



**UNIVERSIDADE FEDERAL DE UBERLÂNDIA**  
**FACULDADE DE ENGENHARIA MECÂNICA**  
**Curso de Graduação em Engenharia Mecatrônica**



**Sistemas Digitais para Mecatrônica**  
**FEELT49081**

**Tarefa da Semana 01 - Utilização do Linux**  
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Hericles Felipe Ferraz - 11811EMT022

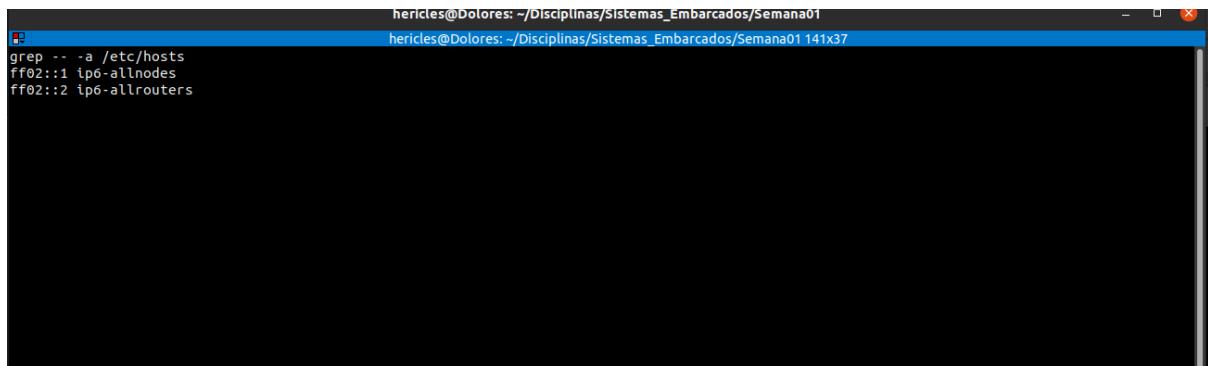
**Uberlândia, 12 de Deembro de 2021**

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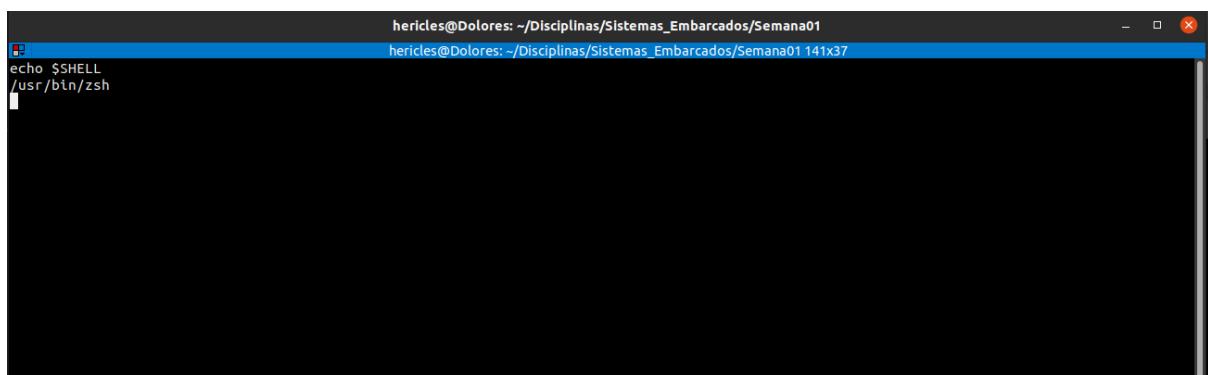
# 1. Capítulo 1

```
grep -- -a /etc/hosts
```



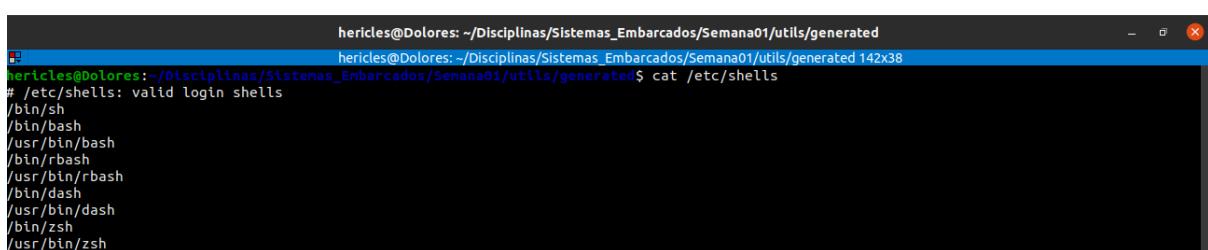
```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
grep -- -a /etc/hosts
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters
```

```
echo $SHELL
```



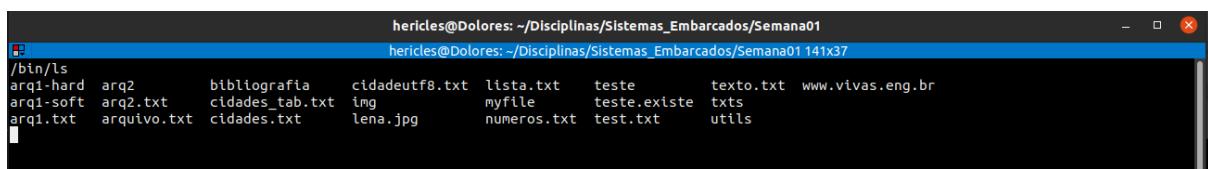
```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
echo $SHELL
/usr/bin/zsh
```

```
cat /etc/shells
```



```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01/utils/generated
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01/utils/generated 142x38
# /etc/shells: valid login shells
/bin/sh
/bin/bash
/usr/bin/bash
/bin/rbash
/usr/bin/rbash
/bin/dash
/usr/bin/dash
/bin/zsh
/usr/bin/zsh
```

```
/bin/ls
```



```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
/bin/ls
arq1-hard arq2 bibliografia cidadeutf8.txt lista.txt teste texto.txt www.vivas.eng.br
arq1-soft arq2.txt cidades_tab.txt img myfile teste.existe txts
arq1.txt arquivo.txt cidades.txt lena.jpg numeros.txt test.txt utils
```

```
clear
```

A screenshot of a terminal window titled "hericles@Dolores: ~/Disciplinas/Sistemas\_Embarcados/Semana01". The window shows a completely blank black screen, indicating that the "clear" command has been successfully executed.

```
echo teste ou
```

A screenshot of a terminal window titled "hericles@Dolores: ~/Disciplinas/Sistemas\_Embarcados/Semana01". The command "echo teste ou" was entered, resulting in the output "teste ou" displayed on the screen.

```
echo 'teste' ou
```

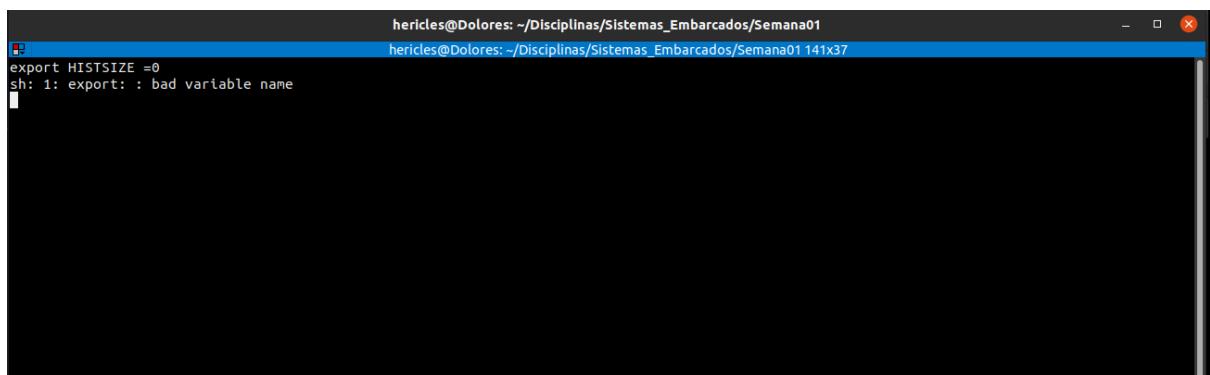
A screenshot of a terminal window titled "hericles@Dolores: ~/Disciplinas/Sistemas\_Embarcados/Semana01". The command "echo 'teste' ou" was entered, resulting in the output "teste ou" displayed on the screen.

```
echo -e "string1\tstring2\nstring3"
```

A screenshot of a terminal window titled "hericles@Dolores: ~/Disciplinas/Sistemas\_Embarcados/Semana01/utils/generated". The command "echo -e "string1\tstring2\nstring3"" was entered, resulting in the output "string1 string2" followed by a new line and "string3" displayed on the screen.

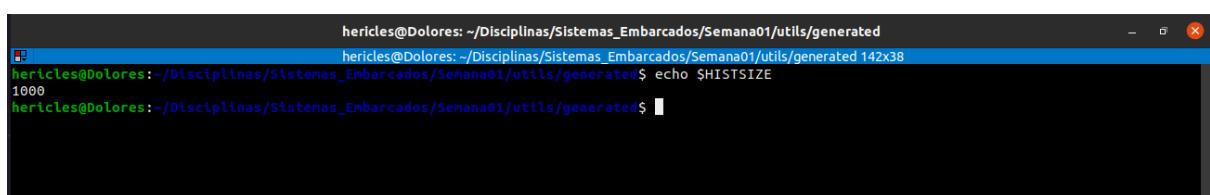
```
export HISTSIZE =100
```

```
export HISTSIZE =0
```



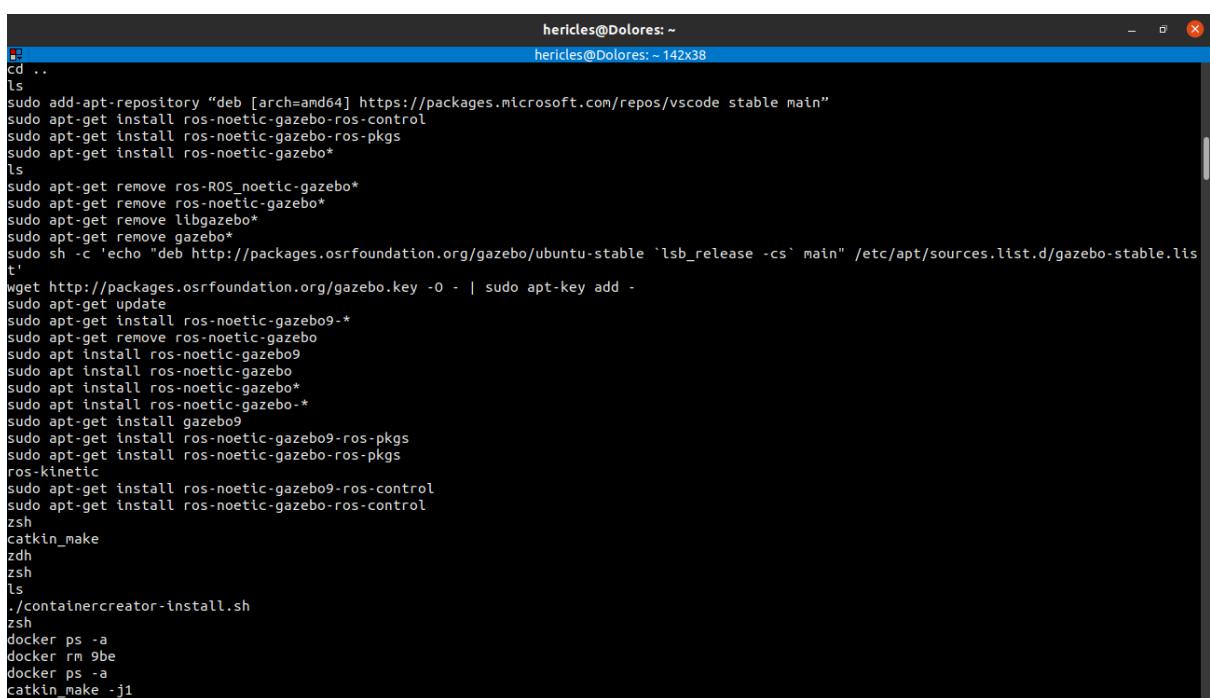
A screenshot of a terminal window titled "hericles@Dolores: ~/Disciplinas/Sistemas\_Embarcados/Semana01". The window shows the command "export HISTSIZE =0" being typed. The terminal returns an error message: "sh: 1: export: : bad variable name".

```
echo $HISTSIZE
```



A screenshot of a terminal window titled "hericles@Dolores: ~/Disciplinas/Sistemas\_Embarcados/Semana01/utils/generated". The command "echo \$HISTSIZE" is run, and the output is "1000".

```
cat /.bash_history
```

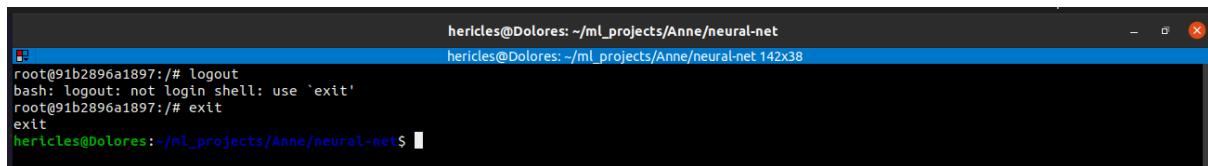


A screenshot of a terminal window titled "hericles@Dolores: ~". The window displays a very long history of commands run by the user, including system updates, package installations, and configuration changes. The history starts with "cd .." and ends with "catkin\_make -j1".

## 2. Capítulo 2

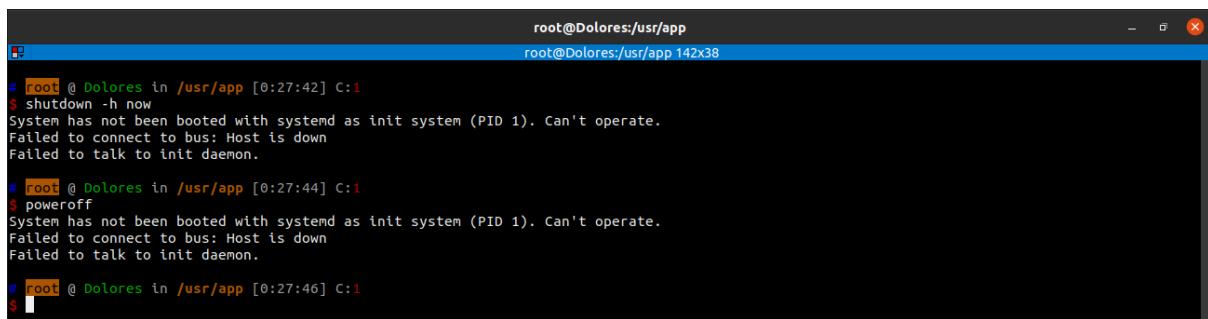
Os comandos deste capítulo foram efetuados dentro do docker, para não ser necessário realmente desligar ou reiniciar o computador. A mensagem de (PID 1) apresenta apenas diz que o computador não pode ser reiniciado pois não foi iniciado por aquele sistema.

```
logout  
exit
```



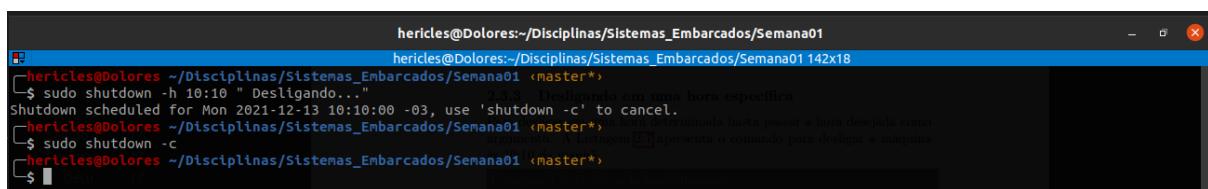
```
hericles@Dolores: ~/ml_projects/Anne/neural-net  
hericles@Dolores: ~/ml_projects/Anne/neural-net 142x38  
root@91b2896a1897:/# logout  
bash: logout: not login shell: use 'exit'  
root@91b2896a1897:/# exit  
exit  
hericles@Dolores:~/ml_projects/Anne/neural-net$
```

```
shutdown -h now  
poweroff
```



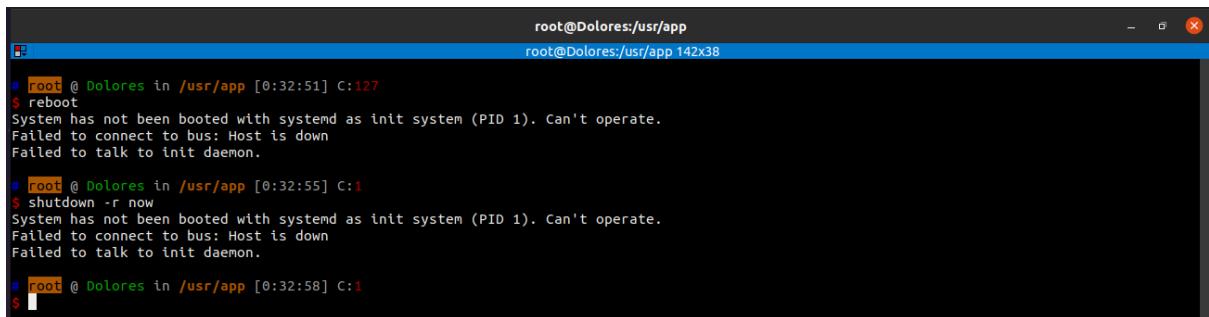
```
root@Dolores:/usr/app  
root@Dolores:/usr/app 142x38  
# root @ Dolores in /usr/app [0:27:42] C:  
$ shutdown -h now  
System has not been booted with systemd as init system (PID 1). Can't operate.  
Failed to connect to bus: Host is down  
Failed to talk to init daemon.  
# root @ Dolores in /usr/app [0:27:44] C:  
$ poweroff  
System has not been booted with systemd as init system (PID 1). Can't operate.  
Failed to connect to bus: Host is down  
Failed to talk to init daemon.  
# root @ Dolores in /usr/app [0:27:46] C:  
$
```

```
sudo shutdown -h 10:10 " Desligando..."  
sudo shutdown -c
```



```
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01  
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01 142x18  
hericles@Dolores ~/Disciplinas/Sistemas_Embarcados/Semana01 <master>  
$ sudo shutdown -h 10:10 " Desligando..."  
Shutdown scheduled for Mon 2021-12-13 10:10:00 -03, use 'shutdown -c' to cancel.  
hericles@Dolores ~/Disciplinas/Sistemas_Embarcados/Semana01 <master>  
$ sudo shutdown -c  
hericles@Dolores ~/Disciplinas/Sistemas_Embarcados/Semana01 <master>  
$
```

```
reboot  
shutdown -r now
```



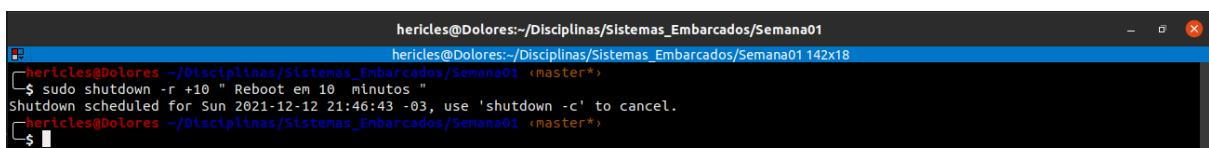
A terminal window titled "root@Dolores:/usr/app". The title bar also shows "root@Dolores:/usr/app 142x38". The terminal contains the following text:

```
# root @ Dolores in /usr/app [0:32:51] C:127
$ reboot
System has not been booted with systemd as init system (PID 1). Can't operate.
Failed to connect to bus: Host is down
Failed to talk to init daemon.

# root @ Dolores in /usr/app [0:32:55] C:1
$ shutdown -r now
System has not been booted with systemd as init system (PID 1). Can't operate.
Failed to connect to bus: Host is down
Failed to talk to init daemon.

# root @ Dolores in /usr/app [0:32:58] C:1
$
```

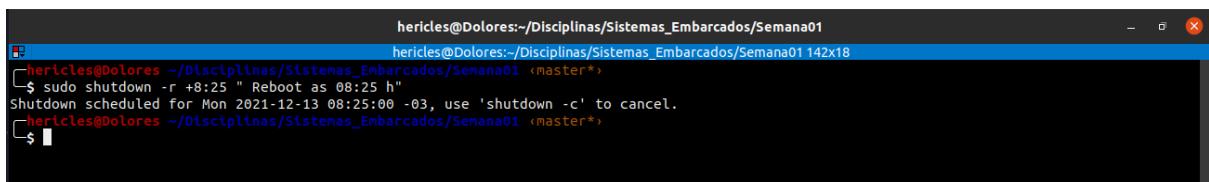
```
sudo shutdown -r +10 " Reboot em 10 minutos "
```



A terminal window titled "hericles@Dolores:~/Disciplinas/Sistemas\_Embarcados/Semana01". The title bar also shows "hericles@Dolores:~/Disciplinas/Sistemas\_Embarcados/Semana01 142x18". The terminal contains the following text:

```
[hericles@Dolores ~/Disciplinas/Sistemas_Embarcados/Semana01] hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01 142x18
[hericles@Dolores ~/Disciplinas/Sistemas_Embarcados/Semana01] $ sudo shutdown -r +10 " Reboot em 10 minutos "
Shutdown scheduled for Sun 2021-12-12 21:46:43 -03, use 'shutdown -c' to cancel.
[hericles@Dolores ~/Disciplinas/Sistemas_Embarcados/Semana01] hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01 142x18
[hericles@Dolores ~/Disciplinas/Sistemas_Embarcados/Semana01] $
```

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

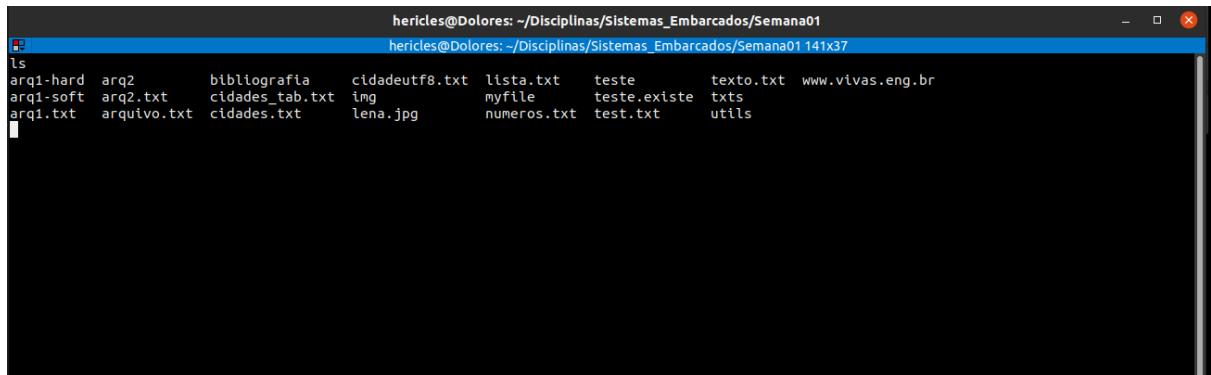


A terminal window titled "hericles@Dolores:~/Disciplinas/Sistemas\_Embarcados/Semana01". The title bar also shows "hericles@Dolores:~/Disciplinas/Sistemas\_Embarcados/Semana01 142x18". The terminal contains the following text:

```
[hericles@Dolores ~/Disciplinas/Sistemas_Embarcados/Semana01] hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01 142x18
[hericles@Dolores ~/Disciplinas/Sistemas_Embarcados/Semana01] $ sudo shutdown -r +8:25 " Reboot as 08:25 h"
Shutdown scheduled for Mon 2021-12-13 08:25:00 -03, use 'shutdown -c' to cancel.
[hericles@Dolores ~/Disciplinas/Sistemas_Embarcados/Semana01] hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01 142x18
[hericles@Dolores ~/Disciplinas/Sistemas_Embarcados/Semana01] $
```

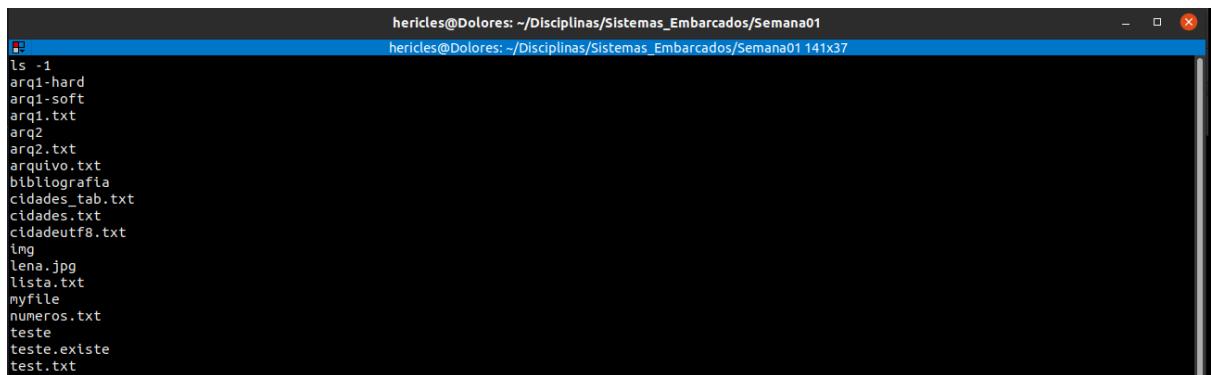
### 3. Capítulo 3

```
ls
```



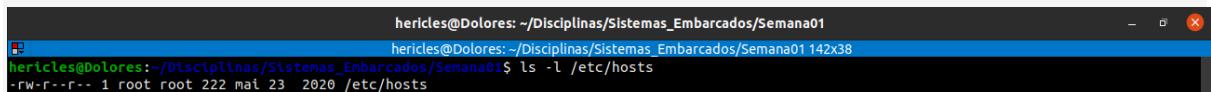
```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
ls
arq1-hard  arq2      bibliografia    cidadeutf8.txt  lista.txt   teste      texto.txt  www.vivas.eng.br
arq1-soft  arq2.txt   cidades_tab.txt  img          myfile     teste.existe  txts
arq1.txt   arquivo.txt cidades.txt     lena.jpg     numeros.txt  test.txt   utils
```

```
ls -l
```



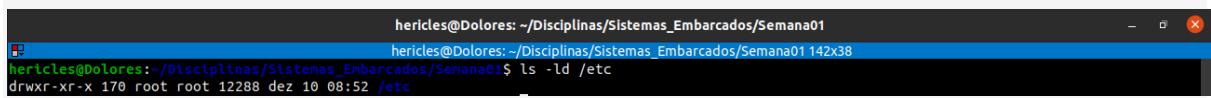
```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
ls -l
arq1-hard
arq1-soft
arq1.txt
arq2
arq2.txt
arquivo.txt
bibliografia
cidades_tab.txt
cidades.txt
cidadeutf8.txt
img
lena.jpg
lista.txt
myfile
numeros.txt
teste
teste.existe
test.txt
```

```
ls -l /etc/hosts
```



```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 142x38
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01$ ls -l /etc/hosts
-rw-r--r-- 1 root root 222 Mai 23 2020 /etc/hosts
```

```
ls -ld /etc
```



```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 142x38
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01$ ls -ld /etc
drwxr-xr-x 170 root root 12288 dez 10 08:52 /etc
```

```
ls -ld /$HOME/.?*
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01/utils/generated
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01/utils/generated 142x38
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01/utils/generated$ ls -ld /$HOME/.?*
drwxr-xr-x 3 root root 4096 mai 23 2020 //home/hericles/..
drwxrwxr-x 3 hericles hericles 4096 mar 12 2021 //home/hericles/.anaconda
drwxrwxr-x 7 hericles hericles 4096 nov 4 12:23 //home/hericles/.arduiniois
drwxrwxr-x 2 hericles hericles 4096 mar 22 2021 //home/hericles/.aws
-rw----- 1 hericles hericles 13743 dez 9 09:47 //home/hericles/.bash_history
-rw-r--r-- 1 hericles hericles 220 mai 23 2020 //home/hericles/.bash_logout
-rw-r--r-- 1 hericles hericles 4391 jun 10 2021 //home/hericles/.bashrc
drwxr-xr-x 65 hericles hericles 4096 dez 12 03:07 //home/hericles/.cache
drwxrwxr-x 3 hericles hericles 4096 jul 17 17:59 //home/hericles/.cargo
drwxrwxr-x 3 hericles hericles 4096 jun 10 2021 //home/hericles/.cnake
drwxrwxr-x 2 hericles hericles 4096 abr 24 2021 //home/hericles/.conda
-rw-rw-r-- 1 hericles hericles 66 abr 26 2021 //home/hericles/.condarc
drwxr-xr-x 75 hericles hericles 4096 dez 12 18:23 //home/hericles/.config
-rw-rw-r-- 1 hericles hericles 2392 jun 3 2020 //home/hericles/.conkyrc
drwx----- 3 hericles hericles 4096 jul 7 2020 //home/hericles/.dbus
drwxrwxr-x 3 hericles hericles 4096 fev 10 2021 //home/hericles/.designer
drwxr-xr-x 5 hericles hericles 4096 mar 8 2021 //home/hericles/.dia
drwx----- 2 hericles hericles 4096 jan 2 2021 //home/hericles/.docker
drwxrwxr-x 3 hericles hericles 4096 jul 3 2020 //home/hericles/.dotnet
drwxr--r-- 5 hericles hericles 4096 jun 3 2020 //home/hericles/.gazebo
drwx----- 2 hericles hericles 4096 set 2 14:51 //home/hericles/.gconf
drwxrwxr-x 4 hericles hericles 4096 jul 9 2020 //home/hericles/.gitbook
-rw-rw-r-- 1 hericles hericles 163 set 11 21:23 //home/hericles/.gitconfig
drwxrwxr-x 2 hericles hericles 4096 jan 12 2021 //home/hericles/.gitmoji
drwx----- 3 hericles hericles 4096 mai 27 2020 //home/hericles/.gnome
drwx----- 4 hericles hericles 4096 dez 10 18:17 //home/hericles/.gnupg
drwxr--r-- 2 hericles hericles 4096 mai 25 2020 //home/hericles/.ignition
drwxrwxr-x 2 hericles hericles 4096 fev 1 2021 //home/hericles/.imageio
drwxr-xr-x 5 hericles hericles 4096 jun 24 2020 //home/hericles/.ipython
drwxrwxr-x 4 hericles hericles 4096 mar 28 2021 //home/hericles/.java
drwxrwxr-x 3 hericles hericles 4096 mai 28 2020 //home/hericles/.jssc
drwxrwxr-x 2 hericles hericles 4096 dez 8 2020 //home/hericles/.jupyter
drwxrwxr-x 2 hericles hericles 4096 abr 1 2021 //home/hericles/.kaggle
drwxrwxr-x 4 hericles hericles 4096 abr 16 2021 //home/hericles/.keras
drwxrwxr-x 5 hericles hericles 4096 set 27 18:07 //home/hericles/.kite
-rw-rw-r-- 1 hericles hericles 1041 mai 20 2021 //home/hericles/.labelingSettings.pkl
-rw-rw-r-- 1 hericles hericles 1907 jan 24 2021 //home/hericles/.labelmerc
```

```
ls -a | egrep '^\..'
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01$ ls -a | egrep '^\.'
.
..
.screenshot2021-1212_18-05-14-062087.png
.screenshot2021-1212_18-22-23-875247.png
```

```
ls -F
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 142x38
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01$ ls -F
arq1-hard arq2 bibliografia/ cidadeutf8.txt lista.txt teste/ texto.txt www.vivas.eng.br/
arq1-soft@ arq2.txt cidades_tab.txt img/ myfile teste.existe txts/
arq1.txt arquivo.txt cidades.txt lena.jpg numeros.txt test.txt utils/
```

```
ls -s
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
ls -s
total 72
4 arq1-hard 4 arq2      4 bibliografia    4 cidadeutf8.txt 4 lista.txt   4 teste     4 texto.txt 4 www.vivas.eng.br
0 arq1-soft 4 arq2.txt  4 cidades_tab.txt 4 img          0 myfile     0 teste.existe 4 txts
4 arq1.txt   0 arquivo.txt 4 cidades.txt   8 lena.jpg     4 numeros.txt 0 test.txt   4 utils
```

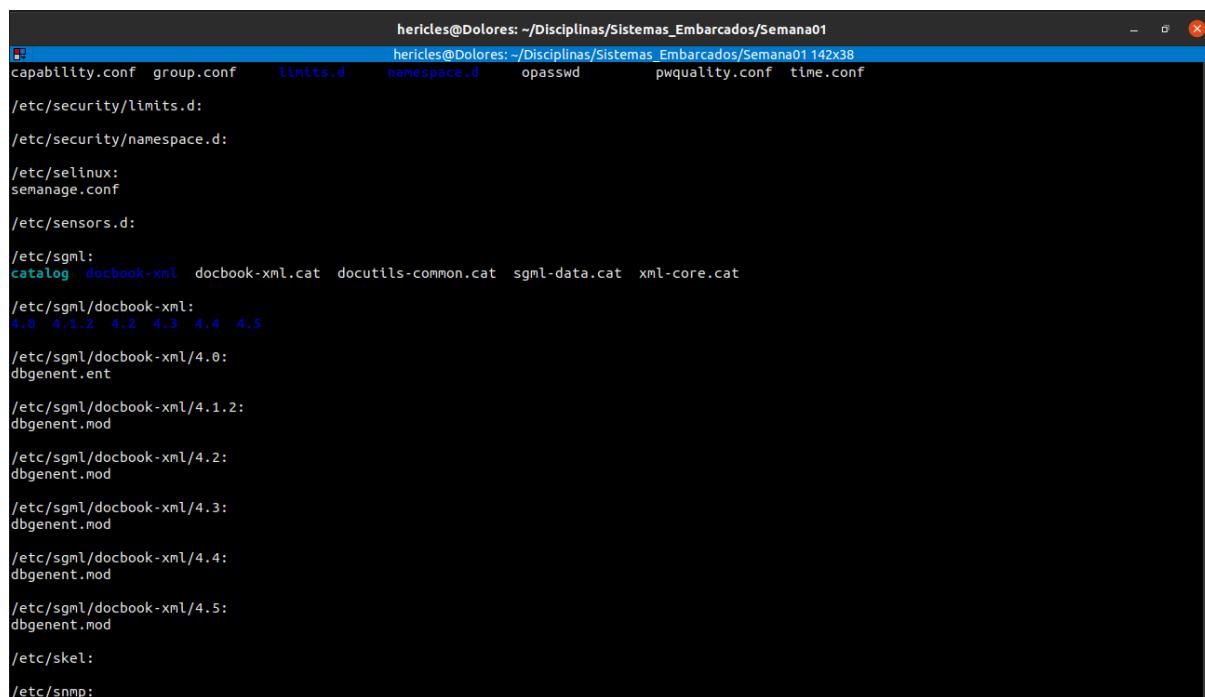
```
ls -alF
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 142x38
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01$ ls -alF
total 88
drwxrwxr-x 8 hericles hericles 4096 dez 12 19:05 .
drwxrwxr-x 5 hericles hericles 4096 dez  8 20:45 ..
-rw-rw-r-- 1 hericles hericles  8 dez 12 18:25 arq1-hard
lrwxrwxrwx 1 hericles hericles  4 dez 12 18:25 arq1-soft -> arq1
-rw-rw-r-- 1 hericles hericles 10 dez 12 18:41 arq1.txt
-rw-rw-r-- 1 hericles hericles  8 dez 12 18:40 arq2
-rw-rw-r-- 1 hericles hericles 11 dez 12 18:41 arq2.txt
-rw-rw-r-- 1 hericles hericles  0 dez 12 19:00 arquivo.txt
drwxrwxr-x 2 hericles hericles 4096 dez  8 09:49 bibliografia/
-rw-rw-r-- 1 hericles hericles 157 dez  8 20:00 cidades_tab.txt
-rw-rw-r-- 1 hericles hericles 107 dez  8 20:00 cidades.txt
-rw-rw-r-- 1 hericles hericles 107 dez 12 18:42 cidadeutf8.txt
drwxrwxr-x 2 hericles hericles 4096 dez  8 21:20 img/
-rw-rw-r-- 1 hericles hericles 8006 dez  8 21:19 lena.jpg
-rw-rw-r-- 1 hericles hericles 198 dez  8 21:17 lista.txt
-rw----- 1 hericles hericles  0 dez 12 19:00 myfile
-rw-rw-r-- 1 hericles hericles  51 dez  8 20:34 numeros.txt
-rw-rw-r-- 1 hericles hericles 33 dez 12 18:05 .screenshot2021-1212_18-05-14-062087.png
-rw-rw-r-- 1 hericles hericles 33 dez 12 18:22 .screenshot2021-1212_18-22-23-875247.png
drwxrwxr-x 2 hericles hericles 4096 dez  8 23:17 teste/
-rw-rw-r-- 1 hericles hericles  0 dez 12 18:44 teste.existe
-rw-rw-r-- 1 hericles hericles  0 dez 12 18:40 test.txt
-rw-rw-r-- 1 hericles hericles 286 dez  8 21:11 texto.txt
drwxrwxr-x 2 hericles hericles 4096 dez  8 21:20 txts/
drwxrwxr-x 6 hericles hericles 4096 dez 12 18:05 utils/
drwxrwxr-x 2 hericles hericles 4096 dez 12 18:33 www.vivas.eng.br/
```

```
ls -ld /usr/
```

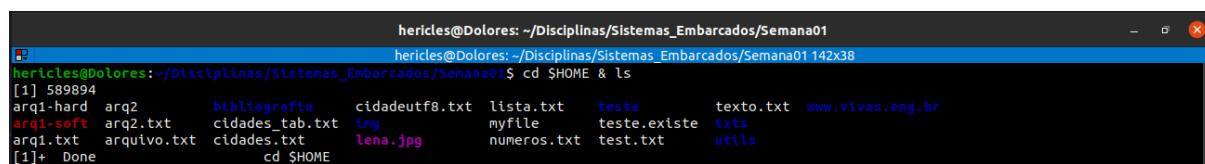
```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 142x38
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01$ ls -ld /usr/
drwxr-xr-x 16 root root 4096 abr 18 2021 /usr/
```

```
ls -R /etc/
```



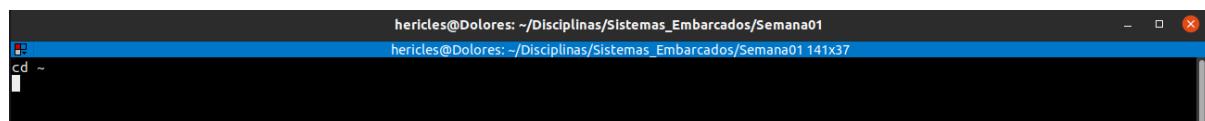
```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 142x38
capability.conf  group.conf    limits.d      namespace.d    opasswd        pwquality.conf  time.conf
/etc/security/limits.d:
/etc/security/namespace.d:
/etc/selinux:
semanage.conf
/etc/sensors.d:
/etc/sgml:
catalog  docbook-xml  docbook-xml.cat  docutils-common.cat  sgml-data.cat  xml-core.cat
/etc/sgml/docbook-xml:
4.0  4.1.2  4.2  4.3  4.4  4.5
/etc/sgml/docbook-xml/4.0:
dbgenent.ent
/etc/sgml/docbook-xml/4.1.2:
dbgenent.mod
/etc/sgml/docbook-xml/4.2:
dbgenent.mod
/etc/sgml/docbook-xml/4.3:
dbgenent.mod
/etc/sgml/docbook-xml/4.4:
dbgenent.mod
/etc/sgml/docbook-xml/4.5:
dbgenent.mod
/etc/skel:
/etc/snmp:
```

```
cd $HOME & ls
```



```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 142x38
[1] 589894
arq1-hard  arq2      btbliografia    cidadeutf8.txt  lista.txt   teste       texto.txt  www.vivas.eng.br
arq1-soft  arq2.txt  cidades_tab.txt  img          myfile     teste.existe  txts
arq1.txt   arquivo.txt  cidades.txt    lena.jpg    numeros.txt  test.txt   utils
[1]+ Done                  cd $HOME
```

```
cd ~
```



```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
cd ~
```

```
echo ~
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
echo ~
/home/hericles
```

```
cd .. & pwd
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
cd .. & pwd
/home/hericles/Disciplinas/Sistemas_Embarcados/Semana01
```

```
cd $HOME & pwd
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
cd $HOME & pwd
/home/hericles/Disciplinas/Sistemas_Embarcados/Semana01
```

```
cd /$HOME/Aula01
```

```
pwd
```

```
hericles@Dolores: //home/hericles/Aula01
hericles@Dolores: //home/hericles/Aula01 142x38
hericles@Dolores: //home/hericles/Aula01$ cd /$HOME/Aula01
hericles@Dolores: //home/hericles/Aula01$ pwd
//home/hericles/Aula01
```

```
touch test.txt code.py
```

```
ls
```

```
hericles@Dolores: //home/hericles/Aula01
hericles@Dolores: //home/hericles/Aula01 142x38
hericles@Dolores: //home/hericles/Aula01$ touch test.txt code.py
hericles@Dolores: //home/hericles/Aula01$ ls
code.py test.txt
```

```
ls $HOME/Disciplinas/Sistemas_Embarcados/Semana01
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
ls $HOME/Disciplinas/Sistemas_Embarcados/Semana01
arq1-hard  arq2      bibliografia  cidadeutf8.txt  lena.jpg   numeros.txt  test.txt  utils
arq1-soft  arq2.txt  cidades_tab.txt  code.py    lista.txt  teste     texto.txt  www.vivas.eng.br
arq1.txt   arquivo.txt  cidades.txt   img        myfile    teste.existe  txts
```

```
cp $HOME/Disciplinas/Sistemas_Embarcados/Semana01/code.py ../
ls $HOME/Disciplinas/Sistemas_Embarcados/Semana01
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
ls $HOME/Disciplinas/Sistemas_Embarcados/Semana01
arq1-hard  arq2      bibliografia  cidadeutf8.txt  lena.jpg   numeros.txt  test.txt  utils
arq1-soft  arq2.txt  cidades_tab.txt  code.py    lista.txt  teste     texto.txt  www.vivas.eng.br
arq1.txt   arquivo.txt  cidades.txt   img        myfile    teste.existe  txts
```

```
mkdir teste
mkdir teste
cp -r teste /tmp/
ls /tmp/tes*
```

```
hericles@Dolores: /tmp$ ls /tmp/t*
hericles@Dolores: /tmp$ hericles@Dolores: /tmp 142x38
/tmp/tmp.4a9GrMMjWD  /tmp/tmp.BlmSIYjbsZ  /tmp/tmp.EPAxOP2dK8  /tmp/tmp.lpJmUjzrT  /tmp/tmp.vfLdglcnH0  /tmp/tmp.xHMCxsXZ4q
/tmp/tmp.6HRHOX4Oy2  /tmp/tmp.EngQWDXYsv  /tmp/tmp.F067msvI91  /tmp/tmp.N4VtwuDjZQ  /tmp/tmp.VXcTjcUBdI
/tmp/tmp.603jnMEtJH  /tmp/tmp.EouuDOVPvF  /tmp/tmp.fZp2ryhhev  /tmp/tmp.TTVT1EBMxH  /tmp/tmp.X5MnMnAd3u
/tmp/teste:
```

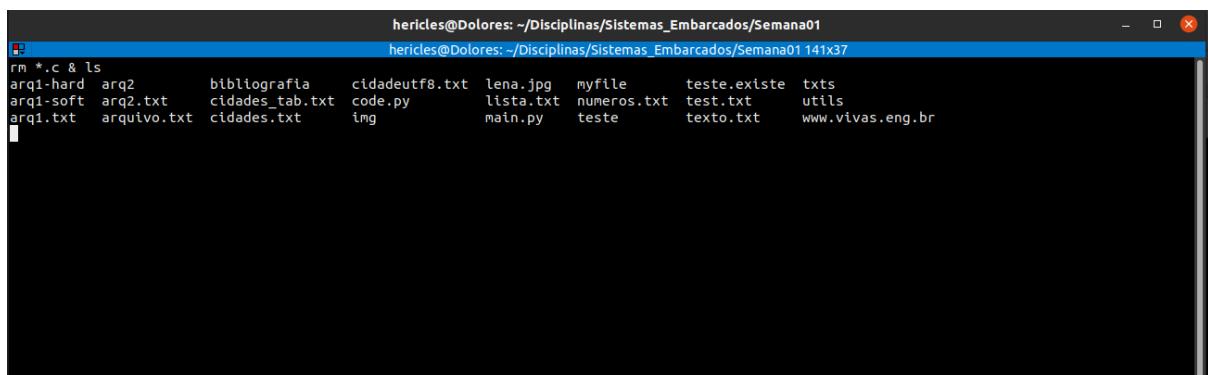
  

```
hericles@Dolores: /tmp$ ls t*
tmp.4a9GrMMjWD  tmp.603jnMEtJH  tmp.EngQWDXYsv  tmp.EPAxOP2dK8  tmp.fZp2ryhhev  tmp.N4VtwuDjZQ  tmp.vfLdglcnH0  tmp.X5MnMnAd3u
tmp.6HRHOX4Oy2  tmp.BlmSIYjbsZ  tmp.EouuDOVPvF  tmp.F067msvI91  tmp.lpJmUjzrT  tmp.TTVT1EBMxH  tmp.VXcTjcUBdI  tmp.xHMCxsXZ4q
teste2.txt:
```

```
touch tmp.c tmp2.c tmp3.c
ls
```

```
hericles@Dolores: ~/Aula01$ touch tmp.c tmp2.c tmp3.c
hericles@Dolores: ~/Aula01$ ls
code.py  teste  test.txt  tmp.c  tmp2.c  tmp3.c  tmp.p
```

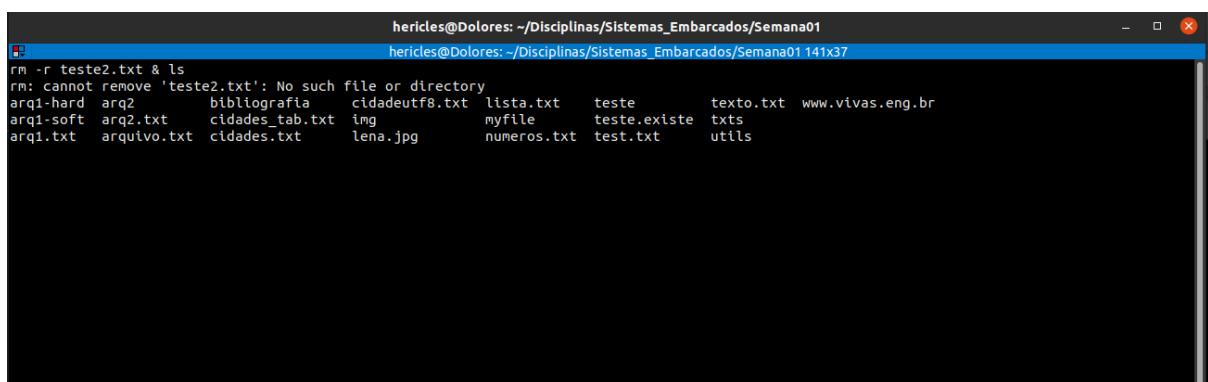
```
rm tmp.c & ls
```



hericles@Dolores: ~/Disciplinas/Sistemas\_Embarcados/Semana01  
hericles@Dolores: ~/Disciplinas/Sistemas\_Embarcados/Semana01 141x37

```
rm *.c & ls
arq1-hard arq2      bibliografia    cidadeutf8.txt  lena.jpg   myfile     teste.existe  txts
arq1-soft arq2.txt  cidades_tab.txt  code.py       lista.txt  numeros.txt test.txt   utils
arq1.txt  arquivo.txt cidades.txt    img          main.py    teste      texto.txt  www.vivas.eng.br
```

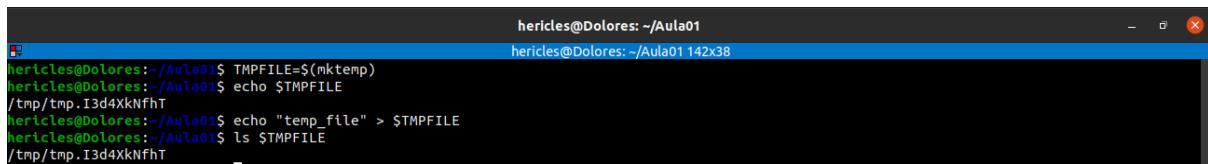
```
rm -r teste2.txt & ls
```



hericles@Dolores: ~/Disciplinas/Sistemas\_Embarcados/Semana01  
hericles@Dolores: ~/Disciplinas/Sistemas\_Embarcados/Semana01 141x37

```
rm -r teste2.txt & ls
rm: cannot remove 'teste2.txt': No such file or directory
arq1-hard arq2      bibliografia    cidadeutf8.txt  lista.txt  teste      texto.txt  www.vivas.eng.br
arq1-soft arq2.txt  cidades_tab.txt  img          myfile    teste.existe  txts
arq1.txt  arquivo.txt cidades.txt    lena.jpg    numeros.txt test.txt   utils
```

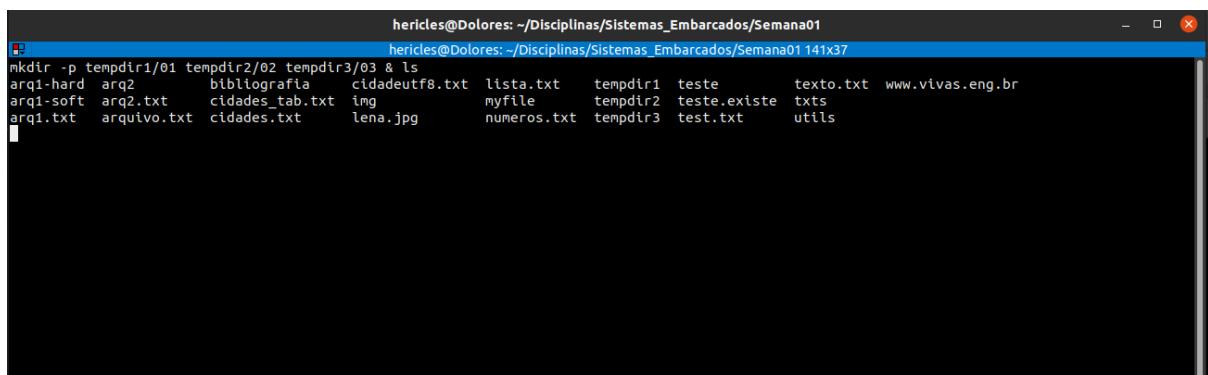
```
TMPFILE=$(mktemp)
echo $TMPFILE
echo "temp_file" > $TMPFILE
```



hericles@Dolores: ~/Aula01  
hericles@Dolores: ~/Aula01 142x38

```
hericles@Dolores:~/Aula01$ TMPFILE=$(mktemp)
hericles@Dolores:~/Aula01$ echo $TMPFILE
/tmp/tmp.I3d4XKNfHT
hericles@Dolores:~/Aula01$ echo "temp_file" > $TMPFILE
hericles@Dolores:~/Aula01$ ls $TMPFILE
/tmp/tmp.I3d4XKNfHT
```

```
mkdir -p tempdir1/01 tempdir2/02 tempdir3/03 & ls
```

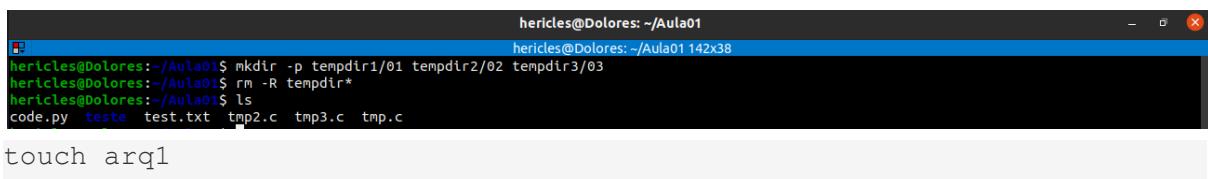


A terminal window titled "hericles@Dolores: ~/Disciplinas/Sistemas\_Embarcados/Semana01". The command "mkdir -p tempdir1/01 tempdir2/02 tempdir3/03 & ls" was run. The output shows the creation of three directories and their contents:

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
mkdir -p tempdir1/01 tempdir2/02 tempdir3/03 & ls
arq1-hard  arq2      bibliografia  cidadeutf8.txt  lista.txt  tempdir1  teste      texto.txt  www.vivas.eng.br
arq1-soft  arq2.txt  cidades_tab.txt img          myfile    tempdir2  teste.existe  txts
arq1.txt   arquivo.txt  cidades.txt   lena.jpg     numeros.txt tempdir3  test.txt   utils
```

```
rm -R tempdir*
```

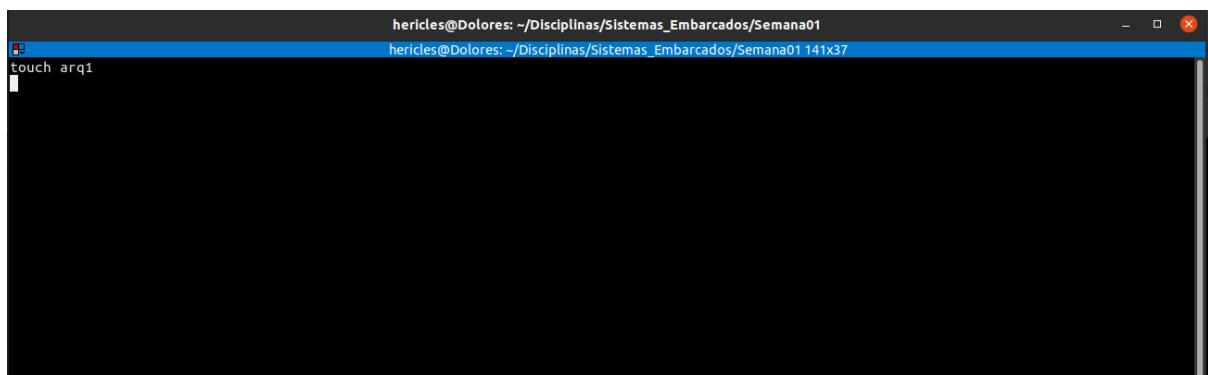
```
ls
```



A terminal window titled "hericles@Dolores: ~/Aula01". The commands "mkdir -p tempdir1/01 tempdir2/02 tempdir3/03", "rm -R tempdir\*", and "ls" were run. The output shows the removal of the temporary directories and the remaining files in the current directory:

```
hericles@Dolores: ~/Aula01
hericles@Dolores: ~/Aula01 142x38
hericles@Dolores:~/aula01$ mkdir -p tempdir1/01 tempdir2/02 tempdir3/03
hericles@Dolores:~/aula01$ rm -R tempdir*
hericles@Dolores:~/aula01$ ls
code.py  teste  test.txt  tmp2.c  tmp3.c  tmp.c
```

```
touch arq1
```



A terminal window titled "hericles@Dolores: ~/Disciplinas/Sistemas\_Embarcados/Semana01". The command "touch arq1" was run. The output shows the creation of the file "arq1":

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
touch arq1
```

```
echo 'Laranja ' >> arq1
```

A terminal window titled "hericles@Dolores: ~/Disciplinas/Sistemas\_Embarcados/Semana01". The command "echo 'Laranja ' >> arq1" is entered and executed. The output shows the file "arq1" has been created.

```
ln -s arq1 arq1-soft  
ls -l arq1*
```

A terminal window titled "hericles@Dolores: ~/Aula01". The commands "touch arq1", "echo 'Laranja ' >> arq1", "ln -s arq1 arq1-soft", and "ls -l arq1\*" are entered and executed. The output shows the file "arq1" has been created and a symbolic link "arq1-soft" has been created pointing to it. The "cat arq1" command is also run to verify the contents of the file.

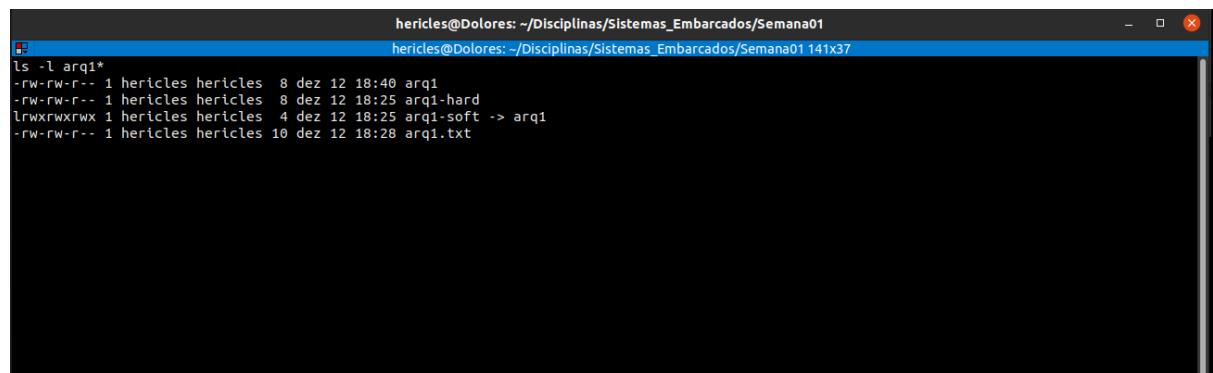
```
cat arq1
```

A terminal window titled "hericles@Dolores: ~/Aula01". The commands "cat arq1" and "mv arq1 arq2" are entered and executed. The output shows the file "arq1" was successfully moved to "arq2".

```
ls -l arq1-hard
```

A terminal window titled "hericles@Dolores: ~/Disciplinas/Sistemas\_Embarcados/Semana01". The command "ls -l arq1-soft" is entered and executed. The output shows the symbolic link "arq1-soft" still exists.

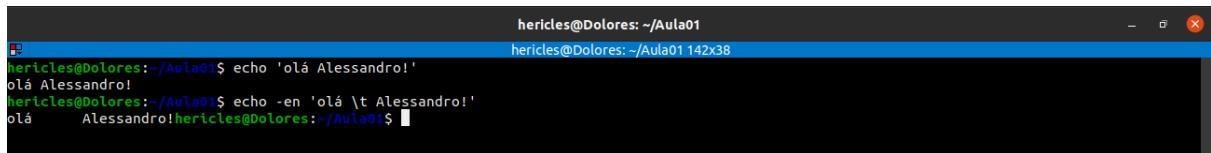
```
ls -l arq1*
```



```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
ls -l arq1*
-rw-rw-r-- 1 hericles hericles 8 dez 12 18:40 arq1
-rw-rw-r-- 1 hericles hericles 8 dez 12 18:25 arq1-hard
lrwxrwxrwx 1 hericles hericles 4 dez 12 18:25 arq1-soft -> arq1
-rw-rw-r-- 1 hericles hericles 10 dez 12 18:28 arq1.txt
```

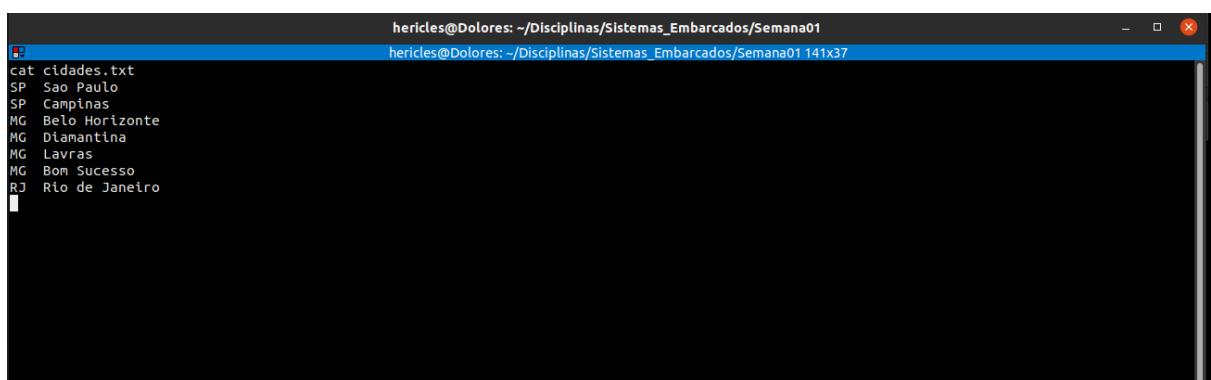
## 4. Capítulo 4

```
echo 'olá Alessandro!'
echo -en 'olá \t Alessandro!'
```



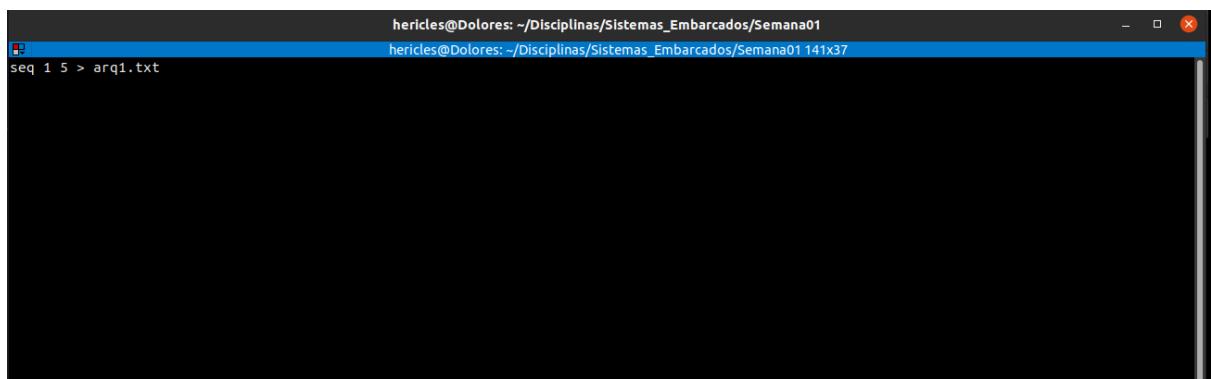
```
hericles@Dolores: ~/Aula01
hericles@Dolores:~/Aula01$ echo 'olá Alessandro!'
olá Alessandro!
hericles@Dolores:~/Aula01$ echo -en 'olá \t Alessandro!'
olá\t Alessandro!hericles@Dolores:~/Aula01$
```

```
cat cidades.txt
```



```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
cat cidades.txt
SP Sao Paulo
SP Campinas
MG Belo Horizonte
MG Diamantina
MG Lavras
MG Bom Sucesso
RJ Rio de Janeiro
```

```
seq 1 5 > arq1.txt
```



```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
seq 1 5 > arq1.txt
```

```
seq 6 10 > arq2.txt
cat arq1.txt arq2.txt
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
cat arq1.txt arq2.txt
1
2
3
4
5
6
7
8
9
10
```

```
echo 'alessandro vivas andrade ' | cut -c 1-10
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 142x38
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01$ echo 'alessandro vivas andrade ' | cut -c 1-10
alessandro
```

```
who | cut -c1 -8 | sort | uniq
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 142x38
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01$ who | cut -c1 -8 | sort | uniq
cut: invalid option -- '8'
Try 'cut --help' for more information.
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
cd $HOME/Disciplinas/Sistemas_Embarcados/Semana01/
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
cat cidades.txt | cut -c 1-2
SP
SP
MG
MG
MG
MG
RJ
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
cat cidades_tab.txt | expand -t 1
SP Sao Paulo:pedro
SP Campinas:andre
MG Belo Horizonte:marta
MG Diamantina:lucas
MG Lavras:rafael
MG Bom Sucesso:lisa
RJ     Rio de Janeiro:alexandro
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
cat cidades_tab.txt
SP Sao Paulo:pedro
SP Campinas:andre
MG Belo Horizonte:marta
MG Diamantina:lucas
MG Lavras:rafael
MG Bom Sucesso:lisa
RJ     Rio de Janeiro:alexandro
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
cat cidades_tab.txt | tr '\t' ''
SP Sao Paulo:pedro
SP Campinas:andre
MG Belo Horizonte:marta
MG Diamantina:lucas
MG Lavras:rafael
MG Bom Sucesso:lisa
RJ     Rio de Janeiro:alexandro
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
tr 'A-Z' 'a-z' < cidades.txt
sp sao paulo
sp campinas
mg belo horizonte
mg diamantina
mg lavras
mg bom sucesso
rj rio de janeiro
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
cat cidades.txt | tr [:upper:] [:lower:]
sp sao paulo
sp campinas
mg belo horizonte
mg diamantina
mg lavras
mg bom sucesso
rj rio de janeiro
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
cat cidades.txt | tr -s [:space:] '\n'
SP
Sao
Paulo
SP
Campinas
MG
Belo
Horizonte
MG
Diamantina
MG
Lavras
MG
Bom
Sucesso
RJ
Rio
de
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
echo 'a{1}, b{2}' | tr '{}' '()'
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
cat numeros.txt | tr -d [:digit:]
Diamantina
Gouveia
Mendanha
Curvelo
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
cat numeros.txt | tr -d '0-9'
Diamantina
Datas
Gouveia
Mendanha
Curvelo
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
tr -dc 'aeiouAEIOU ' < numeros.txt
iaiaia aa ueia eaa ueo
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
fmt -w10 texto.txt
Antes da
chegada
dos
colonizadores
portugueses,
no
século
XVI (os
primeiros
relatos
dão
conta de
expedições
que
subiram
o Rio
Jequitinhonha
e São
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
cat lista.txt | grep alexandro

```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
cat lista.txt | grep alexandro
RJ Rio de Janeiro : alexandro
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
grep '[0-9]' lista.txt
SP Campinas : andre :(074) 2233 -1111
MG Belo Horizonte : marta :010 1222 0011
MG Diamantina : lucas :2
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
grep '[0-9]\{2,\}' lista.txt
SP Campinas : andre :(074) 2233 -1111
MG Belo Horizonte : marta :010 1222 0011
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
grep '\(([0-9]\{3\}) \|([0-9]\{3\}\)[ -]\|[0-9]\{4\}\['
sh: 1: Syntax error: Unterminated quoted string
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
dmesg | fgrep "@"
[118473.348475] iwl data: 00000000: 4c 0b 00 40 20 20 31 30 30 36 34 34 20 20 31 32 L..@ 100644 12
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
head cidades.txt
SP Sao Paulo
SP Campinas
MG Belo Horizonte
MG Diamantina
MG Lavras
MG Bom Sucesso
RJ Rio de Janeiro
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
head -2 cidades.txt
SP Sao Paulo
SP Campinas
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
head -n 2 cidades.txt
SP Sao Paulo
SP Campinas
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
tail -2 cidades.txt
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
tail -2 cidades.txt
MG Bom Sucesso
RJ Rio de Janeiro
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
tail -n 2 cidades.txt
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
tail -n 2 cidades.txt
MG Bom Sucesso
RJ Rio de Janeiro
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
file lena.jpg
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
file lena.jpg
lena.jpg: JPEG image data, JFIF standard 1.01, aspect ratio, density 1x1, segment length 16, baseline, precision 8, 225x225, components 3
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
wget -q http://www.gutenberg.org/files/4300/4300_0.
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
wget: invalid option -- '0'
wget: invalid option -- '..'
Usage: wget [OPTION]... [URL]...
Try 'wget --help' for more options.
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
file 4300 .0. txt
file: invalid option -- '.'
Usage: file [-bccD EhikLlnprssvzz0] [--apple] [--extension] [--mime-encoding]
           [--mime-type] [-e <testname>] [-F <separator>] [-f <namefile>]
           [-m <magicfiles>] [-P <parameter=value>] <file> ...
       file -C [-m <magicfiles>]
       file [--help]
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
echo -e "ação" | iconv -t ASCII// TRANSLIT -f UTF -8
iconv: invalid option -- '8'
Try 'iconv --help' or 'iconv --usage' for more information.
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
echo -e "ação" | iconv -t ASCII// TRANSLIT -f UTF -8
iconv: invalid option -- '8'
Try 'iconv --help' or 'iconv --usage' for more information.
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
cat nomes.txt
cat: nomes.txt: No such file or directory
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
cat notas.txt
cat: notas.txt: No such file or directory
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
sort /usr/share/dict/words | uniq | wc -w
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
sort /usr/share/dict/words | uniq | wc -w
102401
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
tr -dc 'a-z[:space:]' | sed '/^[: space :]*$/d' |
sh: 1: Syntax error: end of file unexpected
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
wc cidades.txt
 7  19 107 cidades.txt
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
wc -w cidades.txt
19 cidades.txt
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
echo "áéíóú" | wc -c
11
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
echo "áéíóú" | wc -m
6
```

## 5. Capítulo 5

```
compgen -c
```

The image displays three vertically stacked terminal windows, each showing a different command-line session. The top window shows the output of the `compgen -c` command, listing various shell completion functions. The middle window shows the output of the `whoami` command, which returns the user name "hericles". The bottom window shows the output of the `pwd` command, which returns the path "/home/hericles/...". All terminals are running on a Linux system with a blue header bar.

```
makedtx  
pnmtowd  
hostid  
dircolors  
twist3  
gvfs-cat  
sfconv  
x86_64-linux-gnu-ranlib  
ppmbrighten  
python3-coverage  
gdal_proximity.py  
asco  
cweave  
pulseaudio  
systemd-run  
pdfseparate  
arn2hpdl  
VBoxSDL  
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01  
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 142x18  
whoami  
hericles  
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01  
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37  
pwd  
/home/hericles/Disciplinas/Sistemas_Embarcados/Semana01  
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01  
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 142x18
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01$ cat /etc/passwd
root:x:0:0:root:/root:/bin/bash
daemon:x:1::1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
irc:x:39:39:ircd:/var/run/ircd:/usr/sbin/nologin
gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/usr/sbin/nologin
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 142x18
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01$ id
uid=1000(hericles) gid=1000(hericles) groups=1000(hericles),4(adm),24(cdrom),27(sudo),30(dip),46(plugdev),120(lpadmin),131(lxd),132(sambashare),134(docker)
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01$
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01$ passwd
Changing password for hericles.
Current password:
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 142x18
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01$ users
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 142x18
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01$ finger hericles
Login: hericles          Name: Hérciles
Directory: /home/hericles   Shell: /usr/bin/zsh
On since Sun Dec 12 21:18 (-03) on :1 from :1 (messages off)
No mail.
No Plan.
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 142x18
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01$ finger -l hericles
Login: hericles          Name: Hérciles
Directory: /home/hericles   Shell: /usr/bin/zsh
On since Sun Dec 12 21:18 (-03) on :1 from :1 (messages off)
No mail.
No Plan.
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 142x18
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01$ finger
Login  Name    Tty    Idle  Login Time  Office   Office Phone
hericles  Hérciles  *:1    Dec 12 21:18 (:1)
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01$
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
free
total      used      free      shared   buff/cache    available
Mem: 12149472  7315956  424948  474412  4408568  4119528
Swap: 2097148  1493724  603424
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
uname -r
5.11.0-41-generic
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
uname -m
x86_64
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
uptime
18:44:16 up 4 days, 40 min, 1 user,  load average: 0,85, 1,45, 1,37
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 142x18
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01$ echo $PATH
/home/hericles/miniconda3/condabin:/anaconda3/bin:/opt/ros/noetic/bin:/home/hericles/.local/bin:/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/bin:/usr/games:/usr/local/games:/snap/bin
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01$
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
timeout 5 ping www.ufvjm.edu.br
PING www.ufvjm.edu.br (200.131.252.165) 56(84) bytes of data.
64 bytes from www.ufvjm.edu.br (200.131.252.165): icmp_seq=1 ttl=48 time=27.4 ms
64 bytes from www.ufvjm.edu.br (200.131.252.165): icmp_seq=2 ttl=48 time=47.9 ms
64 bytes from www.ufvjm.edu.br (200.131.252.165): icmp_seq=3 ttl=48 time=28.3 ms
64 bytes from www.ufvjm.edu.br (200.131.252.165): icmp_seq=4 ttl=48 time=28.0 ms
64 bytes from www.ufvjm.edu.br (200.131.252.165): icmp_seq=5 ttl=48 time=28.9 ms
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
W
18:44:26 up 4 days, 40 min, 1 user, load average: 0.87, 1.43, 1.36
USER     TTY      FROM           LOGIN@   IDLE    JCPU   PCPU WHAT
hericles :1      :1           qua18?  ?xdm?  21:10M  0.01s /usr/lib/gdm3/gdm-x-session --run-script env GNOME_SESSION_MODE=ubuntu
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
locate passwd
sh: 1: locate: not found
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
which ls
/usr/bin/ls
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
which gcc
/usr/bin/gcc
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
whatis ps
ps (1)      - report a snapshot of the current processes.
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
whatis ls
ls (1)      - list directory contents
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
whatis date
date (1)           - print or set the system date and time
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
hostname; date; ls;
Dolores
dom 12 dez 2021 18:44:49 -03
arq1-hard  arq2      bibliografia    cidadeutf8.txt  lista.txt  teste      texto.txt  www.vivas.eng.br
arq1-soft  arq2.txt   cidades_tab.txt  img          myfile     teste.existe  txts
arq1.txt   arquivo.txt cidades.txt     lena.jpg     numeros.txt  test.txt   utils
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
touch teste.existe && test -f teste.existe && echo 'existe'
existe
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 142x18
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01$ gedit &
[2] 25067
[1]  Done                  gedit
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01$
```

## 6. Capítulo 6

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37

ps -aef
UID      PID  PPID  C STIME TTY      TIME CMD
root      1      0  0 dez08 ?        00:00:23 /sbin/init splash
root      2      0  0 dez08 ?        00:00:00 [kthreadd]
root      3      2  0 dez08 ?        00:00:00 [rcu_gp]
root      4      2  0 dez08 ?        00:00:00 [rcu_par_gp]
root      9      2  0 dez08 ?        00:00:00 [mm_percpu_wq]
root     10      2  0 dez08 ?        00:00:00 [rcu_tasks_rude_]
root     11      2  0 dez08 ?        00:00:00 [rcu_tasks_trace]
root     12      2  0 dez08 ?        00:00:12 [ksoftirqd/0]
root     13      2  0 dez08 ?        00:02:52 [rcu_sched]
root     14      2  0 dez08 ?        00:00:00 [migration/0]
root     15      2  0 dez08 ?        00:00:00 [idle_inject/0]
root     16      2  0 dez08 ?        00:00:00 [cpuhp/0]
root     17      2  0 dez08 ?        00:00:00 [cpuhp/1]
root     18      2  0 dez08 ?        00:00:00 [idle_inject/1]

hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37

ps -u $ome
USER      PID %CPU %MEM    VSZ   RSS TTY      STAT START  TIME COMMAND
hericles  2818  0.0  0.0 164024  5836 ttys2  Ssl+ dez08  0:00 /usr/lib/gdm3/gdm-x-session --run-script env GNOME_SESSION_MODE=ubuntu
hericles  2820  2.4  1.3 1094772 163728 ttys2  Sl+  dez08 141:06 /usr/lib/xorg/Xorg vt2 -displayfd 3 -auth /run/user/1000/gdm/Xauthority -b
hericles  2849  0.0  0.0 188232 11640 ttys2  Sl+  dez08  0:00 /usr/libexec/gnome-session-binary --systemd --systemd --session=ubuntu
hericles  277078  0.0  0.0 16308  9356 pts/1   Ss  dez10  0:01 /usr/bin/zsh
hericles  280955  0.0  0.4 905420  56520 pts/1   Sl+  dez10  0:05 docker exec -it react-tutorial zsh
hericles  292763  0.0  0.0 18552  9284 pts/2   Ss+  dez10  0:00 /usr/bin/zsh
hericles  473887  0.0  0.0 18600  9492 pts/0   Ss  17:59  0:00 /usr/bin/zsh
hericles  478184  0.0  0.0 11580  5836 pts/0   S   18:05  0:01 bash
hericles  514276  4.4  0.5 617388 72180 pts/0   Sl+  18:39  0:15 python3 utils/src/print_commands.py
hericles  520476  0.0  0.0  2620  596 pts/0   S+  18:44  0:00 sh -c ps -u $ome
hericles  520477  0.0  0.0 11508  3380 pts/0   R+  18:44  0:00 ps -u

hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37

ps -aef -r | head -5
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37

ps -aef -m | head -5
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
ps -afe | grep firefox
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
pstree
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
top - 18:58:34 up 4 days, 54 min, 1 user, load average: 0,39, 0,57, 0,86
Tasks: 395 total, 1 running, 394 sleeping, 0 stopped, 0 zombie
%Cpu(s): 17,0 us, 5,4 sy, 0,0 ni, 77,3 id, 0,0 wa, 0,0 hi, 0,2 si, 0,0 st
Mem: 11864,7 total, 397,5 free, 7165,1 used, 4302,1 buff/cache
Swap: 2048,0 total, 589,3 free, 1458,7 used. 4013,2 avail Mem
```

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+ COMMAND
264519	hericles	20	0	939590	94832	40608	S	15,8	0,8	1:36.07 gedit
2820	hericles	20	0	1092688	163728	65824	S	13,9	1,3	141:30.92 Xorg
3271	hericles	20	0	821828	19912	18568	S	10,9	0,2	105:31.56 conky
434239	hericles	20	0	13,5g	388184	92348	S	9,9	3,2	12:39.46 teams
3020	hericles	20	0	5190064	317400	86268	S	6,9	2,0	102:40.40 gnome-shell
221866	hericles	20	0	3238864	514840	131224	S	5,9	4,2	135:41.26 Web Content
220826	hericles	20	0	4880212	731256	181652	S	4,0	6,0	187:27.99 GeckoMain
277068	hericles	20	0	997268	78592	46220	S	3,0	0,6	1:13.28 x-terminal-emul
299267	root	20	0	992528	124412	32936	S	3,0	1,0	7:21.99 node
434164	hericles	20	0	1141316	96164	60160	S	3,0	0,8	2:44.61 teams
1672	root	20	0	1077204	6612	5052	S	2,0	0,1	3:43.73 teamviewerd
520657	hericles	20	0	12156	4052	3252	R	2,0	0,0	0:23.52 top

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
top - 18:59:21 up 4 days, 55 min, 1 user, load average: 0,51, 0,59, 0,86
Tasks: 396 total, 1 running, 395 sleeping, 0 stopped, 0 zombie
%Cpu(s): 9,1 us, 4,7 sy, 0,0 ni, 86,2 id, 0,0 wa, 0,0 hi, 0,0 si, 0,0 st
Mem: 11864,7 total, 400,9 free, 7164,7 used, 4299,2 buff/cache
Swap: 2048,0 total, 589,3 free, 1458,7 used. 4016,9 avail Mem
```

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+ COMMAND
434239	hericles	20	0	13,5g	387796	92348	S	15,5	3,2	12:45.91 teams
221866	hericles	20	0	3238864	514840	131224	S	8,9	4,2	135:45.73 Web Content
3271	hericles	20	0	821828	19912	18568	S	7,3	0,2	179:45.14 conky
2820	hericles	20	0	1077812	163728	65824	S	3,3	1,3	141:32.75 Xorg
220826	hericles	20	0	4880212	710244	181652	S	3,3	5,8	276:21.27 GeckoMain
434164	hericles	20	0	1141316	96164	60160	S	3,3	0,8	2:46.14 teams
299267	root	20	0	992528	125300	32936	S	2,3	1,0	11:46.54 node
434050	hericles	20	0	6785016	202016	92796	S	1,3	0,7	0:33.59 teams
530448	hericles	20	0	12156	4040	3240	R	1,0	0,0	0:00.50 top
270	root	19	-1	97216	50824	48412	S	0,7	0,4	4:26.70 systemd-journal
221741	hericles	20	0	9629652	386924	141436	S	0,7	3,2	10:31.68 Web Content
434192	hericles	20	0	723428	65264	52328	S	0,7	0,5	0:13.19 teams

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
top - 18:59:26 up 4 days, 55 min, 1 user, load average: 0,47, 0,58, 0,85
Tasks: 396 total, 1 running, 395 sleeping, 0 stopped, 0 zombie
%CPU(s): 14,6 us, 6,5 sy, 0,0 ni, 78,7 id, 0,2 wa, 0,0 hi, 0,0 si, 0,0 st
Mem Mem : 11864,7 total, 391,7 free, 7164,1 used, 4309,0 buff/cache
Mem Swap: 2048,0 total, 589,3 free, 1458,7 used. 4007,8 avail Mem

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
434239 hericles 20 0 13,5g 387796 92348 S 12,3 3,2 12:46.59 teams
221860 hericles 20 0 323864 514840 131224 S 8,0 4,2 135:46.17 Web Content
3271 hericles 20 0 821028 19912 18568 S 7,6 0,2 105:34.41 conky
137553 hericles 20 0 2144904 337048 52484 S 7,3 2,8 8:54.81 nautilus
2820 hericles 20 0 1087812 163728 65824 S 4,7 1,3 141:32.58 Xorg
3020 hericles 20 0 5189532 317320 86268 S 4,0 2,6 102:40.98 gnome-shell
299267 root 20 0 992528 124732 32936 S 3,7 1,0 7:23.49 node
220826 hericles 20 0 4880212 710244 181652 S 3,0 5,8 187:29.80 GeckoMain
2944 hericles 20 0 65352 54276 5660 S 2,7 0,4 7:50.59 wsatspi
434164 hericles 20 0 1141316 96164 60160 S 2,7 0,8 2:46.31 teams
2771 hericles 20 0 388088 8484 6844 S 2,3 0,1 0:37.05 gvfs-udisks2-vo
1044 root 20 0 1345096 23104 4732 S 1,7 0,2 2:38.36 containerd

```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
top - 18:59:31 up 4 days, 55 min, 1 user, load average: 0,43, 0,57, 0,85
Tasks: 396 total, 2 running, 394 sleeping, 0 stopped, 0 zombie
%CPU(s): 17,1 us, 15,8 sy, 0,0 ni, 67,1 id, 0,0 wa, 0,0 hi, 0,0 si, 0,0 st
Mem Mem : 11864,7 total, 394,5 free, 7163,1 used, 4307,1 buff/cache
Mem Swap: 2048,0 total, 589,3 free, 1458,7 used. 4010,8 avail Mem

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
434239 hericles 20 0 13,5g 387796 92348 S 18,8 3,2 12:47.27 teams
531105 hericles 20 0 12156 3896 3092 R 18,8 0,0 0:00.03 top
137553 hericles 20 0 2144904 337048 52484 R 12,5 2,8 8:54.84 nautilus
221860 hericles 20 0 323864 514840 131224 S 12,5 4,2 135:46.60 Web Content
2729 hericles 20 0 3524556 957332 15420 S 6,2 7,9 398:00.05 kited
220826 hericles 20 0 4880212 710244 181652 S 6,2 5,8 187:29.97 GeckoMain
299267 root 20 0 992528 124360 32936 S 6,2 1,0 7:23.61 node
434164 hericles 20 0 1141316 96164 60160 S 6,2 0,8 2:46.48 teams
512992 hericles 20 0 910880 64312 44340 S 6,2 0,5 0:08.07 eog

```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
find $HOME/tools -name labelImg.py &
/home/hericles/tools/labelImg/labelImg.py
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
ps u
USER      PID %CPU %MEM    VSZ   RSS TTY      STAT START  TIME COMMAND
hericles  2818  0,0  0,0 164024  5836 ttys2    Ssl+ de0:08  0:00 /usr/lib/gdm3/gdm-x-session --run-script env GNOME_SHELL_SESSION_MODE=ubuntu
hericles  2820  2,4  1,3 1090528 163728 ttys2    Sl+ de0:08 141:33 /usr/lib/xorg/Xorg vt2 -displayfd 3 -auth /run/user/1000/gdm/Xauthority --systemd --session=ubuntu
hericles  2849  0,0  0,0 188232 11640 ttys2    Sl+ de0:08  0:00 /usr/libexec/gnome-session-binary --systemd --session=ubuntu
hericles  277078  0,0  0,0 16308  9356 pts/1     Ss  de0:08  0:01 /usr/bin/zsh
hericles  280955  0,0  0,4 905420  56520 pts/1    Sl+ de0:08  0:05 docker exec -it react-tutorial zsh
hericles  292763  0,0  0,0 18552  9284 pts/2    Ss  de0:08  0:00 /usr/bin/zsh
hericles  473887  0,0  0,0 18600  9492 pts/0     Ss  17:59  0:00 /usr/bin/zsh
hericles  478184  0,0  0,0 11580  5836 pts/0     S  18:05  0:01 bash
hericles  514276  1,3  0,5 617388 72244 pts/0    Sl+ 18:39  0:16 python3 utils/src/print_commands.py
hericles  531308  0,0  0,0 2620   604 pts/0     S+  18:59  0:00 sh -c ps u
hericles  531309  0,0  0,0 11508  3352 pts/0    R+  18:59  0:00 ps u
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
[1] 399 top - 18:59:48 up 4 days, 55 min, 1 user, load average: 1,12, 0,71, 0,89
Tasks: 399 total, 1 running, 398 sleeping, 0 stopped, 0 zombie
%Cpu(s): 16,7 us, 9,1 sy, 0,0 ni, 74,2 id, 0,0 wa, 0,0 hi, 0,0 si, 0,0 st
Mem Mem : 11864,7 total, 390,7 free, 7162,5 used, 4311,5 buff/cache
Mem Swap: 2048,0 total, 589,3 free, 1458,7 used. 4007,0 avail Mem

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
434239 hericles 20 0 13,5g 387796 92348 S 18,8 3,2 12:49.37 teams
3020 hericles 20 0 5189548 317348 86298 S 6,2 2,6 102:41.56 gnome-shell
137553 hericles 20 0 2144904 337048 52484 S 6,2 2,8 8:56.58 nautilus
220826 hericles 20 0 4880212 710656 181652 S 6,2 5,8 187:30.47 GeckoMain
221866 hericles 20 0 3238064 514840 131224 S 6,2 4,2 135:48.05 Web Content
512992 hericles 20 0 910800 64412 44340 S 6,2 0,5 0:08.13 eog
531400 hericles 20 0 12156 4004 3208 R 6,2 0,0 0:00.01 top
 1 root 20 0 171328 12368 7244 S 0,0 0,1 0:23.70 systemd
 2 root 20 0 0 0 0 S 0,0 0,0 0:00.14 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_gp
 9 root 0 -20 0 0 0 I 0,0 0,0 0:00.00 mm_percpu_wq
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
[1] 399 top - 18:59:48 up 4 days, 55 min, 1 user, load average: 1,12, 0,71, 0,89
Tasks: 399 total, 1 running, 398 sleeping, 0 stopped, 0 zombie
%Cpu(s): 16,7 us, 9,1 sy, 0,0 ni, 74,2 id, 0,0 wa, 0,0 hi, 0,0 si, 0,0 st
Mem Mem : 11864,7 total, 390,7 free, 7162,5 used, 4311,5 buff/cache
Mem Swap: 2048,0 total, 589,3 free, 1458,7 used. 4007,0 avail Mem

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
434239 hericles 20 0 13,5g 387796 92348 S 18,8 3,2 12:49.37 teams
3020 hericles 20 0 5189548 317348 86298 S 6,2 2,6 102:41.56 gnome-shell
137553 hericles 20 0 2144904 337048 52484 S 6,2 2,8 8:56.58 nautilus
220826 hericles 20 0 4880212 710656 181652 S 6,2 5,8 187:30.47 GeckoMain
221866 hericles 20 0 3238064 514840 131224 S 6,2 4,2 135:48.05 Web Content
512992 hericles 20 0 910800 64412 44340 S 6,2 0,5 0:08.13 eog
531400 hericles 20 0 12156 4004 3208 R 6,2 0,0 0:00.01 top
 1 root 20 0 171328 12368 7244 S 0,0 0,1 0:23.70 systemd
 2 root 20 0 0 0 0 S 0,0 0,0 0:00.14 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_gp
 9 root 0 -20 0 0 0 I 0,0 0,0 0:00.00 mm_percpu_wq
 10 root 20 0 0 0 0 S 0,0 0,0 0:00.00 rcu_tasks_rude_
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
[1] 399 top - 18:59:48 up 4 days, 55 min, 1 user, load average: 1,12, 0,71, 0,89
Tasks: 399 total, 1 running, 398 sleeping, 0 stopped, 0 zombie
%Cpu(s): 16,7 us, 9,1 sy, 0,0 ni, 74,2 id, 0,0 wa, 0,0 hi, 0,0 si, 0,0 st
Mem Mem : 11864,7 total, 390,7 free, 7162,5 used, 4311,5 buff/cache
Mem Swap: 2048,0 total, 589,3 free, 1458,7 used. 4007,0 avail Mem

root 1036 0,0 0,1 118172 19860 ? Ssldez08 0:00 /usr/bin/python3 /usr/share/unattended-upgrades/unattended-upgrade-shutdown
root 1043 0,0 0,0 240772 8864 ? Ssldez08 0:00 /usr/sbin/ModemManager
root 1044 0,0 0,1 1345096 23104 ? Ssldez08 2:38 /usr/bin/containerd
root 1086 0,0 0,0 239616 8160 ? Ssldez08 0:00 /usr/sbin/gdm3
root 1114 0,0 0,0 166684 8292 ? Sldez08 0:00 gdm-session-worker [pam/gdm-launch-environment]
root 1145 0,0 0,0 13652 6024 ? Ssdez08 0:07 /usr/sbin/apache2 -k start
postgres 1173 0,0 0,2 218372 26524 ? Ssdez08 0:03 /usr/lib/postgresql/13/bin/postgres -D /var/lib/postgresql/13/main -c conf
gdm 1250 0,0 0,0 19004 8228 ? Ssdez08 0:05 /lib/systemd/systemd --user
gdm 1258 0,0 0,0 169440 1664 ? Sdez08 0:00 (sd-pam)
gdm 1305 0,0 0,1 1292004 12856 ? S<Sldez08 0:00 /usr/bin/pulseaudio --daemonize=no --log-target=journal
gdm 1307 0,0 0,1 585048 20584 ? SNSldez08 0:00 /usr/libexec/tracker-miner-fs
gdm 1308 0,0 0,0 164024 5720 ttty1 Ssl+dez08 0:00 /usr/lib/gdm3/gdm-x-session dbus-run-session -- gnome-session --autostart
gdm 1310 0,0 0,3 877548 38116 ttty1 Sl+dez08 0:04 /usr/lib/xorg/Xorg vt1 -displayfd 3 -auth /run/user/125/gdm/Xauthority -ba
gdm 1314 0,0 0,0 7404 3952 ? Ssdez08 0:00 /usr/bin/dbus-daemon --session --address=systemd: --nofork --nrepidfile --s
rkit 1315 0,0 0,0 152946 2864 ? SNSldez08 0:01 /usr/libexec/rtkit-daemon
gdm 1322 0,0 0,0 239720 6680 ? Ssldez08 0:00 /usr/libexec/gvfsd
gdm 1337 0,0 0,0 312808 5252 ? Sldez08 0:00 /usr/libexec/gvfsd-fuse /run/user/125/gvfs -f -o big_writes
gdm 1344 0,0 0,0 387808 8232 ? Ssldez08 0:37 /usr/libexec/gvfs-udisks2-volume-monitor
gdm 1352 0,0 0,0 316728 7848 ? Ssldez08 0:05 /usr/libexec/gvfs-afc-volume-monitor
```

## 7. Capítulo 7

The image consists of four vertically stacked screenshots of a terminal window. Each screenshot shows a terminal session with a blue header bar containing the text "hericles@Dolores: ~/Disciplinas/Sistemas\_Embarcados/Semana01" and "hericles@Dolores: ~/Disciplinas/Sistemas\_Embarcados/Semana01 141x37".

- Screenshot 1:** The terminal prompt is shown. The command "chmod g-r cidades.txt" is typed and executed.
- Screenshot 2:** The terminal prompt is shown. The command "chmod o-r cidades.txt" is typed and executed.
- Screenshot 3:** The terminal prompt is shown. The command "ls -l cidades.txt" is typed and executed, displaying the file's permissions and details.
- Screenshot 4:** The terminal prompt is shown. The command "ls -l cidades.txt" is typed again, showing the file's permissions and details.

In the terminal sessions, the file "cidades.txt" is modified from group-readable to group-unreadable, and then from owner-readable to owner-unreadable. The "ls -l" command shows the resulting permissions: "rw--w---- 1 hericles hericles 107 dez 8 20:00 cidades.txt" and "r---w---- 1 hericles hericles 107 dez 8 20:00 cidades.txt" respectively.

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
ls -l cidades.txt
-rw-r--r-- 1 hericles hericles 107 dez  8 20:00 cidades.txt
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
cp arquivo.txt myfile & ls -l myfile
-rw----- 1 hericles hericles 0 dez 12 19:00 myfile
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
chmod 777 myfile & ls -l myfile
-rwxrwxrwx 1 hericles hericles 0 dez 12 19:00 myfile
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
chmod 600 myfile
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
ls -l myfile
-rw----- 1 hericles hericles 0 dez 12 19:00 myfile
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 142x18
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01$ chmod u+xx arquivo
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01$ chmod u+r x arquivo
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01$ ls -l arquivo
-rwxrwxr-- 1 hericles hericles 0 dez 12 19:00 arquivo
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01$
```

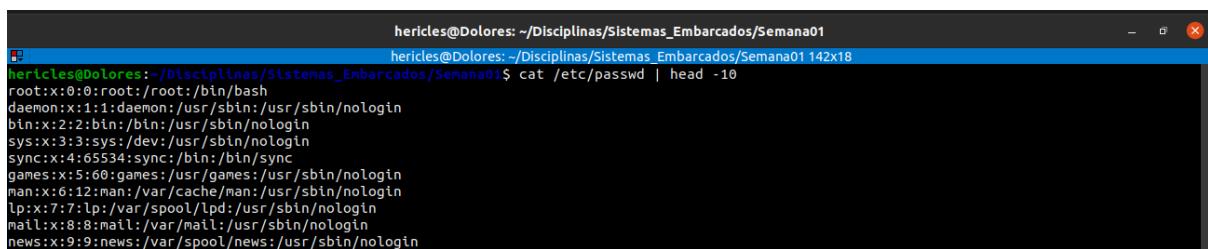
```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 142x18
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01$ chmod u+r,g+x arquivo
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01$ ls
arq1-hard  arq2      arquivo      cidades.txt  lena.jpg  numeros.txt  test.txt  utils
arq1-soft  arq2.txt  bibliografia  cidadeutf8.txt lista.txt  teste      texto.txt  www.vivas.eng.br
arq1.txt   arq2.txtecho  cidades_tab.txt  img        myfile    teste.existe  txts
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 142x18
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01$ chmod u-rx arquivo
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01$ chmod a+xx arquivo
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01$ ls -l arquivo
--wxrwxr-x 1 hericles hericles 0 dez 12 19:00 arquivo
```

## 8. Capítulo 8

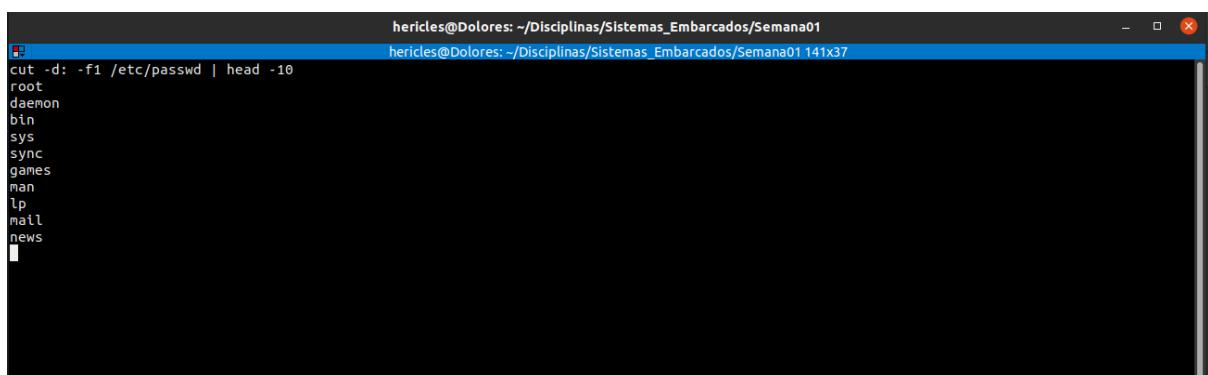
Neste capítulo, todos os comandos relacionados a manipulação de usuários foram efetuados no docker, para não ser necessário alterar nada do sistema linux original utilizado.

```
cat /etc/passwd | head -10
```



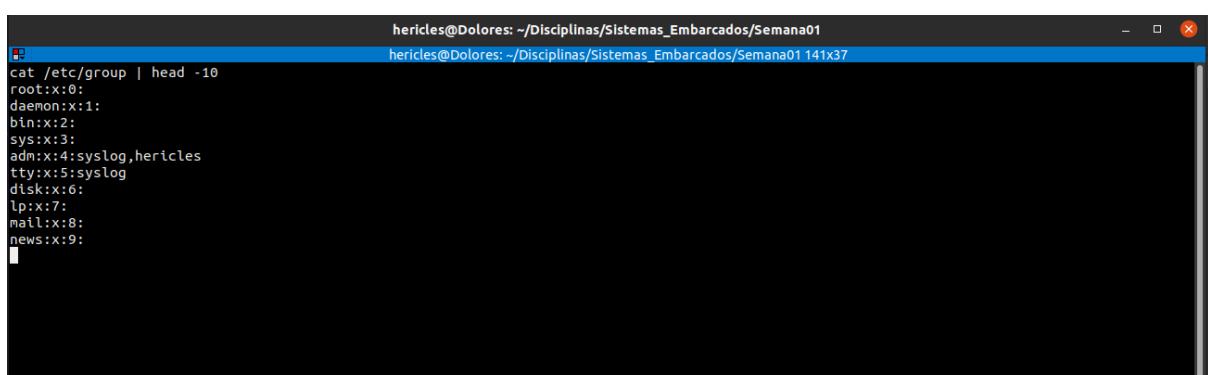
```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 142x18
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin/nologin
bin:x:2:bin:/bin:/usr/sbin/nologin
sys:x:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
```

```
cut -d: -f1 /etc/passwd | head -10
```



```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
cut -d: -f1 /etc/passwd | head -10
root
daemon
bin
sys
sync
games
man
lp
mail
news
```

```
cat /etc/group | head -10
```



```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
cat /etc/group | head -10
root:x:0:
daemon:x:1:
bin:x:2:
sys:x:3:
adm:x:4:syslog,hericles
tty:x:5:syslog
disk:x:6:
lp:x:7:
mail:x:8:
news:x:9:
```

```
adduser aluno
```

```
root@Dolores:/usr/app [1:31:11] C:1
$ adduser aluno
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 []: aluno
      Room Number []:
      Work Phone []:
      Home Phone []:
      Other []:
Is the information correct? [Y/n] y
```

```
passwd
```

```
aluno@Dolores: ~
aluno@Dolores: ~ 142x38
aluno@Dolores - % passwd
Changing password for aluno.
Current password:
New password:
Retype new password:
passwd: password updated successfully
aluno@Dolores - %
```

```
userdel aluno
```

```
root@Dolores:/usr/app [1:37:21]
$ userdel aluno
```

```
usermod -e 2015-11-25 aluno
```

```
root@Dolores:/usr/app [1:39:18] C:2
$ usermod -e 2015-11-25 aluno
```

```
userdel -r aluno
```

```
root@Dolores:/usr/app [1:40:39]
$ userdel -r aluno
userdel: aluno mail spool (/var/mail/aluno) not found
```

```
groupadd professores  
groupadd alunos
```

```
root@Dolores:/usr/app  
# root @ Dolores in /usr/app [1:41:23]  
$ groupadd professores  
# root @ Dolores in /usr/app [1:41:27]  
$ groupadd alunos
```

```
getent group
```

```
root@Dolores:/usr/app  
# root @ Dolores in /usr/app [1:48:01]  
$ getent group  
adm dialout irc news root sys users  
alumnos dip kmem node sasl systemd-journal utmp  
audio disk list nogroup shadow systemd-network uucp  
backup fax lp operator src systemd-resolve video  
bin floppy mail plugdev ssh systemd-timesync voice  
cdrom games man professores staff tape www-data  
daemon gnats messagebus proxy sudo tty
```

```
groupmod -n funcionarios professores
```

```
root@Dolores:/usr/app  
# root @ Dolores in /usr/app [1:52:33]  
$ groupmod --new-name professores funcionarios  
groupmod: group 'funcionarios' does not exist  
# root @ Dolores in /usr/app [1:52:58] C:6  
$ groupmod --new-name funcionarios professores
```

```
getent group
```

```
root@Dolores:/usr/app  
# root @ Dolores in /usr/app [1:54:36]  
$ getent group  
adm dip irc news sasl systemd-journal utmp  
audio disk kmem node shadow systemd-network uucp  
backup fax list nogroup src systemd-resolve video  
bin floppy lp operator ssh systemd-timesync voice  
cdrom funcionarios mail plugdev staff tape www-data  
daemon games man proxy sudo tty  
dialout gnats messagebus root sys users
```

## 9. Capítulo 9

```
hostname
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 142x18
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01$ hostname
Dolores
```

```
cat /etc/hosts
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x18
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01$ cat /etc/hosts
127.0.0.1      localhost
127.0.1.1      Dolores

# The following lines are desirable for IPv6 capable hosts
::1      ip6-localhost ip6-loopback
::ff00::0    ip6-localnet
::ff00::1    ip6-mcastprefix
::ff02::1    ip6-allnodes
::ff02::2    ip6-allrouters
```

```
arp -a
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01$ arp -a
? (192.168.100.5) at 2a:25:9a:5d:c9:cb [ether] on wlo1
? (192.168.100.10) at 98:83:89:94:68:0f [ether] on wlo1
gateway (192.168.100.1) at 6c:16:32:86:05:d5 [ether] on wlo1
```

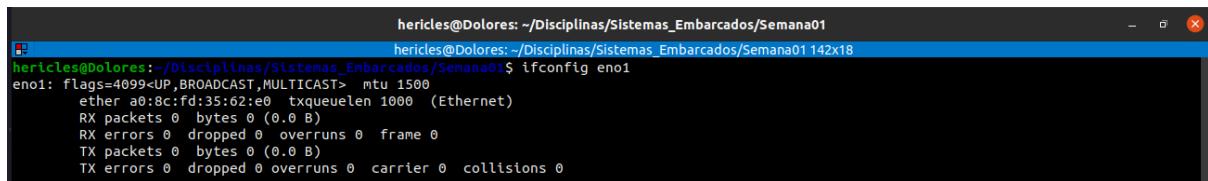
```
ifconfig
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 142x18
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01$ ifconfig
br-0061fd515bdd: flags=4099<UP,BROADCAST,MULTICAST>  mtu 1500
        inet 172.18.0.1  netmask 255.255.0.0  broadcast 172.18.255.255
              ether 02:42:bb:9a:67:5d  txqueuelen 0  (Ethernet)
                    RX packets 0  bytes 0 (0.0 B)
                    RX errors 0  dropped 0  overruns 0  frame 0
                    TX packets 0  bytes 0 (0.0 B)
                    TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0

br-84bfefcfb385: flags=4099<UP,BROADCAST,MULTICAST>  mtu 1500
        inet 172.19.0.1  netmask 255.255.0.0  broadcast 172.19.255.255
              ether 02:42:10:48:06:c1  txqueuelen 0  (Ethernet)
                    RX packets 0  bytes 0 (0.0 B)
                    RX errors 0  dropped 0  overruns 0  frame 0
                    TX packets 0  bytes 0 (0.0 B)
                    TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0

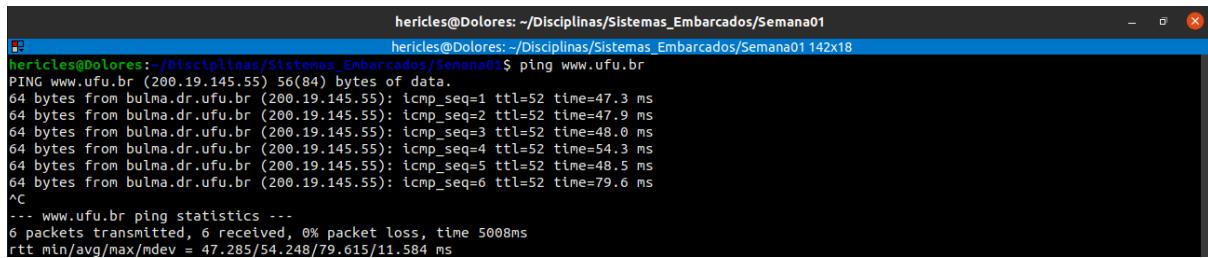
br-f29565badeba: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 172.28.0.1  netmask 255.255.0.0  broadcast 172.28.255.255
```

```
ifconfig eno1
```



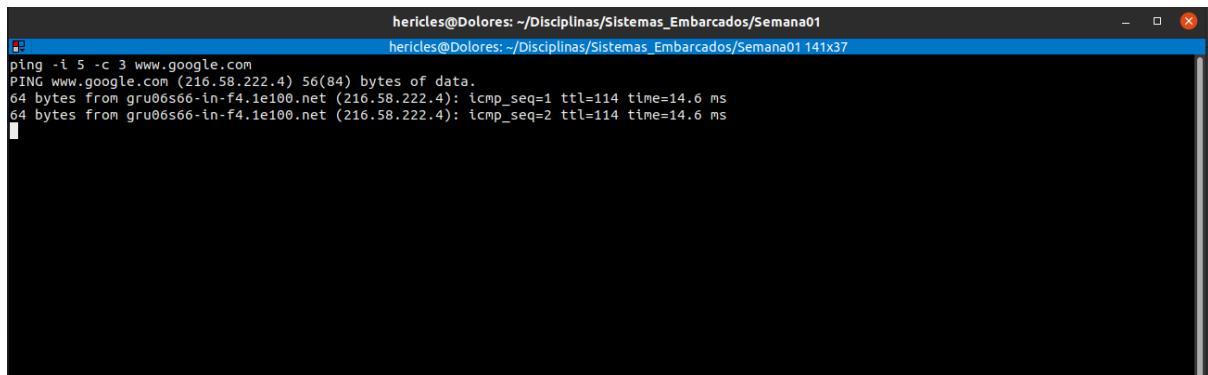
```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 142x18
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01$ ifconfig eno1
eno1: flags=4099<UP,BROADCAST,MULTICAST> mtu 1500
      ether a0:8c:fd:35:62:e0 txqueuelen 1000  (Ethernet)
      RX packets 0 bytes 0 (0.0 B)
      RX errors 0 dropped 0 overruns 0 frame 0
      TX packets 0 bytes 0 (0.0 B)
      TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```

```
ping www.ufu.br
```



```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 142x18
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01$ ping 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=52 time=47.3 ms
64 bytes from bulma.dr.ufu.br (200.19.145.55): icmp_seq=2 ttl=52 time=47.9 ms
64 bytes from bulma.dr.ufu.br (200.19.145.55): icmp_seq=3 ttl=52 time=48.0 ms
64 bytes from bulma.dr.ufu.br (200.19.145.55): icmp_seq=4 ttl=52 time=54.3 ms
64 bytes from bulma.dr.ufu.br (200.19.145.55): icmp_seq=5 ttl=52 time=48.5 ms
64 bytes from bulma.dr.ufu.br (200.19.145.55): icmp_seq=6 ttl=52 time=79.6 ms
^C
--- www.ufu.br ping statistics ---
6 packets transmitted, 6 received, 0% packet loss, time 5008ms
rtt min/avg/max/mdev = 47.285/54.248/79.615/11.584 ms
```

```
ping -i 5 -c 3 www.google.com
```



```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01$ ping -i 5 -c 3 www.google.com
PING www.google.com (216.58.222.4) 56(84) bytes of data.
64 bytes from gru06s66-in-f4.1e100.net (216.58.222.4): icmp_seq=1 ttl=114 time=14.6 ms
64 bytes from gru06s66-in-f4.1e100.net (216.58.222.4): icmp_seq=2 ttl=114 time=14.6 ms
```

```
traceroute www.google.com
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37

traceroute www.google.com
traceroute to www.google.com (216.58.222.4), 30 hops max, 60 byte packets
 1 _gateway (192.168.100.1) 1.727 ms 1.914 ms 2.058 ms
 2 terra-200-225-254-190.dynamic.idial.com.br (200.225.254.190) 5.022 ms 5.456 ms 5.567 ms
 3 187-032-212-098.static.ctbctelecom.com.br (187.32.212.98) 5.297 ms 5.823 ms 5.654 ms
 4 187-032-212-097.static.ctbctelecom.com.br (187.32.212.97) 6.205 ms 6.060 ms 6.707 ms
 5 100.126.1.226 (100.126.1.226) 18.221 ms 18.248 ms 18.793 ms
 6 100.127.6.98 (100.127.6.98) 22.458 ms 19.131 ms 19.030 ms
 7 et-2-0-0-0.border-b.spo511.algaratelecom.com.br (170.84.34.69) 20.307 ms 20.131 ms 20.442 ms
 8 74.125.48.112 (74.125.48.112) 15.993 ms 16.823 ms 16.672 ms
 9 * * *
10 172.253.73.190 (172.253.73.190) 15.402 ms 74.125.243.65 (74.125.243.65) 19.310 ms 18.918 ms
11 74.125.243.76 (74.125.243.76) 15.957 ms 142.251.76.113 (142.251.76.113) 18.256 ms 74.125.243.12 (74.125.243.12) 17.018 ms
12 gru06s25-in-f4.1e100.net (216.58.222.4) 14.069 ms
```

```
traceroute www.ufmg.br
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37

traceroute www.ufmg.br
traceroute to www.ufmg.br (150.164.250.1), 30 hops max, 60 byte packets
 1 _gateway (192.168.100.1) 0.792 ms 1.381 ms 1.365 ms
 2 terra-200-225-254-190.dynamic.idial.com.br (200.225.254.190) 4.583 ms 4.569 ms 5.251 ms
 3 187-032-212-098.static.ctbctelecom.com.br (187.32.212.98) 4.951 ms 4.937 ms 5.106 ms
 4 187-032-212-097.static.ctbctelecom.com.br (187.32.212.97) 5.667 ms 5.653 ms 5.698 ms
 5 100.126.1.226 (100.126.1.226) 16.939 ms 17.731 ms 17.502 ms
 6 100.127.6.98 (100.127.6.98) 21.130 ms 19.347 ms 18.826 ms
 7 et-2-0-0-0.border-b.spo511.algaratelecom.com.br (170.84.34.69) 19.379 ms 19.012 ms 19.478 ms
 8 as1916.saopaulo.sp.ix.br (187.16.220.208) 27.876 ms as1916.florianopolis.sc.ix.br (200.219.141.4) 27.852 ms as1916.saopaulo.sp.ix.br (187.16.220.208) 27.934 ms
 9 rj-sp2-ot.bkb.rnp.br (200.143.253.222) 21.714 ms 21.557 ms 21.401 ms
10 200.143.253.157 (200.143.253.157) 26.123 ms 170.79.213.39 (170.79.213.39) 22.143 ms 21.997 ms
11 170.79.213.81 (170.79.213.81) 23.446 ms 23.685 ms sp2-pr-ot.bkb.rnp.br (200.143.252.61) 32.267 ms
12 mg-mg2.bkb.rnp.br (200.143.253.225) 21.525 ms rj-sp2-ot.bkb.rnp.br (200.143.253.222) 32.080 ms mg-mg2.bkb.rnp.br (200.143.253.225) 21.130 ms
13 lanmg-mg.bkb.rnp.br (200.143.253.162) 21.565 ms 21.616 ms 21.668 ms
14 170.79.213.81 (170.79.213.81) 34.292 ms ptp-tutu-couve.pop-mg.rnp.br (200.131.0.135) 21.671 ms 21.474 ms
15 mg-mg2.bkb.rnp.br (200.143.253.225) 32.999 ms 32.383 ms ufmq-20g-2.pop-mg.rnp.br (200.19.158.3) 21.836 ms
```

```
traceroute www.mit.edu
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37

traceroute www.mit.edu
traceroute to www.mit.edu (23.37.251.54), 30 hops max, 60 byte packets
1 _gateway (192.168.100.1) 1.192 ms 1.181 ms 1.243 ms
2 terra-200-225-254-190.dynamic.idial.com.br (200.225.254.190) 4.633 ms 4.689 ms 5.344 ms
3 187-032-212-098.static.ctbctelecom.com.br (187.32.212.98) 5.228 ms 4.969 ms 5.125 ms
4 187-032-212-097.static.ctbctelecom.com.br (187.32.212.97) 5.317 ms 5.367 ms 5.484 ms
5 100.126.1.226 (100.126.1.226) 21.075 ms 21.553 ms 21.411 ms
6 100.127.6.102 (100.127.6.102) 21.629 ms 19.829 ms 20.185 ms
7 100.126.4.29 (100.126.4.29) 24.815 ms 25.018 ms 24.817 ms
8 * 201-048-050-130.static.ctbctelecom.com.br (201.48.50.130) 25.078 ms TenGigabitEthernet3-1.metroedge-a.pms001.algartelecom.com.br (201.48.50.142) 20.693 ms
9 * * *
10 * * *
11 * * *
12 * * *
13 * * *
14 * * *
15 * * *
16 * * *
```

```
tracepath www.ufmg.br
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37

tracepath www.ufmg.br
1?: [LOCALHOST] pmtu 1500
1: _gateway 1.188ms
1: _gateway 1.165ms
2: _gateway 1.904ms pmtu 1492
2: terra-200-225-254-190.dynamic.idial.com.br 4.949ms
3: 187-032-212-098.static.ctbctelecom.com.br 5.784ms
4: 187-032-212-097.static.ctbctelecom.com.br 3.938ms asymm 3
5: 100.126.1.226 15.813ms asymm 6
6: 100.127.6.98 15.297ms asymm 5
7: et-2-0-0-0.border-b.spo511.algartelecom.com.br 19.187ms asymm 4
8: as1916.florianopolis.sc.tx.br 26.490ms asymm 5
9: 170.79.213.106 24.381ms asymm 8
10: 170.79.213.39 20.838ms asymm 9
11: sp2-pr-oi.bkb.rnp.br 31.938ms asymm 5
12: rj-sp2-oi.bkb.rnp.br 32.342ms asymm 8
13: lanmg-mg.bkb.rnp.br 22.091ms asymm 8
14: ptp-tutu-couve.pop-mg.rnp.br 23.524ms asymm 9
15: mg-mg2.bkb.rnp.br 34.377ms asymm 7
```

```
netstat -s
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37

TCPspuriousRtxHostQueues: 236
TCPAutoCorking: 14177
TCPFromZeroWindowAdv: 18
TCPToZeroWindowAdv: 18
TCPWantZeroWindowAdv: 281
TCPSynRetrans: 4530
TCPOrigDataSent: 469849
TCPHstartTrainDetect: 7
TCPHstartTrainCwnd: 302
TCPHstartDelayDetect: 18
TCPHstartDelayCwnd: 648
TCPACKSkippedPAMS: 60
TCPACKSkippedSeq: 86
TCPACKSkippedTimeWait: 7
TCPACKSkippedChallenge: 8
TCPKeepAlive: 24214
TCPDelivered: 536653
TCPAckCompressed: 11441
TcpTimeoutRehash: 5612
```

```
netstat -i
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37

netstat -i
Kernel Interface table
Iface      MTU     RX-OK RX-ERR RX-DRP RX-OVR     TX-OK TX-ERR TX-DRP TX-OVR Flg
br-0061f   1500      0      0      0      0       0      0      0      0 BMU
br-84bfe   1500      0      0      0      0       0      0      0      0 BMU
br-f2956   1500      0      0      0      0       0      0      0      0 BMU
docker0    1500      0      0      0      0       0      0      0      0 BMU
en0       1500      0      0      0      0       0      0      0      0 BMU
lo        65536  1079104      0      0      0  1079104      0      0      0 LRU
wlo1     1500  13636556      0      0      0  4200928      0      0      0 BMRU
```

```
netstat -rn
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 142x18
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01$ netstat -rn
Kernel IP routing table
Destination     Gateway         Genmask        Flags MSS Window irtt Iface
0.0.0.0         192.168.100.1   0.0.0.0       UG    0 0          0 wlo1
169.254.0.0     0.0.0.0        255.255.0.0   U     0 0          0 wlo1
172.17.0.0      0.0.0.0        255.255.0.0   U     0 0          0 docker0
172.18.0.0      0.0.0.0        255.255.0.0   U     0 0          0 br-0061fd515bdd
172.19.0.0      0.0.0.0        255.255.0.0   U     0 0          0 br-84bfefcfb385
172.28.0.0      0.0.0.0        255.255.0.0   U     0 0          0 br-f29565badeba
192.168.100.0   0.0.0.0        255.255.255.0 U     0 0          0 wlo1
```

```
nmap www.ufmg.br
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01$ nmap www.ufmg.br
Starting Nmap 7.80 ( https://nmap.org ) at 2021-12-12 19:01 -03
Nmap scan report for www.ufmg.br (150.164.250.1)
Host is up (0.45s latency).
Not shown: 990 filtered ports
PORT      STATE SERVICE
80/tcp    open  http
443/tcp   open  https
40193/tcp closed unknown
40911/tcp closed unknown
41511/tcp closed unknown
42510/tcp closed caerp
44176/tcp closed unknown
44442/tcp closed coldfusion-auth
44443/tcp closed coldfusion-auth
44501/tcp closed unknown

Nmap done: 1 IP address (1 host up) scanned in 65.95 seconds
```

```
nmap -v localhost
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01$ nmap -v localhost
Starting Nmap 7.80 ( https://nmap.org ) at 2021-12-12 19:03 -03
Initiating Ping Scan at 19:03
Scanning localhost (127.0.0.1) [2 ports]
Completed Ping Scan at 19:03, 0.00s elapsed (1 total hosts)
Initiating Connect Scan at 19:03
Scanning localhost (127.0.0.1) [1000 ports]
Discovered open port 5900/tcp on 127.0.0.1
Discovered open port 80/tcp on 127.0.0.1
Discovered open port 631/tcp on 127.0.0.1
```

```
nmap www.google.com www.facebook.com
```

hericles@Dolores: ~/Disciplinas/Sistemas\_Embarcados/Semana01  
nmap www.google.com www.facebook.com  
Starting Nmap 7.80 ( https://nmap.org ) at 2021-12-12 19:03 -03

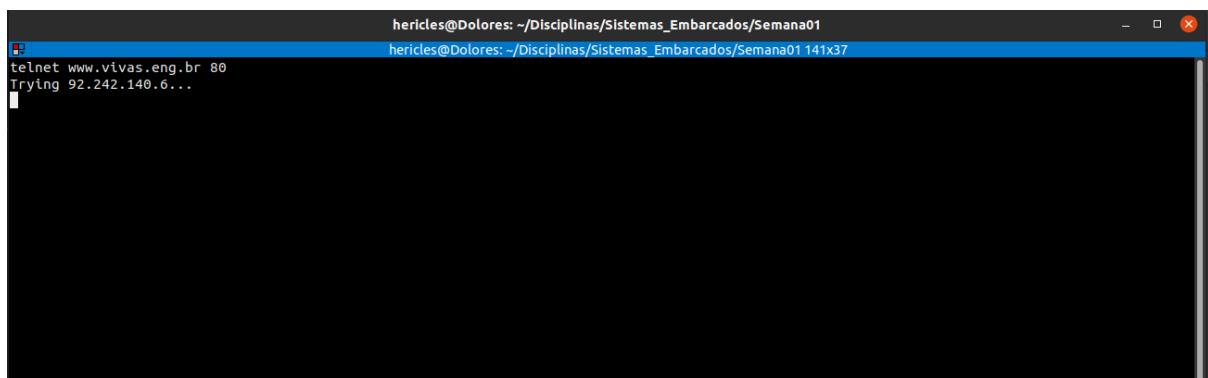
```
nmap 192.168.100.6
```

hericles@Dolores: ~/Disciplinas/Sistemas\_Embarcados/Semana01  
hericles@Dolores: ~/Disciplinas/Sistemas\_Embarcados/Semana01 142x18  
hericles@Dolores: ~/Disciplinas/Sistemas\_Embarcados/Semana01 \$ nmap 192.168.100.6  
Starting Nmap 7.80 ( https://nmap.org ) at 2021-12-12 23:07 -03  
Nmap scan report for Dolores (192.168.100.6)  
Host is up (0.0001zs latency).  
Not shown: 998 closed ports  
PORT STATE SERVICE  
80/tcp open http  
5900/tcp open vnc  
Nmap done: 1 IP address (1 host up) scanned in 0.17 seconds

```
route
```

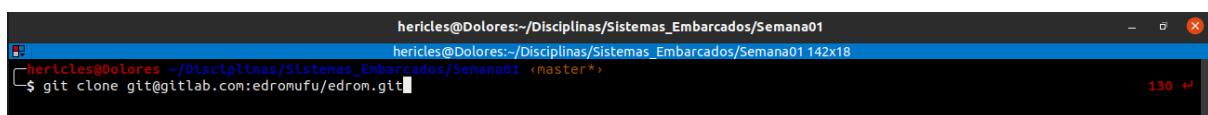
hericles@Dolores: ~/Disciplinas/Sistemas\_Embarcados/Semana01  
hericles@Dolores: ~/Disciplinas/Sistemas\_Embarcados/Semana01 141x37  
route  
Kernel IP routing table  
Destination Gateway Genmask Flags Metric Ref Use Iface

```
telnet www.vivas.eng.br 80
```



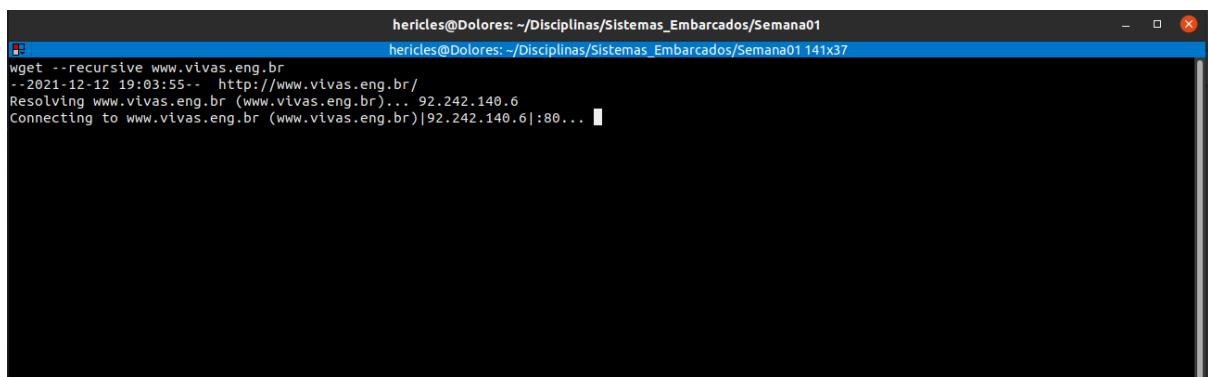
A terminal window titled "hericles@Dolores: ~/Disciplinas/Sistemas\_Embarcados/Semana01". The command "telnet www.vivas.eng.br 80" is entered, followed by "Trying 92.242.140.6...". The window has a blue header bar and a black background.

```
git clone git@gitlab.com:edromufu/edrom.git (exemplo de ssh)
```



A terminal window titled "hericles@Dolores: ~/Disciplinas/Sistemas\_Embarcados/Semana01". The command "git clone git@gitlab.com:edromufu/edrom.git" is entered. The output shows the repository cloned into the current directory. The window has a blue header bar and a black background.

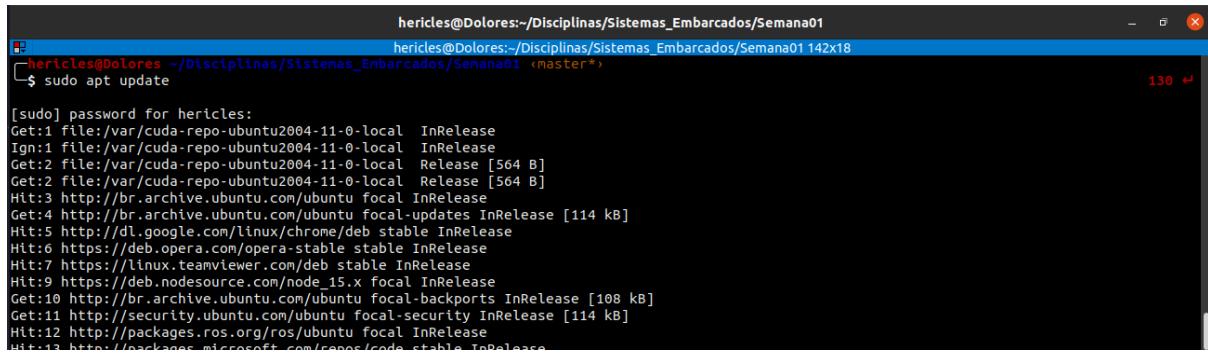
```
wget --recursive www.vivas.eng.br
```



A terminal window titled "hericles@Dolores: ~/Disciplinas/Sistemas\_Embarcados/Semana01". The command "wget --recursive www.vivas.eng.br" is entered. The output shows the process of resolving the URL and connecting to the server. The window has a blue header bar and a black background.

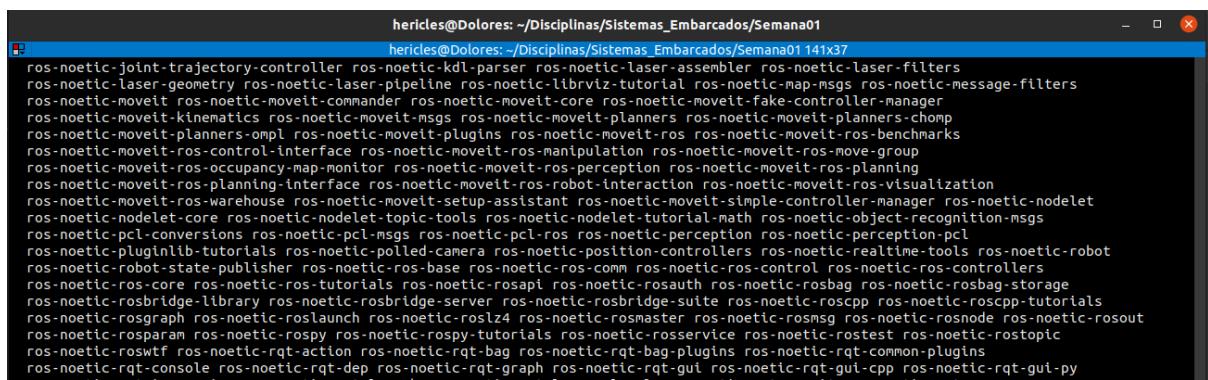
## 10. Capítulo 10

```
sudo apt update
```



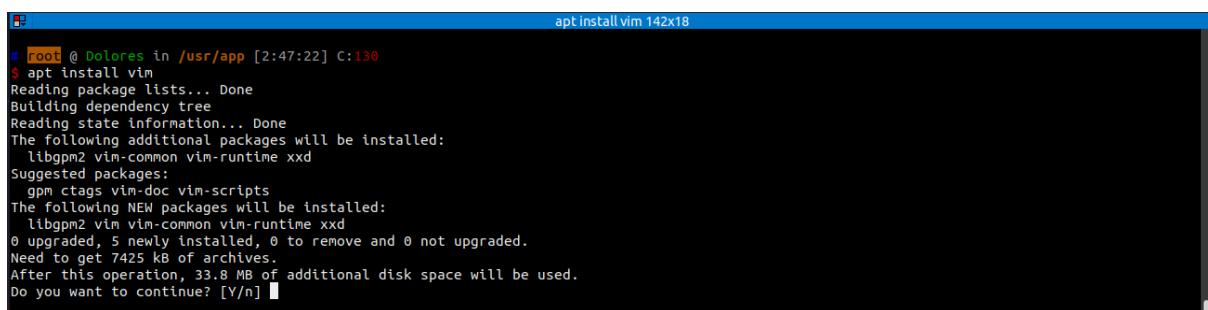
```
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01 142x18
$ sudo apt update
[sudo] password for hericles:
Get:1 file:/var/cuda-repo-ubuntu2004-11-0-local InRelease
Ign:1 file:/var/cuda-repo-ubuntu2004-11-0-local InRelease
Get:2 file:/var/cuda-repo-ubuntu2004-11-0-local Release [564 B]
Get:2 file:/var/cuda-repo-ubuntu2004-11-0-local Release [564 B]
Hit:3 http://br.archive.ubuntu.com/ubuntu focal InRelease
Get:4 http://br.archive.ubuntu.com/ubuntu focal-updates InRelease [114 kB]
Hit:5 http://dl.google.com/linux/chrome/deb stable InRelease
Hit:6 https://deb.opera.com/opera-stable stable InRelease
Hit:7 https://linux.teamviewer.com/deb stable InRelease
Hit:8 https://nodejs.org/dist/v15.x focal InRelease
Get:9 http://br.archive.ubuntu.com/ubuntu focal-backports InRelease [108 kB]
Get:10 http://security.ubuntu.com/ubuntu focal-security InRelease [114 kB]
Hit:11 http://packages.ros.org/ros/ubuntu focal InRelease
Hit:12 http://packages.microsoft.com/repos/code stable InRelease
```

```
sudo apt upgrade
```



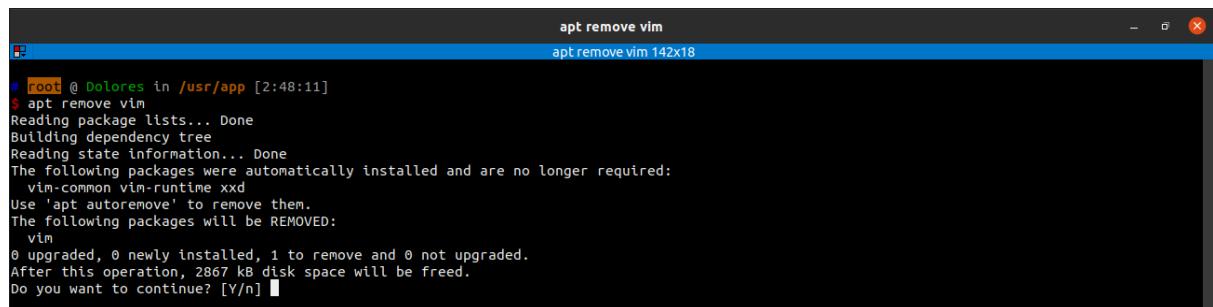
```
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
ros-noetic-joint-trajectory-controller ros-noetic-kdl-parser ros-noetic-laser-assembler ros-noetic-laser-filters
ros-noetic-laser-geometry ros-noetic-laser-pipeline ros-noetic-librviz-tutorial ros-noetic-map-msgs ros-noetic-message-filters
ros-noetic-moveit ros-noetic-moveit-commander ros-noetic-moveit-core ros-noetic-moveit-fake-controller-manager
ros-noetic-moveit-kinematics ros-noetic-moveit-msgs ros-noetic-moveit-planners ros-noetic-moveit-planners-chomp
ros-noetic-moveit-planners-ompl ros-noetic-moveit-plugins ros-noetic-moveit-ros ros-noetic-moveit-ros-benchmarks
ros-noetic-moveit-ros-control-interface ros-noetic-moveit-ros-manipulation ros-noetic-moveit-ros-move-group
ros-noetic-moveit-ros-occupancy-map-monitor ros-noetic-moveit-ros-perception ros-noetic-moveit-ros-planning
ros-noetic-moveit-ros-planning-interface ros-noetic-moveit-ros-robot-interaction ros-noetic-moveit-ros-visualization
ros-noetic-moveit-ros-warehouse ros-noetic-moveit-setup-assistant ros-noetic-moveit-simple-controller-manager ros-noetic-nodelet
ros-noetic-nodelet-core ros-noetic-nodelet-topic-tools ros-noetic-nodelet-tutorial-math ros-noetic-object-recognition-msgs
ros-noetic-pcl-conversions ros-noetic-pcl-msgs ros-noetic-pcl-ros ros-noetic-perception ros-noetic-perception-pcl
ros-noetic-pluginlib-tutorials ros-noetic-polled-camera ros-noetic-position-controllers ros-noetic-realtime-tools ros-noetic-robot
ros-noetic-robot-state-publisher ros-noetic-ros-base ros-noetic-ros-common ros-noetic-ros-control ros-noetic-ros-controllers
ros-noetic-ros-core ros-noetic-ros-tutorials ros-noetic-rosapi ros-noetic-rosauth ros-noetic-rosbag ros-noetic-rosbag-storage
ros-noetic-rosbridge-library ros-noetic-rosbridge-server ros-noetic-rosbridge-suite ros-noetic-roscpp ros-noetic-rospp-tutorials
ros-noetic-rosgraph ros-noetic-roslaunch ros-noetic-roslz4 ros-noetic-rosmaster ros-noetic-rosmsg ros-noetic-rosnode ros-noetic-rosout
ros-noetic-rosparam ros-noetic-rospy-tutorials ros-noetic-rosroverse ros-noetic-rostest ros-noetic-rostopic
ros-noetic-rosrwtf ros-noetic-rqt-action ros-noetic-rqt-bag ros-noetic-rqt-bag-plugins ros-noetic-rqt-common-plugins
ros-noetic-rqt-console ros-noetic-rqt-dep ros-noetic-rqt-graph ros-noetic-rqt-gui ros-noetic-rqt-gui-cpp ros-noetic-rqt-gui-py
```

```
apt install vim
```



```
# root @ Dolores in /usr/app [2:47:22] C:130
$ apt install vim
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  libgpm2 vim-common vim-runtime xxd
Suggested packages:
  gpm ctags vim-doc vim-scripts
The following NEW packages will be installed:
  libgpm2 vim vim-common vim-runtime xxd
0 upgraded, 5 newly installed, 0 to remove and 0 not upgraded.
Need to get 7425 kB of archives.
After this operation, 33.8 MB of additional disk space will be used.
Do you want to continue? [Y/n] ■
```

```
apt remove vim
```

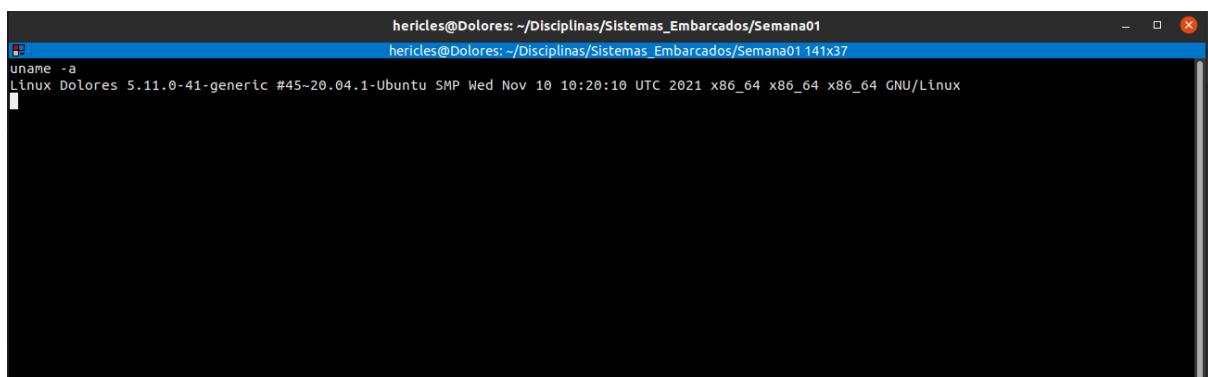


The screenshot shows a terminal window titled "apt remove vim" with the command "apt remove vim" entered. The terminal output indicates that the package "vim" is being removed. It shows the process of reading package lists, building a dependency tree, and determining packages to be removed. It also mentions that "vim-common" and "vim-runtime" are automatically installed and no longer required. The user is prompted with "Do you want to continue? [Y/n]".

```
apt remove vim
apt remove vim 142x18
root@Dolores:~# apt remove vim
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages were automatically installed and are no longer required:
  vim-common vim-runtime xxd
Use 'apt autoremove' to remove them.
The following packages will be REMOVED:
  vim
0 upgraded, 0 newly installed, 1 to remove and 0 not upgraded.
After this operation, 2867 kB disk space will be freed.
Do you want to continue? [Y/n] ■
```

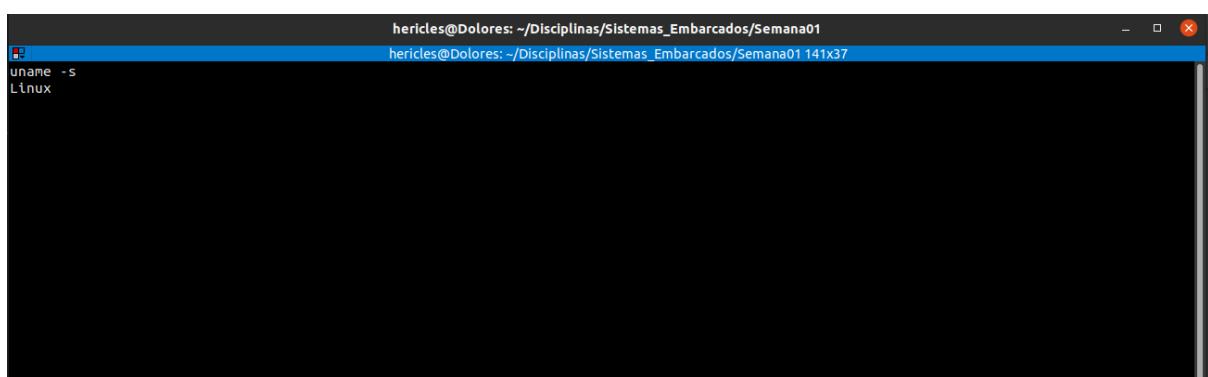
## 11. Capítulo 14

```
uname -a
```



```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
uname -a
Linux Dolores 5.11.0-41-generic #45~20.04.1-Ubuntu SMP Wed Nov 10 10:20:10 UTC 2021 x86_64 x86_64 x86_64 GNU/Linux
```

```
uname -s
```



```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
uname -s
Linux
```

```
uname -v
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
uname -v
#45~20.04.1-Ubuntu SMP Wed Nov 10 10:20:10 UTC 2021
```

```
head -n1 /etc/issue
```

```
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01 142x18
└─ hericles@Dolores ~/Disciplinas/Sistemas_Embarcados/Semana01 (master*) 130 ↵
  $ head -n1 /etc/issue
Ubuntu 20.04.3 LTS \n \l
```

lscpu

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 142x38

hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01$ 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):                4
On-line CPU(s) list:  0-3
Thread(s) per core:   2
Core(s) per socket:   2
Socket(s):             1
NUMA node(s):          1
Vendor ID:             GenuineIntel
CPU family:            6
Model:                 78
Model name:            Intel(R) Core(TM) i5-6200U CPU @ 2.30GHz
Stepping:               3
CPU MHz:               2400.000
CPU max MHz:           2800.0000
CPU min MHz:           400.0000
BogoMIPS:              4800.00
Virtualization:        VT-x
L1d cache:             64 Kib
L1i cache:             64 Kib
L2 cache:              512 Kib
L3 cache:              3 Mib
NUMA node0 CPU(s):     0-3
Vulnerability Itlb multithit: KVM: Mitigation: VMX disabled
Vulnerability L1tf:      Mitigation; PTE Inversion; VMX conditional cache flushes, SMT vulnerable
Vulnerability L1df:      Mitigation; Clear CPU buffers; SMT vulnerable
Vulnerability Meltdown:  Mitigation; PTI
Vulnerability Spec store bypass: Mitigation; Speculative Store Bypass disabled via prctl and seccomp
Vulnerability Spectre v1:  Mitigation; usercopy/swapsgs barriers and __user pointer sanitization
Vulnerability Spectre v2:  Mitigation; Full generic retpoline, IBPB conditional, IBRS_FW, STIBP conditional, RSB filling
Vulnerability Srbds:     Mitigation; Microcode
Vulnerability Tsx async abort: Not affected
Flags:                  fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36 clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpe1gb rdtsvp lm constant tsc art arch perfmon pebs bts rep_good nopl xtalogoy nonstop_tech
```

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

```
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01 142x18
hericles@Dolores ~/Disciplinas/Sistemas_Embarcados/Semana01 <master>
$ grep "model name" /proc/cpuinfo
model name      : Intel(R) Core(TM) i5-6200U CPU @ 2.30GHz
model name      : Intel(R) Core(TM) i5-6200U CPU @ 2.30GHz
model name      : Intel(R) Core(TM) i5-6200U CPU @ 2.30GHz
model name      : Intel(R) Core(TM) i5-6200U CPU @ 2.30GHz
hericles@Dolores ~/Disciplinas/Sistemas_Embarcados/Semana01 <master>
```

```
lscpi
```

```
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
hericles@Dolores ~/Disciplinas/Sistemas_Embarcados/Semana01 <master>
$ lscpi
00:00.0 Host bridge: Intel Corporation Xeon E3-1200 v5/E3-1500 v5/6th Gen Core Processor Host Bridge/DRAM Registers (rev 08)
00:02.0 VGA compatible controller: Intel Corporation Skylake GT2 [HD Graphics 520] (rev 07)
00:04.0 Signal processing controller: Intel Corporation Xeon E3-1200 v5/E3-1500 v5/6th Gen Core Processor Thermal Subsystem (rev 08)
00:14.0 USB controller: Intel Corporation Sunrise Point-LP USB 3.0 xHCI Controller (rev 21)
00:14.2 Signal processing controller: Intel Corporation Sunrise Point-LP Thermal subsystem (rev 21)
00:16.0 Communication controller: Intel Corporation Sunrise Point-LP CSME HECI #1 (rev 21)
00:17.0 SATA controller: Intel Corporation Sunrise Point-LP SATA Controller [AHCI mode] (rev 21)
00:1c.0 PCI bridge: Intel Corporation Sunrise Point-LP PCI Express Root Port #5 (rev f1)
00:1c.5 PCI bridge: Intel Corporation Sunrise Point-LP PCI Express Root Port #6 (rev f1)
00:1d.0 PCI bridge: Intel Corporation Device 9dib (rev f1)
00:1f.0 ISA bridge: Intel Corporation Sunrise Point-LP LPC Controller (rev 21)
00:1f.2 Memory controller: Intel Corporation Sunrise Point-LP PMC (rev 21)
00:1f.3 Audio device: Intel Corporation Sunrise Point-LP HD Audio (rev 21)
00:1f.4 SMBus: Intel Corporation Sunrise Point-LP SMBus (rev 21)
01:00.0 Unassigned class [ff00]: Realtek Semiconductor Co., Ltd. RTS522A PCI Express Card Reader (rev 01)
02:00.0 Ethernet controller: Realtek Semiconductor Co., Ltd. RTL810xE PCI Express Fast Ethernet controller (rev 0a)
03:00.0 Network controller: Intel Corporation Wireless 3165 (rev 81)
```

```
lsusb
```

```
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01 142x18
hericles@Dolores ~/Disciplinas/Sistemas_Embarcados/Semana01 <master>
$ lsusb
Bus 002 Device 001: ID 1d6b:0003 Linux Foundation 3.0 root hub
Bus 001 Device 005: ID 0eef:c04d D-WAV Scientific Co., Ltd eGalaxTouch EXC3000-0367-44.01.00
Bus 001 Device 004: ID 8087:0a2a Intel Corp.
Bus 001 Device 006: ID 05c8:038e Cheng Uei Precision Industry Co., Ltd (Foxlink) HP Wide Vision HD
Bus 001 Device 001: ID 1d6b:0002 Linux Foundation 2.0 root hub
```

```
lsblk
```

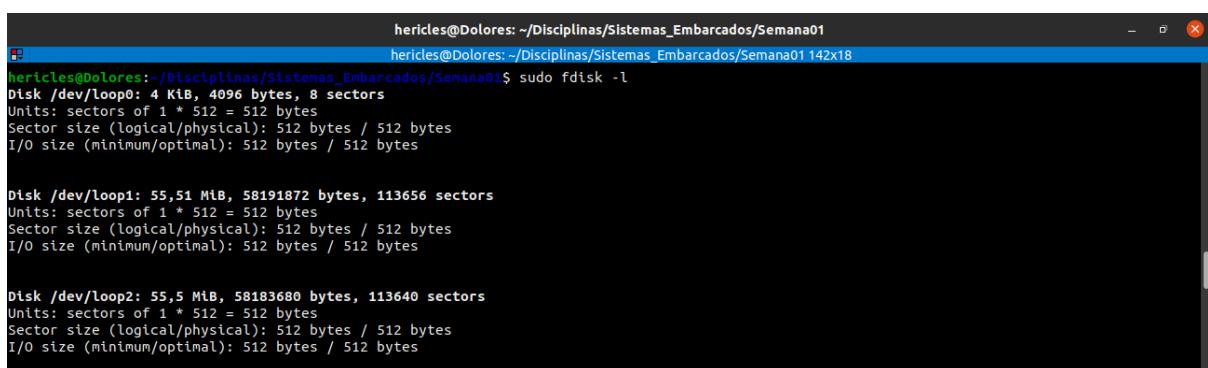
```
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01 142x18
hericles@Dolores ~/Disciplinas/Sistemas_Embarcados/Semana01 <master>
$ lsblk
NAME  MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
loop0   7:0    0   4K  1 loop  /snap/bare/5
loop1   7:1    0 55,5M  1 loop  /snap/core18/2246
loop2   7:2    0 55,5M  1 loop  /snap/core18/2253
loop3   7:3    0 61,9M  1 loop  /snap/core20/1242
loop4   7:4    0 61,9M  1 loop  /snap/core20/1270
loop5   7:5    0 117,5M 1 loop  /snap/dotnet-sdk/143
loop6   7:6    0 117,5M 1 loop  /snap/dotnet-sdk/148
loop7   7:7    0 162,9M 1 loop  /snap/gnome-3-28-1804/145
loop8   7:8    0 219M  1 loop  /snap/gnome-3-34-1804/77
loop9   7:9    0 164,8M 1 loop  /snap/gnome-3-28-1804/161
loop10  7:10   0 65,1M  1 loop  /snap/gtk-common-themes/1515
loop11  7:11   0 247,9M 1 loop  /snap/gnome-3-38-2004/87
loop12  7:12   0 82,3M  1 loop  /snap/netron/218
loop13  7:13   0 92,6M  1 loop  /snap/insomnia/165
loop14  7:14   0 92,3M  1 loop  /snap/insomnia/166
loop15  7:15   0 54,2M  1 loop  /snap/snap-store/558
```

```
cat /proc/partitions
```



```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 142x18
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01$ cat /proc/partitions
Major minor #blocks name
 7      0        4 loop0
 7      1    56828 loop1
 7      2    56820 loop2
 7      3    63316 loop3
 7      4    63392 loop4
 7      5   120340 loop5
 7      6   120340 loop6
 7      7   166776 loop7
 8      0  468851544 sda
 8      1   541696 sda1
 8      2   101376 sda2
 8      3   16384 sda3
 8      4  128726274 sda4
 8      5   637952 sda5
 8      6  337823744 sda6
```

```
sudo fdisk -l
```



```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 142x18
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01$ sudo fdisk -l
Disk /dev/loop0: 4 KiB, 4096 bytes, 8 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk /dev/loop1: 55,51 MiB, 58191872 bytes, 113656 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk /dev/loop2: 55,5 MiB, 58183680 bytes, 113640 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
```

```
free
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37

free
total      used      free      shared  buff/cache   available
Mem:    12149472    7345896    385624    473476    4417952    4092132
Swap:   2097148     1493724    603424
```

```
free -m
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37

free -m
total      used      free      shared  buff/cache   available
Mem:      11864      7172       376      463      4315      3996
Swap:     2047      1458       589
```

```
vmstat -s
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 142x18

hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01$ vmstat -s
12149472 K total memory
 4014588 K used memory
 1770184 K active memory
 5568544 K inactive memory
 3990492 K free memory
  397564 K buffer memory
 3746828 K swap cache
 2097148 K total swap
     0 K used swap
 2097148 K free swap
 419228 non-nice user cpu ticks
   9161 nice user cpu ticks
 140769 system cpu ticks
 754145 idle cpu ticks
   3762 IO-wait cpu ticks
     0 IRQ cpu ticks
  2236 softirq cpu ticks
```

top

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37
top - 19:05:27 up 4 days, 1:01, 1 user, load average: 1,32, 1,08, 1,02
Tasks: 402 total, 2 running, 400 sleeping, 0 stopped, 0 zombie
%CPU(s): 10,6 us, 4,6 sy, 0,1 ni, 84,7 id, 0,0 wa, 0,0 hi, 0,0 si, 0,0 st
MiB Mem : 11864,7 total, 383,9 free, 7175,8 used, 4305,0 buff/cache
MiB Swap: 2048,0 total, 589,3 free, 1458,7 used. 4003,5 avail Mem

 PID USER      PR  NI    VIRT    RES    SHR S %CPU %MEM TIME+ COMMAND
434239 hericles 20   0 13,5g 388880 92348 S 13,0  3,2 13:34.31 teams
137553 hericles 20   0 2144904 337052 52484 R 10,0  2,8 9:09.41 nautilus
221866 hericles 20   0 3238864 515292 131224 S 8,6  4,2 136:19.28 Web Content
299267 root     20   0 992784 124984 32936 S 4,0  1,0 7:33.37 node
2944 hericles 20   0 65616 54540 5660 S 3,3  0,4 7:54.93 wsatspl
220826 hericles 20   0 4880212 714736 181652 S 3,3  5,9 187:41.36 GeckoMain
434164 hericles 20   0 1141316 96164 60160 S 3,3  0,8 2:57.73 teams
2973 hericles 20   0 8640 4612 3592 S 2,3  0,0 4:56.65 dbus-daemon
2820 hericles 20   0 1080812 163728 65824 S 1,3  1,3 141:45.45 Xorg
3020 hericles 20   0 5189580 317352 86288 S 1,3  2,6 102:48.54 gnome-shell
 270 root     19  -1 97216 51520 49108 S 0,7  0,4 4:28.12 systemd-journal
221741 hericles 20   0 9629652 387220 141436 S 0,7  3,2 10:34.33 Web Content
```

```
htop
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 141x37

1 [██████████] 50.0% Tasks: 279, 1405 thr; 1 running
2 [██████████] 0.0% Load average: 1.29 1.08 1.02
3 [██████████] 75.0% Uptime: 4 days, 01:01:39
4 [██████████] 25.0%
Mem[██████████] 7.45G/11.6G
Swp[██████████] 1.42G/2.00G

PID USER PRI NI VIRT RES SHR S CPU% MEM% TIME+ Command
220828 hericles 20 0 4765M 697M 177M S 0.0 5.9 0:00.21 /usr/lib/firefox/firefox
220829 hericles 20 0 4765M 697M 177M S 0.0 5.9 0:10.96 /usr/lib/firefox/firefox
220842 hericles 20 0 4765M 697M 177M S 0.0 5.9 11:11.17 /usr/lib/firefox/firefox
220843 hericles 20 0 4765M 697M 177M S 0.0 5.9 0:33.24 /usr/lib/firefox/firefox
220844 hericles 20 0 4765M 697M 177M S 0.0 5.9 0:00.15 /usr/lib/firefox/firefox
220845 hericles 20 0 4765M 697M 177M S 0.0 5.9 4:15.59 /usr/lib/firefox/firefox
220846 hericles 20 0 4765M 697M 177M S 0.0 5.9 0:00.29 /usr/lib/firefox/firefox
220849 hericles 20 0 4765M 697M 177M S 0.0 5.9 0:01.75 /usr/lib/firefox/firefox
220851 hericles 20 0 4765M 697M 177M S 0.0 5.9 1:03.88 /usr/lib/firefox/firefox
220852 hericles 20 0 4765M 697M 177M S 0.0 5.9 0:00.01 /usr/lib/firefox/firefox
```

```
sudo dmidecode -t 17
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 142x18

# dmidecode 3.2
# Getting SMBIOS data from sysfs.
SMBIOS 2.8 present.

Handle 0x0019, DMI type 17, 40 bytes
Memory Device
  Array Handle: 0x0018
  Error Information Handle: No Error
  Total Width: 64 bits
  Data Width: 64 bits
  Size: 8192 MB
  Form Factor: SODIMM
  Set: None
  Locator: Bottom-Slot 1(left)
  Bank Locator: BANK 0
  Type: DDR4
  Type Detail: Synchronous
```

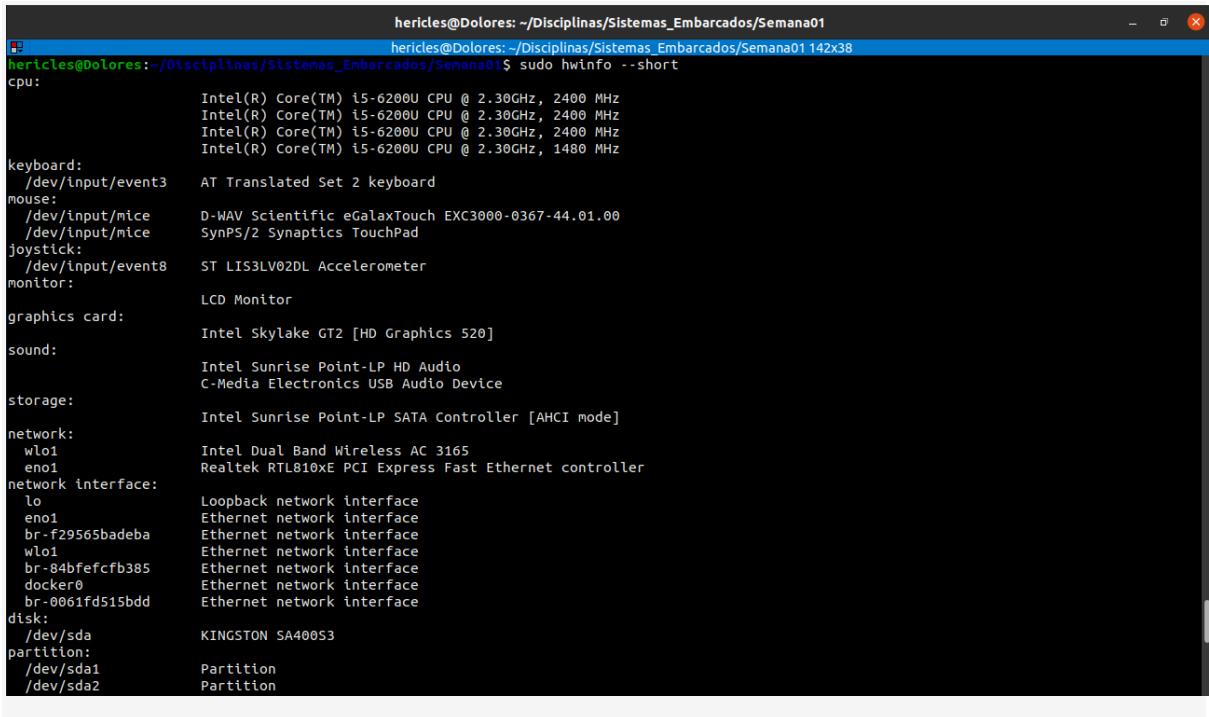
```
sudo hwinfo
```

```
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores: ~/Disciplinas/Sistemas_Embarcados/Semana01 142x18

00: None 01.0: 10701 Ethernet
  [Created at net.126]
  Unique ID: Vnch.ndpeucax6V1
  Parent ID: S6TQ.Z8tIGJt9oq3
  SysFS ID: /class/net/wlo1
  SysFS Device Link: /devices/pci0000:00/0000:00:0d.0/0000:03:00.0
  Hardware Class: network interface
  Model: "Ethernet network interface"
  Driver: "iwlwifi"
  Driver Modules: "iwlwifi"
  Device File: wlo1
  HW Address: ac:2b:e4:e4:61:0f
  Permanent HW Address: ac:2b:e4:e4:61:0f
  Link detected: yes
  Config Status: cfg=new, avail=yes, need=no, active=unknown
  Attached to: #13 (WLAN controller)

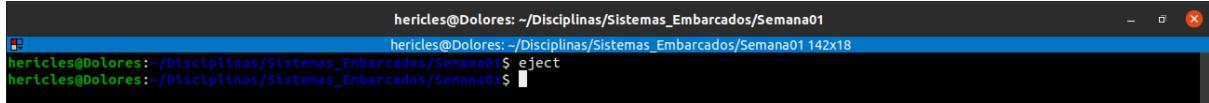
 61: None 00.0: 10701 Ethernet
  [Created at net.126]
```

```
sudo hwinfo --short
```



```
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01$ sudo hwinfo --short
cpu:
    Intel(R) Core(TM) i5-6200U CPU @ 2.30GHz, 2400 MHz
    Intel(R) Core(TM) i5-6200U CPU @ 2.30GHz, 2400 MHz
    Intel(R) Core(TM) i5-6200U CPU @ 2.30GHz, 2400 MHz
    Intel(R) Core(TM) i5-6200U CPU @ 2.30GHz, 1480 MHz
keyboard:
    /dev/input/event3    AT Translated Set 2 keyboard
mouse:
    /dev/input/mice     D-WAV Scientific eGalaxTouch EXC3000-0367-44.01.00
    /dev/input/mice     SynPS/2 Synaptics TouchPad
joystick:
    /dev/input/event8   ST LIS3LV02DL Accelerometer
monitor:
    LCD Monitor
graphics card:
    Intel Skylake GT2 [HD Graphics 520]
sound:
    Intel Sunrise Point-LP HD Audio
    C-Media Electronics USB Audio Device
storage:
    Intel Sunrise Point-LP SATA Controller [AHCI mode]
network:
    wlo1               Intel Dual Band Wireless AC 3165
    eno1               Realtek RTL810xE PCI Express Fast Ethernet controller
network interface:
    lo                 Loopback network interface
    eno1               Ethernet network interface
    br-f29565badeba  Ethernet network interface
    wlo1               Ethernet network interface
    br-84bfefcfb385  Ethernet network interface
    docker0            Ethernet network interface
    br-0061fd515bdd  Ethernet network interface
disk:
    /dev/sda            KINGSTON SA400S3
partition:
    /dev/sda1          Partition
    /dev/sda2          Partition
```

```
eject (Compartimento de dvd/cd abriu)
```



```
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01$ eject
hericles@Dolores:~/Disciplinas/Sistemas_Embarcados/Semana01$
```