

This program creates a sorted list, containing nodes with an unknown data type. We are able to let users select a comparison function with known outputs, and sort their input accordingly, by the use of function pointers. We also use iterators to move through the list and dynamically allow the user to see what a value is at a given index of the list. As items in the list are added or deleted, the iterator will return accordingly. An iterator linked list is attached to each node to keep track of who is looking at it.

Run Time:

Removing or inserting a node from a list is constant, because the list has to be searched through to find the given object to insert or delete. So worst case for insertion or deletion is $O(n*k)$.