1h 21m left

4. Black Girls Code Contest

ALL

Black Girls Code is a nonprofit that seeks to introduce a new generation of young Black girls to technology and programming. To participate in an upcoming HackerRank challenge, participants from Black Girls Code are asked to solve the following challenge. Your task is to solve this below given challenge to ensure its correctness.

Given an integer *k* and a matrix *cost* of size *t x t*. You have to construct a string *s* consisting of the first *t* lowercase English letters such that the total cost of *s* is exactly *k.* It is guaranteed that there exists at least one string that satisfies the given conditions. Among all possible string *s,* you need to report the string which is lexicographically smallest.

Specifically, the cost of having the i^{th} character followed by the j^{th} character of the English alphabet is equal to *cost[i][j]*.
For example, the cost of having 'a' followed by 'a' is denoted by *cost[0][0]*, and the cost of having 'b' followed by 'c' is denoted by *cost[1][3]*.

The total cost of a string *s* is the total cost of two consecutive characters in *s*.
For example, the matrix *cost* is
[1 2]
[3 4],
and the string *s* is "abba", then we have

- the cost of having 'a' followed by 'b' is *cost[0][1] = 2*
- the cost of having 'b' followed by 'b' is *cost[0][1] = 4*
- the cost of having 'b' followed by 'a' is *cost[0][1] = 3*

In total, the cost of the string "abba" is 2 + 4 + 3 = 9.

Note: A string *s* is lexicographically smaller than string *t* if *s* comes before *t* in dictionary order. For example, "abb" is lexicographically smaller than "abbb", and "amiiii" is lexicographically smaller than "ccc".

Example

Considered, for example, *k* is 3, *t* is 2, the matrix *cost* is
[2 1]
[3 4]
There are two strings that its total cost is 3. Those strings are:

- "aab"
- "ba"

However, we choose "aab" because "aab" is lexicographically smaller than "ba".

Function Description

Complete the function *constructString* in the editor below. The function should return a string that satisfies all the aforementioned conditions.
constructString has the following parameters:

- *k*: The total cost of *s*
- *cost*: A matrix size *t*t* denotes the table of cost.