

c.1) The worst-case time complexity for the comparisons made by binary search are  $O(N * \log(N))$ . The reason for that being is that the avg, worst, and best time complexity for binary search is  $O(N * \log(N))$ .

c.2) The worst-case time complexity for the swaps/inversions is  $O(N^2)$ . The reason for that being is that if it is inserted in the first position all indexes would have to shift by 1 causing making it  $N$  swaps \*  $N$  iterations causing it to be  $O(N^2)$ .