ClassActivity_5 Results for Josiah Tsang

Score for this attempt: **10** out of 10
Submitted Feb 11 at 9:47pm
This attempt took 51 minutes.

Question 1

2 / 2 pts

What is the difference between independent and cooperating processes?

Your Answer:

Independent processes cannot affect or be affected by executing another process, whereas cooperating processes can be affected or affect another process.

Question 2

3 / 3 pts

Explain the critical section problem. What is the general structure in regards to critical section?

Your Answer:

The critical section problem is to design a protocol that the processes can use to cooperate. For a system composed of multiple processes, each process has a segment of code that is considered its critical section. Only one critical section belonging to one of those processes is allowed to run at once.

The general structure is:

- entry section

- critical section

- exit section

- remainder section

Question 3

3 / 3 pts

What are the three requirements that a solution to the critical section problem must satisfy?

Your Answer:

Mutual exclusion - if process p is executing its critical section, no other processes can execute theirs

Progress - if a process is not executing its critical section, it should not prevent other processes from accessing the critical section

Bounded Waiting - each process should have a limited waiting time to access the critical section after a process has requested to enter its critical section and before that request is granted. It should not wait endlessly to enter its critical section

Question 4

2 / 2 pts

Explain the race condition.

Your Answer:

A race condition happens when multiple threads try to access a shared variable and manipulate the same data at the same time. The threads perform their operation on the value and race to see which thread can write the value last to the shared variable. The winner of the 'race' is the thread that writes the value to the variable last and is preserved.

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