Bankers Algorithm Problem Set

Problem Set-1:

5 processes P0 P4

3 resources A B C

At an instance of time, we have the following snapshot of the system:

	Allocation			Max			Available			
	Α	В	С	Α	В	С	Α	В	С	
Po	0	1	0	7	5	3	3	3	2	
P ₁	2	0	0	3	2	2				
P ₂	3	0	2	9	0	2				
P ₃	2	1	1	2	2	2				
P ₄	0	0	2	4	3	2	81:			

Is the system is in safe state? If in safe state then what is the possible safe state sequence?

Problem Set-2:

Assume that there are three resources, A, B, and C.

There are 4 processes P0 to P3.

At an instance of time, we have the following snapshot of the system:

Allocation			Max			Available			
Α	В	С	Α	В	С	Α	В	С	
1	0	1	2	1	1	2	1	1	
2	1	2	5	4	4				
3	0	0	3	1	1	28 T	23		
1	0	1	1	1	1				
	A 1 2	A B 1 0 2 1 3 0	A B C 1 0 1 2 1 2 3 0 0	A B C A 1 0 1 2 2 1 2 5 3 0 0 3	A B C A B 1 0 1 2 1 2 1 2 5 4 3 0 0 3 1	A B C A B C 1 0 1 2 1 1 2 1 2 5 4 4 3 0 0 3 1 1	A B C A B C A 1 0 1 2 1 1 2 2 1 2 5 4 4 3 0 0 3 1 1	A B C A B C A B 1 0 1 2 1 1 2 1 2 1 2 5 4 4 3 0 0 3 1 1	

Is the system is in safe state? If in safe state then what is the possible safe state sequence?

Problem Set-3:

Assume that there are 5 processes, P0 through P4, and 4 types of resources. At an instance of time, we have the following snapshot of the system:

Allocation				Max				Available				
Α	В	С	D	Α	В	С	D	Α	В	С	D	
0	1	1	0	0	2	1	0	1	5	2	0	
1	2	3	1	1	6	5	2	-				
1	3	6	5	2	3	6	6	- 23				
0	6	3	2	0	6	5	2			+		
0	0	1	4	0	6	5	6	33		18		
	A 0 1 1 0	A B 0 1 1 2 1 3 0 6	A B C 0 1 1 1 2 3 1 3 6 0 6 3	A B C D 0 1 1 0 1 2 3 1 1 3 6 5 0 6 3 2	A B C D A 0 1 1 0 0 1 2 3 1 1 1 3 6 5 2 0 6 3 2 0	A B C D A B 0 1 1 0 0 2 1 2 3 1 1 6 1 3 6 5 2 3 0 6 3 2 0 6	A B C D A B C 0 1 1 0 0 2 1 1 2 3 1 1 6 5 1 3 6 5 2 3 6 0 6 3 2 0 6 5	A B C D A B C D 0 1 1 0 0 2 1 0 1 2 3 1 1 6 5 2 1 3 6 5 2 3 6 6 0 6 3 2 0 6 5 2	A B C D A B C D A 0 1 1 0 0 2 1 0 1 1 2 3 1 1 6 5 2 1 3 6 5 2 3 6 6 0 6 3 2 0 6 5 2	A B C D A B C D A B 0 1 1 0 0 2 1 0 1 5 1 2 3 1 1 6 5 2 1 3 6 5 2 3 6 6 0 6 3 2 0 6 5 2	A B C D A B C D A B C 0 1 1 0 0 2 1 0 1 5 2 1 2 3 1 1 6 5 2 2 1 3 6 5 2 3 6 6 0 6 3 2 0 6 5 2	

Is the system is in safe state? If in safe state then what is the possible safe state sequence?