Lab 4

Scheduling to maximize profit

Suppose you have one machine and a set of n jobs $a_1, a_2, \ldots, a_n$ to process on that machine. Each job a_j has a processing time t_j, a profit p_j, and a deadline d_j. The machine can process only one job at a time, and job a_j must run uninterruptedly for t_j consecutive time units. If job a_j is completed by its deadline d_j, you receive a profit p_j, but if it is completed after its deadline, you receive a profit of 0. Give an algorithm to find the schedule that obtains the maximum amount of profit, assuming that all processing times are integers between 1 and n. what is the running time of you algorithm?

Grading.
(1) Algorithm and implemented code (including three use cases) (60%).
(2) Efficiency of the algorithm (20%).
(3) Document (20%).