Homework 12

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2) Run

1

12 as

1) Run "Prob1.cpp" and the input is Prob1input.txt.

2) Run "Prob2.cpp" and input is "prob2input.txt"

b) The time complexity for dynamic programming is $\Theta\left(\frac{n(n+1)}{2}\right)$ as this is the number of times the loop runs.

or we would say $\Theta(n^2)$

The space complexity for creating nxn matrix is $n \times 2 = n^2$

$\therefore \Theta(n^2)$

Brute force

The time complexity would be $O(2^n)$ as this is the number of subsets that ~~we will~~ a will be created

c) A greedy solution would not work because it would always consider values on the left or right to it which is not the optimum solution as we would get 7, 8, 17, 5