Palindrotoponyms

Lea needs a break from studying number theory, polynomials in modular arithmetic, and recurrent sequences. So she reads a fantasy book and gets impressed by the fictional place names like “Taumatawhakatangihangakoauauotamateapokaiwhenuakitanatahu” or “Llanfairpwllgwyngyllgogerychwyrndrobwllllantysiliogogogoch”, and even longer ones. She suddenly wonders whether some of these place names also contain long palindromes inside. Naturally, now she needs a program to check!

And wouldn’t it be nice if Lea could practice what she was studying?

Input

The first line of the input contains an integer t. t test cases follow, each of them separated by a blank line.

Each test case starts with a line containing two integers, n and p. The first integer, n, specifies the length of the place name. The second one, p, specifies the minimal length of a palindrome to find. A line, containing the place name s follows. To simplify search for palindromes, the name is written using only lower case letters.

Output

For each test case where a palindrome is found, print a line containing “Case #i: a b”, where i is the number of the test case starting from 1, and a and b are the the starting and the final positions of a long palindrome inside the name (position numbers start from 1). If no such palindrome is contained in the name, print a line containing “Case #i: none”.

Constraints

- $1 \leq t \leq 100$
- $1 \leq p, n \leq 10^5$
- The total length of all the words is at most 10^6

Sample Input 1

```
2
15 4
ammerseestrasse

19 4
garchingbeimuenchen
```

Sample Output 1

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Case #1: 6 9
Case #2: none
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