操作系统(D)

第 8 次作业

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8.3 Consider the following snapshot of a system:

	Allocation	*Max*	*Available*
	ABCD	*ABCD*	*ABCD*
T_0	0012	0012	1520
T_1	1000	1750	
T_2	1354	2356	
T_3	0632	0652	
T_4	0014	0656	

Answer the following questions using the banker's algorithm:

a. What is the content of the matrix *Need*?

b. Is the system in a safe state?

c. If a request from thread T_1 arrives for (0,4,2,0), can the request be granted immediately?

8.9 Consider the following snapshot of a system:

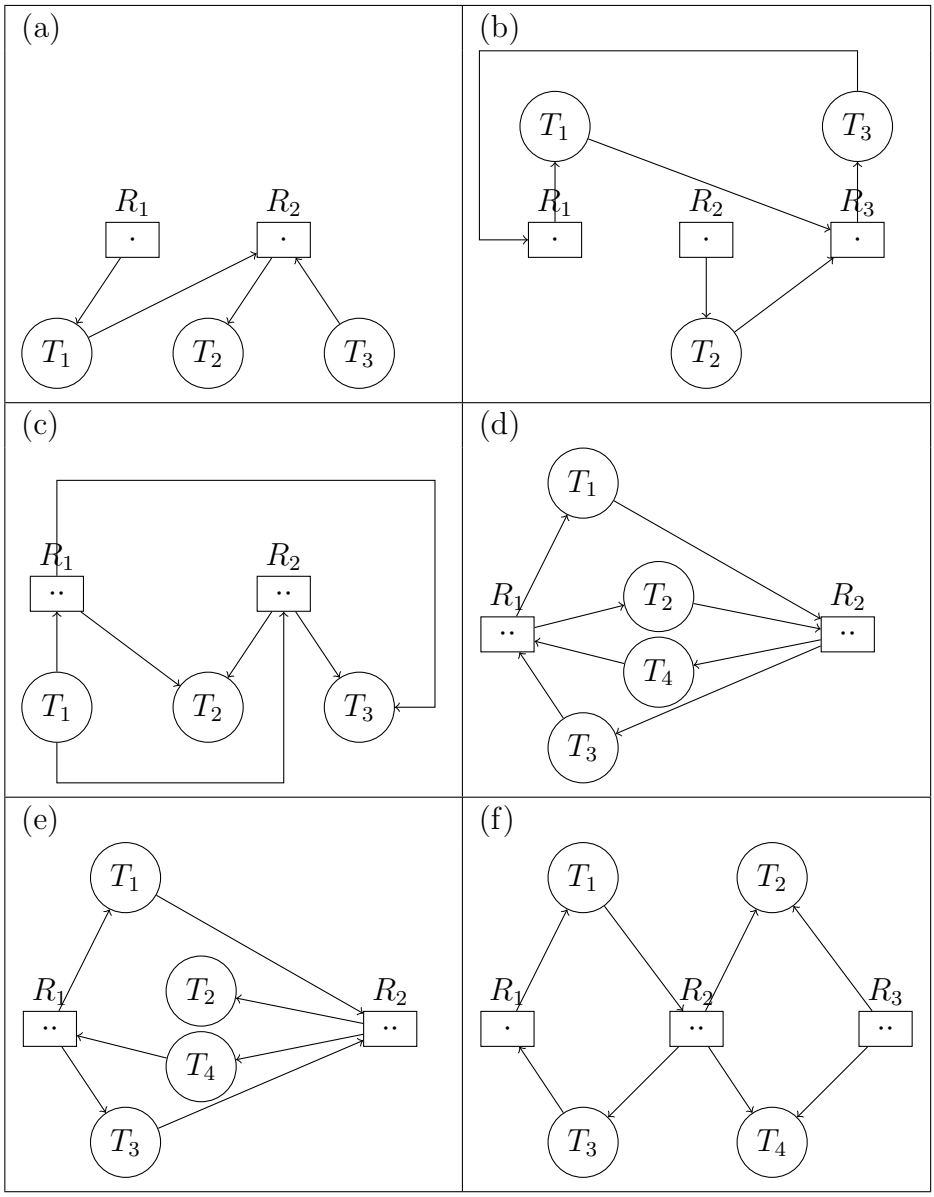
	Allocation	*Max*
	ABCD	*ABCD*
T_0	3014	5117
T_1	2210	3211
T_2	3121	3321
T_3	0510	4612
T_4	4212	6325

Using the banker’ s algorithm, determine whether or not each of thefollowing states is unsafe. If the state is safe, illustrate the order in whichthe threads may complete. Otherwise, illustrate why the state is unsafe.

a. *Available*=(0,3,0,1)

b. *Available*=(1,0,0,2)

8.18 Which of the six resource-allocation graphs shown in Figure 8.12 illustrate deadlock? For those situations that are deadlocked, provide the cycle of threads and resources. Where there is not a deadlock situation,illustrate the order in which the threads may complete execution.



8.27 Consider the following snapshot of a system:

	Allocation	*Max*
	ABCD	*ABCD*
T_0	1202	4316
T_1	0112	2424
T_2	1240	3651
T_3	1201	2623
T_4	1001	3112

Using the banker's algorithm, determine whether or not each of the following states is unsafe. If the state is safe, illustrate the order in which the threads may complete. Otherwise, illustrate why the state is unsafe.

a. *Available*=(2,2,2,3)

b. *Available*=(4,4,1,1)

c. *Available*=(3,0,1,4)

d. *Available*=(1,5,2,2)

8.28 Consider the following snapshot of a system:

	Allocation	*Max*	*Available*
	ABCD	*ABCD*	*ABCD*
T_0	3141	6473	2224
T_1	2102	4232	
T_2	2413	2533	
T_3	4110	6332	
T_4	2221	5675	

Answer the following questions using the banker's algorithm:

a. Illustrate that the system is in a safe state by demonstrating anorder in which the threads may complete.

b. If a request from thread T_4 arrives for (2,2,2,4), can the request begranted immediately.

c. If a request from thread T_2 arrives for (0,1,1,0), can the request begranted immediately?

d. If a request from thread T_3 arrives for (2,2,1,2), can the request begranted immediately?