1.//write a program to find area of a Triangle given two sides.

**package** Main.java;

**import** java.util.Scanner;

**public** **class** TriangleThree {

**public** **static** **void** main(String[] args) {

// **TODO** Auto-generated method stub

Scanner s=**new** Scanner(System.*in*);

System.*out*.println("enter the width of the triangle: ");

**double** b=s.nextDouble();

System.*out*.println("enter the height of the triangle: ");

**double** h=s.nextDouble();

**double** area=(b\*h)/2;

System.*out*.println("area of triangle is: "+area);

}

}

2.//program to find biggest of three numbers using nested if else statement

import java.util.\*;

import java.util.\*;

public class Big3

{

public static void main(String[] args)

{

Scanner S=new Scanner(System.in);

int a,b,c,big;

System.out.println("Enter 3 values");

a=S.nextInt();

b=S.nextInt();

c=S.nextInt();

if(a>b && a>c)

{

big=a;

}

else if(b>c)

big=b;

else

big=c;

System.out.println("The biggest among 3 numbers "+a+","+b+","+c+" is " +big);

}

}

3.write a program to find and output all the roots of a given equation.

import java.util.\*;

import java.lang.\*;

import java.math.\*;

class quad

{

public static void main(String[] args)

{

Scanner S=new Scanner(System.in);

int a,b,c;

double d,r1,r2;

System.out.println("enter the value for abc");

a=S.nextInt();

b=S.nextInt();

c=S.nextInt();

d=((b\*b)-(4\*a\*c));

if(d<0)

{

System.out.println("roots are imaginary");

r1=(-b)/2\*a;

r2=(Math.sqrt(-d)/(2\*a));

System.out.println("r1="+r1+"+i"+r1);

System.out.println("r2="+r2+"-i"+r2);

}

else if(d>0)

{

System.out.println("roots are real and distinct");

r1=(-b+Math.sqrt(d)/(2\*a));

r2=(-b-Math.sqrt(d)/(2\*a));

System.out.println("r1="+r1);

System.out.println("r2=%.2f"+r2);

}

else if(d==0)

{

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

r1=((-b)/2\*a);

r2=r1;

System.out.println("r1="+r1);

System.out.println("r2="+r2);

}

}

}

4.Write a program to simulate simple calculator that performs arithmetic operations.

import java.util.\*;

import java.lang.\*;

class Arithmetic

{

public static void main(String[] args)

{

Scanner S=new Scanner(System.in);

int a,b,ch,sum,diff,mul;

float div;

System.out.println("Enter 2 numbers:");

a=S.nextInt();

b=S.nextInt();

System.out.println("Enter your choice:");

ch=S.nextInt();

switch(ch)

{

case 1:System.out.println("Addition="+(a+b));

break;

case 2:System.out.println("Subtraction="+(a-b));

break;

case 3:System.out.println("Mutiplication="+(a\*b));

break;

case 4:System.out.println("Division="+(a/b));

break;

default:System.out.println("Invalid Choice");

}

}

}

5.write a program to generate and print prime number in a given range and print the number of the prime numbers.

import java.lang.\*;

import java.math.\*;

import java.util.\*;

public class Prime

{

public static void main(String[] args)

{

int i,n,j,x,count=0;

Scanner S=new Scanner(System.in);

System.out.println("enter the range:");

n=S.nextInt();

System.out.println("prime number are:");

for(i=2;i<=n;i++)

{

x=1;

for(j=2;j<=Math.sqrt(i);j++)

{

if(i%j==0)

{

x=0;

break;

}

}

if(x==1)

{

count++;

System.out.println(i);

}

}

System.out.println("number of prime number are:"+count);

}

}

6.Write a program to read N integers into an array and to

a).find the sum of negative numbers.

b).find the sum of positive numbers.

c).find the average of all in input numbers.

import java.util.\*;

class Numbers

{

public static void main(String[] args)

{

Scanner input=new Scanner(System.in);

int sum1=0,sum2=0,avg=0,n;

System.out.println("Enter the numbers: ");

n=input.nextInt();

System.out.println("Enter the" +n+ "elements;");

int num[]= new int[10];

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

{

num[i]=input.nextInt();

if(num[i]>0)

{

sum2+=num[i];

}

else

{

sum1+=num[i];

}

}

avg=(sum1+sum2)/n;

System.out.println("Sum of positive numbers:"+sum2);

System.out.println("Sum of negative numbers:"+sum1);

System.out.println("Average of given numbers:"+avg);

}

}

7.//WAP to perform linear search technique:

import java.util.Scanner;

class LinearSearchExample

{

public static void main(String args[])

{

int i, n, key, a[];

Scanner input = new Scanner(System.in);

System.out.println("Enter number of elements:");

n = input.nextInt();

a= new int[n];

System.out.println("Enter " + n + " integers");

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

a[i] = input.nextInt();

System.out.println("Enter the search value:");

key = input.nextInt();

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

{

if (a[i] == key)

{

System.out.println(key+" is present at location "+(i+1));

break;

}

}

if (i==n)

System.out.println(key+ " doesn't exist in array.");

}

}

8.Write a program to sort N numbers in ascending order using bubble sort and print.

import java.util.Scanner;

class bubble

{

public static void main(String[] args)

{

int i,j;

Scanner S=new Scanner(System.in);

System.out.println("enter a value for n");

int n =S.nextInt();

int a[]=new int[n];

System.out.println("enter array elements");

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

a[i]=S.nextInt();

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

{

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

{

if (a[j]> a[j+1])

{

int temp=a[j];

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

a[j+1]=temp;

}

}

}

System.out.println("the array elementes are");

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

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

}

}

9.Write a program to input real numbers and to find mean, variance and standard deviation.

import java.util.\*;

import java.lang.Math;

class statis

{

public static void main(String[] args)

{

float a[]=new float[20],avg,var,std,sum,sqsum;

int n,i;

Scanner S=new Scanner(System.in);

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

n=S.nextInt();

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

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

a[i]=S.nextInt();

sum=0;

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

sum=sum+a[i];

avg=sum/n;

sqsum=0;

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

sqsum=sqsum+(a[i]-avg)\*(a[i]-avg);

var=sqsum/n;

std=(float)Math.sqrt(var);

System.out.println("mean="+avg);

System.out.println("variance="+var);

System.out.println("standard deviation="+std);

}

}

10.//Add,sub,mul of onedimensional array:

import java.util.Scanner;

public class AddSubMul

{

public static void main(String[] args)

{

Scanner S = new Scanner(System.in);

int a[] = new int[20];

int b[] = new int[20];

int add[] = new int[20];

int sub[] = new int[20];

int mul[] = new int[20];

System.out.println("Enter the order of the matrices");

int m =S.nextInt();

System.out.println("Elements of Matrix A");

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

{

a[i]=S.nextInt();

}

System.out.println("Elements of Matrix B");

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

{

b[i]=S.nextInt();

}

System.out.println("Addition of Matrices");

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

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

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

{

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

System.out.println(" ");

}

System.out.println("Subtraction of Matrices");

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

sub[i] =a[i] - b[i];

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

{

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

System.out.println(" ");

}

System.out.println("Multiplication of Matrices");

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

mul[i] =a[i] \* b[i];

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

{

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

System.out.println(" ");

}

}

}

11.Write a program to perform addition subtraction of two dimensional array.

import java.util.Scanner;

public class AddSubMul

{

public static void main(String[] args)

{

Scanner S = new Scanner(System.in);

int a[] = new int[20];

int b[] = new int[20];

int add[] = new int[20];

int sub[] = new int[20];

int mul[] = new int[20];

System.out.println("Enter the order of the matrices");

int m =S.nextInt();

System.out.println("Elements of Matrix A");

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

{

a[i]=S.nextInt();

}

System.out.println("Elements of Matrix B");

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

{

b[i]=S.nextInt();

}

System.out.println("Addition of Matrices");

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

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

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

{

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

System.out.println(" ");

}

System.out.println("Subtraction of Matrices");

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

sub[i] =a[i] - b[i];

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

{

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

System.out.println(" ");

}

System.out.println("Multiplication of Matrices");

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

mul[i] =a[i] \* b[i];

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

{

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

System.out.println(" ");

}

}

}

12.Write a program to perform multiplication of two dimensional array.

import java.util.Scanner;

class Mul2DimArray

{

public static void main(String[] args)

{

Scanner S=new Scanner(System.in);

int a[][]=new int[20][20];

int b[][]=new int[20][20];

int c[][]=new int[20][20];

int i=0,j=0,m,n;

System.out.println("enter the order of the matrix");

m=S.nextInt();

n=S.nextInt();

System.out.println("elements of a");

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

{

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

{

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

}

}

System.out.println("elements of b");

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

{

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

{

b[i][j]=S.nextInt();

}

}

c[i][j]=0;

int k=0;

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

{

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

{

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

{

c[i][j]=c[i][j]+a[i][k]\*b[k][j];

}

}

}

System.out.println("product is");

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

{

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

{

System.out.println(c[i][j]);

System.out.println(" ");

}

}

}

}

13.Write a program to find fibonacci series.

import java.util.Scanner;

class fib

{

public static int fibo(int n)

{

if(n==0)

{

return 0;

}

if ((n==1)||(n==2))

{

return 1;

}

return (fibo(n-1)+fibo(n-2));

}

public static void main(String[] args)

{

Scanner S=new Scanner(System.in);

int i,m=0;

System.out.println("Enter the number:");

m=S.nextInt();

System.out.println("fibbonacci number is :");

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

{

System.out.println(fibo(i)+" ");

}

}

}

14.write a program to find x^y without using functions.

import java.util.Scanner;

class PowXYWithOutFun

{

public static void main(String[] args)

{

int x,y,z =1;

Scanner S = new Scanner(System.in);

System.out.println("Enter the value of X and Y");

x = S.nextInt();

y = S.nextInt();

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

{

z=z\*x;

}

System.out.println(x+" Power "+y+" is "+z);

}

}

15.Write a program to implement record of 5 students in 3 semesters and 3 tests per 3 semsters

and display the records.

**import** java.util.Scanner;

**public** **class** Student

{

**public** **static** **void** main(String[] args)

{

**int** i=0,k,j;

Scanner S=**new** Scanner(System.*in*);

**int** a[][][]=**new** **int**[5][3][3];

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

System.*out*.println("enter details of Student"+(i+1));

**for**(j=0;j<3;j++){

System.*out*.println("for semester"+(j+1));

**for**(k=0;k<3;k++){

**try**{

System.*out*.println("enter marks for subject"+(k+1));

a[i][j][k]=S.nextInt();

}

**catch**(Exception e){

}

}

System.*out*.println("\n");

}

System.*out*.println("\n");

}

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

System.*out*.println("details of student"+(i+1));

**for**(j=0;j<3;j++){

System.*out*.println("for tha semester"+(j+1));

**for**(k=0;k<3;k++){

System.*out*.println("marks in subject"+(k+1));

}

System.*out*.println("\n");

}

}

}

}

16.//WAP to compute area of rectangle using class by passing values to variables and methods:

import java.util.\*;

class Rectangle

{

int length,width;

void getData(int x,int y)

{

length=x;

width=y;

}

int rectArea()

{

int area=length\*width;

return(area);

}

}

class RectArea

{

public static void main(String[] args)

{

int area1,area2;

Rectangle rect1=new Rectangle();

Rectangle rect2=new Rectangle();

rect1.length=20;

rect1.width=15;

area1=rect1.length\*rect1.width;

rect2.getData(20,12);

area2=rect2.rectArea();

System.out.println("Area of rectangle1 ="+area1);

System.out.println("Area of rectangle2 ="+area2);

}

}

17.//WAP to find area of square using constructor:

import java.util.\*;

class Square

{

int side;

Square(int x)

{

side=x;

}

int SqArea()

{

return(side\*side);

}

}

class SquareArea

{

public static void main(String[] args)

{

Square s1=new Square(8);

int area=s1.SqArea();

System.out.println("Area of square ="+area);

}

}

18.// Write a program to implement Method Overloading:

import java.util.\*;

class Room

{

double len,bred;

Room(double x,double y)

{

len=x;

bred=y;

}

Room(double x)

{

len=bred=x;

}

double area()

{

return(len\*bred);

}

}

class RoomArea

{

public static void main(String[] args)

{

Room r1=new Room(30.0,10.0);

Room r2=new Room(42.0);

double area1=r1.area();

double area2=r2.area();

System.out.println("Area1 ="+area1);

System.out.println("Area2 ="+area2);

}

}

19.Write a program to illustrate method overriding.

import java.util.\*;

class Super

{

int x;

Super(int x)

{

this.x=x;

}

void display()

{

System.out.println("super x="+x);

}

}

class Sub extends Super

{

int y;

Sub(int x,int y)

{

super(x);

this.y=y;

}

void display()

{

System.out.println("Super x="+x);

System.out.println("Super y="+y);

}

}

public class OverrideTest

{

public static void main(String[] args)

{

Sub S1=new Sub(350,750);

S1.display();

}

}

20. Write a program to find the biggest of two numbers using nesting methods.

**class** Nesting

{

**int** m,n;

Nesting(**int** x,**int** y)

{

m=x;

n=y;

}

**int** largest()

{

**if** (m>=n)

**return**(m);

**else**

**return**(n);

}

**void** display()

{

**int** large=largest();

System.*out*.println("largest value="+large);

}

}

**public** **class** Triangle {

**public** **static** **void** main(String[] args) {

Nesting nest =**new** Nesting(50,400);

nest.display();

}

}