

Assignment #1

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This program will generate a pseudo memory process block of block size 1024. The user will be prompted to enter a menu number between 1 to 4. The functions are as follows:

1. Create a new process

1. allocate dynamic memory for a process control block (PCB)
2. obtain a unique process ID (PID) and save it in the PCB
3. generate a random number in the range of 10 to 250 for required memory blocks
4. search MBT for free blocks, if insufficient free blocks are available then display error message and return to menu
5. allocate dynamic memory for a page table of size equal to the number of required memory blocks, save the table size and the pointer to page table in PCB
6. allocate memory blocks (only a simulation by designating the required number of blocks in MBT as “allocated”) and store block numbers of the allocated blocks in the page table
7. insert PCB in ready queue
8. output page table and MBT to enable verification, and return to menu

2. Print all process’s PID in ready queue

output PID for each process in ready queue and return to menu

3. Terminate a process with a specific PID

1. search through the ready queue for the given PID, output error message if not found
2. deallocate memory blocks allocated for the process (only a simulation by designating those assigned blocks to this process as “free”)
3. delete page table for the process
4. delete PCB for the process and return to menu

4. Exit program

1. output PIDs in ready queue, if any, and MBT
2. if ready queue is not empty, ask user to confirm the request to exit, and delete all dynamically allocated memory and end program execution if affirmative.

Inputs other than these 4 numbers will display an error message.