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# Diverse Strings

locked

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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 `b` and `c` each appears exactly **2** 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  $n$  and  $k$ .

## Constraints

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

## 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
```

Submissions: 146



Max Score: 75

Difficulty: Hard

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Rust  

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// Enter your code here

Line: 1 Col: 1

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Run Code

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