

problem.c

```
1  #include <stdio.h>
2
3  int findCandidate(int arr[], int n) {
4      int candidate = 0, count = 1;
5
6      for (int i = 1; i < n; i++) {
7          if (arr[i] == arr[candidate]) {
8              count++;
9          } else {
10             count--;
11         }
12
13         if (count == 0) {
14             candidate = i;
15             count = 1;
16         }
17     }
18
19     return arr[candidate];
20 }
21
22 int isMajority(int arr[], int n, int candidate) {
23     int count = 0;
24
25     for (int i = 0; i < n; i++) {
26         if (arr[i] == candidate) {
27             count++;
28         }
29     }
30
31     if (count > n / 2) {
32         return candidate;
33     } else {
34         return -1;
35     }
36 }
37
38 int majorityElement(int arr[], int n) {
39     int candidate = findCandidate(arr, n);
40
41     return isMajority(arr, n, candidate);
42 }
43
44 int main() {
45     int n;
46
47
48     printf("Enter the size of the array: ");
49     scanf("%d", &n);
50
51     int arr[n];
```

```
52
53     printf("Enter the elements of the array:\n");
54     for (int i = 0; i < n; i++) {
55         scanf("%d", &arr[i]);
56     }
57
58     int majority = majorityElement(arr, n);
59
60     if (majority != -1) {
61         printf("The majority element is: %d\n", majority);
62     } else {
63         printf("No majority element exists.\n");
64     }
65
66     return 0;
67 }
68
```