Ain Shams University

Faculty of Engineering

Assignment

Banker's Algorithm

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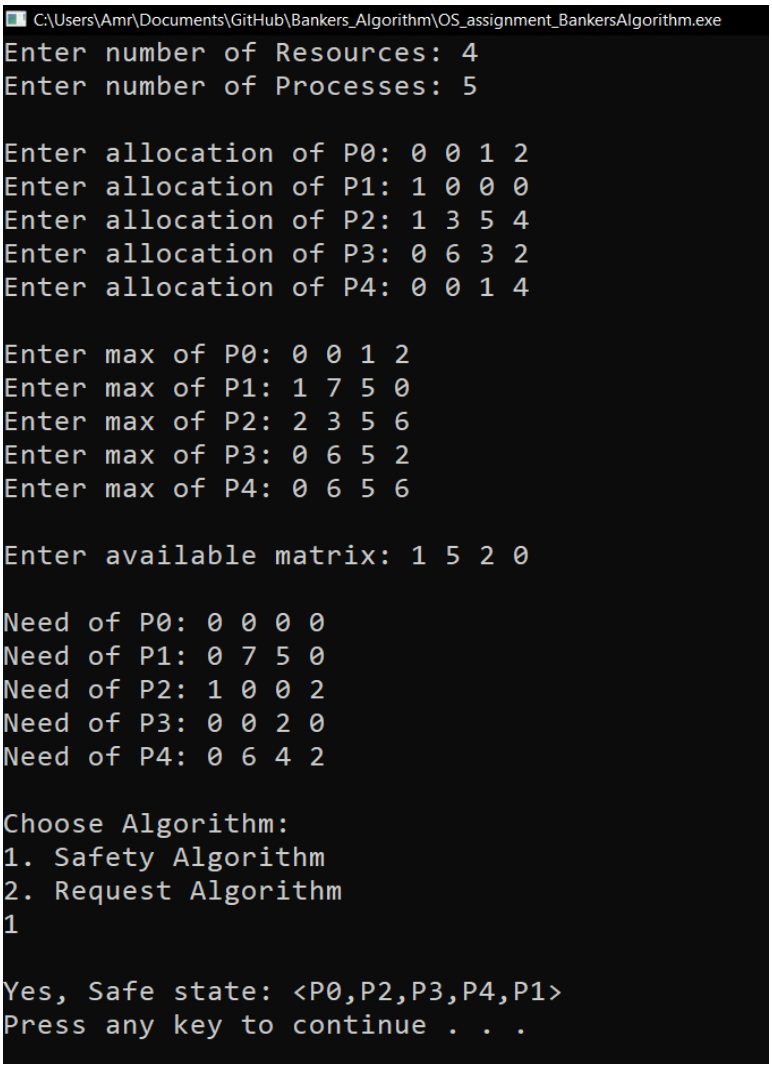
Sec.3

Test Cases

1) Safe

	Allocation				Max				Available			
	A	B	C	D	A	B	C	D	A	B	C	D
P0	0	0	1	2	0	0	1	2	1	5	2	0
P1	1	0	0	0	1	7	5	0				
P2	1	3	5	4	2	3	5	6				
P3	0	6	3	2	0	6	5	2				
P4	0	0	1	4	0	6	5	6				



2) Request Granted

	Allocation				Max				Available			
	A	B	C	D	A	B	C	D	A	B	C	D
P0	0	0	1	2	0	0	1	2	1	5	2	0
P1	1	0	0	0	1	7	5	0				
P2	1	3	5	4	2	3	5	6				
P3	0	6	3	2	0	6	5	2				
P4	0	0	1	4	0	6	5	6				

Request from P1 (0, 4, 2, 0)

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C:\Users\Amr\Documents\GitHub\Bankers_Algorithm\OS_assignment_BankersAlgorithm.exe

Enter allocation of P0: 0 0 1 2
Enter allocation of P1: 1 0 0 0
Enter allocation of P2: 1 3 5 4
Enter allocation of P3: 0 6 3 2
Enter allocation of P4: 0 0 1 4

Enter max of P0: 0 0 1 2
Enter max of P1: 1 7 5 0
Enter max of P2: 2 3 5 6
Enter max of P3: 0 6 5 2
Enter max of P4: 0 6 5 6

Enter available matrix: 1 5 2 0

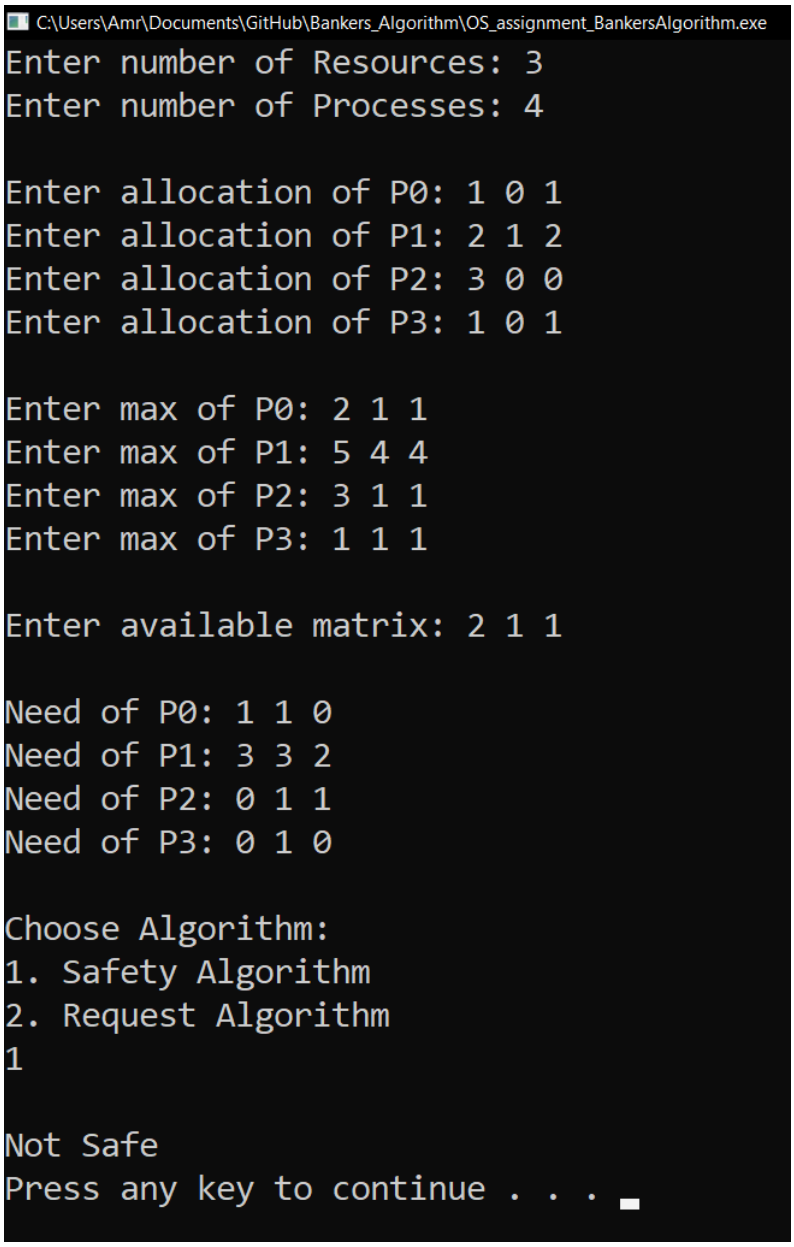
Need of P0: 0 0 0 0
Need of P1: 0 7 5 0
Need of P2: 1 0 0 2
Need of P3: 0 0 2 0
Need of P4: 0 6 4 2

Choose Algorithm:
1. Safety Algorithm
2. Request Algorithm
2
Enter number of process making the request: 1
Enter request: 0 4 2 0

Yes request can be granted with safe state, Safe state: <P1req,P0,P2,P3,P4,P1>
Press any key to continue . . .
```

3) Not Safe

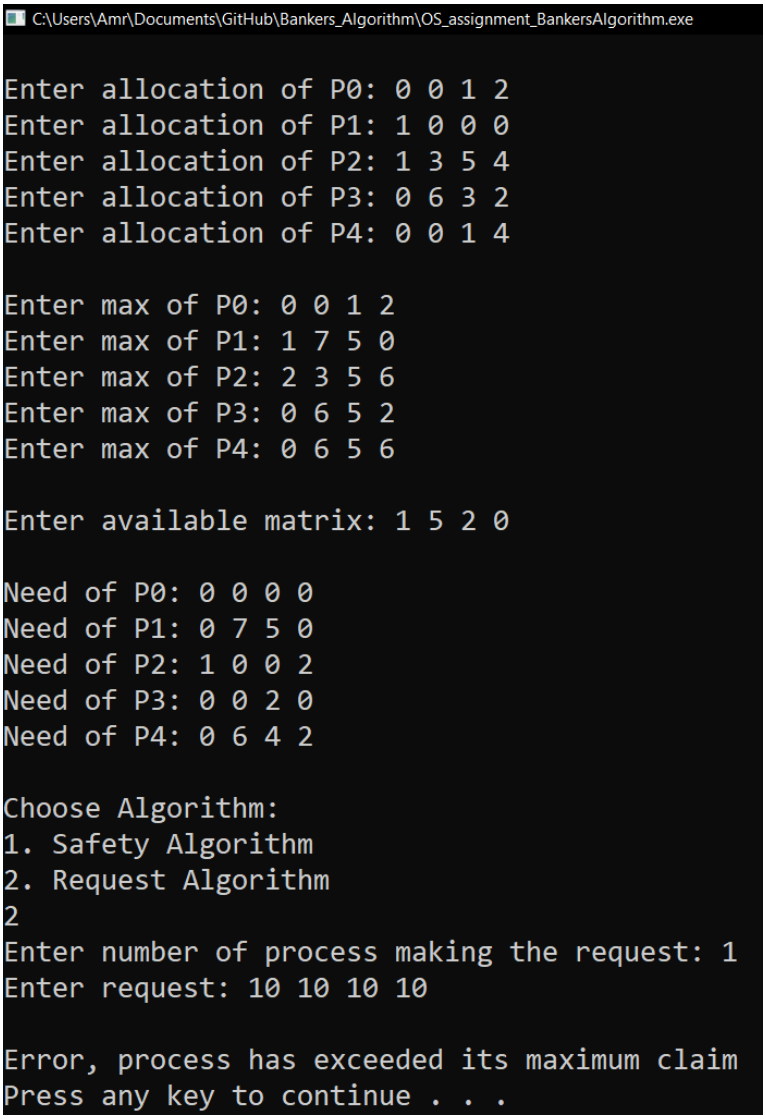
	Allocation			Max			Available		
	A	B	C	A	B	C	A	B	C
P0	1	0	1	2	1	1	2	1	1
P1	2	1	2	5	4	4			
P2	3	0	0	3	1	1			
P3	1	0	1	1	1	1			



4) Process exceeded its maximum claim

	Allocation				Max				Available			
	A	B	C	D	A	B	C	D	A	B	C	D
P0	0	0	1	2	0	0	1	2	1	5	2	0
P1	1	0	0	0	1	7	5	0				
P2	1	3	5	4	2	3	5	6				
P3	0	6	3	2	0	6	5	2				
P4	0	0	1	4	0	6	5	6				

Request from P1 (10, 10, 10, 10)



5) Not Granted

	Allocation			Max			Available		
	A	B	C	A	B	C	A	B	C
P0	0	1	0	7	5	3	3	3	2
P1	2	0	0	3	2	2			
P2	3	0	2	9	0	2			
P3	2	1	1	2	2	2			
P4	0	0	2	4	3	3			

Request from P4 (3, 3, 0)

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C:\Users\Amr\Documents\GitHub\Bankers_Algorithm\OS_assignment_BankersAlgorithm.exe
Enter number of Resources: 3
Enter number of Processes: 5

Enter allocation of P0: 0 1 0
Enter allocation of P1: 2 0 0
Enter allocation of P2: 3 0 2
Enter allocation of P3: 2 1 1
Enter allocation of P4: 0 0 2

Enter max of P0: 7 5 3
Enter max of P1: 3 2 2
Enter max of P2: 9 0 2
Enter max of P3: 2 2 2
Enter max of P4: 4 3 3

Enter available matrix: 3 3 2

Need of P0: 7 4 3
Need of P1: 1 2 2
Need of P2: 6 0 0
Need of P3: 0 1 1
Need of P4: 4 3 1

Choose Algorithm:
1. Safety Algorithm
2. Request Algorithm
2
Enter number of process making the request: 4
Enter request: 3 3 0

Not Granted
Press any key to continue . . .
```

Github Link:

https://github.com/amrehab-98/Bankers_Algorithm

Google Drive:

https://drive.google.com/drive/folders/1HgezRW4UKXbOa60bwtCos3xqHuu1GwNn?usp=sharing