

Sorted List Analysis

Sorted-list.c

SLCREATE

My memory usage here is malloc and it creates a list every time this function is called adding up conditions and statements it becomes big $O(1)$

SLDESTROY

for this function theres no initializing memory usage but we are freeing the linked list
 $3+4n$

which comes up to $O(n)$

SLINSERT

im using malloc here to malloc a node every time it is inserted into the linked list
worst case $7 + (4n + 5)$ so $O(n)$

SLREMOVE

im not mallocing any data just freeing
 $8 + 4n + 4$ big $O(n)$

SLCREATEITERATOR

im mallocing an iterator struct
and this is constant $O(1)$

SLDESTROYITERATOR

constant again
im just freeing the iterator
 $O(1)$

SLGETITEM

no loops so constant $O(1)$

SLNEXTITEM

Constant again $O(1)$
9 steps of conditions and assignments