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Assignment No: 02

Title Name: Implement job sequence based on deadline to earn max profit.

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Program

```
// Java code for the above approach

import java.util.*;

class Job {

    // Each job has a unique-id,profit and deadline
    char id;
    int deadline, profit;

    // Constructors
    public Job() {}

    public Job(char id, int deadline, int profit)
    {
        this.id = id;
        this.deadline = deadline;
        this.profit = profit;
    }

    // Function to schedule the jobs take 2 arguments
    // arraylist and no of jobs to schedule
    void printJobScheduling(ArrayList<Job> arr, int t)
    {
        // Length of array
        int n = arr.size();

        // Sort all jobs according to decreasing order of
```

```
        // profit
        Collections.sort(arr,
                         (a, b) -> b.profit - a.profit);

        // To keep track of free time slots
        boolean result[] = new boolean[t];

        // To store result (Sequence of jobs)
        char job[] = new char[t];

        // Iterate through all given jobs
        for (int i = 0; i < n; i++) {
            // Find a free slot for this job (Note that we
            // start from the last possible slot)
            for (int j
                 = Math.min(t - 1, arr.get(i).deadline - 1);
                 j >= 0; j--) {
                // Free slot found
                if (result[j] == false) {
                    result[j] = true;
                    job[j] = arr.get(i).id;
                    break;
                }
            }
        }

        // Print the sequence
        for (char jb : job)
            System.out.print(jb + " ");
        System.out.println();
    }

    // Driver's code
    public static void main(String args[])
    {
        ArrayList<Job> arr = new ArrayList<Job>();
        arr.add(new Job('a', 2, 100));
        arr.add(new Job('b', 1, 19));
        arr.add(new Job('c', 2, 27));
        arr.add(new Job('d', 1, 25));
```

```
        arr.add(new Job('e', 3, 15));

        System.out.println(
            "Following is maximum profit sequence of jobs");

        Job job = new Job();

        // Function call
        job.printJobScheduling(arr, 3);
    }
}
```

Output:

```
Following is maximum profit sequence of jobs
 Sequence of jobs: c a e
 Maximum Profit:  142
```