

实验报告

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实验题目	完成Linux系统（Ubuntu）的安装以及demo程序的编译运行。		

代码区（包括实验内容说明、程序的代码、关键部分的注释、程序流程图（可以不画）等）

```
/tmp/cc7LreXT.o: In function `thread1':
condition.c:(.text+0x76): undefined reference to `__pthread_register_cancel'
/tmp/cc7LreXT.o: In function `main':
condition.c:(.text+0x162): undefined reference to `pthread_create'
condition.c:(.text+0x17d): undefined reference to `pthread_create'
collect2: error: ld returned 1 exit status
ubuntu@VM-0-4-ubuntu:~/b$ ./c
condition.c      createthread.c
ubuntu@VM-0-4-ubuntu:~/b$ ./condition.out
-bash: ./condition.out: No such file or directory
ubuntu@VM-0-4-ubuntu:~/b$ gcc condition.c -o llllllll -lpthread
condition.c: In function `thread1':
condition.c:10:2: warning: initialization from incompatible pointer type [-Wincompatible
-pointer-types]
    pthread_cleanup_push(pthread_mutex_unlock, &mutex);
    ^
condition.c: In function `thread2':
condition.c:31:22: warning: passing argument 1 of `pthread_cond_init' from incompatibl
e pointer type [-Wincompatible-pointer-types]
    pthread_cond_init(&mutex, NULL);
                      ^
In file included from condition.c:3:0:
```

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```
1 新建会话(2) x +
/usr/include/pthread.h:968:12: note: expected `pthread_cond_t * restrict {aka union <an
onymous> * restrict}' but argument is of type `pthread_mutex_t * {aka union <anonymous>
 *}'
extern int pthread_cond_init (pthread_cond_t * __restrict __cond,
ubuntu@VM-0-4-ubuntu:~/b$ ls
llllllll condition.c createthread.c fork.c ftok.c mutex.c pipe.c sendmsg.c
ubuntu@VM-0-4-ubuntu:~/b$ ./llllllll
condition variable study!
thread2 : hello everyone! I am running
thread2 : get codition ,running
thread1 : I am running
thread2 : hello everyone! I am running
thread2 : get codition ,running
thread1 :get condition, running
thread2 : hello everyone! I am running
thread2 : get codition ,running
thread1 : I am running
thread2 : hello everyone! I am running
thread2 : get codition ,running
thread1 :get condition, running
thread2 : hello everyone! I am running
thread2 : get codition ,running
thread2 : hello everyone! I am running
thread2 : get codition ,running
```

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```
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1 新建会话 (2) x +
^C
ubuntu@VM-0-4-ubuntu:~/b$ gcc pipe.c -o 12221 -lpthread
pipe.c: In function 'main':
pipe.c:53:3: warning: implicit declaration of function 'wait' [-Wimplicit-function-declaration]
    wait(&stat_val);
    ^
ubuntu@VM-0-4-ubuntu:~/b$ ./12221
parent process: write data to pipe.....
child process: read data from pipe>>>>>
Hello, pipe, send some strings to you!
ubuntu@VM-0-4-ubuntu:~/b$ ls
111111 12221 condition.c createthread.c fork.c ftok.c mutex.c pipe.c sendmsg.c
ubuntu@VM-0-4-ubuntu:~/b$ gcc createthread.c -o 13321 -lpthread
createthread.c: In function 'thread':
createthread.c:11:9: warning: format '%u' expects argument of type 'unsigned int', but argument 2 has type 'pthread_t {aka long unsigned int}' [-Wformat=]
    printf("hello, I'm new thread, my thread ID = %u \n", newthid);
    ^
createthread.c: In function 'main':
createthread.c:22:9: warning: format '%u' expects argument of type 'unsigned int', but argument 2 has type 'pthread_t {aka long unsigned int}' [-Wformat=]
    printf("main thread , ID is %u \n", pthread_self());
    ^
ubuntu@VM-0-4-ubuntu:~/b$ ./13321
```

```
createthread.c:22:9: warning: format '%u' expects argument of type 'unsigned int', but argument 2 has type 'pthread_t {aka long unsigned int}' [-Wformat=]
    printf("main thread , ID is %u \n", pthread_self());
    ^
ubuntu@VM-0-4-ubuntu:~/b$ ./13321
main thread , ID is 3335923456
hello, I'm new thread, my thread ID = 3327530752
I will go home, see you !
ubuntu@VM-0-4-ubuntu:~/b$ gcc fork.c -o 14421 -lpthread
fork.c: In function 'main':
fork.c:28:2: warning: implicit declaration of function 'exit' [-Wimplicit-function-declaration]
    exit(0);
    ^
fork.c:28:2: warning: incompatible implicit declaration of built-in function 'exit'
fork.c:28:2: note: include '<stdlib.h>' or provide a declaration of 'exit'
ubuntu@VM-0-4-ubuntu:~/b$ ./14421
Process Creation study
Parent: I'm parent process, my ChildPid is 8753, My Pid is 8752
Child: I'm child process, CurPid is 0, ParentPid is 8753
ubuntu@VM-0-4-ubuntu:~/b$ gcc ftok.c -o 15521 -lpthread
ftok.c: In function 'main':
ftok.c:12:2: warning: implicit declaration of function 'exit' [-Wimplicit-function-declaration]
    exit(0);
    ^
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```



```
1 新建会话 (2) x +
12221 14421 condition.c fork.c mutex.c sendmsg.c
ubuntu@VM-0-4-ubuntu:~/b$ gcc sendmsg.c -o 16621 -lpthread
sendmsg.c: In function 'main':
sendmsg.c:38:2: warning: implicit declaration of function 'strcpy' [-Wimplicit-function-declaration]
    strcpy(msgbuffer.ctrlstring, "Hello,message queue some data send to you !");
    ^
sendmsg.c:38:2: warning: incompatible implicit declaration of built-in function 'strcpy'
sendmsg.c:38:2: note: include '<string.h>' or provide a declaration of 'strcpy'
ubuntu@VM-0-4-ubuntu:~/b$ ./16621
send data to message queue !
ubuntu@VM-0-4-ubuntu:~/b$ gcc pipe.c -o 16621 -lpthread
pipe.c: In function 'main':
pipe.c:53:3: warning: implicit declaration of function 'wait' [-Wimplicit-function-declaration]
    wait(&stat_val);
    ^
ubuntu@VM-0-4-ubuntu:~/b$ gcc pipe.c -o pipe.out -lpthread
pipe.c: In function 'main':
pipe.c:53:3: warning: implicit declaration of function 'wait' [-Wimplicit-function-declaration]
    wait(&stat_val);
    ^
ubuntu@VM-0-4-ubuntu:~/b$
```

```
ubuntu@VM-0-4-ubuntu:~/b$ gcc ftok.c -o 15521 -lpthread
ftok.c: In function 'main':
ftok.c:12:2: warning: implicit declaration of function 'exit' [-Wimplicit-function-declaration]
    exit(0);
    ^
ftok.c:12:2: warning: incompatible implicit declaration of built-in function 'exit'
ftok.c:12:2: note: include '<stdlib.h>' or provide a declaration of 'exit'
ubuntu@VM-0-4-ubuntu:~/b$ ./15521
key[1] = 16867643l
key[2] = 33644859l
key[3] = 50422075l
key[4] = 67199291l
ubuntu@VM-0-4-ubuntu:~/b$ ls
1111111 13321 15521 createthread.c ftok.c pipe.c
12221 14421 condition.c fork.c mutex.c sendmsg.c
ubuntu@VM-0-4-ubuntu:~/b$ gcc sendmsg.c -o 16621 -lpthread
sendmsg.c: In function 'main':
sendmsg.c:38:2: warning: implicit declaration of function 'strcpy' [-Wimplicit-function-declaration]
    strcpy(msgbuffer.ctrlstring, "Hello,message queue some data send to you !");
    ^
sendmsg.c:38:2: warning: incompatible implicit declaration of built-in function 'strcpy'
sendmsg.c:38:2: note: include '<string.h>' or provide a declaration of 'strcpy'

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```

```

pipe.c:53:3: warning: implicit declaration of function 'wait' [-Wimplicit-function-declaration]
    wait(&stat_val);
    ^
ubuntu@VM-0-4-ubuntu:~/b$ gcc pipe.c -o pipe.out -lpthread
pipe.c: In function 'main':
pipe.c:53:3: warning: implicit declaration of function 'wait' [-Wimplicit-function-declaration]
    wait(&stat_val);
    ^
ubuntu@VM-0-4-ubuntu:~/b$ gcc mutex.c -o pipe.out -lpthread
ubuntu@VM-0-4-ubuntu:~/b$ ./pip.out
-bash: ./pip.out: No such file or directory
ubuntu@VM-0-4-ubuntu:~/b$ ./pipe.out
please input the producers number: e
please input the consumers number: ubuntu@VM-0-4-ubuntu:~/b$ ./pipe.out
please input the producers number: 1
please input the consumers number: 1
producer number<1> thread idetifier:1676719872 put into buffer[1].The buffer is like: 1
0 0 0 0 0 0 0 0
consumer number<1> thread idetifier:1668327168 get from buffer[1].The buffer is like: 0
0 0 0 0 0 0 0 0
producer number<1> thread idetifier:1676719872 put into buffer[2].The buffer is like: 0
1 0 0 0 0 0 0 0
consumer number<1> thread idetifier:1668327168 get from buffer[2].The buffer is like: 0

```

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