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Department of Computer Science & Engineering

Design and Analysis of Algorithm
(CSPC-226)
Lab - 7

Submitted to :

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Group : G2-A
CSE (2nd year (4th Sem))

We have five jobs A, B, C, D, E with time deadline as 2, 4, 5, 1, 3 and profit as 30, 20, 35, 10, 30 respectively. Schedule all the jobs to gain maximum profit using greedy algorithm.

Output must show:

1. All the Inputs (jobs, deadline, and profit) in a tabular form
2. Maximum Deadline
3. Jobs sequence, based on decreasing order of profit
4. Maximum profit.

```
#include <bits/stdc++.h>
using namespace std;
void job_greedy()
{
    int n,max=0;
    cout<<"Total Job : ";
    cin>>n;
    int timedead[n],profit[n];
    cout<<"Enter job time deadline : "<<endl;
    for(int i=0;i<n;i++)
    {
        cin>>timedead[i];
        if(timedead[i]>max)
        max =  timedead[i];
    }
    cout<<"Enter job profit respectively : "<<endl;
    for(int i=0;i<n;i++)
    cin>>profit[i];
    vector<pair<int,int>>v;
    for(int i=0;i<n;i++)
```

```
    {
        v.push_back(make_pair(profit[i],timedead[i]));
    }
    sort(v.begin(),v.end());
    int ans[max] = {0};
    for(int i=0;i<n;i++)
    {
        if(!ans[v[i].second-1])
        {
            ans[v[i].second-1] = v[i].first;
        }
        else
        {
            for(int j=v[i].second-2;j>=0;j--)
            {
                if(!ans[j])
                {
                    ans[j] = v[i].first;
                }
            }
        }
    }
    cout<<endl<<endl<<"|Job            |";
    for(int i=0;i<n;i++)
    {
        cout<<" "<<i+1<<" |";
    }
    cout<<endl<<"-----------------------------------
"<<endl<<"|Time deadline |";
    for(int i=0;i<n;i++)
    {
        cout<<" "<<timedead[i]<<" |";
    }
```

```
    cout<<endl<<"-------------------------------------
"<<endl<<"|Profit         |";
    for(int i=0;i<n;i++)
    {
        cout<<profit[i]<<" |";
    }
    int sum =0;
    cout<<endl<<endl<<"Job Sequence based on decreasing
order of profit : ";
    for(int i=0;i<max;i++)
    {
        cout<<ans[i]<<" ";
        sum+=ans[i];
    }
    cout<<endl<<"Max Profit : "<<sum<<endl;
}
int main()
{
    job_greedy();
}
```

```
Total Job : 5
Enter job time deadline :
2 4 5 1 3
Enter job profit respectively :
30 20 35 10 30


|Job           | 1 | 2 | 3 | 4 | 5 |
-------------------------------------
|Time deadline | 2 | 4 | 5 | 1 | 3 |
-------------------------------------
|Profit        |30 |20 |35 |10 |30 |

Job Sequence based on decreasing order of profit : 10 30 30 20 35
Max Profit : 125
```