**1)**

import java.util.\*;

class Main {

public static void main (String[] args) {

int num,rem;

int sum=0;

Scanner sc = new Scanner(System.in);

System.out.println("enter 3 digit number");

num=sc.nextInt();

while(num>0)

{

rem=num%10;

num=num/10;

sum=sum+rem;

}

System.out.println("Sum of digits of 3 digit number :"+sum);

}

}

**2)**

// 0 + ++1(=2)

int j = i++ + ++i

OUTPUT : 2

**3)**

OUTPUT: false

**Array Lab Guide**

**1)**

import java.util.\*;

class Main {

public static void main (String[] args) {

Scanner sc = new Scanner(System.in);

int[] arr = new int[12];

int positive\_count=0;

int even\_count=0;

int odd\_count=0;

System.out.println(“Enter 12 integers”);

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

{

arr[i] = sc.nextInt();

if(arr[i]>0)

{

positive\_count++;

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

{

even\_count++;

}

else

{

odd\_count++;

}

}

}

System.out.println("positive count : "+positive\_count);

System.out.println("even count : "+even\_count);

System.out.println("odd count : "+odd\_count);

}

}

**2)**

import java.util.\*;

class Main {

public static void main (String[] args) {

Scanner sc = new Scanner(System.in);

int[] arr = {2,7,21,45,4,10,17,30,41,20};

int len = arr.length;

int[] copy = new int[len];

int j=0;

int k=len-1;

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

{

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

{

copy[j]=arr[i];

j++;

}

else{

copy[k]=arr[i];

k--;

}

}

System.out.println(Arrays.toString(copy));

}

}

**3)**

import java.util.\*;

class Main {

public static void main (String[] args) {

Scanner sc = new Scanner(System.in);

int[] arr = new int[12];

int[] copy = new int[12];

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

{

arr[i] = sc.nextInt();

}

int k=0;

for(int j=arr.length-1; j>=0;j--)

{

copy[j]=arr[k];

k++;

}

System.out.println(Arrays.toString(copy));

}

}

**-----2D Array-------:**

**1)**

import java.util.\*;

class Main {

public static void main (String[] args) {

Scanner sc = new Scanner(System.in);

int[][] arr = new int[4][4];

int row = arr.length;

int col= arr[0].length;

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

{

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

{

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

}

System.out.println(Arrays.toString(arr[i]));

}

// for(int j=0;j<row;j++)

// {

// System.out.println(Arrays.toString(arr[j]));

// }

}

}

**2)**

import java.util.\*;

class Main {

public static void main (String[] args) {

Scanner sc = new Scanner(System.in);

int[][] arr = new int[4][4];

int row = arr.length;

int col= arr[0].length;

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

{

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

{

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

}

//System.out.println(Arrays.toString(arr[i]));

}

int[] temp;

temp=arr[0];

arr[0]=arr[row-1];

arr[row-1]=temp;

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

{

System.out.println(Arrays.toString(arr[j]));

}

}

}

**----STRINGS-----:**

**1)**

import java.util.\*;

class Main {

public static void main (String[] args) {

Scanner sc = new Scanner(System.in);

String txt;

String empty="";

txt = sc.nextLine();

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

{

empty = txt.charAt(i)+empty;

}

System.out.println(empty);

}

}

**2)**

import java.util.\*;

class Main {

public static void main (String[] args) {

Scanner sc = new Scanner(System.in);

String txt;

txt = sc.nextLine();

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

{

if((txt.charAt(i)) == ' ') //always use single quote for character in java

{

System.out.println("");

}

else{

System.out.print(txt.charAt(i));

}

}

}

}

**3)**

import java.util.\*;

class Main {

public static void main (String[] args) {

Scanner sc = new Scanner(System.in);

String txt;

txt = sc.nextLine();

String[] empty= txt.split(" ");

char[] vowels = {'a','e','i','o','u'};

int count=0;

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

{

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

{

if(txt.charAt(i)==vowels[j])

{

count++;

}

}

}

System.out.println(count);

}

}

**4)**

import java.util.\*;

class Main {

public static void main (String[] args) {

Scanner sc = new Scanner(System.in);

String txt;

txt = sc.nextLine();

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

{

if(i%2==0)

{

System.out.print(Character.toUpperCase(txt.charAt(i)));

}

else{

System.out.print(Character.toLowerCase(txt.charAt(i)));

}

}

}

}

**5)**

import java.util.\*;

class Main {

public static void main (String[] args) {

Scanner sc = new Scanner(System.in);

String txt;

txt = sc.nextLine();

HashMap<Character, Integer> dict = new HashMap<Character, Integer>();

for(Character ch : txt.toCharArray())

{

if(dict.containsKey(ch))

{

dict.put(ch, dict.get(ch)+1);

}

else

{

dict.put(ch,1);

}

}

dict.forEach((k,v) -> System.out.println(k+"->"+v));

}

}