ADS

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1 Problem 8

1.1 1

e In the worst case, this would imply that we would have $O(n^2)$ performance, because if every element was in one bucket, then we would have to use insertion sort on n elements which is $O(n^2)$.
source{https://cs.stackexchange.com/questions/9876/worst-case-analysis-of-bucket-sort-using-insertion-sort-for-the-buckets}

1.2 2

b All of the Time Complexities of Radix Sort is always O(n*k) Space Complexity. Radix Sort is a linear sorting algorithm. Counting sort is a linear time sorting algorithm that sort in O(n+k) but that will worst in case of items range from 1 to n^2 that sort in $O(n^2)$.
source{https://www.easycomputer.com.ve/id/radix-sort-space-complexity-825215: :text=All%20of%20the%