RAJALAKSHMI ENGINEERING COLLEGE

🔔 ⁷　**SIVA S 2024-CSE** ⌄　　**S2**

Started on	Wednesday, 8 October 2025, 4:05 PM
State	Finished
Completed on	Wednesday, 8 October 2025, 4:06 PM
Time taken	38 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 %)

```c
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.

Back to Course