

113) Job sequence with deadlines

CODE:

```
def job_sequence_with_deadlines(jobs):
    jobs.sort(key=lambda x: x[2], reverse=True)

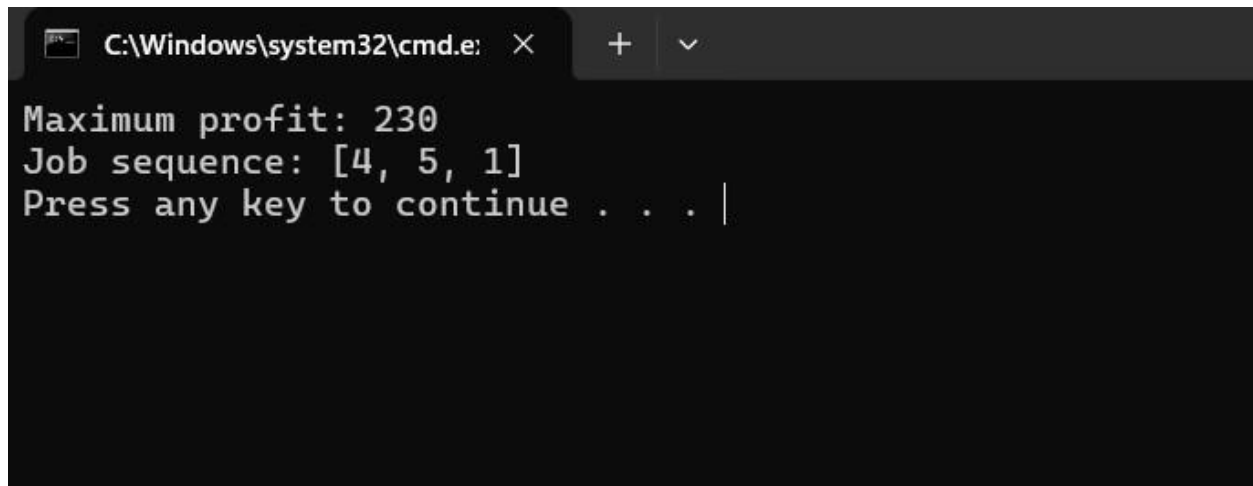
    max_deadline = max(jobs, key=lambda x:
x[1])[1]    slot = [-1] * (max_deadline + 1)
    result = [None] * max_deadline

    total_profit = 0
    for job in jobs:
        profit = job[2]
        deadline = job[1]
        for j in range(deadline, 0, -
1):
            if slot[j] == -1:
                slot[j] = job[0]
                total_profit
+= profit
                break

    job_sequence = [job_id for job_id in slot if job_id != -1]

    return total_profit, job_sequence

if __name__ ==
"__main__":
    jobs = [
(1, 4, 70),
(2, 1, 80),
(3, 1, 30),
(4, 1, 100),
(5, 3, 60)
]
    max_profit, job_sequence =
job_sequence_with_deadlines(jobs)
    print(f'Maximum profit:
{max_profit}')
    print(f'Job sequence: {job_sequence}')
OUTPUT:
```



A screenshot of a Windows command prompt window. The title bar shows the path 'C:\Windows\system32\cmd.e' with a close button. The window contains the following text: 'Maximum profit: 230', 'Job sequence: [4, 5, 1]', and 'Press any key to continue . . . |'. The cursor is positioned at the end of the third line.

```
C:\Windows\system32\cmd.e: × + v  
Maximum profit: 230  
Job sequence: [4, 5, 1]  
Press any key to continue . . . |
```

TIME COMPLEXITY : $O(n)$