You are given a string s containing lowercase English letters, and a matrix shift, where shift[i] = [direction, amount]:

* direction can be 0 (for left shift) or 1 (for right shift).
* amount is the amount by which string s is to be shifted.
* A left shift by 1 means remove the first character of s and append it to the end.
* Similarly, a right shift by 1 means remove the last character of s and add it to the beginning.

Return the final string after all operations.

**Example 1:**

**Input:** s = "abc", shift = [[0,1],[1,2]]

**Output:** "cab"

**Explanation:**

[0,1] means shift to left by 1. "abc" -> "bca"

[1,2] means shift to right by 2. "bca" -> "cab"

**Example 2:**

**Input:** s = "abcdefg", shift = [[1,1],[1,1],[0,2],[1,3]]

**Output:** "efgabcd"

**Explanation:**

[1,1] means shift to right by 1. "abcdefg" -> "gabcdef"

[1,1] means shift to right by 1. "gabcdef" -> "fgabcde"

[0,2] means shift to left by 2. "fgabcde" -> "abcdefg"

[1,3] means shift to right by 3. "abcdefg" -> "efgabcd"

**Constraints:**

* 1 <= s.length <= 100
* s only contains lower case English letters.
* 1 <= shift.length <= 100
* shift[i].length == 2
* 0 <= shift[i][0] <= 1
* 0 <= shift[i][1] <= 100