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**Turma:** Engenharia de Computação  
**Disciplina:** Sistemas Operacionais

### Atividade Prática de SA

1)

dr-xr-xr-x	9	root	root	0 dez 15 22:55	1
dr-xr-xr-x	9	root	root	0 dez 15 22:55	10
dr-xr-xr-x	9	root	root	0 dez 15 22:55	100
dr-xr-xr-x	9	root	root	0 dez 15 22:55	101
dr-xr-xr-x	9	wesley	wesley	0 dez 15 22:55	1012
dr-xr-xr-x	9	wesley	wesley	0 dez 15 22:55	1021
dr-xr-xr-x	9	wesley	wesley	0 dez 15 22:55	1024
dr-xr-xr-x	9	wesley	wesley	0 dez 15 22:55	1033
dr-xr-xr-x	9	wesley	wesley	0 dez 15 22:55	1042
dr-xr-xr-x	9	wesley	wesley	0 dez 15 22:55	1044
dr-xr-xr-x	9	wesley	wesley	0 dez 15 22:55	1051
dr-xr-xr-x	9	wesley	wesley	0 dez 15 22:55	1069
dr-xr-xr-x	9	wesley	wesley	0 dez 15 22:55	1071
dr-xr-xr-x	9	wesley	wesley	0 dez 15 22:55	1077
dr-xr-xr-x	9	root	root	0 dez 15 22:55	1083
dr-xr-xr-x	9	root	root	0 dez 15 22:55	109
dr-xr-xr-x	9	root	root	0 dez 15 22:55	11
dr-xr-xr-x	9	root	root	0 dez 15 22:55	112
dr-xr-xr-x	9	root	root	0 dez 15 22:55	113
dr-xr-xr-x	9	wesley	wesley	0 dez 15 23:01	11365
dr-xr-xr-x	9	root	root	0 dez 15 22:55	118
dr-xr-xr-x	9	wesley	wesley	0 dez 15 22:55	1185
dr-xr-xr-x	9	wesley	wesley	0 dez 15 22:55	1189
dr-xr-xr-x	9	wesley	wesley	0 dez 15 22:55	1197
dr-xr-xr-x	9	root	root	0 dez 15 22:55	12
dr-xr-xr-x	9	wesley	wesley	0 dez 15 22:55	1203
dr-xr-xr-x	9	wesley	wesley	0 dez 15 22:55	1231
dr-xr-xr-x	9	wesley	wesley	0 dez 15 22:55	1240
dr-xr-xr-x	9	wesley	wesley	0 dez 15 22:55	1245
dr-xr-xr-x	9	root	root	0 dez 15 22:55	1261
dr-xr-xr-x	9	wesley	wesley	0 dez 15 22:55	1268
dr-xr-xr-x	9	wesley	wesley	0 dez 15 23:02	12773
dr-xr-xr-x	9	wesley	wesley	0 dez 15 22:55	1280
dr-xr-xr-x	9	wesley	wesley	0 dez 15 22:55	1283
dr-xr-xr-x	9	wesley	wesley	0 dez 15 22:55	1291

```
wesley@wesley-VirtualBox:/proc$ ps -lax
```

F	UID	PID	PPID	PRI	NI	VSZ	RSS	WCHAN	STAT	TTY	TIME	COMMAND
4	0	1	0	20	0	168224	11020	-	Ss	?	0:05	/sbin/init splash
1	0	2	0	20	0	0	0	-	S	?	0:00	[kthreadd]
1	0	3	2	0	-20	0	0	-	I<	?	0:00	[rcu_gp]
1	0	4	2	0	-20	0	0	-	I<	?	0:00	[rcu_par_gp]
1	0	5	2	0	-20	0	0	-	I<	?	0:00	[netns]
1	0	7	2	0	-20	0	0	-	I<	?	0:00	[kworker/0:0H-events_highpri]
1	0	9	2	0	-20	0	0	-	I<	?	0:01	[kworker/0:1H-kblockd]
1	0	10	2	0	-20	0	0	-	I<	?	0:00	[mm_percpu_wq]
1	0	11	2	20	0	0	0	-	S	?	0:00	[rcu_tasks_rude_]
1	0	12	2	20	0	0	0	-	S	?	0:00	[rcu_tasks_trace]
1	0	13	2	20	0	0	0	-	S	?	0:01	[ksoftirqd/0]
1	0	14	2	20	0	0	0	-	I	?	0:01	[rcu_sched]
1	0	15	2	-100	-	0	0	-	S	?	0:00	[migration/0]
1	0	16	2	-51	-	0	0	-	S	?	0:00	[idle_inject/0]
1	0	18	2	20	0	0	0	-	S	?	0:00	[cpuhp/0]
5	0	19	2	20	0	0	0	-	S	?	0:00	[kdevtmpfs]
1	0	20	2	0	-20	0	0	-	I<	?	0:00	[inet_frag_wq]
1	0	21	2	20	0	0	0	-	S	?	0:00	[kauditd]
1	0	22	2	20	0	0	0	-	S	?	0:00	[khungtaskd]
1	0	23	2	20	0	0	0	-	S	?	0:00	[oom_reaper]
1	0	24	2	0	-20	0	0	-	I<	?	0:00	[writeback]
1	0	25	2	20	0	0	0	-	S	?	0:00	[kcompactd0]
1	0	26	2	25	5	0	0	-	SN	?	0:00	[ksmd]
1	0	27	2	39	19	0	0	-	SN	?	0:00	[khugepaged]
1	0	73	2	0	-20	0	0	-	I<	?	0:00	[kintegrityd]
1	0	74	2	0	-20	0	0	-	I<	?	0:00	[kblockd]
1	0	75	2	0	-20	0	0	-	I<	?	0:00	[blkcg_punt_bio]
1	0	76	2	0	-20	0	0	-	I<	?	0:00	[tpm_dev_wq]
1	0	77	2	0	-20	0	0	-	I<	?	0:00	[ata_sff]
1	0	78	2	0	-20	0	0	-	I<	?	0:00	[md]
1	0	79	2	0	-20	0	0	-	I<	?	0:00	[edac-poller]
1	0	80	2	0	-20	0	0	-	I<	?	0:00	[devfreq_wq]
1	0	81	2	-51	-	0	0	-	S	?	0:00	[watchdogd]
1	0	82	2	20	0	0	0	-	S	?	0:00	[kworker/u3:1-events_unbound]

2)

```
wesley@wesley-VirtualBox:/proc$ ps
```

PID	TTY	TIME	CMD
25810	pts/3	00:00:00	bash
33416	pts/3	00:00:00	ps

```
wesley@wesley-VirtualBox:/proc$ more /proc/25810/cmdline
bash
wesley@wesley-VirtualBox:/proc$ more /proc/25810/maps
```

56458fa03000-56458fa32000	r--p	00000000	08:02 112	/usr/bin/bash
56458fa32000-56458fb11000	r-xp	0002f000	08:02 112	/usr/bin/bash
56458fb11000-56458fb4b000	r--p	0010e000	08:02 112	/usr/bin/bash
56458fb4c000-56458fb50000	r--p	00148000	08:02 112	/usr/bin/bash
56458fb50000-56458fb59000	rw-p	0014c000	08:02 112	/usr/bin/bash
56458fb59000-56458fb64000	rw-p	00000000	00:00 0	
564590ef3000-564591017000	rw-p	00000000	00:00 0	[heap]
7f6ea0a1a000-7f6ea1801000	r--p	00000000	08:02 6931	/usr/lib/locale/locale-archive
7f6ea1801000-7f6ea1804000	rw-p	00000000	00:00 0	
7f6ea1804000-7f6ea182c000	r--p	00000000	08:02 7726	/usr/lib/x86_64-linux-gnu/libc.so.6
7f6ea182c000-7f6ea19c1000	r-xp	00028000	08:02 7726	/usr/lib/x86_64-linux-gnu/libc.so.6
7f6ea19c1000-7f6ea1a19000	r--p	001bd000	08:02 7726	/usr/lib/x86_64-linux-gnu/libc.so.6
7f6ea1a19000-7f6ea1a1d000	r--p	00214000	08:02 7726	/usr/lib/x86_64-linux-gnu/libc.so.6
7f6ea1a1d000-7f6ea1a1f000	rw-p	00218000	08:02 7726	/usr/lib/x86_64-linux-gnu/libc.so.6
7f6ea1a1f000-7f6ea1a2c000	rw-p	00000000	00:00 0	
7f6ea1a2c000-7f6ea1a3a000	r--p	00000000	08:02 8855	/usr/lib/x86_64-linux-gnu/libtinfo.so.6.3
7f6ea1a3a000-7f6ea1a4b000	r-xp	0000e000	08:02 8855	/usr/lib/x86_64-linux-gnu/libtinfo.so.6.3
7f6ea1a4b000-7f6ea1a59000	r--p	0001f000	08:02 8855	/usr/lib/x86_64-linux-gnu/libtinfo.so.6.3
7f6ea1a59000-7f6ea1a5d000	r--p	0002c000	08:02 8855	/usr/lib/x86_64-linux-gnu/libtinfo.so.6.3
7f6ea1a5d000-7f6ea1a5e000	rw-p	00030000	08:02 8855	/usr/lib/x86_64-linux-gnu/libtinfo.so.6.3
7f6ea1a66000-7f6ea1a6d000	r--s	00000000	08:02 397818	/usr/lib/x86_64-linux-gnu/gconv/gconv-modules.cache
7f6ea1a6d000-7f6ea1a6f000	rw-p	00000000	00:00 0	
7f6ea1a6f000-7f6ea1a71000	r--p	00000000	08:02 7389	/usr/lib/x86_64-linux-gnu/ld-linux-x86-64.so.2
7f6ea1a71000-7f6ea1a9b000	r-xp	00002000	08:02 7389	/usr/lib/x86_64-linux-gnu/ld-linux-x86-64.so.2
7f6ea1a9b000-7f6ea1aa6000	r--p	0002c000	08:02 7389	/usr/lib/x86_64-linux-gnu/ld-linux-x86-64.so.2
7f6ea1aa7000-7f6ea1aa9000	r--p	00037000	08:02 7389	/usr/lib/x86_64-linux-gnu/ld-linux-x86-64.so.2
7f6ea1aa9000-7f6ea1aab000	rw-p	00039000	08:02 7389	/usr/lib/x86_64-linux-gnu/ld-linux-x86-64.so.2
7ffe843c1000-7ffe843e2000	rw-p	00000000	00:00 0	[stack]
7ffe843e2000-7ffe843e6000	r--p	00000000	00:00 0	[vvar]
7ffe843e6000-7ffe843e8000	r-xp	00000000	00:00 0	[vdso]
fffffffffff60000-fffffffffff601000	--xp	00000000	00:00 0	[vsyscall]

```
wesley@wesley-VirtualBox:/proc$ more /proc/25810/stat
25810 (bash) S 25694 25810 25810 34819 33428 4194304 1030 8484 4 180 1 0 8 19 20 0 1 0 57523 20131840 1301 18446744073709551615 9485
6762564608 94856763477773 140731117080896 0 0 0 65536 3686404 1266761467 1 0 0 17 0 0 0 0 0 94856763722416 94856763770448 94856784
326656 140731117083179 140731117083184 140731117083184 140731117084654 0
```

3)

```
lrwxrwxrwx   1 root root    7 out  6 13:41 bin -> usr/bin
drwxr-xr-x   3 root root 4096 dez 15 23:26 boot
drwxrwxr-x   2 root root 4096 out  6 13:47 cdrom
drwxr-xr-x  19 root root 4160 dez 15 23:00 dev
drwxr-xr-x 130 root root 12288 dez 15 23:05 etc
drwxr-xr-x   3 root root 4096 out  6 13:50 home
lrwxrwxrwx   1 root root    7 out  6 13:41 lib -> usr/lib
lrwxrwxrwx   1 root root    9 out  6 13:41 lib32 -> usr/lib32
lrwxrwxrwx   1 root root    9 out  6 13:41 lib64 -> usr/lib64
lrwxrwxrwx   1 root root   10 out  6 13:41 libx32 -> usr/libx32
drwx-----  2 root root 16384 out  6 13:41 lost+found
drwxr-xr-x   2 root root 4096 ago  9 08:48 media
drwxr-xr-x   2 root root 4096 ago  9 08:48 mnt
drwxr-xr-x   2 root root 4096 ago  9 08:48 opt
dr-xr-xr-x 243 root root    0 dez 15 22:55 proc
drwx-----  4 root root 4096 out  6 13:55 root
drwxr-xr-x  32 root root   880 dez 15 23:03 run
lrwxrwxrwx   1 root root    8 out  6 13:41/sbin -> usr/sbin
drwxr-xr-x  11 root root 4096 ago  9 08:55 snap
drwxr-xr-x   2 root root 4096 ago  9 08:48 srv
dr-xr-xr-x  13 root root    0 dez 15 22:55 sys
drwxrwxrwt  22 root root 4096 dez 15 23:27 tmp
drwxr-xr-x  14 root root 4096 ago  9 08:48 usr
drwxr-xr-x  14 root root 4096 ago  9 08:54 var
```

4)

/dev/full é um arquivo de dispositivo especial

/dev/zero retornam caracteres nulos conforme solicitado na operação de leitura.

/dev/null no Linux é um arquivo de dispositivo nulo. Descartando qualquer coisa escrita nele e retornará o EOF na leitura.

/dev/random são arquivos especiais que servem como geradores de números pseudo-aleatórios.

5)

```
wesley@wesley-VirtualBox:~/Área de Trabalho$ echo "Hello World"
Hello World
wesley@wesley-VirtualBox:~/Área de Trabalho$ echo "Hello World" > /dev/null
wesley@wesley-VirtualBox:~/Área de Trabalho$
```

6)

```
wesley@wesley-VirtualBox:~/Área de Trabalho$ echo "Hello World" > /dev/full
bash: echo: erro de escrita: Não há espaço disponível no dispositivo
```

8)

```
wesley@wesley-VirtualBox:~$ stat /dev/pts
Arquivo: /dev/pts
  Tamanho: 0          Blocos: 0          bloco de E/S: 1024  diretório
Dispositivo: 17h/23d  Inode: 1          Links: 2
Acesso: (0755/drwxr-xr-x)  Uid: (  0/   root)  Gid: (  0/   root)
Acesso: 2022-12-16 16:44:12.904000013 -0300
Modificação: 2022-12-16 16:44:12.904000013 -0300
  Alteração: 2022-12-16 16:44:12.904000013 -0300
  Criação: -
```

```
wesley@wesley-VirtualBox:~/Área de Trabalho/Praticas/pratica3$ stat jantar.zip
Arquivo: jantar.zip
  Tamanho: 791        Blocos: 8          bloco de E/S: 4096  arquivo comum
Dispositivo: 802h/2050d Inode: 543833      Links: 1
Acesso: (0664/-rw-rw-r--) Uid: ( 1000/  wesley)  Gid: ( 1000/  wesley)
Acesso: 2022-11-02 23:30:34.162511301 -0300
Modificação: 2022-11-02 23:30:26.426457293 -0300
  Alteração: 2022-11-02 23:31:35.558939619 -0300
  Criação: 2022-11-02 23:30:26.426457293 -0300
```

```
wesley@wesley-VirtualBox:~/Área de Trabalho$ stat abc
Arquivo: abc
  Tamanho: 11         Blocos: 8          bloco de E/S: 4096  arquivo comum
Dispositivo: 802h/2050d Inode: 522221      Links: 1
Acesso: (0664/-rw-rw-r--) Uid: ( 1000/  wesley)  Gid: ( 1000/  wesley)
Acesso: 2022-12-16 20:30:35.429245850 -0300
Modificação: 2022-12-16 20:30:12.865044909 -0300
  Alteração: 2022-12-16 20:30:32.641221013 -0300
  Criação: 2022-12-16 20:30:12.861044874 -0300
```

9)

```
wesley@wesley-VirtualBox:~/Área de Trabalho$ ln -s ~/Área de Trabalho/texto.txt
t ~/Área de Trabalho/link.txt
wesley@wesley-VirtualBox:~/Área de Trabalho$ ls -l
total 8
lrwxrwxrwx 1 wesley wesley  40 dez 16 21:23 link.txt -> '/home/wesley/Área de T
rabalho/texto.txt'
drwxrwxr-x 5 wesley wesley 4096 nov  2 23:31 Praticas
-rw-rw-r-- 1 wesley wesley  11 dez 16 21:16 texto.txt
wesley@wesley-VirtualBox:~/Área de Trabalho$
```

10)

```
wesley@wesley-VirtualBox:~/Área de Trabalho$ ln ~/Área de Trabalho/texto.txt hardlink.txt
wesley@wesley-VirtualBox:~/Área de Trabalho$ ls -l
total 12
-rw-rw-r-- 2 wesley wesley  11 dez 16 21:16 hardlink.txt
lrwxrwxrwx 1 wesley wesley  40 dez 16 21:23 link.txt -> '/home/wesley/Área de Trabalho/texto.
txt'
drwxrwxr-x 5 wesley wesley 4096 nov  2 23:31 Praticas
-rw-rw-r-- 2 wesley wesley  11 dez 16 21:16 texto.txt
wesley@wesley-VirtualBox:~/Área de Trabalho$
```

```
wesley@wesley-VirtualBox:~/Área de Trabalho$ ln ~/Área de Trabalho/texto.txt hardlink.txt
wesley@wesley-VirtualBox:~/Área de Trabalho$ ls -l
total 12
-rw-rw-r-- 2 wesley wesley  11 dez 16 21:16 hardlink.txt
lrwxrwxrwx 1 wesley wesley  40 dez 16 21:23 link.txt -> '/home/wesley/Área de Trabalho/texto.txt'
drwxrwxr-x 5 wesley wesley 4096 nov  2 23:31 Praticas
-rw-rw-r-- 2 wesley wesley  11 dez 16 21:16 texto.txt
wesley@wesley-VirtualBox:~/Área de Trabalho$ more ~/Área de Trabalho/hardlink.txt
aaaaaaaaaa
```

11)

```
wesley@wesley-VirtualBox:~/Área de Trabalho$ ln ~/Área de Trabalho/Praticas ~/Área de Trabalho/LinkDiretorio
ln: '/home/wesley/Área de Trabalho/Praticas': não são permitidos links absolutos para diretórios
wesley@wesley-VirtualBox:~/Área de Trabalho$
```