Synchronization
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B20CS003

Late Night Pizza

For this part, please refer to the pdf in the root folder of the submission

Sleeping Barber Problem

Find the problem description here.

Execution

`gcc sleeping_barber.c -o sleeper -pthread -w`
`./sleeper <count of chairs> <count of customers>`

- default value of number of chairs and customers is 8 and 50 respectively.
- Implementation synchronizes the availability of chairs.
- Monitor implemented using mutex and semaphores.
- PFA the log of program execution in the root folder (8 chairs and 50 customers)

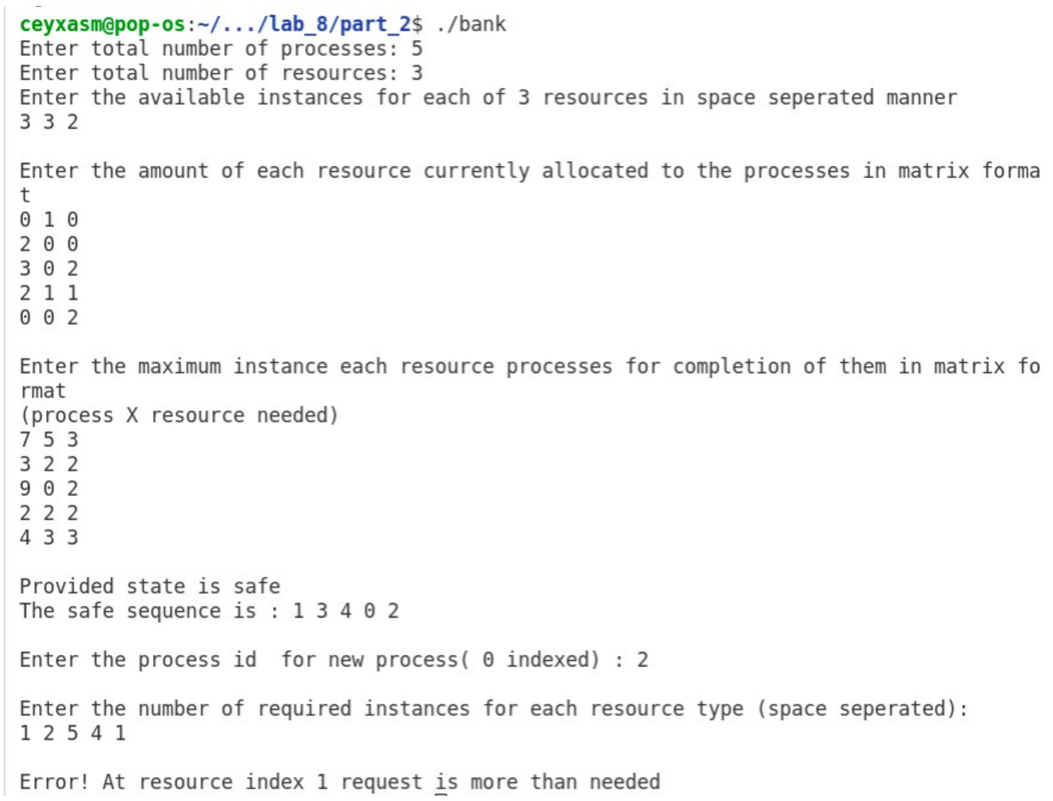
Banker's Algorithm

Execution

`g++ banker_algo.cpp -o banker && ./banker`

- Determines whether the input state is safe or not.
- Decides whether the process request can be granted on not, by computing the safe/unsafe state.

(below stated example can be refered from here, validating the result of our implementation)



```
ceyxasm@pop-os:~/.../lab_8/part_2$ ./bank
Enter total number of processes: 5
Enter total number of resources: 3
Enter the available instances for each of 3 resources in space seperated manner
3 3 2

Enter the amount of each resource currently allocated to the processes in matrix forma
t
0 1 0
2 0 0
3 0 2
2 1 1
0 0 2

Enter the maximum instance each resource processes for completion of them in matrix fo
rmat
(process X resource needed)
7 5 3
3 2 2
9 0 2
2 2 2
4 3 3

Provided state is safe
The safe sequence is : 1 3 4 0 2

Enter the process id  for new process( 0 indexed) : 2

Enter the number of required instances for each resource type (space seperated):
1 2 5 4 1

Error! At resource index 1 request is more than needed
```