LAB Assignment 6
CS205
Topic: Dynamic Algorithm and Greedy Algorithm
Lab Assignment : a Home Assignment: b

a) Let us say we have N jobs and for each job there is an associated duration and loss. For job i, duration di indicates number of hours required to finish the job while li indicates the loss per hour due to delay in start. All the jobs are available at the beginning. We can schedule at most one job at a time. Please find out a schedule for set of given jobs so that loss is minimized. If there are more than one possible solution, then go as per dictionary order.
Examples:

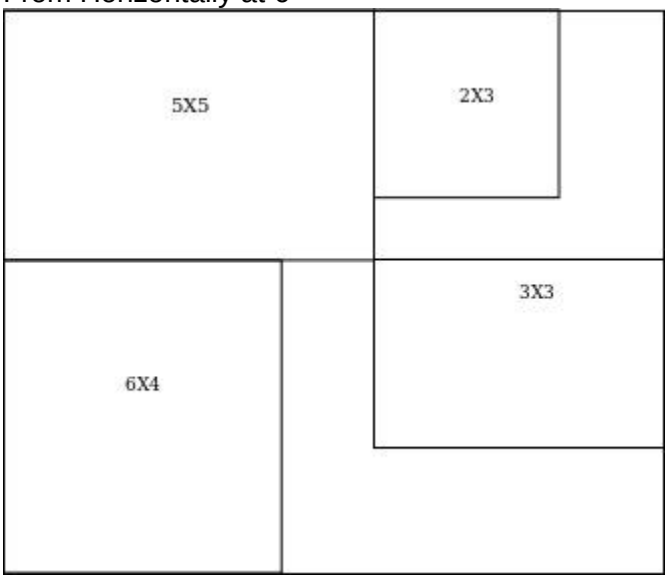
```
Input : l = {3, 1, 2, 4} and
        d = {4, 1000, 2, 5}
Output : 3, 4, 1, 2
We should first complete job 3, then jobs 4, 1, 2 respectively.


Input : l = {1, 2, 3, 5, 6}
        d = {2, 4, 1, 3, 2}
Output : 3, 5, 4, 1, 2
Explanation: We should complete jobs 3, 5, 4, 1 and then 2 in this
order.
```

Upload Ass6a.c

b) You are given a rectangular piece of cloth with dimensions X × Y, where X and Y are positive integers, and a list of n products that can be made using the cloth. For each product i € [1, n] you know that a rectangle of cloth of dimensions a_i x b_i is needed and that the final selling price of the product is c_i. Assume the a_i, b_i, and c_i are all positive integers. You have a machine that can cut any rectangular piece of cloth into two pieces either horizontally or vertically. Design an algorithm that determines the best return on the piece of cloth with dimension X × Y, that is, a strategy for cutting the cloth so that the products made from the resulting pieces give the maximum sum of selling prices. You are free to make as many copies of a given product as you wish, or none if desired.
Test Case:
Enter dimension(X x Y) of sheet: 11 x 8
Enter the number of products : 5
Enter dimensions (a_i x b_i) of all products and profit (c_i) respectively

2, 3, 10
4, 6, 30
5, 5, 35
8, 6, 40
3, 3, 15

Output:
Maximum profit : 90
Strategy of cutting cloth
From Horizontally at 5
From Vertically at 5
From Vertically at 4
From Vertically at 7
From Horizontally at 6



Upload Ass6b.c