Quiz

Oct 23, 2024

多选题 4分

设置

Which of the following is/are true about race condition and mutual exclusion?

A Implementation of critical sections require mutual exclusion, bounded-waiting and progress.

B Race condition may happen when two processes concurrently access shared variables.

C Priority inversion may happen when two processes are synchronized with semaphores.

D Peterson’s solution satisfies all the three requirements of critical section implementation

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Which of the following is/are true?

A Implementing critical sections by disabling interrupts is a reasonable solution even on multi-core systems.

B Bounded waiting requires that a process trying to enter the critical section will eventually get in if no process is currently in it.

C Spin-based locks may waste CPU resources, so it is only reasonable to use it when the spin time is much longer than the context switch time.

D Peterson’s solution is an example of the spin-based locks.

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Which of the following is/are true about semaphores?

A Semaphores are only used for mutual exclusion.

B Semaphores must be implemented in the kernel.

C When solving producer-consumer problem with semaphores, it is OK to swap the order of wait(&fill) and wait(&mutex).

D In the correct solution to dining philosopher problem, semaphore is used to model a chopstick.

提交

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Which of the following is/are true about semaphores?

A If the initial value of a semaphore is set to 3, this semaphore can be used by 3 processes to ensure only one process can enter the critical section.

B Semaphores must be implemented using atomic instruction, otherwise concurrent calling sem_wait() and sem_post() may cause race condition.

C To ensure bounded waiting, the wait list of a semaphore should be implemented as a stack.

D Semaphore is an example of sleep-based locks for process synchronization.

提交