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HOMEWORK-3

First, in main function, I create 10 thread with using thread id array and thread function. Then, I join the threads. After that I called the dump_memory function to print out the memory. In this function, I made loop, which is turn memory size times and print the memory array. In my_malloc function I create a new node and then push it to the queue, while I push, I use mutex. In server function, while I write again, I use mutex and this time semaphore. If queue is not empty, I locked the mutex and take the first node in the queue. If the size is not available, I make the thread_message [temp.id] = -1, else thread_message[temp.id] = starting point. Then, I up the semaphore and unlocked the mutex. This loop will turn for all threads. In thread function, first I create a random number for size and then I down the semaphore and lock the mutex. If the thread message value equal to -1, I print an error message. Otherwise, I did 10 if else if statement for all 10 threads and allocate their value to their own id. At the end again I unlocked the mutex.