Knapsack Packing

This question is graded for 1.5%!

Statement

Fluffy the Hamster is at a shopping mall. He is participating in a special promotion, called "Pack As Many Items As You Can In A Knapsack And Get Them All For Free!".

There are N items on display, numbered from 1 to N. Item i is valued at $\$V_i$ and has weight W_i kg.

To participate in the promotion, Fluffy must use a special knapsack to pack the items he wishes to win. The knapsack can hold at most C items. Also, as the knapsack is made of a special material, the difference between the weight of the heaviest item and the lightest item selected by Fluffy must not be greater than D kg.

Help Fluffy compute what is the maximum total value of items he can win from the promotion.

Constraints

- $1 \leq N, C \leq 2 \cdot 10^5$
- $1 \leq D, V_i, W_i \leq 3 \cdot 10^9$

Input

The first line of input will contain three integers N, C and D.

The next Q lines of input will each contain two integers, W_i and V_i.

Output

Output a single integer, the maximum total value of items that Fluffy can win from the promotion.

Examples

Sample Input	Expected Output

5 2 1
2 4
1 2
3 5
5 3
4 5
	10

Notes

1. A skeleton file has been given to help you. You should not create a new file or rename the file provided. You should develop your program using this skeleton file.
2. You are free to define your own helper methods and classes (or remove existing ones) if it is suitable but you must put all the new classes, if any, in the same skeleton file provided.

Skeleton File

You are given the skeleton file `Knapsack.java`. You should see the following contents when you open the file:

```
/**
 * Name          :
 * Matric. No    :
*/

import java.util.*;

public class Knapsack {
    private void run() {
    }

    public static void main(String args[]) {
        Knapsack runner = new Knapsack();
        runner.run();
    }
}
```