safe state and unsafe state

Prof.Dr. Fazal Rehman Shamil

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What is a state?

State of the system informs that if resources are allocated to different processes then system undergoes deadlock or not.

What is a safe state?

If the system can allocate resources to the process in such a way that it can avoid deadlock. Then the system is in a safe state.

What is the unsafe state?

If the system can't allocate resources to the process in such a way that it can avoid deadlock. Then the system is in the unsafe state.

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Free resources : 3

PROCESS	Allocated R	Needed resources
P1	4	10
P2	2	4
P3	2	7

Free resources: 1

PROCESS	Allocated R	Needed resources
P1	4	10
P2	4	4
P3	2	7

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Free resources: 1

PROCESS	Allocated R	Needed resources
P1	4	10
P2	4	4
P3	2	7

Free resources: 5

PROCESS	Allocated R	Needed resources
P1	4	10
P2	0	0
P3	2	7

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Free resources: 5

PROCESS	Allocated R	Needed resources
P1	4	10
P2	0	0
P3	2	7

Free resources : 0

PROCESS	Allocated R	Needed resources
P1	4	10
P2	0	0
P3	7	7

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Free resources : 0

PROCESS	Allocated R	Needed resources
P1	4	10
P2	0	0
P3	7	7

Free resources: 7

PROCESS	Allocated R	Needed resources
P1	4	10
P2	0	0
P3	0	0

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Free resources: 7

PROCESS	Allocated R	Needed resources
P1	4	10
P2	0	0
P3	0	0

Free resources: 1

PROCESS	Allocated R	Needed resources
P1	10	10
P2	0	0
P3	0	0

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Free resources: 1

PROCESS	Allocated R	Needed resources
P1	10	10
P2	0	0
P3	0	0

Free resources: 11

PROCESS	Allocated R	Needed resources
P1	0	0
P2	0	0
P3	0	0

Result: All processes execute successfully, so there is no deadlock and the system is in the safe state.

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