

```

1  #include<stdio.h>
2  #include<conio.h>
3  int sum=0;
4
5  int max(int a,int b)
6  {
7      if(a>b)
8          return a;
9      else
10         return b;
11 }
12
13 void knapsack(int m,int n,int w[],int p[])
14 {
15     int v[100][200],x[10],i,j;
16
17     for(i=0;i<=m;i++)
18         v[0][i]=0;
19
20     for(i=1;i<=n;i++)
21     {
22         for(j=0;j<=m;j++)
23         {
24             if(j>=w[i])
25                 v[i][j]=max(v[i-1][j],v[i-1][j-w[i]]+p[i]);
26             else
27                 v[i][j]=v[i-1][j];
28         }
29     }
30
31     for(i=1;i<=n;i++)
32         x[i]=0;
33
34     i=n;
35     j=m;
36
37     while(i>0 && j>0)
38     {
39         if(v[i][j]!=v[i-1][j])
40         {
41             x[i]=1;
42             j=j-w[i];
43         }
44         i--;
45     }
46
47     printf("\nOptimal Set of Items in Knapsack:\n");
48     printf("Items\tCount\n");
49
50     for(i=1;i<=n;i++)
51     {
52         if(x[i]==1)
53         {
54             printf("Item %d=\t1\n",i);
55             sum=sum+p[i];
56         }
57         else
58             printf("Item %d=\t0\n",i);
59     }
60
61     printf("\nTotal value: %d",sum);
62
63     printf("\nThe Knapsack Array: \n");
64     for(i=0;i<=m;i++)
65     {
66         for(j=0;j<=n;j++)

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67         {
68             printf("%d\t", v[j][i]);
69         }
70         printf("\n");
71     }
72 }
73
74
75 int main()
76 {
77     int w[10],p[10],i,m,n;
78
79
80     printf("Number of Items: ");
81     scanf("%d",&n);
82
83     printf("Enter the Weight of Items:\n");
84     for(i=1;i<=n;i++)
85         scanf("%d",&w[i]);
86
87     printf("Enter Value of Items:\n");
88     for(i=1;i<=n;i++)
89         scanf("%d",&p[i]);
90
91     printf("Capacity of Knapsack: ");
92     scanf("%d",&m);
93
94     knapsack(m,n,w,p);
95     getch();
96
97     return 0;
98 }

```