Ain Shams University
Faculty Of Engineering
Computer And System Department

Banker's Algorithm Assignment

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Code: 16X0103

Sec: 4

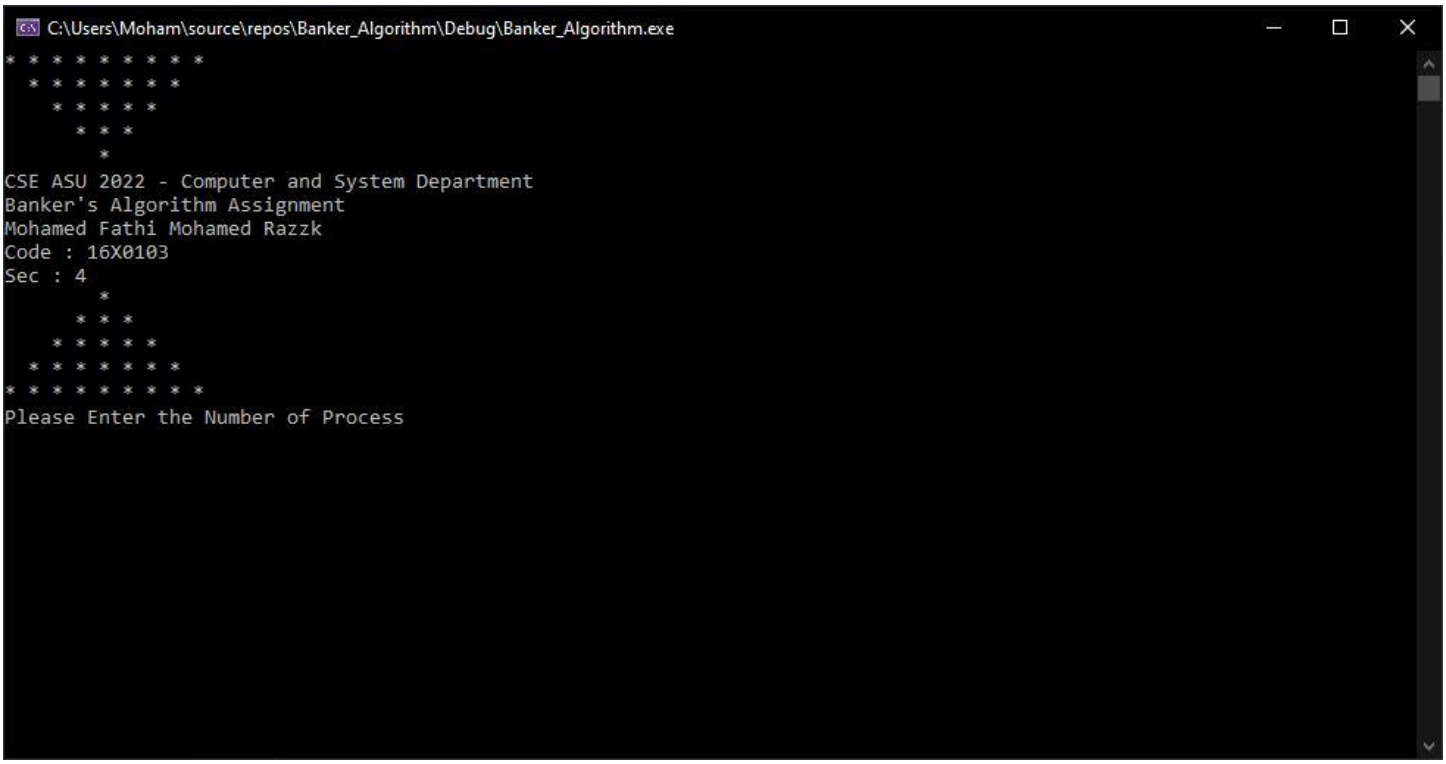
- **Bank ‘s Algorithm Program**

Instruction:

Operation	Explain
help	If you wanna see help instruction
safe	If you wanna safe state
request	If you wanna request
print_need_matrix	If you wanna Need Matrix
print_allocation_matrix	If you wanna Allocation
print_max_matrix	If you wanna Max Matrix
print_all	If you wanna All Matrix
new	If you wanna start fresh
exit	If you wanna exit program

- Test Case 1,

```
5                  //process number
4                  //  Recourse type
0 0 1 2          // allocation matrix
1 0 0 0
1 3 5 4
0 6 3 2
0 0 1 4
0 0 1 2          // max matrix
1 7 5 0
2 3 5 6
0 6 5 2
0 6 5 6
1 5 2 0        //available array
```


C:\Users\Moham\source\repos\Banker_Algorithm\Debug\Banker_Algorithm.exe
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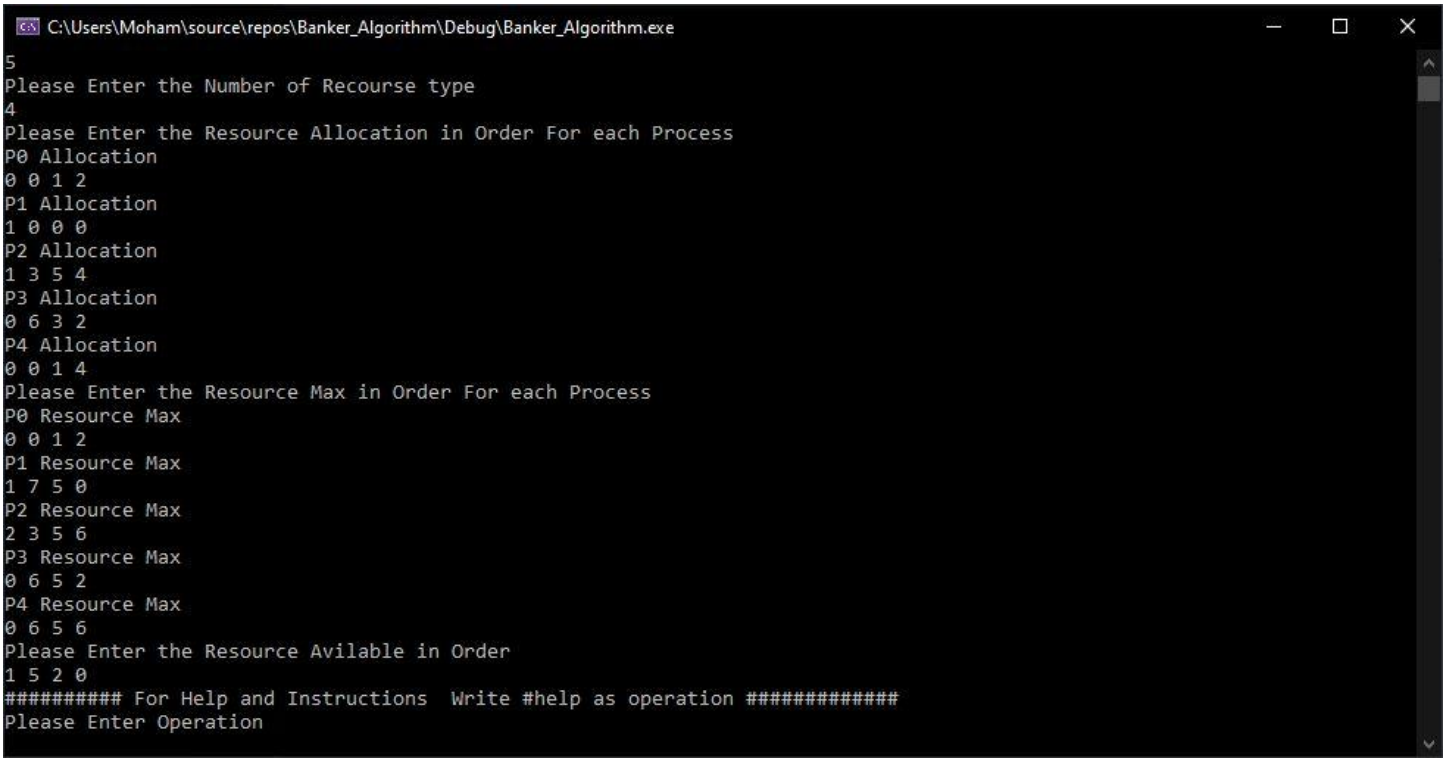
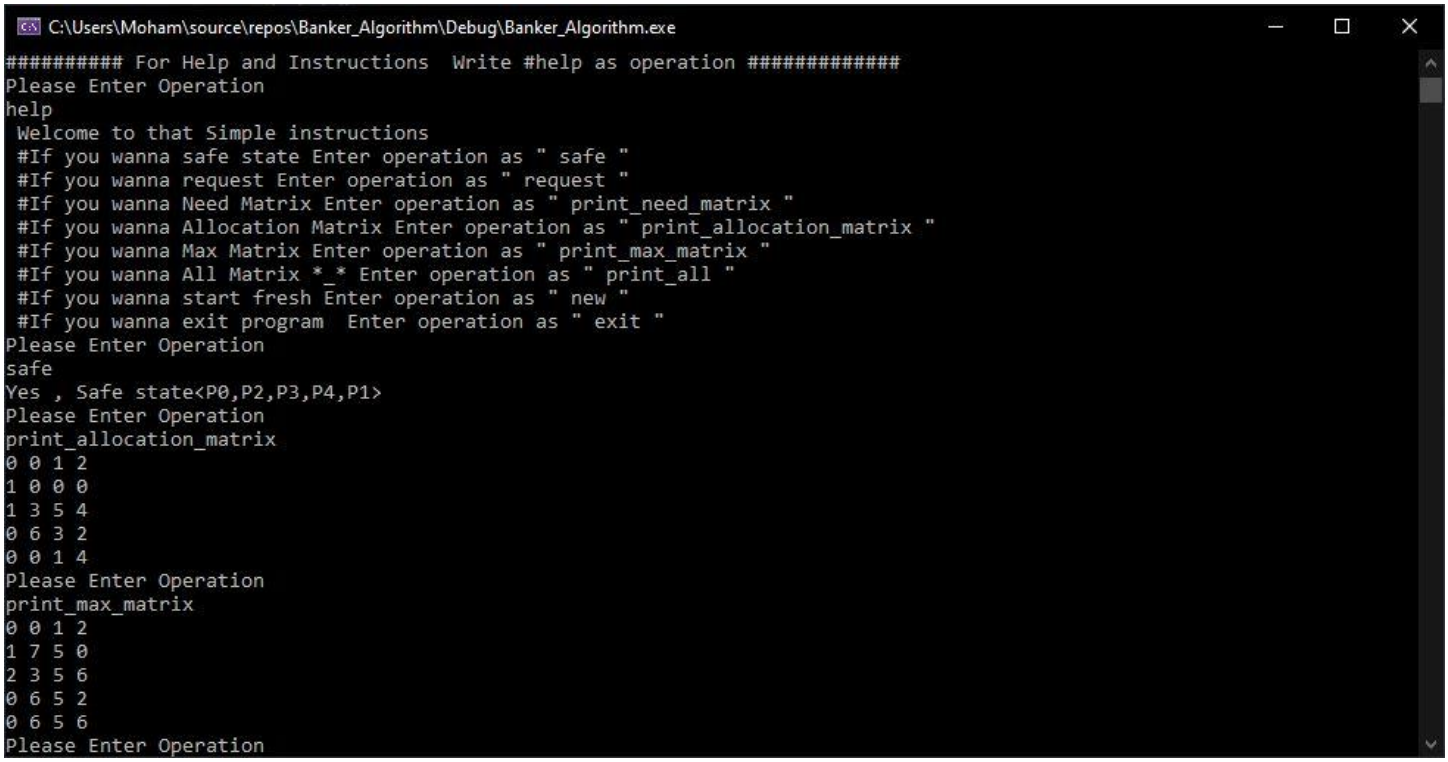
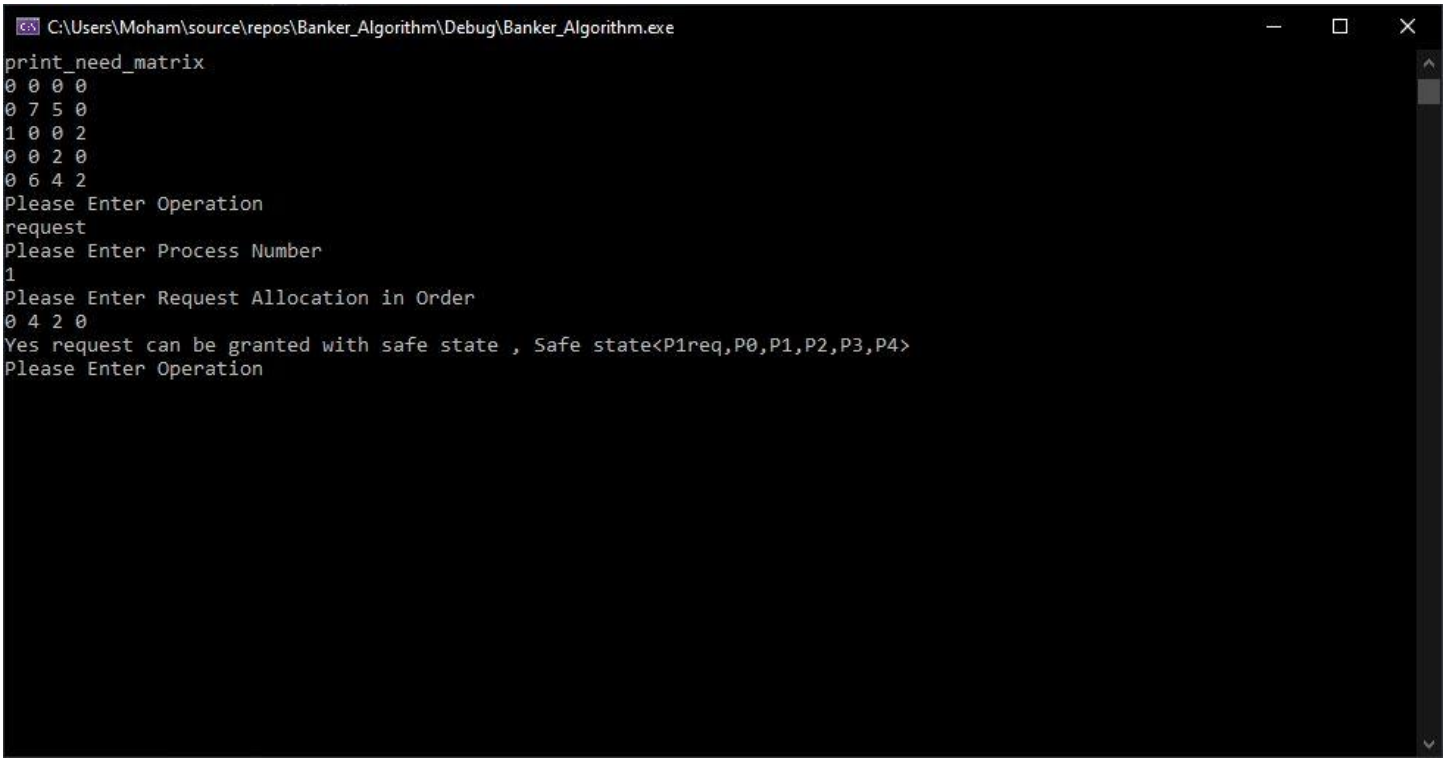
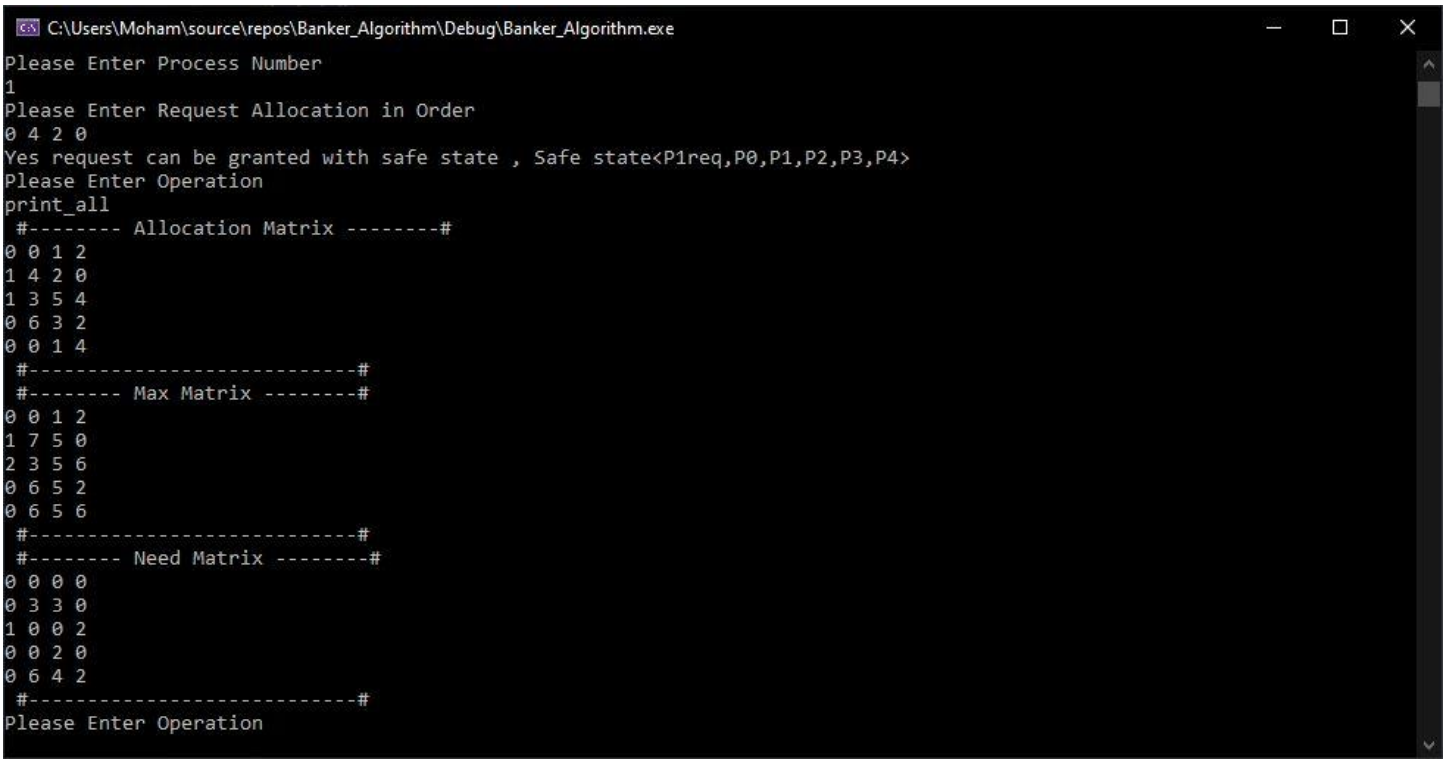
  * * * * * * *
    * * * * *
      * * *
        *
CSE ASU 2022 - Computer and System Department
Banker's Algorithm Assignment
Mohamed Fathi Mohamed Razzk
Code : 16X0103
Sec : 4
        *
      * * *
    * * * * *
  * * * * * * *
* * * * * * * * *
Please Enter the Number of Process


C:\Users\Moham\source\repos\Banker_Algorithm\Debug\Banker_Algorithm.exe
5
Please Enter the Number of Recourse type
4
Please Enter the Resource Allocation in Order For each Process
P0 Allocation
0 0 1 2
P1 Allocation
1 0 0 0
P2 Allocation
1 3 5 4
P3 Allocation
0 6 3 2
P4 Allocation
0 0 1 4
Please Enter the Resource Max in Order For each Process
P0 Resource Max
0 0 1 2
P1 Resource Max
1 7 5 0
P2 Resource Max
2 3 5 6
P3 Resource Max
0 6 5 2
P4 Resource Max
0 6 5 6
Please Enter the Resource Avilable in Order
1 5 2 0
########## For Help and Instructions Write #help as operation ##############
Please Enter Operation

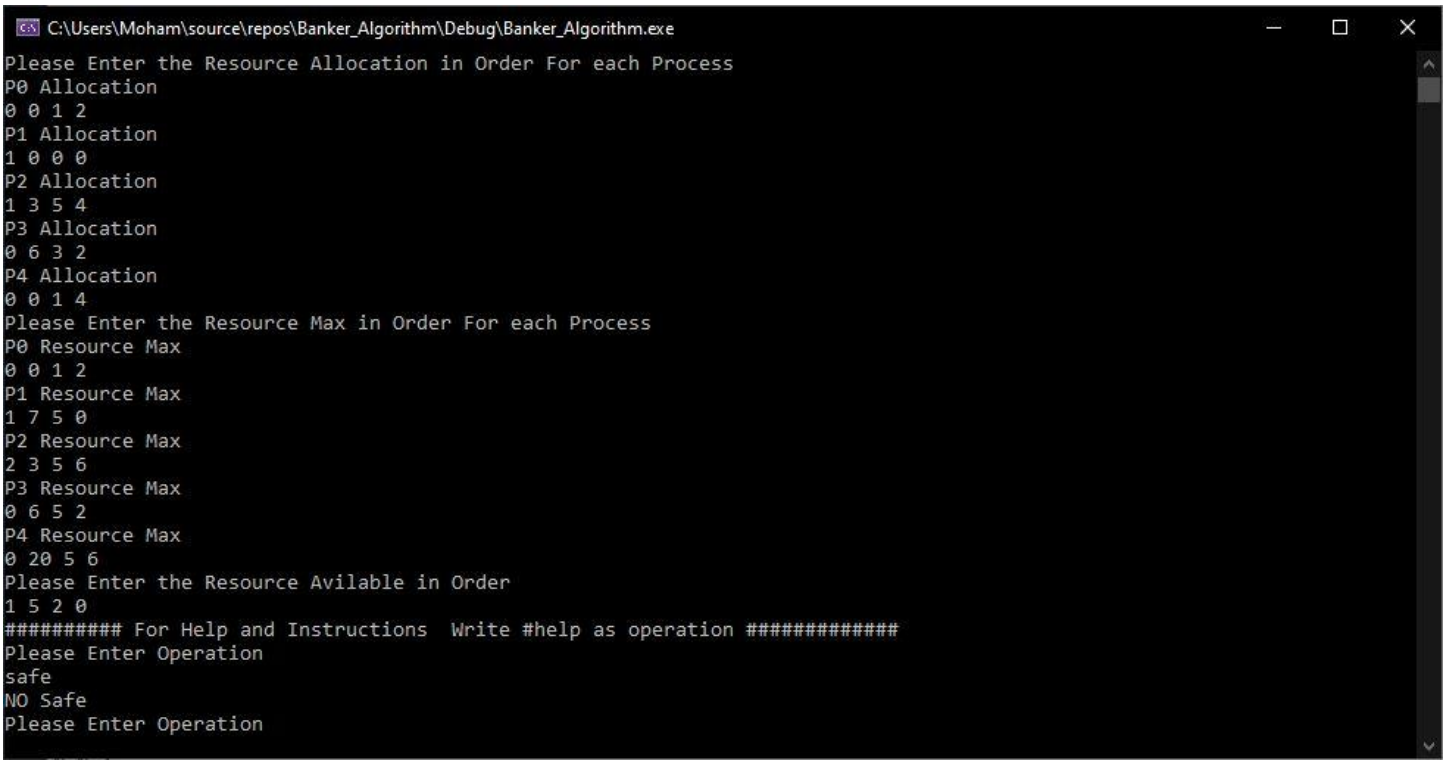

C:\Users\Moham\source\repos\Banker_Algorithm\Debug\Banker_Algorithm.exe
########## For Help and Instructions Write #help as operation #############
Please Enter Operation
help
 Welcome to that Simple instructions
 #If you wanna safe state Enter operation as " safe "
 #If you wanna request Enter operation as " request "
 #If you wanna Need Matrix Enter operation as " print_need_matrix "
 #If you wanna Allocation Matrix Enter operation as " print_allocation_matrix "
 #If you wanna Max Matrix Enter operation as " print_max_matrix "
 #If you wanna All Matrix *_* Enter operation as " print_all "
 #If you wanna start fresh Enter operation as " new "
 #If you wanna exit program Enter operation as " exit "
Please Enter Operation
safe
Yes , Safe state<P0,P2,P3,P4,P1>
Please Enter Operation
print_allocation_matrix
0 0 1 2
1 0 0 0
1 3 5 4
0 6 3 2
0 0 1 4
Please Enter Operation
print_max_matrix
0 0 1 2
1 7 5 0
2 3 5 6
0 6 5 2
0 6 5 6
Please Enter Operation


C:\Users\Moham\source\repos\Banker_Algorithm\Debug\Banker_Algorithm.exe
print_need_matrix
0 0 0 0
0 7 5 0
1 0 0 2
0 0 2 0
0 6 4 2
Please Enter Operation
request
Please Enter Process Number
1
Please Enter Request Allocation in Order
0 4 2 0
Yes request can be granted with safe state , Safe state<P1req,P0,P1,P2,P3,P4>
Please Enter Operation

- Need and Allocation Matrix After request had been applied

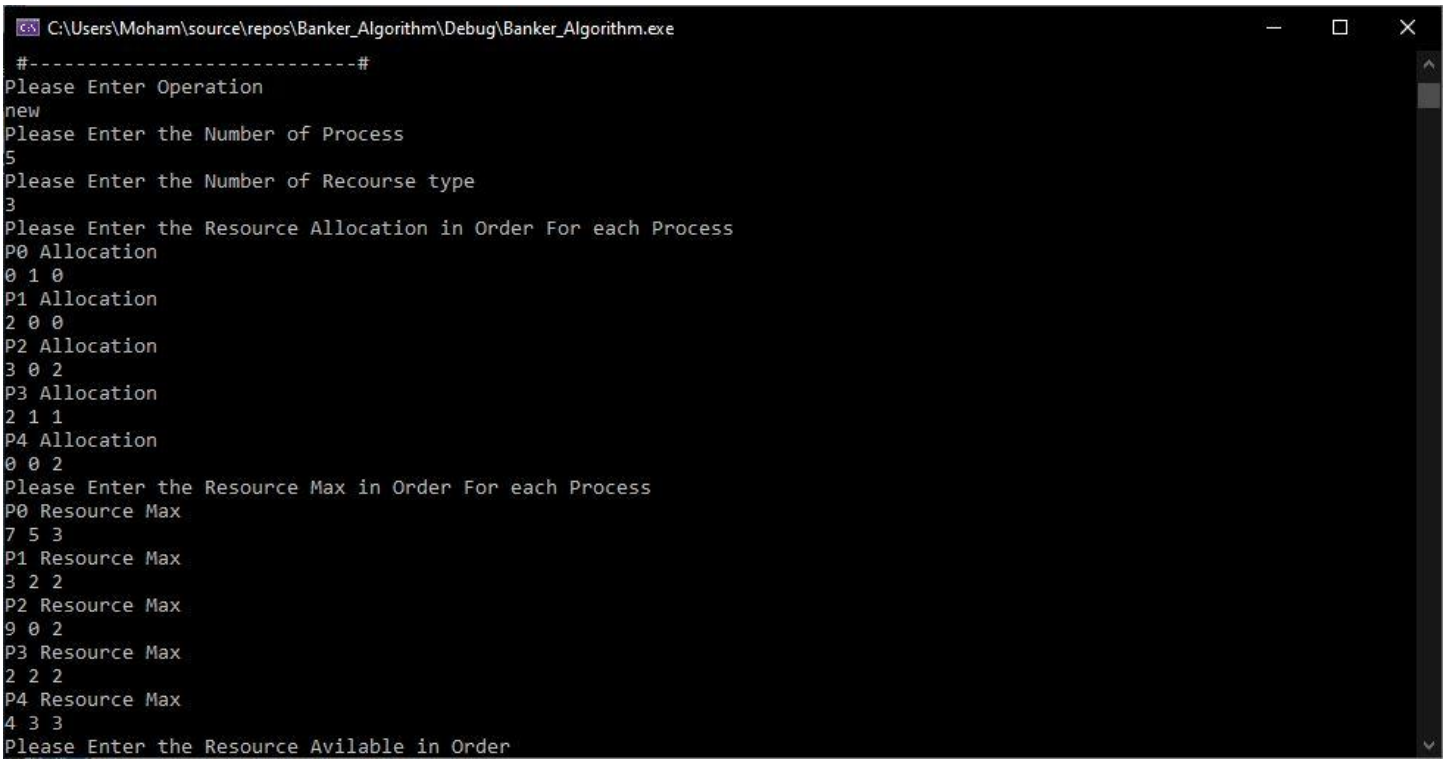


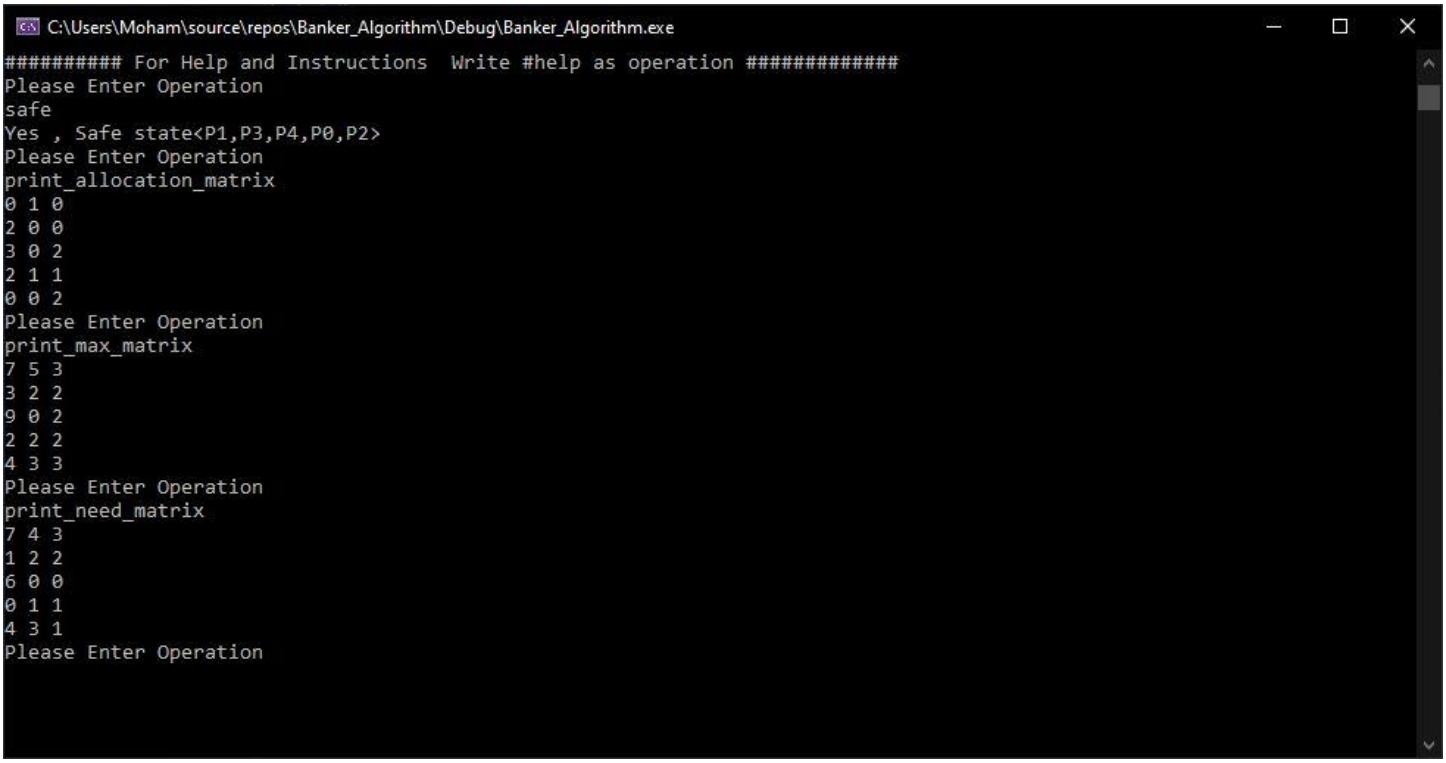
- When change in allocation P4 to 20 state will be not safe

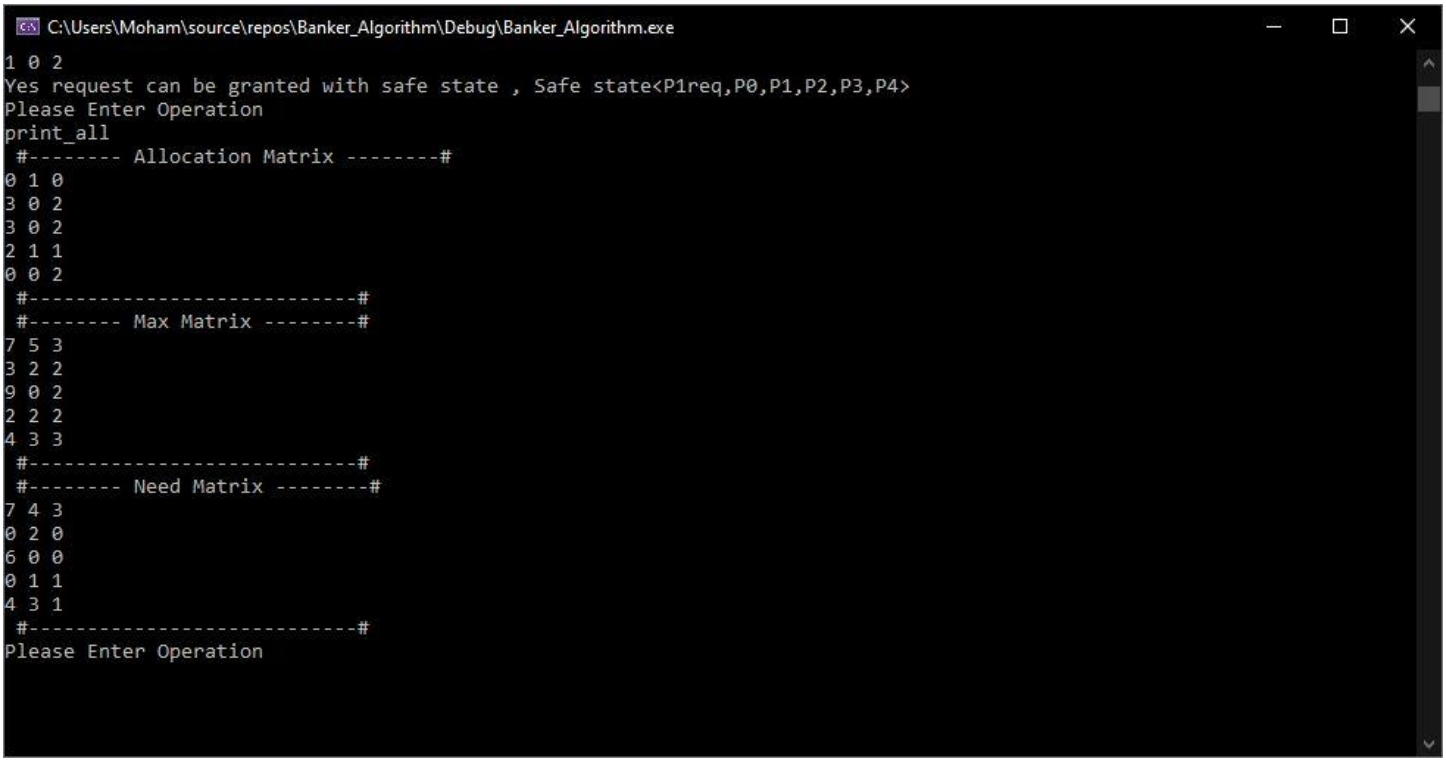


- Test Case 2,

```
5                  //process number
3                  //  Recourse type
0 1 0              // allocation matrix
2 0 0
3 0 2
2 1 1
0 0 2
7 5 3              // max matrix
3 2 2
9 0 2
2 2 2
4 3 3
3 3 2        //available array
```




C:\Users\Moham\source\repos\Banker_Algorithm\Debug\Banker_Algorithm.exe
########## For Help and Instructions Write #help as operation #############
Please Enter Operation
safe
Yes , Safe state<P1,P3,P4,P0,P2>
Please Enter Operation
print_allocation_matrix
0 1 0
2 0 0
3 0 2
2 1 1
0 0 2
Please Enter Operation
print_max_matrix
7 5 3
3 2 2
9 0 2
2 2 2
4 3 3
Please Enter Operation
print_need_matrix
7 4 3
1 2 2
6 0 0
0 1 1
4 3 1
Please Enter Operation


C:\Users\Moham\source\repos\Banker_Algorithm\Debug\Banker_Algorithm.exe
1 0 2
Yes request can be granted with safe state , Safe state<P1req,P0,P1,P2,P3,P4>
Please Enter Operation
print_all
#-------- Allocation Matrix --------#
0 1 0
3 0 2
3 0 2
2 1 1
0 0 2
#----------------------------#
#-------- Max Matrix --------#
7 5 3
3 2 2
9 0 2
2 2 2
4 3 3
#----------------------------#
#-------- Need Matrix --------#
7 4 3
0 2 0
6 0 0
0 1 1
4 3 1
#----------------------------#
Please Enter Operation

- Project All files - Github : Link