Introduction To Algorithms
CS430

Spring 2013
HomeWork 7
Due 11th March

1. **Problem 1:** The Beagle Company wishes to set up charging stations for its phones, the Froid phones, at n possible locations $s_1, s_2 \dots s_n$ along a straight long highway. The locations are at distance $d_1, d_2 \dots d_n$ from the start of the highway. The estimate of profit that can be obtained from location s_i is $p_i > 0$. Given that locations chosen must be at least k distance apart, give an efficient algorithm to determine the maximum estimated profit that Beagle Company can obtain.

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2. **Problem 2:** A subsequence is a palindrome if it reads the same left to right as well as right to left. Given a string of characters, $x_1, x_2 \dots x_n$, devise an algorithm to determine the maximum sized subsequence that is a palindrome.

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3. **Problem 3:** Suppose we wish to make change for a bill of a certain value into smaller coins of denominations $d_1, d_2 \dots d_n$. Given unlimited coins of the denominations, design a dynamic programming algorithm to determine if it is possible to make change for an input bill of value v.

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4. **Problem 4:** Problem: 15-3 .CLRS. (pg 405)

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