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Asst 1: Sorted List
Systems Programming, Spring 2016

SLCreate:

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

SLDestroy:

This method frees all memory from the list. This is done in unit time: $O(1)$.

SLInsert:

The method inserts the value into the list through linear search. A node is created 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: $O(1)$.