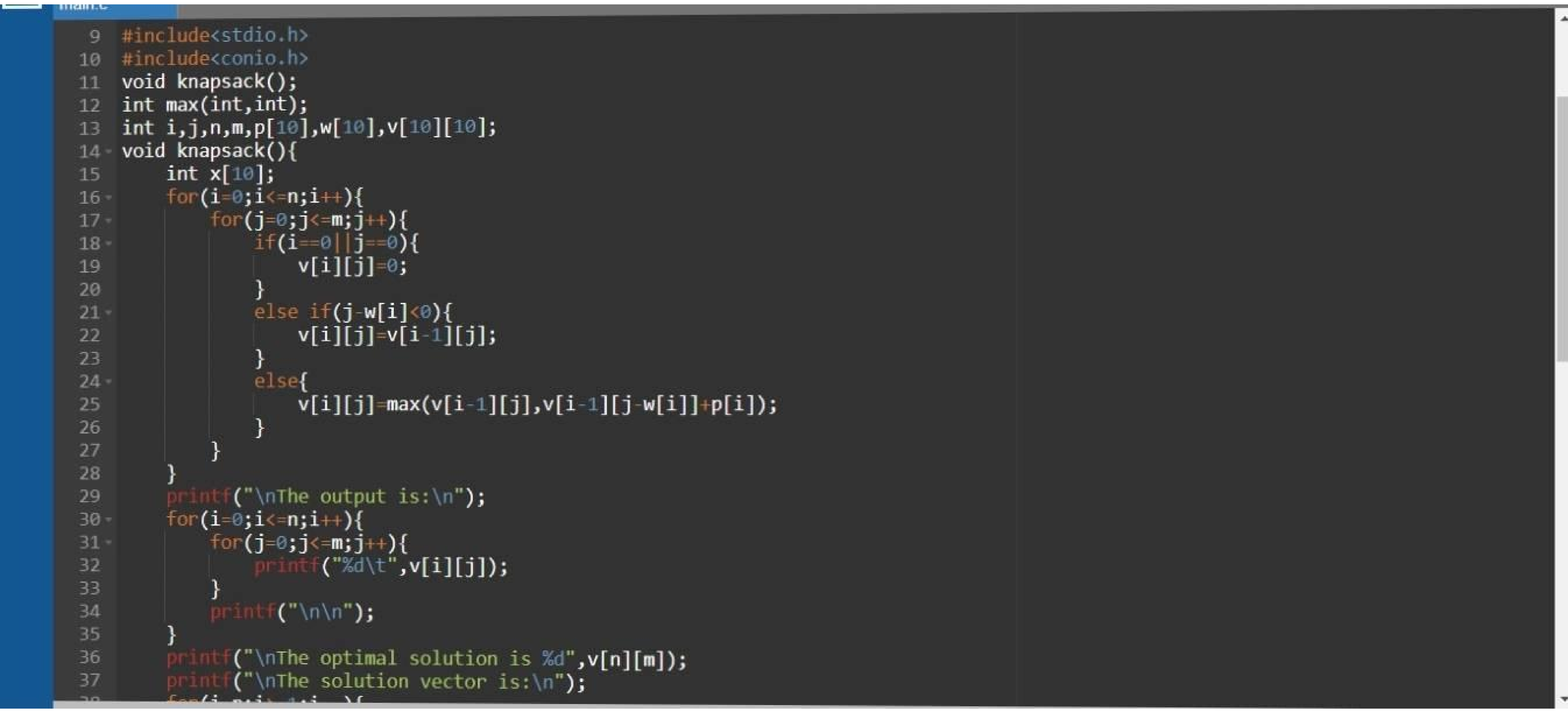
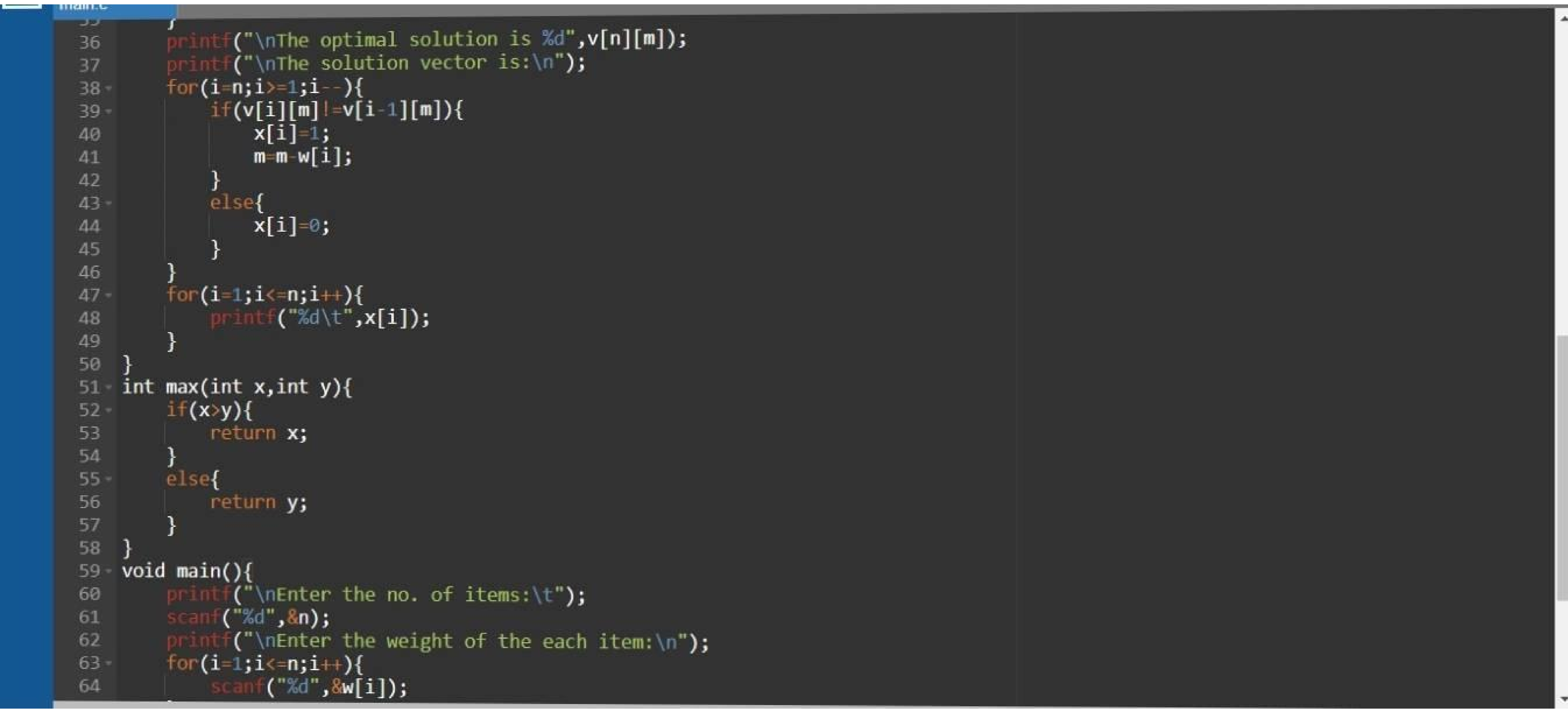
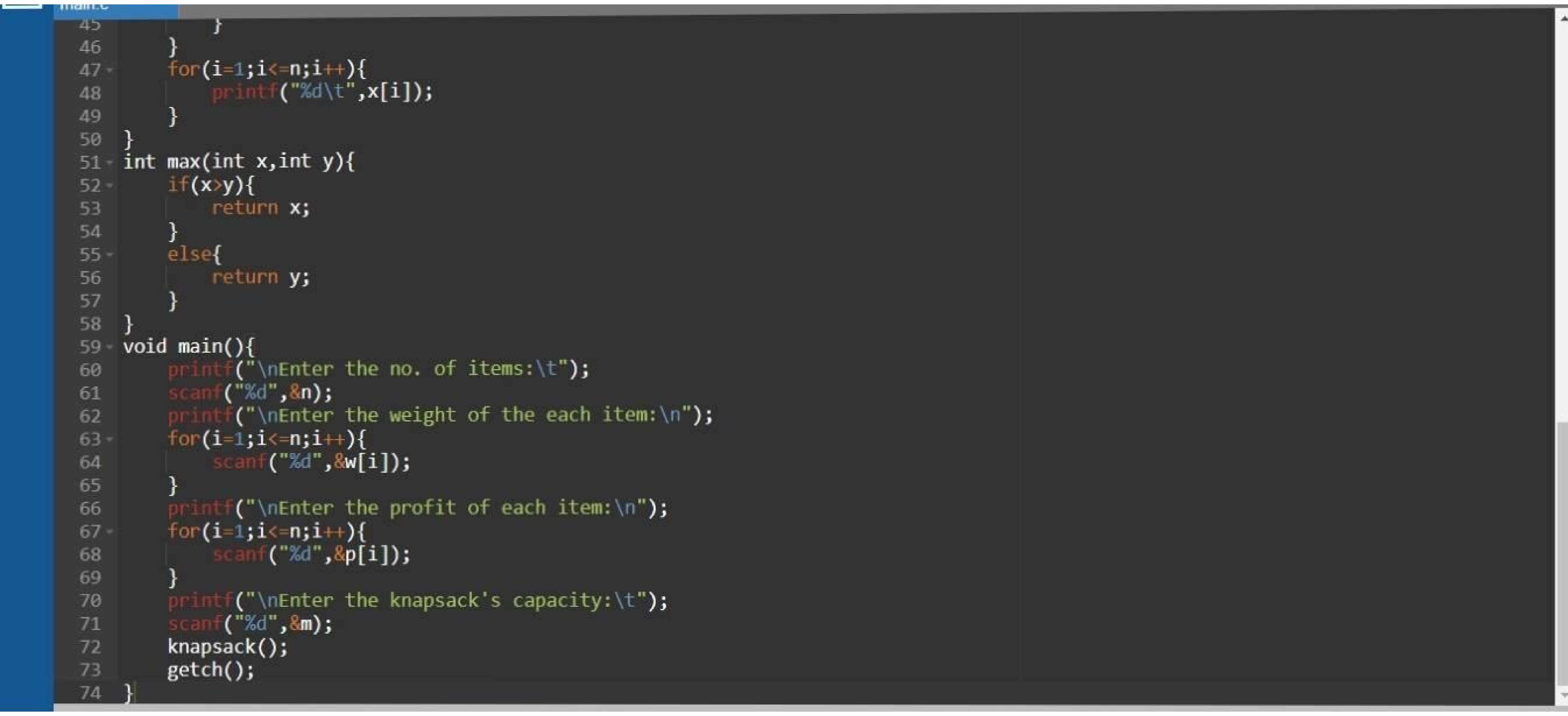


```c
#include<stdio.h>
#include<conio.h>
void knapsack();
int max(int,int);
int i,j,n,m,p[10],w[10],v[10][10];
void knapsack(){
    int x[10];
    for(i=0;i<=n;i++){
        for(j=0;j<=m;j++){
            if(i==0||j==0){
                v[i][j]=0;
            }
            else if(j-w[i]<0){
                v[i][j]=v[i-1][j];
            }
            else{
                v[i][j]=max(v[i-1][j],v[i-1][j-w[i]]+p[i]);
            }
        }
    }
    printf("\nThe output is:\n");
    for(i=0;i<=n;i++){
        for(j=0;j<=m;j++){
            printf("%d\t",v[i][j]);
        }
        printf("\n\n");
    }
    printf("\nThe optimal solution is %d",v[n][m]);
    printf("\nThe solution vector is:\n");
    for(i=n;i>=1;i--){
```

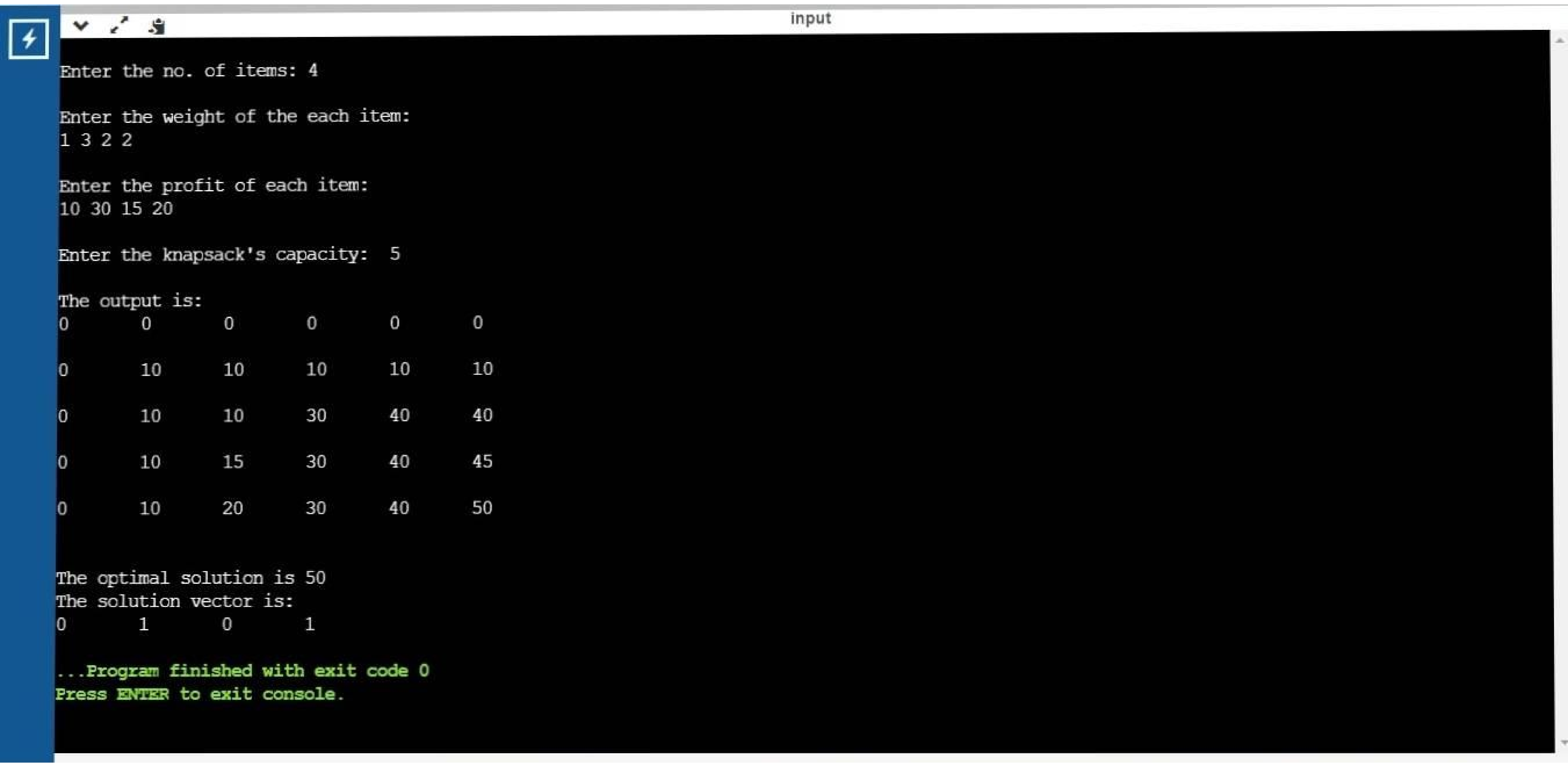


```c
    printf("\nThe optimal solution is %d",v[n][m]);
    printf("\nThe solution vector is:\n");
    for(i=n;i>=1;i--){
        if(v[i][m]!=v[i-1][m]){
            x[i]=1;
            m=m-w[i];
        }
        else{
            x[i]=0;
        }
    }
    for(i=1;i<=n;i++){
        printf("%d\t",x[i]);
    }
}
int max(int x,int y){
    if(x>y){
        return x;
    }
    else{
        return y;
    }
}
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]);
```

Scanned by TapScanner



```
        }
    }
    for(i=1;i<=n;i++){
        printf("%d\t",x[i]);
    }
}
int max(int x,int y){
    if(x>y){
        return x;
    }
    else{
        return y;
    }
}
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]);
    }
    printf("\nEnter the profit of each item:\n");
    for(i=1;i<=n;i++){
        scanf("%d",&p[i]);
    }
    printf("\nEnter the knapsack's capacity:\t");
    scanf("%d",&m);
    knapsack();
    getch();
}
```



```
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       0

0       10      10      10      10      10

0       10      10      30      40      40

0       10      15      30      40      45

0       10      20      30      40      50


The optimal solution is 50
The solution vector is:
0       1       0       1

...Program finished with exit code 0
Press ENTER to exit console.
```