**ARRAY LOGICAL CODING**

class B1

{

public static void main(String[] args)

{

int[] x={10,30,50,60};

System.out.println(x.length);

System.out.println(x[0]);

System.out.println(x[2]);

}

}

class B2

{

public static void main(String[] args)

{

int[] x=new int[20];

System.out.println(x.length);

System.out.println(x[0]);

System.out.println(x[2]);

}

}

//default values are 0

class B3

{

public static void main(String[] args)

{

int[] x=new int[3];

System.out.println(x.length);

System.out.println(x[0]);

System.out.println(x[1]);

System.out.println(x[2]);

x[0]=100;

x[1]=34;

x[2]=56;

System.out.println(x[0]);

System.out.println(x[1]);

System.out.println(x[2]);

}

}

class B4

{

public static void main(String[] args)

{

int[] x={12,30,500,55};

System.out.println(x.length);

System.out.println(x[0]);

System.out.println(x[1]);

System.out.println(x[2]);

System.out.println(x[3]);

x[0]=100;

x[1]=34;

x[2]=56;

x[3]=46;

System.out.println(x[0]);

System.out.println(x[1]);

System.out.println(x[2]);

System.out.println(x[3]);

}

}

class B5

{

public static void main(String[] args)

{

int[] x={12,30,500,55};

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

{

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

}

}

}

class B6

{

public static void main(String[] args)

{

int[] x={12,30,500,55};

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

{

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

}

}

}

class B7

{

public static void main(String[] args)

{

int[] x={12,30,500,55};

for(int i:x)

{

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

}

}

}

import java.util.Arrays; //built in method

class B8

{

public static void main(String[] args)

{

int[] x={12,30,500,55};

System.out.print(Arrays.toString(x));

}

}

import java.util.Arrays;

class B9

{

public static void main(String[] args)

{

int[] x={12,30,500,55,5,35,50,2,0,34};

System.out.println("array content:"+ Arrays.toString(x));

for(int i=0; i<x.length;i+=2)

{

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

}

}

}

import java.util.Arrays;

class B12

{

public static void main(String[] args)

{

int[] x={12,30,500,55,5,35,50,2,0,34};

System.out.println("array content:"+ Arrays.toString(x));

System.out.println(" Even numbers :");

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

{

if(x[i]%2==0)

{

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

}

}

}

}

//print even numbers

import java.util.Arrays;

class B18

{

public static void main(String[] args)

{

int[] x={12,30,500,55,5,35,50,2,0,34};

System.out.println("array content:"+ Arrays.toString(x));

int sum=0;

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

{

sum+=x[i];

}

double avg=(double)sum/x.length;

System.out.println("lesser than avg value:");

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

{

if(x[i]<avg)

{

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

}

}

}

}

//print only values which are less than avg value;

import java.util.Arrays;

class B19

{

public static void main(String[] args)

{

int[] x={1,2,1,5,6,5,7,4,8,9,8};

// 0 1 2 3 4 5 6 7 8 9 10

//output should be 1,4,9

System.out.println("array content:"+ Arrays.toString(x));

for(int i =1;i<x.length-1;i++)

{

if(x[i-1]==x[i+1])

{

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

}

}

}

}

//read the index which has equal left and right element;

import java.util.Arrays;

class B20

{

public static void main(String[] args)

{

int[] x={1,2,3,5,6,3,9,7,2,9,8};

// 0 1 2 3 4 5 6 7 8 9 10

//output should be 2,3,6,9

System.out.println("array content:"+ Arrays.toString(x));

for(int i =2;i<x.length-1;i++)

{

if((x[i-2]+x[i-1]==x[i]))

{

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

}

}

}

}

//read the index which has the value of previous two values sum;

import java.util.Arrays;

class B21

{

public static void main(String[] args)

{

int[] x={1,2,3,5,6,3,9,7,2,9,8};

// 0 1 2 3 4 5 6 7 8 9 10

//output should be 2,3,6,9

System.out.println("array content:"+ Arrays.toString(x));

int temp=x[0];

x[0]=x[x.length-1];

x[x.length-1]=temp;

System.out.println("final array content:"+Arrays.toString(x));

}

}

//swap first element with last element

import java.util.Arrays;

class B22

{

public static void main(String[] args)

{

int[] x={1,2,3,5,6,3,9,7,2,9,8};

// 0 1 2 3 4 5 6 7 8 9 10

//output should be 2,3,6,9

System.out.println("array content:"+ Arrays.toString(x));

x[0]=x[0]+x[x.length-1];

x[x.length-1]=x[0]-x[x.length-1];

x[0]=x[0]-x[x.length-1];

System.out.println("final array content:"+Arrays.toString(x));

}

}

//swap first element with last element without third variable

import java.util.Arrays;

class B24

{

public static void main(String[] args)

{

int[] x={1,2,3,5,6,3,9,7,2,9,8};

// 0 1 2 3 4 5 6 7 8 9 10

System.out.println("array content:"+ Arrays.toString(x));

for(int i=0;i<x.length/2;i++)

{

int temp=x[i];

x[i]=x[x.length-1-i];

x[x.length-1-i]=temp;

}

System.out.println("final array content:"+Arrays.toString(x));

}

}

//reverse array

import java.util.Arrays;

class B25

{

public static void main(String[] args)

{

int[] x={1,2,3,5,6,3,9,7,2,9,8};

System.out.println("initial array content:"+Arrays.toString(x));

for( int i=0;i<x.length-1;i++)

{

x[i]=x[i+1];

}

System.out.println("final array content:"+Arrays.toString(x));

}

}

//left shift by one

//1,2,3,5,6,3,9,7,2,9,8

//2,3,5,6,3,9,7,2,9,8,8

import java.util.Arrays;

class B26

{

public static void main(String[] args)

{

int[] x={1,2,3,5,6,3,9,7,2,9,8};

System.out.println("initial array content:"+Arrays.toString(x));

int temp=x[0] ;

for( int i=0;i<x.length-1;i++)

{

x[i]=x[i+1];

}

x[x.length-1]=temp;

System.out.println("final array content:"+Arrays.toString(x));

}

}

//left rotate by one

//1,2,3,5,6,3,9,7,2,9,8

//2,3,5,6,3,9,7,2,9,8,1

import java.util.Arrays;

class B27

{

public static void main(String[] args)

{

int[] x={1,2,3,5,6,3,9,7,2,9,8};

System.out.println("initial array content:"+Arrays.toString(x));

for( int i=x.length-1;i>0;i--)

{

x[i]=x[i-1];

}

System.out.println("final array content:"+Arrays.toString(x));

}

}

//right shift by one

//1,2,3,5,6,3,9,7,2,9,8

//1,1,2,3,5,6,3,9,7,2,9

import java.util.Arrays;

class B28

{

public static void main(String[] args)

{

int[] x={1,2,3,5,6,3,9,7,2,9,8};

System.out.println("initial array content:"+Arrays.toString(x));

int temp=x[x.length-1];

for( int i=x.length-1;i>0;i--)

{

x[i]=x[i-1];

}

x[0]=temp;

System.out.println("final array content:"+Arrays.toString(x));

}

}

//right rotate by one

//1,2,3,5,6,3,9,7,2,9,8

//8,1,2,3,5,6,3,9,7,2,9

import java.util.Arrays;

class B29

{

public static void main(String[] args)

{

int[] x={1,2,3,5,6,3,9,7,2,9,8};

System.out.println("initial array content:"+Arrays.toString(x));

int temp=x[4];

int temp1;

x[4]=100;

for(int i=5;i<=x.length-1;i++)

{

temp1=x[i];

x[i]=temp;

temp=temp1;

}

System.out.println("final array content:"+Arrays.toString(x));

}

}

//insert a new element at 4th index.new element is 100.

//1,2,3,5,6,3,9,7,2,9,8

//1,2,3,5,100,6,3,9,7,2,9

import java.util.Arrays;

class B30

{

public static void main(String[] args)

{

int[] x={1,2,3,5,6,3,9,7,2,9,8};

System.out.println("initial array content:"+Arrays.toString(x));

for(int i=4;i<x.length-1;i++)

{

x[i]=x[i+1];

}

System.out.println("final array content:"+Arrays.toString(x));

}

}

//remove an new element at 4th index.

//1,2,3,5,6,3,9,7,2,9,8

//1,2,3,5,3,9,7,2,9,8,8

import java.util.Arrays;

class B31

{

public static void main(String[] args)

{

int[] x={1,2,3,5,6,3,9,7,2,9,8};

System.out.println("initial array content:"+Arrays.toString(x));

int[] y=new int[x.length+1];

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

{

y[i]=x[i];

}

for(int i=y.length-1;i>4;i--)

{

y[i]=y[i-1];

}

y[4]=100;

System.out.println("final array content:"+Arrays.toString(y));

}

}

//insert a new element at 4th index,new element is 100, without removing any element

//1,2,3,5,6,3,9,7,2,9,8

//1,2,3,5,100,6,3,9,7,2,9,8

import java.util.Arrays;

class B32

{

public static void main(String[] args)

{

int[] x={1,2,3,5,6,3,9,7,2,9,8};

System.out.println("initial array content:"+Arrays.toString(x));

int[] y=new int[x.length-1];

for(int i=0;i<4;i++)

{

y[i]=x[i];

}

for(int i=4;i<y.length;i++)

{

y[i]=x[i+1];

}

System.out.println("final array content:"+Arrays.toString(y));

}

}

//remove an element at index number 4 without making any duplicates

//1,2,3,5,6,3,9,7,2,9,8

//1,2,3,5,3,9,7,2,9,8

import java.util.Arrays;

class B33

{

public static void main(String[] args)

{

int[] x={1,2,3,5,6,3,9,7,2,9,8};

System.out.println("initial array content:"+Arrays.toString(x));

for(int i=4;i<x.length-1;i++)

{

x[i]=x[i+1];

}

int[] y=new int[x.length-1];

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

{

y[i]=x[i];

}

System.out.println("final array content:"+Arrays.toString(y));

}

}

//remove an element at index number 4 without making any duplicates

//1,2,3,5,6,3,9,7,2,9,8

//1,2,3,5,3,9,7,2,9,8

import java.util.Arrays;

class B34

{

public static void main(String[] args)

{

int[] x={1,2,3,5,6,3,9,7,2,9,8};

System.out.println("initial array content:"+Arrays.toString(x));

for(int i=4;i<x.length-2;i++)

{

x[i]=x[i+2];

}

int[] y=new int[x.length-2];

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

{

y[i]=x[i];

}

System.out.println("final array content:"+Arrays.toString(y));

}

}

//remove an element at index number 4,5 without making any duplicates

//1,2,3,5,6,3,9,7,2,9,8

//1,2,3,5,9,7,2,9,8

//inset two new element from index number 4 . new elements are 100,40;

//1,2,3,5,6,3,9,7,2,9,8

//1,2,3,5,100,40,6,3,9,7,2,9,8

import java.util.Arrays;

class B35

{

public static void main(String[] args)

{

int[] x={1,2,3,5,6,3,9,7,2,9,8};

System.out.println("initial array content:"+Arrays.toString(x));

int[] y=new int[x.length+2];

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

{

y[i]=x[i];

}

for(int i=y.length-1;i>4;i--)

{

y[i]=y[i-2];

}

y[4]=100;

y[5]=80;

System.out.println("final array content:"+Arrays.toString(y));

}

}

//inset two new element from index number 4 . new elements are 100,40;

//1,2,3,5,6,3,9,7,2,9,8

//1,2,3,5,100,40,6,3,9,7,2,9,8

import java.util.Arrays;

class B35

{

public static void main(String[] args)

{

int[] x={1,2,3,5,6,3,9,7,2,9,8};

System.out.println("initial array content:"+Arrays.toString(x));

int[] y=new int[x.length+2];

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

{

y[i]=x[i];

}

for(int i=y.length-1;i>4;i--)

{

y[i]=y[i-2];

}

y[4]=100;

y[5]=80;

System.out.println("final array content:"+Arrays.toString(y));

}

}

//remove all single digit elements from an array

/\*

initial : {1,2,3,5,61,3,19,7,22,9,80}

final:{20,61,19,22,80}

\*/

//inset two new element from index number 4 . new elements are 100,40;

//1,2,3,5,6,3,9,7,2,9,8

//1,2,3,5,100,40,6,3,9,7,2,9,8

import java.util.Arrays;

class B36

{

public static void main(String[] args)

{

int[] x={1,2,3,5,61,3,19,7,22,9,80};

int count=0;

System.out.println("initial array content:"+Arrays.toString(x));

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

{

if(x[i]<10)

{

for(int j=i;j<(x.length-1-count);j++)

{

x[j]=x[j+1];

}

i--;

count++;

}

}

int[] y=new int[x.length-count];

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

{

y[i]=x[i];

}

System.out.println("final array content:"+Arrays.toString(y));

}

}

//remove all single digit elements from an array

import java.util.Arrays;

class B37

{

public static void main(String[] args)

{

int[] x={1,2,3,5,61,3,19,7,22,9,80};

int count=0;

System.out.println("initial array content:"+Arrays.toString(x));

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

{

if(x[i]<10)

{

count++;

}

}

int[] y=new int[x.length-count];

for(int i=0,j=0;i<x.length;i++)

{

if(x[i]>=10)

{

y[j++]=x[i];

}

}

System.out.println("final array content:"+Arrays.toString(y));

}

}

//remove all even elements from an array

/\*

initial array : {1,20,3,5,61,3,19,7,22,9,80};

final {1,3,5,61,3,19,7,9}

\*/

import java.util.Arrays;

class B38

{

public static void main(String[] args)

{

int[] x={1,2,3,5,61,3,19,7,22,9,80};

int count=0;

System.out.println("initial array content:"+Arrays.toString(x));

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

{

if(x[i]%2==0)

{

count++;

}

}

int[] y=new int[x.length-count];

for(int i=0,j=0;i<x.length;i++)

{

if(x[i]%2!=0)

{

y[j++]=x[i];

}

}

System.out.println("final array content:"+Arrays.toString(y));

}

}

//remove duplicates elements from an array

/\*

initial array : {1,20,3,1,61,3,19,7,61,9,80};

final {1,20,3,61,19,7,9,80}

\*/

import java.util.Arrays;

class B39

{

public static void main(String[] args)

{

int[] x={1,2,3,5,61,3,19,7,22,9,80};

int count=0;

int[] y=new int[0];

System.out.println("initial array content:"+Arrays.toString(x));

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

{

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

{

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

{

count++;

}

}

}

int[] y=new int[x.length-count];

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

{

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

{

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

{

i++;

}

else

{

y[i]=y[j];

}

}

}

System.out.println("final array content:"+Arrays.toString(y));

}

}

//remove elements of one array from another array

/\*

initial array :

first array:{1,20,3,1,61,3,19,7,61,9,80};

2nd array:{50,61,3,45,1}

final array:

first array:{20,19,7,9,80}

2nd array:{50,61,3,45,1}

\*/

import java.util.Arrays;

class B40

{

public static void main(String[] args)

{

int[] x={1,20,3,1,61,3,19,7,61,9,80};

int[] y={50,61,3,45,1};

System.out.println("initial first array content:"+Arrays.toString(x));

System.out.println("initial second array content:"+Arrays.toString(y));

int count=0;

for(int i=0;i<y.length;i++) //i as index

{

for(int j=0;j<(x.length-count);j++)

{

if(y[i]==x[j])

{

for(int k=j; k<(x.length-count-1);k++)

{

x[k]=x[k+1];

}

j--;

count++;

}

}

}

int[] z=new int[x.length-count];

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

{

z[i]=x[i] ;

}

System.out.println("final array content:"+Arrays.toString(z));

System.out.println("final array content:"+Arrays.toString(y));

}

}

//develop third array with the common elements of given two arrays

/\*

initial arrays content:

first array:{1,20,3,1,61,3,19,7,61,9,80}

second array:{50,61,3,45,1}

final arrays content:

third array:{1,3,61}

\*/

class B41

{

public static void main(String[] args)

{

int[] x={1,20,3,1,61,3,19,7,61,9,80};

int[] y={50,61,3,45,1};

System.out.println("initial first array content:"+Arrays.toString(x));

System.out.println("initial second array content:"+Arrays.toString(y));

int size=x.length < y.length?x.length:y.length;

int[] z= new int[size];

int count=0;

for(int i=0;i<x.length;i++) //i as index

{

for(int j=0;j<y.length;j++)

{

if(x[i]==y[j])

{

boolean isAvailable=false;

for(int k=0; k<z.length;k++)

{

if(x[i]==z[k])

{

isAvailable=true;

break;

}

}

if(!isAvailable)

{

z[count++]=x[i];

}

}

}

}

int[] z1=new int[count];

for(int i=0;i<z1.length;i++)

{

z1[i]=z[i] ;

}

System.out.println("third array content:"+Arrays.toString(z1));

}

}

//develop third array with the uncommon elements of given two arrays

/\*

initial arrays content:

first array:{1,20,3,1,61,3,19,7,61,9,80}

second array:{50,61,3,45,1}

final arrays content:

third array:{20,19,7,9,80,50,45}

\*/

class B42

{

public static void main(String[] args)

{

int[] x={1,20,3,1,61,3,19,7,61,9,80};

int[] y={50,61,3,45,1};

System.out.println("initial first array content:"+Arrays.toString(x));

System.out.println("initial second array content:"+Arrays.toString(y));

int size=x.length + y.length;

int[] z= new int[size];

int count=0;

boolean isAvailable=false;

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

{

for(int j=0;j<y.length;j++)

{

if(x[i]==y[j])

{

isAvailable=true;

break;

}

}

if(!isAvailable)

{

z[count++]=x[i];

}

isAvailable=false;

}

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

{

for(int j=0;j<x.length;j++)

{

if(y[i]==x[j])

{

isAvailable=true;

break;

}

}

if(!isAvailable)

{

z[count++]=y[i];

}

isAvailable=false;

}

int[] z1=new int[count];

for(int i=0;i<z1.length;i++)

{

z1[i]=z[i] ;

}

System.out.println("third array content:"+Arrays.toString(z1));

}

}

//find out all missed numbers from a given int array between min and max values

/\*

initial arrays content:

given array:{3,7,15,9,1,12,5}

missed elements:2,4,6,8,10,11,13,14

\*/

class B43

{

public static void main(String[] args)

{

int[] x={3,7,15,9,1,12,5};

int min=x[0],max=x[0];

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

{

if(x[i]<min)

{

min=x[i];

}

if(x[i]>max)

{

max=x[i];

}

}

int[] y=new int[max+1];

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

{

y[x[i]]=min-5;

}

System.out.println("missed elements:");

for(int i=min+1;i<y.length;i++)

{

if(y[i]!=(min-5))

{

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

}

}

}

}

import java.util.Arrays;

class P20

{

public static void main(String[] args)

{

int[] x={1,2,3,5,6,3,9,7,2,9,8};

// 0 1 2 3 4 5 6 7 8 9 10

//output should be 2,3,6,9

System.out.println("array content:"+ Arrays.toString(x));

for(int i =2;i<x.length;i++)

{

if(x[i-1]+x[i-2]==x[i])

{

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

}

}

}

}

//read the index which has the value of previous two values sum;

import java.util.Arrays;

class P23

{

public static void main(String[] args)

{

int[] x={1,2,3,5,6,3,9,7,2,9,8};

// 0 1 2 3 4 5 6 7 8 9 10

//output should be 2,3,6,9

System.out.println("array content:"+ Arrays.toString(x));

for(int i=1;i<x.length;i+=2)

{

int temp=x[i];

x[i]=x[i-1];

x[i-1]=temp;

}

System.out.println("final array content:"+Arrays.toString(x));

}

}

//swap even indexed elements with immediate odd indexed elements