Systems Programming

PA2

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SLCreate – This functions mallocs the memory space for the sorted list and runs in O(1) as it just runs once in constant time.

SLDestroy- This function destroys the list as well as each node because it traverses through the list. The worst possible case the function will run in is in O (n) because it is based on the length of the list. The memory gets deallocated and becomes read to be used again as free memory.

SLInsert - This function will insert items into the list. As it inserts them it sorts them into descending order. The worst case in this function is O(n) because it depends on the number of items.

SLRemove – This function will remove a node found in the list. The worst case for this function is O(n) because you are able to remove the smallest item which will be at the end of list.

SLCreateIterator- This function creates the iterator to be used to walk through the list. This will malloc the memory space for the sorted list iterator struct .

SLDestroyIterator – This function will destroy the iterator by freeing the memory that's has been allocated to it. This will not affect thelist.

SLGetItem- This function returns the item of the current node. This function will run at O(1).

SLNextItem- This function returns the next item in the list from the current item. It will run in O(1).