Counting Boolean Parenthesizations

Team ID: 24

Topic: dynamic programming

Description: (文末有**中文敘述**和**提示**,簡短很多)

For solving our problem, you will be given some boolean expressions which are strings consisting of **'true'**, **'false'**, **'and'**, **'or'**, and **'xor'**. Count the numbers of ways to parenthesize each expression such that the boolean value of each string can be true. For example, there are 2 ways to parenthesize **'true and false xor true'** such that the whole string with the parenthesization can be computed as true:

true and false xor true

true and (false xor true)

Therefore, in this example, you should output 2

However, to avoid counting the same parenthesization several times, different parenthesizations with the same order or priority of computing their boolean value should be considered the same one.

For example,

**true and false xor true**

**(true and false xor true)**

**true and (false) xor true**

**(true and false) xor true**

**((true and false)) xor true** are the same parenthesization, which can only be counted as one.

Input:

There’s an integer, N, in the first line.

For the next N lines, there’s a W and a Boolean expression consists of W words (we promise you each line will start and end with a **‘true’** or **‘false’**, and between any two boolean operators there will also be a **‘true’** or **‘false’**)

input sample:

3

5 true and false xor true

3 true and true

9 false or true or true or false xor true

output:

You should output the number of ways to parenthesize each expression such that

the boolean value of each line can be true.

output sample:

2

1

7

Time and Memory Limits:

建丞你來寫

Chinese Description and Hints:

就是，先給你一個整數N，之後的N行每一行都有一個**W**和一串布林運算，**W**會告訴你那串布林運算有幾個元素。對於每一行，輸出有幾種上括號的方法可以讓那行的布林運算等於‘true’

另外，如果有不同上括號的方法導致了同一種運算時的順序，那這些方法總共只能算是同一種。

所以，**true and false xor true** ，**(true and false xor true)，(true) and (false) xor true，**

**(true and false) xor true**，**((true and false)) xor true**

都只能算是同一種上括號的方法

提示就是，谷歌可以幫助你解這題！