

## 1、通过fork创建子进程，让父子进程都打印pid，都处于while(1)，然后用ps进程查看，查看完毕，用kill命令杀掉

```
R dcrsgk 2907 2515 49 80 0 - 1126 - 19:56 pts/1 00:00:20 ./homework01
R dcrsgk 2908 2907 49 80 0 - 1126 - 19:56 pts/1 00:00:20 ./homework01
R dcrsgk 2913 1755 0 80 0 - 11693 - 19:57 pts/0 00:00:00 ps -elf
dcrsgk@ubuntu:~/day31/homework/homework01$ kill -9 2908
dcrsgk@ubuntu:~/day31/homework/homework01$ ps -elf
S UID PID PPID C PRI NI ADDR SZ WCHAN STIME TTY TIME CMD
1 Z dcrsgk 2908 2907 47 80 0 - 0 - 19:56 pts/1 00:00:27 [homework01] <d
0 R dcrsgk 2914 1755 0 80 0 - 11693 - 19:57 pts/0 00:00:00 ps -elf
dcrsgk@ubuntu:~/day31/homework/homework01$
```

- kill杀死子进程之后父进程变成僵尸进程（未写wait语句）

## 2、能够得到孤儿进程；

```
0 R dcrsgk 2925 2515 47 80 0 - 1126 - 20:15 pts/1 00:00:04 ./homework01
1 R dcrsgk 2926 2925 47 80 0 - 1126 - 20:15 pts/1 00:00:04 ./homework01
0 R dcrsgk 2927 1755 0 80 0 - 11693 - 20:15 pts/0 00:00:00 ps -elf
dcrsgk@ubuntu:~/day31/homework/homework01$ kill -9 2925
1 R root 2922 2 0 80 0 - 0 - 20:13 ? 00:00:00 [kworker/0:256:1]
1 R dcrsgk 2926 1 60 80 0 - 1126 - 20:15 pts/1 00:00:29 ./homework01
0 R dcrsgk 2928 1755 0 80 0 - 11693 - 20:16 pts/0 00:00:00 ps -elf
dcrsgk@ubuntu:~/day31/homework/homework01$
```

- 孤儿进程被init接收
- 上文用kill杀死父进程之后子进程变成孤儿进程（未写wait语句）

## 3、通过fork创建进程，能够产生僵尸进程；

```
R dcrsgk 2907 2515 49 80 0 - 1126 - 19:56 pts/1 00:00:20 ./homework01
R dcrsgk 2908 2907 49 80 0 - 1126 - 19:56 pts/1 00:00:20 ./homework01
R dcrsgk 2913 1755 0 80 0 - 11693 - 19:57 pts/0 00:00:00 ps -elf
dcrsgk@ubuntu:~/day31/homework/homework01$ kill -9 2908
dcrsgk@ubuntu:~/day31/homework/homework01$ ps -elf
S UID PID PPID C PRI NI ADDR SZ WCHAN STIME TTY TIME CMD
1 Z dcrsgk 2908 2907 47 80 0 - 0 - 19:56 pts/1 00:00:27 [homework01] <d
0 R dcrsgk 2914 1755 0 80 0 - 11693 - 19:57 pts/0 00:00:00 ps -elf
dcrsgk@ubuntu:~/day31/homework/homework01$
```

- kill杀死子进程之后父进程变成僵尸进程（未写wait语句）

## 4、通过fork创建子进程，然后父进程通过wait回收，同时拿到子进程的返回值

```
dcrsgk@ubuntu:~/day31/homework/homework04$ ./homework04
i am father precess, pid = 3505
i am chile precess,pid = 3506
child exit success.
the child exitCode is 2
dcrsgk@ubuntu:~/day31/homework/homework04$
```

## 5、通过execl拉起来一个add进程，并给其传参3和4，让其求和最终得到7

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附加作业：

## 1、验证ps显示的是有效用户ID，还是真实用户ID

- 有效用户id：真正执行程序的用户ID
- 真实用户id：真正执行程序的用户ID
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## 2、验证sudo里边是使用了setuid，还是seteuid

- sudo内用了setuid
- 查阅文档得知sudo通过 `/etc/sudoers` 配置文件确定用户是否有获得root权限的资格；如果有，则给调用程序设置 `sticky` 标识，这样用户就能运行程序了；最后，再去掉 `sticky` 标识（sudo命令只对一条命令有效）