

# CS23331-Design and Analysis of Algorithms-2023 Batch-CSE

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✓

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<b>Started on</b>	Friday, 16 August 2024, 2:00 PM
<b>State</b>	Finished
<b>Completed on</b>	Friday, 16 August 2024, 2:20 PM
<b>Time taken</b>	19 mins 46 secs
<b>Marks</b>	1.00/1.00
<b>Grade</b>	4.00 out of 4.00 (100%)

Question **1**  
Correct  
Mark 1.00 out of 1.00  
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Find Duplicate in Array.

Given a read only array of  $n$  integers between 1 and  $n$ , find one number that repeats.

Input Format:

First Line - Number of elements

$n$  Lines -  $n$  Elements

Output Format:

Element  $x$  - That is repeated

For example:

Input	Result
5 1 1 2 3 4	1

Answer: (penalty regime: 0.0%)

```
1 #include <stdio.h>
2
3 int main() {
4     int n;
5     scanf("%d", &n);
6     int arr[n];
7     for (int i = 0; i < n; i++) {
8         scanf("%d", &arr[i]);
9     }
10    for (int i = 0; i < n; i++) {
11        int index = arr[i] % n;
12        arr[index] += n;
13    }
14    for (int i = 0; i < n; i++) {
15        if (arr[i] / n > 1) {
16            printf("%d", i);
17        }
18    }
19 }
20
```

	Input	Expected	Got	
✓	11 10 9 7 6 5 1 2 3 8 4 7	7	7	✓
✓	5 1 2 3 4 4	4	4	✓
✓	5 1 1 2 3 4	1	1	✓

Passed all tests! ✓

**Correct**

Marks for this submission: 1.00/1.00.

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[← 1-Finding Duplicates- \$O\(n^2\)\$  Time Complexity, \$O\(1\)\$  Space Complexity](#)

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[3-Print Intersection of 2 sorted arrays- \$O\(m\*n\)\$  Time Complexity, \$O\(1\)\$  Space Complexity →](#)