

实验三 信号通信

实验题目

信号通信

实验目的

利用信号通信机制在父子进程及兄弟进程间进行通信

实验软件环境

Ubuntu21.04

实验内容

父进程创建一个有名事件，由子进程发送事件信号，父进程获取事件信号后进行相应的处理。

实验程序及分析

```
1  #include<unistd.h>
2  #include<signal.h>
3  #include<wait.h>
4  #include<stdio.h>
5
6  void sigchld_handler(int sig) {
7      pid_t pid;
8      int status;
9      for(;; (pid=waitpid(-1, &status, WNOHANG)) > 0;){
10         printf("child %d died :%d\n", pid, WEXITSTATUS(status));
11         printf("hi, parent process received SIGCHLD signal\n");
12     }
13     return;
14 }
15 void main() {
16     // int pid_pr = getpid();
17     int pid = fork();
18     if (pid == 0) {
19         printf("child\n");
20         sleep(3);
21     } else if (pid > 0) {
22         signal(SIGCHLD, sigchld_handler);
23         pause();
24         return;
25     } else {
26         printf("fork failed\n");
27         exit(-1);
28     }
29 }
30 }
31
32
```

```

1  #include<unistd.h>
2  #include<signal.h>
3  #include<stdio.h>
4  void signal_handler(int sig) {
5      printf("received SIGINT signal succeeded!\n");
6      return;
7  }
8  void main() {
9      int pid = fork();
10     if (pid == 0) {
11         printf("pid = %d\n", getpid());
12         sleep(2);
13         printf("after sleep pid = %d\n", getpid());
14         sleep(2);
15         printf("after second sleep pid = %d\n", getpid());
16         exit(0);
17     } else if (pid > 0) {
18         signal(SIGINT, signal_handler);
19         pause();
20     } else {
21         printf("error");
22         exit(-1);
23     }
24 }
25 ~

```

实验截图

```

→ oslab3 ./a.out
child
child 52195 died :0
hi, parent process received SIGHLD signal successfully!

```

```

→ oslab3 ./a.out
pid = 61129
after sleep pid = 61129
after second sleep pid = 61129
^Creceived SIGINT signal succeeded!

```

实验心得体会

无