

Program:

Class to represent a Job

class Job:

def __init__(self, job_id, deadline, profit):

self.job_id = job_id

self.deadline = deadline

self.profit = profit

Function to solve the Job Sequencing problem using Greedy strategy

def job_sequencing(jobs, t):

Sort jobs by profit in descending order

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

result = [False] * t # Keep track of free time slots

job_sequence = ['-1'] * t # To store result (sequence of jobs)

total_profit = 0 # Total profit

for job in jobs:

Find a free slot for this job (start from the last possible slot)

for j in range(min(t - 1, job.deadline - 1), -1, -1):

if not result[j]:

result[j] = True

job_sequence[j] = job.job_id

total_profit += job.profit

break

print("Job sequence: ", job_sequence)

print("Total profit: ", total_profit)

Input

n = int(input("Enter the number of jobs: "))

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jobs = []

for i in range(n):
    job_id = input(f"Enter job ID of job {i+1}: ")
    deadline = int(input(f"Enter deadline of job {i+1} (in time slots): "))
    profit = int(input(f"Enter profit of job {i+1}: "))
    jobs.append(Job(job_id, deadline, profit))

t = int(input("Enter the maximum number of time slots available: "))

# Perform the greedy strategy to solve the job sequencing problem
job_sequencing(jobs, t)

```

Output:



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PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS Python + v
● PS C:\Users\katur\Music\DAA practicals> & C:/Users/katur/AppData/Local/Programs/Python/Python312/python.exe "c:/Users/katur/Music/DAA practicals/practical5..py"
Enter the number of jobs: 4
Enter job ID of job 1: a
Enter deadline of job 1 (in time slots): 4
Enter profit of job 1: 20
Enter job ID of job 2: b
Enter deadline of job 2 (in time slots): 1
Enter profit of job 2: 10
Enter job ID of job 3: c
Enter deadline of job 3 (in time slots): 1
Enter profit of job 3: 40
Enter job ID of job 4: d
Enter deadline of job 4 (in time slots): 1
Enter profit of job 4: 30
Enter the maximum number of time slots available: 3
Job sequence: ['c', '-1', 'a']
Total profit: 60
○ PS C:\Users\katur\Music\DAA practicals>

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