Begin: 2021-10-10 12:30 CST

NCPC Simulation Day2

End: 2021-10-10 17:30 CST

Elapsed: 05:06:29

Running

Remaining: -1:53:30

Overview | Problem | Status | Rank (05:00:00) | 0 Comments

Setting | ☆Favorite

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Status | My Status

Time limit

2000 ms

Memory limit

262144 kB

H - Building Forest

An *oriented weighted forest* is an acyclic weighted digraph in which from each vertex at most one edge goes.

The *root* of vertex v of an oriented weighted forest is a vertex from which no edge goes and which can be reached from vertex v moving along the edges of the weighted oriented forest. We denote the root of vertex v as $root(v)$.

The *depth* of vertex v is the sum of weights of paths passing from the vertex v t[...] root. Let's denote the depth of the vertex v as $depth(v)$.

Let's consider the process of constructing a weighted directed forest. Initially, forest does not contain vertices. Vertices are added sequentially one by one. Ov[...] there are n performed operations of adding. The i-th ($i > 0$) adding operation is described by a set of numbers $(k,\ v_1,\ x_1,\ v_2,\ x_2,\ \dots,\ v_k,\ x_k)$ and means that we should add vertex number i and k edges to the graph: an edge from vertex $root(v_1)$ to vertex i with weight $depth(v_1) + x_1$, an edge from vertex $root(v_2)$ to vertex i with weight $depth(v_2) + x_2$ and so on. If $k = 0$, then only vertex i is added to the graph, there are no added edges.

Your task is like this: given the operations of adding vertices, calculate the sum of the weights of all edges of the forest, resulting after the application of all defined operations, modulo 1000000007 $(10^9 + 7)$.

Input

The first line contains a single integer n $(1 \le n \le 10^5)$ — the number of operations of adding a vertex.

Next n lines contain descriptions of the operations, the i-th line contains the description of the operation of adding the i-th vertex in the following format: the first number of a line is an integer k $(0 \le k \le i - 1)$, then follow $2k$ space-separated integers: $v_1, x_1, v_2, x_2, \dots, v_k, x_k$ $(1 \le v_j \le i - 1, |x_j| \le 10^9)$.

The operations are given in the order, in which they should be applied to the graph. It is guaranteed that sum k of all operations does not exceed 10^5, also that applying operations of adding vertexes does not result in loops and multiple edges.

Output

Print a single number — the sum of weights of all edges of the resulting graph modulo 1000000007 $(10^9 + 7)$.

Examples

Input

```
6
0
0
1 2 1
2 1 5 2 2
1 1 2
```

```
1 3 4
```

Output

```
30
```

Input

```
5
0
1 1 5
0
0
2 3 1 4 3
```

Output

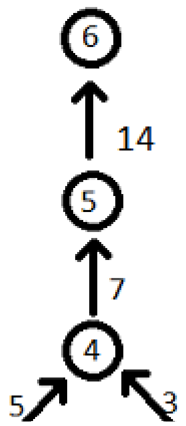
```
9
```

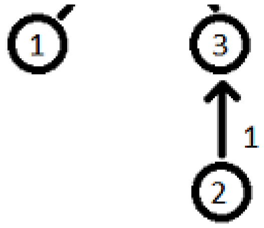
Note

Conside the first sample:

1. Vertex 1 is added. $k = 0$, thus no edges are added.
2. Vertex 2 is added. $k = 0$, thus no edges are added.
3. Vertex 3 is added. $k = 1$. $v_1 = 2, x_1 = 1$. Edge from vertex $root(2) = 2$ to vertex 3 with weight $depth(2) + x_1 = 0 + 1 = 1$ is added.
4. Vertex 4 is added. $k = 2$. $v_1 = 1, x_1 = 5$. Edge from vertex $root(1) = 1$ to vertex 4 with weight $depth(1) + x_1 = 0 + 5 = 5$ is added. $v_2 = 2, x_2 = 2$. Edge from vertex $root(2) = 3$ to vertex 4 with weight $depth(2) + x_1 = 1 + 2 = 3$ is added.
5. Vertex 5 is added. $k = 1$. $v_1 = 1, x_1 = 2$. Edge from vertex $root(1) = 4$ to vertex 5 with weight $depth(1) + x_1 = 5 + 2 = 7$ is added.
6. Vertex 6 is added. $k = 1$. $v_1 = 3, x_1 = 4$. Edge from vertex $root(3) = 5$ to vertex 6 with weight $depth(3) + x_1 = 10 + 4 = 14$ is added.

The resulting graph is shown on the pictore below:




1
3
1
2