//19BEIT30030

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#include<stdio.h>

void knapsack(int num,float w[],float p[],int capacity)

{

int i;

float total\_profit=0,vector[num];

for(i=0;i<num;i++)

{

if(capacity>0 && w[i]<=capacity)

{

capacity=capacity-w[i];

total\_profit=total\_profit+p[i];

vector[i]=1;

printf("\n%f",vector[i]);

}

else if(capacity>0)

{

float temp=(p[i]/w[i]);

total\_profit=total\_profit+((temp)\*(capacity));

vector[i]=capacity/w[i];

capacity=0;

printf("\n%f",vector[i]);

break;

}

}

printf("\nTotal profit:%f",total\_profit);

}

int main()

{

int num,i,j,capacity;

float weight[20],profit[20],ratio[20],temp;

printf("Enter no of object:");

scanf("%d",&num);

printf("\nEnter weight and profit of each object");

for(i=0;i<num;i++)

{

printf("\nWeight of obj %d:",i+1);

scanf("%f",&weight[i]);

printf("Profit of obj %d:",i+1);

scanf("%f",&profit[i]);

ratio[i]=profit[i]/weight[i];

}

printf("\nEnter the capacity of bag:");

scanf("%d",&capacity);

for(i=0;i<num;i++)

{

for(j=i+1;j<num;j++)

{

if(ratio[i]<ratio[j])

{

temp=ratio[j];

ratio[j]=ratio[i];

ratio[i]=temp;

temp=weight[j];

weight[j]=weight[i];

weight[i]=temp;

temp=profit[j];

profit[j]=profit[i];

profit[i]=temp;

}

}

}

knapsack(num,weight,profit,capacity);

return (0);

}