Deadlock

Banker's algorithm is a resource allocation and avoidance algorithm developed by Edsger Dijkstra that tests for safety by simulating the allocation of predetermined maximum possible resources. When a process requests set of resources, the system must determine whether the allocation of these resources will leave the system in a safe state. If it will, the resources are allocated; otherwise, the process must wait until some other process releases enough resources.

Implement Banker's algorithm by assuming that there are three resources and five processes. Take instances of resources, maximum amount of resources required and allocated number of resources for each processes as user input to check the existence of safe sequence of execution.

Example: Consider a system with five processes and three resource types A, B, and C. Resource type A has ten instances, resource type B has five instances, and resource type C has seven instances. Suppose that, at time t , the following snapshot of the system has been taken:

	Allocated A B C	Max A B C	Available 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	

Output: <P1 , P3 , P4 , P2 , P0 > satisfies the safety criteria.

Also, increase the request of P0 by (0,2,0) and then identify the satisfy the safety criteria