Task: PSS
Purrfect Scent Schedule

AACPP SuSe 2025 Round 6 Memory: 128MiB 2025.06.24 – 2025.07.01

Dexter the Cat loves exploring new gardens in his free time. Eventually, he came across a garden of a cat lady, who loves to organize taste-testing events for the neighborhood cats. Soon, she'll be hosting a daily "scent trail" event, where each day a different-scented treat (from a set of m unique scents) is left in the garden for curious cats to investigate. The event will be held for n consecutive days, and Dexter received a special "whisker pass" that allows him to join the event every day starting from any day he chooses, but only if he doesn't miss a day. As soon as he skips a day, the pass becomes invalid.

Dexter has sniffed around the local meowborhood gossip and rated each of the m scents based on how much he likes them. He wants to use his whisker pass to maximize the total enjoyment of the scents he experiences. However, Dexter is a picky cat and has a no-re-sniff paw-licy. While he can endure it, repeating a scent not only bores him, but also ruins the fragile memory of his first sniff. In other words, on repeated tasting, Dexter loses all enjoyment from a scent.

Given the scedule of scented treats for each of the n days, Dexter wants to choose the best starting day so that he can enjoy the most exciting, non-repeating meow-mentous sniffathon possible.

Input

The first line of input contains two integers n and m, which specify the number of days and of unique scents, respectively. The scented treats are numbered from 1 to m.

In the second line, there is a sequence of n integers, $f_1, f_2, ..., f_n$, describing the scented treats given out on the i-th day of the event.

In the third line, there is a sequence of m integers, $w_1, w_2, ..., w_m$, where w_j is the enjoyment value of the j-th scent. Note that it may happen that some of the m scents will not be given out during the event.

Output

Print a single integer k, equal to the **maximal total enjoyment** Dexter can achieve by tasting the uniquely-scented treats with his whisker pass.

Example

For the input:

```
9 4
2 3 1 1 4 1 2 4 1
5 3 6 6
```

the correct output is:

```
15
```

Dexter can use his whisker pass to taste 6 scents, starting on the second day of the event. This way, he will taste treats no. 2, 3, and 4 exactly once.

Additional examples

The following initial tests are also available:

- `0b` – $n = 10$, $m = 5$, random assortment of scents on random days;
- `0c` – $n = 100$, $m = 50$, another random assortment;
- `0d` – $n = 75\,000$, $m = 75\,000$, same scent on all days;
- `0e` – $n = 1\,000\,000$, $m = 1\,000\,000$, all scents except one have an enjoyment value of $200\,000$, and are given out once; the remaining scent has an enjoyment value of $1\,000\,000$ and is given out every 10 days;

Limits

Your solution will be evaluated on a number of hidden test cases divided into groups. Points for a group are awarded if and only if the submission returns the correct answer for each of the tests in the group within the allotted time limit. These groups are organised into subtasks with the following limits and points awarded.

For all tests, $1 \leq m \leq n \leq 1\,000\,000$, $1 \leq f_i \leq m$, $1 \leq w_j \leq 1\,000\,000$.

Subtask	Limits	Points
1.	$1 \leq m \leq n \leq 8\,000$	2
2.	$1 \leq m \leq n \leq 100\,000$	3
3.	$1 \leq m \leq n \leq 1\,000\,000$	5