My sparse matrix was implemented using a class called SparseMatrix that had two pieces of data. The first was a Linked List that held all the nonzero elements contained in the sparse matrix. The other was an integer holding the size of the sparse matrix. The elements that were contained within the Linked List were of a class that I created called “element.” This class contained each particular elements row and column in the sparse matrix and its corresponding data value.

I chose this particular implementation because it was the most straightforward and easy to see, and to me, the easiest to implement. The computational complexity of my methods that are contained within the SparseMatrix class are as follows:

- clear – O(1)
- setSize – O(1)
- addElement – O(n)
- removeElement – O(n)
- getElement – O(n)
- determinant – $O(n^3)$
- minor – $O(n^2)$
- toString – O(n)
- getSize – O(1)