Operating System HW4

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6.1

Assume that they have 10000 dollars in the account. The husband wants to withdraw(1000) and the wife wants to deposit(2000). If it allows to modify the balance of the account concurrently, it may become 12000 or 9000 if one call interrupts in the middle of the other call. Hence, we need a key to protect the critical session (the change of the balance).

6.14

(a) The race condition occurs on the variable number_of_processes.
(b) The call acquire() needs to be placed in the beginning of each function and release() needs to be placed before exiting each function.

6.33

Implement same function in HW2 by using mutex locks.
Usage: gcc -o first first.c
./first <number of points>
Sample output:

```
└ ✓hw./first 1000000
Using 10 threads...
In circle:   785524 | Total points:  1000000 | approximate pi: 3.142096
The approximate value of pi for 1000000 points is: 3.142096
```