

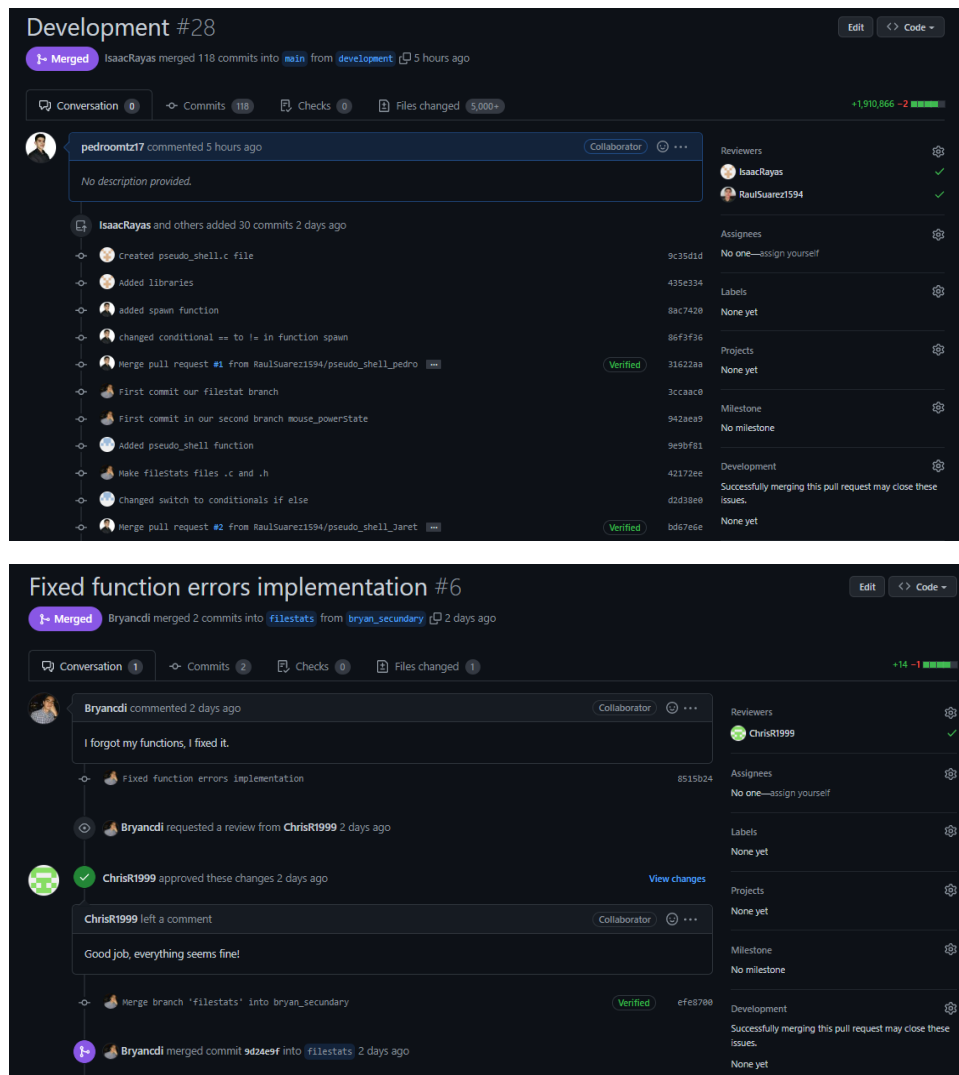
## Capturas de lo realizado – Proyecto modulo 2

### Ligas a los repositorios:

Liga del repositorio Grupal: [https://github.com/RaulSuarez1594/Linux\\_M2\\_Final](https://github.com/RaulSuarez1594/Linux_M2_Final)

Liga de los pull request realizados: [Pull requests · RaulSuarez1594/Linux\\_M2\\_Final \(github.com\)](https://github.com/RaulSuarez1594/Linux_M2_Final/pull-requests)

### Capturas de algunos de los reviews en los pull requests:



### Capturas de la compilación cruzada:

#### Información de los ejecutables:

- File main

```
arielgp@ubuntu:~/Documents/GitProyectos/Linux_M2_Final/src$ file main
main: ELF 32-bit LSB executable, ARM, EABI5 version 1 (SYSV), dynamically linked, interpreter /lib/ld-linux-armhf.so.3, for GNU/Linux 2.6.32, BuildID[sha1]=9de3b3c344ebdba6f54c001dc78b7010804b9c89, with debug_info, not stripped
```

- Librerías compartidas:

```
arielgp@ubuntu:~/Documents/GitProyectos/Linux_M2_Final/src/lib$ file libfileStats.so
libfileStats.so: ELF 32-bit LSB shared object, ARM, EABI5 version 1 (SYSV), dynamically linked, BuildID[sha1]=640d577af4bba974e53f26aa63216931d8b0253c, with debug_info, not stripped
arielgp@ubuntu:~/Documents/GitProyectos/Linux_M2_Final/src/lib$ file lib_memory_leaks.so
lib_memory_leaks.so: ELF 32-bit LSB shared object, ARM, EABI5 version 1 (SYSV), dynamically linked, BuildID[sha1]=f112cfc7361edc3bba871654c990a2aea201fa00, with debug_info, not stripped
arielgp@ubuntu:~/Documents/GitProyectos/Linux_M2_Final/src/lib$ file lib_memory_map.so
lib_memory_map.so: ELF 32-bit LSB shared object, ARM, EABI5 version 1 (SYSV), dynamically linked, BuildID[sha1]=17d980a2252a2b99fca3719cc73530b5a44d4847, with debug_info, not stripped
arielgp@ubuntu:~/Documents/GitProyectos/Linux_M2_Final/src/lib$ file libmouse_powerState.so
libmouse_powerState.so: ELF 32-bit LSB shared object, ARM, EABI5 version 1 (SYSV), dynamically linked, BuildID[sha1]=1e7f6386eeb50fbac60adce444f142e5c8a04d83, with debug_info, not stripped
arielgp@ubuntu:~/Documents/GitProyectos/Linux_M2_Final/src/lib$ file libpseudo_shell.so
libpseudo_shell.so: ELF 32-bit LSB shared object, ARM, EABI5 version 1 (SYSV), dynamically linked, BuildID[sha1]=a03806699a9f7a4fb22975f4aa3a8daec95e0c03, with debug_info, not stripped
arielgp@ubuntu:~/Documents/GitProyectos/Linux_M2_Final/src/lib$ file libthreads_race_condition.so
libthreads_race_condition.so: ELF 32-bit LSB shared object, ARM, EABI5 version 1 (SYSV), dynamically linked, BuildID[sha1]=3dd1a9f54a546aa3643b8baaed4893b817d66631, with debug_info, not stripped
arielgp@ubuntu:~/Documents/GitProyectos/Linux_M2_Final/src/lib$
```

- Localización de los archivos en la beaglebone después de realizar el comando “scp” y las copias requeridas a usr/lib

```
debian@beaglebone:~$ ls
bin  busybox-1.32.1  busybox-1.32.1.tar.bz2  main
debian@beaglebone:~$
```

```
debian@beaglebone:/usr/lib$ ls
apt          groff          locale          resolvconf
arm-linux-gnueabihf  kernel         man-db          rsyslog
avahi        klibc          mime            sasl2
bfd-plugins  libcpufreq.so.0  mjpg-streamer  sftp-server
binfmt.d     libcpufreq.so.0.0.0  modules-load.d  ssl
bluetooth    libfileStats.so  NetworkManager  sudo
compat-ld    lib_memory_leaks.so  nginx           systemd
dbus-1.0     lib_memory_map.so  nodejs          sysusers.d
dpkg         libmouse_powerState.so  openssh         taskset
environment.d  libpseudo_shell.so  os-release      tc
file         librobotcontrol.so  pkgconfig       ti
gcc          librobotcontrol.so.1  pkg-config.multiarch  tmpfiles.d
git-core     libroboticscape.so  pm-utils        valgrind
gnupg        libthreads_race_condition.so  python2.7
gnupg2       linux-image-4.19.94-ti-r42  python3
gold-ld
```

## Programa en ejecución – Menú principal

```
debian@beaglebone:~$ ./main
*****
*****
----- MAIN MENU -----
*****
*****
Which program would you like to execute?
Select an option
[1] file stats
[2] mouse power state
[3] memory map
[4] memory leaks
[5] Pseudo shell
[6] Threads race condition
[7] Exit
>>
```

## 1.- File stats

```
Type the file?
testText

File Type: Regular File
The alphanumeric count is : 44
Size: 60 bytes
Owner: debian with an UID: 1000
File Permissions: -rw-r--r--
Inode: 49648
The creation day was: Tue, 07, Apr 2020 12:21:23

Press any character on the keyboard and then the ENTER key
█
```

## 2.- Mouse power state

```
Type the direction?
testText
File recieved: testText
##### Entry 0 #####
value=2037543968
time=1701670771
type=8308
code=28532
##### Entry 1 #####
value=168457076
time=544106784
type=29472
code=24948
##### Entry 2 #####
value=1702257930
time=1701998445
type=8308
code=2570
##### Entry 3 #####
value=1702257930
time=1869422702
type=30821
code=2676
##### Entry 4 #####
value=1702257930
time=1869422702
type=30821
code=2676
```

## 3.- Memory map

```
var2: 1 at 0xbe6fb5c4
var3: 507 at 0xb6edeabd8
var4: 507 at 0xbe6fb5bc
var5: 1 at 0x124a760
var6: - at 0xb6ece659
var1: 508 at 0xb6edeabd8
var2: 1 at 0xbe6f759c
var3: 508 at 0xb6edeabd8
var4: 508 at 0xbe6f7594
var5: 1 at 0x124a770
var6: - at 0xb6ece659
var1: 509 at 0xb6edeabd8
var2: 1 at 0xbe6f3574
var3: 509 at 0xb6edeabd8
var4: 509 at 0xbe6f356c
var5: 1 at 0x124a780
var6: - at 0xb6ece659
var1: 510 at 0xb6edeabd8
var2: 1 at 0xbe6ef54c
var3: 510 at 0xb6edeabd8
var4: 510 at 0xbe6ef544
var5: 1 at 0x124a790
var6: - at 0xb6ece659

Press any character on the keyboard and then the ENTER key
█
```

#### 4.- Memory leaks

```
Memory Leaks has finished execution

Press any character on the keyboard and then the ENTER key
█
```

#### 5.- Pseudoshell

```
Pseudo-command?
fecha, quiensoy, tiempo, modulos
fecha
Tue 07 Apr 2020 12:32:56 PM UTC

Press any character on the keyboard and then the ENTER key
█
```

#### 6.- Threads race condition

```
I will create two threads
Point 1 >> X is: 0
The threads has been created
The threads have exited
Point 2 >> X is: 20000000

Press any character on the keyboard and then the ENTER key
█
```

#### 7.- Exit

```
Exit was chosen!
█
```

[Makefile utilizado](#)

```

1  COMPILER_PREFIX=
2  CC=gcc
3  CFLAGS=
4  LIB=-./lib/
5  INCLUDE=./include/
6  SHARE=-shared -fPIC
7
8  ifeq (${ARCH}, arm)
9      COMPILER_PREFIX=../toolchain_linaro/gcc-linaro-6.4.1-2017.11-x86_64_arm-linux-gnueabi/bin/arm-linux-gnueabi/
10 else
11     COMPILER_PREFIX=
12 endif
13
14 main: $(LIB)fileStats.so $(LIB)mouse_powerState.so $(LIB)pseudo_shell.so $(LIB)threads_race_condition.so $(LIB)lib_memory_map.so $(LIB)lib_memory_leaks.so
15     $(COMPILER_PREFIX)$(CC) $(CFLAGS) main.c -lfileStats -lmouse_powerState -lpseudo_shell -lthreads_race_condition -l_memory_leaks -l_memory_map -L$(LIB) -o main
16
17 $(LIB)fileStats.so: $(LIB)fileStats.c $(INCLUDE)fileStats.h
18     $(COMPILER_PREFIX)$(CC) $(CFLAGS) $(SHARE) $(LIB)fileStats.c -o $(LIB)libfileStats.so -lc
19
20 $(LIB)mouse_powerState.so: $(LIB)mouse_powerState.c $(INCLUDE)mouse_powerState.h
21     $(COMPILER_PREFIX)$(CC) $(CFLAGS) $(SHARE) $(LIB)mouse_powerState.c -o $(LIB)libmouse_powerState.so -lc
22
23 $(LIB)pseudo_shell.so: $(LIB)pseudo_shell.c $(INCLUDE)pseudo_shell.h
24     $(COMPILER_PREFIX)$(CC) $(CFLAGS) $(SHARE) $(LIB)pseudo_shell.c -o $(LIB)libpseudo_shell.so -lc
25
26 $(LIB)threads_race_condition.so: $(LIB)threads_race_condition.c $(INCLUDE)threads_race_condition.h
27     $(COMPILER_PREFIX)$(CC) $(CFLAGS) $(SHARE) $(LIB)threads_race_condition.c -o $(LIB)libthreads_race_condition.so -pthread -lc
28
29 $(LIB)lib_memory_leaks.so: $(LIB)memory_leaks.c $(INCLUDE)memory_leaks.h
30     $(COMPILER_PREFIX)$(CC) $(CFLAGS) $(SHARE) $(LIB)memory_leaks.c -o $(LIB)lib_memory_leaks.so -lc
31
32 $(LIB)lib_memory_map.so: $(LIB)memory_map.c $(INCLUDE)memory_map.h
33     $(COMPILER_PREFIX)$(CC) $(CFLAGS) $(SHARE) $(LIB)memory_map.c -o $(LIB)lib_memory_map.so -lc
34
35 .PHONY: clean all install
36 all: main
37
38 install:
39     @sudo ln -s -f /home/debian/src/lib/*.so /usr/lib/
40
41 clean:
42     @rm -f ./lib/*.so main

```