DATE:28.12.23 DAY3- JAVA- QUIZ-2

1. Create a class illustrating all the three types of constructors
● No arguments constructor
● Default constructor ● Parameterised constructor
(can create more than one with different type of parameters)

```
public class ConstructorsExample {

    public ConstructorsExample() {

    }


    public ConstructorsExample() {

    }

    public ConstructorsExample(int param1) {

    }

    public ConstructorsExample(String param1, int param2) {

    }
}
```

2. Given a sorted integer array (in increasing order), remove duplicates in-place such that eac element appears only once. The relative order of the elements should be kept the same. Then r number of unique elements in the array.

```
public class RemoveDuplicates {

    public static int removeDuplicates(int[] nums) {
        if (nums.length == 0) {
            return 0;
        }

        int uniqueCount = 1;

        for (int i = 1; i < nums.length; i++) {
            if (nums[i] != nums[i - 1]) {
                nums[uniqueCount++] = nums[i];
            }
        }

        return uniqueCount;
    }

    public static void main(String[] args) {
        int[] inputArray = {22, 22, 77, 77, 88, 89, 89};
        int result = removeDuplicates(inputArray);
```

```
        System.out.println("No. of unique elements = " + result);

        System.out.println(Arrays.toString(inputArray));
    }
```

3 . An array contains both positive and negative numbers in random order. Rearrange the array so that all negative numbers appear before all positive numbers. Don't use .sort() metho

```
java.util.Scanner;

public class RearrangeArray {

    public static void rearrangeArray(int[] arr) {
        int n = arr.length;
        int negativeIndex = 0;

        for (int i = 0; i < n; i++) {
            if (arr[i] < 0) {
                if (i != negativeIndex) {
                    int temp = arr[i];
                    arr[i] = arr[negativeIndex];
                    arr[negativeIndex] = temp;
                }
                negativeIndex++;
            }
        }
    }

    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        System.out.println("Enter the size of the array:");
        int size = scanner.nextInt();

        int[] inputArray = new int[size];

        System.out.println("Enter the elements of the array:");
        for (int i = 0; i < size; i++) {
            inputArray[i] = scanner.nextInt();
        }

        rearrangeArray(inputArray);

        System.out.println("Rearranged array: " + Arrays.toString(inputArray));
    }

}
```