



作业 复查测验提交: 第7章 死锁 作业

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用户	工科试验班 (信息) 裴奔心
课程	操作系统
测试	第7章 死锁 作业
已开始	19-11-19 下午7:57
已提交	19-11-22 下午8:00
截止日期	19-11-24 下午11:30
状态	已完成
尝试分数	得 47 分, 满分 50 分
已用时间	72 小时 2 分钟
显示的结果	所有答案, 已提交的答案, 正确答案, 反馈

问题 1

得 7 分, 满分 10 分

Consider the following snapshot of a system:

	Allocation	Max	Available
	A B C D	A B C D	A B C D
P ₀	0 0 1 2	0 0 1 2	1 5 2 0
P ₁	1 0 0 0	1 7 5 0	
P ₂	1 3 5 4	2 3 5 6	
P ₃	0 6 3 2	0 6 5 2	
P ₄	0 0 1 4	0 6 5 6	

Answer the following questions using the banker's algorithm:

- What is the content of the matrix *Need*?
- Is the system in a safe state?
- If a request from process P₁ arrives for (0,4,2,0), can the request be granted immediately?

所选答案: a. The matrix is:

0	0	0	0
0	7	5	0
1	0	0	2
0	0	2	0
0	6	4	2

- For there is a sequence p₀, p₃, p₂, p₁, <p₀p₄, the system is in a safe state.
- If the request is done, Available now is 1100, and Need Matrix is:

0	0	0	0
0	3	3	0
1	0	0	2
0	0	2	0
0	6	4	2

In this case, there is a sequence p₀, p₂, p₃, p₁, p₄. So the quest can be granted immediately.

正确答案:

a. Need = Max - Allocation. Thus, its content is

	Need			
	A	B	C	D
P0	0	0	0	0
P1	0	7	5	0
P2	1	0	0	2
P3	0	0	2	0
P4	0	6	4	2

b. Yes, the sequence <P0, P2, P3, P4, P1> satisfies the safety requirement.

c. Yes. Since

i. Request1(0,4,2,0) <= need1(0,7,5,0)

ii. Request1(0,4,2,0) <= available(1,5,2,0)

iii. The new system state after the allocation is made is

	Allocation	Max	Need	Available
P0	0 0 1 2	0 0 1 2	0 0 0 0	1 1 0 0
P1	1 4 2 0	1 7 5 0	0 3 3 0	
P2	1 3 5 4	2 3 5 6	1 0 0 2	
P3	0 6 3 2	0 6 5 2	0 0 2 0	
P4	0 0 1 4	0 6 5 6	0 6 4 2	

and the sequence < P0, P2, P3, P4, P1> satisfies the safety requirement.



回答反馈: [未给定]

问题 2

得 4 分, 满分 4 分

For operating systems, deadlock means _____.

所选答案: ☒ A. processes are blocked and wait for each other to finish

答案: ☒ A. processes are blocked and wait for each other to finish

B. hardware malfunctions

C. system halts

D. A program is looping forever

问题 3

得 4 分, 满分 4 分

The deadlock prevention is a set of methods for ensuring that at least one of the necessary conditions of deadlock can not be held. In the following methods, which one breaks the "Circular Wait" condition.

所选答案: ☒ C. Each process request resources in the ascending order of resource ID number.

答案: A. none of the above

B. Each process request and be allocated all its resources before it begins execution

☒ C. Each process request resources in the ascending order of resource ID number.

D. Banker's Algorithm

问题 4

得 4 分, 满分 4 分

Which of the following is not a necessary condition of deadlock?

所选答案: ☒ A. Number of resources

答案: ☒ A. Number of resources

B. Mutual exclusion

- C. Circular wait
- D. Hold and wait

问题 5

得 4 分, 满分 4 分

A system has 3 concurrent processes, each of which requires 4 items of resource R. What is the minimum number of resource R in order to avoid the deadlock.

所选答案: ☒ D. 10

答案: ☐ A. 11
☐ B. 9
☐ C. 12
☒ D. 10

问题 6

得 4 分, 满分 4 分

Assume that a system has 9 instances of 1 resource type shared by 4 processes. How many resource instances can a process be allowed to request in order to avoid deadlock?

所选答案: ☒ A. 3

答案: ☒ A. 3
☐ B. 1
☐ C. 2
☐ D. 4

问题 7

得 4 分, 满分 4 分

There are N processes which share M mutual exclusive resources, each process can hold W resources at most. Which of the following condition may cause a deadlock?

所选答案: ☒ C. $M=4, N=2, W=3$

答案: ☐ A. $M=4, N=3, W=2$
☐ B. $M=2, N=1, W=2$
☒ C. $M=4, N=2, W=3$
☐ D. $M=2, N=2, W=1$

问题 8

得 4 分, 满分 4 分

A system is in a deadlock, if its resource allocation graph _____.

所选答案: ☒ B. contains a cycle and there is just one instance of every resource

答案: ☐ A. contains a cycle
☒ B. contains a cycle and there is just one instance of every resource
☐ C. doesn't contain a cycle
☐ D. has at least one outgoing edge from any one of the process nodes

问题 9

得 4 分, 满分 4 分

Banker's algorithm is one of _____ algorithm.

所选答案: ☒ D. deadlock avoidance

答案:
A. deadlock recovery
B. deadlock prevention
C. deadlock detection
☒ D. deadlock avoidance

问题 10

得 4 分, 满分 4 分

Which of the following operating system uses Banker's Algorithm to perform deadlock avoidance?

所选答案: ☒ B. None of the above

答案:
A. Windows 10
☒ B. None of the above
C. Linux
D. Mac OS

问题 11

得 4 分, 满分 4 分

Which of the following phenomena is not a kind of deadlock?

所选答案: ☒ B. A car cannot move forward because a bridge is damaged.

答案:
A. Two cars crossing a single-lane bridge from opposite directions
☒ B. A car cannot move forward because a bridge is damaged.
C. A person is going down a ladder while another is climbing up the ladder
D. Two trains traveling toward each other in the same track

2020年1月4日 星期六 下午04时02分31秒 CST

← 确定