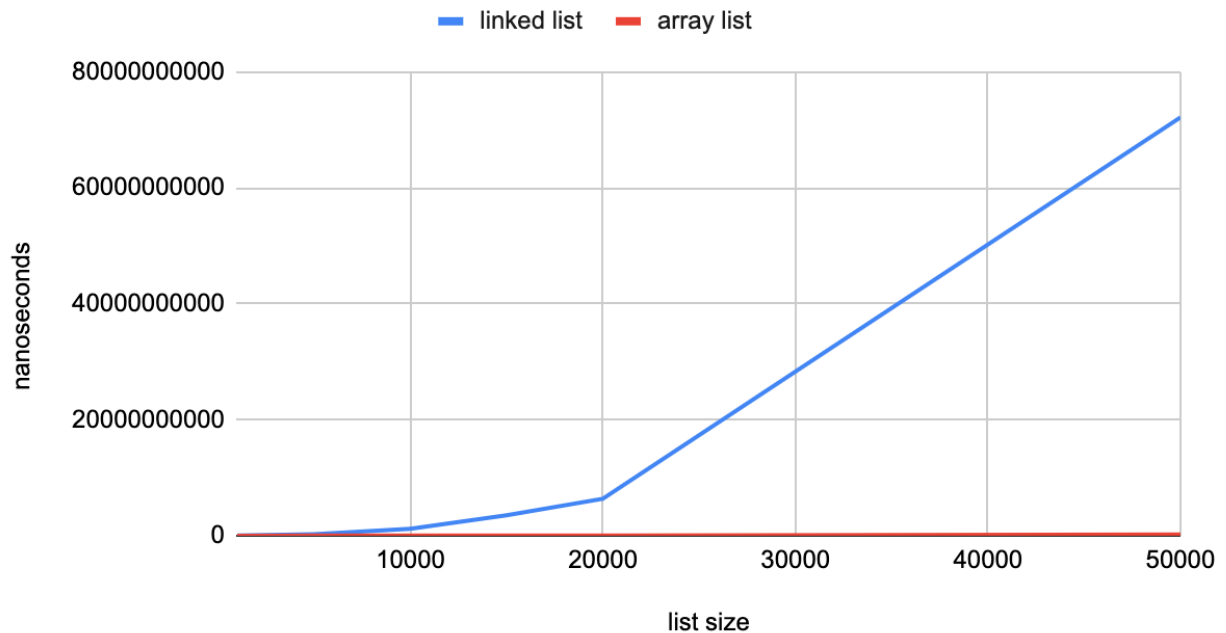## linked list time nano and array list time nano

It is clear from the graph that the arraylist sorts much more efficiently than the linkedlist when sorted with the same sorting algorithm. Arraylists effectively have an instant search mechanism since indices are accessed easily. Linkedlists must be iterated through to find the correct item. The time complexity of the binary insertion sort is O(n*logn). Binary search recursively divides by itself, hence the logn time complexity. Insertion sort is linear because it iterates through the array.