

Department of Mechanical Engineering

CS-114 - Fundamental of Programing

Home Tasks 8

Course Instructor: Dr Jawad Khan

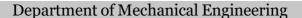
Lab Instructor: Muhammad Affan

Student Name: Ahmed Adil Hussain

CMS ID: 477537

DATE:

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HOME TASK 1:

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

Code:

```
#include <iostream>
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5
       using namespace std;
       int main()
            HOME TASK 1
7
8
9
            int 1;
                                      //length of array
            int d;
                                      //number of times an element appears
                                      //number of times the most repeated element appears
            int dmax=0;
            11
12
13
14
            int a[1];
            cout<<"Please enter the elements"<<endl;
for(int i=0; i<1; i+=1){cin>>a[i];}
for(int i=0; i<1; i+=1){</pre>
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20
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25
26
                 d=0;
for(int j=0; j<1; j+=1){if(a[i]==a[j]){d+=1;}}
if(d<=dmax){continue;}</pre>
                 if(d>dmax){dmax=d; pos=i;}
            if(dmax==1){cout<<"All elements are present only once"; return 0;}</pre>
            cout<<"In the given array {";
for(int c=0; c<1; c+=1){cout<<a[c]<<' ';}
cout<<"}, the most repeated element is "<<a[pos]<<". This element was repeated "<<dmax<<" times.";</pre>
27
            return 0;
28
```

Result:



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HOME TASK 2:

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()
 5 🖳
            HOME TASK 2
             int a[8] = {13, 15, 17, 9, 99, 77, 65, 43};
             int d;
             int largest;
int smallest;
for(int i=0; i<8; i+=1){</pre>
10
11 -
12
13 —
14
15
                        for(int j=0; j<8; j+=1){
    if(a[i]<=a[j]){d+=1;}}
    if(d==8){smallest = a[i];}
16
17 —
18
19
                  d=0;
                        for(int j=0; j<8; j+=1){
    if(a[i]>=a[j]){d+=1;}}
                        if(d==8){largest = a[i];}
20
21
             cout<<"The largest element is "<<largest<<" and the smallest element is "<<smallest<<endl;
22
23
             return 0;
24
```

Result:

```
The largest element is 99 and the smallest element is 9
------
Process exited after 0.1147 seconds with return value 0
Press any key to continue . . .
```



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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()
 5 -
      {
// HOME TASK 3
           int a[5]={0,0,0,0,0,0};
           int temp;
cout<<"Please enter the elements"<<endl;</pre>
 8
 9
           for(int i=0; i<5; i+=1){cin>>a[i];}
10
           cout<<"The given array is {";
for(int z=0; z<5; z+=1){cout<<a[z]<<' ';}</pre>
11
12
           cout<<"}";
temp=a[1];</pre>
13
14
           a[1]=a[3];
15
           a[3]=temp;
16
           cout<<"The swapped array is {";</pre>
           for(int j=0; j<5; j+=1){cout<<a[j]<<' ';}
18
19
           cout << "}";
20
            return 0;
```

Result:

```
Please enter the elements

1

2

3

4

5

The given array is {1 2 3 4 5 }The swapped array is {1 4 3 2 5 }

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Process exited after 22.62 seconds with return value 0

Press any key to continue . . .
```