**Exercises**

Q1-Write a C++ program to find the largest three elements in an array.

#include<iostream>

using namespace std;

void three\_largest(int arr[], int arr\_size)

 {

 int i, first, second, third;

 if (arr\_size < 3)

 {

 cout << "Invalid Input";

 }

 third = first = second = INT\_MIN;

 for (i = 0; i < arr\_size ; i ++)

 {

 if (arr[i] > first)

 {

 third = second;

 second = first;

 first = arr[i];

 }

 else if (arr[i] > second)

 {

 third = second;

 second = arr[i];

 }

 else if (arr[i] > third)

 third = arr[i];

 }

 cout << "\nThree largest elements are: " <<first <<", "<< second <<", "<< third;

}

int main()

{

 int nums[] = {7, 12, 9, 15, 19, 32, 56, 70};

 int n = sizeof(nums)/sizeof(nums[0]);

 cout << "Original array: ";

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

 cout << nums[i] <<" ";

 three\_largest(nums, n);

 return 0;

}

Q2- Write a C++ program to find the most occurring element in an array of integers.

#include<iostream>

using namespace std;

void most\_occurred\_number(int nums[], int size)

{

 int max\_count = 0;

 cout << "\nMost occurred number: ";

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

 {

 int count=1;

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

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

 count++;

 if (count>max\_count)

 max\_count = count;

 }

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

 {

 int count=1;

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

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

 count++;

 if (count==max\_count)

 cout << nums[i] << endl;

 }

 }

int main()

{

 int nums[] = {4, 5, 9, 12, 9, 22, 45, 7};

 int n = sizeof(nums)/sizeof(nums[0]);

 cout << "Original array: ";

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

 cout << nums[i] <<" ";

 most\_occurred\_number(nums, n);

}

Q3-Write a C++ program to find and print all unique elements of a given array of integers.

#include <iostream>

using namespace std;

int main()

{

 int array1[] = {1, 5, 7, 5, 8, 9, 11, 11, 2, 5, 6};

 int s1 = sizeof(array1)/sizeof(array1[0]);

 cout << "Original array: ";

 for (int i=0; i < s1; i++)

 cout << array1[i] <<" ";

 cout <<"\nUnique elements of the said array: ";

 for (int i=0; i<s1; i++)

 {

 int j;

 for (j=0; j<i; j++)

 if (array1[i] == array1[j])

 break;

 if (i == j)

 cout << array1[i] << " ";

 }

 return 0;

}

Q4-Write a C++ program to separate 0s and 1s from a given array of values 0 and 1.

#include<iostream>

using namespace std;

void segregateEvenOdd(int nums[], int n)

{

 int ctr = 0;

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

 if (nums[i] == 0)

 ctr++;

 }

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

 nums[i] = 0;

 for (int i = ctr; i < n; i++)

 nums[i] = 1;

}

int main()

{

 int nums[] = {0, 1, 0, 0 , 1, 1, 1, 0, 1, 0};

 int n = sizeof(nums)/sizeof(nums[0]);

 cout << "Original array: ";

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

 cout << nums[i] <<" ";

 segregateEvenOdd(nums, n);

 printf("\nArray after divided: ");

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

 cout << nums[i] <<" ";

 return 0;

}

 Q5-Write a C++ program to find the two repeating elements in a given array of integers.

#include <iostream>

using namespace std;

int main()

{

 int nums[] = {1, 2, 3, 5, 5, 7, 8, 8, 9, 9, 2};

 int i, j;

 int size = sizeof(nums)/sizeof(nums[0]);

 cout << "Original array: ";

 for (i = 0; i < size; i++)

 cout << nums[i] <<" ";

 cout << "\nRepeating elements: ";

 for(i = 0; i < size; i++)

 for(j = i+1; j < size; j++)

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

 cout << nums[i] << " ";

 return 0;

 }