Shopee Programming Contest #2

LIVE INVITE ONLY ACCESS

Jul 25, 2020, 02:00 PM CST - Jul 25, 2020, 05:15 PM CST

03 : 13 : 29
HRS MIN SEC

Number Tree

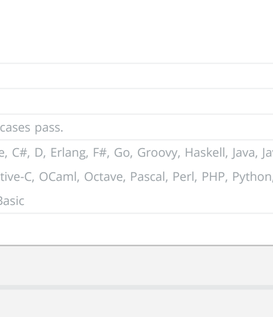
Max. score: 30

Your colleague Alice came up with an interesting puzzle, and discussed with you to find out the solution together.

The puzzle is in the form of an undirected tree graph with **N** nodes, with the following characteristics:

- Each nodes are given a number from 1 to **N**
- Each edges have a single digit integer written in it

An example of this tree would be the following picture:



The value of a path was defined as the concatenation of the number written in the edges of the path, starting from the node with lower number. For example, in the example above, the value from node 2 to node 3 is 35, and value from node 2 to node 4 is 356. Then, the puzzle is calcuating the sum of value from each possible path in the tree.

Can you write a program to solve this puzzle?

Input

The first line contains 1 integer **N** ($1 \le N \le 100{,}000$), denoting the number of nodes.

The next **N**-1 line contains U_i V_i C_i ($1 \le U_i, V_i \le N$, $0 \le C_i \le 9$), denoting an edge between node U_i and node V_i which has number C_i written in it. It is guaranteed that the given graph is a tree graph.

Output

One line containing a single integer, the answer of this puzzle. Since this number can be very large, output its value modulo 10^9+7.

SAMPLE INPUT	SAMPLE OUTPUT
4 1 2 3 1 3 5 3 4 6	461

Explanation

The tree corresponds to the tree given in the description.

Below are all the possible values:

1. From node 1 to node 2 = 3
2. From node 1 to node 3 = 5
3. From node 1 to node 4 = 56
4. From node 2 to node 3 = 35
5. From node 2 to node 4 = 356
6. From node 3 to node 4 = 6

The sum of all of them is 461.

Time Limit:	5.0 sec(s) for each input file.
Memory Limit:	256 MB
Source Limit:	1024 KB
Marking Scheme:	Score is assigned when all the testcases pass.
Allowed Languages:	Bash, C, C++, C++14, C++17, Clojure, C#, D, Erlang, F#, Go, Groovy, Haskell, Java, Java 8, Java 14, JavaScript(Rhino), JavaScript(Node.js), Julia, Kotlin, Lisp, Lisp (SBCL), Lua, Objective-C, OCaml, Octave, Pascal, Perl, PHP, Python, Python 3, Python 3.8, R(RScript), Racket, Ruby, Rust, Scala, Swift-4.1, Swift, TypeScript, Visual Basic

RECENT SUBMISSIONS

DEVELOPERS	RESULT	LANGUAGE

View All

CODE EDITOR

Save C (gcc 5.4.0)

```c
/*
// Sample code to perform I/O:
#include <stdio.h>

int main(){
    int num;
    scanf("%d", &num);                          // Reading input from STDIN
    printf("Input number is %d.\n", num);       // Writing output to STDOUT
}

// Warning: Printing unwanted or ill-formatted data to output will cause the test cases
to fail
*/

// Write your code here

```

1:1 vscode

Provide custom input

COMPILE & TEST SUBMIT

Tip: You can submit any number of times you want. Your best submission is considered for computing total score.

Your Rating:

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