Design & Analysis Of Algorithm

Lab Experiment -8

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SUBJECT: DESIGN & ANALYSIS OF ALGORITHM

SUBJECT CODE: 19CSE302

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EX NO: 8

Job sequencing algorithm.

AIM:

To write an algorithm to implement Job sequencing algorithm.

ALGORITHM:

1) Define the jobs with job ids, deadlines, and profits.
2) define the function.
3) Get the length of the array holding the job details, n.
4) Sort all jobs according to decreasing order of profit.
5) Declare a list to store time slots & results.
6) Iterate through all the given jobs and find a free slot for each job, Print the final job sequence and total profit.

CODE SCREEN:

```
def printJobScheduling(arr):
    l = []
    for i in range(len(arr)):
        l.append(arr[i][1])
    t = 0
    for i in l:
        if i > t:
            t = i
    n = len(arr)
    for i in range(n):
        for j in range(n - 1 - i):
            if arr[j][2] < arr[j + 1][2]:
                arr[j], arr[j + 1] = arr[j + 1], arr[j]
    result = [False] * t
    job = ['N'] * t
    p=[]
    for i in range(len(arr)):
        for j in range(min(t - 1, arr[i][1] - 1), -1, -1):
            if result[j] is False:
                result[j] = True
                job[j] = arr[i][0]
                p.append(arr[i][2])
                break
```

```
    print(job)
    print(sum(p))

if __name__ == '__main__':
    arr = [['J1', 5, 85],
           ['J2', 4, 25],
           ['J3', 3, 16],
           ['J4', 3, 40],
           ['J5', 4, 55],
           ['J6', 5, 19],
           ['J7', 2, 92],
           ['J8', 3, 80],
           ['J9', 7, 15]]
    print("Max Profit sequence of jobs:  ")
    printJobScheduling(arr)
```

OUTPUT SCREEN :

```
PS D:\python> & C:/Users/HP/AppData/Local/Programs/Python/Python310/python.exe d:/python/DAA/jobSequencing.py
Max Profit sequence of jobs:
['J4', 'J7', 'J8', 'J5', 'J1', 'N', 'J9']
367
PS D:\python>
```

TIME COMPLEXITY:

$O(N^2)$

Auxiliary Space: O(N)

RESULT:

I have studied and understood the Job sequencing in python language and executed the program successfully.

THANK YOU !!