Shirong Zheng

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Prof. Iannelli

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Report Of Dad-Son Problem

Solution:

Semaphore is a solution to solve synchronization errors. It can limit the number of processes to enter critical section, and this number is one in this program. There are three programs want to enter this critical section, which are one Dad and two Sons. Semaphore limits one process go to change the balance file at a time. If one process didn't finish its codes, then it won't release to allow other processes to enter. In my code, when semid is 1, any process can enter critical section to change the global value. However, it's other than 1, the processes outside the critical section will wait until semid equals to 1 again.

Time measurement:

The clock_t variable t is used to store the time that P(semid) has used on waiting. Before P(semid) is processing, t is going to store the time of that moment. After finished P(semid), the time is also been stored. Finally, it will calculate difference between two different time period, which is the time process spent in waiting.