ELEC377 Lab 1 Documentation

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Problem Description

The main objective of this lab was to discover more about the Process Control Block and gain some understanding into the process information of the current running process. The process information pulled included the name, PID, PPID, UID and GID. In order to pull this information, the Linux data structure task_struct was used, which contains much of the information about the current process.

In the file lab1mod.c, the last three lines MODULE_LICENSE("GPL"); module_init(lab1_init); and module_exit(lab1_exit); specify information about the kernel module. The module_init line specifies the initialization function of the module and calls the function lab1_init that appears above in the code. The module_exit line specifies the exit and cleanup function for the module and calls the function lab1_exit.

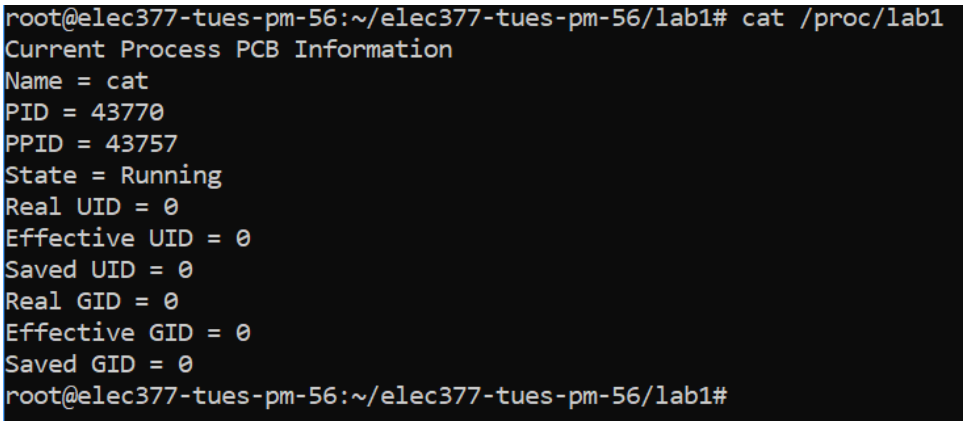
Outputs

```
19lvn@elec377-tues-pm-56:~/elec377-tues-pm-56/lab1$ cat /proc/lab1
Current Process PCB Information
Name = cat
PID = 34293
PPID = 32917
State = Running
Real UID = 1007
Effective UID = 1007
Saved UID = 1007
Real GID = 1000
Effective GID = 1000
Saved GID = 1000
19lvn@elec377-tues-pm-56:~/elec377-tues-pm-56/lab1$ echo $$
32917
```

Can be found in lab1_out1.txt file in the GitLab

```
19ajp17@elec377-tues-pm-56:/home/19lvn/elec377-tues-pm-56/lab1$ cat /proc/lab1
Current Process PCB Information
Name = cat
PID = 32730
PPID = 32339
State = Running
Real UID = 1008
Effective UID = 1008
Saved UID = 1008
Real GID = 1000
Effective GID = 1000
Saved GID = 1000
19ajp17@elec377-tues-pm-56:/home/19lvn/elec377-tues-pm-56/lab1$ echo $$
32339
```

Can be found in lab1_out2.txt



Comparison to lab1mod ran in root

Across the three tests, both the name and state remain the same, which makes sense as the same code and commands are being run, regardless of the system. UID and GID values of 0 are reserved for the "root" user, which is why all the UID and GID values in the root test are 0.