Problem C: Video Game Combos

Bessie is playing a video game! In the game, the three letters 'A', 'B', and 'C' are the only valid buttons. Bessie may press the buttons in any order she likes; however, there are only N distinct combos possible (1 <= N <= 20). Combo i is represented as a string S_i which has a length between 1 and 15 and contains only the letters 'A', 'B', and 'C'.

Whenever Bessie presses a combination of letters that matches with a combo, she gets one point for the combo. Combos may overlap with each other or even finish at the same time! For example if N = 3 and the three possible combos are "ABA", "CB", and "ABACB", and Bessie presses "ABACB", she will end with 3 points. Bessie may score points for a single combo more than once.

Bessie of course wants to earn points as quickly as possible. If she presses exactly K buttons (1 <= K <= 1,000), what is the maximum number of points she can earn?

INPUT FORMAT:

* Line 1: Two space-separated integers: N and K.
* Lines 2..N+1: Line i+1 contains only the string S_i, representing combo i.

SAMPLE INPUT:

3 7
ABA
CB
ABACB

OUTPUT FORMAT:

* Line 1: A single integer, the maximum number of points Bessie can obtain.

SAMPLE OUTPUT:

4

OUTPUT DETAILS:

The optimal sequence of buttons in this case is ABACBCB, which gives 4 points—1 from ABA, 1 from ABACB, and 2 from CB.