

```
01Knapsack.cpp X
Practical-6 > C++ 01Knapsack.cpp > ...
1 // Author: Anish Tilloo
2 // Roll No. : 34
3 // Program: Knapsack Problem
4
5 #include<bits/stdc++.h>
6 using namespace std;
7
8 int knapsack(int value[], int wt[], int n, int W){
9     if (n == 0 || W == 0)
10     {
11         return 0;
12     }
13     if (wt[n - 1] > W)
14     {
15         return knapsack(value, wt, n - 1, W);
16     }
17     int maximum = max(knapsack(value, wt, n - 1, W - wt[n - 1]) + value[n - 1], knapsack(value, wt,
18     return maximum;
19 }
20
21 int main(){
22     int n, W;
```

```
01Knapsack.cpp X
Practical-6 > C++ 01Knapsack.cpp > ...
20
21 int main(){
22     int n, W;
23     cout << "Enter the capacity of the knapsack " << endl;
24     cin >> W;
25
26     cout << "No of items " << endl;
27     cin >> n;
28
29     int value[n];
30     int wt[n];
31
32     for (int i = 0; i < n; i++)
33     {
34         cout << "Enter the weight of that item " << i << " " << endl;
35         cin >> wt[i];
36         cout << "Enter the value of the items " << i << " " << endl;
37         cin >> value[i];
38     }
39
40
41     cout << knapsack(value, wt, n, W);
42     return 0;
```

```
File Edit Selection View Go Run Terminal Help 01Knapsack.cpp - DAA-practical - Visual Studio Code
01Knapsack.cpp X
Practical-6 > C++ 01Knapsack.cpp > ...
24     cin >> W;
25
26     cout << "No of items " << endl;
27     cin >> n;
28
29     int value[n];
30     int wt[n];
31
32     for (int i = 0; i < n; i++)
33     {
34         cout << "Enter the weight of that item " << i << " " << endl;
35         cin >> wt[i];
36         cout << "Enter the value of the items " << i << " " << endl;
37         cin >> value[i];
38     }
39
40
41     cout << knapsack(value, wt, n, W);
42     return 0;
43 }
```

```
File Edit Selection View Go Run Terminal Help 01Knapsack.cpp - DAA-practical - Visual Studio Code
PROBLEMS 4 OUTPUT DEBUG CONSOLE TERMINAL
PS E:\College-Work\Sixth-Semester\DAA-practical\Practical-6> cd "e:\College-Work\Sixth-Semester\DAA-practical\Practical-6" ; if ($?) {
g++ 01Knapsack.cpp -o 01Knapsack } ; if ($?) { .\01Knapsack }
Enter the capacity of the knapsack
50
No of items
5
Enter the weight of that item 0
10
Enter the value of the items 0
50
Enter the weight of that item 1
35
Enter the value of the items 1
60
Enter the weight of that item 2
25
Enter the value of the items 2
55
Enter the weight of that item 3
40
Enter the value of the items 3
70
Enter the weight of that item 4
20
Enter the value of the items 4
45
120
PS E:\College-Work\Sixth-Semester\DAA-practical\Practical-6> |
```