Computer Systems & Programming

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Home Tasks of Lab Manual 8

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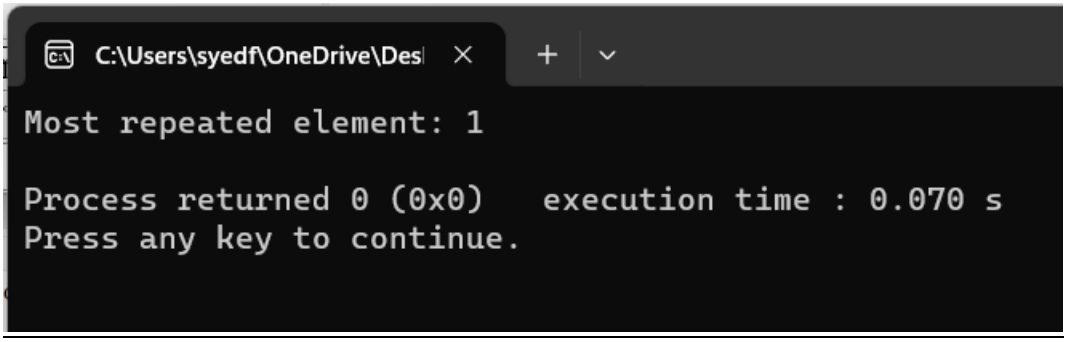
Home Task# 1:

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

Code:

```
#include <iostream>
Using namespace std;

int main() {
  int arr[] = {1, 2, 3, 1, 4, 2, 1, 5, 3};
  int n = sizeof(arr) / sizeof(arr[0]);

  int maxCount = 0;
  int mostRepeated;

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

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

  cout << "Most repeated element: " << mostRepeated << endl;

  return 0;
}
```

Result:



Home Task# 2:

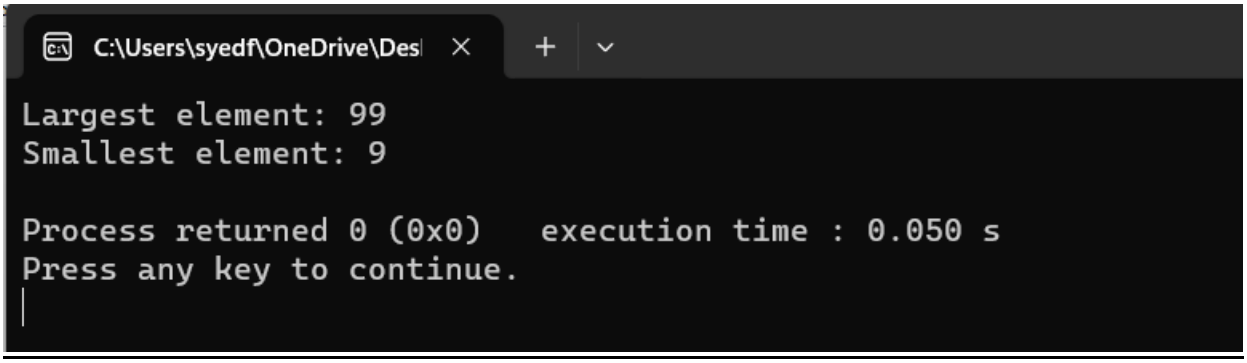
Let's say an array is a[8] = {13, 15, 17, 9, 99, 77, 65, 43}. Find largest and smallest element.

Code:

```
#include <iostream>

using namespace std;

int main() {

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

  int n = sizeof(a) / sizeof(a[0]);

  // Initialize variables

  int largest = a[0];

  int smallest = a[0];

  // Loop through the array

  for (int i = 1; i < n; ++i) {

    if (a[i] > largest) {

      largest = a[i];

    }

    else if (a[i] < smallest) {

      smallest = a[i];

    }

  }

  // Print the results

  cout << "Largest element: " << largest <<endl;

 cout << "Smallest element: " << smallest <<endl;

return 0;
```

}

Result:



Home Task# 3:

Develop a program that takes 5 array elements from user. Swap position [2] element with position [4] element. (**Hint**: Use the same method of swapping values we used for variables using a third variable temp).

Code:

```
#include <iostream>
using namespace std;
int main() {
  // Define an array to store 5 elements
  int arr[5];

  // Get input from the user
cout << "Enter 5 elements for the array: ";
  for (int i = 0; i < 5; i++) {
cin >> arr[i];
  }

  // Swap elements at positions 2 and 4
  int temp = arr[2];
  arr[2] = arr[4];
  arr[4] = temp;

  // Print the updated array
cout << "Updated array: ";
  for (int i = 0; i < 5; i++) {
cout << arr[i] << " ";
  }
```

```
cout << std::endl;

  return 0;
}
```

Result: