



SIVA S 2024-CSE ▾

S2

Started on Wednesday, 8 October 2025, 4:04 PM

State Finished

Completed on Wednesday, 8 October 2025, 4:05 PM

Time taken 33 secs

Marks 1.00/1.00

Grade **4.00** out of 4.00 (**100%**)

Question 1 Correct Mark 1.00 out of 1.00

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 %)

```
1 #include <stdio.h>
2
3 int findDuplicate(int arr[], int n) {
4     int slow = arr[0];
5     int fast = arr[0];
6
7     // Phase 1: Detect cycle
8     do {
9         slow = arr[slow];
10        fast = arr[arr[fast]];
11    } while (slow != fast);
12
13    // Phase 2: Find entry point of cycle (duplicate)
14    slow = arr[0];
15    while (slow != fast) {
16        slow = arr[slow];
17        fast = arr[fast];
18    }
19
20    return slow;
21 }
22
23 int main() {
24     int n;
25     scanf("%d", &n);
26     int arr[n];
27
28     for (int i = 0; i < n; i++)
29         scanf("%d", &arr[i]);
30
31     int duplicate = findDuplicate(arr, n);
32     printf("%d\n", duplicate);
33
34     return 0;
35 }
36
```

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

| | Input | Expected | Got | |
|---|----------------|----------|-----|---|
| ✓ | 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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