/\*

Write a Java program to find sum and average of all elements in an array

sample

input =6 (//enter array size)

10 20 30 40 50 -10 (//enter array elements)

output =

140 (//sum)

23.333334 (//average)

\*/

import java.util.\*;

class ArrSumAvg

{

int n, sum = 0;

float average;

Scanner s;

int a[];

ArrSumAvg()

{

s= new Scanner(System.in);

n = s.nextInt();

a = new int[n];

}

void input()

{

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

{

a[i] = s.nextInt();

}

}

void calculate()

{

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

{

sum = sum + a[i];

}

average = (float)sum / n;

}

void output()

{

System.out.println(sum);

System.out.println(average);

}

}

class Test

{

public static void main(String args[])

{

ArrSumAvg a=new ArrSumAvg();

a.input();

a.calculate();

a.output();

}

}

/\*

Write a Java program to add two array elements and store the result in third array

sample

input =5 (//enter array size)

-10 20 5 3 2 (//enter 1st array elements)

8 10 3 4 6 (//enter 2nd array elements)

output =

-2 30 8 7 8

\*/

import java.util.\*;

class ArrSumAvg

{

int n, sum = 0;

float average;

Scanner s;

int a[],b[],res[];

ArrSumAvg()

{

s= new Scanner(System.in);

n = s.nextInt();

a = new int[n];

b = new int[n];

res = new int[n];

}

void input()

{

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

{

a[i] = s.nextInt();

}

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

{

b[i] = s.nextInt();

}

}

void calculate()

{

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

{

res[i] = a[i]+b[i];

}

}

void output()

{

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

{

System.out.print(res[i]+"");

}

}

}

class Test

{

public static void main(String args[])

{

ArrSumAvg a=new ArrSumAvg();

a.input();

a.calculate();

a.output();

}

}

/\*Write a java program to find second largest element in an array without sorting elements

sample

input =

6

4 1 2 5 3 6

output =

5

\*/

import java.util.\*;

class SecondLargest

{

int arr[],n;

Scanner s=new Scanner(System.in);

//use input() method, to read the required input values

//use the find() method to perform the required logic and print the result

void input()

{

n=s.nextInt();

arr=new int[n];

for(int i=0;i<arr.length;i++)

{

arr[i]=s.nextInt();

}

}

void find()

{

int largest = arr[0];

int secondLargest = arr[0];

for (int i = 0; i < arr.length; i++)

{

if (arr[i] > largest)

{

secondLargest = largest;

largest = arr[i];

}

else if (arr[i] > secondLargest)

{

secondLargest = arr[i];

}

}

System.out.println(secondLargest);

}

}

class Test

{

public static void main(String[] args)

{

SecondLargest sl=new SecondLargest();

sl.input();

sl.find();

}

}

/\* Write a Java program to calculate the sum of all elements of even indices of an array and print it

then find and print factors of that sum

sample

input =

5 (//enter size)

1 3 10 6 7 (//enter array elements)

output =

18 (//print sum)

1 2 3 6 9 18

\*/

import java.util.\*;

class CheckSumEvOd\_Arr

{

int arr[],n;

Scanner s=new Scanner(System.in);

//use input() method, to read the required input values

//use the find() method to perform the required logic and print the result

void input()

{

n=s.nextInt();

arr=new int[n];

for(int i=0;i<arr.length;i++)

{

arr[i]=s.nextInt();

}

}

void find()

{

int sum=0;

for(int i=0;i<arr.length;i++)

{

if(i%2==0)

{

sum=sum+arr[i];

}

}

System.out.println(sum);

for(int i=1;i<=sum;i++)

{

if(sum%i==0)

System.out.print(i+"");

}

}

}

class Test

{

public static void main(String[] args)

{

CheckSumEvOd\_Arr c=new CheckSumEvOd\_Arr();

c.input();

c.find();

}

}

/\*Write a Java to find sum of diagonal elements of an array

note:

1. Calculate diagonal sum for square matrix

2. if entered order of matrix is not square matrix then print -1

sample

1. input =

2

3

output = -1

2. input =

2

2

1 2 3 4

output = 5

\*/

import java.util.\*;

class DiagonalSum

{

int a[][],m,n;

Scanner s=new Scanner(System.in);

DiagonalSum(int m,int n)

{

this.m=m;

this.n=n;

}

void input()

{

a=new int[m][n];

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

{

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

{

a[i][j]=s.nextInt();

}

}

}

void calculate()

{

int sum=0;

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

{

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

{

if(i==j)

sum+=a[i][j];

}

}

System.out.println(sum);

}

//Write required logic here

}

class Test

{

public static void main(String args[])

{

int m,n;

Scanner s=new Scanner(System.in);

m=s.nextInt();

n=s.nextInt();

if(m==n)

{

DiagonalSum d=new DiagonalSum(m,n);

d.input();

d.calculate();

}

else

System.out.println(-1);

//call methods here

}

}

/\*Write a Java to find row sum of each individual rows of an array

and print matrix along with its row sum

sample

input =

2 (//enter order of an array)

2

1 (//enter array elements)

2

3

4

output =

1 2 = 3

3 4 = 7

\*/

import java.util.\*;

class RowSum

{

int a[][],m,n;

Scanner s=new Scanner(System.in);

RowSum()

{

m=s.nextInt();

n=s.nextInt();

}

void input()

{

a=new int[m][n];

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

{

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

{

a[i][j]=s.nextInt();

}

}

}

void calculate()

{

int sum[]=new int[m];

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

{

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

{

sum[i]=sum[i]+a[i][j];

}

}

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

{

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

{

System.out.print(a[i][j]+"");

}

System.out.println("= "+sum[i]);

}

}

//Write required logic here

}

class Test

{

public static void main(String args[])

{

RowSum r= new RowSum();

r.input();

r.calculate();

}

}

/\*Write a Java Program to find mid value of an array after sorting elements of it

sample

input =

6 (//array size)

1 (//enter array elements)

2

3

0

9

4

output =

0 1 2 3 4 9

2.5

\*/

import java.util.\*;

class MidValueArr

{

int arr[],n,t;

double t1;

Scanner s=new Scanner(System.in);

//use input() method, to read the required input values

//use the find() method to perform the required logic and print the result

void input()

{

n=s.nextInt();

arr=new int[n];

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

{

arr[i]=s.nextInt();

}

}

void find()

{

int temp;

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

{

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

{

if(arr[i]>arr[j])

{

temp=arr[i];

arr[i]=arr[j];

arr[j]=temp;

}

}

}

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

{

System.out.print(arr[i]+"");

}

System.out.println();

if(n%2==0)

{

t=(n+1)/2;

t1=(arr[t]+arr[t-1])/2.0;

System.out.println(t1);

}

else

System.out.println(arr[n/2]);

}

}

class Test

{

public static void main(String[] args)

{

MidValueArr sl=new MidValueArr();

sl.input();

sl.find();

}

}

/\*Write a Java Program to find closest value of a number in an array

sample

input =

5 (//enter array size)

9 85 63 -23 -15 (//enter array elements)

-2 (//enter value to find closest number in array)

output =

9

\*/

import java.util.\*;

class ClosestValArr

{

int arr[],n,val,cval=0;

double t1;

Scanner s=new Scanner(System.in);

//use input() method, to read the required input values

//use the find() method to perform the required logic and print the result

void input()

{

n=s.nextInt();

arr=new int[n];

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

{

arr[i]=s.nextInt();

}

val=s.nextInt();

}

void find()

{

int distance=Math.abs(arr[0]-val);

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

{

int distance1=Math.abs(arr[i]-val);

if(distance>=distance1)

{

cval=arr[i];

distance=distance1;

}

}

System.out.println(cval);

}

}

class Test

{

public static void main(String[] args)

{

ClosestValArr sl=new ClosestValArr();

sl.input();

sl.find();

}

}

/\*Write a Java program to merge two arrays into the third array.

sample

input =

5

3

10 20 30 40 50

11 22 33

output =

10 20 30 40 50 11 22 33

\*/

import java.util.\*;

class MergeTwoArr

{

int a[],b[],m,n,c[];

Scanner s=new Scanner(System.in);

MergeTwoArr()

{

m=s.nextInt();

n=s.nextInt();

a=new int[m];

b=new int[n];

c=new int[m+n];

}

void input()

{

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

{

a[i]=s.nextInt();

}

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

{

b[i]=s.nextInt();

}

}

void merge()

{

int i,j;

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

{

c[i]=a[i];

}

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

{

c[i++]=b[j];

}

for(i=0;i<c.length;i++)

{

System.out.print(c[i]+"");

}

}

}

class Test

{

public static void main(String[] args)

{

MergeTwoArr m=new MergeTwoArr();

m.input();

m.merge();

}

}

/\*Write a Java program to delete a element from an array

sample

1. input =

5 (// enter array size)

3 1 4 10 20 (//enter array elements)

4 (//enter the element to delete)

output =

Element deleted

3 1 10 20

2. input =

5

3 1 4 10 20

15

output =

Element not found

\*/

import java.util.\*;

class DelEleArr

{

int a[],n,del;

Scanner s=new Scanner(System.in);

DelEleArr()

{

n=s.nextInt();

a=new int[n];

}

void input()

{

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

{

a[i]=s.nextInt();

}

del=s.nextInt();

}

void delEle()

{

int i,flag=0;

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

{

if(a[i] == del)

{

for(int j=i; j<(n-1); j++)

{

a[j] = a[j+1];

}

flag=1;

break;

}

}

if(flag==0)

{

System.out.println("Element not found");

}

else

{

System.out.println("Element deleted");

for(i=0; i<(n-1); i++)

{

System.out.print(a[i]+ "");

}

}

}

}

class Test

{

public static void main(String[] args)

{

DelEleArr d=new DelEleArr();

d.input();

d.delEle();

}

}

**/\*Write a Java program to delete a element from an array**

**sample**

**1. input =**

**5 (// enter array size)**

**3 1 4 10 20 (//enter array elements)**

**4 (//enter the element to delete)**

**output =**

**Element deleted**

**3 1 10 20**

**2. input =**

**5**

**3 1 4 10 20**

**15**

**output =**

**Element not found**

**\*/**

import java.util.\*;

class DelEleArr

{

int a[],n,del;

Scanner s=new Scanner(System.in);

DelEleArr()

{

n=s.nextInt();

a=new int[n];

}

void input()

{

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

{

a[i]=s.nextInt();

}

del=s.nextInt();

}

void delEle()

{

int i,flag=0;

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

{

if(a[i] == del)

{

for(int j=i; j<(n-1); j++)

{

a[j] = a[j+1];

}

flag=1;

break;

}

}

if(flag==0)

{

System.out.println("Element not found");

}

else

{

System.out.println("Element deleted");

for(i=0; i<(n-1); i++)

{

System.out.print(a[i]+ " ");

}

}

}

}

class Test

{

public static void main(String[] args)

{

DelEleArr d=new DelEleArr();

d.input();

d.delEle();

}

}

**/\***

**Write a Java Program to insert an element at a specified position in a given array**

**sample**

**1. input =**

**5 (//Enter no. of elements)**

**10 20 30 40 50 (//Enter Elements)**

**2 (//Enter the position where you want to insert element)**

**100 (//Enter the element to insert)**

**output =**

**10 100 20 30 40 50**

**2. input =-2**

**output =enter array size >= 0**

**3. input =**

**3**

**10 20 30**

**6**

**output =**

**Entered position is beyond the size of array**

**\*/**

import java.util.\*;

class InsertEleArray

{

int n, pos, x;

int a[];

Scanner s = new Scanner(System.in);

InsertEleArray()

{

n = s.nextInt();

}

void input()

{

if(n>=0)

{

a= new int[n+1];

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

{

a[i] = s.nextInt();

}

pos = s.nextInt();

if(pos<=n)

{

x = s.nextInt();

insertEle();

}

else

{

System.out.println("Entered position is beyond the size of array");

}

}

else

{

System.out.println("enter array size >= 0");

}

}

void insertEle()

{

for(int i = (n-1); i >=(pos-1); i--)

{

a[i+1] = a[i];

}

a[pos-1] = x;

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

{

System.out.print(a[i]+" ");

}

}

}

public class Test

{

public static void main(String[] args)

{

InsertEleArray i = new InsertEleArray();

i.input();

}

}

**/\***

**Write a Java program to count number of pairs of elements which are equal to given sum**

**sample**

**1. input =5**

**10 5 15 20 30**

**25**

**output =**

**(10,15) = 25**

**(5,20) = 25**

**2**

**2. input =2**

**10 20**

**40**

**output = no pairs**

**\*/**

import java.util.\*;

class Count\_Pairs\_Equal2Sum

{

int a[],n,sum=0;

Scanner s=new Scanner(System.in);

void input()

{

n=s.nextInt();

a=new int[n];

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

{

a[i]=s.nextInt();

}

sum=s.nextInt();

}

void getPairs()

{

int count=0;

for (int i = 0; i < a.length; i++)

{

for (int j = i + 1; j < a.length; j++)

{

if ((a[i] + a[j]) == sum)

{

System.out.println("("+a[i]+","+a[j]+") = "+sum);

count++;

}

}

}

if(count==0)

{

System.out.println("no pairs");

}

else

{

System.out.println(count);

}

}

}

class Test

{

public static void main(String args[])

{

Count\_Pairs\_Equal2Sum c= new Count\_Pairs\_Equal2Sum();

c.input();

c.getPairs();

}

}

**/\* Write a Java program to remove duplicate elements from an unsorted Array**

**sample**

**input =**

**5**

**3 2 1 1 3**

**output =**

**1 2 3**

**\*/**

import java.util.\*;

class RemDupEle\_Array

{

void remDupEle()

{

Scanner s=new Scanner(System.in);

int n=s.nextInt();

int arr[]=new int[n];

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

{

arr[i]=s.nextInt();

}

int[] temp = new int[n];

int j = 0;

Arrays.sort(arr);

for (int i=0; i<n-1; i++)

if (arr[i] != arr[i+1])

temp[j++] = arr[i];

temp[j++] = arr[n-1];

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

System.out.print(temp[i]+" ");

}

}

class Test

{

public static void main (String[] args)

{

RemDupEle\_Array r=new RemDupEle\_Array();

r.remDupEle();

}

}