許家文 408530049

1.

```
ulohg@ulohg-VirtualBox:~/Desktop/system-program/hw13$ ./fileCount ~/Desktop/
parent's group id is 4681
1st child's pid = 4682
2nd child's pid = 4683
1st child's group id is 4681
1st child's new group id is 4681
2nd child's group id is 4681
2nd child's new group id is 4681
ls: cannot open directory '/boot/efi': Permission denied
ls: cannot open directory '/etc/cups/ssl': Permission denied
ls: cannot open directory '/etc/polkit-1/localauthority': Permission denied
ls: cannot open directory '/etc/ssl/private': Permission denied
ls: cannot open directory '/lost+found': Permission denied
ls: cannot open directory '/media/ulohg/VBox_GAs_6.1.22': Permission denied
ls: cannot open directory '/media/ulohg/VBox_GAs_6.1.221': Permission denied
```

```
ls: cannot open directory '/var/spool/cups': Permission denied
ls: cannot open directory '/var/spool/rsyslog': Permission denied
ls: cannot open directory '/var/tmp/systemd-private-6d32b5e7017e417a9ce4ef84f6cb8d26-colord.service-Yt
vMTe': Permission denied
ls: cannot open directory '/var/tmp/systemd-private-6d32b5e7017e417a9ce4ef84f6cb8d26-fwupd.service-EBA
hpf': Permission denied
ls: cannot open directory '/var/tmp/systemd-private-6d32b5e7017e417a9ce4ef84f6cb8d26-ModemManager.serv
ice-81Y16i': Permission denied
ls: cannot open directory '/var/tmp/systemd-private-6d32b5e7017e417a9ce4ef84f6cb8d26-switcheroo-contro
l.service-uPvZXe': Permission denied
ls: cannot open directory '/var/tmp/systemd-private-6d32b5e7017e417a9ce4ef84f6cb8d26-systemd-logind.se
rvice-b3GpSh': Permission denied
ls: cannot open directory '/var/tmp/systemd-private-6d32b5e7017e417a9ce4ef84f6cb8d26-systemd-resolved.
service-Gswn5e': Permission denied
ls: cannot open directory '/var/tmp/systemd-private-6d32b5e7017e417a9ce4ef84f6cb8d26-systemd-timesyncd
.service-aptmBh': Permission denied
ls: cannot open directory '/var/tmp/systemd-private-6d32b5e7017e417a9ce4ef84f6cb8d26-upower.service-gF
D0Dg': Permission denied
1095527
child 4686
child 4685
```

2.

```
ls: cannot read symbolic link '/proc/15/cwd': Permission denied
ls: cannot read symbolic link '/proc/15/root': Permission denied
ls: cannot read symbolic link '/proc/15/exe': Permission denied
ls: cannot open directory '/proc/15/fd': Permission denied
ls: cannot open directory '/proc/15/fdinfo': Permission denied
ls: cannot open directory '/proc/15/map_files': Permission denied
ls: cannot open directory '/proc/15/ns': Permission denied
ls: cannot read symbolic link '/proc/15/task/15/cwd': Permission denied
ls: cannot read symbolic link '/proc/15/task/15/root': Permission denie
ls: cannot read symbolic link '/proc/15/task/15/exe': Permission denied
ls: cannot open directory '/proc/15/task/15/fd': Permission denied
ls: cannot open directory '/proc/15/task/15/fdinfo': Permission denied
ls: cannot open directory '/proc/15/task/15/ns': Permission denied
^C
ulohg@ulohg-VirtualBox:~/Desktop/system-program/hw13$
```

3.

使用signal handle：

```
    /*parent註冊signal handler*/
    signal(SIGINT, signal_ctr_c);
```

用signal_ctr_c來kill

不使用signal handle：

```
    /*parent註冊signal handler*/
    // signal(SIGINT, signal_ctr_c);
```

設定每個fork出來的child(ls,wc)和parent的group id相同，讓他們屬於同個group, process group收到SIGINT時，其裡面的每個process都會收到SIGINT並終止執行。