**FBI Tree**

**Problem Description**

We can classify strings consisting of “0” and “1” into three categories: all “0” are called B strings, all “1” are called I strings, and strings containing both “0” and “1” are called F strings.

FBI tree is a binary tree1, and its node types also include F node, B node and I node. An FBI tree T can be constructed from a string S of “01” with a length of 2N, and the recursive construction method is as follows:

1) The root node of T is R, and its type is the same as that of string S;

2) If the length of string S is greater than 1, separate the string S from the middle and divide it into equal length left and right substrings S1 and S2; the left subtree T1 of R is constructed from the left substring S1, and the right subtree T2 of R is constructed from the right substring S2.

Now given a “01” string of length 2N, construct an FBI tree using the above construction method and output its post-order traversal2 sequence.

**Input**

The first line of the input file is an integer N(0≤N≤10), and the second line is a “01” string of length 2N.

**Output**

The output file contains a line that contains only one string, which is the post-traversal sequence of the FBI tree.

**Sample Input**

3

10001011

**Sample Output**

IBFBBBFIBFIIIFF

**Data Size**

For 40% of data, N≤2;

For all of the data, N≤10.