Coding Area

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02Hr 31Min 26Sec

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Attendees Count

Problem Description

A Seminar is organised by XYZ company for it's employees. After the seminar, refreshments are served. There are three queues, one each for Juice, Cut fruits and Sandwich. Employees can go wherever they want and pick any snack item(s) in following fashion

· An employee can go for any snack any number of times as desired.

· S/he can move to another queue upon collecting snack from current queue (if s/he wants.)

For example, employee E, can first queue up for Sandwich and later queue up for Juice. After that E can queue up for sandwich again followed by cut fruits. If E is still hungry, then E can join any of the queues again.

Now, organisers want to ascertain that guests are well served. For this, they want to know the count of attendees, who have taken at least one snack in a particular interval of time. Now, there is no systematic way to do this, hence three different members of organizing team are watching the three different queues. Due to limitations of human memory, they are only able to watch sub-parts of the queue. They will collate their data and estimate the count of attendees who have taken at least one snack.

Their strategy is to randomly pick the lower and higher indices in each queue and memorize which guests were queued up in that sub-part. So for 3 queues, they would have 3 different observations. Note, that this is a mental exercise, hence their observations may collide on time. Simply put, the same employee may be seen in more than one queue, because their observations are not necessarily simultaneous.

Note : if an employee takes more than one snack then he/she will be counted as one.

Constraints

0 < N <= 5000 (Integer)

0 < Employee ID <= 5000 (Integer)

0 < R <= 100000 (Integer)

Input Format

First line contains an integer N, which denote the size of all 3 queues

Next three lines contain N space separated integers, which denote Employee IDs

Next line contains integer R, which denotes the number of queries

Next R lines containing 6 space separated integers L1,H1,L2,H2,L3,H3, where

L1 and H1 denote low and high indices of queue 1 i.e sub-part of queue 1

L2 and H2 denote low and high indices of queue 2 i.e sub-part of queue 2

L3 and H3 denote low and high indices of queue 3 i.e sub-part of queue 3

Output

For each query, print the employee count who has had at least one snack, on a new line

Test Case

Explanation

Example 1

Input

10

11 12 13 14 15 16 17 18 19 20

16 17 18 19 20 21 22 23 24 25

21 22 23 24 25 26 27 28 29 30

1

2 7 1 5 2 6

Output

14

Explanation

We can see that there is only one query. So we have to get 2nd to 7th employee from the first queue, which is 12 13 14 15 16 17. Similarly, 1st to 5th employee from the second queue, which is 16 17 18 19 20. Finally, 2nd to 6th from the third queue, which is 22 23 24 25 26.

So now the final list contain :

12 13 14 15 16 17 16 17 18 19 20 22 23 24 25 26

But we can see that employee with Employee ID 16 17 are coming twice in the list. So we count them only once so the final Employee count is 14.

Example 2

Input

7

1 2 3 4 5 6 7

6 6 2 1 5 2 1

2 5 4 3 1 8 3

2

1 5 3 5 2 4

1 3 5 6 3 7

Output

5

6

Explanation

For 1st query 1 5 3 5 2 4

For the first query we have to get 1st to 5th employee from the first queue, which is 1 2 3 4 5. Similarly, 3rd to 5th employee from the second queue, which is 2 1 5. Finally, 2nd to 4th from the third queue, which is 5 4 3.

So now the final list contain :

1 2 3 4 5 2 1 5 5 4 3

But we can see that employee with Employee ID 1 2 3 4 5 are coming twice in the list. So we count them only once so the final Employee count is 5.

Similarly For 2nd record 1 3 5 6 3 7 output will be 6.

Upload Solution [Question : E]