John Eng and Jamie Liao
Asst 1: Sorted List
Systems Programming, Spring 2016

SLCreate:

This method dynamically allocates data for a pointer to a SortedList struct. This is done in unit time: O(1).

SLDestroy:

This method frees all memory(the nodes and the list ptr) from the list. This is done by looping through each node in 0(n) efficiency.

SLInsert:

The method inserts the value into the list through linear search. Nodes are dynamically allocated and pointers redirected. The efficiency of the algorithm is O(n) + O(1) = O(n).

SLRemove:

The method uses a linear search to find the value and moves pointers around. Pointers are redirected. Again, the efficiency of the algorithm itself is O(n) + O(1) = O(n).

SLCreateIterator:

This method allocates data for a pointer to a SortedListIterator struct. This is done in unit time: O(1).

SLDestroyIterator:

This method frees the memory in the iterator. This is done in unit time: O(1).

SLNextItem:

This method returns the data of the next item in iterator. This is done in unit time: O(1).

SLGetItem:

This method returns the data of the current item in iterator. This is done in unit time: O(1).

In the interator implementation, we felt that SLGetItem was redundant because SLNextItem served the iterator's purpose. (Note SLGetItem was implemented, but not used in main).