

Readme

This assignment of CS 214 required the implementation of a malloc and a free function for the purpose of dynamic memory allocation. The malloc function in C uses a stack to allocate memory space according to user requests. Our implementation, in the program mymalloc, makes use of a 5000 byte array, and also outputs error messages when the functions are called improperly.

The mymalloc function uses a doubly linked list to check if there is sufficient space for memory allocation, and proceeds to do so. It also ensures that metadata has been created. In order to check if there is space available, a single pointer traverses the linked list. When space is found, memory is allocated according to specification, and the memory address is returned. If there is no space available, an error message is printed.

In C, the inbuilt free function receives a memory address from the user in the form of a pointer and then frees the memory at the specified location. There are also several modes of error checking that ensure that no other memory is freed. Our implementation performs the exact same function on the doubly linked list.