Design #2
Author: Alves Silva, Otavio Augusto
Date: 05/05/2015
CS 163 - Program #2

1) How well did the data structure selected perform for the assigned application?

The data structure, which as a linear linked list, selected for this assignment was able to achieve a part of the objective that was assigned with a great results. The LLL was capable to work with an unknown upfront memory that the system would need in the future as well as the LLL with the ADT stack and queue are a perfection abstraction of the life. Therefore, the data structure proved that can work to different size of data.

2) Would a different data structure work better? If so, which one and why?

Yes, another data structure would work better, for example an array because is more faster than a LLL. The array has direct access the information that would be necessary to do some process whereas a LLL has to traverse through the list to find the specific element. However, the array isn't a good choice if we don't know upfront the amount of memory that will be necessary to allocate our elements. Therefore, an array is just a good choice if you already know the amount of memory that will be used by the program.

3) What was efficient about your design and use of the data structure?

My data structure has all the minimum requirements and design to be considered efficient. It was capable to be replaced by another main program without affecting the client program. The data structure proved a good choice whereas we don't know the amount that will be necessary and the algorithm to implement the abstraction of the queue and the stack were totally efficient. Therefore, the data structure and design even as the algorithms were able to achieve the objective.

4) What was not efficient?

I think that the time structure chose is a little bit hard to work with. This structure has nine members of integer type so it would occupy a significant amount of memory if it were necessary in the program. Besides, every time that were necessary do a deep copy in this structure, I had to copy every single value to the nine members of the structure. Therefore, I think that another time structure would be better.

5) What would you do differently if you had more time to solve the problem?

I would change my away to work with the time in my program. Mainly the structure that was chose for this assignment. It was not a great choice to work whereas I had to write more lines of code to do the same thing of some others structures.