

Crop Harvesting

Statement

Fluffy the Hamster is running a farm. His farm consists of n cornfields, numbered from 0 to $n - 1$. The cornfields are connected by m different roads, with each road connecting two different cornfields u_i and v_i . The i th road takes t_i time for Fluffy's tractor to traverse. Fluffy also has a farmhouse located at cornfield 0.

It's harvesting season, and so Fluffy wishes to harvest his corn. There are c bushels of corn that are available for harvesting. The i th bushel is located at cornfield f_i , and must be harvested by time h_i for it to be considered fresh. Fluffy's tractor can only transport one bushel of corn at any time. Hence, to harvest a bushel of corn, Fluffy must drive his tractor to the target cornfield, load up the bushel of corn that he wishes to harvest, then transport it back to the farmhouse, before he can harvest another bushel of corn.

Help Fluffy compute the maximum number of fresh bushels of corn that he can harvest.

Constraints

- $1 \leq n \leq 10^5$
- $0 \leq m \leq 10^5$
- $0 \leq c \leq n$
- $0 \leq u_i \leq v_i \leq f_i \leq n - 1$
- $0 \leq t_i, h_i \leq 10^9$

Input

The first line of input will contain three integers n , m , c .

The next m lines of input will each contain three integers, u_i , v_i , t_i .

The next c lines of input will each contain two integers, f_i , h_i .

Output

Print a single integer, the maximum number of fresh bushels of corn Fluffy can harvest.

Examples

Sample Input	Expected Output
7 8 3 0 1 3 0 2 1 1 4 2 2 4 1 1 3 2 3 4 2 4 5 1 4 6 3 3 14 5 8 6 22	3

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 `Harvest.java`. You should see the following contents when you open the file:

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

import java.util.*;

public class Harvest {
    private void run() {
        // implement your "main" method here
    }

    public static void main(String args[]) {
```

```
Harvest runner = new Harvest();  
runner.run();  
}  
}
```