P3

Discussion

When we first performed this algorithm with vectors, I had a time-out, but I changed the vector into an array and minimized the operation when input was received, so I was able to pass the test case. Through this issue, I found that the execution time even though the same logic used, that can vary depending on the data structure. This algorithm will be useful when you count how fast a vehicle has been speeding on the road.

Data structure for storing weight: array

Key Solution : Sorting & Pairing

pre-data processing : Store all of the weight into array(array size is 10^5). Then sorting it in descending order

How to : Sorting array in descending order. Also, Initialize left index for first bag, right index for last bag, and number of carrier to 0. Then while bag's size less than 1, Check 3 conditions

Condition 1 : If total bag's count is 1, plus 1 to number of carrier. Take the bag out.

Condition 2 : If left bag's weight equal to n or, sum of left bag and right bag is more than n, plus 1 to number of carrier. moving left index to next(right side). Take the left bag out.

Condition 3 : If sum of left bag and right bag not bigger than n, move the right index to left by 1 and left index move to right side for 1. Than Take both of two bags. plus 1 to number of carrier

Time complexity : O(n) - n is for count of bags. This loop will end if all bags weight equals n.

Space complexity : O(1) array that store the bag's weight has constant size so space complexity is constant