

SAC '22 Code Challenge 4 P2 - Obligatory String Problem

Time limit: 1.0s **Memory limit:** 256M

After grading too many tests, Mr. DeMello decided to start grading strings instead.

Mr. DeMello has the correct 4-letter, lowercase string, C , which he will use to grade the other strings.

Now, Mr. DeMello considers all possible 4-letter, lowercase strings and grades them by finding the minimum distance between each letter in the string (e.g., `a` and `z` have a distance of 1), summing it up for their total score.

Since Mr. DeMello knows all his students will get a score of at most K , can you tell him all the possible strings that his students can get?

Input Specification

The first line will contain K ($0 \leq K \leq 52$), the maximum score his students can achieve.

The second line will contain C , the intended 4-letter string.

Output Specification

Output all possible strings in sorted alphabetical order (e.g., `abc` should appear before `bac`).

Sample Input

```
1
abcd
```

Sample Output

```
aacd
abbd
abcc
abcd
abce
abdd
accd
bbcd
zbcd
```