Vivekanand Education Society's
Institute of Technology
Approved by AICTE & Affiliated to University of Mumbai

Artificial Intelligence and Data Science Department.

AOA / Even Sem 2021-22 / Experiment 4.

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47 / D6AD.

EXPERIMENT - 4.

Aim: Write a C program to implement the 'Job sequencing with deadlines' problem.

Theory:

Suppose you are a freelancer who has got 5 different jobs to do with the respective deadlines and profit/payment.
Also, you are not sure whether you will be able to complete all the jobs before the respective deadlines.
So, which job will you start working on first?

- The job which gives you maximum profit: In this case, the job may have a long deadline and by doing this job you may miss some jobs with a short deadline. And it can be unprofitable to you if the sum of profits from missed jobs is greater than the profit of the job which you are doing.
- The job which has a short deadline: In this case, It may happen that you have completed multiple jobs within the given

deadlines but there could be the possibility that you could have earned more if you would have chosen the job with max profit.

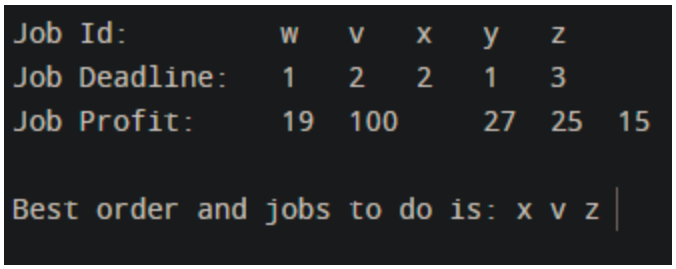
To solve the ambiguity of which job to choose, we use a greedy approach.

Time Complexity: O(n)
The time complexity is O(n) as the code iterates over the ‘n’ number of jobs.

CODE:

Code is in the job_sequencing.c file attached along with this doc.

OUTPUT:



CONCLUSION:

In short, we are being greedy (choosing a job with max profit) and lazy (completing a job on the day of the deadline).
