

## Problem Statement

Find the Majority Element in an Array Write a program to find the majority element in an array (an element that appears more than  $n/2$  times). For example, in the array [3, 3, 4, 2, 4, 4, 2, 4, 4], the output should be 4. Do not use any built-in functions for array manipulation or counting. Instructions: Implement a manual count and comparison logic to find the majority element.

## Problem Code

```
void main()
{
int arr[]={3,3,4,2,4,4,2,4,4};
int n=sizeof(arr)/sizeof(arr[0]);
int count,i,j;
clrscr();

for(i=0;i<n;i++)
{
count=0;
for(j=0;j<n;j++)
{
if(arr[i]==arr[j])
{
count++;
}
}
}

if(count>(n/2))
{
printf("The Majority Element is:%d",arr[i]);
return;
}
}

printf("An element that not appear more than (n/2) times");
getch();
}
```

## ScreenShots:

## PROGRAMS

```
File Edit Search Run Compile Debug Project Options Window Help
ARR_PROB.C 2-[+/-]
void main()
{
int arr[]={3,3,4,2,4,4,2,4,4};
int n=sizeof(arr)/sizeof(arr[0]);
int count,i,j;
clrscr();

for(i=0;i<n;i++)
{
count=0;
for(j=0;j<n;j++)
{
if(arr[i]==arr[j])
{
count++;
}
}

if(count>(n/2))
{
21:30
F1 Help Alt-F8 Next Msg Alt-F7 Prev Msg Alt-F9 Compile F9 Make F10 Menu
```

```
File Edit Search Run Compile Debug Project Options Window Help
ARR_PROB.C 2-[+/-]
for(i=0;i<n;i++)
{
count=0;
for(j=0;j<n;j++)
{
if(arr[i]==arr[j])
{
count++;
}
}

if(count>(n/2))
{
printf("The Majority Element is: %d",arr[i]);
return;
}
}
printf("No element that not appear more than (n/2) times");
getch();
}
28:23
F1 Help Alt-F8 Next Msg Alt-F7 Prev Msg Alt-F9 Compile F9 Make F10 Menu
```

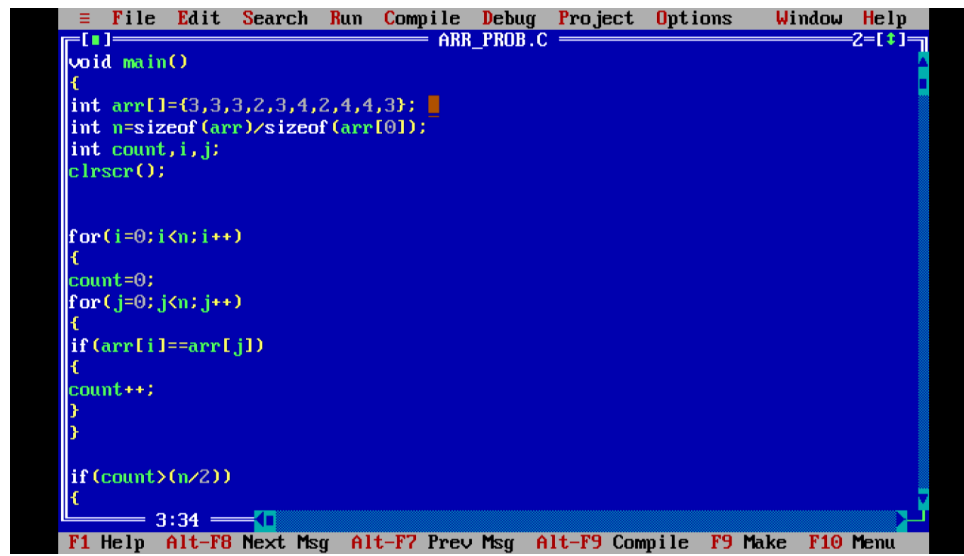
## INPUT 01:

```
File Edit Search Run Compile Debug Project Options Window Help
ARR_PROB.C 2-[+/-]
void main()
{
int arr[]={3,3,4,2,4,4,2,4,4};
int n=sizeof(arr)/sizeof(arr[0]);
int count,i,j;
clrscr();

for(i=0;i<n;i++)
{
count=0;
for(j=0;j<n;j++)
{
if(arr[i]==arr[j])
{
count++;
}
}

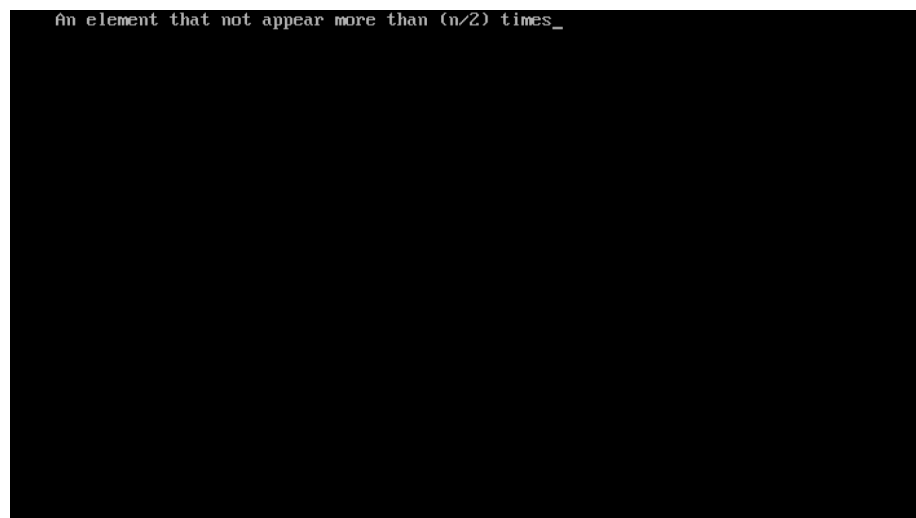
if(count>(n/2))
{
2:23
F1 Help Alt-F8 Next Msg Alt-F7 Prev Msg Alt-F9 Compile F9 Make F10 Menu
```

## INPUT 02



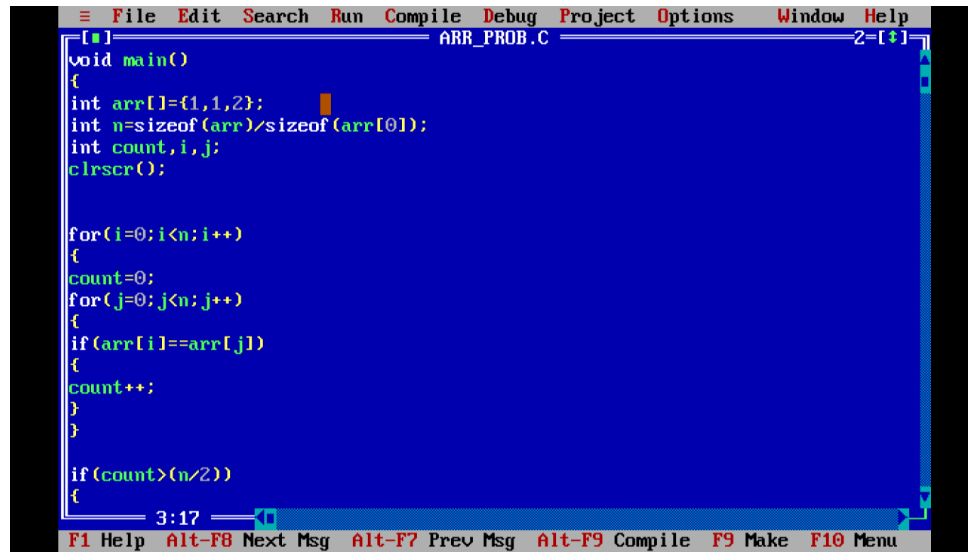
```
File Edit Search Run Compile Debug Project Options Window Help
ARR_PROB.C 2-[+]  
[ ]  
void main()  
{  
int arr[]={3,3,3,2,3,4,2,4,4,3};  
int n=sizeof(arr)/sizeof(arr[0]);  
int count,i,j;  
clrscr();  
  
for(i=0;i<n;i++)  
{  
count=0;  
for(j=0;j<n;j++)  
{  
if(arr[i]==arr[j])  
{  
count++;  
}  
}  
  
if(count>(n/2))  
{  
3:34  
F1 Help Alt-F8 Next Msg Alt-F7 Prev Msg Alt-F9 Compile F9 Make F10 Menu
```

## OUTPUT02



```
An element that not appear more than (n/2) times_
```

## INPUT 03

A screenshot of a text editor window titled 'ARR\_PROB.C'. The editor has a menu bar with 'File', 'Edit', 'Search', 'Run', 'Compile', 'Debug', 'Project', 'Options', 'Window', and 'Help'. The code is written in C and is as follows:

```
[ ]  
void main()  
{  
  int arr[]={1,1,2};  
  int n=sizeof(arr)/sizeof(arr[0]);  
  int count,i,j;  
  clrscr();  
  
  for(i=0;i<n;i++)  
  {  
    count=0;  
    for(j=0;j<n;j++)  
    {  
      if(arr[i]==arr[j])  
      {  
        count++;  
      }  
    }  
  }  
  
  if(count>(n/2))  
  {
```

The status bar at the bottom shows '3:17' and several function key shortcuts: 'F1 Help', 'Alt-F8 Next Msg', 'Alt-F7 Prev Msg', 'Alt-F9 Compile', 'F9 Make', and 'F10 Menu'.

```
}
```

## OUTPUT 03

A screenshot of a terminal window showing the output of the program. The text 'The Majority Element is:1\_' is displayed on the first line, followed by a large black rectangular area.

The Majority Element is:1\_