Alphabetti

After tidying her room, Tina has found another box full of wooden blocks. This time, the blocks are each inscribed with a letter of the alphabet.

Tina loves palindromes (her surname is Anit after all), so she always arranges her blocks so they read the same forwards and backwards.

Tina considers all of the possible palindromes that she can make with a selection of her blocks. She wants to know what the **i**th palindrome is in lexicographic order.

INPUT   You will be given 2 integers, **n** and **i**, followed by a string of **n** uppercase letters. Tina wishes to know the **i**th palindrome - in lexicographic order - that can be made from a selection of the **n** blocks. You will always be given a valid input.

$1 \leq \mathbf{n} \leq 35$
$1 \leq \mathbf{i} < 2^{64}$

OUTPUT   Output a string, the **i**th palindrome - in lexicographic order - that can be made from a selection of the **n** blocks.

SAMPLE   For example, suppose Tina has the blocks `AAABBC`. She can make the following palindromes, given in lexicographic order: `A AA AAA ABA ABABA ABBA ABCBA ACA B BAB BAAB BAAAB BACAB BB BCB C`.

INPUT	OUTPUT
6 7 CAABAB	ABCBA
10 50 CDEFABFBDE	BFDADFB
20 64660 AAAAABBBBBCCCCCDDEEE	EAE