

MTL458: Assignment 3

(Free Space Management)

Refer to Lecture 11 on Free Space Management.

In this assignment, you need to implement your own library, replacing the *malloc/calloc, realloc* and *free* functions available in the C library.

- The Assignment has to be done in C.
- Your functions should have the same calling conventions as the original *malloc, calloc, and realloc*.
- The name of your functions should be *my_malloc, my_calloc, my_free*. The function signature should be the same as the original library functions.
- Complete the functions provided in template code. Make sure the file is named *my mmu.h* during the submission.
- You are free to use any data structure (you will have to implement them on your own) for managing the free memory.
- You are required to use the system calls *mmap, brk, and sbrk*. Please refer to the man pages to learn about them in detail.
- We expect you to submit a working library, which, after linking to a program, should work exactly like the original *malloc, free* and *calloc*.
- You should preferably include a *debug()* or *info()* or similarly-named function (not provided by the standard C library). A call to this function should print information about the current state of the heap to *stderr*.
- The assignment will be checked for plagiarism against the internet and among your peers. Please don't copy, there will be strict penalties.