

# Machine Problem 3 Report

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Question 1 & 2:

Posted below question 3 and 4.

Question 3:

Sometimes a user needs to take the identity of another process. This is why two IDs are needed. The real ID is the actual ID of the user and the effective ID is the ID that the operating system sees. One situation that would cause the IDs to differ is if the a user takes the identity of another, such as root. In that case, the effective ID would be the ID of root and the real ID would be the user's actual ID.

Question 4:

Most files are read only for safety reasons. We do not want other users to be allowed to change anything that does not belong to that user, even if they took the ID of the other user.

When using a process ran by a user other than us, we get the following output:

```
[cmc236]@build ~/csce313/MP3> (21:32:56 09/29/16)
:: sh proctest.sh 9357
PID = 9357
PPID = 9356
EUID = 0
EGID = 0
RUID = 0
RGID = 0
FSUID = 0
FSGID = 0
State = S
Number of Threads = 1
Priority Number = 20
Niceness Number = 0
stime = 248
utime = 1216
cstime = 15034
cutime = 12688
Startcode = 1
Endcode = 1
ESP = 0
EIP = 0
File Handles = 256
Voluntary Context Switches = 679
Involuntary Context Switches = 617
CPUs Allowed = ff
```

Last Processor Used = 2

Memory Map:

awk: cmd. line:1: fatal: error reading input file `/proc/9357/maps': Permission denied

When we run our shell script on our own process we get the output:

```
[cmc236]@build ~/csce313/MP3> (21:32:50 09/29/16)
```

```
:: sh proctest.sh $$
```

PID = 23060

PPID = 23059

EUID = 39911

EGID = 180

RUID = 39911

RGID = 180

FSUID = 39911

FSGID = 180

State = S

Number of Threads = 1

Priority Number = 20

Niceness Number = 0

stime = 2

utime = 5

cstime = 0

cutime = 0

Startcode = 4194304

Endcode = 4758492

ESP = 140723169956224

EIP = 139858158919285

File Handles = 256

Voluntary Context Switches = 99

Involuntary Context Switches = 61

CPUs Allowed = ff

Last Processor Used = 5

Memory Map:

00400000-0048a000 r-xp 00000000 08:02 344070 /bin/ba

sh

00689000-0068a000 r--p 00089000 08:02 344070 /bin/ba

sh

0068a000-0068f000 rw-p 0008a000 08:02 344070 /bin/ba

sh

0068f000-0083d000 rw-p 00000000 00:00 0 [heap]

7f3343b27000-7f3343b65000 r-xp 00000000 08:02 393293 /lib64/

libncurses.so.5.6

7f3343b65000-7f3343d65000 ---p 0003e000 08:02 393293 /lib64/

libncurses.so.5.6

7f3343d65000-7f3343d69000 r--p 0003e000 08:02 393293 libncurses.so.5.6	/lib64/
7f3343d69000-7f3343d6f000 rw-p 00042000 08:02 393293 libncurses.so.5.6	/lib64/
7f3343d6f000-7f3343ee1000 r-xp 00000000 08:02 393463 libc-2.11.3.so	/lib64/
7f3343ee1000-7f33440e1000 ---p 00172000 08:02 393463 libc-2.11.3.so	/lib64/
7f33440e1000-7f33440e5000 r--p 00172000 08:02 393463 libc-2.11.3.so	/lib64/
7f33440e5000-7f33440e6000 rw-p 00176000 08:02 393463 libc-2.11.3.so	/lib64/
7f33440e6000-7f33440eb000 rw-p 00000000 00:00 0	
7f33440eb000-7f33440ed000 r-xp 00000000 08:02 393511 libdl-2.11.3.so	/lib64/
7f33440ed000-7f33442ed000 ---p 00002000 08:02 393511 libdl-2.11.3.so	/lib64/
7f33442ed000-7f33442ee000 r--p 00002000 08:02 393511 libdl-2.11.3.so	/lib64/
7f33442ee000-7f33442ef000 rw-p 00003000 08:02 393511 libdl-2.11.3.so	/lib64/
7f33442ef000-7f3344328000 r-xp 00000000 08:02 393318 libreadline.so.5.2	/lib64/
7f3344328000-7f3344527000 ---p 00039000 08:02 393318 libreadline.so.5.2	/lib64/
7f3344527000-7f3344529000 r--p 00038000 08:02 393318 libreadline.so.5.2	/lib64/
7f3344529000-7f334452f000 rw-p 0003a000 08:02 393318 libreadline.so.5.2	/lib64/
7f334452f000-7f3344531000 rw-p 00000000 00:00 0	
7f3344531000-7f3344550000 r-xp 00000000 08:02 393456 ld-2.11.3.so	/lib64/
7f3344572000-7f3344573000 rw-p 00000000 00:00 0	
7f3344573000-7f33445b2000 r--p 00000000 08:02 420425 b/locale/en_US.utf8/LC_CTYPE	/usr/li
7f33445b2000-7f33446cf000 r--p 00000000 08:02 420426 b/locale/en_US.utf8/LC_COLLATE	/usr/li
7f33446cf000-7f3344712000 r--s 00000000 08:02 450564 n/nscd/passwd	/var/ru
7f3344712000-7f3344716000 rw-p 00000000 00:00 0	
7f334473e000-7f334473f000 r--p 00000000 08:02 420421 b/locale/en_US.utf8/LC_NUMERIC	/usr/li
7f334473f000-7f3344740000 r--p 00000000 08:02 298129 b/locale/en_US.utf8/LC_TIME	/usr/li
7f3344740000-7f3344741000 r--p 00000000 08:02 298128 b/locale/en_US.utf8/LC_MONETARY	/usr/li
7f3344741000-7f3344742000 r--p 00000000 08:02 482846 b/locale/en_US.utf8/LC_MESSAGES/SYS_LC_MESSAGES	/usr/li
7f3344742000-7f3344743000 r--p 00000000 08:02 114745 b/locale/en_US.utf8/LC_PAPER	/usr/li

7f3344743000-7f3344744000 r--p 00000000 08:02 114747	/usr/li
b/locale/en_US.utf8/LC_NAME	
7f3344744000-7f3344745000 r--p 00000000 08:02 298126	/usr/li
b/locale/en_US.utf8/LC_ADDRESS	
7f3344745000-7f3344746000 r--p 00000000 08:02 114744	/usr/li
b/locale/en_US.utf8/LC_TELEPHONE	
7f3344746000-7f3344747000 r--p 00000000 08:02 114746	/usr/li
b/locale/en_US.utf8/LC_MEASUREMENT	
7f3344747000-7f334474e000 r--s 00000000 08:02 290859	/usr/li
b64/gconv/gconv-modules.cache	
7f334474e000-7f334474f000 r--p 00000000 08:02 298127	/usr/li
b/locale/en_US.utf8/LC_IDENTIFICATION	
7f334474f000-7f3344750000 rw-p 00000000 00:00 0	
7f3344750000-7f3344751000 r--p 0001f000 08:02 393456	/lib64/
ld-2.11.3.so	
7f3344751000-7f3344753000 rw-p 00020000 08:02 393456	/lib64/
ld-2.11.3.so	
7ffcaa8ca000-7ffcaa8eb000 rw-p 00000000 00:00 0	[stack]
7ffcaa964000-7ffcaa965000 r-xp 00000000 00:00 0	[vdso]
fffffffff600000-fffffffff601000 r-xp 00000000 00:00 0	[vsysca
ll]	