CS & Programming Lab
Lab Manual 08
Home Task

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Home Task #1

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

```cpp
#include<iostream>

using namespace std;


int main()

{

        //Declaring variables and taking inputs

        int n, a[n], most_rptd=0, count;

        cout<<"Enter the number of elements : ";

        cin>>n;

        cout<<endl;


        cout<<"Enter the number values\n\n";

        int i=0;

        while (i<n)

        {

        cout<<"Enter Value #"<<i+1<<" : ";

        cin>>a[i];

        i++;
```

```cpp
    }
cout<<endl;


//Checking for single most repeated element
    for (int i=0; i<n; i++)

    {

    count=1;

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

    {

    if (a[i]==a[j])

    {count++;}}

    if (count>most_rptd)

    {most_rptd=count;}

    }
    //Checking for multiple most repeated elements
for (int i=0; i<n; i++)

    {

    count=1;

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

    {

    if (a[i]==a[j])

    {count++;}}

    if (count==most_rptd)
```

{cout<<"Element "<<a[i]<<" was repeated "<<most_rptd<<" times."<<endl;}

    }

}

```cpp
1    /*1. Take an array and find the most repeated element in that array.*/
2
3    #include<iostream>
4    using namespace std;
5
6    int main()
7    {
8        //Declaring variables and taking inputs
9        int n, a[n], most_rptd=0, count;
10       cout<<"Enter the number of elements : ";
11       cin>>n;
12       cout<<endl;
13
14       cout<<"Enter the number values\n\n";
15       int i=0;
16       while (i<n)
17       {
18       cout<<"Enter Value #"<<i+1<<" : ";
19       cin>>a[i];
20       i++;
21       }
22       cout<<endl;
23
24       //Checking for single most repeated element
25       for (int i=0; i<n; i++)
26       {
27       count=1;
28       for (int j=i+1; j<n; j++)
29       {
30       if (a[i]==a[j])
31       {count++;}}
32       if (count>most_rptd)
33       {most_rptd=count;}
34       }

35       //Checking for multiple most repeated elements
36       for (int i=0; i<n; i++)
37       {
38       count=1;
39       for (int j=i+1; j<n; j++)
40       {
41       if (a[i]==a[j])
42       {count++;}}
43       if (count==most_rptd)
44       {cout<<"Element "<<a[i]<<" was repeated "<<most_rptd<<" times."<<endl;}
45       }
46   }
```

```
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Enter the number of elements : 5

Enter the number values

Enter Value #1 : 1
Enter Value #2 : 2
Enter Value #3 : 3
Enter Value #4 : 4
Enter Value #5 : 3

Element 3 was repeated 2 times.

------------------------------------
Process exited after 16.89 seconds with return value 0
Press any key to continue . . .
```

```
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Enter the number of elements : 5

Enter the number values

Enter Value #1 : 1
Enter Value #2 : 2
Enter Value #3 : 2
Enter Value #4 : 3
Enter Value #5 : 3

Element 2 was repeated 2 times.
Element 3 was repeated 2 times.

------------------------------------
Process exited after 8.536 seconds with return value 0
Press any key to continue . . .
```

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.*/

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

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

    for (int i=0; i<8; i++)
    {
    for (int j=0; j<8; j++)
    {
    if (a[j]>a[j+1])
    {temp=a[j];
    a[j]=a[j+1];
    a[j+1]=temp;}
    }
    }
    cout<<"The smallest element is "<<a[0]<<"."<<endl;
```

cout<<"The largest element is "<<a[7]<<"."<<endl;

}

```
1    /*2. Let's say an array is a[8] = {13, 15, 17, 9, 99, 77, 65, 43}. Find largest and smallest element.*/
2
3    #include<iostream>
4    using namespace std;
5
6    int main()
7  □ {
8        int a[8] = {13, 15, 17, 9, 99, 77, 65, 43}, temp;
9
10       for (int i=0; i<8; i++)
11  □    {
12           for (int j=0; j<8; j++)
13  □        {
14           if (a[j]>a[j+1])
15  □        {temp=a[j];
16           a[j]=a[j+1];
17           a[j+1]=temp;}
18           }
19           }
20       cout<<"The smallest element is "<<a[0]<<"."<<endl;
21       cout<<"The largest element is "<<a[7]<<"."<<endl;
22  └ }
```

```
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The smallest element is 9.
The largest element is 99.

----------------------------------
Process exited after 0.06166 seconds with return value 0
Press any key to continue . . .
```

Home Task #3

/*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).*/

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

int main()
{
    //Declaring variables and taking inputs
    int a[5], temp;

    cout<<"Enter five elements\n"<<endl;

    for (int i=0; i<5; i++)
    {
    cout<<"Enter Value #"<<i+1<<" : ";
    cin>>a[i];
    }
    cout<<endl;
```

//Computing result and displaying output

temp=a[2];

a[2]=a[4];

a[4]=temp;

cout<<"Array = ";

for (int i=0; i<5; i++)

{

cout<<a[i]<<" ";

}

}

```cpp
1    /*3. Develop a program that takes 5 array elements from user.|
2    Swap position [2] element with position [4] element.
3    (Hint: Use the same method of swapping values we used for variables using a third variable temp).*/
4
5    #include<iostream>
6    using namespace std;
7
8    int main()
9  {
10       //Declaring variables and taking inputs
11       int a[5], temp;
12
13       cout<<"Enter five elements\n"<<endl;
14
15       for (int i=0; i<5; i++)
16       {
17           cout<<"Enter Value #"<<i+1<<" : ";
18           cin>>a[i];
19       }
20       cout<<endl;
21       //Computing result and displaying output
22       temp=a[2];
23       a[2]=a[4];
24       a[4]=temp;
25       cout<<"Array = ";
26       for (int i=0; i<5; i++)
27       {
28           cout<<a[i]<<" ";
29       }
30  }
```

```
Enter five elements

Enter Value #1 : 0
Enter Value #2 : 1
Enter Value #3 : 2
Enter Value #4 : 3
Enter Value #5 : 4

Array = 0 1 4 3 2
--------------------------------------
Process exited after 6.543 seconds with return value 0
Press any key to continue . . .
```