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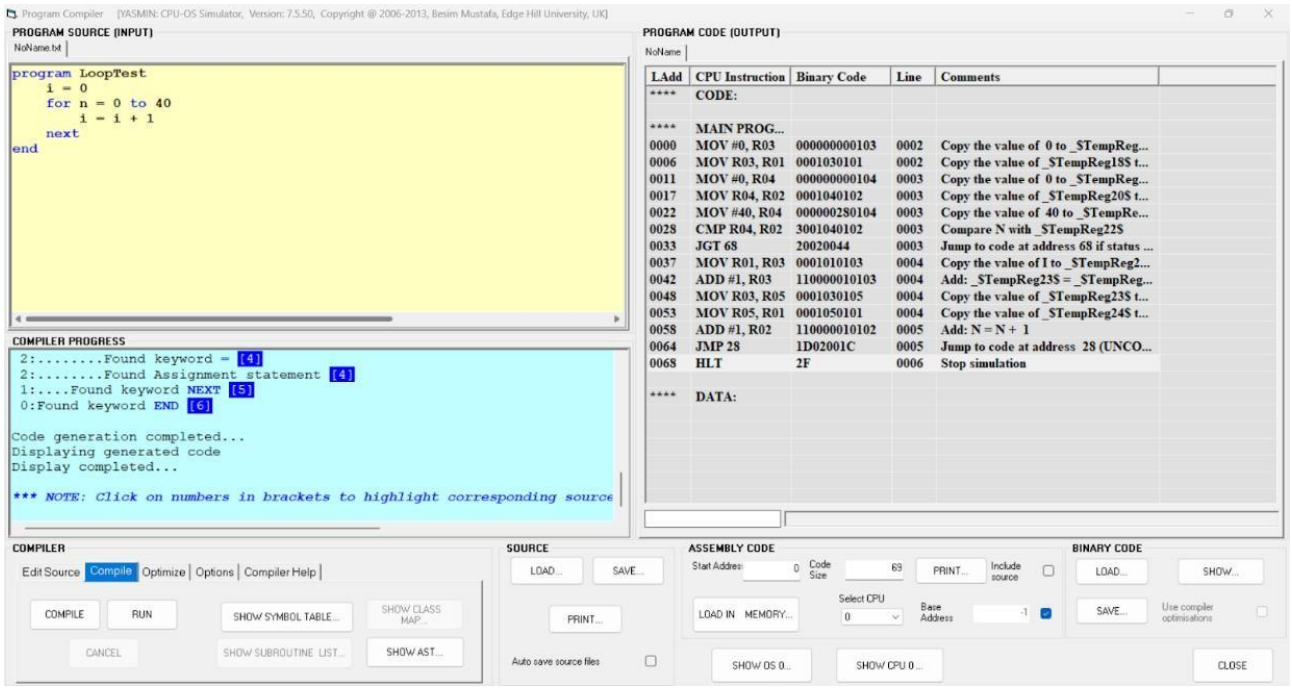
Course:	Operating System Laboratory
Course Code:	DJ19CEL403
Experiment No.:	07

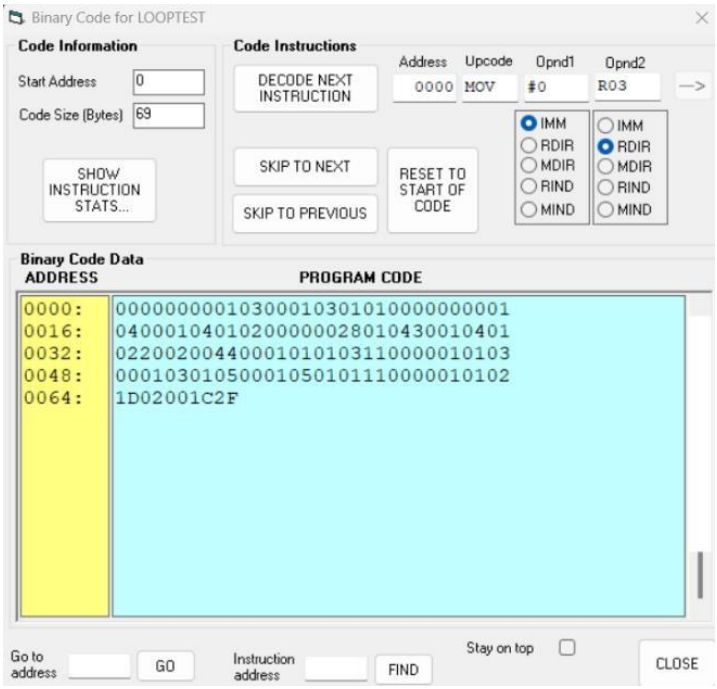
AIM: USING THE CPU-OS SIMULATOR TO ANALYZE AND SYNTHESIZE THE FOLLOWING:
A. PROCESS SCHEDULING ALGORITHMS.
B. THREAD CREATION AND SYNCHRONIZATION.
C. DEADLOCK PREVENTION AND AVOIDANCE.

A. PROCESS SCHEDULING ALGORITHMS.

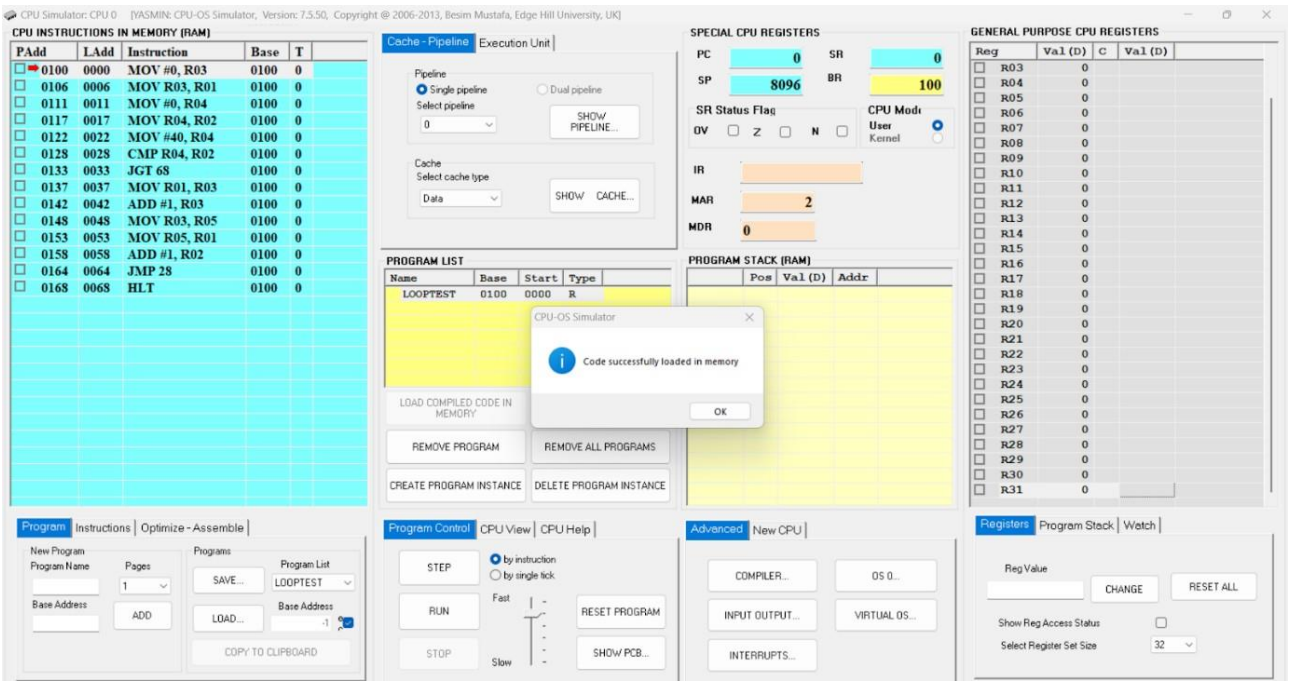
a. Compiled a process loop test



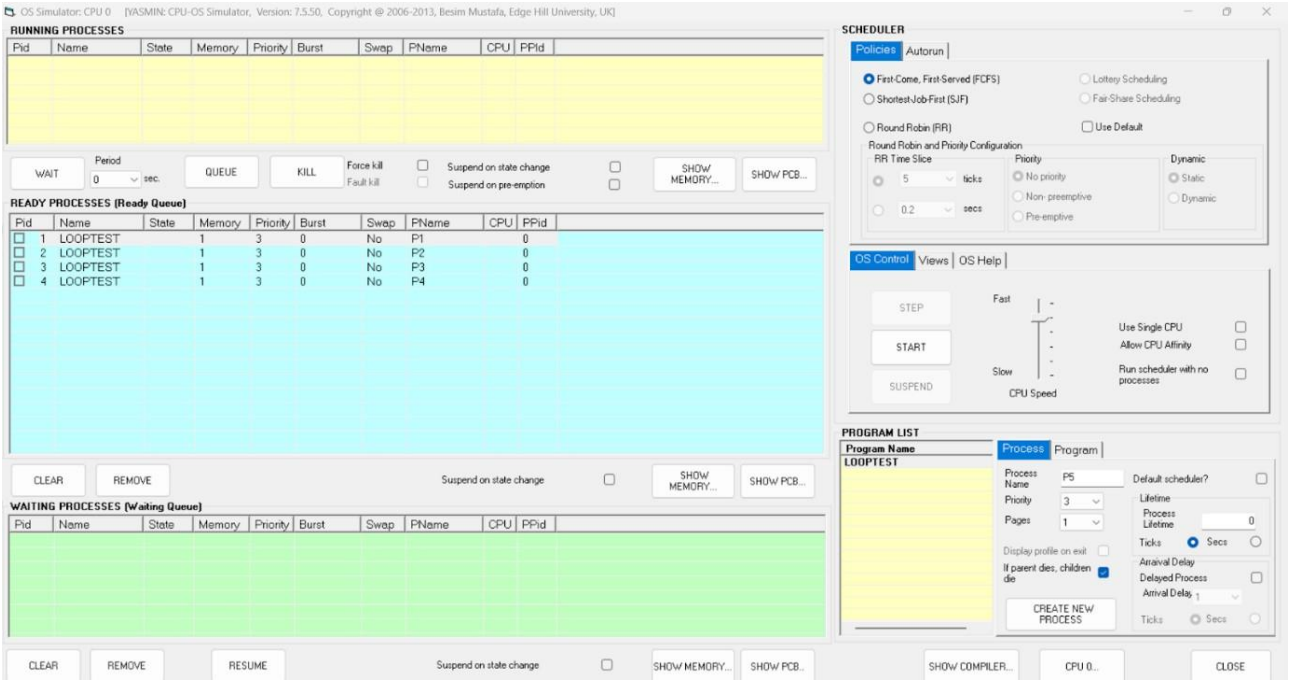
b. Binary Code



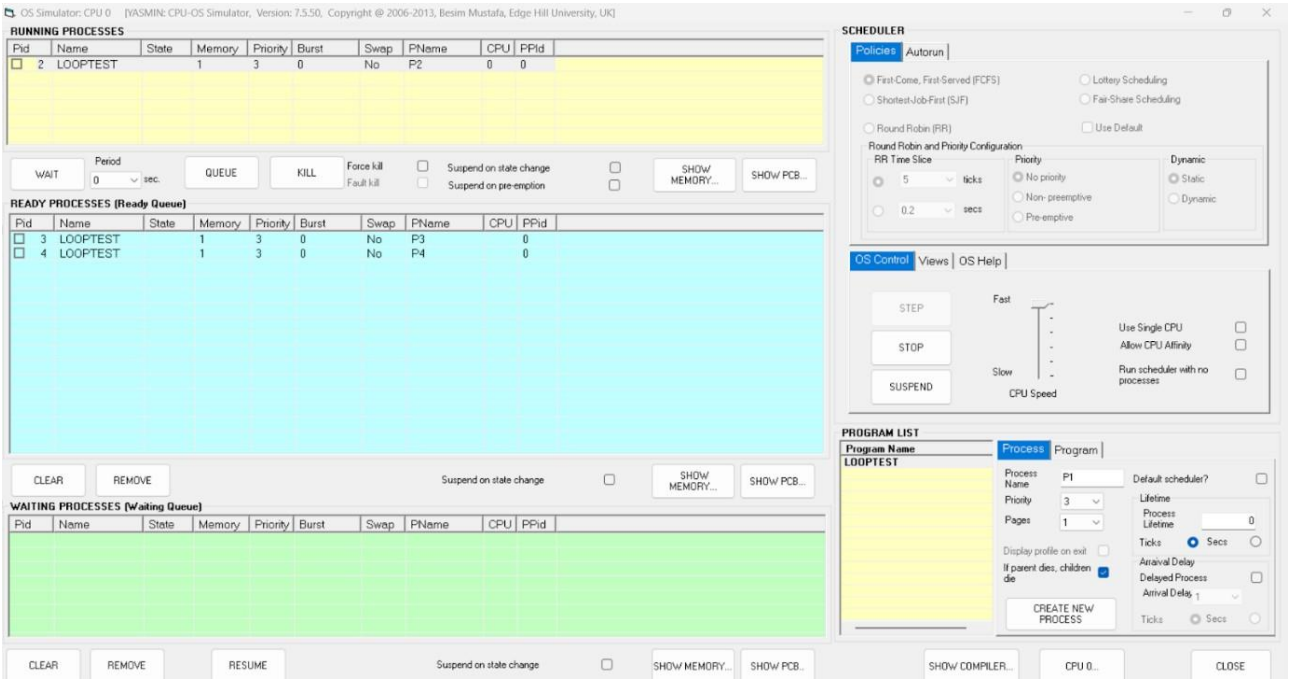
c. Loaded into memory



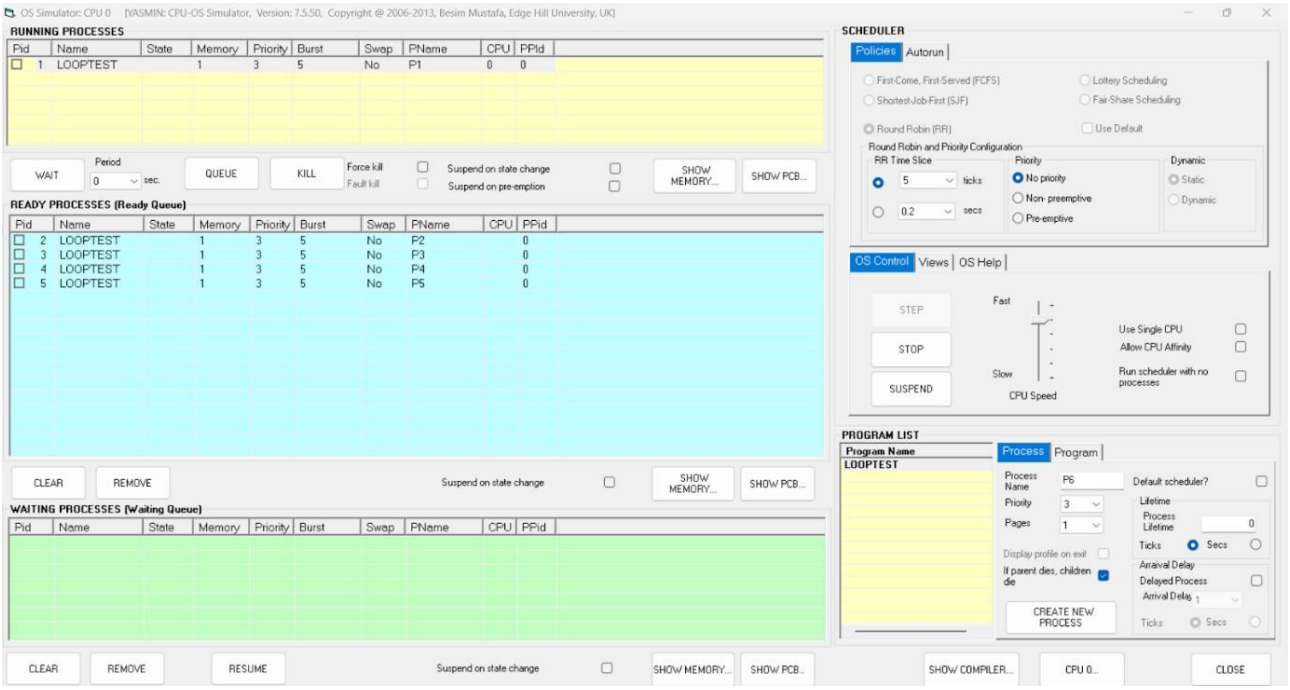
d. Created 4 instances of the process



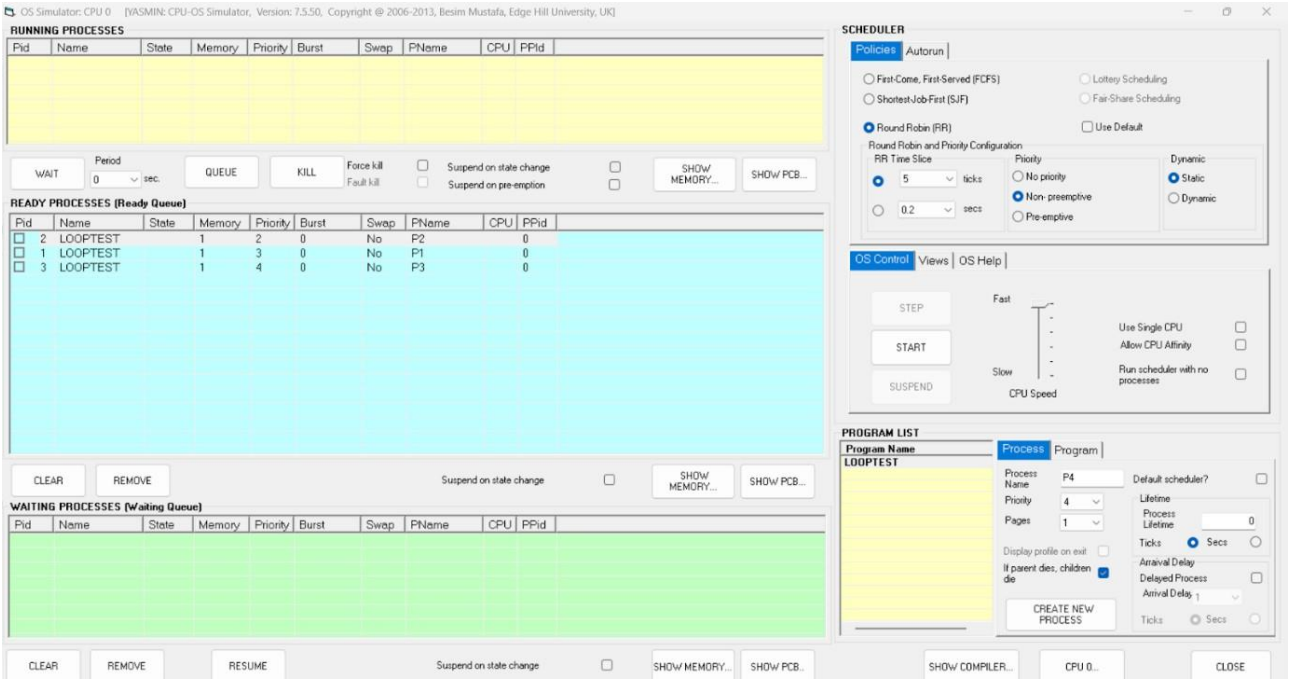
e. FCFS scheduling



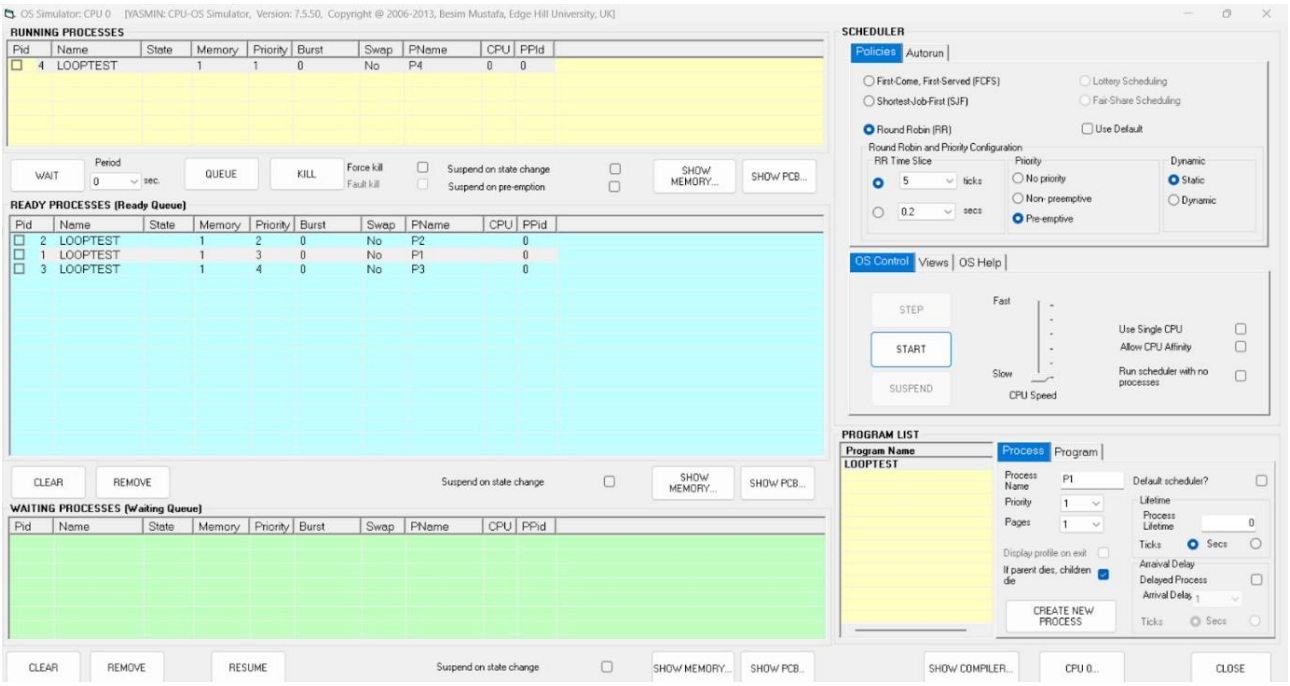
f. Round Robin Scheduling with no priority



g. Round Robin with priority and non preemptive



h. Round Robin with priority and preemptive

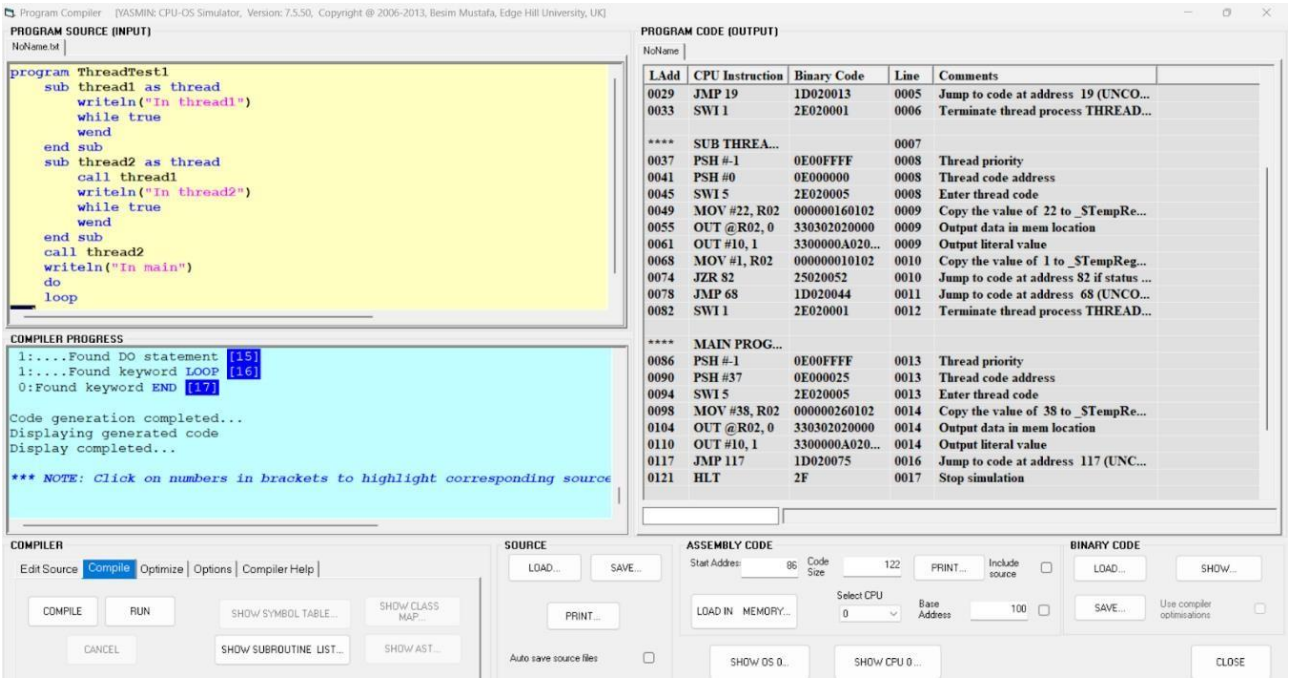


Observation:

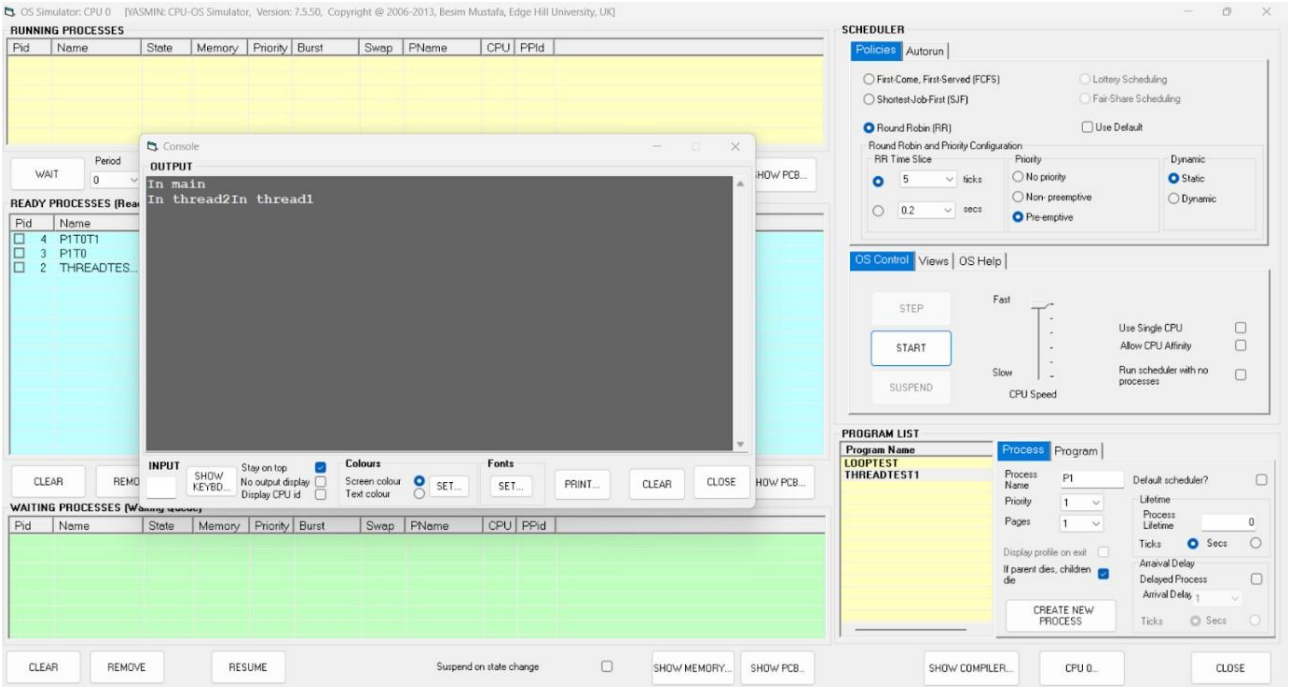
- FCFS (First-Come-First-Serve), Non-Preemptive Round Robin, and Preemptive Round Robin are CPU scheduling algorithms.
- FCFS is simple but may cause long waiting times.
- Non- Preemptive Round Robin has fixed time slices but may waste CPU time.
- Preemptive Round Robin provides fair CPU utilization and

B. Thread creation and synchronization.

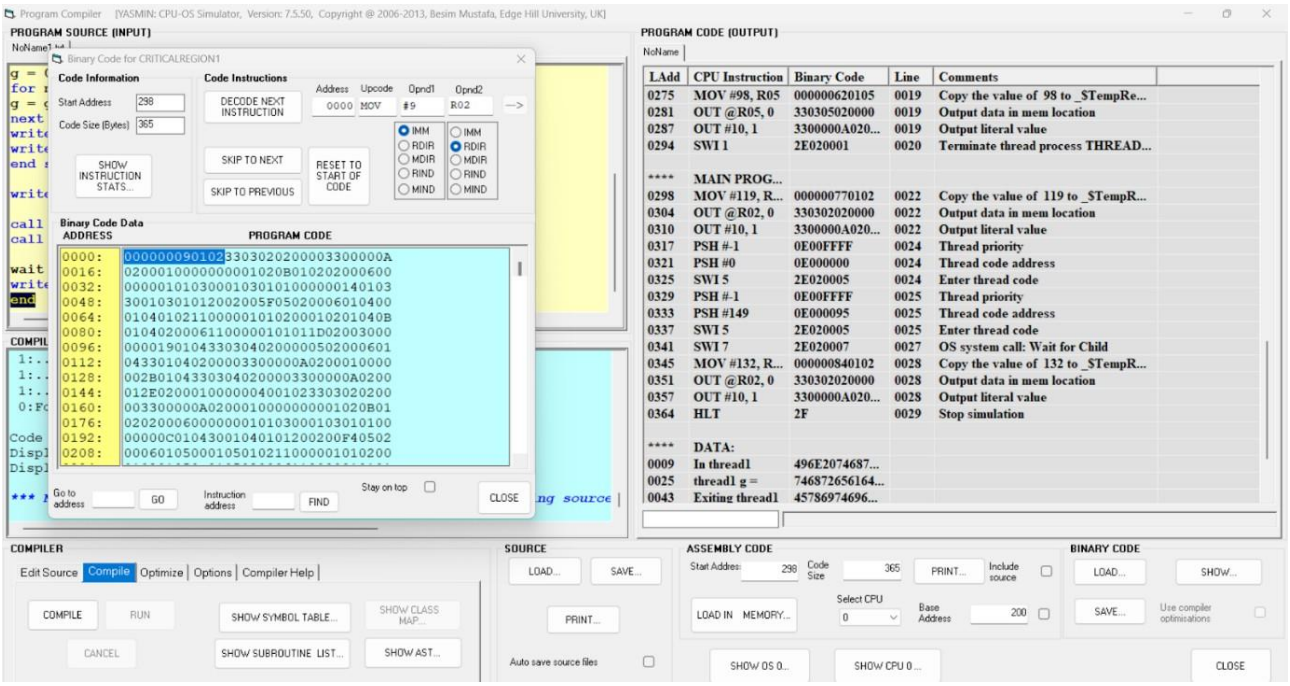
a. Loaded and Compiled Thread Test 1



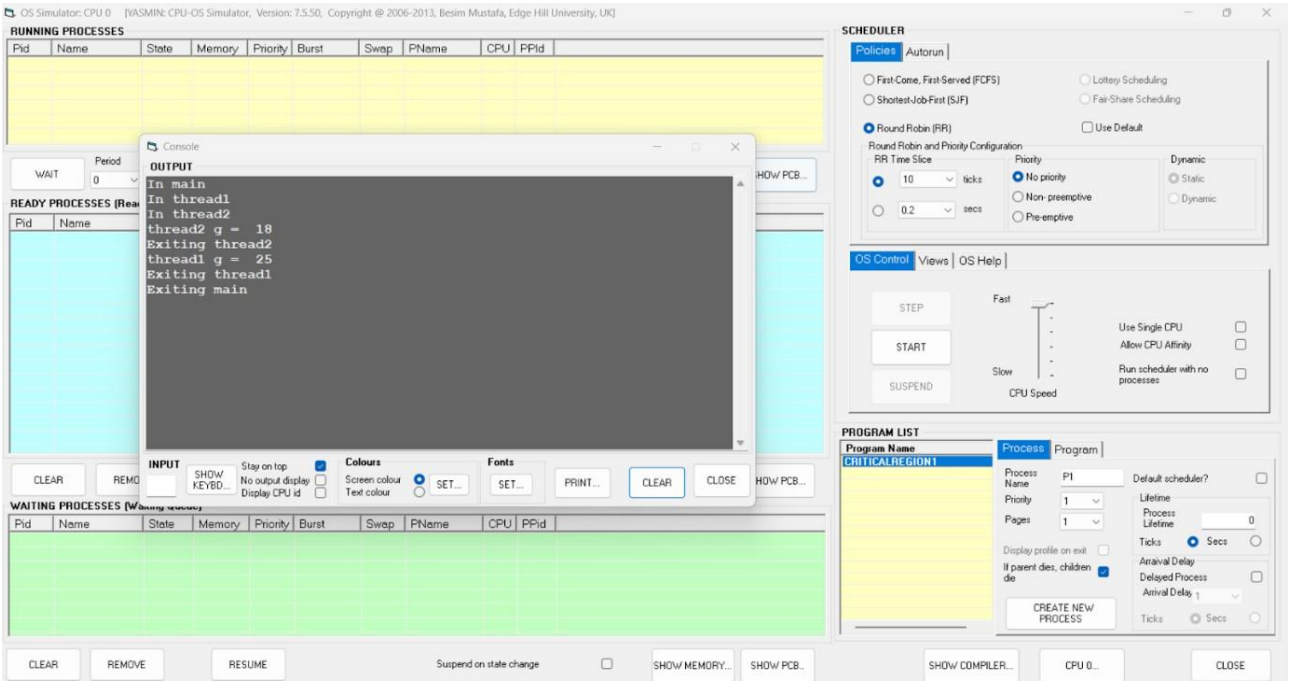
b. Console Output



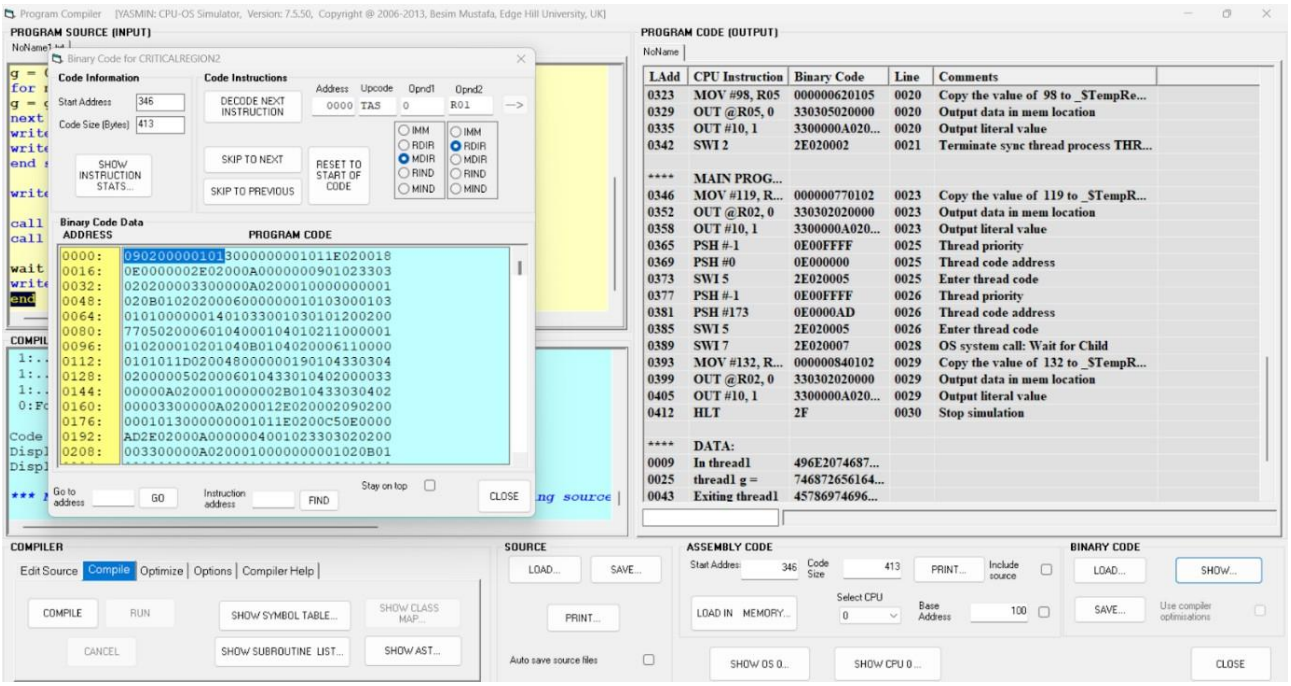
c. Loaded and Compiled CriticalRegion1



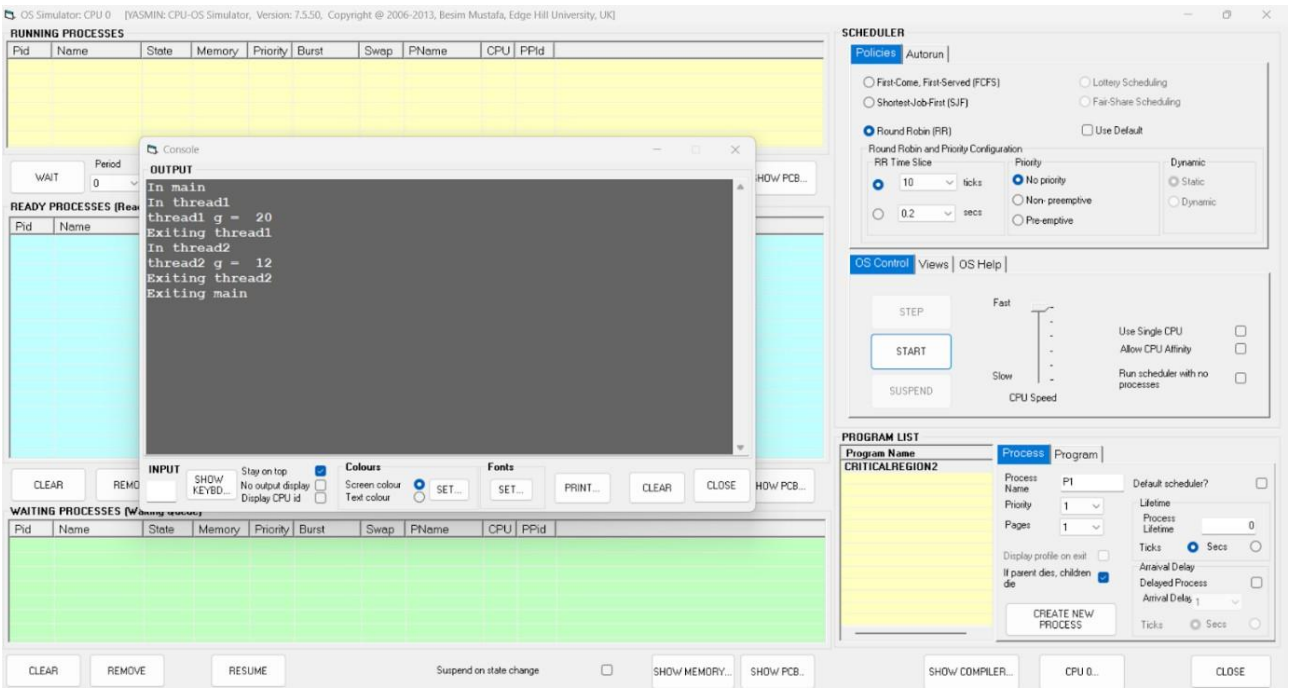
d. Console Output



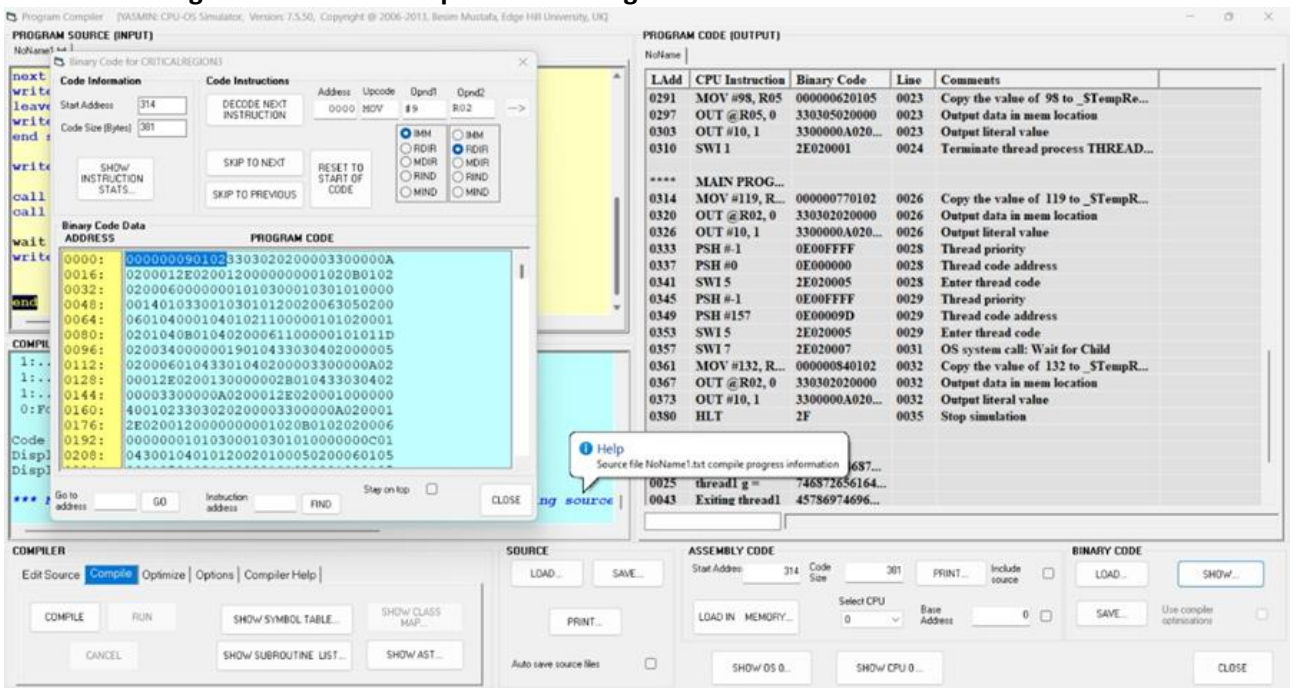
e. Loaded and Compiled CriticalRegion2



f. Console Output



g. Loaded and Compiled CriticalRegion3



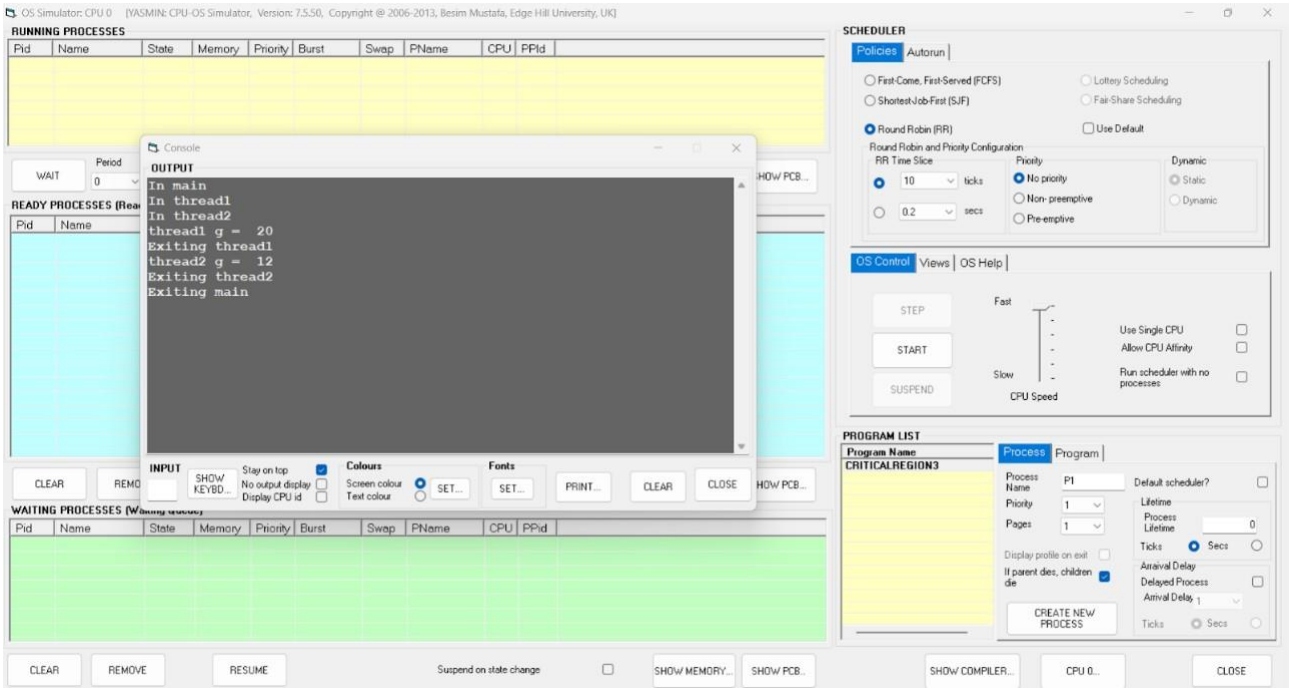
ENTER keyword Assembly code

LAdd	CPU Instruction	Binary Code	Line	Comments
0019	SWI 18	2E020012	0005	OS system call: Enter critical region

LEAVE keyword Assembly code

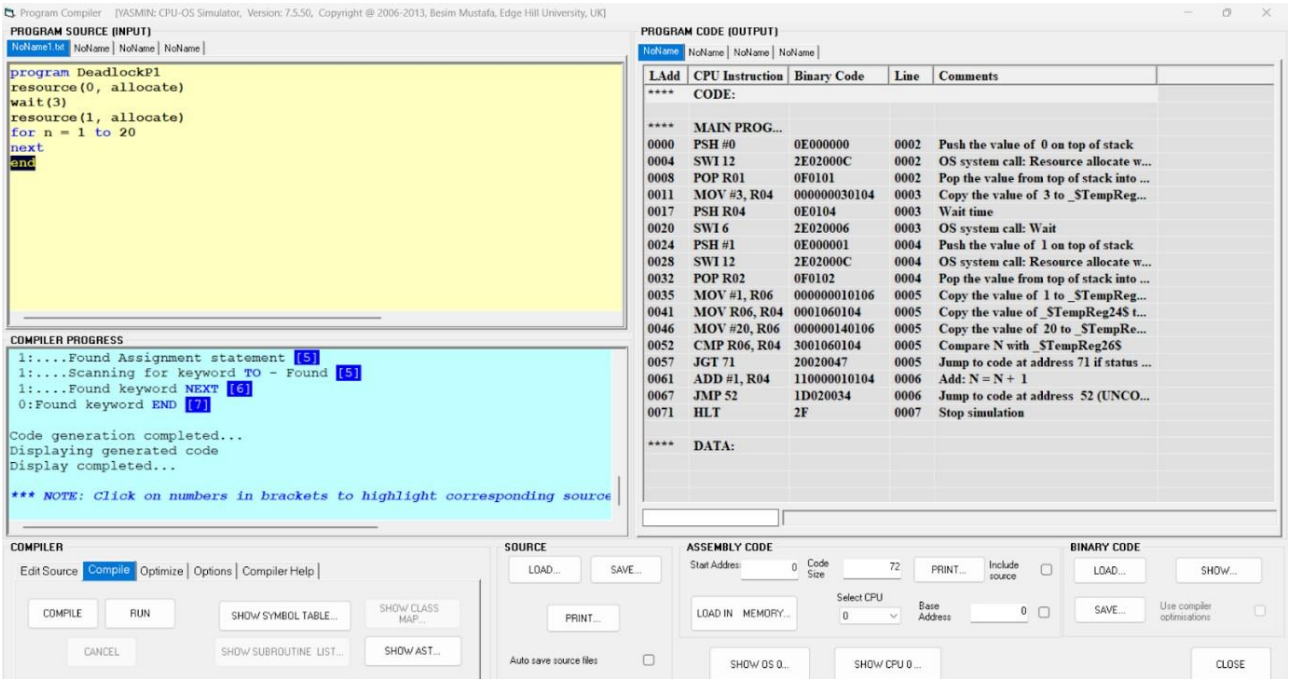
0130	SWI 19	2E020013	0011	OS system call: Exit critical region

h. Console Output

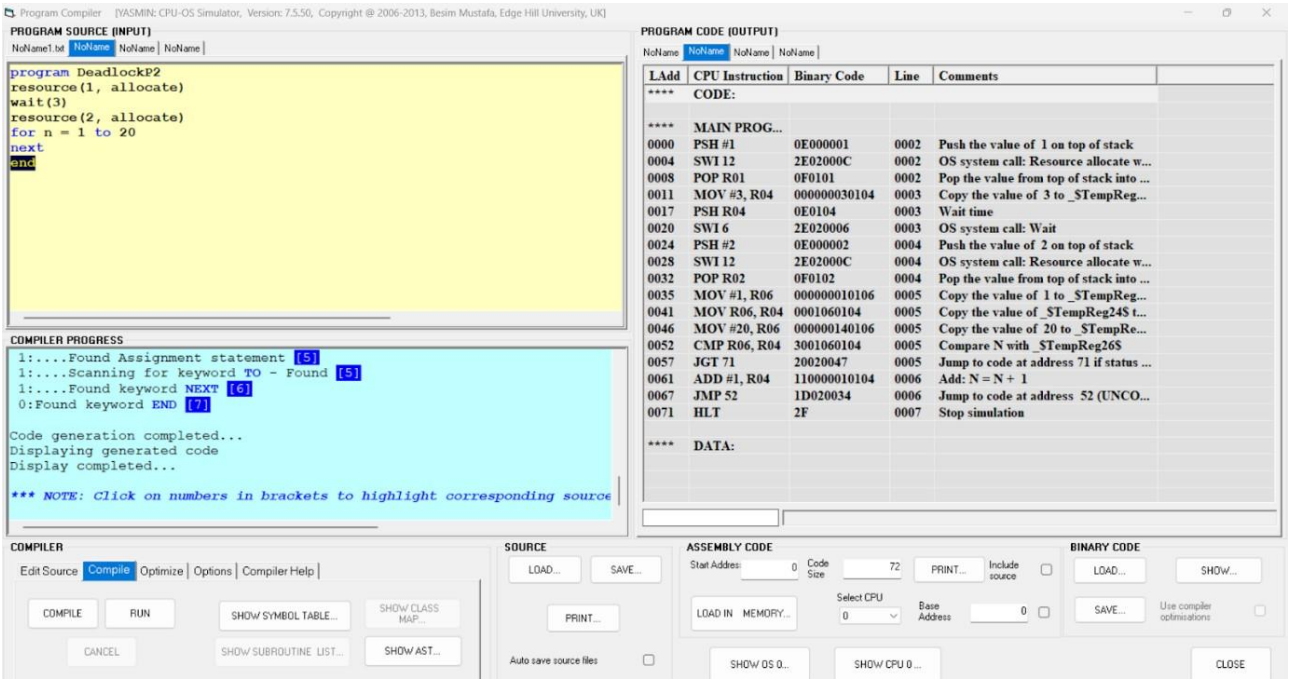


C. Deadlock prevention and avoidance.

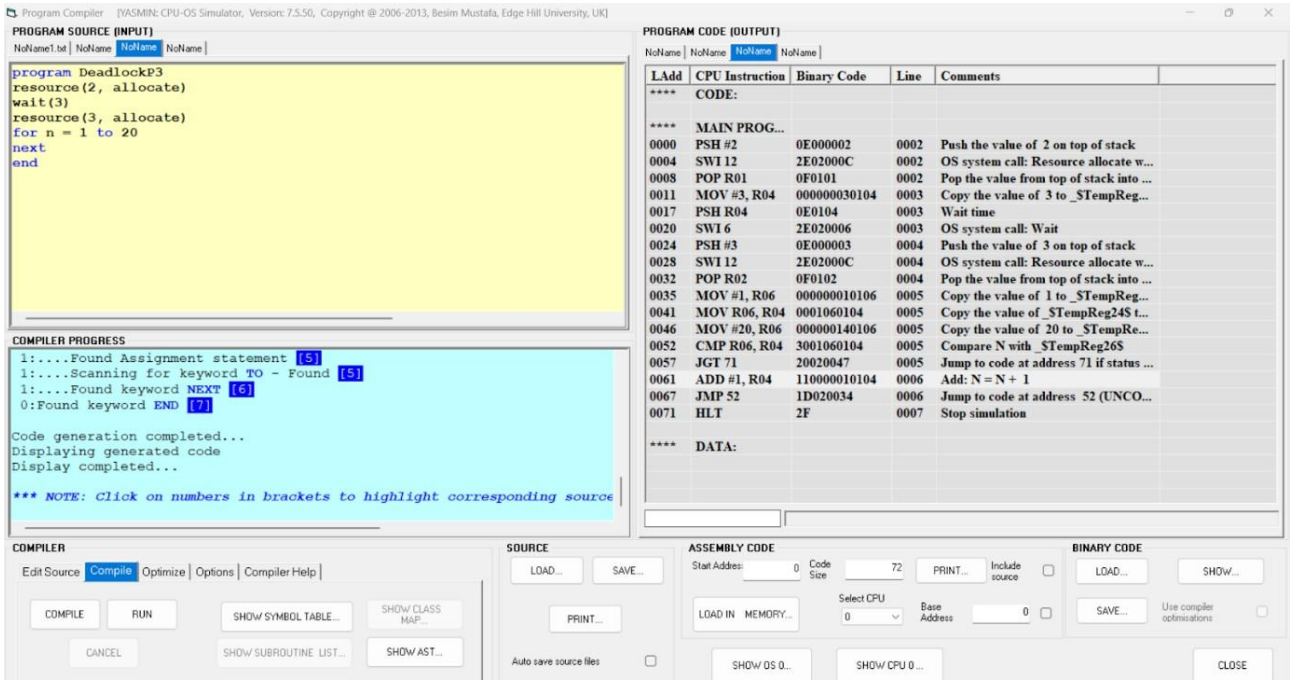
a. Loaded and Compiled P1



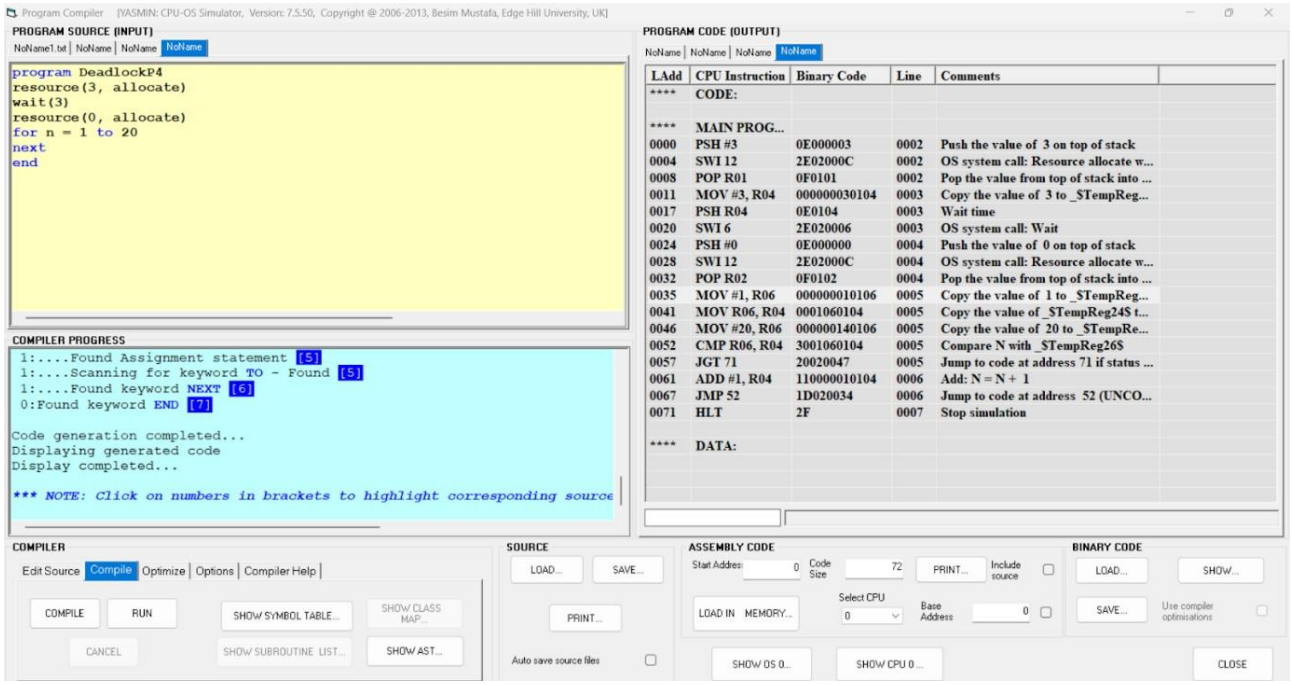
b. Loaded and Compiled P2



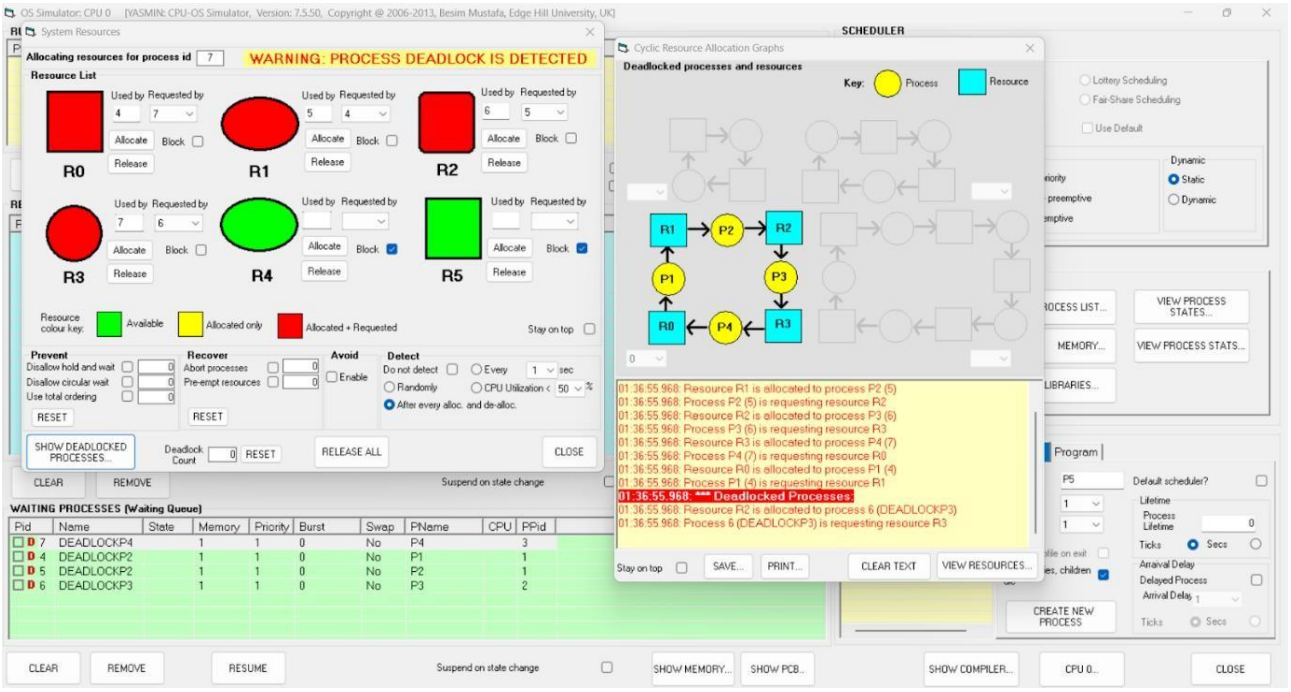
c. Loaded and Compiled P3



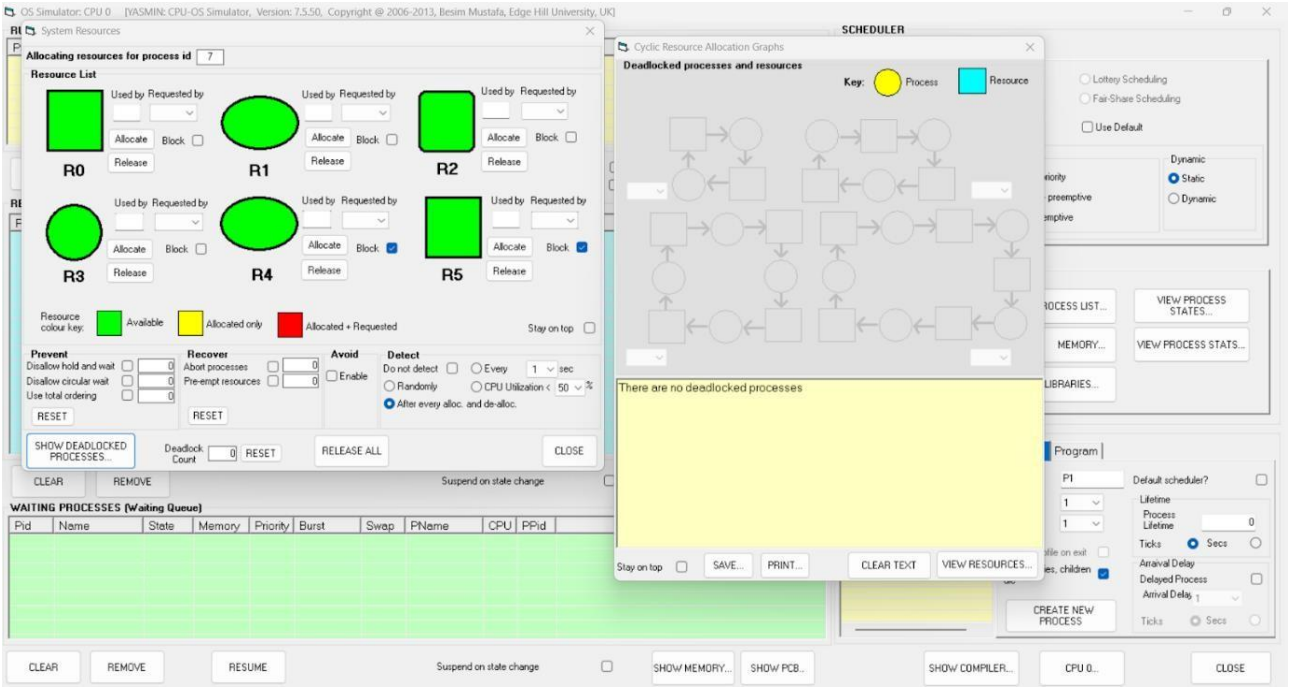
d. Loaded and Compiled P4



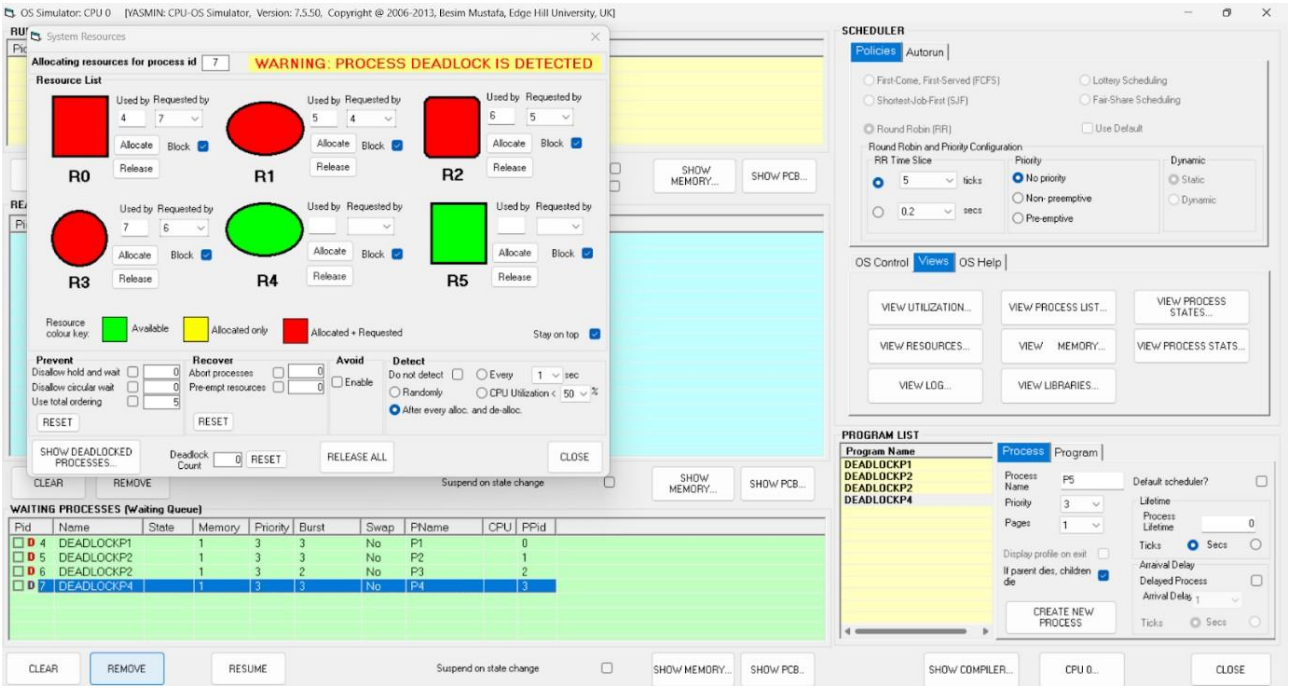
e. Deadlock Graph



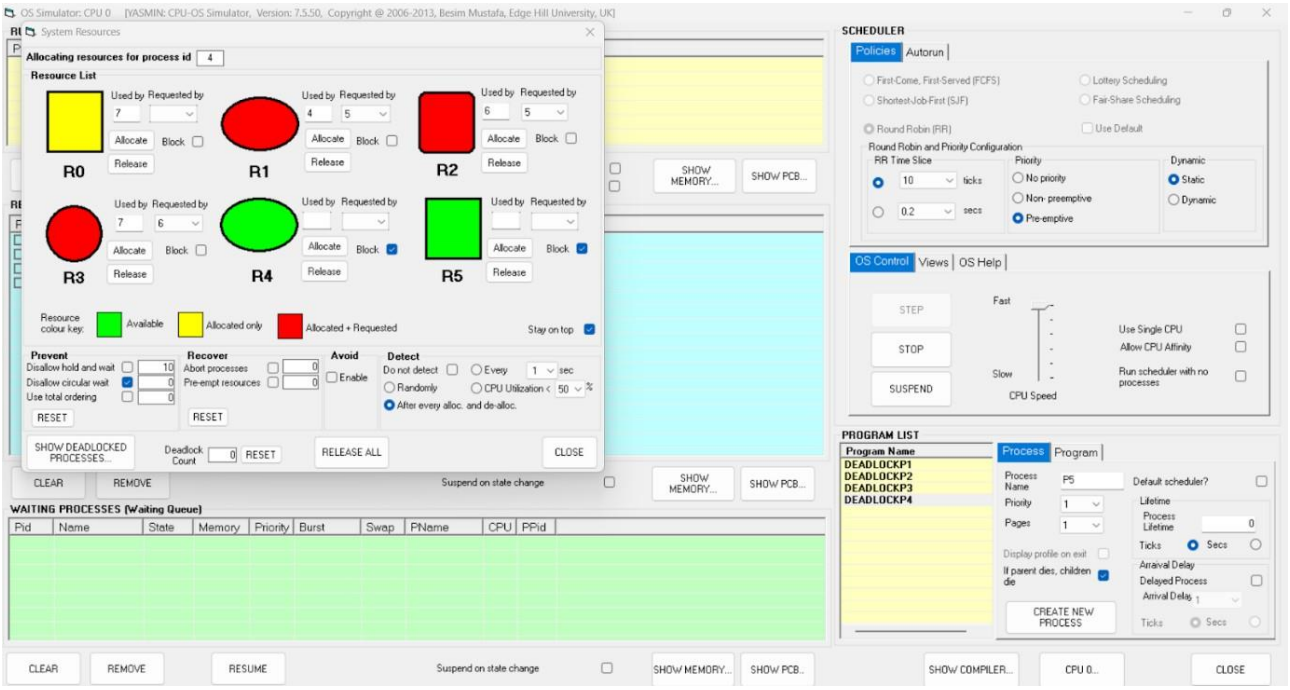
f. Releasing a resource



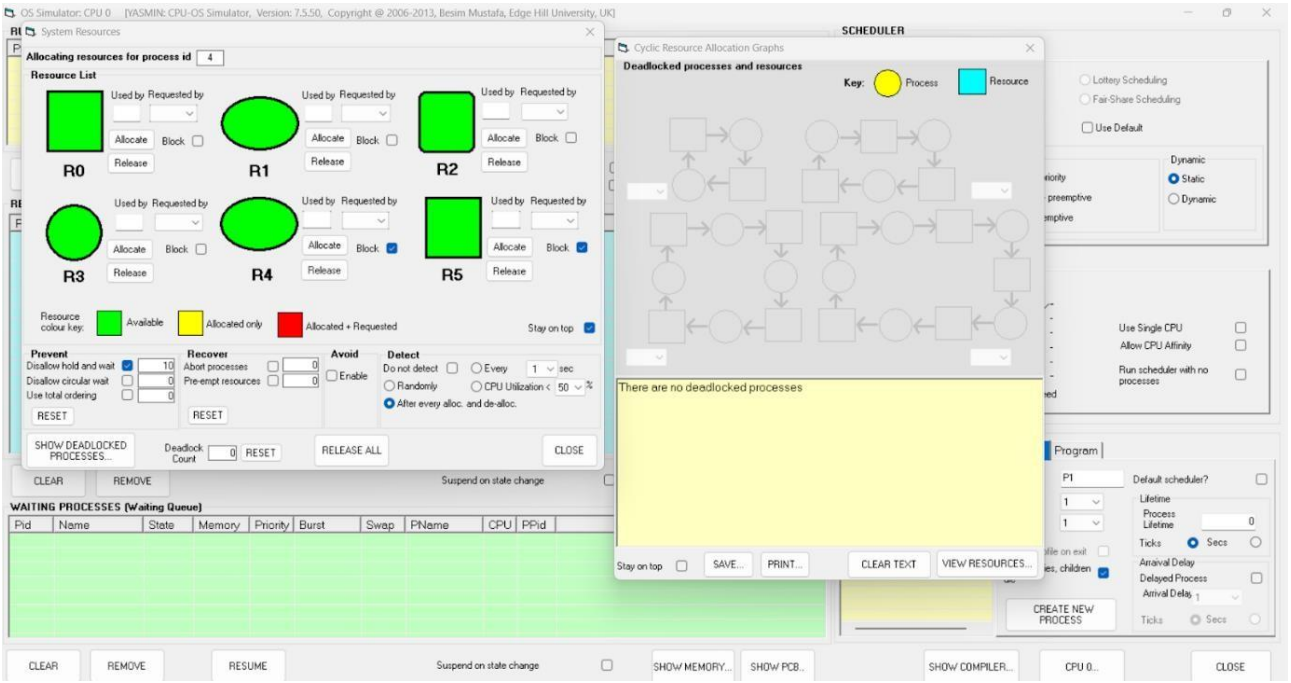
g. Removing a process



h. Disallow hold and wait



i. Disallow circular wait



j. Total Ordering