

COMPETITIVE PROGRAMMING

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 int main(){
3     int a;
4     scanf("%d",&a);
5     int arr[a];
6     int b = 0, c = 0;
7     for(int i=0;i<a;i++){
8         scanf("%d",&arr[i]);
9         c += arr[i];
10    }
11    for(int i=1;i<a;i++){
12        b += i;
13    }
14    int ans = c-b;
15    printf("%d",ans);
16 }
```

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