

**Department of Computer Science and Engineering**

**Lab Report-3**

Course Code: **CSE 206**

Course Title: **Algorithms Lab**

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**Code:**

#include <bits/stdc++.h>

using namespace std;

int n, maxWt;

struct Item{;

int weight ,benefit;

};

Item item[100];

bool cmp(Item a, Item b)

{

double x = (double)a.benefit/(double)a.weight;

double y = (double)b.benefit/(double)b.weight;

return x>y;

}

double knapsack()

{

sort(item,item+n,cmp);

int currWt =0;

int mxBenefit =0;

for (int i=0;i<n;i++){

if(item[i].weight + currWt <= maxWt ){

currWt+= item[i].weight;

mxBenefit+=item[i].benefit;

}

}

return mxBenefit;

}

int main()

{

printf("enter total no. of items:" );

scanf("%d",&n);

for (int i=0;i<n;i++){

scanf("%d%d",&item[i].weight,&item[i].benefit);

}

printf("enter maximum weight:");

scanf("%d",&maxWt);

double maxBenefit = knapsack();

printf("the maximum benefit is :%2f\n",maxBenefit);

return 0;

}