Fundamentals of Programing

Lab Manual #8

Home-Tasks

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TASK 1:

```cpp
#include <iostream>
using namespace std;

int main() {
    int size;

    cout << "Enter the size of the array: ";
    cin >> size;

    int arr[size];

    cout << "Enter the array elements: "<<endl;
    for (int i = 0; i < size; ++i) {
        cout << "Element " << i + 1 << ": ";
        cin >> arr[i];
    }

    int mostRepeatedElement = arr[0];
    int maxFrequency = 1;

    for (int i = 0; i < size - 1; ++i) {
        int currentElement = arr[i];
        int currentFrequency = 1;

        for (int j = i + 1; j < size; ++j) {
            if (arr[j] == currentElement) {
                currentFrequency++;
            }
        }

        if (currentFrequency > maxFrequency) {
            maxFrequency = currentFrequency;
            mostRepeatedElement = currentElement;
        }
    }

    cout << "The most repeated elements: " << mostRepeatedElement;

    for (int i = 1; i < size; ++i) {
        int currentElement = arr[i];
        int currentFrequency = 1;

        for (int j = i + 1; j < size; ++j) {
```

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```cpp
        if (arr[j] == currentElement) {
            currentFrequency++;
        }
    }

    if (currentFrequency == maxFrequency && currentElement != mostRepeatedElement) {
        cout << ", " << currentElement;
    }
  }

  cout << endl;

  return 0;
}
```

```
Enter the size of the array: 6
Enter the array elements:
Element 1: 4
Element 2: 4
Element 3: 2
Element 4: 2
Element 5: 2
Element 6: 3
The most repeated elements: 2


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Process exited after 4.543 seconds with return value 0
Press any key to continue . . . |
```

TASK 2:

```cpp
#include <iostream>
using namespace std;

int main() {
    int arr[8] = {13, 15, 17, 9, 99, 77, 65, 43};

    int largest = arr[0];
    int smallest = arr[0];

    for (int i = 1; i < 8; ++i) {
        if (arr[i] > largest) {
            largest = arr[i];
        } else if (arr[i] < smallest) {
            smallest = arr[i];
        }
    }

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

    return 0;
}
```

```
Largest element: 99
Smallest element: 9


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Process exited after 0.04246 seconds with return value 0
Press any key to continue . . .
```

TASK 3:

```cpp
#include <iostream>
using namespace std;

int main() {
    int arr1[5];
int temp;
    cout << "Enter 5 array elements:\n";
    for (int i = 0; i < 5; ++i) {
        cout << "Element " << i + 1 << ": ";
        cin >> arr1[i];
    }
    temp = arr1[2];
    arr1[2] = arr1[4];
    arr1[4] = temp;

    cout << "Updated array after swapping:\n";
    for (int i = 0; i < 5; ++i) {
        cout << "Element " << i + 1 << ": " << arr1[i] << endl;
    }

    return 0;
}
```

```
Enter 5 array elements:
Element 1: 15
Element 2: 20
Element 3: 33
Element 4: 46
Element 5: 98
Updated array after swapping:
Element 1: 15
Element 2: 20
Element 3: 98
Element 4: 46
Element 5: 33


---------------------------------
Process exited after 6.947 seconds with return value 0
Press any key to continue . . .
```