Program Description

This program uses the Banker's Algorithm to determine if a system of processes and resources is in a safe or unsafe state. It reads data from an input file containing the Allocation, Maximum Need, and Available resources for each process. From these values, the program calculates the Need matrix and checks whether each process can safely run with the currently available resources. When a process's needs can be met, it is assumed to complete and release its resources, which are then added back to the available pool. This process repeats until all processes can safely finish or no more processes can proceed. If all can finish, the program displays that the system is in a safe state and prints the safe sequence showing the order of execution. If not, it reports that the system is unsafe. The goal of this program is to demonstrate how the Banker's Algorithm prevents deadlock by ensuring that resource allocation decisions always leave the system in a safe configuration.

After Implementation: Is the system in a safe state?

Yes, the system is in a safe state. The safe sequence determined by the program is:

< P3, P4, P1, P2, P0 >