1. Write a program in Java to perform **arithematicoperations**using switch case.

importjava.util.\*;

class Practice

{

public static void main(String args[])

{

Scanner sc=new Scanner(System.in);

int no1,no2,ch,res;

System.out.println("\tMenu");

System.out.println("1. Addition");

System.out.println("2. Subtraction");

System.out.println("3. Multiplication");

System.out.println("4. Division");

System.out.println("Enter ur Choice:-");

ch=sc.nextInt();

switch(ch)

{

case 1:

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

no1=sc.nextInt();

no2=sc.nextInt();

res=no1+no2;

System.out.println("Addition="+res);

break;

case 2:

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

no1=sc.nextInt();

no2=sc.nextInt();

res=no1-no2;

System.out.println("Subtraction="+res);

break;

case 3:

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

no1=sc.nextInt();

no2=sc.nextInt();

res=no1\*no2;

System.out.println("Multiplication="+res);

break;

case 4:

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

no1=sc.nextInt();

no2=sc.nextInt();

res=no1/no2;

System.out.println("Division="+res);

break;

default:

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

}

}

}

1. Write a program in Java to create **class Employee** with methods getdata() and putdata() and instantiate its object.

importjava.util.\*;

class Employee

{

Scanner sc=new Scanner(System.in);

intemp\_id;

String name;

public void get\_data()

{

System.out.print("Enter Employee ID: ");

emp\_id = sc.nextInt();

System.out.print("Enter Employee Name: ");

name = sc.next();

}

public void put\_data()

{

System.out.print("\nEmployee ID: " + emp\_id);

System.out.print("\nEmployee Name: " + name);

}

public static void main(String args[])

{

Employee e=new Employee();

System.out.print("Enter information of Employee-\n");

e.get\_data();

System.out.print("\nInformation of Employee-\n");

e.put\_data();

}

}

1. Write a program for Factorial using Function.

importjava.util.\*;

class Practice

{

public static void main(String args[])

{

Scanner sc=new Scanner(System.in);

int n;

System.out.print("Enter a Number: ");

n=sc.nextInt();

System.out.print("Factorial of "+n+" = "+factorial(n));

}

public static int factorial(int no)

{

inti,fact=1;

for(i=1;i<=no;++i)

{

fact=fact\*i;

}

return fact;

}

}

1. Write a program for Wrapper Class.(Autoboxing)

importjava.util.\*;

class Practice

{

public static void main(String args[])

{

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

int a=7852;

Integer b=new Integer(a);

System.out.println(b);

long l=9875l;

Long lg=new Long(l);

System.out.println(lg);

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

int c;

c=b.intValue();

System.out.println(c);

long g;

g=lg.longValue();

System.out.println(g);

}

}

1. Write a program for Wrapper Class.(Unboxing)

importjava.util.\*;

class Practice

{

public static void main(String args[])

{

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

int a=7852;

Integer b=new Integer(a);

System.out.println(b);

long l=9875l;

Long lg=new Long(l);

System.out.println(lg);

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

int c;

c=b.intValue();

System.out.println(c);

long g;

g=lg.longValue();

System.out.println(g);

}

}

1. Write a program for Parameterised Constructor

importjava.util.\*;

class Student

{

introll\_no;

String name;

Double per;

Student()

{

roll\_no=15;

name="Rudra";

per=98.70;

}

Student(intr,Stringn,Double p)

{

roll\_no=r;

name=n;

per=p;

}

Student(intrn,Stringna,Doublepe)

{

roll\_no=rn;

name=na;

per=pe;

}

void display()

{

System.out.println("Roll No.:-"+roll\_no);

System.out.println("Name:-"+name);

System.out.println("Percentage:-"+per+"%");

}

public static void main(String args[])

{

Student s1=new Student();

s1.display();

Student s2=new Student(19,"Smita",96.55);

s2.display();

Student s3=new Student(15,"Sanket",97.5);

s3.display();

}

}

1. Write a program in Java to apply **string**methods :**equals(), compareTo(), charAt(), toUpperCase()** over entered strings from user.

importjava.util.\*;

class Practice

{

public static void main(String args[])

{

Scanner sc=new Scanner(System.in);

String str1,str2;

System.out.println("Enter a String-1 :-");

str1=sc.next();

System.out.println("Enter a String-2 :-");

str2=sc.next();

System.out.println("Equals:-"+str1.equals(str2));

System.out.println("Compare to:-"+str1.compareTo(str2));

System.out.println("Character At:-"+str1.charAt(4));

System.out.println("Upper Case:-"+str2.toUpperCase());

}

}

1. Write a program in Java to apply **String**methods :**equalsIgnoreCase(), compareTo(), indexOf(), toLowerCase()** over entered strings from user.

importjava.util.\*;

class Practice

{

public static void main(String args[])

{

Scanner sc=new Scanner(System.in);

String str1,str2;

System.out.println("Enter a String-1 :-");

str1=sc.next();

System.out.println("Enter a String-2 :-");

str2=sc.next();

System.out.println("Equals Ignore Case:-"+str1.equalsIgnoreCase(str2));

System.out.println("Compare to:-"+str1.compareTo(str2));

System.out.println("Index Of:-"+str1.indexOf('a'));

System.out.println("Lower Case:-"+str2.toLowerCase());

}

}

1. Write a program in Java to implement a **vector** and add five elements of type Integer, Character, Boolean, Long, Float into that vector. Also display vector elements.

importjava.util.\*;

importjava.util.Vector;

class Practice {

public static void main(String args[]) {

int no1;

float a;

char x;

boolean y;

long l;

Scanner sc = new Scanner(System.in);

Vector v = new Vector();

System.out.println("Enter an Integer:");

no1 = sc.nextInt();

Integer val1 = new Integer(no1);

System.out.println("Enter a Float Number:");

a = sc.nextFloat();

Float val2 = new Float(a);

System.out.println("Enter a Character:");

x = sc.next().charAt(0);

Character val3 = new Character(x);

System.out.println("Enter a Long Integer:");

l = sc.nextLong();

Long val4 = new Long(l);

System.out.println("Enter a Boolean:");

y = sc.nextBoolean();

Boolean val5 = new Boolean(y);

v.addElement(val1);

v.addElement(val2);

v.addElement(val3);

v.addElement(val4);

v.addElement(val5);

System.out.println("Elements in vector:");

for (int i = 0; i <= v.size(); i++) {

System.out.println("\n"+v.elementAt(i));

}

}

}

1. Write a program in Java to apply **Vector**methods :**addElement(), elementAt(), firstElement(), removeElementAt()** over vector v.

import java.util.Vector;

public class Practice

{

public static void main(String[] args)

{

Vector v = new Vector();

v.addElement("JPR");

v.addElement("MIC");

v.addElement("DCC");

System.out.println("Before removing the vector contains:");

for (int i = 0; i < v.size(); i++)

{

System.out.println(v.elementAt(i));

}

String str = (String) v.elementAt(1);

System.out.println("2nd element in the vector is:"+str);

String firstEle = (String) v.firstElement();

System.out.println("1st element in the vector is:"+firstEle);

v.removeElementAt(1);

System.out.println("After removing the vector contains:");

for (int i = 0; i < v.size(); i++)

{

System.out.println(v.elementAt(i));

}

}

}

1. Write a program in Java to implement **single inheritance** with super class Student and sub class Marks.

importjava.util.Scanner;

class Student {

introll\_no;

String name;

Scanner sc = new Scanner(System.in);

public void get\_stud() {

System.out.print("Enter Roll no: ");

roll\_no = sc.nextInt();

System.out.print("Enter Name: ");

name = sc.next();

}

public void put\_stud() {

System.out.print("\nRoll No: " + roll\_no);

System.out.print("\nName: " + name);

}

}

classMarksheet extends Student {

int java, mic, sen, gad, dcc;

doubleperc, total;

public void accept() {

System.out.print("Enter marks of subjects:-\n");

System.out.print("Java-");

java = sc.nextInt();

System.out.print("MIC-");

mic = sc.nextInt();

System.out.print("SEN-");

sen = sc.nextInt();

System.out.print("GAD-");

gad = sc.nextInt();

System.out.print("DCC-");

dcc = sc.nextInt();

}

public void Display() {

System.out.println("Marks of subjects:-");

System.out.println("Java-" + java);

System.out.println("MIC-" + mic);

System.out.println("SEN-" + sen);

System.out.println("GAD-" + gad);

System.out.println("DCC-" + dcc);

}

public void Calculate() {

total = (java + mic + sen + gad + dcc);

perc = (total / 5);

}

public void Percentage() {

System.out.print("Total Marks-" + total);

System.out.print("\nPercentage-" + perc);

}

public static void main(String args[]) {

Marksheet m = new Marksheet();

System.out.print("Enter information of Student-\n");

m.get\_stud();

m.accept();

m.Calculate();

System.out.print("\nInformation of Student-\n");

m.put\_stud();

m.Display();

m.Percentage();

}

}

1. Write a program in Java to create **package** with class student. Write another program to import created package(class and methods).

//package file

package abc;

public class Student

{

String name;

int roll\_no;

public Student(String n, int r)

{

name = n;

roll\_no = r;

}

public void display()

{

System.out.println("Roll No: "+roll\_no);

System.out.println("Name: " +name);

}

}

//Main Src File

import abc.Student;

public class Practice

{

public static void main(String[] args)

{

Student s = new Student("John",12);

s.display();

}

}

1. Write a program in Java to handle **Arithmetic Exception**.

importjava.util.\*;

class Practice

{

public static void main(String args[])

{

Scanner sc=new Scanner(System.in);

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

int no1=sc.nextInt();

int no2=sc.nextInt();

try

{

int no3=no1/no2;

System.out.println("Division:"+no3);

}

catch(Exception e)

{

System.out.println("Exception occured..");

System.out.println(e);

}

finally

{

System.out.println("Operations performed successfully...");

}

}

}

1. Write a program in Java to throw **user defined exception** if entered number is **Negative.**

importjava.util.\*;

class NEG extends Exception

{

NEG(String s)

{

super(s);

}

}

class Practice

{

public static void main(String args[])

{

Scanner sc=new Scanner(System.in);

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

int no=sc.nextInt();

try

{

if(no>=0)

{

System.out.println("Entered Number is Positive..");

}

else

{

System.out.println("Entered Number is Negative");

throw new NEG("Negative Number");

}

}

catch(Exception e)

{

System.out.println(e);

}

finally

{

System.out.println("Operations performed successfully...");

}

}

}

1. Write a program in Java to create two **threads**: one will print **even** numbers and other **odd** number from 1 to 20.

importjava.util.\*;

class Even extends Thread

{

public void run()

{

for(int i=1;i<=20;++i)

{

if(i%2==0)

{

System.out.println(i);

}

}

}

}

class Odd extends Thread

{

public void run()

{

for(int i=1;i<=20;++i)

{

if(i%2!=0)

{

System.out.println(i);

}

}

}

}

public class Practice

{

public static void main(String args[])

{

new Even().start();

new Odd().start();

}

}

1. Write a program in Java to draw smiley shape using **applet**.

importjava.applet.\*;

importjava.awt.\*;

/\*<Applet CODE= SmileFace.class

WIDTH=400

HEIGHT=200 ></Applet>\*/

public class SmileFace extends Applet

{

public void paint(Graphics g)

{

g.setColor(Color.yellow);

g.fillOval(20,20,150,150);

g.setColor(Color.black);

g.fillOval(50,60,15,25);

g.fillOval(120,60,15,25);

int x[]={95,85,106,95};

int y[]={85,104,104,85};

g.setColor(Color.black);

g.fillPolygon(x,y,4);

g.drawArc(55,95,78,50,0,-180);

g.drawArc(55,95,78,50,0,-180);

g.drawLine(50,126,60,116);

g.drawLine(128,115,139,126);

}

}

1. Write a program in java to draw **three concentric circle.**

importjava.applet.\*;

importjava.awt.\*;

/\*<Applet CODE= Practice.class

WIDTH=400

HEIGHT=200 ></Applet>\*/

public class Practice extends Applet

{

public void paint(Graphics g)

{

setBackground(Color.BLACK);

g.setColor(Color.RED);

g.fillOval(400,200,150,150);

g.setColor(Color.YELLOW);

g.fillOval(400,400,150,150);

g.setColor(Color.GREEN);

g.fillOval(400,600,150,150);

}

}

1. Write a program to copy contents of one **File** into another file.

import java.io.\*;

public class Filecpy

{

public static void main(String args[])

{

try{

FileInputStreamsrc=new FileInputStream("src.txt");

FileOutputStreamdest=new FileOutputStream("dest.txt");

int i;

while((i=src.read())!=-1)

{

dest.write(i);

}

System.out.println("File Data copied Successfully....");

src.close();

dest.close();

}

catch(IOException e)

{

System.out.println("Exception Occured...."+e.toString());

}

finally

{

System.out.println("File operations performed....");

}

}

}

1. Write a program in Java to create **class Student** with methods getdata() and putdata() and instantiate its object.

importjava.util.\*;

class Student

{

Scanner sc=new Scanner(System.in);

introll\_no;

String name;

public void get\_data()

{

System.out.print("Enter Student Roll no: ");

roll\_no = sc.nextInt();

System.out.print("Enter Student Name: ");

name = sc.next();

}

public void put\_data()

{

System.out.print("\nStudent Roll no: " + roll\_no);

System.out.print("\nStudent Name: " + name);

}

public static void main(String args[])

{

Student e=new Student();

System.out.print("Enter information of Student-\n");

e.get\_data();

System.out.print("\nInformation of Student-\n");

e.put\_data();

}

}

1. Write a program in Java to create two **threads**: one will print numbers 1 to 20 and other **reverse** number from 20 to 1.

importjava.util.\*;

class Even extends Thread

{

public void run()

{

for(int i=1;i<=20;++i)

{

System.out.println(i);

}

}

}

class Odd extends Thread

{

public void run()

{

for(int i=20;i>=1;--i)

{

System.out.println(i);

}

}

}

public class Practice

{

public static void main(String args[])

{

new Even().start();

new Odd().start();

}

}

1. Write a program in Java to draw cone and cylinder using applet.

importjava.applet.\*;

importjava.awt.\*;

/\*<Applet CODE= ShapesApplet.class WIDTH=400 HEIGHT=200></Applet>\*/

public class ShapesApplet extends Applet

{ public void paint(Graphics g)

{ setBackground(Color.BLACK);

g.setColor(Color.YELLOW);

g.drawString("Cylinder",10,110);

g.drawOval(10,10,50,10);

g.drawOval(10,80,50,10);

g.drawLine(10,15,10,85);

g.drawLine(60,15,60,85);

g.setColor(Color.GREEN);

g.drawString("Cone",90,250);

g.drawOval(200,200,200,50);

g.drawLine(200,225,290,500);

g.drawLine(400,225,290,500);

}

}

1. Write a program in Java to implement a **vector** and add five elements of type Integer, Character, Boolean, Long, Float into that vector. Also display vector elements.

importjava.util.\*;

importjava.util.Vector;

class Practice {

public static void main(String args[]) {

int no1;

float a;

char x;

boolean y;

long l;

Scanner sc = new Scanner(System.in);

Vector v = new Vector();

System.out.println("Enter an Integer:");

no1 = sc.nextInt();

Integer val1 = new Integer(no1);

System.out.println("Enter a Float Number:");

a = sc.nextFloat();

Float val2 = new Float(a);

System.out.println("Enter a Character:");

x = sc.next().charAt(0);

Character val3 = new Character(x);

System.out.println("Enter a Long Integer:");

l = sc.nextLong();

Long val4 = new Long(l);

System.out.println("Enter a Boolean:");

y = sc.nextBoolean();

Boolean val5 = new Boolean(y);

v.addElement(val1);

v.addElement(val2);

v.addElement(val3);

v.addElement(val4);

v.addElement(val5);

System.out.println("Elements in vector:");

for (int i = 0; i <= v.size(); i++) {

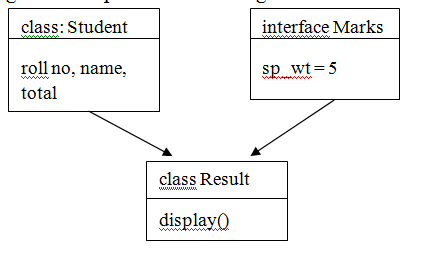
System.out.println("\n"+v.elementAt(i));

}

}

}

23.Write a program to implement following interface with multiple inheritance.



1. Write a Java program for implementation of implicit and explicit type conversion.

class Practice

{

public static void main (String args[])

{

System.out.println("Implicit Type Casting");

byte b=51;

int i;

i=b;

System.out.println(i);

short c=521;

int j;

j=c;

System.out.println(j);

int m=52347;

long n;

n=m;

System.out.println(n);

float p=88.2222f;

double d;

d=p;

System.out.println(d);

System.out.println("Explicit Type Casting");

double y=29.2985236521;

float f;

f=(float)y;

System.out.println(f);

int x=8844;

short s;

s=(short)x;

System.out.println(x);

long l=69881244;

int z;

z=(int)l;

System.out.println(z);

double o=88698869;

float k;

k=(float)o;

System.out.println(k);

}

}

1. Write a Java program to sort the array elements using arrays.

importjava.util.Scanner;

classArrayelements {

int i, j, temp;int A[]=e Int[];

Scanner sc = new Scanner(System.in);

System.out.println("How many elements you want?");

int no=sc.nextInt();

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

for(i=0;i<no;i++)

{

A[i]=sc.nextInt();

}

for(i=0;i<no;i++)

{

for(j=i+1;j<no;j++)

{

if(A[i]>A[j])

{

temp=A[i];

A[i]=A[j];

A[j]=temp;

}

}

}

System.out.println("Array Elements are: ");

for(i=0;i<no;i++)

{

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

}

}