

PROBLEMS SUBMIT STATUS STANDINGS CUSTOM TEST

## B. Equal XOR

time limit per test: 1 second  
memory limit per test: 256 megabytes

You are given an array  $a$  of length  $2n$ , consisting of each integer from 1 to  $n$  exactly **twice**.

You are also given an integer  $k$  ( $1 \leq k \leq \lfloor \frac{n}{2} \rfloor$ ).

You need to find two arrays  $l$  and  $r$  each of length  $2k$  such that:

- $l$  is a subset<sup>†</sup> of  $[a_1, a_2, \dots, a_n]$
- $r$  is a subset of  $[a_{n+1}, a_{n+2}, \dots, a_{2n}]$
- bitwise XOR of elements of  $l$  is equal to the bitwise XOR of elements of  $r$ ; in other words,  $l_1 \oplus l_2 \oplus \dots \oplus l_{2k} = r_1 \oplus r_2 \oplus \dots \oplus r_{2k}$

It can be proved that at least one pair of  $l$  and  $r$  always exists. If there are multiple solutions, you may output any one of them.

<sup>†</sup> A sequence  $x$  is a subset of a sequence  $y$  if  $x$  can be obtained by deleting several (possibly none or all) elements of  $y$  and rearranging the elements in any order. For example,  $[3, 1, 2, 1]$ ,  $[1, 2, 3]$ ,  $[1, 1]$  and  $[3, 2]$  are subsets of  $[1, 1, 2, 3]$  but  $[4]$  and  $[2, 2]$  are not subsets of  $[1, 1, 2, 3]$ .

### Input

Each test contains multiple test cases. The first line contains a single integer  $t$  ( $1 \leq t \leq 5000$ ) — the number of test cases. The description of the test cases follows.

The first line of each test case contains 2 integers  $n$  and  $k$  ( $2 \leq n \leq 5 \cdot 10^4$ ,  $1 \leq k \leq \lfloor \frac{n}{2} \rfloor$ ).

The second line contains  $2n$  integers  $a_1, a_2, \dots, a_{2n}$  ( $1 \leq a_i \leq n$ ). It is guaranteed that every integer from 1 to  $n$  occurs exactly twice in  $a$ .

It is guaranteed that the sum of  $n$  over all test cases does not exceed  $5 \cdot 10^4$ .

### Output

For each test case, output two lines.

On the first line of output, output  $2k$  integers  $l_1, l_2, \dots, l_{2k}$ .

On the second line of output, output  $2k$  integers  $r_1, r_2, \dots, r_{2k}$ .

If there are multiple solutions, you may output any one of them.

### Example

input	Copy
4 2 1 1 2 2 1 6 1 6 4 2 1 2 3 1 6 3 5 5 4 4 1 1 2 3 4 1 2 3 4 6 2 5 1 3 3 5 1 2 6 4 6 4 2	
output	Copy
2 1 2 1 6 4 1 3 1 2 1 2 5 1 3 3 6 4 2 4	

### Note

In the first test case, we choose  $l = [2, 1]$  and  $r = [2, 1]$ .  $[2, 1]$  is a subset of  $[a_1, a_2]$  and  $[2, 1]$  is a subset of  $[a_3, a_4]$ , and  $2 \oplus 1 = 2 \oplus 1 = 3$ .

In the second test case,  $6 \oplus 4 = 1 \oplus 3 = 2$ .

Codeforces Round 934 (Div. 2)

Finished

Practice

→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest

→ Submit?

Language: GNU G++20 13.2 (64 bit, win)

Choose file: Choose File No file chosen

Submit

→ Last submissions

Submission	Time	Verdict
<a href="#">262627299</a>	May/26/2024 00:34	Accepted

→ Problem tags

bitmasks constructive algorithms

\*1100

No tag edit access

→ Contest materials

Announcement (en)

Tutorial (en)