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;
}
```