
```java
package com.company;
import java.util.Arrays;
import java.util.Random;

/**
 * Created by Abdulrahman on 23/02/21.
 */
public class testarray {
    public static void main(String[] args) {
        int arr[] = new int[10];
        Random rand =new Random();
        rand.setSeed(System.currentTimeMillis());
        for (int i =0;i < arr.length;i++){
            arr[i] = rand.nextInt(100);
            int[] old = (int[]) arr.clone();
            System.out.println("arrays equal before sort: " +
Arrays.equals(old,arr));
            Arrays.sort(arr);
            System.out.println("arrays equal after sort: " +
Arrays.equals(old,arr));
            System.out.println("old =" + Arrays.toString(old));
            System.out.println("arr =" + Arrays.toString(arr));
        }
    }
}
```

```java
package com.company;
public class copyarray
{
    public static void main(String[] args)
    {
        int intArray[] = {12,15,17};

        //print original intArray
        System.out.println("Contents of intArray[] before assignment:");
        for (int i=0; i<intArray.length; i++)
            System.out.print(intArray[i] + " ");

        // Create an array b[] of same size as a[]
        int copyArray[] = new int[intArray.length];

        // intArray is assigned to copyArray; so references point to same
location
        copyArray = intArray;

        // change element of copyArray
        copyArray[1]++;

        //print both arrays
        System.out.println("\nContents of intArray[]:");
        for (int i=0; i<intArray.length; i++)
            System.out.print(intArray[i] + " ");

        System.out.println("\nContents of copyArray[]:");
        for (int i=0; i<copyArray.length; i++)
            System.out.print(copyArray[i] + " ");
    }
}
```

```java
package com.company;
import java.util.ArrayList;
import java.util.Arrays;
```

```java
/**
 * Created by Abdulrahman on 27/02/21.
 */
public class mergearray {
    public static <T> void reveres(T[] arr){
        int n=arr.length-1;
        for (int i =0;i<arr.length/2;i++){
            T a=arr[i];
            arr[i]=arr[n];
            arr[n]=a;
            n--;
            System.out.println(arr[i]);
        }
    }
    public static <e> void merge (e a[],e b[]){
        ArrayList<e> m= new ArrayList<>();
        for (int i =0;i <a.length;i++)
        {
            m.add(a[i]);
        }
        for (int i=0;i<b.length;i++){
            m.add(b[i]);
        }
        System.out.println(Arrays.toString(a)+"    ");
        System.out.println(Arrays.toString(b)+"    ");
        System.out.println(" after  marege:");
        System.out.println(m.toString());

    }

    public static void main(String[] args) {
        Integer a[]={1,2,3,4,5,6};
        merge(a,a);




    }
}
```

```java
package com.company;
import java.util.HashMap;
import java.util.Map;

/**
 * Created by Abdulrahman on 28/02/21.
 */
public class pr123 {


    public static void morethanNdK(int a[], int n, int k)
    {
        int x = n / k;

        HashMap<Integer, Integer> y = new HashMap<>();

        for (int i = 0; i < n; i++)
        {
            if (!y.containsKey(a[i]))
                y.put(a[i], 1);

            else
            {
                int count = y.get(a[i]);
                y.put(a[i], count + 1);
            }
        }
```

```
        for (Map.Entry m : y.entrySet())
        {
            Integer temp = (Integer)m.getValue();
            if (temp > x)
                System.out.println(m.getKey());
        }
    }

    public static void main(String[] args)
    {

        int a[] = new int[] { 1, 1, 2, 2, 3, 5, 4,1, 1, 3, 1, 1, 1 ,2};
        int n = 12;
        int k = 5;
        System.out.print("The repeated component more than five times: ");
        morethanNdK(a, n, k);

    }}
```

```
package com.company;
public class reverseArray {

    /* created by Abdulrahman */
    static void reverse(int a[], int n)
    {
        int[] b = new int[n];
        int j = n;
        for (int i = 0; i < n; i++) {
            b[j - 1] = a[i];
            j = j - 1;
        }

      /*printing the reversed array*/
        System.out.println("Reversed array is: \n");
        for (int k = 0; k < n; k++) {
            System.out.println(b[k]);
        }
    }

    public static void main(String[] args)
    {
        int [] arr = {10, 20, 30, 40, 50};
        reverse(arr, arr.length);
    }
}
```

```
package com.company;
public class scores {
    public static final int maxentries =  10;
    protected int numentries;
    protected int pr[]entries;
    public scores()
    {
        entries = new pr(maxentries);
        numentries =0;



    }
    public  String tostring()
    {
        String s= "[";
        for (int i =0;i<numentries;i++)
        {
            if (i >0)s +=",";
            s+= entries[i]
        }
        return s + "]";
```

```
}
public void add(pr e){
    int newscores = e.getScore();
    if (numentries == maxentries){
        if (newscores <=entries[numentries-1].getScore())
            return;
    }
    else
        numentries++;
    int i =numentries-1;
    for ( ;(i >= 1)&&(newscores > entries[i-1].getScore());i--){
        entries [i] = entries [i -1];

        entries [i] = e;
    }
    public static void insertionsort(char[] a ){
    int n = a.length;
    for (int i =1;i<n;i++){
        char cur =a[i];
        int j = i-1;
        while ((j >= 0) && (a[j] > cur))
            a[j+1] = a[j--];
        a[j + 1] =cur;
    }
}
}
```