

CSE321

HOMEWORK 5

REPORT

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Part1:

To minimize the result we need to prioritize the jobs with the most weight and least time. So I sorted the jobs list so that the ones with the greater weight/time ratio will be at the beginning. I used bubble sort for this. Then I proceeded to calculate the result using this sorted list

TIME COMPLEXITY: $O(n^2)$

Part2:

a)

The false algorithm is false because it does not care about the cost amount. It just spend the month at the city with the less cost. So I give an enormous travelling cost to this function which needed the optimal result to be staying in NY until end, but the false function travelled to SF and returned me the wrong result

b)

To implement the optimal algorithm, I created 2 list for each starting city an appended them with the first month costs. Then I appended the minimum of the next cost for current city and next cost + penalty for other city. Then appended these minimum values to necessary result lists. Returned the minimum cost between the 2 results

TIME COMPLEXITY OF THE FALSE ALGORITHM: $O(n)$

TIME COMPLEXITY OF THE ALGORITHM: $O(n)$