Problem A
Awesome Arrangement

Time limit: 2 seconds

Memory limit: 512 megabytes

Problem Description

Saiki Kusuo is a high school student with all kinds of psychic powers. One of his most useful abilities is Apport (アポート), which can be used to teleport an object. To do that, he has to first select another object near it and then have the objects swap positions with each other.

Kusuo's favorite food is coffee jellies. There are n pieces of coffee jelly in a row. For each $1 \le i \le n$, the i^{th} jelly is initially placed at position i and has value a_i. All of their values are different. Since Kusuo is a perfectionist, he hopes that the jellies are in a "perfect order": for each $1 \le i \le n$, the jelly at position i should have value b_i instead. The list $\langle b_i \rangle$ is a permutation of $\langle a_i \rangle$.

To achieve that perfect order, Kusuo can perform some moves with Apport. For each move, he can choose an index i ($1 \le i \le n-1$) and swap the jellies at positions i and $i+1$. Whenever he swaps two jellies with values x and y, he has to pay a mana cost $(x+y) \mod k$. As mana is pretty valuable to him (though not more than coffee jellies), he wants to pay as less total mana cost as possible. What is the minimum cost?

Input Format

The first line contains two integers n and k. The second line contains n space-separated integers $a_1, a_2, \ldots, a_n$. The third line contains n space-separated integers $b_1, b_2, \ldots, b_n$.

Output Format

Output an integer denoting the minimum mana cost required to achieve the perfect order.

Technical Specification

- $2 \le n \le 10^5$
- $2 \le k \le 10$
- $0 \le a_i, b_i \le 10^9$
- $\langle a_i \rangle$ and $\langle b_i \rangle$ are permutations of each other, and the values a_i are unique.

Sample Input 1

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5 3
1 2 3 4 5
5 3 1 4 2
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Sample Output 1

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6
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