**1.JAVA PROGRAM FOR QUADRATIC EQUATION**

**import** java.util.Scanner;

**public** **class** Quad

{

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

{

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

System.***out***.print("Enter the value of a: ");

**double** a = input.nextDouble();

System.***out***.print("Enter the value of b: ");

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

System.***out***.print("Enter the value of c: ");

**double** c = input.nextDouble();

**double** d= b \* b - 4.0 \* a \* c;

**if** (d> 0.0)

{

**double** r1 = (-b + Math.*pow*(d, 0.5)) / (2.0 \* a);

**double** r2 = (-b - Math.*pow*(d, 0.5)) / (2.0 \* a);

System.***out***.println("The roots are " + r1 + " and " + r2);

}

**else** **if** (d == 0.0)

{

**double** r1 = -b / (2.0 \* a);

System.***out***.println("The root is " + r1);

}

**else**

{

System.***out***.println("Roots are not real.");

}

}

}

**2.JAVA PROGRAM 5 SUBJECT MARKS M,AV,P**

**import** java.util.Scanner;

**class** Prg2

{

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

{

**float** eng, phy, chem, math, comp;

**double** total, average, percentage;

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

/\* Input marks of all five subjects \*/

System.***out***.println("Enter marks of five subjects:");

System.***out***.print("Enter marks of English subjects:");

eng=op.nextFloat();

System.***out***.print("Enter marks of physics subjects:");

phy=op.nextFloat();

System.***out***.print("Enter marks of chemistry subjects:");

chem=op.nextFloat();

System.***out***.print("Enter marks of maths subjects:");

math=op.nextFloat();

System.***out***.print("Enter marks of computers subjects:");

comp=op.nextFloat();

/\* Calculate total, average and percentage \*/

total = eng + phy + chem + math + comp;

average = (total / 5.0);

percentage = (total / 500.0) \* 100;

/\* Print all results \*/

System.***out***.println("Total marks ="+total);

System.***out***.println("Average marks = "+average);

System.***out***.println("Percentage = "+percentage);

}

}

**3.PROGRAM FOR EMPLOYEE DA,HRA,PF**

**import** java.util.Scanner;

**public** **class** Prg3{

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

**double** DA,HRA,PF,gross,net;

**double** CCA=240, PT=100;

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

System.***out***.println("Enter The Name,ID,Salary");

String empname = sc.nextLine();

**int** empno = sc.nextInt();

**float** basic = sc.nextFloat();

DA = (0.5)\*basic;

HRA = (0.2)\*basic;

PF= (0.1)\*basic;

gross = basic+DA+PF+HRA;

net = gross-CCA-PT-PF;

System.***out***.println("Employee Id:"+empno);

System.***out***.println("Employee Name: "+empname);

System.***out***.println(empname+"'s Gross salary is :"+gross);

System.***out***.println(empname+"'s net Salary is :"+net);

}

}

**4.java program for single Dimensional array**

**import** java.util.Arrays;

**import** java.util.Scanner;

**public** **class** Prg4{

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

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

System.***out***.println("Enter the String Value: ");

String st = sc.nextLine();

**char**[] ch = **new** **char**[st.length()];

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

ch[i]=st.charAt(i);

}

Arrays.*sort*(ch);

**for** (**char** c:ch){

System.***out***.println(c);

}

}

}

**5.java program for educational hierarchy using multiple inheritance**

**class** col **extends** sec{

**public** col(){

System.***out***.println("4. College Education");

System.***out***.println(" Graduate");

System.***out***.println("Post Graduate");

System.***out***.println("Doctorate");

}

}

**class** sec **extends** mid{

**public** sec(){

System.***out***.println("3.Secondary Education");

}

}

**class** mid **extends** prim{

**public** mid(){

System.***out***.println("2.Middle School");

}

}

**class** prim{

**public** prim(){

System.***out***.println("1.Primary Education");

}

}

**public** **class** Prg5 **extends** col{

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

System.***out***.println("Education System");

Prg5 obj = **new** Prg5();

}

}

**6.Program to implement constructor overloading by passing different number of parameters**

**public** **class** Box

{

**int** length,breadth,height;

Box()

{

length=breadth=height=2;

System.***out***.println("Intialized with default constructor");

}

Box(**int** l, **int** b)

{

length=l; breadth=b; height=2;

System.***out***.println("Initialized with parameterized constructor having 2 params");

}

Box(**int** l, **int** b, **int** h)

{

length=l; breadth=b; height=h;

System.***out***.println("Initialized with parameterized constructor having 3 params");

}

**public** **int** getVolume()

{

**return** length\*breadth\*height;

}

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

{

Box box1 = **new** Box();

System.***out***.println("The volume of Box 1 is :"+ box1.getVolume());

Box box2 = **new** Box(10,20);

System.***out***.println("Volume of Box 2 is :" + box2.getVolume());

Box box3 = **new** Box(10,20,30);

System.***out***.println("Volume of Box 3 is :" + box3.getVolume());

}

}

**7.Java program to demonstrate method overloading and print geomentrical figures**

**import** java.util.\*;

**public** **class** Shapes{

**double** area;

**void** area(**int** a) {

area=a\*a;

System.***out***.println("Area of Square");

}

**void** area(**double** r) {

area=3.14\*r\*r;

System.***out***.println("Area of Circle");

}

**void** area(**double** l,**double** b) {

area=l\*b;

System.***out***.println("Area of Rectangle");

}

**void** display() {

System.***out***.println("area"+area);

}

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

Shapes S=**new** Shapes();

S.area(10);

S.display();

S.area(12,56);

S.display();

S.area(14.5,16.66);

S.display();

}

}

**8.Program to show usage of Method Overriding**

**class** MyBank{

**int** getRateOflnterest(){**return** 5;}

**double** minBalance() {**return** 500;}

}

**class** SBI **extends** MyBank{

**int** getrateOfinterest() {**return** 7;}

**double** minBalance() {**return** 600;}

}

**class** ICICI **extends** MyBank{

**int** getRateOfinterest() {**return** 6;}

**double** minBalance() {**return** 1000;}

}

**class** CANARA **extends** MyBank{

**int** getRateOfinterest(){**return** 8;}

**double** minBalance() {**return** 1500;}

}**public** **class** Bank{

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

SBI s= **new** SBI();

ICICI i = **new** ICICI();

CANARA c = **new** CANARA();

System.***out***.println("SBI Rate of Interest is :"+s.getRateOflnterest());

System.***out***.println("SBI minimun Balance is :"+s.minBalance());

System.***out***.println("ICICI Rate of Interest is :"+i.getRateOflnterest());

System.***out***.println("ICICI minimun Balance is :"+i.minBalance ());

System.***out***.println("CANARA Rate of Interest is :"+c.getRateOflnterest());

System.***out***.println("CANARA minimun Balance is :"+c.minBalance ());

}

}

**9.Program to show difference between static, final, abstract keywords**

**abstract** **class** Square{

**abstract** **void** display();

}

**class** Rectangle **extends** Square

{

**void** display() {

System.***out***.println("The demostrates abstract method and classes");

}

**static** **void** display2() {

System.***out***.println("This demostrates static methods");

}

}

**final** **class** Triangle **extends** Rectangle

{

**final** **static** **void** display2() {

System.***out***.println("This demostrates final classes and final methods");

}

}

**public** **class** Display{

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

Triangle obj=**new** Triangle();

Rectangle.*display2*();

Triangle.*display2*();

obj.display();

}

}

**10.To generate list of string operations through Buffered reader**

**import** java.io.\*;

**public** **class** Prg10{

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

InputStreamReader r = **new** InputStreamReader(System.***in***);

BufferedReader br = **new** BufferedReader(r);

System.***out***.println("Enter The String:");

String st = br.readLine();

String pt = st;

System.***out***.println("1."+st);

System.***out***.println("2."+st.length());

System.***out***.println("3."+st.toLowerCase());

System.***out***.println("4."+st.toUpperCase ());

System.***out***.println("5."+st.concat(pt));

System.***out***.println("6."+st.trim());

System.***out***.println("7."+st+" "+pt);

}

}