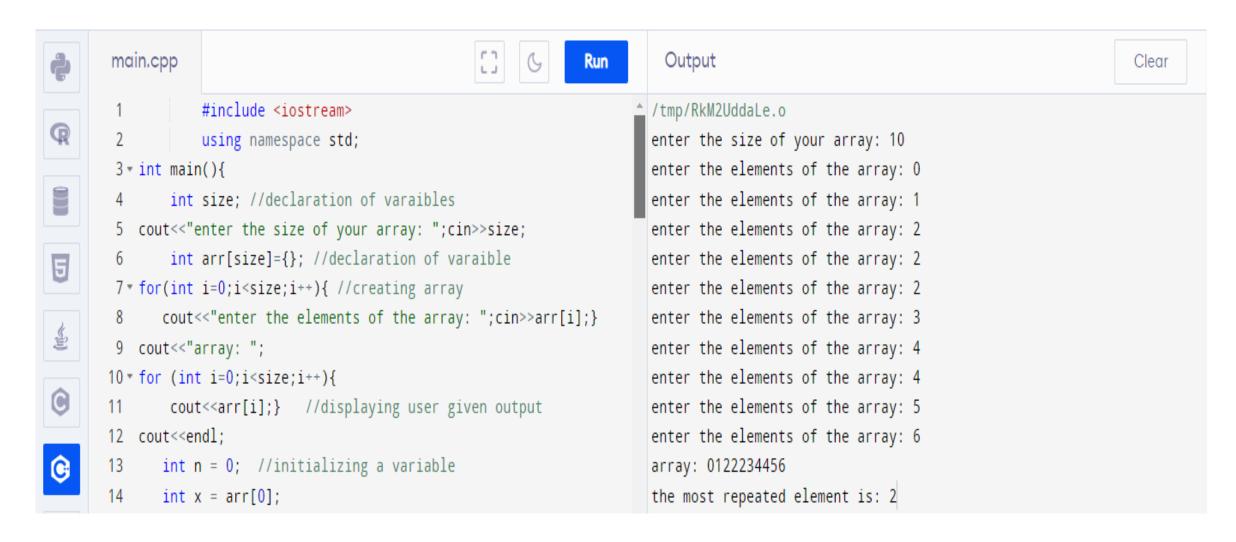
FUNDAMENTALS OF PROGRAMMING (LAB)

LAB MANUAL 8 (HOME TASKS)

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TASK # 01

Take an array and find the most repeated element in that array.

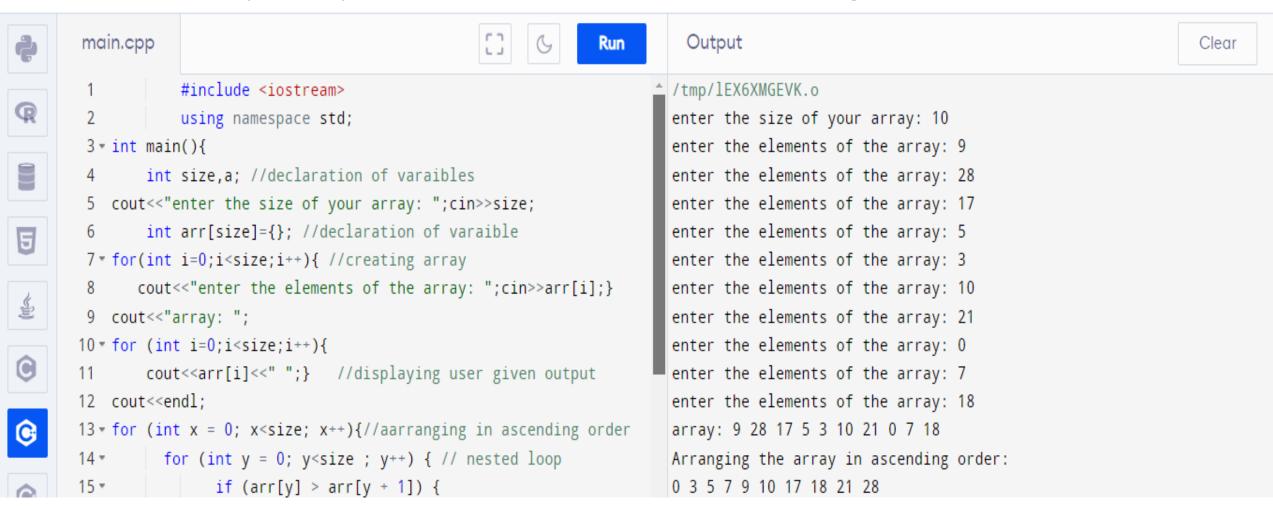


TASK # 01 (CONT)

```
15 ▼ for (int i=0;i<size;++i){ //finding the recurring elements
                                                                       Output
                                                                                                                                   Clear
            int count = 1;
                                                                     /tmp/RkM2UddaLe.o
                                                                     enter the size of your array: 10
                for (int j = i + 1; j < size; ++j){//nested loop
17 ₹
                                                                     enter the elements of the array: 0
                                                                     enter the elements of the array: 1
                    if (arr[i] == arr[j]) {
18 ₹
                                                                     enter the elements of the array: 2
                        ++count;}}
                                                                     enter the elements of the array: 2
                                                                     enter the elements of the array: 2
20 * if (count > n) {
                                                                     enter the elements of the array: 3
                                                                     enter the elements of the array: 4
            n = count;
                                                                     enter the elements of the array: 4
          x = arr[i];}}
                                                                     enter the elements of the array: 5
                                                                     enter the elements of the array: 6
23 cout<<"the most repeated element is: "<<x;</pre>
                                                                     array: 0122234456
                                                                     the most repeated element is: 2
24 return 0;}
```

TASK # 02

Let's say an array is a[8] = {13, 15, 17, 9, 99, 77, 65, 43}. Find largest and smallest element.

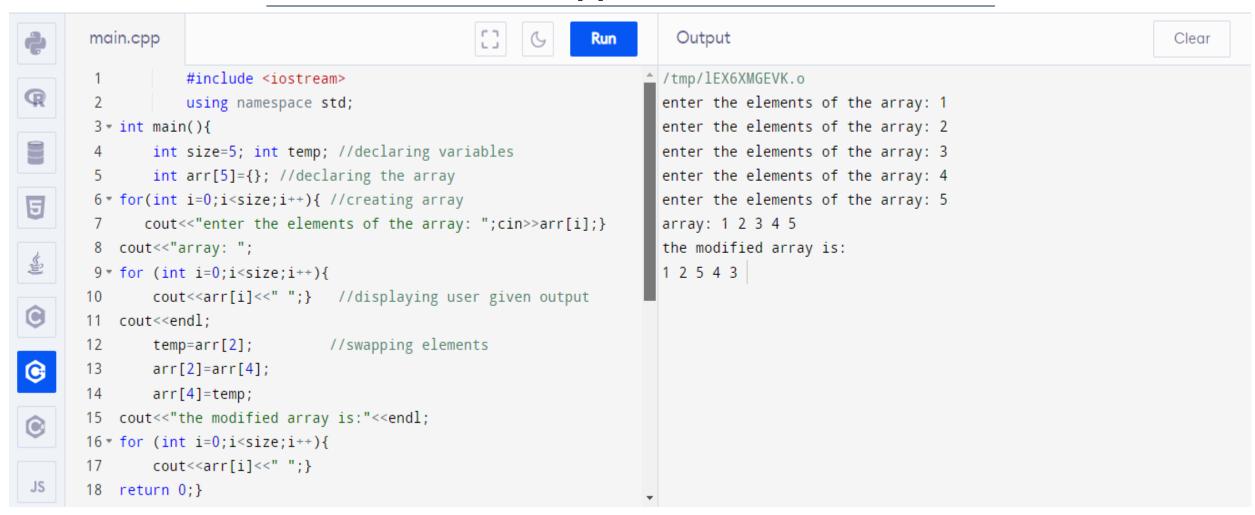


TASK # 02 (CONTD)

```
if (arr[y] > arr[y + 1]) {
15 ₹
                                                                      Output
                                                                                                                                   Clear
16
                   a = arr[y];
                                                                  ↑ /tmp/1EX6XMGEVK.o
                                                                    enter the size of your array: 10
                   arr[y] = arr[y + 1];
                                                                    enter the elements of the array: 9
                                                                    enter the elements of the array: 28
                    arr[y + 1] = a; } } }
                                                                    enter the elements of the array: 17
19 cout<<"Arranging the array in ascending order:"<<endl;</p>
                                                                    enter the elements of the array: 5
                                                                    enter the elements of the array: 3
20 * for (int i = 0; i < size; i++) {
                                                                    enter the elements of the array: 10
           cout << arr[i] << " ";}
                                                                    enter the elements of the array: 21
                                                                    enter the elements of the array: 0
22 cout<<endl;
                                                                    enter the elements of the array: 7
                                                                    enter the elements of the array: 18
23 cout<<"smallest element: "<<arr[0]<<endl;</pre>
                                                                    array: 9 28 17 5 3 10 21 0 7 18
24 cout<<"largest elemnt: "<<arr[size-1]<<endl;</pre>
                                                                    Arranging the array in ascending order:
                                                                    0 3 5 7 9 10 17 18 21 28
25 return 0;}
                                                                    smallest element: 0
                                                                    largest elemnt: 28
26
```

TASK # 03

Develop a program that takes 5 array elements from user. Swap position [2] element with position [4] element.



<u>THEORY</u>

- The tasks performed above all exhibit the properties of an array.. An Array is a collection of data
 of the same data type, stored at a memory location. Arrays are used to store multiple values in
 a single variable, instead of declaring separate variables for each value.
- In the first task the required is to find the most repeated element in a given array. This task is accomplished by using three separate loops one of which is a nested loops and a if statement.
- The second tasks requires us to find the smallest and largest variable which is achieved by bubble sorting the array and then displaying the first and last elements of the sorted array on the screen.
- The objective of the final task is to swap the elements at position 2 and 4. this is done by introducing a temporary variable 'temp'.