```
#include<stdio.h>
     #include<process.h>
 4
     int max(int,int);
 5
     int m,i,j,n,p[10],w[10],v[10][10],x[10];
 6
     int op soln;
 7
     int knapsack();
 8
     void object selected();
 9
     int main()
10
   ₽ {
       printf("Enter the number of objects :");
11
12
        scanf("%d", &n);
13
       printf("Enter the weights of N objects :\n");
        for (i=1; i<=n; i++)</pre>
14
        scanf("%d", &w[i]);
15
       printf("Enter the profits of N objects :\n");
16
17
        for (i=1; i<=n; i++)
18
        scanf("%d", &p[i]);
19
        printf("Enter the capacity of Knapsack :\n");
20
        scanf("%d", &m);
21
       op soln=knapsack(n,w,m,v,p);
22
       printf("The Output is :\n");
23
        for (i=0;i<=n;i++)</pre>
24
25
          for (j=0; j<=m; j++)</pre>
26
         printf("%d\t",v[i][j]);
27
28
29
         printf("\n");
30
       printf("Optimal Solution=%d\n", op_soln);
31
32
       object selected();
33
        return 0;
34
35
36
     int max(int a, int b)
37 □ {
20
        raturn (ashoa.h).
```

```
35
36
     int max(int a, int b)
return(a>b?a:b);
38
39
40
     int knapsack()
41
42
    ₽ {
43
       int i,j;
       for (i=0; i<=n; i++)</pre>
44
45
        for(j=0;j<=m;j++)</pre>
46
47
   □ □ {
        if(i==0||j==0)
48
49
        v[i][j]=0;
        else{
50
   白
51
        if(w[i]>j)
52
        v[i][j]=v[i-1][j];
53
        else
        v[i][j]=max(v[i-1][j],v[i-1][j-w[i]]+p[i]);
54
55
56
57
       return v[n][m];
58
59
60
     void object_selected()
61
62
   ₽ {
63
       i=n;
       j=m;
64
65
       while(i!=0 && j!=0)
66 🖨 {
67
       if(v[i][j]!=v[i-1][j])
   68
69
       x[i]=1;
70
       j=j-w[i];
71
72
      i__.
```

```
45
46
        for(j=0;j<=m;j++)
47
48
        if(i==0||j==0)
49
        v[i][j]=0;
50
        else{
51
        if(w[i]>j)
52
        v[i][j]=v[i-1][j];
53
        else
54
        v[i][j]=max(v[i-1][j],v[i-1][j-w[i]]+p[i]);
55
56
57
58
       return v[n][m];
59
60
61
     void object_selected()
62 早{
63
       i=n;
64
       j=m;
65
       while(i!=0 && j!=0)
66
    ₽ {
       if(v[i][j]!=v[i-1][j])
67
68
69
       x[i]=1;
70
       j=j-w[i];
71
72
       i--;
73
74
      printf("Objects Selected :\n");
75
      for (i=1; i<=n; i++)</pre>
76 自 {
77
       if(x[i]==1)
       printf("%d\t",i);
78
79
80
81
```

```
C:\WINDOWS\SYSTEM32\cmd.exe
```

```
Enter the number of objects :4
Enter the weights of N objects :
2 1 3 2
Enter the profits of N objects :
12 10 20 15
Enter the capacity of Knapsack :
The Output is :
        0
                0
                        0
                                0
                                         0
                12
                        12
                                12
                                         12
        0
        10
                12
                        22
                                22
                                         22
        10
                12
                        22
                                30
                                         32
        10
                15
                        25
                                         37
                                 30
Optimal Solution=37
Objects Selected :
        2
(program exited with code: 0)
Press any key to continue . . . _
```