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package homework;

import java.util.ArrayList;
import java.util.List;

public class ArrayToListToArray {

    public static void main (String[] args)
    {
        String[] array = {"Rahul", "Utkarsh",
                           "Shubham", "Neelam", "Usha", "Sona"};

        List<String> arl = new ArrayList<String>();

        // Array to ArrayList Conversion
        for (String arraylist : array)
            arl.add(arraylist);

        System.out.println(arl);

        List<Integer> arrl = new ArrayList<Integer>();
        arrl.add(10);
        arrl.add(20);
        arrl.add(30);
        arrl.add(40);

        Object[] objects = arrl.toArray();

        // Printing array of objects
        for (Object obj : objects)
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        System.out.print(obj + " ");
    }
}

package homework;

public class DuplicateArray {

    public static void main(String[] args) {
        //Initialize array
        int [] arr = new int [] {1, 2, 3, 4, 2, 7, 8, 8, 3};

        System.out.println("Duplicate elements in given array: ");
        //Searches for duplicate element
        for(int i = 0; i < arr.length; i++) {
            for(int j = i + 1; j < arr.length; j++) {
                if(arr[i] == arr[j])
                    System.out.println(arr[j]);
            }
        }
    }
}

package homework;

import java.util.Arrays;

public class EqualArray {

    public static void main(String[] args) {

        //defining array to compare
        int[] array1 = new int[] {'a', 'b', 'c', 'd', 'r'};
        int[] array2 = new int[] {'a', 'b', 'c', 'd', 'e'};
        //comparing two arrays using equals() method
        if (Arrays.equals(array1, array2))
            System.out.println("Arrays are equal.");
        else
            System.out.println("Arrays are not equal.");
    }
}

package homework;

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public class IntersectionOfTwoArray {

    public static void main(String[] args) {
        int myArray1[] = {23, 36, 19, 78, 55};
        int myArray2[] = {78, 45, 19, 73, 55};
        System.out.println("Intersection of the two arrays ::");

        for(int i = 0; i<myArray1.length; i++ ) {
            for(int j = 0; j<myArray2.length; j++) {
                if(myArray1[i]==myArray2[j]) {
                    System.out.println(myArray2[j]);
                }
            }
        }
    }
}

package homework;

public class OccuranceOfEl {

    public static void main(String[] args) {
        int [] arr = new int [] {1, 2, 8, 3, 2, 2, 2, 5, 1};
        //Array fr will store frequencies of element
        int [] fr = new int [arr.length];
        int visited = -1;
        for(int i = 0; i < arr.length; i++){
            int count = 1;
            for(int j = i+1; j < arr.length; j++){
                if(arr[i] == arr[j]){
                    count++;
                    //To avoid counting same element again
                    fr[j] = visited;
                }
            }
            if(fr[i] != visited)
                fr[i] = count;
        }

        //Displays the frequency of each element present in array
        System.out.println("-----");
        System.out.println(" Element | Frequency");
        System.out.println("-----");
        for(int i = 0; i < fr.length; i++){
            if(fr[i] != visited)
                System.out.println("    " + arr[i] + "    |    " + fr[i]);
        }
        System.out.println("-----");
    }
}

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}
package homework;

public class PairsOfElement {
    static void findThePairs(int inputArray[], int inputNumber)
    {
        System.out.println("Pairs of elements whose sum is "+inputNumber+" are : ");

        for (int i = 0; i < inputArray.length; i++)
        {
            for (int j = i+1; j < inputArray.length; j++)
            {
                if(inputArray[i]+inputArray[j] == inputNumber)
                {
                    System.out.println(inputArray[i]+" + "+inputArray[j]+" = "+inputNumber);
                }
            }
        }
    }

    public static void main(String[] args)
    {
        findThePairs(new int[] {4, 6, 5, -10, 8, 5, 20}, 10);

        /*findThePairs(new int[] {4, -5, 9, 11, 25, 13, 12, 8}, 20);

        findThePairs(new int[] {12, 13, 40, 15, 8, 10, -15}, 25);

        findThePairs(new int[] {12, 23, 125, 41, -75, 38, 27, 11}, 50);*/
    }
}

package homework;
import java.util.Arrays;

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public class ReverseArray {

    public int[] reverse(int [] array){

        if(array == null || array.length <= 1){
            System.out.println("Invalid array.");
        }
        for (int i = 0; i < array.length / 2; i++) {
            int temp = array[i];
            array[i] = array[array.length - 1 - i];
            array[array.length - 1 - i] = temp;
        }
        return array;
    }
}

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    }

    public static void main(String[] args){
        ReverseArray arrayReverse = new ReverseArray();
        int[] input = {1, 2, 3, 4, 5, 6, 7, 8};
        System.out.println("Original array" + Arrays.toString(input));
        System.out.println("Reversed array" +
Arrays.toString(arrayReverse.reverse(input)));
    }
}

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**package** homework;

```

public class SecondLargNo {
    public static int getSecondLargest(int[] a, int total){
        int temp;
        for (int i = 0; i < total; i++)
        {
            for (int j = i + 1; j < total; j++)
            {
                if (a[i] > a[j])
                {
                    temp = a[i];
                    a[i] = a[j];
                    a[j] = temp;
                }
            }
        }
        return a[total-2];
    }
    public static void main(String args[]){
        int a[]={1,2,5,6,3,2};
        int b[]={44,66,99,77,33,22,55};
        System.out.println("Second Largest: "+getSecondLargest(a,6));
        System.out.println("Second Largest: "+getSecondLargest(b,7));
    }
}

```

**package** homework;

```

public class SubSum {
    void subArraySum(int arr[], int n, int sum)
    {
        // Pick a starting point
        for (int i = 0; i < n; i++) {
            int currentSum = arr[i];

            if (currentSum == sum) {

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        System.out.println("Sum found at indexe "
            + i);
        return;
    }
    else {
        // Try all subarrays starting with 'i'
        for (int j = i + 1; j < n; j++) {
            currentSum += arr[j];

            if (currentSum == sum) {
                System.out.println(
                    "Sum found between indexes " + i
                    + " and " + j);
                return;
            }
        }
    }
}
System.out.println("No subarray found");
return;
}

public static void main(String[] args)
{
    SubSum arraysum = new SubSum();
    int arr[] = { 15, 2, 4, 8, 9, 5, 10, 23 };
    int n = arr.length;
    int sum = 23;
    arraysum.subArraySum(arr, n, sum);
}
}

```

**package homework;**

**import java.util.Arrays;**

**import java.util.Scanner;**

```

public class ZeroFromNonZero {

    public static void main(String[] args) {

        //Reading the array from the user

        Scanner sc = new Scanner(System.in);

        System.out.println("Enter the size of the array: ");
    }
}

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int size = sc.nextInt();
int[] myArray = new int[size];
System.out.println("Enter the elements: ");
for(int i=0; i<size; i++){
    myArray[i] = sc.nextInt();
}
System.out.println("The array: "+Arrays.toString(myArray));
System.out.println("Seperated array: ");
int pos = myArray.length-1;
for(int i = myArray.length-1; i>=0; i--){
    if(myArray[i]!=0){
        myArray[pos]=myArray[i];
        pos--;
    }
}
while(pos>=0) {
    myArray[pos] = 0;
    pos--;
}
System.out.println("The array : "+Arrays.toString(myArray));
}
}

```