

CS375 Small Assignment 7

Due Oct 22th 10PM ET

This small assignment will focus on the rod cutting problem. We'll modify it slightly though: this time, we are given a “cut-cost” c , along with a purchase-price array p . Our goal is to determine the maximum payoff obtainable from a length n rod, where any piece of length i will give a payoff of $p[i]$, but it costs c to make each individual cut.

Using dynamic programming, write pseudocode to determine the optimal cuts to make. After, trace through your algorithm (I'm expecting to see an array of values corresponding to whatever your DP alg builds and the tracethrough of the backtrack step to build the actual solution) on the input $p = [0, 3, 10, 20, 22, 24, 28, 37, 37, 40, 49, 57, 58, 58]$ and $c = 3$. Note that in the above array $p[0] = 0$, $p[1] = 3$, etc.