ELEC 377 Lab 1 Test Cases

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Testing Completeness

This testing is thorough and complete. The program runs as different users and returns real expected answers. The program runs in the root terminal and returns expected values showing elevated privilege. The program makes, compiles, and installs properly onto the kernel without issues. When the code is changed, making, removing, and installing the program reflects the changes made on the kernel.

Desired Output in user terminal

```
20wyvs@elec377-tues-pm-27:~/elec377-tues-pm-27$ cat /proc/lab1
Current Process PCB Information
Name = cat
PID = 46640
PPID = 46156
State = Running
Real UID = 1007
Effective UID = 1007
Saved UID = 1007
Real GID = 1000
Effective GID = 1000
Saved GID = 1000
```

This demonstrates that the code complies and runs successfully on the kernel. Real expected values are found in the task_struct.

Output using root:

```
root@elec377-tues-pm-27:/home/20wyvs/elec377-tues-pm-27/lab1# cat /proc/lab1
Current Process PCB Information
Name = cat
PID = 46975
PPID = 46329
State = Running
Real UID = 0
Effective UID = 0
Saved UID = 0
Real GID = 0
Effective GID = 0
Saved GID = 0
```

This demonstrates that the values do in fact change when the process is run by a different terminal. These values make sense, the UIDs and GIDs are zero because the root terminal has more privilege than a regular user.

Updating code changes

Without making, removing lab1mod.ko and reinserting it after each code update, the output of the code will not update.

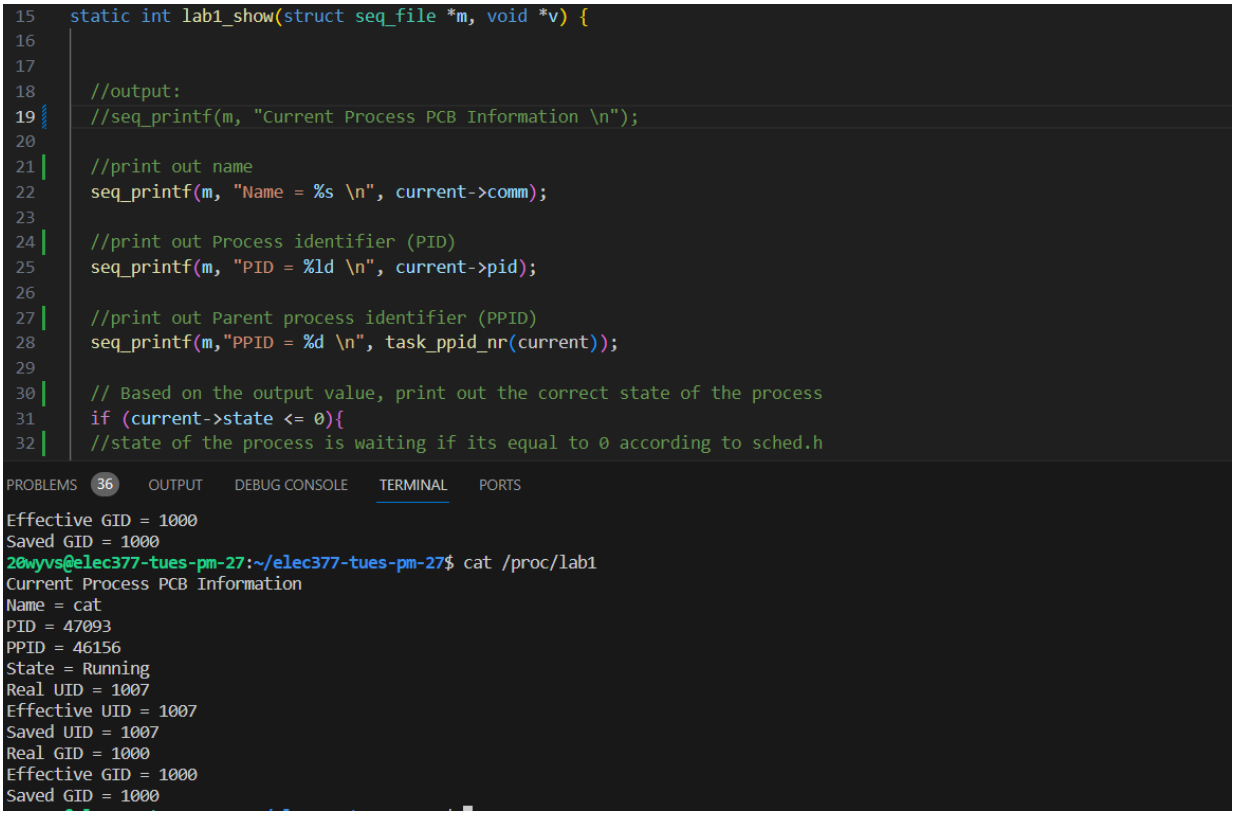

Figure 1 – The first line "Current Process PCB information" is commented out however the output did not change since the module has not been updated.

Steps to update c file for the kernel:

1. Run "make" in the user terminal inside lab1 folder.
2. Go to root terminal and run "rmmod lab1mod" to remove the module.
3. Run "insmod lab1mod.ko" to insert the module again.
4. Run "cat /proc/lab1" to output the updated code.

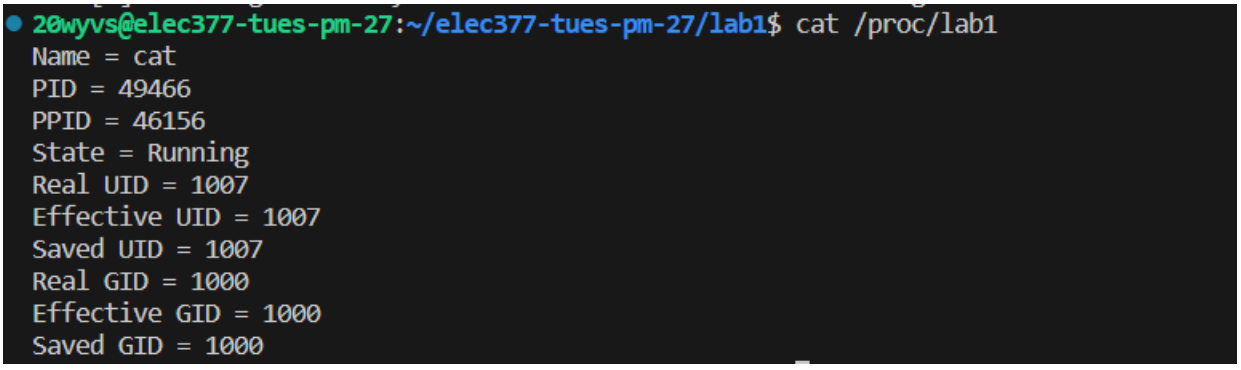

Figure 2 – Output has been updated after running the correct commands.