

Arrays Challenge - Smallest Positive Missing Number (Amazon, Samsung, Snapdeal, Accolite)

Problem

Find the smallest positive missing number in the given array.

Example: [0, -10, 1, 3, -20], Ans = 2

Intuition

If in $O(1)$, we can tell if an element is present in an array, then our task will be simpler.

For that, we will maintain a Check[] array, that will if an element x is present in the array or not.

It will be of boolean type as we only need to check the presence or absence of the number.

Steps to Solve:

1. Build the Check[] array initialized with False at all indices.
2. By iterating over the array and marking non-negative $a[i]$ as true i.e.
if($a[i] \geq 0$)
 check[$a[i]$] = True
3. Iterate in the Check[] from $i=1$, BREAK the loop when you find check[i] = False and store that i in the ans variable.
4. Output the ans.

Example:

Given Array: [0, -9, 1, 3, -4, 5]

Iterations

- At $i = 0$:

Given Array:

0	-9	1	3	-4	5
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↑

check[]:

T	F	F	F	F	F
(0)	(1)	(2)	(3)	(4)	(5)

- At $i = 1$:

Given Array:

0	-9	1	3	-4	5
---	----	---	---	----	---

↑

check[]:

T	F	F	F	F	F
(0)	(1)	(2)	(3)	(4)	(5)

- At $i = 2$:

Given Array:

0	-9	1	3	-4	5
---	----	---	---	----	---



check[]:

T	T	F	F	F	F
---	---	---	---	---	---

(0)

(1)

(2)

(3)

(4)

(5)

- At $i = 3$:

Given Array:

0	-9	1	3	-4	5
---	----	---	---	----	---



check[]:

T	T	F	T	F	F
---	---	---	---	---	---

(0)

(1)

(2)

(3)

(4)

(5)

- At $i = 4$:

Given Array:

0	-9	1	3	-4	5
---	----	---	---	----	---



check[]:

T	T	F	T	F	F
---	---	---	---	---	---

(0) (1) (2) (3) (4) (5)

- At $i = 5$:

Given Array:

0	-9	1	3	-4	5
---	----	---	---	----	---



check[]:

T	T	F	T	F	T
---	---	---	---	---	---

(0) (1) (2) (3) (4) (5)

T	T	F	T	F	T
---	---	---	---	---	---

(0) (1) (2) (3) (4) (5)



Ans = 2

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