

CSE 321 Homework-4

Q1-) Compare current point penalty and next stops penalties. Choose best option that has minimum penalty. Carry penalty on way so don't calculate penalty again again each stop. Function returns minimum penalty and best path. Total running time of function is " $1+2+3+...+n$ " and it's equal $(n \cdot (n-1)) / 2$ so that is $O(n^2)$.

Q2-) On a text traverse by increasing index one by one and compare piece of string with word set. If word set includes piece of text add this piece to final text and reset piece. Function returns true or false according to given text is created by given word set and return clear form of given text. Total running time of function is $O(n^2)$.

Q3-) Divide given array into 2 half until one each part has only one element (like classic merge sort) then merge 2 element. Differences between standard merge sort, each element is an array not a number. Function takes a 2d array that each array is sorted and returns a sorted array. Total running time of function is $O(n \log n)$.

Q4-) Create a people relation graph according to given people list and pair list that includes acquaintance information. That search all people in graph, he/she has at least five other people whom they know and five other people whom they don't know. Return people that available to join party. Total running time of function is $O(n^3)$.

Q5-) Take a rule dictionary and input array. According to dictionary check array. Rule is satisfied or unsatisfied. Total running time of function is $O(n)$.