

Arrays Challenge-First Repeating Element (Amazon, Oracle)

Problem

Given an array `arr[]` of size `N`. The task is to find the first repeating element in an array of integers, i.e., an element that occurs more than once and whose index of first occurrence is smallest.

Constraints

$1 \leq N \leq 10^6$

$0 \leq A_i \leq 10^6$

Example

Input:

7

1 5 3 4 3 5 6

Output:

2

Explanation:

5 is appearing twice and its first appearance is at index 2 which is less than 3 whose first occurring index is 3.

Solution

Base idea: To check if an element is repeating, we maintain an array `idx[]`, which stores the first occurrence (index) of a particular element `a[i]`.

Steps

1. Initialise the `idx[]` with -1, and `minidx` with `INT_MAX`.

-1	-1	-1	-1	-1	-1	-1	-1
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2. Keep updating idx[], while traversing the given array.

Given Array:

1	5	3	4	3	5	6
---	---	---	---	---	---	---

Iterations

• At i = 0:

Given Array:

1	5	3	4	3	5	6
---	---	---	---	---	---	---



Idx[]:

-1	0	-1	-1	-1	-1	-1	-1
----	---	----	----	----	----	----	----

• At i = 1:

Given Array:

1	5	3	4	3	5	6
---	---	---	---	---	---	---



Idx[]:

-1	0	-1	-1	1	-1	-1	-1
----	---	----	----	---	----	----	----

• At i = 2:

Given Array:

1	5	3	4	3	5	6
---	---	---	---	---	---	---



Idx[]:

-1	0	-1	2	-1	1	-1	-1
----	---	----	---	----	---	----	----

- At $i = 3$:

Given Array:

1	5	3	4	3	5	6
---	---	---	---	---	---	---



Idx[]:

-1	0	-1	2	3	1	-1	-1
----	---	----	---	---	---	----	----

- At $i = 4$:

Given Array:

1	5	3	4	3	5	6
---	---	---	---	---	---	---



Idx[]:

-1	0	-1	2	3	1	-1	-1
----	---	----	---	---	---	----	----

- At $i = 5$:

Given Array:

1	5	3	4	3	5	6
---	---	---	---	---	---	---



Idx[]:

-1	0	-1	2	3	1	-1	-1
----	---	----	---	---	---	----	----

- At $i = 6$:

Given Array:

1	5	3	4	3	5	6
---	---	---	---	---	---	---



Idx[]:

-1	0	-1	2	3	1	6	-1
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Apni Kaksha