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Diverse Strings



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In this challenge, we introduce the concept of assorted and diversed strings.

- A string s is called *assorted* if no two distinct letters in s appear the same number of times. For example, aacbcc is assorted, but aabaccab is not assorted, since s and s appears exactly s times.
- A string **s** is called *diverse* if it is assorted and all its prefixes and suffixes are assorted. For example, aabaa is diverse, but aaba is not diverse, since the suffix ba is not assorted.

Given n and k, find the lexicographically smallest *diverse* string of length n with exactly k distinct letters. Your output string can only contain lowercase English letters. If no such string exists, output NONE.

Input Format

The first line of input contains q, the number of queries.

Each query consists of a single line containing two space-separated integers $m{n}$ and $m{k}$.

Constraints

- $1 \le q \le 60$
- $1 \le n \le 10^5$
- $1 \le k \le 26$
- $n \geq k$

Output Format

For each case, output a single line containing the required diverse string, or the string NONE if no such string exists.

Sample Input 0

3

1 1

2 2

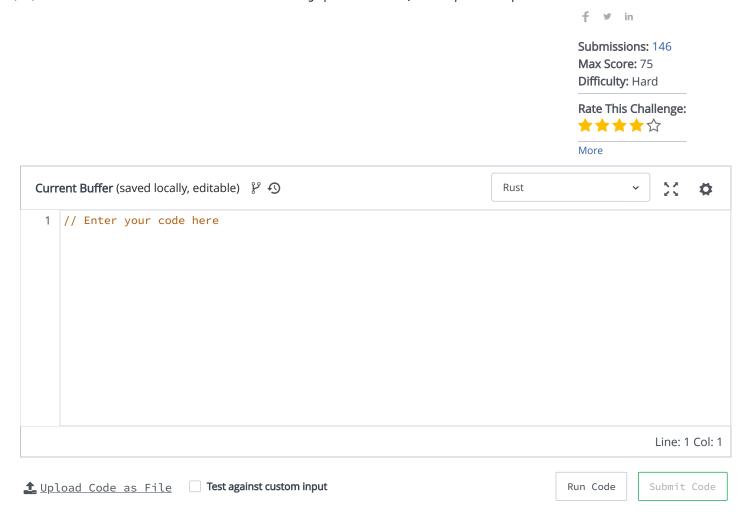
5 2

Sample Output 0

a

NONE

aabaa



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