



0/1 Knapsack

Problem

Submissions

Leaderboard

Discussions

It's a rough time to be a jewel thief. You're planning to break into this jewelry store, but as always, your burlap sack is limited in how much weight it can carry. Each jewel has a weight and a value, and your sack cannot carry more weight than its capacity. You want to maximize the amount of value you can carry out of the jewelry store.

Grading

Correctness & Efficiency: 80%

- Passes 41 test cases: 80%
- Passes 30 to 40 test cases: 60%
- Passes 20 to 29 test cases: 40%
- Passes 1 to 19 test cases: 20%
- Passes 0 test cases: 0%

Code Quality: 20%

Input Format

Each test case begins with two integers N and C , the number of jewels and the capacity of your sack. N lines follow, each containing two space separated integers V_i and W_i , the value and weight of the jewel.

Constraints

$$1 \leq N \leq 1000$$

$$1 \leq C \leq 1000$$

$$1 \leq V_i \leq 10000$$

$$1 \leq W_i \leq 10000$$

Output Format

For each test case, print a single line of output: The maximum value you can steal.

Sample Input 0

```
4 10
10 5
40 4
30 6
50 3
```

Sample Output 0

90

Explanation 0

Take jewels 2 and 4. The value is 90 and the total weight is 7, which fits easily into your bag of size 10.

[f](#) [t](#) [in](#)

Submissions: 4

Max Score: 10

Difficulty: Medium

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C++



```
1 #include <cmath>
2 #include <cstdio>
3 #include <vector>
4 #include <iostream>
5 #include <algorithm>
6 using namespace std;
7
8
9 int main() {
10     /* Enter your code here. Read input from STDIN. Print output to STDOUT */
11     return 0;
12 }
13
```

Line: 1 Col: 1

[Upload Code as File](#)

☐ Test against custom input

Run Code

Submit Code