

Problem for R2 Batch:

• Use file handling for some ips

A primary memory is divided into 'n' number of blocks of different sizes. Whenever process comes to processor two strategies are implemented to allocate space to process.

1. First Fit : first sufficient block among free blocks is allocated
2. Best Fit: smallest sufficient block among free blocks is allocated

Write an application to implement following

1. Initial list creation

- Create a link list to store information related to memory blocks (block_id, block_size, and allocated_status).
- Create process queue to store information related to process (process_id, timestamp, burst_time, memory_requirement, priority, status (active, running, waiting, completed)). **Timestamp:** time when process created and **burst_time** is total time required by the process to execute.

2. Allocate_Memory

- Implement both memory allocation algorithm by considering the priority and status (i.e. highest priority and active as well as waiting processes should be allocated memory).

3. Update_process_status

- If the process is running then it can enter into waiting or completed state. In either the cases its allocated memory should be freed and assigned to free pool. If the process is completed it should be removed from process queue. **Note:**Running process will enter in waiting state if any higher priority process enters in queue.
- If the process is active execute Allocate_Memory in Q.2 and change status to running.
- If the process is waiting from long time there should be provision to enhance its priority so that it can be executed. **Note:**You can write a function which will automatically increases the priority of the process by one if the process waiting time is more than 30 sec.

4. Display_Memory_Picture

- It should display the memory blocks and allocated process details.
- It should display no. and sizes of free memory blocks.