Q.1 Write a program to make a Jagged Array.

//ladder array

import java.util.Scanner;

class Test{

public static void main(String[]args){

Scanner sc=new Scanner(System.in);

System.out.println( "enter the limit of row");

int r=sc.nextInt();

int rowcol ;

int a[][]=new int[r][];

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

System.out.print( "enter the coloum for row ");

rowcol=sc.nextInt();

a[i]=new int[rowcol];

}

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

for(int j=0;j<a[i].length;j++){

System.out.print( "enter the coloum element ");

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

}

}

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

for(int j=0;j<a[i].length;j++){

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

}

System.out.println(" ");

}

}

}

Output-

enter the limit of row

4

enter the coloum for row 4

enter the coloum for row 3

enter the coloum for row 2

enter the coloum for row 1

enter the coloum element 3

enter the coloum element 4

enter the coloum element 6

enter the coloum element 4

enter the coloum element 8

enter the coloum element 5

enter the coloum element 4

enter the coloum element 9

enter the coloum element 5

enter the coloum element 3

3464

854

95

3

Qu-2 Write a program for Sorting an Array.

//shorting of array

import java.util.Scanner;

class Test{

public static void main(String[]args){

Scanner sc=new Scanner(System.in);

System.out.println( "enter the limit of array");

int n=sc.nextInt();

int a[]=new int[n];

System.out.println( "enter the number ");

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

a[i]=sc.nextInt();

}

System.out.println("shorting" );

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

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

if(a[i]>=a[j]){

int tem=0;

tem=a[i];

a[i]=a[j];

a[j]=tem;

}

}

System.out.println(a[i]);

}

}

}

Output-

enter the limit of array

5

enter the number

34

24

65

35

335

shorting

24

34

35

65

335

Qu-3 Write a program for Swapping Two Arrays.

//swaping of array

import java.util.Scanner;

class Test {

public static void main(String[] args) {

int a[] = { 1, 2, 3, 4, 5 };

int a1[] = { 6, 7, 8, 9, 10 };

int temp;

System.out.println("number of first array");

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

System.out.println(a[i]);

}

System.out.println("number of second array");

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

System.out.println(a1[i]);

}

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

temp = a[i];

a[i] = a1[i];

a1[i] = temp;

}

System.out.println("swapping of array");

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

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

}

System.out.println();

for (int i = 0; i < a1.length; i++) {

System.out.print(" " + a1[i]);

}

}

}

Output-

number of first array

1

2

3

4

5

number of second array

6

7

8

9

10

swapping of array

6 7 8 9 10

1 2 3 4 5

Qu-4 Q.4 Write a Java program to swap first and last element of an integer 1-d Array.

//swaping of the first and last element in array

//Swaping of element

import java.util.Scanner;

class Test {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.println("enter the limit of array");

int n = sc.nextInt();

int a[] = new int[n];

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

System.out.println("element of first array");

a[i] = sc.nextInt();

}

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

int temp = a[0];

a[0] = a[n - 1];

a[n - 1] = temp;

}

System.out.println("Swaping of the element");

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

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

}

}

}

Output-

enter the limit of array

5

element of first array

45

element of first array

66

element of first array

34

element of first array

67

element of first array

34

Swaping of the element

34

66

34

67

45

Qu-5 Write a Java program to test two arrays' equality.

//two array equality

import java.util.Scanner;

class Test {

public static void main(String[] args) {

int a[] = { 1, 2, 3, 4, 5 };

int a1[] = { 1, 2, 3, 4, 5 };

boolean k = true;

if (a.length != a1.length)

k = false;

else {

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

if (a[i] != a1[i]) {

k = false;

break;

}

}

}

if (k)

System.out.println("array are equal");

else

System.out.println("array are not equal");

}

}

Output-

array are equal

Qu-6 Find a missing number in an array.

//misssing number in array

import java.util.Scanner;

class Test {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

int a[] = new int[5];

int sum = 0;

int sum1 = 0;

System.out.println("number of first array");

for (int i = 0; i < 5; i++) {

a[i] = sc.nextInt();

}

for (int i = 0; i < 5; i++) {

sum = sum + a[i];

}

for (int i = 1; i <= 6; i++) {

sum1 = sum1 + i;

}

int diff = sum1 - sum;

System.out.println("Missing number in Array" + diff);

}

}

Output-

number of first array

1

2

3

5

6

Missing number in Array -4

Qu-7Wap to Insert an element at a specific position in an array in java.

//insert an element at specific position in array

import java.util.Scanner;

class Test {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

int a[] = new int[5];

System.out.println("enter number of position");

int pos = sc.nextInt();

System.out.println("enter number");

int num = sc.nextInt();

System.out.println("number of first array");

for (int i = 0; i < 5; i++) {

a[i] = sc.nextInt();

}

for (int i = 4; i > pos - 1; i--) {

a[i] = a[i - 1];

}

a[pos - 1] = num;

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

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

}

}

}

Output-

enter number of position

4

enter number

45

number of first array

67

45

89

34

45

67 45 89 45 34

Qu-8 Java Program to Increment All Element of an Array by One

Examples:

Input : arr1[] = {50, 25, 32, 12, 6, 10, 100, 150}

Output: arr1[] = {51, 25, 33, 13, 7, 11, 101, 151}

// increment all element by one

import java.util.Scanner;

class Test {

public static void main(String[] args) {

int n;

Scanner sc = new Scanner(System.in);

System.out.println("limit of array ");

n = sc.nextInt();

int a[] = new int[n];

System.out.println("element of first array");

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

a[i] = sc.nextInt();

}

System.out.println("increment all element by one");

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

{

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

System.out.println(a[i]);

}

}

}

Output-

limit of array

5

element of first array

34

6

78

34

56

increment all element by one

35

7

79

35

57

Qu-Q.9 Find a peak element which is not smaller than its neighbours.

// peak element which is smaller its neighbour

import java.util.Scanner;

class Test {

public static void main(String[] args) {

int n;

Scanner sc = new Scanner(System.in);

System.out.println("limit of array ");

n = sc.nextInt();

int a[] = new int[n];

System.out.println("element of first array");

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

a[i] = sc.nextInt();

}

System.out.println("big number its neighbour");

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

if (a[i] > a[i - 1] && a[i] > a[i + 1])

System.out.println("the peak element is :" + a[i]);

}

}

}

Output-

limit of array

5

element of first array

34

56

78

34

52

big number its neighbour

the peak element is :78

Qu-10 Check for Majority Element in a sorted array.

//majority element in a sorted array

import java.util.Scanner;

class Test {

public static void main(String[] args) {

int n;

Scanner sc = new Scanner(System.in);

System.out.println("limit of array ");

n = sc.nextInt();

int a[] = new int[n];

boolean flag = true;

System.out.println("element of first array");

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

a[i] = sc.nextInt();

}

int m = 0;

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

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

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

m = a[i];

}

}

System.out.print("majority Element :" + m);

}

}

Output-

limit of array

4

element of first array

5

6

7

5

majority Element :5

Qu-11 Q.11 K-th Element of Two Sorted Arrays.

// kth element of two shorted arrays

import java.util.Scanner;

class Test {

public static void main(String[] args) {

int n, m;

Scanner sc = new Scanner(System.in);

System.out.println("size of first array ");

n = sc.nextInt();

System.out.println("size of second array ");

m = sc.nextInt();

int a[] = new int[n];

int a1[] = new int[m];

int a2[] = new int[n + m];

System.out.println("element of first array");

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

a[i] = sc.nextInt();

}

System.out.println("element of second array");

for (int j = 0; j < m; j++) {

a1[j] = sc.nextInt();

}

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

if (i < n) {

a2[i] = a[i];

} else {

a2[i] = a1[i - n];

}

}

int temp = 0;

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

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

if (a2[i] > a2[j]) {

temp = a2[i];

a2[i] = a2[j];

a2[j] = temp;

}

}

System.out.println("the final sorted array" + a2[i]);

}

System.out.println("enter index number :");

int k = sc.nextInt();

System.out.println("the" + k + "element of this array is:" + a2[k - 1]);

}

}

Output-

size of first array

4

size of second array

4

element of first array

45

34

56

78

element of second array

45

76

45

67

the final sorted array34

the final sorted array45

the final sorted array45

the final sorted array45

the final sorted array56

the final sorted array67

the final sorted array76

the final sorted array78

enter index number :

6

the6element of this array is:67

Q.12 Find the number of zeroes.

// how many time zero in array

import java.util.Scanner;

class Test {

public static void main(String[] args) {

int n;

Scanner sc = new Scanner(System.in);

System.out.println("limit of array ");

n = sc.nextInt();

int a[] = new int[n];

System.out.println("element of first array");

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

a[i] = sc.nextInt();

}

int count = 0;

System.out.println("number of zero in array elements");

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

if (a[i] == 0)

count++;

}

System.out.println(count);

}

}

Output-

limit of array

5

element of first array

3

5

0

0

1

number of zero in array elements

2

Q.13 Find the Rotation Count in Rotated Sorted array.

//rotation count

import java.util.Scanner;

class Test {

public static void main(String[] args) {

int n, m;

Scanner sc = new Scanner(System.in);

System.out.println("size of first array ");

n = sc.nextInt();

int a[] = new int[n];

int a1[] = new int[n];

System.out.println("element of first array");

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

a[i] = sc.nextInt();

}

System.out.println("enter the roated array element");

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

a1[i] = sc.nextInt();

}

int min = a1[0];

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

if (a1[i] < min) {

min = a1[i];

}

}

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

if (a1[i] == min)

System.out.println("roated count :" + " " + i);

}

}

}

Output-

Q.14 Find Subarray with given sum.

//sum of element b/w to indices

import java.util.Scanner;

class Test {

public static void main(String[] args) {

int n;

Scanner sc = new Scanner(System.in);

System.out.println("size of array ");

n = sc.nextInt();

int a[] = new int[n];

System.out.println("element of first array");

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

a[i] = sc.nextInt();

}

System.out.println("enter first index to start sum");

int k = sc.nextInt();

System.out.println("enter last index to end sum");

int m = sc.nextInt();

int sum = 0;

for (int i = k; i <= m; i++) {

sum = sum + a[i];

}

System.out.println(sum + " " + "is total sum of indexes element");

}

}

Output-

size of array

5

element of first array

34

56

8

56

4

enter first index to start sum

2

enter last index to end sum

4

68 is total sum of indexes element

Q.15 Find Second largest element in an array.

// find second largest element in array

import java.util.Scanner;

class Test {

public static void main(String[] args) {

int n, m;

Scanner sc = new Scanner(System.in);

System.out.println("size of first array ");

n = sc.nextInt();

int a[] = new int[n];

System.out.println("element of first array");

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

a[i] = sc.nextInt();

}

System.out.println("after arranging in incresing order");

int temp = 0;

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

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

if (a[i] > a[j]) {

temp = a[i];

a[i] = a[j];

a[j] = temp;

}

}

System.out.println(+a[i]);

}

System.out.println("second largest number" + a[n - 2]);

}

}

Output-

size of first array

5

element of first array

45

665

345

65

45

after arranging in incresing order

45

45

65

345

665

second largest number 345

Q.16 Rearrange array such that even positioned are greater than odd.

Q.17 Print All Distinct Elements of a given integer array.

//print all Distinct element

import java.util.Scanner;

class Test {

public static void main(String[] args) {

int n, m;

Scanner sc = new Scanner(System.in);

System.out.println("size of first array ");

n = sc.nextInt();

int i, j;

int a[] = new int[n];

System.out.println("element of first array");

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

a[i] = sc.nextInt();

}

System.out.println("all Distinct element");

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

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

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

break;

}

if (i == j)

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

}

}

}

Output-

size of first array

5

element of first array

23

45

34

45

67

all Distinct element

23

45

34

67

Q.18 Write a program to print all the LEADERS in the array. An element is a

leader if it is greater than all the elements to its right side. And the rightmost

element is always a leader.

//print leader element

import java.util.Scanner;

class Test {

public static void main(String[] args) {

int n, m;

Scanner sc = new Scanner(System.in);

System.out.println("size of first array ");

n = sc.nextInt();

int i, j;

int a[] = new int[n];

System.out.println("element of first array");

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

a[i] = sc.nextInt();

}

int count = 0;

System.out.println("all Leaders element");

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

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

if (a[i]<=a[j])

break;

}

if (j==n)

System.out.println(a[i]);

}

}

}

size of first array

5

element of first array

16

1

4

5

2

all Leaders element

16

5

2