gradeup

Deadlocks Part-2

Content :-

1. **Banker's Algorithm**

Banker's Algorithm: It is a deadlock avoidance algorithm. It is used to avoid deadlocks, by maintaining the system in a safe state. The algorithm operates as follows :

a. When a new process is admitted into the system , the process has to pre-declare its maximum requirement of resources they may occur any time during its execution. The process will be admitted for execution only if its maximum requirement of the resources is within the system capacity of resources. The processes admitted for execution can be safely executed in some sequence called SAFE SEQUENCE.

b. Whenever , a process request allocation of resources(of course within its maximum requirement , already declared).

Question: Find the safe sequence:

Total Resources = 13

	Allocation	Maximum
P_0	5	10
P_1	4	6
P_2	1	2

Solution

	Allocation	Maximum	Need (Max - Allocation)
P_0	5	10	5

Gradeup UGC NET Super Subscription
Access to all Structured Courses & Test Series

P_1	4	6	2
P_2	1	2	1
Total	10		

Free = 13 - 10 = 3

Free Resources = 3+4 =7 ---- >P_2

7+1 = 8 ------- > P_3

8+ 5 = 13 ------- > P_1

<P_2,P_3,P_1> → Safe Sequence

Question :

Total resources :- 10 5 7

	Allocation	**Maximum**
	ABC	**ABC**
P_0	010	753
P_1	200	322
P_2	302	902
P_3	211	222
P_4	002	433

Free resources = 3 3 2

Gradeup UGC NET Super Subscription
Access to all Structured Courses & Test Series

Solution :-

	Allocation	Maximum	Need
	ABC	ABC	ABC
P_0	010	753	743
P_1	200	322	122
P_2	302	902	600
P_3	211	222	011
P_4	002	433	431
Total	725		

332 + 200 =532 -----P_1

532 + 211 = 743 ---- P_3

743 + 002 = 745 --- P_4

745 + 010 = 755 ----P_0

755 + 302 = 1057 ----P_2

<P_1,P_3,P_4,P_0,P_2> ---→ safe sequence

Gradeup UGC NET Super Subscription
Access to all Structured Courses & Test Series

gradeup SUPER

Gradeup UGC NET
Super Superscription

Features:

1. 7+ Structured Courses for UGC NET Exam
2. 200+ Mock Tests for UGC NET & MHSET Exams
3. Separate Batches in Hindi & English
4. Mock Tests are available in Hindi & English
5. Available on Mobile & Desktop

Gradeup Super Subscription, Enroll Now

gradeup.co