**Project 7 Documentation**

The purpose of the program is to build my understanding of dynamic memory allocation inside C++ and translate what I remembered from C into C++. Dynamic memory is something I struggled with deeply in CS 135 so translating it to the new function was a little challenging, but overall the project was fairly easy and took me an extremely short amount of time to finish. The program builds m\_buffer with a dynamically allocated size of m\_size and updates m\_size dynamically every time a new string is called through a parametized constructor. In order to call upon a new string, I made sure to reallocate a new size to the m\_buffer with the string length of the string passed through in the parameters. I believe I do have a lot of problems if the program were to be more complex. I do not believe I deallocated and reallocated everything correctly every time I called a new m\_buffer, so my program is bound to have many memory leaks.

My constructors function similar to any constructor that I have done previously, except for the small change of dynamic memory allocation. The only true change that was made to make it work dynamically was the creation of m\_size and the different sizes for the array, and how we change that size based on the string sized passed through the constructors. All operators function exactly how they should, the only implementation of dynamic memory would be in the assignment operator. The assignment operator must have a new allocation of memory for the size if one left hand object is being set equal to the right hand object. The object must update the size of the new string in order to copy the whole string to the left hand object, so you need to be able to allocate a new size, which is what buffer\_allocate is for.

Otherwise, all of the program is straightforward with most of the coding in previous projects, so I feel it is unnecessary to explain simple parts of the program.