91. Job Sequencing with Deadlines

Code:

```
class Job:
    def __init__(self, job_id, deadline, profit):
        self.job_id = job_id
        self.deadline = deadline
        self.profit = profit

def job_sequencing_with_deadlines(jobs):
    jobs.sort(key=lambda x: x.profit, reverse=True)

    n = len(jobs)
    max_deadline = max(job.deadline for job in jobs)
    time_slots = [-1] * (max_deadline + 1)

    total_profit = 0
    job_sequence = []
    for job in jobs:
        for t in range(job.deadline, 0, -1):
            if time_slots[t] == -1:
                time_slots[t] = job.job_id
                total_profit += job.profit
                job_sequence.append(job.job_id)
                break

    return total_profit, job_sequence

jobs = [Job('A', 2, 100), Job('B', 1, 19), Job('C', 2, 27), Job('D', 1, 25), Job('E', 3, 15)]
total_profit, job_sequence = job_sequencing_with_deadlines(jobs)
print(f"Total Profit: {total_profit}")
print(f"Job Sequence: {job_sequence}")
```

Output:

```
Total Profit: 142
Job Sequence: ['A', 'C', 'E']
```

Time Complexity:

- T(n)= O(nlogn)