

<https://course.acciojob.com/idle?question=f4554cd0-bbb1-4639-814b-851cdc0f08c4>

MEDIUM

Max Score: 40 Points

Find the Duplicate Number

Given an array of integers `nums` containing $n + 1$ integers where each integer is in the range $[1, n]$ inclusive. There is only one repeated number in `nums`, return this repeated number.

You must solve the problem without modifying the array `nums` and uses only constant extra space.

Input Format

The first line of input contains integer n representing the size of array `nums` respectively.

The second line of input contains n space-separated integers representing the elements of array `nums`.

Output Format

The only line of output contains a single integer representing the duplicate integer.

Example 1

Input

```
5
1 3 4 2 2
```

Output

```
2
```

Explanation

2 is the duplicate element here .

Example 2

Input

```
5
```

```
3 1 3 4 2
```

Output

```
3
```

Explanation

3 is the duplicate element here

Constraints:

```
1 <= n <= 10^5
```

```
nums.length == n + 1
```

```
1 <= nums[i] <= n
```

All the integers in `nums` appear only once except for precisely one integer which appears two or more times.

Topic Tags

[Bit Manipulation](#)

[2-Pointers](#)

[Binary Search](#)

[Arrays](#)

My code

```
// in java
```

```
import java.util.*;
```

```
class Solution {
```

```

public int findDuplicate(int[] nums) {
    // Write your code here
    HashMap<Integer,Integer>hm=new HashMap<>();
    int n=nums.length;
    for(int i=0;i<n;i++)
    {
        if(hm.containsKey(nums[i]))
            return nums[i];
        hm.put(nums[i],1);
    }
    return 0;
}
}

```

```

public class Main{
    public static void main(String[] args) throws Exception {
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        int[] arr = new int[n];
        for (int i = 0; i < n; i++) {
            arr[i] = sc.nextInt();
        }
        sc.close();
        Solution Obj = new Solution();
        System.out.println(Obj.findDuplicate(arr));
    }
}

```