

Problem 7.1.

c)

Temp[k]

for $i = 0$ to k

Temp[k] = 0

End for

for $i = 0$ to n

Temp[ord[i]] \leftarrow Temp[ord[i]] + 1

End for

for $i = 1$ to k

Temp[i] \leftarrow Temp[i] + Temp[i-1]

End for

ans = Temp[k] - Temp[0]

e) The worst case for Bucket sort would be when all the elements fall into the same bucket and we need to sort only that one bucket. If we are using insertion sort as our sorting algorithm, the worst case would be $O(n^2)$. So, the overall time complexity would be $T(n) = O(n^2)$, $O(n)$, which is $T(n) = O(n^2)$