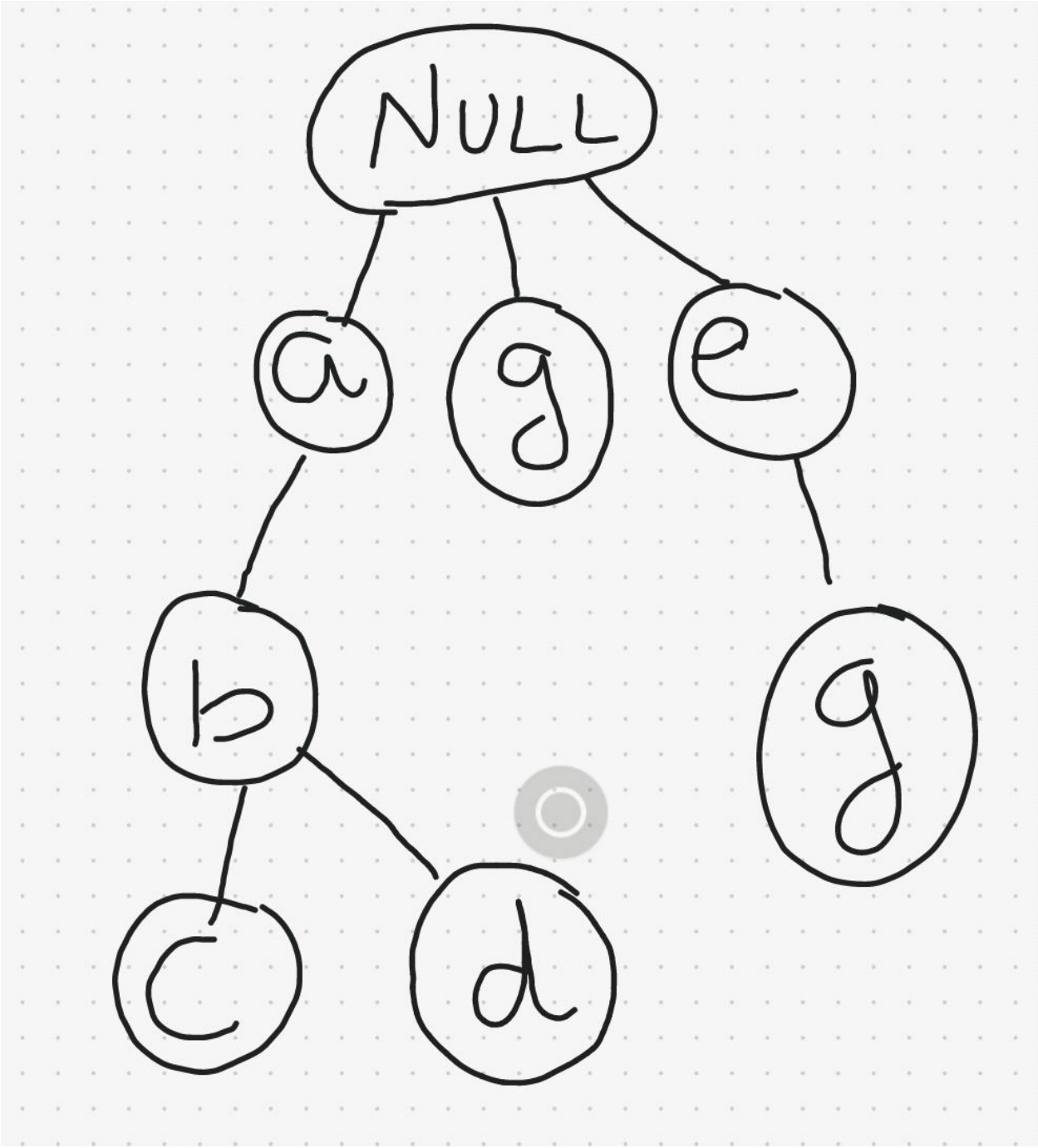
Optimized String

Arun and his friends has discovered an optimal way of storing the strings using a structure similar to Tree. This method will save a large amount of space for them. Suppose we have to store the strings - a, ab, abc, g, e, eg, bd; Then the structure will look like this



You have to find how many nodes will be used will be used to construct this structure from given set of strings

Constraints:

0 <= N <= 10^5

Length of each string <= 30

Input Format:

First line of the test case will be the number of strings m .

Then on next N subsequent lines you will be given a string .

Output Format:

For each query of type 1 output the desired value.

Sample Input

7
a
ab
abc
g
e
eg
bd

Sample Output

9

Difficulty

Easy