**Assignment – Core Java Arrays**

**1.**  Write a program to count a total number of duplicate and unique elements in the given array.

**Sample Input:**

Enter array size: 5

Array elements are: 2 5 7 2 4

**Sample Output:**

No of duplicate element: 1 No of unique elements: 3

import java.util.HashMap;

import java.util.Map;

import java.util.Scanner;

Publicclass DuplicateAndUniqueElementsCounter {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

System.out.print("Enter array size: ");zz

int size = scanner.nextInt();

int[] array = new int[size];

System.out.print("Array elements are: ");

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

array[i] = scanner.nextInt();

}

scanner.close();

Map<Integer, Integer> elementCountMap = new HashMap<>();

// Count the occurrences of each element in the array

for (int num : array) {

if (elementCountMap.containsKey(num)) {

elementCountMap.put(num, elementCountMap.get(num) + 1);

} else {

elementCountMap.put(num, 1);

}

}

int duplicateCount = 0;

int uniqueCount = 0;

// Count the number of duplicate and unique elements

for (int count : elementCountMap.values()) {

if (count > 1) {

duplicateCount++;

} else {

uniqueCount++;

}

}

System.out.println("No of duplicate elements: " + duplicateCount);

System.out.println("No of unique elements: " + uniqueCount);

}

}

**2.**  There are N friends in a group. Each of them has Xi chocolates. Write a Java Program to check whether they can share all of these chocolates among themselves such that each one of them has equal number of chocolates.

**Input:**

            First line contains of a single line of input, an integer N denoting no. of friends in the group.

Next line contains N space separated integers Xi denoting the no. chocolates with friend has.

**Output:**

        Output "Yes" if it is possible to share equally else "No" (without " ").

**Sample Input:**

3

1 2 3

**Sample Output:**

Yes

**3.**  Consider an array contains both positive and negative numbers in random order. Write a Java Program to rearrange the array elements so that all negative numbers appear before all positive numbers.

**Input:**

First line contains of a single line of input, an integer N denoting the size of an array.

Next line contains N space separated integers (positive or negative)

**Output:**

Set of negative integers followed by positive integers

**Sample Input:**

9

-12 11 -13 -5 6 -7 5 -3 -6

**Sample Output:**

-12 -13 -5 -7 -3 -6 11 6 5

**4.**  Arun and Naveen are playing a dice game. Each one will get one chance to roll the dice. Dice values are recorded in two different tables. After 10 turns, the winner has to be decided by calculating each value recorded in each table.

**Sample Input:**

            Arun Dice Choice: 5, 6, 2, 1, 2, 5, 6, 3, 4, 2

Naveen Choice: 5, 5, 4, 3, 3, 5, 6, 2, 1, 1

**Sample Output:**

Naveen Wins!!!

**5.**  Write a program to find the minimum and maximum element of each row and column in the given two-dimensional arrays.

**Sample Input:**

Enter row size: 3 Enter column size: 3

Enter 3 \* 3 array elements are: 4

1

2

5

3

6

3

7

8

**Sample Output:**

**Given Array is:**

4  1  2

5  3  6

3  7   8

The minimum and maximum element of 1st row is: 1, 4

The minimum and maximum element of 2nd row is: 3, 6

The minimum and maximum element of 3rd row is: 6, 8

The minimum and maximum element of 1st column is: 3, 5

The minimum and maximum element of 2nd column is: 1, 7

The minimum and maximum element of 3rd column is: 2, 8