liding Champion

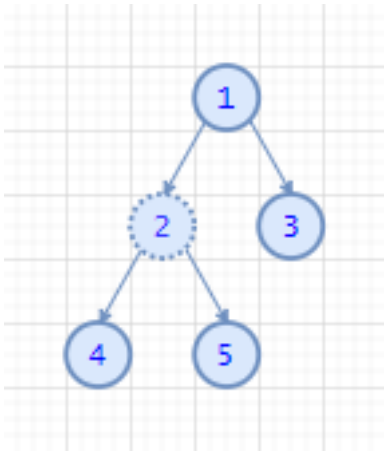
Input file:	`standard input`
Output file:	`standard output`
Time limit:	3 seconds
Memory limit:	512 megabytes

Outrider Amber reporting for duty! Just say the word if you ever need my help!

—Amber

Amber is a perky and straightforward girl. Her amazing mastery of the glider has made her a three-time winner of the Gliding Championship in Mondstadt. As a rising star within the Knights of Favonius, Amber is always ready for any challenging task.

Now, Amber is planning the routes of the new Gliding Challenge in Mondstadt. Mondstadt can be represented by a rooted tree with n nodes as buildings and $n-1$ edges as roads, and the root is node 1. In the Gliding Challenge in this year, a legal gliding routes should begin from the root, go along the road, end at a leave, and don't pass through a road more than once. For example, in the following picture, $1 \to 3$, $1 \to 2 \to 4$ and $1 \to 2 \to 5$ are legal routes; $1 \to 2$ and $1 \to 3 \to 1 \to 3$ are not.



As an organizer, Amber can set some nodes as bonus nodes while others not. When a challenger flies over a bonus node, he gets a bonus. In order to attract more challengers, Amber wants to set as many bonus nodes as possible, but to be fair, there should be as many bonus nodes on each legal route. Now, Amber wants to calculate the number of ways to set bonus nodes to satisfy the above constraints. As the result can be very large, you should output the answer modulo 998244353.

Two ways are considered different if a node is bonus node in one way when it's not bonus node in another way.

Input

The first line contains a single integer n ($2 \le n \le 10^6$) — the size of Mondstadt.

The i-th line in following $n-1$ lines contains two integers u_i, v_i ($1 \le u, v \le n$, $u_i \ne v_i$), which means there is a road between node u_i and node v_i in Mondstadt.

It is guaranteed the given input forms a tree.

Output

Output a single integer — the number of the ways to set bonus nodes to satisfy all constraints modulo 998244353.

Examples

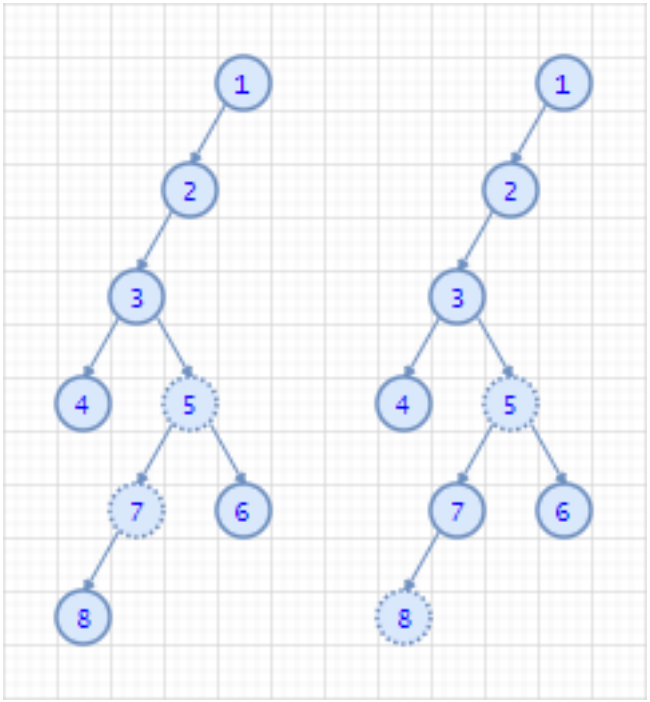
standard input	standard output
5 1 2 1 3 2 4 2 5	1
8 1 2 2 3 3 4 3 5 5 6 5 7 7 8	2

Note

We use circles of full line to represent bonus nodes and circles of dotted line to represent normal nodes.

The picture for the first example is shown in statement.

In the second example, there are 2 ways as following:



Recall that **two ways are considered different if a node is bonus node in one way when it's not bonus node in another way.**

Amber is described as an "exemplary of justice" by Kaeya. A righteous and accomplished knight, she fulfills her duties and does things by the Knights of Favonius handbook. She is as charismatic as she is kind, being able to see others' efforts to turn over a new leaf. Cheerful and friendly, Amber has no problem talking to strangers as if she's already acquainted with them. She is passionate in all things she does, be it when it comes to helping others as an Outrider or taking out hilichurl camps.