Assignment 8
25114035
Garv

1.Write a program to find the majority element in an array (an element that appears more than n/ 2 times, where n is the size of the array).

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```c
#include <stdio.h>

int main() {
        int n ;
        printf("Enter array size : ");scanf("%d",&n);

        int arr[n];
        printf("Enter array elements : ");
        for(int i = 0 ; i < n ; i++ ) {
                scanf("%d",&arr[i]);
        }


        //Finding majority function
        int current , max , valid = 0 ;

        for(int i = 0 ; i < n ; i++ ) {
                for(int j = i + 1 ; j < n ; j++ ) {
                        if(arr[i] == arr[j]) {
                                current++;
                        }
                }
                if(current > n/2) {
                        max = arr[i];
                        valid = 1;
                       break;
                }
        }

        if(valid == 1) {
                printf("Majority element is : %d. \n",max);
        }
        else {
                printf("No majority element.\n");
        }

        return 0;
}
```

38,1 All

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```
garvmehta991@omnitrix-1000:~/25114035/Assignment8/Question1$ vim q1.c
garvmehta991@omnitrix-1000:~/25114035/Assignment8/Question1$ gcc q1.c && ./a.out
Enter array size : 7
Enter array elements : 2 2 4 5 2 2 3
Majority element is : 2.
garvmehta991@omnitrix-1000:~/25114035/Assignment8/Question1$ gcc q1.c && ./a.out
Enter array size : 5
Enter array elements : 1 1 2 2 3
No majority element.
garvmehta991@omnitrix-1000:~/25114035/Assignment8/Question1$ gcc q1.c && ./a.out
Enter array size : 8
Enter array elements : 4 4 4 2 5 4 4 6
Majority element is : 4.
garvmehta991@omnitrix-1000:~/25114035/Assignment8/Question1$
```

2.Take an integer input *n*. Write a program in C to print all prime numbers less than *n*. You may use any efficient algorithm for prime number generation.

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```c
#include <stdio.h>

int main() {
        int n ;
        printf("Enter the number : ");scanf("%d",&n);


        for(int i = 2 ; i < n ; i++ ) {

                int factor = 1;

                for(int j = 1 ; j < i ; j++) {
                        if(i%j == 0) {
                                factor = j;
                        }
                }

                if(factor == 1) {
                        printf("%d\n",i);
                }
        }
        return 0 ;
}
```

13,7-28 All

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```
garvmehta991@omnitrix-1000:~/25114035/Assignment8/Question2$ vim q2.c
garvmehta991@omnitrix-1000:~/25114035/Assignment8/Question2$ gcc q2.c && ./a.out
Enter the number : 7
2
3
5
garvmehta991@omnitrix-1000:~/25114035/Assignment8/Question2$ gcc q2.c && ./a.out
Enter the number : 10
2
3
5
7
garvmehta991@omnitrix-1000:~/25114035/Assignment8/Question2$ gcc q2.c && ./a.out
Enter the number : 15
2
3
5
7
11
13
garvmehta991@omnitrix-1000:~/25114035/Assignment8/Question2$ gcc q2.c && ./a.out
Enter the number : 25
2
3
5
7
11
13
17
19
23
garvmehta991@omnitrix-1000:~/25114035/Assignment8/Question2$
```