Container Stacking

100 points

Memory Limit: 32 MB

Time Limit: 1 second

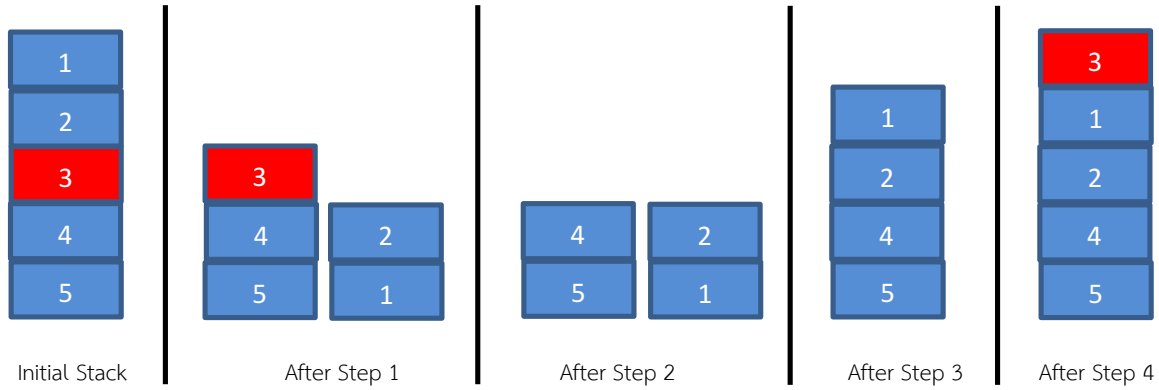
Somchai is an assistant props manager and he is responsible for procuring and providing props to be used in movie productions as requested by the client production houses. For a given movie production, Somchai is given a list of props required for each day of the shooting for the entire production period and he usually needs to manage props for several movie productions at the same time.

Being a systematic organizer, he prearranges the props so that all the props required for any given day of shooting for a given movie production is put into a container box and these container boxes are stacked together vertically. Therefore, for each movie production, there is a stack of containers, each container containing all the props required for a single day. Because exactly same set of the props can be used in several different days of the production, the same container may be reused on different days without having to duplicate the props; therefore, the number of containers prepared for a movie production may be less than the number of days for the entire production.

In the morning of any day when a movie is shot, an errand boy for the movie production house visits Somchai's storage room and Somchai gives the boy the container containing the props to be used on that day for that movie production. In the evening, the errand boy returns the container to Somchai's storage room and Somchai place the container to the top of the stack of containers for the movie. Because all the containers for a movie production is stacked vertically, a container required for the day may not be at the top of the stack and Somchai follows the procedure described below to arrange the stack of the containers each day:

1. He pops out the containers that are on top of a required container *one at a time* placing them on top of one another on the order they are popped out forming a temporary stack of containers that need to be removed until the required container reveals itself on the top of the initial stack.
2. He then pops out the required container from the initial stack and gives to the errand boy.
3. He pops out containers from the top of the temporary stack and places them on top of the initial stack of the containers until all the containers from the temporary stack are put back to the initial stack.
4. When the errand boy returns the container in the evening, Somchai places the container on the top of the stack of containers for the movie.

Refer to the following diagram illustrating the procedure described above when the container numbered 3 is required on a day.



The configuration of the stack after the errand boy has returned the container (after step 4) will become the initial stack on the next day.

Note that on this particular day, Somchai needs to lift containers #1 and #2 in order to deliver container #3 to the errand boy and the combined weights of the containers #1 and #2 represent extra weight Somchai needs to lift on the day. And the total extra weight he might have to lift over a period of days will depend on the configuration of the initial stack apart from the weight of each container and the order of the required containers over the period.

Write a program to help Somchai figure out the *minimum total extra weight* he needs to lift *over a period of days* given the weight of each container and the order of the containers required during the period.

INPUT

The first line of input contains a single integer $2 \le n \le 500$, representing the number of containers prepared for a movie production.

The second line contains n integers $w_1, w_2, \ldots, w_n$ each separated by a white space representing the weight of corresponding container in the order of the container numbers from the 1^{st} container to n^{th} container. The weight of containers can range between 1 and 100 kilograms inclusive.

The third line contains a single integer $2 \le m \le 1000$, representing the number of days for which a container of props needs to be provided for a movie production.

The fourth (and the last) line of the input contains m integers $c_1, c_2, \ldots, c_m$ separated by a white space representing the container numbers required over the period of m days in the order of the days from the 1^{st} day to m^{th} day.

OUTPUT

Output contains a single integer representing the minimum total extra weight Somchai should lift, which can be achieved by initially stacking the containers in a specific way.

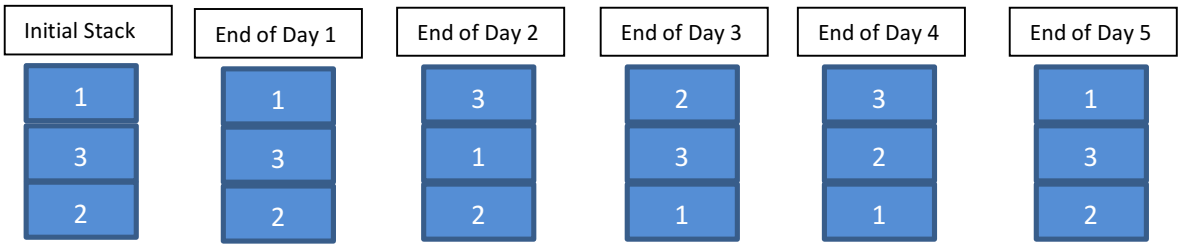
Sample Inputs/Outputs

Input	Output
3 8 17 3 5 1 3 2 3 1	56
5 30 20 10 20 17 3 4 4 4	0
5 30 20 10 20 17 7 3 3 3 3 1 1 1	10

Let's use the first sample test case for further detailed explanation of the actions taken by Somchai.

The input describes that there are 3 containers numbered from 1 to 3. The 1st container weighs 8 kg, the 2nd container 17 kg and the 3rd container weighs 3 kg. A movie production requires the containers over the period of 5 days. On the 1st day, container #1 is required, on the 2nd day container #3, on the 3rd day container # 2, on the 4th day container #3 and the container #1 is required on the 5th day.

On the input specification described above, Somchai can initially stack the 3 containers in the following way to minimize the total extra weight he needs to lift over the 5 days and the pictures summarize the configuration of the containers at the end of each day (after step 4) resulting from the actions Somchai takes each day over the 5 days.



On day 1, he does not need to lift any extra container,

On day 2, he needs to lift container #1 incurring the weight of 8kg.

On day 3, he needs to lift container #3 and #1 incurring 3 + 8 = 11 kg.

On day 4, he needs to lift container #2 incurring 17 kg.

On day 5, he needs to lift container #3 and #2 incurring 3 + 17 = 20 kg.

Over the 5 days, he needs to lift total extra weight of 56kg as a minimum.