实验四修改步骤：

1.const.h 中 NR_SYS_CALL 加 4

2.global.c 中 sys_call_table[]增加四个成员，分别为 sys_disp_str，sys_process_sleep，sys_sem_p，sys_sem_v

3.proc.c 中实现 sys_process_sleep，sys_sem_p，sys_sem_v 的函数体，tty.c 中实现 sys_disp_str 的函数体

4.proto.h 中声明函数 sys_process_sleep，sys_sem_p，sys_sem_v，sys_disp_str，以及用户调用函数 process_sleep，p，v，write

5.syscall.asm 中定义_NR_sys_ process_sleep，_NR_sem_p，_NR_sem_v，_NR_write，实现 p，v，process_sleep，write 的函数体，添加 global p，global v，global process_sleep，global write

6.在 proc.h 中定义信号量 struct SEMAPHORE

7.修改 proc.h 中 struct PROCESS 的成员变量，增加 isBlocked 和 sleep_ticks

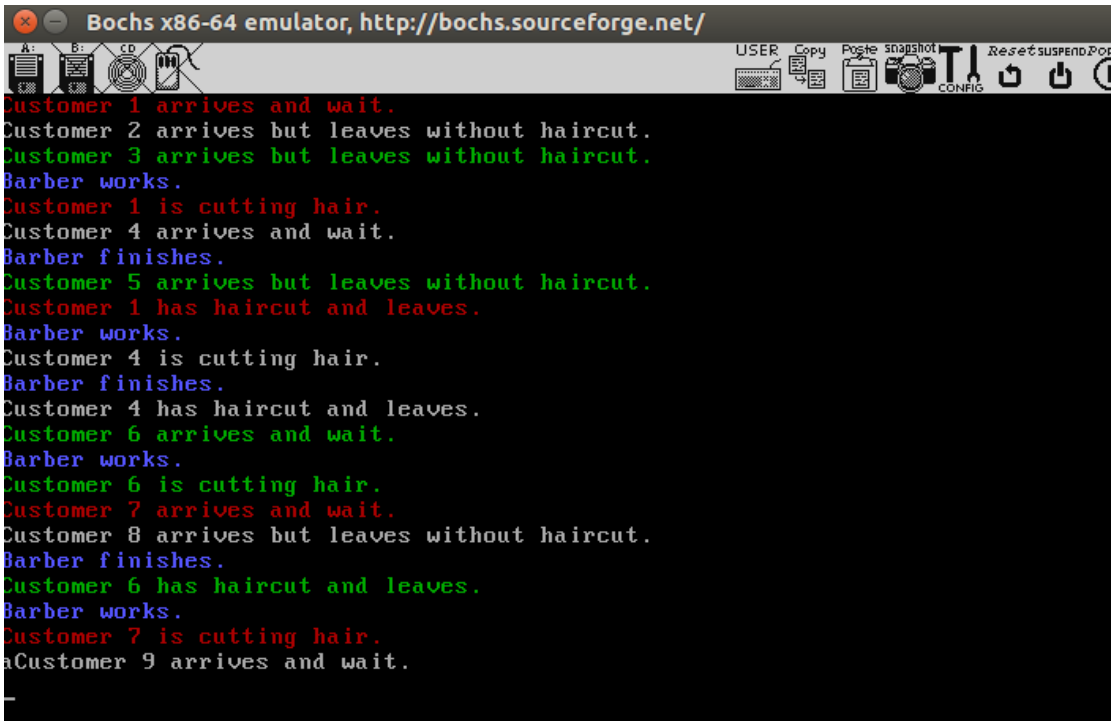
8.修改 proc.c 中 schedule 方法使得 isBlocked 的进程和 sleep 的进程不被调用

9. 在 global.c 中的 user_proc_table 中添加 TestD、TestE 进程，在 proc.h 中添加对应的宏定义，增加 STACK_SIZE_TOTAL，并设置 NR_PROCS 为 5，在 proto.h 中增加 TestD、TestE 的声明，在 main 中实现函数体。

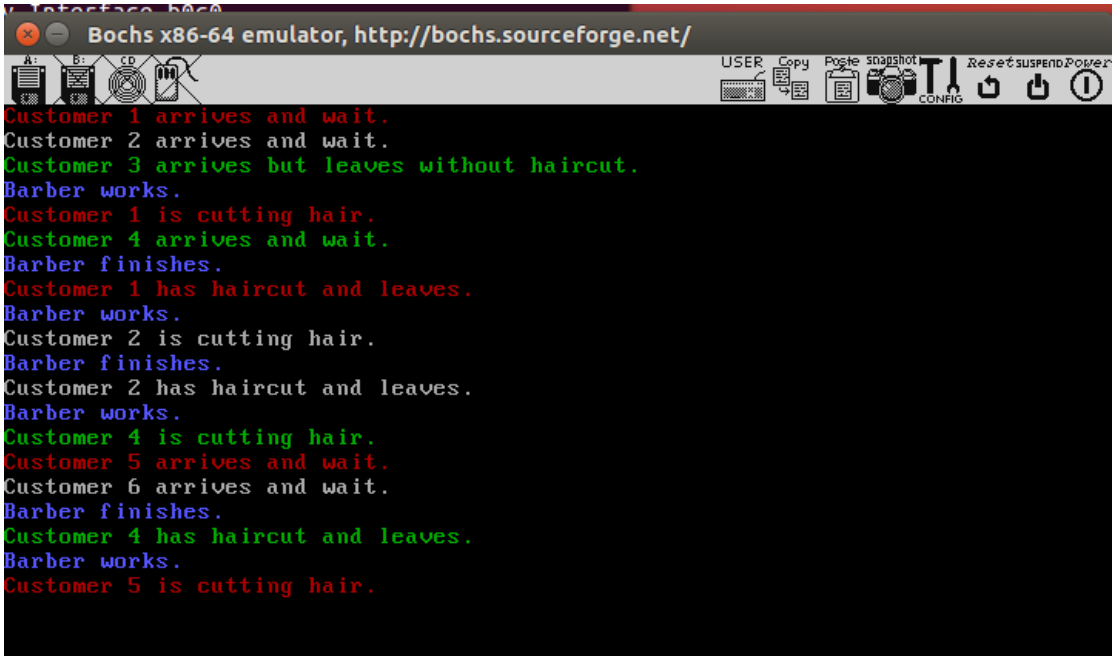
10.在 main.c 中完成理发师问题

运行截图

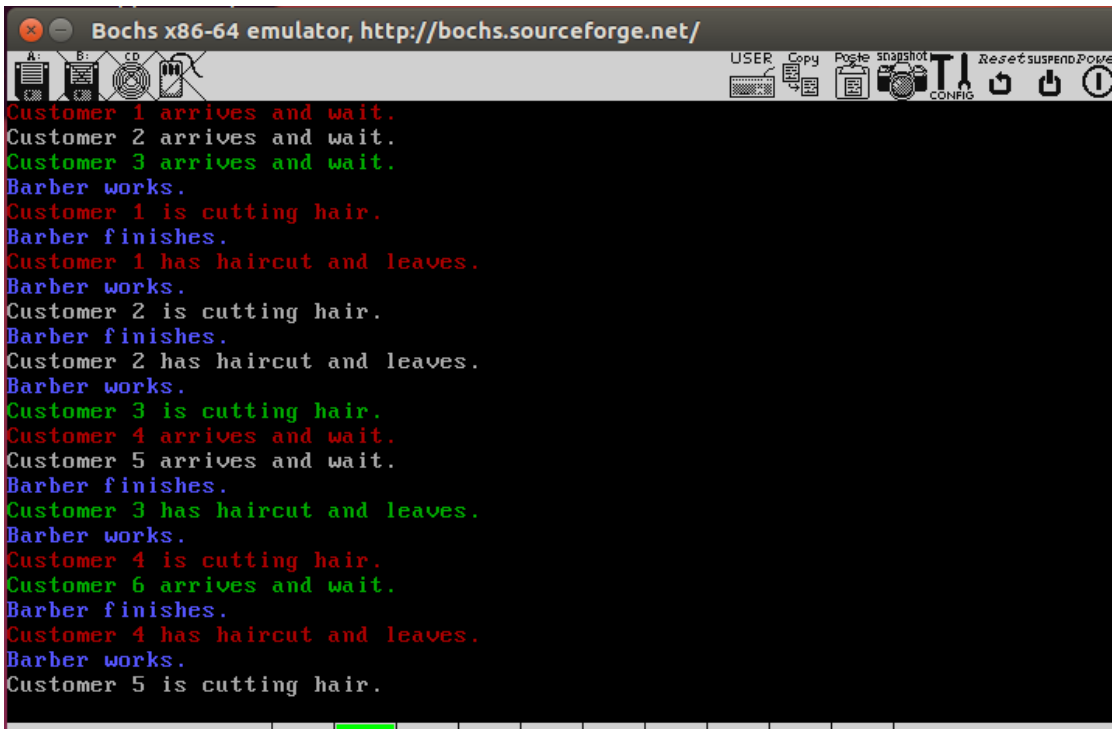
Chairs=1:



Chairs=2


Bochs x86-64 emulator, http://bochs.sourceforge.net/
Customer 1 arrives and wait.
Customer 2 arrives and wait.
Customer 3 arrives but leaves without haircut.
Barber works.
Customer 1 is cutting hair.
Customer 4 arrives and wait.
Barber finishes.
Customer 1 has haircut and leaves.
Barber works.
Customer 2 is cutting hair.
Barber finishes.
Customer 2 has haircut and leaves.
Barber works.
Customer 4 is cutting hair.
Customer 5 arrives and wait.
Customer 6 arrives and wait.
Barber finishes.
Customer 4 has haircut and leaves.
Barber works.
Customer 5 is cutting hair.

Chairs=3


Bochs x86-64 emulator, http://bochs.sourceforge.net/
Customer 1 arrives and wait.
Customer 2 arrives and wait.
Customer 3 arrives and wait.
Barber works.
Customer 1 is cutting hair.
Barber finishes.
Customer 1 has haircut and leaves.
Barber works.
Customer 2 is cutting hair.
Barber finishes.
Customer 2 has haircut and leaves.
Barber works.
Customer 3 is cutting hair.
Customer 4 arrives and wait.
Customer 5 arrives and wait.
Barber finishes.
Customer 3 has haircut and leaves.
Barber works.
Customer 4 is cutting hair.
Customer 6 arrives and wait.
Barber finishes.
Customer 4 has haircut and leaves.
Barber works.
Customer 5 is cutting hair.