PT07X - Vertex Cover

#tree (/problems/tag/tree)

You are given an unweighted, undirected tree. Write a program to find a vertex set of minimum size in this tree such that each edge has as least one of its end-points in that set.

Input

The first line of the input file contains one integer *N* --- number of nodes in the tree (0 < *N* <= 100000). Next *N*-1 lines contain *N*-1 edges of that tree --- Each line contains a pair (*u*, *v*) means there is an edge between node *u* and node *v* (1 <= *u*,*v* <= *N*).

Output

Print number of nodes in the satisfied vertex set on one line.

Example 1

```
Input:
3
1 2
1 3

Output:
1

Explanation:
The set can be {1}
```

Example 2

```
Input:
3
1 2
2 3

Output:
1

Explanation:
The set can be {2}
```

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abhi6991 (/users/abhi6991): 2017-09-23 05:40:13
In Cpp not passing graph as a reference resulted in 2 WA.

mamnoonsiam (/users/mamnoonsiam): 2017-07-25 13:07:30
AC in one go :)
easy tree dp... dfs

Submit solution! (/submit/PT07X/)

Added by:	Thanh-Vy Hua (/users/thanhvy)
Date:	2007-03-28
Time limit:	0.194s-1.254s
Source limit:	50000B
Memory limit:	1536MB
Cluster:	Cube (Intel G860) (/cluster
Languages:	All except: ERL JS-RHINO NODEJS PERL6 VB.NET
Resource:	Co-author Amber

Evaluate this problem

Nobody has rated this problem yet, may you'll be the first?

Concept difficulty

easy normal hard extreme

Implementation difficulty

easy normal hard extreme

Recommend!

Own tags


d_skyhawk (/users/d_skyhawk): 2017-04-01 06:45:04
DP+Tree=AC in a go

rishi_07 (/users/rishi_07): 2017-03-31 15:48:01
Finally AC! Nice DP.

cake_is_a_lie (/users/cake_is_a_lie): 2017-03-05 14:44:08
For some reason I understood each vertex needed one neighbour in the output set. That cost me SO many WAs.

siddharth9820 (/users/siddharth9820): 2017-02-19 09:27:54
Isnt it a straight divide and conquer problem?

sina_ss (/users/sina_ss): 2017-02-14 18:03:23
it is so badihi

Last edit: 2017-02-14 18:53:24

vengatesh15 (/users/vengatesh15): 2016-12-23 06:50:41
AC in 1 go :-)


lt (/users/lavee_singh): 2016-11-27 14:51:55
Greedy is failing in very particular cases, while DP is awesome! :D

Last edit: 2016-11-27 14:52:50
kartikay singh (/users/kart123): 2016-06-30 18:05:47
Tried with dp,greedy and maximum matching ... :-D

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