

## Assignment 4

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### Algorithm:-

- 1) Sort all jobs in decreasing order of profit.
- 2) Iterate on jobs in decreasing order of profit. For each job, do the following :
- 3) Find a time slot  $i$ , such that slot is empty and  $i < \text{deadline}$  and  $i$  is greatest. Put the job in this slot and mark this slot filled.
- 4) If no such  $i$  exists, then ignore the job.

Complexity:-

Time Complexity:-  $O(N^2)$

### Source Code:-

```
//Piyush Bali 19:12 24/09/2020

#include<bits/stdc++.h>
using namespace std;
int main()
{
    vector<pair<int,int>> data;
    int tj; // total jobs
    cout<<"\nPlease enter total number of jobs\n";
    cin>>tj;
    int die, profit;
    for(int i=1; i<=tj; i++)
    {
        cout<<"\nEnter "<<i<<" job deadline\n";
        cin>>die;
        cout<<"\nEnter "<<i<<" job profit \n";
        cin>>profit;
```

```

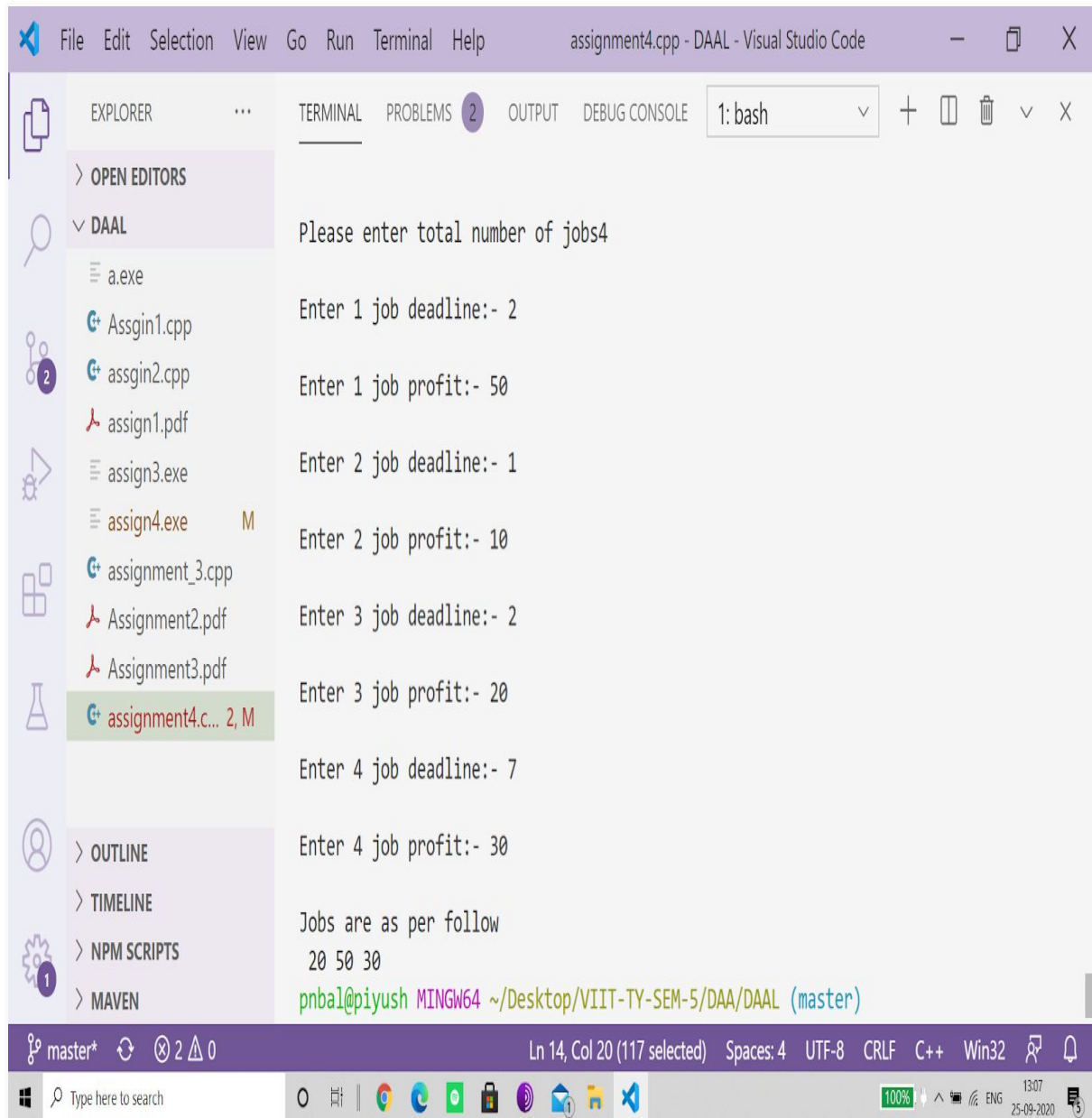
        data.push_back(make_pair(profit,die));
    }
    int slot[tj];
    memset(slot,0,sizeof(slot));
    bool slotb[tj];
    memset(slotb,false,sizeof(slotb));
    sort(data.begin(),data.end(),greater<pair<int,int>>());
    for(int i=tj;i>=0;i--)
    {
        for(int j=0;j>tj;j++)
        {
            if(i<=data[j].second && slotb[i]==false)
            {
                slot[i]=data[j].first;
                slotb[i]=true;
                data.erase(data.begin()+j);
                break;
            }
        }
    }

    cout<<"\nJobs are as per follow\n";
    for(int i=0;i<tj;i++)
    {
        if(slot[i]==0)
            continue;
        cout<<slot[i]<<" ";

    }
}

```

## OUTPUT:-



```
File Edit Selection View Go Run Terminal Help assignment4.cpp - DAAL - Visual Studio Code

EXPLORER
> OPEN EDITORS
  DAAL
    a.exe
    Assign1.cpp
    assign2.cpp
    assign1.pdf
    assign3.exe
    assign4.exe M
    assignment_3.cpp
    Assignment2.pdf
    Assignment3.pdf
    assignment4.c... 2, M
  OUTLINE
  TIMELINE
  NPM SCRIPTS
  MAVEN

TERMINAL
1: bash

Please enter total number of jobs4

Enter 1 job deadline:- 2

Enter 1 job profit:- 50

Enter 2 job deadline:- 1

Enter 2 job profit:- 10

Enter 3 job deadline:- 2

Enter 3 job profit:- 20

Enter 4 job deadline:- 7

Enter 4 job profit:- 30

Jobs are as per follow
20 50 30

pnbal@piyush MINGW64 ~/Desktop/VIIT-TY-SEM-5/DAA/DAAL (master)
```