



University of Asia Pacific

H.W.__1(CSE-108)

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Sec: C-2

Course:CSE-108

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//1::Program to find the minimum (or maximum) element of an array

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

int A[5]={5,4,7,9,5};
int t;

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

for(int j=i+1;j<5;j++){

if(A[i]<A[j]){
t=A[i];
A[i]=A[j];
A[j]=t;

}
}
}
cout<<"MAX="<<A[0]<<endl<<"MIN="<<A[4]<<" ";
return 0;
}
```

C++ Online Compiler

Programiz PRO >

main.cpp

Share

Run

Output

Clear

```

5 int main() {
6
7 int A[]={5,4,7,9,5};
8 int t;
9
10 for(int i=0;i<5;i++){
11
12 for(int j=i+1;j<5;j++){
13
14 if(A[i]<A[j]){
15 t=A[i];
16 A[i]=A[j];
17 A[j]=t;
18
19 }
20 }
21 }
22 cout<<"MAX="<<A[0]<<endl<<"MIN="<<A[4]<<" ";
23 return 0;
24 }

```

/tmp/g0215hz0N2.o

MAX=9

MIN=4

=== Code Execution Successful ===

Activate Windows

Go to Settings to activate Windows.

//2::Program to reverse a array

```

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

```

```

int A[]={5,4,7,9,8};
int t;

```

```

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

```

```

    for(int j=i+1;j<5;j++){
        t=A[i];
        A[i]=A[j];
        A[j]=t;

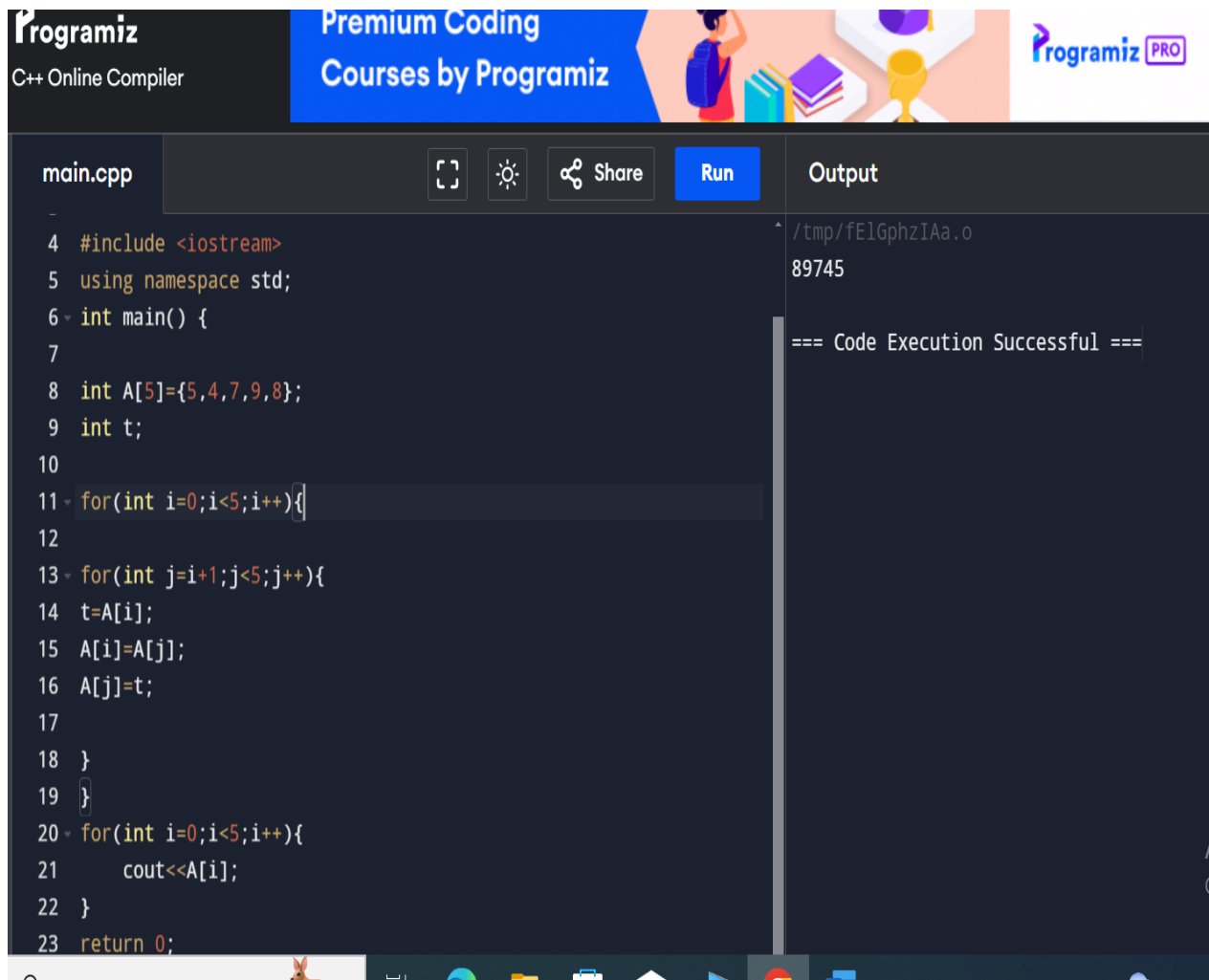
```

```

    }
}
for(int i=0;i<5;i++){
    cout<<A[i];
}
return 0;

```

}



```
main.cpp
4  #include <iostream>
5  using namespace std;
6  int main() {
7
8  int A[5]={5,4,7,9,8};
9  int t;
10
11  for(int i=0;i<5;i++){
12
13  for(int j=i+1;j<5;j++){
14  t=A[i];
15  A[i]=A[j];
16  A[j]=t;
17
18  }
19  }
20  for(int i=0;i<5;i++){
21  cout<<A[i];
22  }
23  return 0;
```

Output

/tmp/fElGphzIAa.o
89745
=== Code Execution Successful ===

//3..Program to cyclically rotate an array by one

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

```
int main() {
    int arr[] = {1, 2, 3, 4, 5};
    int last= arr[4];

    for(int i = 4; i > 0; i--){
        arr[i] = arr[i-1];
    }
    arr[0] = last;

    for (int i = 0; i < 5; i++) {
        cout << arr[i] << " ";
    }
    return 0;
}
```

main.cpp	Run	Output
<pre>1 2 //3..Program to cyclically rotate an array by one 3 #include <iostream> 4 using namespace std; 5 6 int main() { 7 int arr[] = {1, 2, 3, 4, 5}; 8 int last= arr[4]; 9 10 for(int i = 4; i > 0; i--){ 11 arr[i] = arr[i-1]; 12 } 13 arr[0] = last; 14 15 for (int i = 0; i < 5; i++) { 16 cout << arr[i] << " "; 17 } 18 return 0; 19 }</pre>	<div>^ /tmp/OBHIHy6aFJ.o</div> <div>5 1 2 3 4</div> <div>=== Code Execution Successful ===</div>	<div>Clear</div> <div>Activate Windows Go to Settings to activate Windows.</div>

//4::Program to Sort an Array in Ascending Order

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

```
int A[5]={5,4,6,1,2};
int t;
```

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

```
for(int j=i+1;j<5;j++){
```

```
if(A[i]>A[j]){
t=A[i];
A[i]=A[j];
A[j]=t;}
}
```

```
} for(int i=0;i<5;i++){
cout<<A[i]<<" ";}
return 0;
}
```

```
main.cpp
4 int main() {
5
6 int A[5]={5,4,6,1,2};
7 int t;
8
9 for(int i=0;i<5;i++){
10 |
11 for(int j=i+1;j<5;j++){
12
13 if(A[i]>A[j]){
14 t=A[i];
15 A[i]=A[j];
16 A[j]=t;
17
18 }
19 }
20 } for(int i=0;i<5;i++){
21 cout<<A[i]<<" ";
22 return 0;
23 }
```

Output

/tmp/wbYv9T1dQF.o

1 2 4 5 6

=== Code Execution Successful ===

Activate Windows
Go to Settings to activate Windows.

Type here to search

Rich...

11:18 AM
9/16/2024

//5..Find duplicate elements in an array

#include <iostream>

using namespace std;

```
int main() {
    int arr[] = {1,1,3,3,5,6,6,7,7};
    int i,j;

    for(int i = 0; i<10 ; i++){
        for(int j= i+1; j<10 ; j++){
            if(arr[i]==arr[j]){
                cout<<"duplicate elements is"<<arr[i]<<" "<<endl;}
            }
        }
    return 0;
}
```



main.cpp	Share	Run	Output
<pre> 1 2 //5..Find duplicate elements in an array 3 #include <iostream> 4 using namespace std; 5 6 int main() { 7 int arr[] = {1,1,3,3,5,6,6,7,7}; 8 int i,j; 9 10 for(int i = 0; i<10 ; i++){ 11 for(int j= i+1; j<10 ; j++){ 12 if(arr[i]==arr[j]){ 13 cout<<"duplicate elements is"<<arr[i]<<" "<<endl; 14 } 15 } 16 return 0; 17 } 18 </pre>			<pre> /tmp/pXwA1HkVQB.o duplicate elements is=1 duplicate elements is=3 duplicate elements is=6 duplicate elements is=7 === Code Execution Successful === </pre>

Activate Windows
Go to Settings to activate Windows

//6::Count number of occurrences (or frequency) in a sorted array

```

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

```

```

    int A[5]={5,4,2,4,2};
    int c1=0,c2=0,c3=0;

```

```

    for(int i=0;i<5;i++){
        if(A[i]==5){
            c1++;
        }
        else if(A[i]==4){
            c2++;
        }
        else if(A[i]==2){
            c3++;
        }
    }

```

```

    cout<<"occurrences of 5="<<c1<<endl;
    cout<<"occurrences of 4="<<c2<<endl;
    cout<<"occurrences of 2="<<c3;
    return 0;

```

}

The screenshot shows an online C++ compiler interface. The code in `main.cpp` is as follows:

```
1 using namespace std;
2
3 int main() {
4
5     int A[5]={5,4,2,4,2};
6     int c1=0,c2=0,c3=0;
7
8     for(int i=0;i<5;i++){
9         if(A[i]==5){
10             c1++;
11         }
12         else if(A[i]==4){
13             c2++;
14         }
15         else if(A[i]==2){
16             c3++;
17         }
18     }
19
20     cout<<"occurrences of 5="<<c1<<endl;
21     cout<<"occurrences of 4="<<c2<<endl;
22     cout<<"occurrences of 2="<<c3;
23     return 0;
24 }
```

The output of the program is:

```
/tmp/hq51ulgRVj.o
occurrences of 5=1
occurrences of 4=2
occurrences of 2=2

=== Code Execution Successful ===
```

The interface also includes a search bar, a taskbar with various application icons, and a system tray showing the temperature (88°F) and time (11:43).

//7::Sort an array of 0s, 1s and 2s | Dutch National Flag problem

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

    int A[]={5,4,2,4,2,0,0,8,0};
    int r;

    for(int i=0;i<10;i++){
        for(int j=i+1;j<10;j++){

            if(A[i]>A[j]){
                r= A[i];
                A[i]=A[j];
                A[j]=r;
            }
        }
    }
}
```



```

for(int i=0;i<10;i++){
    cout<<A[i]<<" ";
return 0;
}

```

The screenshot shows a C++ IDE with a file named `main.cpp`. The code in the editor is as follows:

```

1 #include <iostream>
2
3 using namespace std;
4
5 int main() {
6
7     int A[]={5,4,2,4,2,0,0,8,0};
8     int r;
9
10    for(int i=0;i<10;i++){
11        for(int j=i+1;j<10;j++){
12
13            if(A[i]>A[j]){
14                r= A[i];
15                A[i]=A[j];
16                A[j]=r;
17            }
18        }
19    }
20
21    for(int i=0;i<10;i++){
22        cout<<A[i]<<" ";
23    }
24    return 0;
25 }

```

The IDE interface includes buttons for 'Run', 'Share', and 'Output'. The 'Output' pane on the right shows the execution path `/tmp/uZ994Y49YZ.o` and the output `0 0 0 2 2 4 5 8`. Below the output, it states '=== Code Execution Successful ==='. A Windows watermark 'Activate Windows' is visible in the bottom right corner.

//8..Move all negative numbers to beginning and positive to end

```

#include <iostream>
using namespace std;
int main() {
    int arr[] = {-8, 5, -3, 9, 4, -6, -7};
    int n = 7;
    int r;
    for (int i = 0; i < 7; i++) {
        for (int j = i + 1; j < 7; j++) {
            if (arr[i] > 0 && arr[j] < 0) {
                r = arr[i];

```

```

        arr[i] = arr[j];
        arr[j] = r;
    }
}
}
for (int i = 0; i < 7; i++) {
    cout << arr[i] << " ";
}
return 0;
}

```

Programiz
C++ Online Compiler

Courses by Programiz

Programiz PRO

Progr...

main.cpp

Share

Run

Output

```

4  using namespace std;
5  int main() {
6      int arr[] = {-8, 5, -3, 9, 4, -6, -7};
7      int n = 7;
8      int r;
9      for (int i = 0; i < 7; i++) {
10         for (int j = i + 1; j < 7; j++) {
11             if (arr[i] > 0 && arr[j] < 0) {
12                 r = arr[i];
13                 arr[i] = arr[j];
14                 arr[j] = r;
15             }
16         }
17     }
18     for (int i = 0; i < 7; i++) {
19         cout << arr[i] << " ";
20     }
21     return 0;
22 }
23

```

/tmp/BciKjUnz9H.o

-8 -3 -6 -7 4 5 9

=== Code Execution Successful ===

Activate Windows

Go to Settings to activate Windows

//9..Find the row with maximum number of 1s

```

#include <iostream>
using namespace std;

```

```

int main() {
    int a[4][4] = { {0, 0, 0, 1},
                    {1, 1, 1, 1},
                    {0, 1, 1, 1},
                    {0, 0, 1, 1} };

```

```

    int c1 = 0, c2 = 0, c3 = 0, c4 = 0;

```

```

    for (int j = 0; j < 4; j++) {
        if (a[0][j] == 1) {

```

```

        c1++;
    }
    if (a[1][j] == 1) {
        c2++;
    }
    if (a[2][j] == 1) {
        c3++;
    }
    if (a[3][j] == 1) {
        c4++;
    }
}
if(c1>c2&& c1>c3&& c1>>c4){
    cout<<"the maximun 1 is in row=1"<<" "<<c1<<"times";}
    if(c2>c1&& c2>c3&& c2>>c4){
        cout<<"the maximun 1 is in row=2"<<" "<<c2<<"times";}
        if(c3>c2&& c3>c1&& c3>>c4){
            cout<<"the maximun 1 is in row=3"<<" "<<c3<<"times";}
            if(c4>c2&& c4>c3&& c4>>c1){
                cout<<"the maximun 1 is in row=4"<<" "<<c4<<"times";}
            return 0;

```

Online Compiler

Program File

main.cpp

Share

Run

Output

Clear

```

4 int main() {
5     int a[4][4] = { {0, 0, 0, 1},
6                     {1, 1, 1, 1},
7                     {0, 1, 1, 1},
8                     {0, 0, 1, 1} };
9
10    int c1 = 0, c2 = 0, c3 = 0, c4 = 0;
11
12    for (int j = 0; j < 4; j++) {
13        if (a[0][j] == 1) {
14            c1++;
15        }
16        if (a[1][j] == 1) {
17            c2++;
18        }
19        if (a[2][j] == 1) {
20            c3++;
21        }
22        if (a[3][j] == 1) {
23            c4++;
24        }
25    }
26    if (c1 > c2 && c1 > c3 && c1 > c4) {
27        cout << "the maximun 1 is in row=1" << " " << c1 << "times";
28    }
29    if (c2 > c1 && c2 > c3 && c2 > c4) {
30        cout << "the maximun 1 is in row=2" << " " << c2 << "times";
31    }
32    if (c3 > c2 && c3 > c1 && c3 > c4) {
33        cout << "the maximun 1 is in row=3" << " " << c3 << "times";
34    }
35    if (c4 > c2 && c4 > c3 && c4 > c1) {
36        cout << "the maximun 1 is in row=4" << " " << c4 << "times";
37    }
38    return 0;
39 }
40

```

/tmp/o9jwJRI1pc.o

the maximun 1 is in row=2 4times

=== Code Execution Successful ===

Activate Windows

Go to Settings to activate Windows.

2:21 PM

//10..Majority Element(element must be greater than the half of the array size)

#include <iostream>

using namespace std;

```

int main() {
    int A[6] = {1, 2, 2, 4, 5, 3};
    int c1 = 0, c2 = 0, c3 = 0;

    for (int i = 0; i < 6; i++) {
        if (A[i] == 1) {
            c1++;
        }
        else if (A[i] == 2) {
            c2++;
        }
        else if (A[i] == 3) {
            c3++;
        }
    }
}

```

```

    }
    if (c1 > 3) {
        cout << "Maximum count is of 1: " << c1 << endl;
    }
    else if (c2 >3) {
        cout << "Maximum count is of 2: " << c2 << endl;
    }
    else if (c3 >3) {
        cout << "Maximum count is of 3: " << c3 << endl;
    }
    else{cout <<"there is no majority integers=" << "-1"<< endl;}

    return 0;
}

```

The screenshot shows a C++ IDE with a code editor on the left and an output window on the right. The code in the editor is a C++ program that finds the majority element in an array. It uses three counters, c1, c2, and c3, to track the frequency of elements 1, 2, and 3 respectively. The array A is initialized as {1, 2, 2, 4, 5, 3}. The program iterates through the array, incrementing the corresponding counter. After the iteration, it checks if any counter is greater than 3. If so, it prints the maximum count for that element. If none are, it prints "-1".

```

main.cpp
int main() {
    int A[6] = {1, 2, 2, 4, 5, 3};
    int c1 = 0, c2 = 0, c3 = 0;

    for (int i = 0; i < 6; i++) {
        if (A[i] == 1) {
            c1++;
        }
        else if (A[i] == 2) {
            c2++;
        }
        else if (A[i] == 3) {
            c3++;
        }
    }

    if (c1 > 3) {
        cout << "Maximum count is of 1: " << c1 << endl;
    }
    else if (c2 >3) {
        cout << "Maximum count is of 2: " << c2 << endl;
    }
    else if (c3 >3) {
        cout << "Maximum count is of 3: " << c3 << endl;
    }
    else{cout <<"there is no majority integers=" << "-1"<< endl;}

    return 0;
}

```

Output window shows the result of the execution:

```

/tmp/fCTDK5uo0X.o
there is no majority integers=-1

=== Code Execution Successful ===

```

Activate Windows
Go to Settings to activate Windows.

//11..Sort an array in wave form

```

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

```

```

{
int array[] = {7, 8, 2, 1, 5, 13};

int temp;

for (int i = 0; i < 6- 1; i++)
{
for (int j = i + 1; j < 6; j++)
{
if (array[i] > array[j]){

temp = array[i];

array[i] = array[j];

array[j] = temp;}
}
}
for (int i = 0; i < 6; i = i + 2)
{
temp = array[i];
array[i] = array[i + 1];
array[i + 1] = temp;
}
for (int i = 0; i < 6; i++)
{
cout<< array[i]<<" ";
//printf("%d ", array[i]);
}
return 0;
}

```

main.cpp



Share

Run

Output

```
3 int main()
4
5 {
6     int array[] = {7, 8, 2, 1, 5, 13};
7
8     int temp;
9
10    for (int i = 0; i < 6- 1; i++)
11    {
12        for (int j = i + 1; j < 6; j++)
13        {
14            if (array[i] > array[j]){
15
16                temp = array[i];
17
18                array[i] = array[j];
19
20                array[j] = temp;}
21        }
22    }
23    for (int i = 0; i < 6; i = i + 2)
24    {
25        temp = array[i];
26        array[i] = array[i + 1];
27        array[i + 1] = temp;
28    }
29    for (int i = 0; i < 6; i++)
30    {
31        cout<< array[i]<<" ";
32        //printf("%d ", array[i]);
33    }
34    return 0;
35 }
```

^ /tmp/shdQ5kUmsY.o
2 1 7 5 13 8

=== Code Execution Successful ===

Activate Windows
Go to Settings to activate Windows.