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CS-114

ME-15

SEC-A

05 DEC 2023

## HOME TASK 1:

```
#include <iostream>
```

```
int main() {
```

```
    const int maxSize = 100; // You can adjust the maximum size of the array
```

```
    int arr[maxSize];
```

```
    int n;
```

```
    std::cout << "Enter the size of the array: ";
```

```
    std::cin >> n;
```

```
    if (n <= 0 || n > maxSize) {
```

```
        std::cout << "Invalid size. Please enter a valid size." << std::endl;
```

```
        return 1; // Exit with an error code
```

```
    }
```

```
    std::cout << "Enter the elements of the array:" << std::endl;
```

```
    for (int i = 0; i < n; ++i) {
```

```
        std::cout << "Element " << i + 1 << ": ";
```

```
        std::cin >> arr[i];
```

```
    }
```

```
    int mostRepeated = arr[0];
```

```
    int maxCount = 1;
```

```
    for (int i = 0; i < n; ++i) {
```

```
        int count = 1;
```

```

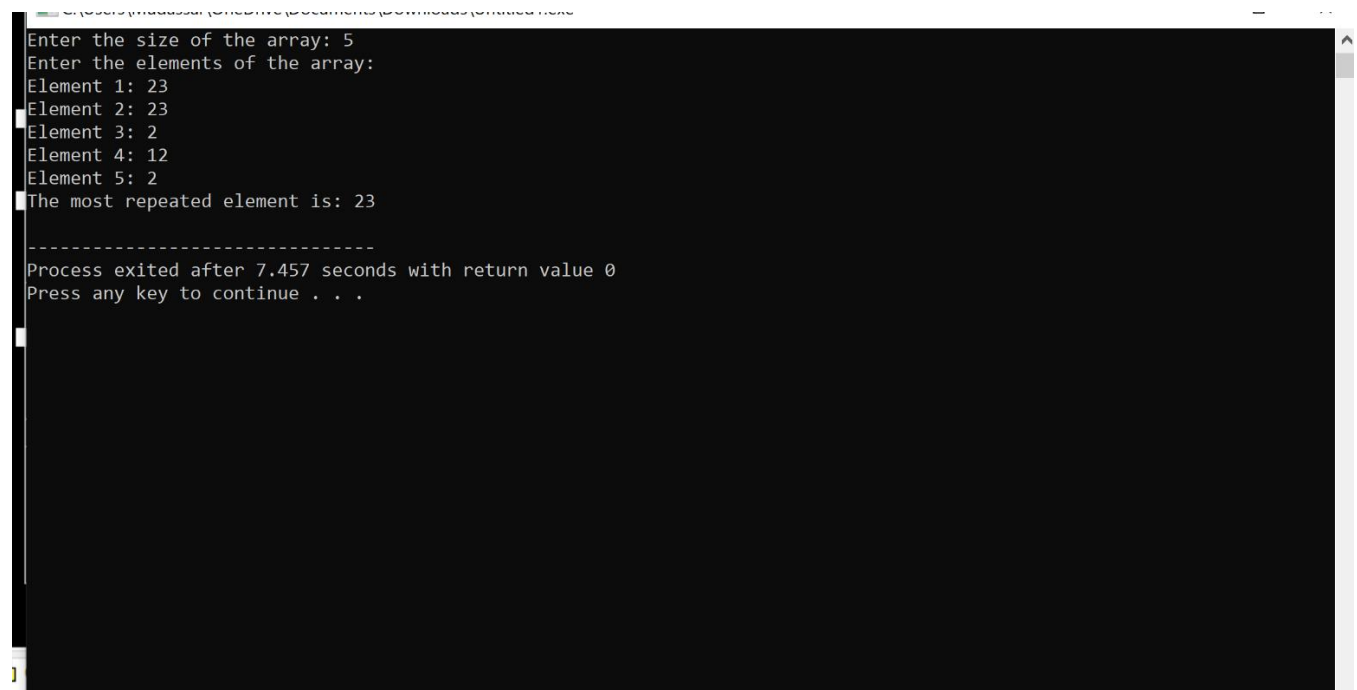
        for (int j = i + 1; j < n; ++j) {
            if (arr[i] == arr[j])
                ++count;
        }

        if (count > maxCount) {
            maxCount = count;
            mostRepeated = arr[i];
        }
    }

    std::cout << "The most repeated element is: " << mostRepeated << std::endl;

    return 0; // Exit successfully
}

```



The screenshot shows a terminal window with the following text:

```

Enter the size of the array: 5
Enter the elements of the array:
Element 1: 23
Element 2: 23
Element 3: 2
Element 4: 12
Element 5: 2
The most repeated element is: 23

-----
Process exited after 7.457 seconds with return value 0
Press any key to continue . . .

```

The terminal window has a dark background with white text. The output matches the logic of the provided C++ code, where the element 23 is identified as the most repeated element in the array [23, 23, 2, 12, 2].

## TASK 2:

```
#include <iostream>
```

```
#include <climits> // for INT_MAX and INT_MIN
```

```
int main() {
```

```
    int a[8] = {13, 15, 17, 9, 99, 77, 65, 43}
```

```
    int maxElement = INT_MIN;
```

```
    int minElement = INT_MAX;
```

```
    for (int i = 0; i < 8; ++i) {
```

```
        if (a[i] > maxElement) {
```

```
            maxElement = a[i];
```

```
        }
```

```
        if (a[i] < minElement) {
```

```
            minElement = a[i];
```

```
        }
```

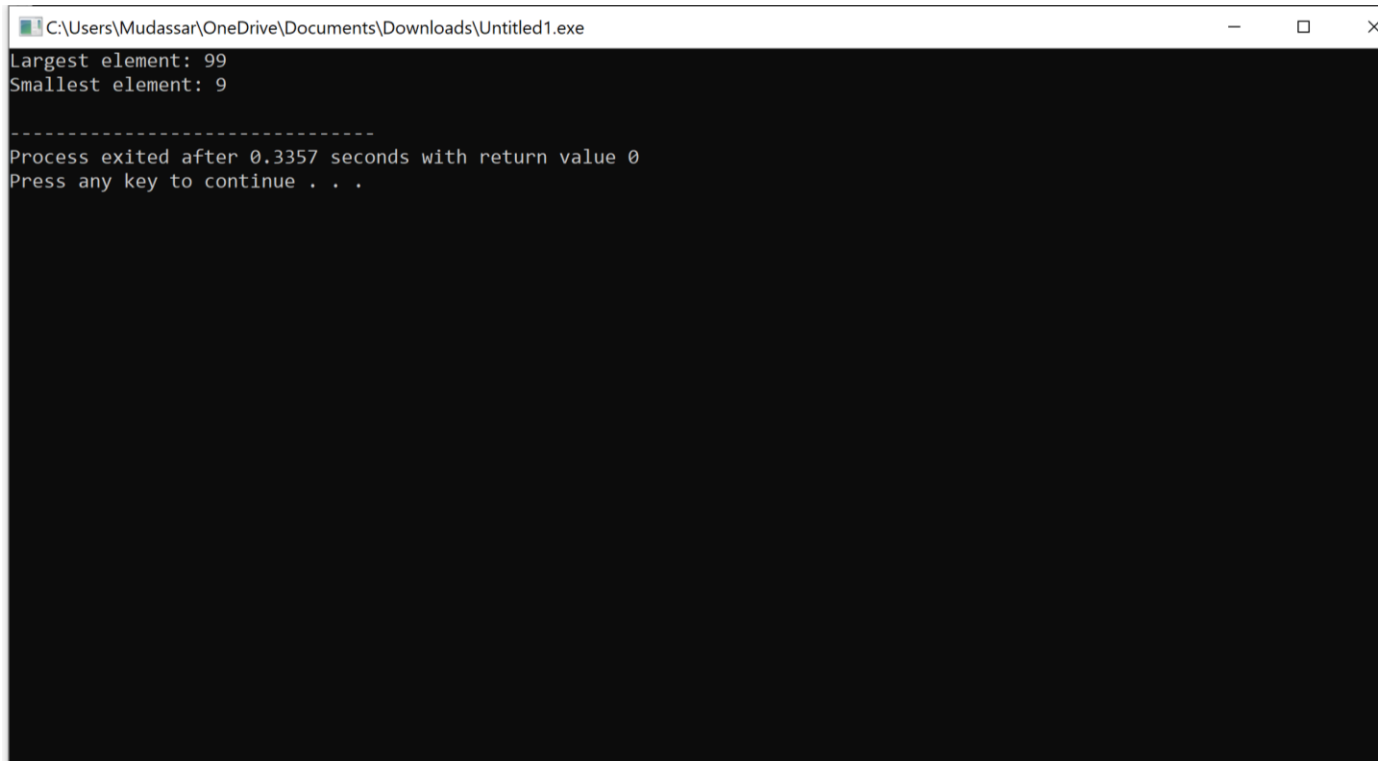
```
    }
```

```
    std::cout << "Largest element: " << maxElement << std::endl;
```

```
    std::cout << "Smallest element: " << minElement << std::endl;
```

```
    return 0;
```

```
}
```

A screenshot of a Windows command prompt window. The title bar at the top reads "C:\Users\Mudassar\OneDrive\Documents\Downloads\Untitled1.exe". The window has standard minimize, maximize, and close buttons. The command prompt shows the following text: "Largest element: 99", "Smallest element: 9", a separator line of dashes, "Process exited after 0.3357 seconds with return value 0", and "Press any key to continue . . .".

```
C:\Users\Mudassar\OneDrive\Documents\Downloads\Untitled1.exe
Largest element: 99
Smallest element: 9
-----
Process exited after 0.3357 seconds with return value 0
Press any key to continue . . .
```

### TASK 3:

```
#include <iostream>
```

```
int main() {
```

```
    const int size = 5;
```

```
    int arr[size];
```

```
    std::cout << "Enter 5 elements for the array:\n";
```

```
    for (int i = 0; i < size; ++i) {
```

```
        std::cout << "Element " << i + 1 << ": ";
```

```
        std::cin >> arr[i];
```

```
    }
```

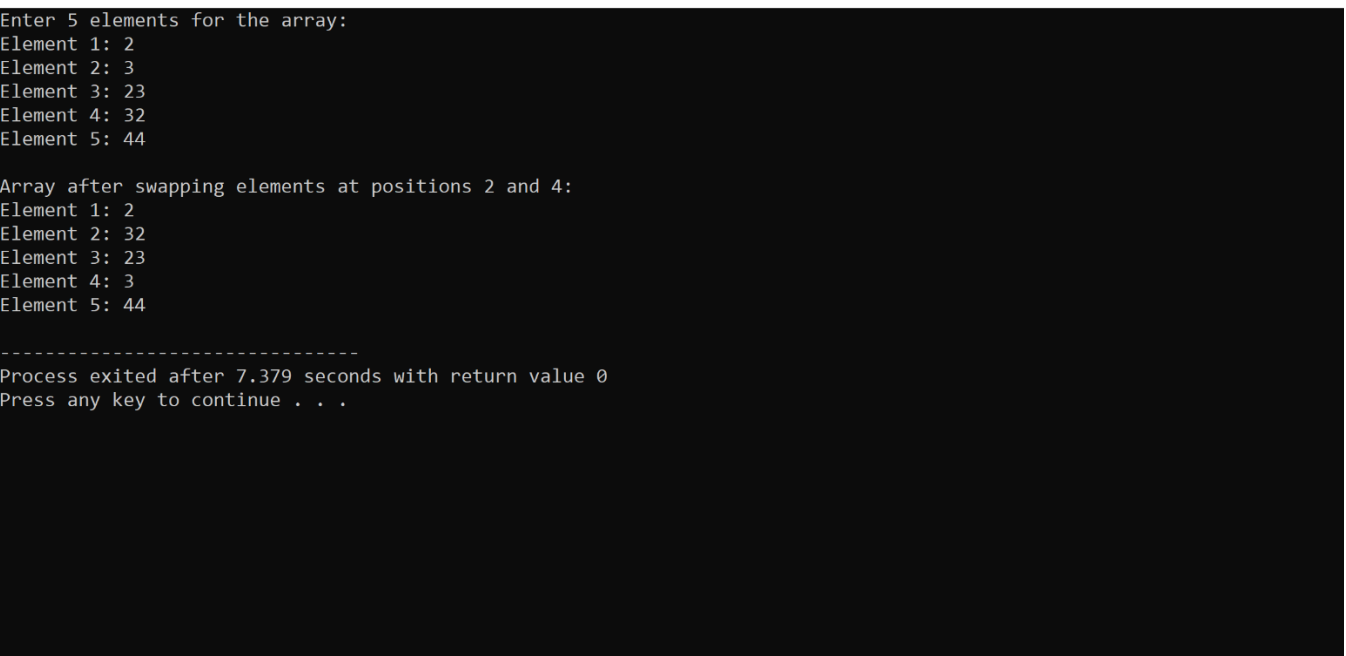
```

int temp = arr[1]; // Element at position 2
arr[1] = arr[3]; // Swap with element at position 4
arr[3] = temp; // Place the original element at position 2 in position 4

std::cout << "\nArray after swapping elements at positions 2 and 4:\n";
for (int i = 0; i < size; ++i) {
    std::cout << "Element " << i + 1 << ": " << arr[i] << "\n";
}

return 0;
}

```



The screenshot shows a Windows command prompt window with the title "C:\Users\mudassar\OneDrive\Documents\Downloads\Untitled1.exe". The program prompts the user to "Enter 5 elements for the array:". The user enters the values 2, 3, 23, 32, and 44. The program then displays "Array after swapping elements at positions 2 and 4:" followed by the updated array: Element 1: 2, Element 2: 32, Element 3: 23, Element 4: 3, and Element 5: 44. At the bottom, it shows "Process exited after 7.379 seconds with return value 0" and "Press any key to continue . . .".

```

C:\Users\mudassar\OneDrive\Documents\Downloads\Untitled1.exe
Enter 5 elements for the array:
Element 1: 2
Element 2: 3
Element 3: 23
Element 4: 32
Element 5: 44

Array after swapping elements at positions 2 and 4:
Element 1: 2
Element 2: 32
Element 3: 23
Element 4: 3
Element 5: 44

-----
Process exited after 7.379 seconds with return value 0
Press any key to continue . . .

```