**Day-2**

1.Average of 15 students.

import java.util.\*;

class AverageOf15students

{

public static void main(String[] arg)

{

Scanner s=new Scanner(System.in);

int i;

int avg,sum=0;

int a[]=new int[15];

System.out.println("Enter Each student marks");

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

{

System.out.print("Enter "+(i+1)+" Marks: ");

a[i]=s.nextInt();

sum=sum+a[i];

}

avg=sum/a.length;

System.out.println("Sum is = "+sum);

System.out.println("Average is = "+avg);

    }

}

OUTPUT

Enter Each student marks

Enter 1 Marks: 17

Enter 2 Marks: 28

Enter 3 Marks: 56

Enter 4 Marks: 48

Enter 5 Marks: 90

Enter 6 Marks: 45

Enter 7 Marks: 54

Enter 8 Marks: 69

Enter 9 Marks: 74

Enter 10 Marks: 86

Enter 11 Marks: 22

Enter 12 Marks: 95

Enter 13 Marks: 70

Enter 14 Marks: 10

Enter 15 Marks: 34

Sum is = 798

Average is = 53

Process finished with exit code 0

2.Matrix addition

import java.util.\*;

class MatrixAddition

{

public static void main(String[] arg)

{

Scanner s=new Scanner(System.in);

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

int b[][]=new int[3][3];

System.out.println("Enter first matrix elements");

for(int i=0;i<3;i++)

{

for (int j=0;j<3;j++)

{

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

}

}

System.out.println("Enter Second matrix elements");

for(int i=0;i<3;i++)

{

for (int j=0;j<3;j++)

{

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

}

}

int c[][]=new int[3][3];

for(int i=0;i<3;i++)

{

for (int j=0;j<3;j++)

{

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

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

}

System.out.println(" ");

       }

    }

}

OUTPUT

Enter first matrix elements

1

2

5

8

4

3

1

2

5

Enter Second matrix elements

3

2

1

5

4

6

1

2

8

4 4 6

13 8 9

2 4 13

Process finished with exit code 0

3.Matrix substraction.

import java.util.\*;

class MatrixSubtraction

{

public static void main(String[] arg)

{

Scanner s=new Scanner(System.in);

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

int b[][]=new int[3][3];

System.out.println("Enter first matrix elements");

for(int i=0;i<3;i++)

{

for (int j=0;j<3;j++)

{

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

}

}

System.out.println("Enter Second matrix elements");

for(int i=0;i<3;i++)

{

for (int j=0;j<3;j++)

{

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

}

}

int c[][]=new int[3][3];

for(int i=0;i<3;i++)

{

for (int j=0;j<3;j++)

{

c[i][j]=a[i][j]-b[i][j];

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

}

System.out.println(" ");

       }

    }

}

OUTPUT

Enter first matrix elements

8

9

7

6

8

7

9

5

9

Enter Second matrix elements

1

5

4

2

3

1

2

4

3

7 4 3

4 5 6

7 1 6

Process finished with exit code 0

4.Area of Rectangle

import java.util.\*;

class Rectangle

{

int height,width;

void area()

{

Scanner s=new Scanner(System.in);

System.out.println("Enter the height of rectangle: ");

height=s.nextInt();

System.out.println("Enter the width of rectangle: ");

width=s.nextInt();

}

void cal()

{

int result=height\*width;

System.out.println("Area of rectangle= "+result);

}

public static void main(String[] arg)

{

Rectangle obj=new Rectangle();

obj.area();

obj.cal();

    }

}

OUTPUT

Enter the height of rectangle:

20

Enter the width of rectangle:

15

Area of rectangle= 300

Process finished with exit code 0

5.Area of Circle.

import java.util.\*;

class Circle

{

int radius;

void area()

{

Scanner s=new Scanner(System.in);

System.out.println("Enter the radius of Circle: ");

radius=s.nextInt();

}

void cal()

{

int result=radius\*radius\*22/7;

System.out.println("Area of Circle= "+result);

}

public static void main(String[] arg)

{

Circle obj=new Circle();

obj.area();

obj.cal();

    }

}

OUTPUT

Enter the radius of Circle:

7

Area of Circle= 154

Process finished with exit code 0

6.Simple Interest.

import java.util.\*;

class SimpleInterest

{

int p,r,t;

void input()

{

Scanner s=new Scanner(System.in);

System.out.println("Enter the Principle Amount: ");

p=s.nextInt();

System.out.println("Enter the Time period: ");

t=s.nextInt();

System.out.println("Enter the Rate of Interest: ");

r=s.nextInt();

}

void cal()

{

int result=p\*t\*r/100;

System.out.println("Simple Interest= "+result);

}

public static void main(String[] arg)

{

SimpleInterest obj=new SimpleInterest();

obj.input();

obj.cal();

    }

}

OUTPUT

Enter the Principle Amount:

10000

Enter the Time period:

12

Enter the Rate of Interest:

3

Simple Interest= 3600

Process finished with exit code 0

7.Volume of a Box

import java.util.\*;

class Box

{

double width,height,depth;

Box(double w,double h,double d)

{

width=w;

height=h;

depth=d;

}

double volume()

{

return width\*height\*depth;

}

public static void main(String[] arg)

{

Box obj=new Box(10.5,20.5,30.4);

double res3=obj.volume();

System.out.println("result3: "+res3);

    }

}

OUTPUT

result3: 6543.599999999999

Process finished with exit code 0

8. Sum of Series using OOPS concept.

import java.util.\*;

class SumofSeries

{

int n,sum=0;

void sum()

{

Scanner s=new Scanner(System.in);

System.out.println("Enter a number");

n=s.nextInt();

}

void cal()

{

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

{

sum=sum+i;

}

System.out.println("Sum = "+sum);

}

public static void main(String[] arg)

{

SumofSeries obj=new SumofSeries();

obj.sum();

obj.cal();

    }

}

OUTPUT

Enter a number

10

Sum = 55

Process finished with exit code 0

9.Area of Triangle.

import java.util.\*;

class Triangle

{

int base,height;

void area()

{

Scanner s=new Scanner(System.in);

System.out.println("Enter the base of triangle: ");

base=s.nextInt();

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

height=s.nextInt();

}

void cal()

{

int result=base\*height/2;

System.out.println("Area of triangle= "+result);

}

public static void main(String[] arg)

{

Triangle obj=new Triangle();

obj.area();

obj.cal();

    }

}

OUTPUT

Enter the base of triangle:

12

Enter the height of triangle:

10

Area of triangle= 60

Process finished with exit code 0

**Assignment-2**

1.Bank Account

**PROGRAM**

import java.util.\*;

class Account{

int ib=0, cb, add, wd, pen=0, intr, choice, roi, t;

Account()

{

cb=ib;

Scanner s=new Scanner(System.in);

System.out.print("Your Initial Balance is:"+ib+"\n");

while(choice!=4) {

System.out.print("1.ADD Money\n2.Withdraw Money\n3.Balance Enquiry\n4.Exit\n");

System.out.print("Choose your choice:");

choice = s.nextInt();

switch (choice) {

case 1:

System.out.print("Enter the Money to add:");

add = s.nextInt();

cb = cb + add;

break;

case 2:

System.out.print("Enter the Money to withdraw:");

wd = s.nextInt();

if (wd > cb) {

pen = 5;

System.out.println("You cannot withdraw more amount than your current balance\n");

System.out.println("You have to pay Penalty of "+pen+" rupees!!");

cb=cb-pen;

System.out.println("Your current balance is : "+cb);

} else {

cb = cb - wd;

}

break;

case 3:

System.out.println("Your current Balance is = " + cb);

break;

case 4:

System.out.print("Exiting the program!! Thank you.\n");

break;

default:

System.out.print("Enter a valid Choice!!\n");

}

}

}

void interest(){

Scanner s=new Scanner(System.in);

System.out.print("Enter your Interest rate:");

roi=s.nextInt();

System.out.print("Enter the Time Period:");

t=s.nextInt();

intr=(roi\*cb\*t)/100;

System.out.println("You'll get an interest of "+intr+" for your current balance for "+t+" Months.");

}

}

class BankAccount{

public static void main(String[] args){

Account obj=new Account();

obj.interest();

}

}

**OUTPUT**

Your Initial Balance is:0

1.ADD Money

2.Withdraw Money

3.Balance Enquiry

4.Exit

Choose your choice:1

Enter the Money to add:500

1.ADD Money

2.Withdraw Money

3.Balance Enquiry

4.Exit

Choose your choice:2

Enter the Money to withdraw:200

1.ADD Money

2.Withdraw Money

3.Balance Enquiry

4.Exit

Choose your choice:3

Your current Balance is = 300

1.ADD Money

2.Withdraw Money

3.Balance Enquiry

4.Exit

Choose your choice:4

Exiting the program!! Thank you.

Enter your Interest rate:5

Enter the Time Period:12

You'll get an interest of 180 for your current balance for 12 Months.

Process finished with exit code 0

2.Identify the Triangle type

**PROGRAM**

import java.util.Scanner;

class TriangleType {

private int sideA, sideB, sideC;

public TriangleType(int sideA, int sideB, int sideC) {

this.sideA = sideA;

this.sideB = sideB;

this.sideC = sideC;

}

public boolean isRight() {

return (sideA\*sideA)+(sideB\*sideB)==(sideC\*sideC) || (sideA\*sideA)+(sideC\*sideC)==(sideB\*sideB) || (sideB\*sideB)+(sideC\*sideC)==(sideA\*sideA) ;

}

public boolean isScalene() {

return sideA != sideB && sideB != sideC && sideC != sideA;

}

public boolean isIsosceles() {

return sideA == sideB || sideB == sideC || sideC == sideA;

}

public boolean isEquilateral() {

return sideA == sideB && sideB == sideC;

}

}

class TType {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

System.out.print("Enter side A: ");

int sideA = scanner.nextInt();

System.out.print("Enter side B: ");

int sideB = scanner.nextInt();

System.out.print("Enter side C: ");

int sideC = scanner.nextInt();

TriangleType triangle = new TriangleType(sideA, sideB, sideC);

System.out.println("Is Right Triangle: " + triangle.isRight());

System.out.println("Is Scalene Triangle: " + triangle.isScalene());

System.out.println("Is Isosceles Triangle: " + triangle.isIsosceles());

System.out.println("Is Equilateral Triangle: " + triangle.isEquilateral());

}

}

**OUTPUT**

Enter side A: 3

Enter side B: 4

Enter side C: 5

Is Right Triangle: true

Is Scalene Triangle: true

Is Isosceles Triangle: false

Is Equilateral Triangle: false

Process finished with exit code 0

3.Matrix Multiplication

**PROGRAM**

import java.util.\*;

class MatrixMultiplication{

public static void main(String[] args){

Scanner s=new Scanner(System.in);

int ar, br, ac, bc;

int i,j,k;

System.out.print("Enter no of rows for Matrix-A:");

ar=s.nextInt();

System.out.print("Enter no of columns for Matrix-A:");

ac=s.nextInt();

System.out.print("Enter no of rows for Matrix-B:");

br=s.nextInt();

System.out.print("Enter no of columns for Matrix-B:");

bc=s.nextInt();

if(ac!=br){

System.out.print("Matrix Multiplication not possible!!");

return;

}

int a[][]=new int[ar][ac];

int b[][]=new int[br][bc];

int res[][]=new int[ar][bc];

System.out.print("Enter elements of Matrix-A:");

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

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

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

}

}

System.out.print("Enter elements of Matrix-B:");

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

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

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

}

}

System.out.print("The resultant matrix of A\*B is:\n");

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

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

res[i][j] = 0;

for (k = 0; k < ac; k++) {

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

}

}

}

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

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

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

}

System.out.println();

}

}

}

**OUTPUT**

Enter no of rows for Matrix-A:2

Enter no of columns for Matrix-A:2

Enter no of rows for Matrix-B:2

Enter no of columns for Matrix-B:2

Enter elements of Matrix-A:1

2

5

3

Enter elements of Matrix-B:2

3

4

1

The resultant matrix of A\*B is:

10 5

22 18

Process finished with exit code 0