

# Edge Groups

Input file:            **standard input**  
Output file:           **standard output**  
Time limit:            1 second  
Memory limit:         256 megabytes

Given an undirected connected graph of  $n$  vertices and  $n - 1$  edges, where  $n$  is guaranteed to be odd. You want to divide all the  $n - 1$  edges to  $\frac{n-1}{2}$  groups under following constraints:

- There are exactly 2 edges in each group
- The 2 edges in the same group share a common vertex

Determine the number of valid dividing schemes modulo 998244353. Two schemes are considered different if there are 2 edges that are in the same group in one scheme but not in the same group in the other scheme.

## Input

The first line contains one integer  $n$  ( $3 \leq n \leq 10^5$ ), denoting the number of vertices.

Following  $n - 1$  lines each contains two integers  $u, v$  ( $1 \leq u < v \leq n$ ), denoting that vertex  $u, v$  are undirectedly connected by an edge.

It is guaranteed that  $n$  is odd and that the given graph is connected.

## Output

Output one line containing one integer, denoting the number of valid dividing schemes modulo 998244353.

## Example

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

## Note

The 3 schemes are:

- The 3 edge groups are  $\{1 \leftrightarrow 2, 1 \leftrightarrow 3\}, \{1 \leftrightarrow 7, 4 \leftrightarrow 7\}, \{5 \leftrightarrow 7, 6 \leftrightarrow 7\}$
- The 3 edge groups are  $\{1 \leftrightarrow 2, 1 \leftrightarrow 3\}, \{1 \leftrightarrow 7, 5 \leftrightarrow 7\}, \{4 \leftrightarrow 7, 6 \leftrightarrow 7\}$
- The 3 edge groups are  $\{1 \leftrightarrow 2, 1 \leftrightarrow 3\}, \{1 \leftrightarrow 7, 6 \leftrightarrow 7\}, \{4 \leftrightarrow 7, 5 \leftrightarrow 7\}$