1. Explain why implementing synchronization primitives by disabling interrupts is not appropriate in a single-processor system if the synchronization primitives are to be used in user-level programs.

用户级程序不可以赋予禁用中断，否则他就可以通过这一权限阻止上下文切换，从而独自占有 CPU 资源以及当前线程。

2. Explain why interrupts are not appropriate for implementing synchronization primitives in multiprocessor systems.

进程只能关闭当前处理器的中断，但多处理器缺一个处理器显然不行，且进程停止中断不能保证互斥进入程序状态。

3. A university wants to show off how politically correct it is by applying the"Separate but equal is inherently unequal" doctrine to gender as well as race, ending its long-standing practice of gender-segregated bathrooms on campus. However, as a concession to tradition, it decrees that when a woman is in a bathroom, other women may enter, but no men, and vice versa. A sign with a sliding marker on the door of each bathroom indicates which of three possible states it is currently in: Empty, Women present, and Men present. Write the following procedures: woman_wants_to_enter, man_wants_to_enter, woman_leaves, man_leaves, using semaphore.

```
int    man, woman    //定义男女性数目
Boolean    Is Man, Is Woman    //定义2个布尔类型的量以进行标志
Boolean    mutex    //定义信号量

woman_wants_to_enter:              Woman_leaves:
    P(Is Woman)                        P(Is Woman)
    woman++                            woman--
    IF(Woman=0)                        IF(woman=0)
        P(mutex)                           V(mutex)
    V(Is Woman)                        V(Is Woman)
        Woman  bath


man_wants_to_enter:                mon_leaves:
    P(Is Man)                          P(Is Man)
    man++                              man--
    IF(man=0)                          IF(man=0)
        P(mutex)                           V(mutex)
    V(Is Man)                          V(Is Man)
        man  bath
```