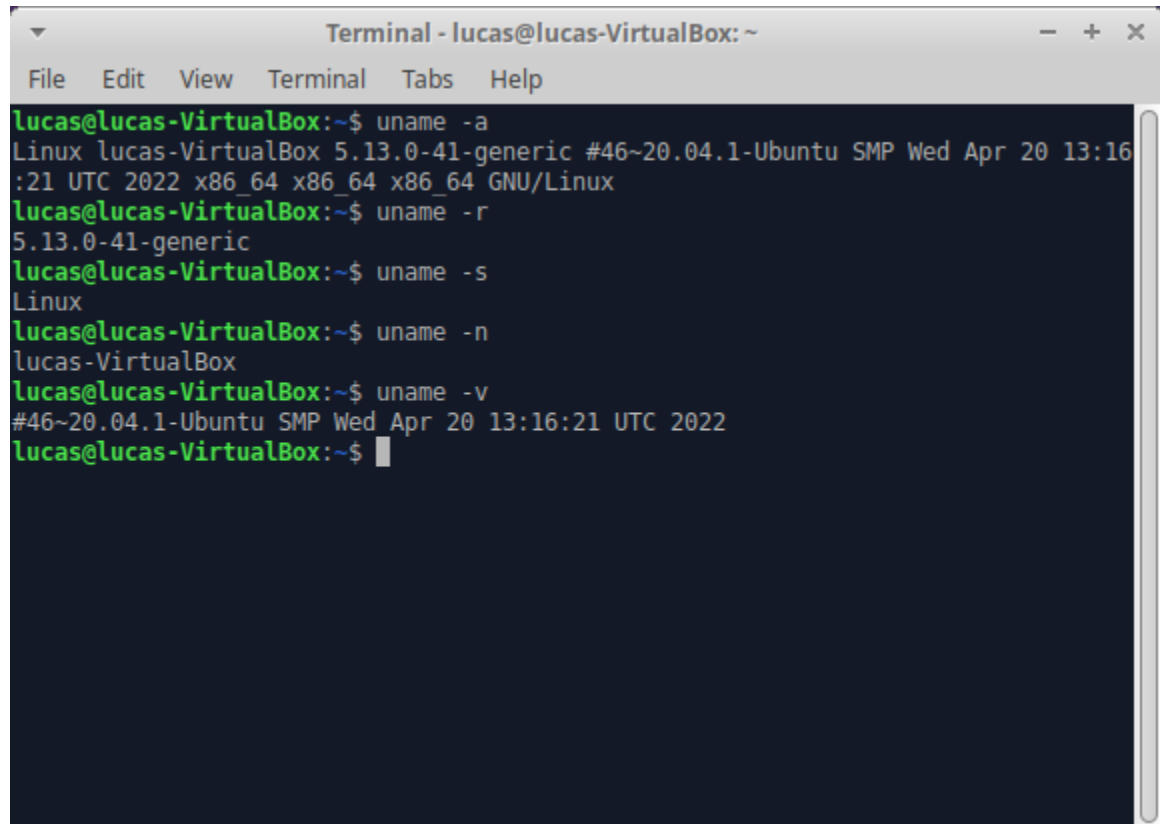
Comando: dnf install lshw

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~" with a menu bar (File, Edit, View, Terminal, Tabs, Help) and window controls. The terminal shows the command "dnf install lshw" being entered. The output indicates that "dnf" is not found and suggests using "df" from the "deb coreutils" package. It then prompts the user to try "sudo apt install <deb name>". The user then enters "sudo dnf install lshw", which prompts for a password and then reports "dnf: command not found".

```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ dnf install lshw
Command 'dnf' not found, did you mean:
  command 'df' from deb coreutils (8.30-3ubuntu2)
Try: sudo apt install <deb name>
lucas@lucas-VirtualBox:~$ sudo dnf install lshw
[sudo] password for lucas:
sudo: dnf: command not found
lucas@lucas-VirtualBox:~$
```

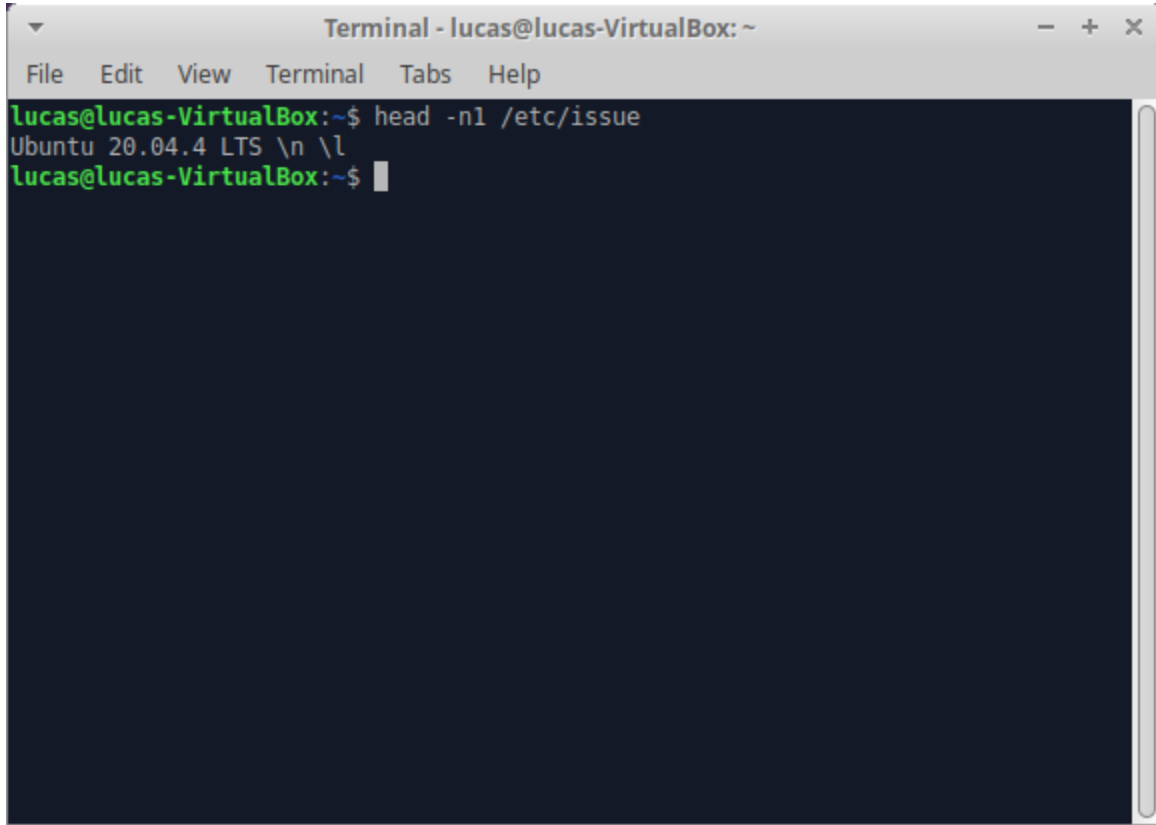
Capítulo 14

Comando: `uname`

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The terminal shows the execution of the 'uname' command with various flags. The output is as follows:

```
lucas@lucas-VirtualBox:~$ uname -a
Linux lucas-VirtualBox 5.13.0-41-generic #46~20.04.1-Ubuntu SMP Wed Apr 20 13:16:21 UTC 2022 x86_64 x86_64 x86_64 GNU/Linux
lucas@lucas-VirtualBox:~$ uname -r
5.13.0-41-generic
lucas@lucas-VirtualBox:~$ uname -s
Linux
lucas@lucas-VirtualBox:~$ uname -n
lucas-VirtualBox
lucas@lucas-VirtualBox:~$ uname -v
#46~20.04.1-Ubuntu SMP Wed Apr 20 13:16:21 UTC 2022
lucas@lucas-VirtualBox:~$
```

Comando: head -n1 /etc/issue

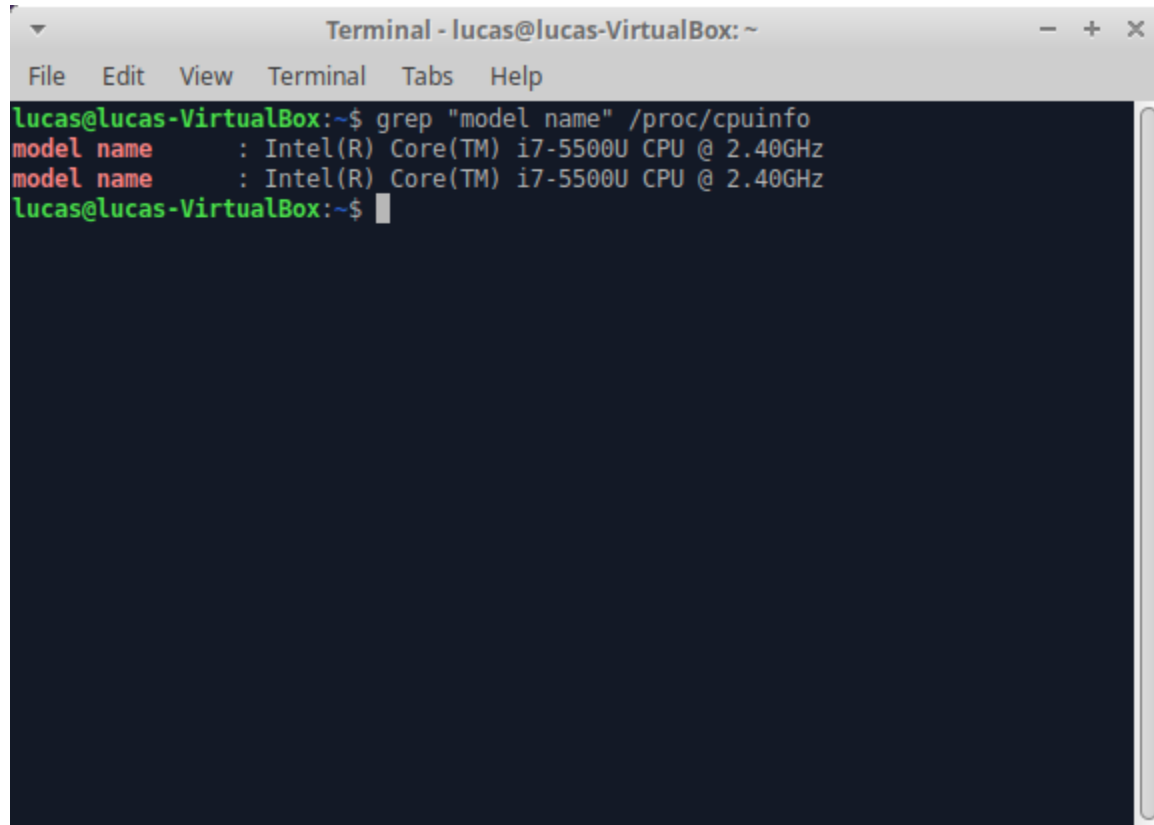
A screenshot of a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows the command "lucas@lucas-VirtualBox:~\$ head -n1 /etc/issue" being executed, followed by the output "Ubuntu 20.04.4 LTS \n \l". The prompt "lucas@lucas-VirtualBox:~\$" is shown again on the next line with a cursor. A vertical scrollbar is visible on the right side of the terminal window.

```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ head -n1 /etc/issue
Ubuntu 20.04.4 LTS \n \l
lucas@lucas-VirtualBox:~$
```

Comando: lscpu

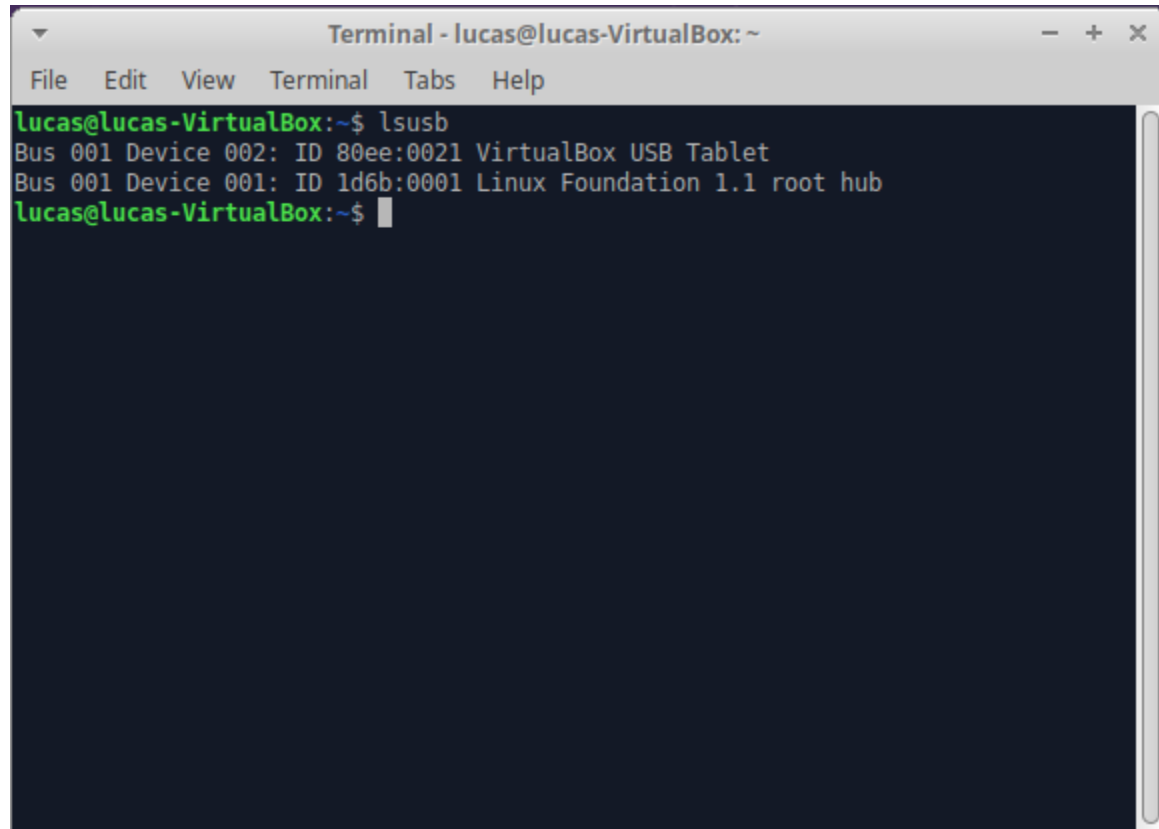
```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ lscpu
Architecture:          x86_64
CPU op-mode(s):        32-bit, 64-bit
Byte Order:             Little Endian
Address sizes:          39 bits physical, 48 bits virtual
CPU(s):                 2
On-line CPU(s) list:    0,1
Thread(s) per core:     1
Core(s) per socket:     2
Socket(s):              1
NUMA node(s):           1
Vendor ID:              GenuineIntel
CPU family:             6
Model:                  61
Model name:             Intel(R) Core(TM) i7-5500U CPU @ 2.40GHz
Stepping:               4
CPU MHz:                2394.454
BogoMIPS:               4788.90
Hypervisor vendor:      KVM
Virtualization type:    full
L1d cache:              64 KiB
L1i cache:              64 KiB
L2 cache:               512 KiB
L3 cache:               8 MiB
```

Comando: `grep "model name" /proc/cpuinfo`

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~" with a menu bar containing "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal shows the command `lucas@lucas-VirtualBox:~$ grep "model name" /proc/cpuinfo` and its output: `model name : Intel(R) Core(TM) i7-5500U CPU @ 2.40GHz` on two lines. The prompt `lucas@lucas-VirtualBox:~$` is shown again on the third line with a cursor.

```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ grep "model name" /proc/cpuinfo
model name      : Intel(R) Core(TM) i7-5500U CPU @ 2.40GHz
model name      : Intel(R) Core(TM) i7-5500U CPU @ 2.40GHz
lucas@lucas-VirtualBox:~$
```

Comando: lsusb

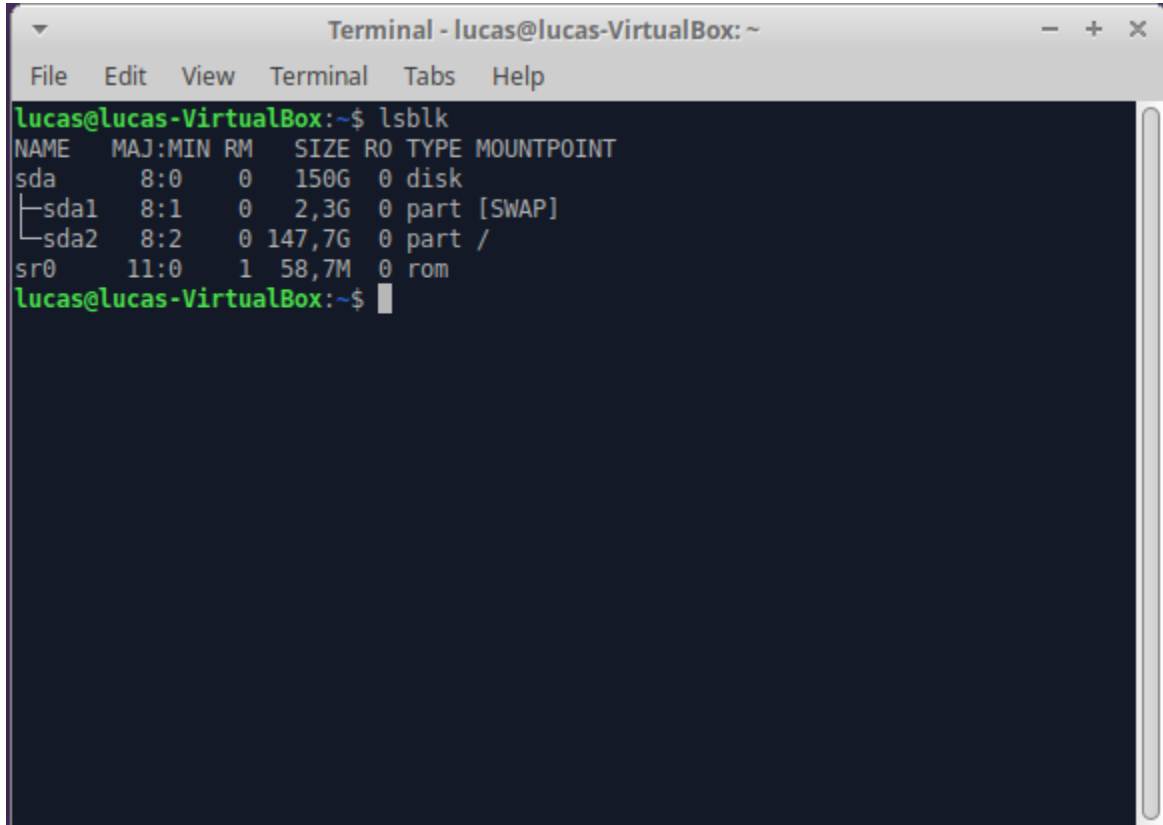
A screenshot of a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows the command "lsusb" being executed, resulting in two lines of output: "Bus 001 Device 002: ID 80ee:0021 VirtualBox USB Tablet" and "Bus 001 Device 001: ID 1d6b:0001 Linux Foundation 1.1 root hub". The prompt "lucas@lucas-VirtualBox:~\$" is visible at the end of each line, with a cursor at the end of the second line.

```
lucas@lucas-VirtualBox:~$ lsusb
Bus 001 Device 002: ID 80ee:0021 VirtualBox USB Tablet
Bus 001 Device 001: ID 1d6b:0001 Linux Foundation 1.1 root hub
lucas@lucas-VirtualBox:~$
```


Comando: lspci

```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ lspci
00:00.0 Host bridge: Intel Corporation 440FX - 82441FX PMC [Natoma] (rev 02)
00:01.0 ISA bridge: Intel Corporation 82371SB PIIX3 ISA [Natoma/Triton II]
00:01.1 IDE interface: Intel Corporation 82371AB/EB/MB PIIX4 IDE (rev 01)
00:02.0 VGA compatible controller: VMware SVGA II Adapter
00:03.0 Ethernet controller: Intel Corporation 82540EM Gigabit Ethernet Controller (rev 02)
00:04.0 System peripheral: InnoTek Systemberatung GmbH VirtualBox Guest Service
00:05.0 Multimedia audio controller: Intel Corporation 82801AA AC'97 Audio Controller (rev 01)
00:06.0 USB controller: Apple Inc. KeyLargo/Intrepid USB
00:07.0 Bridge: Intel Corporation 82371AB/EB/MB PIIX4 ACPI (rev 08)
00:0d.0 SATA controller: Intel Corporation 82801HM/HEM (ICH8M/ICH8M-E) SATA Controller [AHCI mode] (rev 02)
lucas@lucas-VirtualBox:~$
```

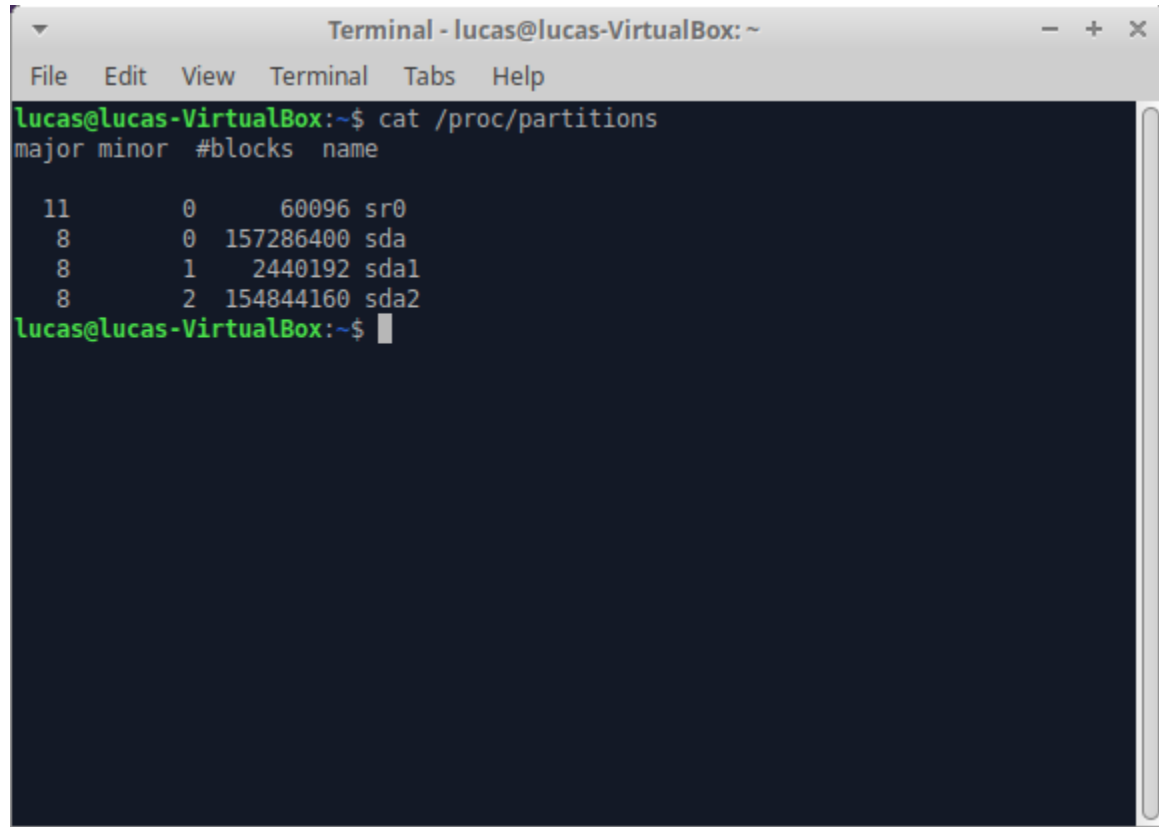
Comando: lsblk

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~" with a menu bar containing "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal shows the command "lsblk" being executed. The output is a table of block devices. The prompt "lucas@lucas-VirtualBox:~\$" is shown in green. A vertical scrollbar is visible on the right side of the terminal window.

```
lucas@lucas-VirtualBox:~$ lsblk
NAME        MAJ:MIN RM   SIZE RO TYPE MOUNTPOINT
sda          8:0    0  150G  0 disk
├─sda1       8:1    0   2,3G  0 part [SWAP]
└─sda2       8:2    0 147,7G  0 part /
sr0         11:0    1   58,7M  0 rom
```

lucas@lucas-VirtualBox:~\$

Comando: cat /proc/partitions



A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~" with a menu bar containing "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal shows the command "cat /proc/partitions" being executed. The output is a table of disk partitions with columns for major, minor, #blocks, and name. The partitions listed are sr0, sda, sda1, and sda2.

```
lucas@lucas-VirtualBox:~$ cat /proc/partitions
major minor  #blocks  name

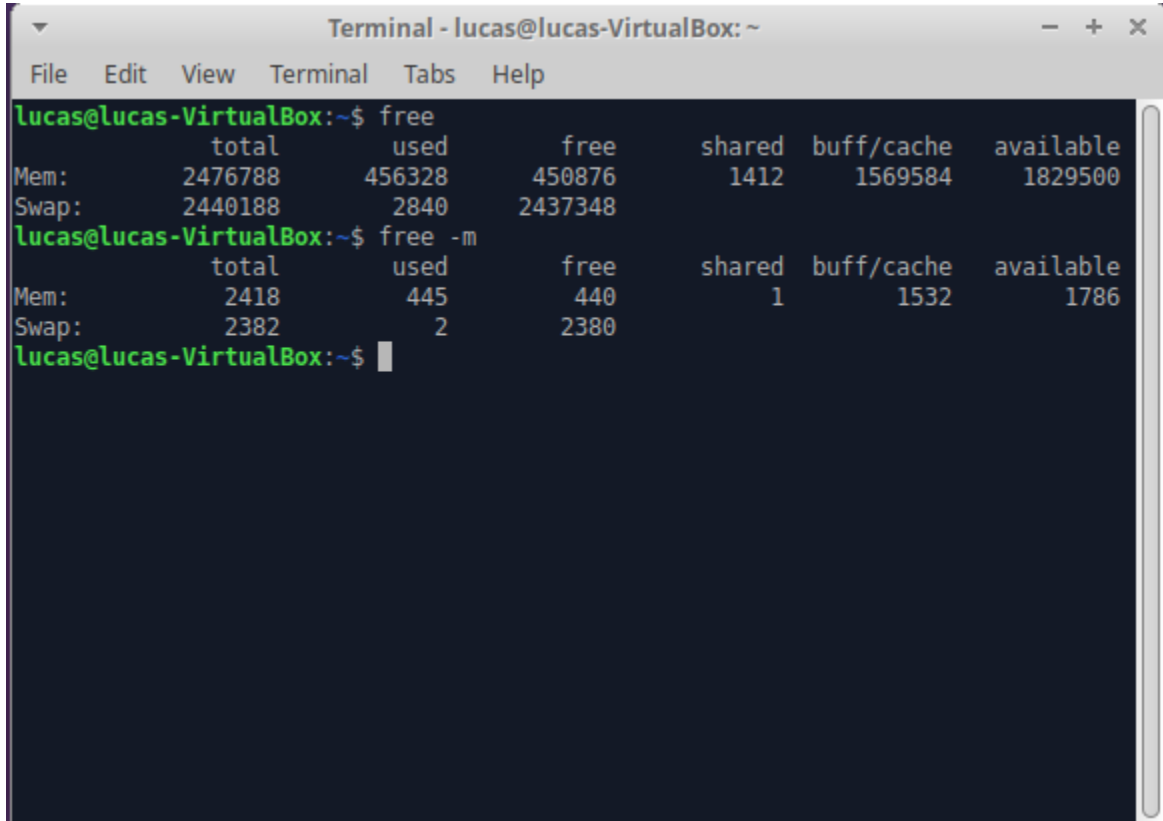
 11        0     60096  sr0
   8        0  157286400  sda
   8        1   2440192  sda1
   8        2  154844160  sda2
lucas@lucas-VirtualBox:~$
```

Comando: fdisk -l

```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ sudo fdisk -l
[sudo] password for lucas:
Disk /dev/sda: 150 GiB, 161061273600 bytes, 314572800 sectors
Disk model: VBOX HARDDISK
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disklabel type: dos
Disk identifier: 0x6c1cf350

Device      Boot  Start      End  Sectors  Size Id Type
/dev/sda1                2048   4882431   4880384    2,3G 82 Linux swap / Solaris
/dev/sda2  *    4882432 314570751 309688320 147,7G 83 Linux
lucas@lucas-VirtualBox:~$
```

Comando: free

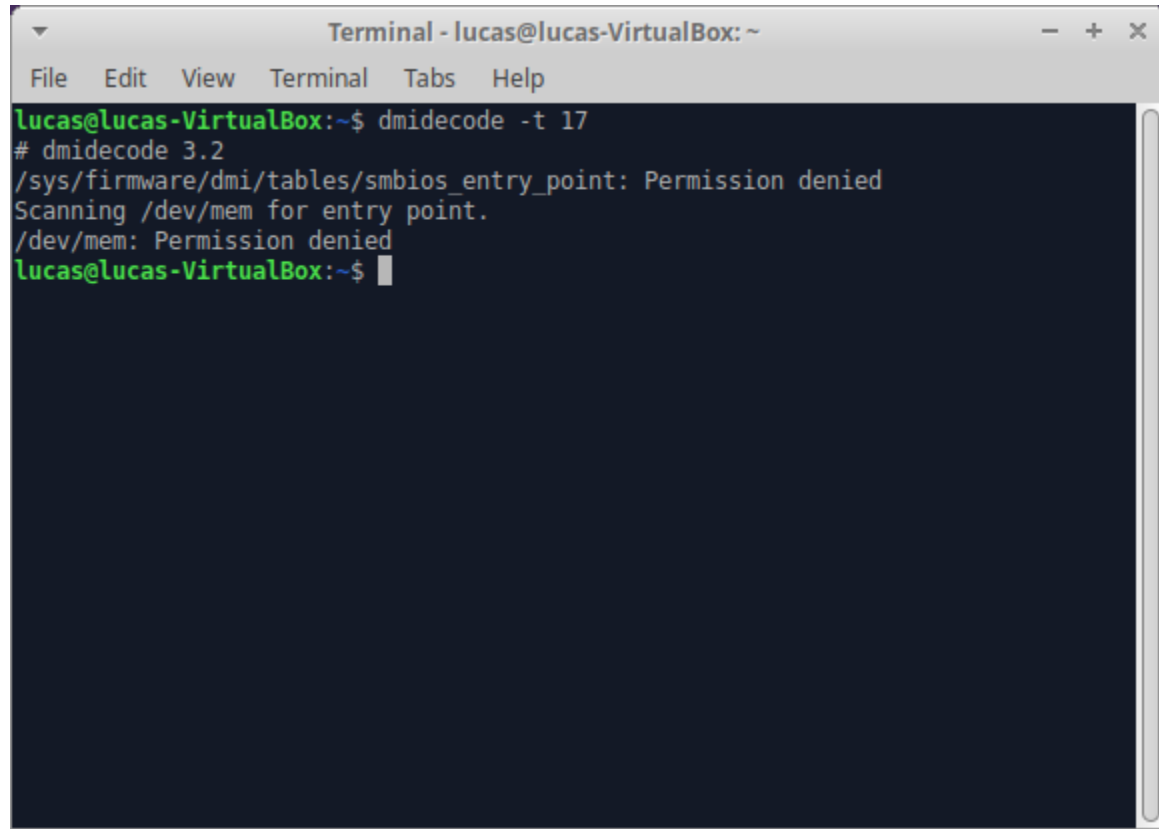


A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The terminal shows the output of the 'free' and 'free -m' commands. The first output shows memory usage in kilobytes, and the second shows it in megabytes.

```
lucas@lucas-VirtualBox:~$ free
              total        used        free      shared  buff/cache   available
Mem:          2476788        456328        450876          1412       1569584       1829500
Swap:          2440188           2840       2437348

lucas@lucas-VirtualBox:~$ free -m
              total        used        free      shared  buff/cache   available
Mem:              2418          445          440           1         1532         1786
Swap:              2382           2         2380
```

Comando: dmidecode -t 17

A terminal window titled "Terminal - lucas@lucas-VirtualBox: ~" with a menu bar containing "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal output shows the command "dmidecode -t 17" being executed. The output includes the version "# dmidecode 3.2", a warning about a denied permission for the SMBIOS entry point, and a message about scanning /dev/mem. The prompt returns to "lucas@lucas-VirtualBox:~\$".

```
lucas@lucas-VirtualBox:~$ dmidecode -t 17
# dmidecode 3.2
/sys/firmware/dmi/tables/smbios_entry_point: Permission denied
Scanning /dev/mem for entry point.
/dev/mem: Permission denied
lucas@lucas-VirtualBox:~$
```

Comando: hwinfo

```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help

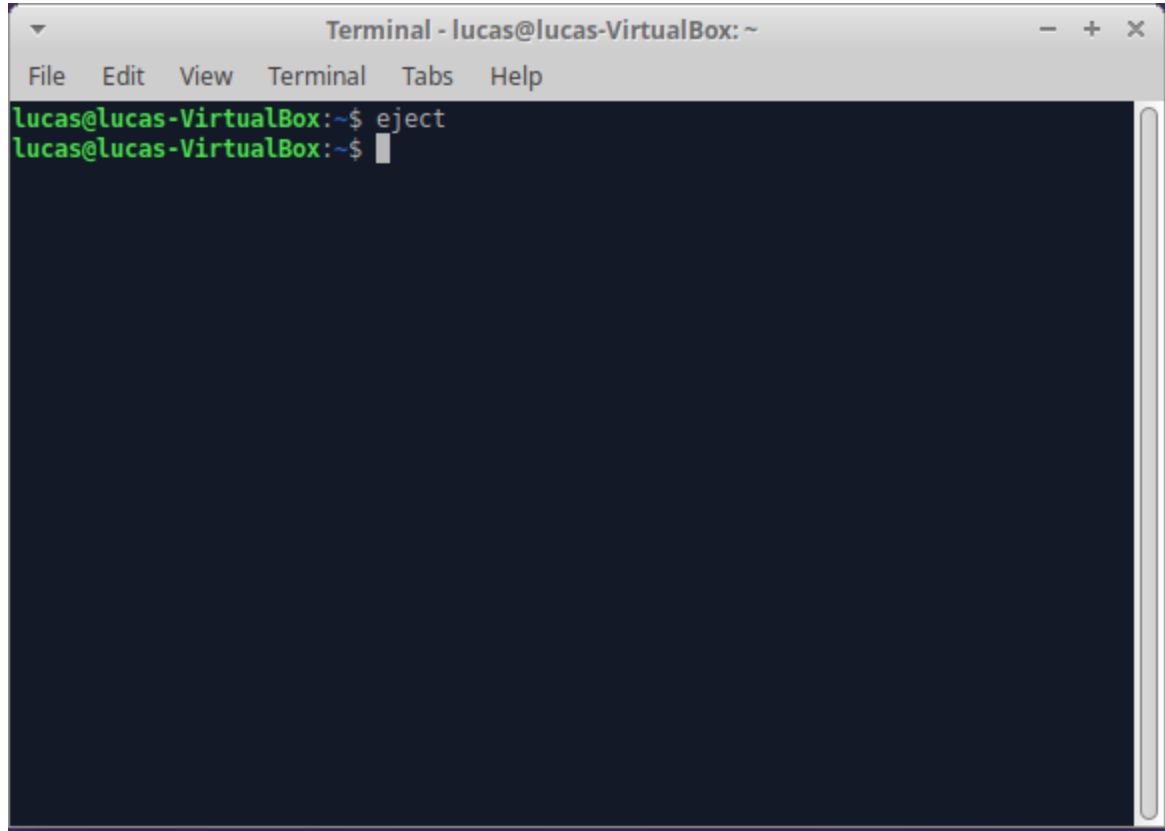
SysFS ID: /class/net/lo
Hardware Class: network interface
Model: "Loopback network interface"
Device File: lo
Link detected: yes
Config Status: cfg=new, avail=yes, need=no, active=unknown

32: None 00.0: 10701 Ethernet
[Created at net.126]
Unique ID: wbsj.ndpeucax6V1
Parent ID: Fybr.GkSpXDNdaaB
SysFS ID: /class/net/enp0s3
SysFS Device Link: /devices/pci0000:00/0000:00:03.0
Hardware Class: network interface
Model: "Ethernet network interface"
Driver: "e1000"
Driver Modules: "e1000"
Device File: enp0s3
HW Address: 08:00:27:06:27:4d
Permanent HW Address: 08:00:27:06:27:4d
Link detected: yes
Config Status: cfg=new, avail=yes, need=no, active=unknown
Attached to: #15 (Ethernet controller)
lucas@lucas-VirtualBox:~$
```

Comando: hwinfo --short

```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ sudo hwinfo --short
cpu:
    Intel(R) Core(TM) i7-5500U CPU @ 2.40GHz, 2394 MHz
    Intel(R) Core(TM) i7-5500U CPU @ 2.40GHz, 2394 MHz
keyboard:
    /dev/input/event2    AT Translated Set 2 keyboard
mouse:
    /dev/input/mice      VirtualBox USB Tablet
    /dev/input/mice      Mouse
graphics card:
    VMware VMWARE0405
sound:
    Intel 82801AA AC'97 Audio Controller
storage:
    Intel 82801HM/HEM (ICH8M/ICH8M-E) SATA Controller [AHCI m
ode]
    Intel 82371AB/EB/MB PIIX4 IDE
network:
    enp0s3               Intel PRO/1000 MT Desktop Adapter
    /dev/input/event6    OSA Express Network card
network interface:
    lo                   Loopback network interface
    enp0s3               Ethernet network interface
disk:
```


Comando: eject

A screenshot of a terminal window titled "Terminal - lucas@lucas-VirtualBox: ~". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows the prompt "lucas@lucas-VirtualBox:~\$" followed by the command "eject" on the next line. The prompt "lucas@lucas-VirtualBox:~\$" appears again on the third line, followed by a white cursor block. A vertical scrollbar is visible on the right side of the terminal area.

```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help
lucas@lucas-VirtualBox:~$ eject
lucas@lucas-VirtualBox:~$
```

Comando: `wget --recursive $SITE_ANDRESS`

```
Terminal - lucas@lucas-VirtualBox: ~
File Edit View Terminal Tabs Help

lucas@lucas-VirtualBox:~$ wget --recursive www.google.com
--2022-05-18 22:22:34-- http://www.google.com/
Resolving www.google.com (www.google.com)... 142.250.79.196, 2800:3f0:4001:808::
2004
Connecting to www.google.com (www.google.com)|142.250.79.196|:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: unspecified [text/html]
Saving to: 'www.google.com/index.html'

www.google.com/inde [ <=> ] 14,18K --.-KB/s in 0,001s

2022-05-18 22:22:34 (14,3 MB/s) - 'www.google.com/index.html' saved [14518]

Loading robots.txt; please ignore errors.
--2022-05-18 22:22:34-- http://www.google.com/robots.txt
Reusing existing connection to www.google.com:80.
HTTP request sent, awaiting response... 200 OK
Length: 7221 (7,1K) [text/plain]
Saving to: 'www.google.com/robots.txt'

www.google.com/robo 100%[=====>] 7,05K --.-KB/s in 0,002s

2022-05-18 22:22:34 (3,21 MB/s) - 'www.google.com/robots.txt' saved [7221/7221]
```