CECS 326-05

Operating Systems

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Assignment 1

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Program Description:

This program simulates memory allocation on a paged memory system. Users at any time can select to execute one of four options:

1. Initiate a new process
2. Print the state of the system
3. Terminate the process that has a user specified process ID (PID)
4. Exit

If the user selections option 1:
- A process size is randomly generated using the std rand() function
- A new process is created by dynamic memory allocation
- The process gets allocated in the memory block table
- The process gets added to the ready queue

If the user selections option 2:
- An 8x64 table is printed to show which memory blocks are currently in use by a process
- Each ready process's ID, size, and page table are printed

If the user selections option 3:
- The ready queue is iterated over until the element with the process ID is found
- The once it is found, it is removed from the queue and the memory block table is updated
- The process is deallocated

If the user selections option 4:
- All remaining processes are deallocated
- The program quits