

D. A Lot of Games

time limit per test: 1 second

memory limit per test: 256 megabytes

input: standard input

output: standard output

Andrew, Fedor and Alex are inventive guys. Now they invent the game with strings for two players.

Given a group of n non-empty strings. During the game two players build the word together, initially the word is empty. The players move in turns. On his step player must add a single letter in the end of the word, the resulting word must be prefix of at least one string from the group. A player loses if he cannot move.

Andrew and Alex decided to play this game k times. The player who is the loser of the i -th game makes the first move in the $(i + 1)$ -th game. Guys decided that the winner of all games is the player who wins the last (k -th) game. Andrew and Alex already started the game. Fedor wants to know who wins the game if both players will play optimally. Help him.

Input

The first line contains two integers, n and k ($1 \leq n \leq 10^5$; $1 \leq k \leq 10^9$).

Each of the next n lines contains a single non-empty string from the given group. The total length of all strings from the group doesn't exceed 10^5 . Each string of the group consists only of lowercase English letters.

Output

If the player who moves first wins, print "First", otherwise print "Second" (without the quotes).

Examples

input
2 3 a b
output
First

input
3 1 a b c
output
First

input
1 2 ab
output
Second