```
9 #include<stdio.h>
10 #include<conio.h>
void knapsack();
    int max(int,int);
    int i,j,n,m,p[10],w[10],v[10][10];
void knapsack(){
         int x[10];
for(i=0;i<=n;i++){</pre>
15
16 -
              for(j=0;j<=m;j++){
    if(i==0||j==0){
        v[i][j]=0;
17 -
18 -
19
20
                   else if(j-w[i]<0){
   v[i][j]=v[i-1][j];</pre>
21 -
22
23
                   else{
24 -
                        v[i][j]=max(v[i-1][j],v[i-1][j-w[i]]+p[i]);
25
26
27
28
         printf("\nThe output is:\n");
29
         for(i=0;i<=n;i++){
              for(j=0;j<=m;j++){
printf("%d\t",v[i][j]);
31 -
32
33
              }
printf("\n\n");
34
35
         printf("\nThe optimal solution is %d",v[n][m]);
         printf("\nThe solution vector is:\n");
37
```

```
printf("\nThe optimal solution is %d",v[n][m]);
printf("\nThe solution vector is:\n");
37
             for(i=n;i>=1;i--){
    if(v[i][m]!=v[i-1][m]){
        x[i]=1;
        m=m-w[i];
}
38 -
40
41
                   }
else{
42
43 -
                          x[i]=0;
44
45
46
             for(i=1;i<=n;i++){
47 -
                  printf("%d\t",x[i]);
48
50 }
51 - int max(int x,int y){
             if(x>y){
52 -
53
                   return x;
            }
else{
54
55 -
                   return y;
56
57
58 }
59 - void main(){
            printf("\nEnter the no. of items:\t");
scanf("%d",&n);
printf("\nEnter the weight of the each item:\n");
for(i=1;i<=n;i++){
    scanf("%d",&w[i]);</pre>
60
61
62
63 -
64
```

```
45
                                                                         }
for(i=1;i<=n;i++){
    printf("%d\t",x[i]);</pre>
                         46
                         47 -
                         48
                         50 }
                         51 int max(int x,int y){
                         52 -
                                                                               if(x>y){
                         53
                                                                                                          return x;
                         54
                                                                               else{
                         55 -
                                                                                                         return y;
                         56
                         57
57
58 }
59 void main(){
60    printf("\nEnter the no. of items:\t");
61    scanf("%d",&n);
62    printf("\nEnter the weight of the each item:\n");
63 for(i=1;i<=n;i++){
64    scanf("%d",&w[i]);
65    scanf("%d",&w[i]);
66    scanf("%d",&w[i]);
67    scanf("%d",&w[i]);
68    scanf("%d",&w[i]);
69    scanf("%d",&w[i]);
60    scanf("%d",&w[i]);
60    scanf("%d",&w[i]);
61    scanf("%d",&w[i]);
62    scanf("%d",&w[i]);
63    scanf("%d",&w[i]);
64    scanf("%d",&w[i]);
65    scanf("%d",&w[i]);
66    scanf("%d",&w[i]);
67    scanf("%d",&w[i]);
68    scanf("%d",&w[i]);
69    scanf("%d",&w[i]);
60    scanf("%d",&w[i]);
60    scanf("%d",&w[i]);
61    scanf("%d",&w[i]);
62    scanf("%d",&w[i]);
63    scanf("%d",&w[i]);
64    scanf("%d",&w[i]);
65    scanf("%d",&w[i]);
66    scanf("%d",&w[i]);
67    scanf("%d",&w[i]);
68    scanf("%d",&w[i]);
69    scanf("%d",&w[i]);
60    scanf("%d",&w[i]);
60    scanf("%d",&w[i]);
61    scanf("%d",&w[i]);
62    scanf("%d",&w[i]);
63    scanf("%d",&w[i]);
64    scanf("%d",&w[i]);
65    scanf("%d",&w[i]);
66    scanf("%d",&w[i]);
67    scanf("%d",&w[i]);
68    scanf("%d",&w[i]);
69    scanf("%d",&w[i]);
60    scanf("%d",&w[i]);
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69    scanf("%d",&w[i]);
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65    scanf("%d",&w[i]);
66    scanf("%d",&w[i]);
67    scanf("%d",&w[i]);
68    scanf("%d",&w[i]);
68    scanf("%d",&w[i]);
69    scanf("%d",&w[i]);
60    scanf("%d",&w[i]
                                                                             }
printf("\nEnter the profit of each item:\n");
                                                                              for(i=1;i<=n;i++){
    scanf("%d",&p[i]);</pre>
                         67 -
                         68
                                                                             }
printf("\nEnter the knapsack's capacity:\t");
                         70
                                                                              scanf("%d",&m);
knapsack();
getch();
                         71
                       72
                       73
74 }
```

```
v / 3
                                                              input
Enter the no. of items: 4
Enter the weight of the each item:
1 3 2 2
Enter the profit of each item:
10 30 15 20
Enter the knapsack's capacity: 5
The output is:
      0
             0
                    0
                            0
                                   0
              10
                    10
                            10
                                   10
      10
              10
                     30
                            40
                                   40
      10
                                   45
             15
                     30
                            40
      10
              20
                                   50
      10
                     30
                            40
The optimal solution is 50
The solution vector is:
0 1 0 1
...Program finished with exit code 0
Press ENTER to exit console.
```