

Unit 9 - Week 8

Course outline

How does an NPTEL online course work?

Week 1

Week 2

Week 3

Week 4

Week 5

Week 6

Week 7

Week 8

● Creating the first process

● Handling User Pointers, Concurrency

● Locking

● Fine-grained Locking and its challenges

Quiz : Assignment 8

Week 8 Feedback Form

Week 9

Week 10

Week 11

Week 12

Assignment Solution

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Assignment 8

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2020-03-25, 23:59 IST.

1) A critical section is a program segment

2 points

- which should run in a certain specified amount of time
- which avoids deadlocks
- where shared resources are accessed
- which must be enclosed by a pair of semaphore operations, P and V

No, the answer is incorrect.
Score: 0

Accepted Answers:
where shared resources are accessed

2) Consider the methods used by processes P1 and P2 for accessing their critical sections whenever needed, as given below. The initial values of shared boolean variables S1 and S2 are randomly assigned.

2 points

Method Used by P1:
while (S1 == S2) ;
Critical Section
S1 = S2;

Method Used by P2
while (S1 != S2) ;
Critical Section
S2 = not (S1);

Which one of the following statements describes the properties achieved?

- Mutual exclusion but not progress
- Progress but not mutual exclusion
- Neither mutual exclusion nor progress
- Both mutual exclusion and progress

No, the answer is incorrect.
Score: 0

Accepted Answers:
Mutual exclusion but not progress

3) Two processes, P1 and P2, need to access a critical section of code. Consider the following synchronization construct used by the processes:

2 points

```
Code for P1:
while (true) {
  wants1 = true;
  while (wants2 == true);
/* Critical Section */
  wants1=false;
}
/* Remainder section */
```

```
Code for P2:
while (true) {
  wants2 = true;
  while (wants1==true);
/* Critical Section */
  wants2 = false; }
/* Remainder section */
```

Here, wants1 and wants2 are shared variables, which are initialized to false.

Which one of the following statements is TRUE about the above construct?

- It does not ensure mutual exclusion.
- It does not ensure bounded waiting.
- It requires that processes enter the critical section in strict alternation.
- It does not prevent deadlocks, but ensures mutual exclusion.

No, the answer is incorrect.
Score: 0

Accepted Answers:
It does not prevent deadlocks, but ensures mutual exclusion.

4) Which of the following is NOT a necessary condition for a deadlock?

2 points

- Mutual Exclusion
- Circular wait
- No preemption of resources
- None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
None of the above

5) Which of the following is NOT a solution for the critical section problem?

2 points

- Monitor
- Semaphore
- Segmentation
- Critical Region construct

No, the answer is incorrect.
Score: 0

Accepted Answers:
Segmentation