

# Find Only Repetitive Element from 1 to $n-1$

## Find Only Repetitive Element from 1 to $n-1$



Difficulty: **Easy** Accuracy: **59.22%** Submissions: **18K+** Points: **2**

Given an array `arr[]` of size `n`, filled with numbers from **1** to  **$n-1$**  in random order. The array has **only** one repetitive element. Your task is to find the **repetitive element**.

**Note:** It is guaranteed that there is a repeating element present in the array.

**Examples:**

**Input:** `arr[] = [1, 3, 2, 3, 4]`

**Output:** 3

**Explanation:** The number 3 is the only repeating element.

**Input:** `arr[] = [1, 5, 1, 2, 3, 4]`

**Output:** 1

**Explanation:** The number 1 is the only repeating element.

**Input:** `arr[] = [1, 1]`

**Output:** 1

**Explanation:** The array is of size 2 with both elements being 1, making 1 the repeating element.

**Constraints:**

$2 \leq \text{arr.size()} \leq 10^5$

$1 \leq \text{arr}[i] \leq n-1$

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**Expected Complexities**

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Approach:- T.C  $\cdot O(n)$  S.C  $\cdot O(1)$

The idea is to start traversing the array & add each element to res & at the same time subtract the index.

```
C++ (g++ 5.4) Start Timer
1 // } Driver Code Ends
7
8 // User function Template for C++
9 class Solution {
10 public:
11 int findDuplicate(vector<int>& arr) {
12     // code here
13     int ans=0;
14     for(int i=0;i<arr.size();i++){
15         ans+=arr[i];
16         ans--(i+1);
17     }
18     return ans+arr.size();
19 }
20 };
21
22 // } Driver Code Ends
```