CS619 Advanced Data Structures and Algorithms Laboratory
Autumn 2024
Assignment 7
Not for evaluation

The objective of this assignment is to implement the dynamic programming algorithm we learned for the rod-cutting problem.

Command-line argument:

Your program should receive two command-line arguments: a file containing prices, and an integer specifying the length of the rod to be cut. For example, a typical run of your program can be ./a.out price.txt 34.

Input

A file containing prices: The first command-line argument is the path of a text file containing the prices of rods of various lengths. The first line contains a single integer n which shows how many more lines are there in the file. Each of the next n lines contains a pair of integers separated by a white space. The first integer specifies the length of rod and the second integer specifies the price of it.

The second command-line argument is an integer specifying the length of the rod to be cut.

Task

The task is to implement the dynamic programming algorithm that we learned for the rod-cutting problem.

Output

The output should be a sequence of integers specifying the cut to be made on the rod to maximize revenue. The integers should be written to a file named "output.txt". The sum of integers must be equal to the length of the rod. There is no need to specify the prices of the cut or the total revenue obtained by the cut.