

PPS4

Q1

Aim:

Write a program in C to find maximum and minimum element in the array.

Procedure:

Input:

Number of elements, n

Next n lines contain n numbers

Output:

Maximum element

Minimum element

Algorithm:

Step 1: Read n

Step 2: Initialise array of size n

Step 3: Using for loop read elements

Step 4: For first iteration initialise min and max to be equal to first element

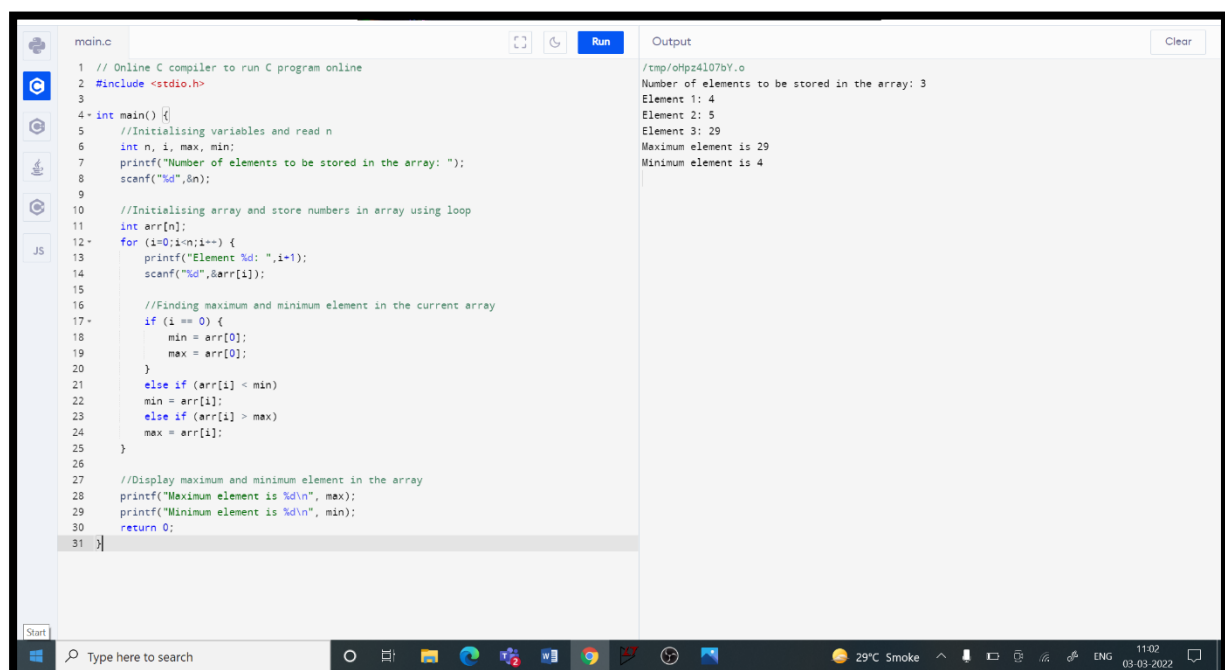
Step 5: For subsequent iterations check if current element is

Smaller than min, then min = current element

Else if larger than max, then max = current element

Step 6: Display Maximum and minimum elements in separate lines

Code:



```
main.c
1 // Online C compiler to run C program online
2 #include <stdio.h>
3
4 int main() {
5     //Initialising variables and read n
6     int n, i, max, min;
7     printf("Number of elements to be stored in the array: ");
8     scanf("%d", &n);
9
10    //Initialising array and store numbers in array using loop
11    int arr[n];
12    for (i=0; i<n; i++) {
13        printf("Element %d: ", i+1);
14        scanf("%d", &arr[i]);
15
16        //Finding maximum and minimum element in the current array
17        if (i == 0) {
18            min = arr[0];
19            max = arr[0];
20        }
21        else if (arr[i] < min)
22            min = arr[i];
23        else if (arr[i] > max)
24            max = arr[i];
25    }
26
27    //Display maximum and minimum element in the array
28    printf("Maximum element is %d\n", max);
29    printf("Minimum element is %d\n", min);
30    return 0;
31 }
```

Output

```
/tmp/oHgz4l07bY.o
Number of elements to be stored in the array: 3
Element 1: 4
Element 2: 5
Element 3: 29
Maximum element is 29
Minimum element is 4
```

Q2

Aim:

Write a program in C to separate odd and even integers in separate arrays.

Procedure:

Input:

Number of elements, n

Next n lines contain n numbers

Output:

Even elements in one line

Odd elements in next line

Algorithm:

Step 1: Read n, initialise o = 0 and e = 0

Step 2: Initialise array, odd array and even array of size n

Step 3: Using for loop read elements

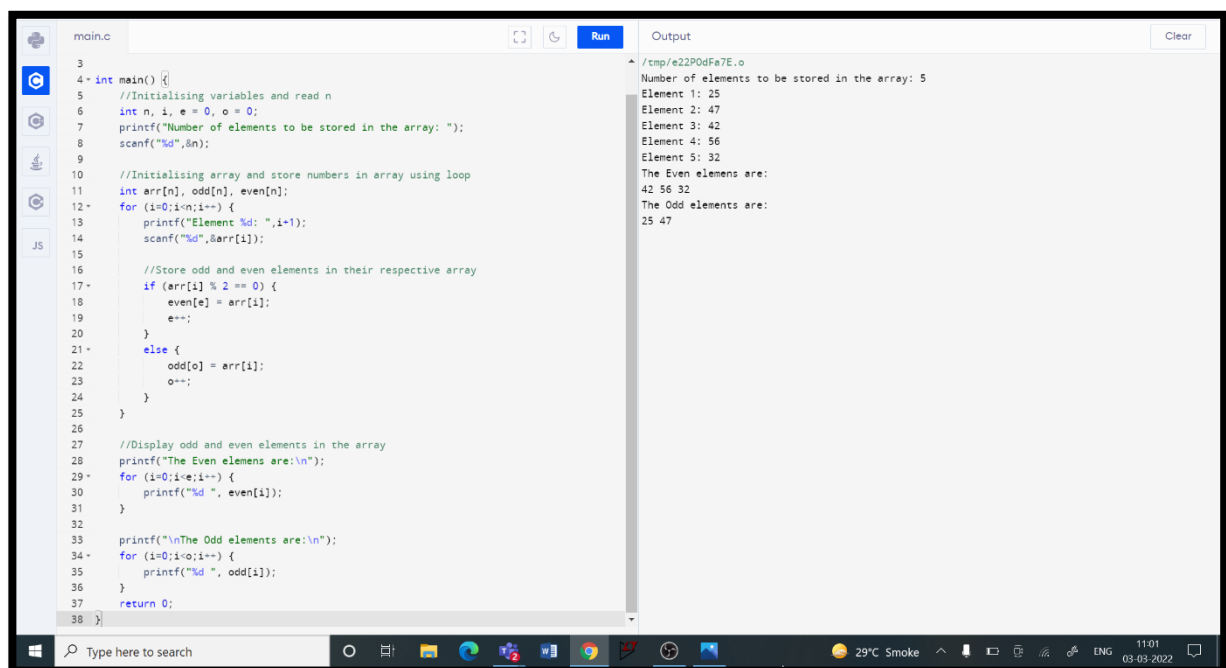
Step 4: In each iteration check

 If element is even, then store element in even array and increment e by 1

 Else store element in odd array and increment o by 1

Step 5: Display even and odd elements in separate lines

Code:



```
main.c
3
4 int main() {
5     //Initialising variables and read n
6     int n, i, e = 0, o = 0;
7     printf("Number of elements to be stored in the array: ");
8     scanf("%d", &n);
9
10    //Initialising array and store numbers in array using loop
11    int arr[n], odd[n], even[n];
12    for (i=0; i<n; i++) {
13        printf("Element %d: ", i+1);
14        scanf("%d", &arr[i]);
15
16        //Store odd and even elements in their respective array
17        if (arr[i] % 2 == 0) {
18            even[e] = arr[i];
19            e++;
20        }
21        else {
22            odd[o] = arr[i];
23            o++;
24        }
25    }
26
27    //Display odd and even elements in the array
28    printf("The Even elements are:\n");
29    for (i=0; i<e; i++) {
30        printf("%d ", even[i]);
31    }
32
33    printf("\nThe Odd elements are:\n");
34    for (i=0; i<o; i++) {
35        printf("%d ", odd[i]);
36    }
37
38    return 0;
}
```

Output

```
/tmp/e22P0dFe7E.o
Number of elements to be stored in the array: 5
Element 1: 25
Element 2: 47
Element 3: 42
Element 4: 56
Element 5: 32
The Even elements are:
42 56 32
The Odd elements are:
25 47
```