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CSE 4501

Answer to the question no: 1

for the given snapshot, the table along with need matrix will be:

	Allocation	Max	Available	Need
	A B C	A B C	A B C	A B C
P_0	0 1 0	7 5 3	3 3 2	7 4 3
P_1	2 0 0	3 2 2		1 2 2
P_2	3 0 2	9 0 2		6 0 0
P_3	2 1 1	2 2 2		0 1 1
P_4	0 0 2	4 3 3		4 3 1

- At first when ABC (3,3,2) is available, P_1 is satisfied. So, $P_1(2,0,0)$ is added to available matrix to get (5, 3, 2).
- Next using ABC(5,3,2) we can satisfy P_3. So, now $P_3(2,1,1)$ is added to (5,3,2) to get (7, 4, 3).

- Using $(7,4,3)$ we can satisfy P_4 and end up getting $(7,4,5)$ by adding $P_4(0,0,2)$.

- Next using $(7,4,5)$ we can satisfy P_0 and get available matrix $(7,5,5)$ by adding $P_0(0,1,0)$.

- Lastly, we satisfy P_2 and add $P_2(3,0,2)$ to get $(10,5,7)$ which is the total available resources.

So, the safe sequence is:

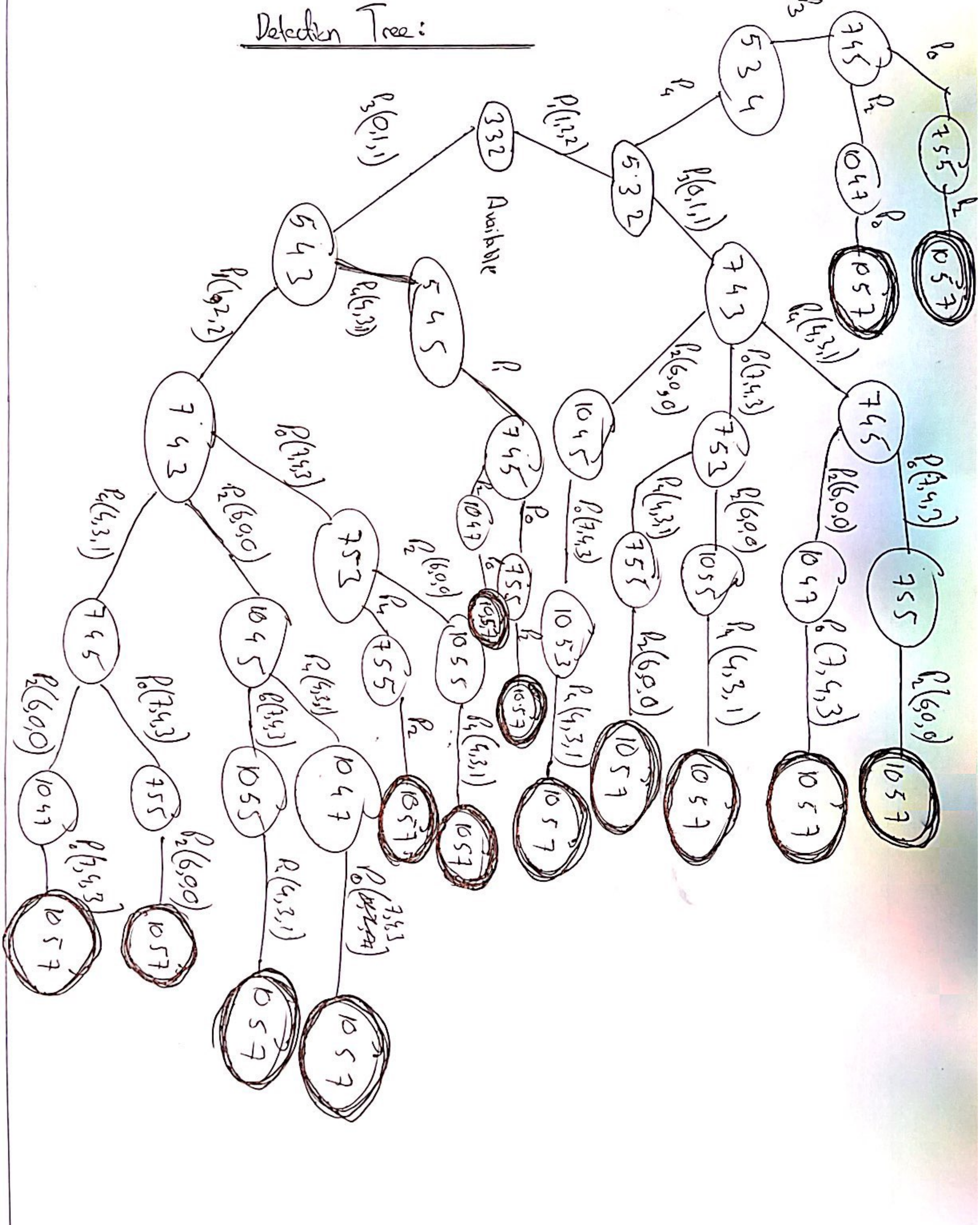
P_1, P_3, P_4, P_0, P_2.

And at each step the available matrix was:

$(3,3,2) \Rightarrow (5,3,2) \Rightarrow (7,4,3) \Rightarrow (7,4,5) \Rightarrow (7,5,5)$

$\Rightarrow (10,5,7)$.

Detection Tree:



Answer to question no: 2

	Allocation			Max			Available			Need		
	A	B	C	A	B	C	A	B	C	A	B	C
P_0	0	1	0	7	5	3	2	3	0	7	4	3 ✓
P_1	3	0	2	3	2	2	5	3	2	0	2	0 ✓
P_2	3	0	2	9	0	2	7	4	3	6	0	0
P_3	2	1	1	2	2	2	7	4	5	0	1	1 ✓
P_4	0	0	2	4	3	3	7	5	5	4	3	1 ✓
							10	5	7			

Safe sequence: P_1 P_3 P_4 P_0 P_2

Since, safe sequence is found, we can ~~grant~~ grant request.

Answer to question: 3

	Alloc.	Max	Available	Need
P_0	0 1 0	7 5 3	2 3 0	7 4 3
P_1	3 0 2	3 2 2		0 2 0
P_2	3 0 2	9 0 2		6 0 0
P_3	2 1 1	2 2 2		0 1 1
P_4	0 0 2	4 3 3		4 3 1

(a) (3,3,0) request by P_4 is not acceptable since it exceeds availability.

(b) (0,3,0) by P_3 is not acceptable since it exceeds its priori maximum.

(c) (0,0,2) by P_2 is not acceptable since it exceeds availability.