Tanvir Sami

Question 4

For question 4, I was asked to create a random array and a random linked list. Then, I had to compare how many steps it takes to complete a bubble sort for each. A bubble sort consists of swapping an element with the next element if the next element is smaller and repeating this process until the all the elements in the array or linked list is sorted in an ascending order. At first, I had to create an array of size s. This size should also be applicable to the linked list since we want both the array and the linked list to contain the same elements. Then I had to copy the array into the linked list by using an insert() function, where I had to store the element of each array into the linked list by using a for loop. For the array, I was able to establish the swap with for loops in the function sortArray(), where the swaps would continue given the condition of the size of the array. However, for linked list it was a different case. Since I was not able to access elements from a linked list by simply setting a for loop in sortLink(), I had to use many conditional statements and iterations to complete the bubble sort. I had to break down the for loop from the sortArray() into a while() statement and an if() statement, where I was able to replicate the process in sortArray(). After the code was completed, I was able to measure the steps it took both, array and linked list, to complete the bubble sort.