Fundamentals of Programming

Lab Manual 8, Home tasks 1-3

Me-15

Name: Faizan Ahmad

Qalam ID: 476602

Section: A

Task 1:

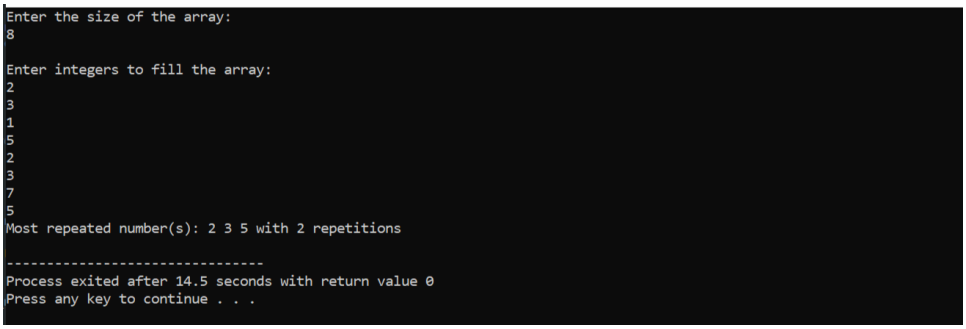
“Take an array and find the most repeated element in that array.”

Code:

```
#include<iostream>
using namespace std;
int main() {


 int n, current, repeat, maxrepeat = 0, index = 0;

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

   int most_number[n];
   int a[n];

   cout << endl << "Enter integers to fill the array: " << endl;

   for (int i = 0; i < n; i++) {
      cin >> a[i];
   }

   for (int i = 0; i < n; i++) {
      current = a[i];
```

```
        repeat = 1;

        for (int j = i + 1; j < n; j++) {
            if (current == a[j]) {
                repeat++;
            }
        }

        if (repeat > maxrepeat) {
            maxrepeat = repeat;
            index = 0;
            most_number[index] = current;
        } else if (repeat == maxrepeat) {
            index++;
            most_number[index] = current;
        }
    }

cout << "Most repeated number(s): ";
            for (int i = 0; i <= index; i++) {
            cout << most_number[i] << " ";
            }

            cout << "with " << maxrepeat << " repetitions" << endl;
return 0;
}
```

Screenshot of execute:



Task 2:

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

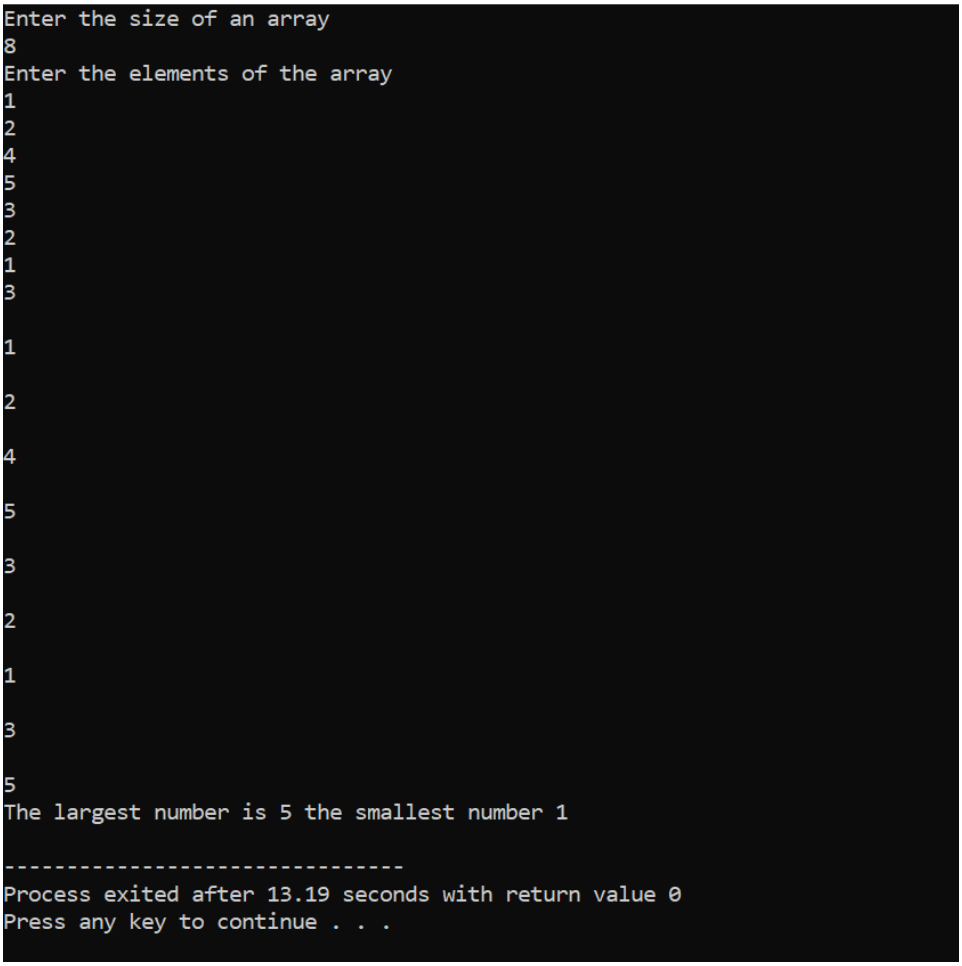
Code:

```
#include<iostream>
using namespace std;
int main() {
int n, temp, max = 0, smol;
cout<<"Enter the size of an array "<<endl;
cin>>n;
int a[n];

cout<<"Enter the elements of the array "<<endl;

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

cin>>a[i];
}
```

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

cout<<endl<<a[i]<<endl;
}

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

temp = a[i];
for ( int j = i; j< n; j++ ) {

if ( a[j] <= temp && max <= temp ) {
max = temp;
}

}

}

smol = max;
cout<<endl<<smol<<endl;

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

temp = a[i];
for ( int j = i; j< n; j++ ) {

if ( a[j] > temp && smol > temp ) {
```

```
smol = temp;
}

}

}

cout<<"The largest number is "<<max<<" the smallest number "<<smol<<endl;

return 0;
}
```

Screenshot of execute:



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() {

cout<<"Enter 5 elements for an array"<<endl;
```

```
int a[5];
for ( int i=0; i<5; i++ ) {
cin>>a[i];
}
int temp = 0;

temp = a[4];
a[4] = a[2];
a[2] = temp;

cout<<endl<<"The array with the position [2] and [4] swaped is "<<endl;
for ( int i = 0; i<5; i++ ) {
cout<<a[i]<<endl;
}

return 0;
}
```

Screenshot of execute: