Permutation Recovery

Input file:	`standard input`
Output file:	`standard output`
Time limit:	2 seconds
Memory limit:	256 megabytes

There are two hidden permutations a and b of size n.

A permutation of length n is an array consisting of n distinct integers from 1 to n in arbitrary order. For example, $[2, 3, 1, 5, 4]$ is a permutation, but $[1, 2, 2]$ is not a permutation (2 appears twice in the array), and $[1, 3, 4]$ is also not a permutation ($n = 3$ but there is 4 in the array).

For each i from 1 to n, you are given the values a_{b_i} and b_{a_i}. Recover any possible permutations a and b, or determine that none exist.

Input

The first line of the input contains a single integer t ($1 \le t \le 10^4$) — the number of test cases. The description of the test cases follows.

The first line of each test case contains a single integer n ($1 \le n \le 2 \cdot 10^5$) — the size of the two permutations.

The second line of each test case contains n integers. The i-th of these is a_{b_i} ($1 \le a_{b_i} \le n$). It is guaranteed that these n integers are distinct.

The third line of each test case contains n integers. The i-th of these is b_{a_i} ($1 \le b_{a_i} \le n$). It is guaranteed that these n integers are distinct.

It is guaranteed that the sum of n across all test cases is at most $2 \cdot 10^5$.

Output

For each test case, the first line of output should contain "`YES`" if there is a solution, and "`NO`" otherwise. You can print this in any case (upper or lower). For example, the strings "`yEs`", "`yes`", "`Yes`", and "`YES`" will be recognized as positive responses.

If you print "`YES`", print two additional lines of output:

The first line should contain n integers $a_1, a_2, \cdots a_n$ ($1 \le a_i \le n$) — a valid permutation a.

The second line should contain n integers $b_1, b_2, \cdots b_n$ ($1 \le b_i \le n$) — a valid permutation b.

If there are multiple solutions, you may print any.

Example

standard input	standard output
6 3 3 1 2 2 3 1 2 1 2 2 1 5 1 2 3 4 5 1 2 3 4 5 1 1 1 6 4 5 1 2 3 6 1 2 3 4 5 6 10 3 7 5 8 9 1 4 10 6 2 7 8 1 5 10 9 2 3 4 6	YES 2 1 3 3 2 1 NO YES 5 4 3 2 1 5 4 3 2 1 YES 1 1 NO YES 8 2 4 6 1 5 10 7 9 3 10 8 6 1 9 5 3 7 4 2

Note

The given solution to the first sample case is $a = [2, 1, 3]$, $b = [3, 2, 1]$. This gives

$$a_{b_1} = a_3 = 3 \qquad a_{b_2} = a_2 = 1 \qquad a_{b_3} = a_1 = 2$$

$$b_{a_1} = b_2 = 2 \qquad b_{a_2} = b_1 = 3 \qquad b_{a_3} = b_3 = 1$$

which matches the input values $a_b = [3, 1, 2]$ and $b_a = [2, 3, 1]$.

In the second sample case, it can be shown that there are no valid permutations a and b.