

TIME

COMPLEXITY 2

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 f(int arr[], int n) {
4     int s = arr[0];
5     int fa= arr[0];
6     do {
7         s = arr[s];
8         fa= arr[arr[fa]];
9     } while (s != fa);
10    s= arr[0];
11    while (s!= fa) {
12        s= arr[s];
13        fa= arr[fa];
14    }
15    return s;
16 }
17 int main(){
18     int n;
19     scanf("%d", &n);
20     int arr[n];
21     for (int i = 0; i < n; i++) {
22         scanf("%d", &arr[i]);
23     }
24     int d = f(arr, n);
25     printf("%d\n", d);
26     return 0;
27 }
```

	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	✓