

Operating Systems

Open Ended Lab



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Description:

This program simulates Dynamic Memory Partitioning with FIFO Replacement and Size-Based Process Selection.

- **Processes are input by the user with unique Process IDs, arrival times, and memory sizes.**
- **At each time step:**
 - **Processes that have arrived are sorted by size (smaller size first) if arrival times are the same.**
 - **Each process is allocated memory dynamically.**
 - **If memory is insufficient, the oldest allocated process (FIFO order) is deallocated to free space.**
- **Duplicate Process IDs are checked during input and not allowed.**
- **Memory layout is updated and displayed after each allocation.**
- **Adjacent free blocks are merged automatically after deallocation to reduce fragmentation.**

The simulation ends when all processes have been successfully allocated.