

ELEC 377 Operating Systems F22

Lab 1: Testing

Due September 27th, 2022

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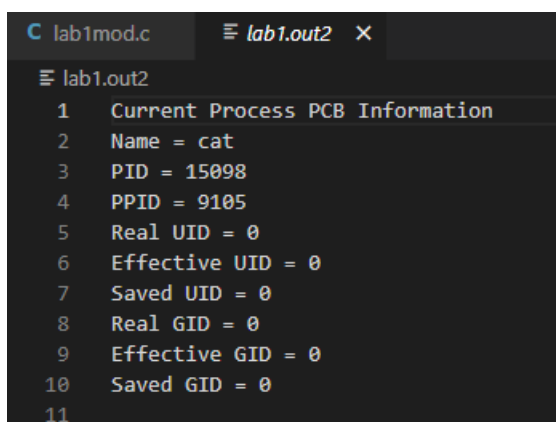
Student Numbers: 20203451, 20120770

Describe the differences in the output files

Differences

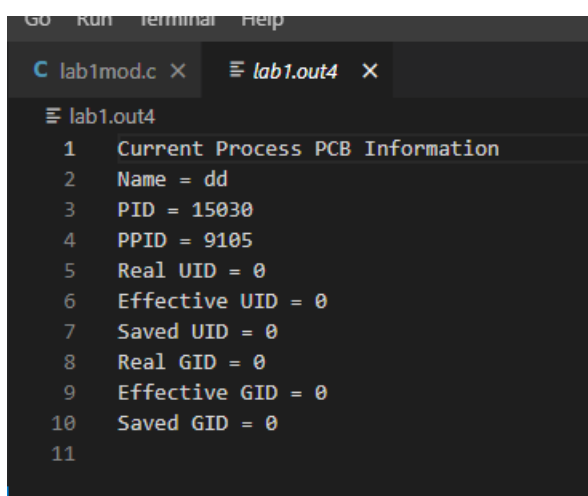
For root and user mode, the name property will always correspond to the name of the command being called in the shell as seen in Figure 1 and 2. The PPID remains the same when the shell command is called using cat and dd because the parent process id for the shell hasn't changed (when the user remains the same) as seen in Figure 1 and 2. However, when the mode switches between root and user, a new shell will be started for the current user. Therefore, the PPID will change because the shell will be different based on the current user as seen in Figure 1 and Figure 3. For both root and user modes, the PID specifies the process id of the command being called in the shell; that is why they are different when the cat and dd commands are called as seen in Figure 1,2,3, and 4. When in root mode, all UID and GID properties are set to 0 compared to common user mode which has unique values for their UID and GID properties. Additionally, the user values are valid because they matched the corresponding net IDs in the /etc/passwd path.

Root Mode



```
C lab1mod.c  lab1.out2 X
lab1.out2
1  Current Process PCB Information
2  Name = cat
3  PID = 15098
4  PPID = 9105
5  Real UID = 0
6  Effective UID = 0
7  Saved UID = 0
8  Real GID = 0
9  Effective GID = 0
10 Saved GID = 0
11
```

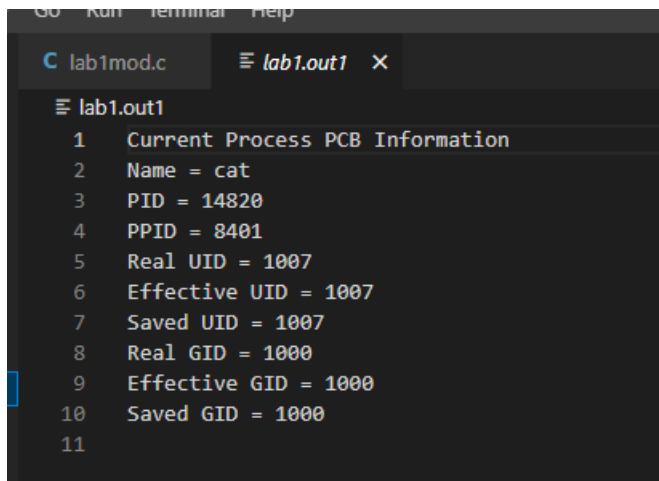
Figure 1: cat command



```
GO Run Terminal Help
C lab1mod.c X  lab1.out4 X
lab1.out4
1  Current Process PCB Information
2  Name = dd
3  PID = 15030
4  PPID = 9105
5  Real UID = 0
6  Effective UID = 0
7  Saved UID = 0
8  Real GID = 0
9  Effective GID = 0
10 Saved GID = 0
11
```

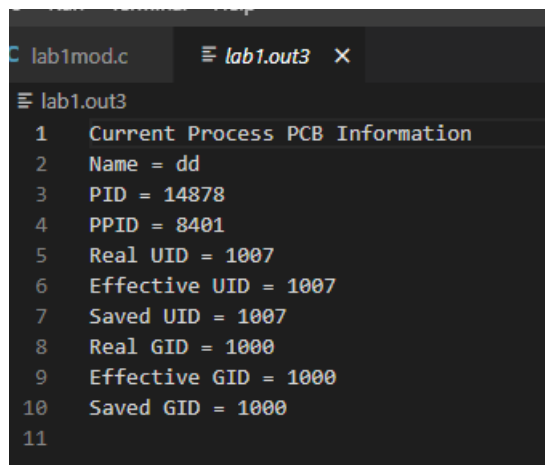
Figure 2: dd command

User Mode



```
GO Run Terminal Help
lab1mod.c lab1.out1 X
lab1.out1
1 Current Process PCB Information
2 Name = cat
3 PID = 14820
4 PPID = 8401
5 Real UID = 1007
6 Effective UID = 1007
7 Saved UID = 1007
8 Real GID = 1000
9 Effective GID = 1000
10 Saved GID = 1000
11
```

Figure 3: cat command



```
GO Run Terminal Help
lab1mod.c lab1.out3 X
lab1.out3
1 Current Process PCB Information
2 Name = dd
3 PID = 14878
4 PPID = 8401
5 Real UID = 1007
6 Effective UID = 1007
7 Saved UID = 1007
8 Real GID = 1000
9 Effective GID = 1000
10 Saved GID = 1000
11
```

Figure 4: dd command