General experience working on the assignment:

While working on this assignment, I learned a lot about inheritance in C++. Inheritance allows the programmer to clearly show the relationship between each class, specifically, how they are related. For example, for a derived class, it can use all the resources of the base class, and some additional functions or members of its own.

Most difficult challenge:

One of the most challenging things for me while working on this assignment has to do with learning how to write a function that utilizes the concept of recursive function calls. In the end, by referring to the practice solution provided by the professor, I found out that unlike last semester where recursive function calls are done by changing parameters within every function calls, doing it with class requires the programmer to make a copy of the object with necessary modifications to its data members.

Development of the assignment:

First, the implementations of functions in the base class: Matrix is defined. Some functions within the base class are also defined using some of the basic functions within the class. After that, the functions of SMatrix and Vector are defined based on the functions in their base class. One important thing to note is that while SMatrix and Vector are derived functions of Matrix, they cannot directly access protected members of an object of class Matrix. Instead, they would have to use public functions to obtain them.