Slip30_1

```
import java.io.BufferedReader;
import java.io.IOException;
import java.io.*;
class Person
{
    int Aadharno;
    String name;
    String Panno;
    Person(int Aadharno , String name , String Panno)
    {
        this.Aadharno = Aadharno;
        this.name = name;
        this.Panno = Panno;
    }
    Person(int Aadharno , String name)
    {
        this.Aadharno = Aadharno;
        this.name = name;
        Panno = "Not Applicable";
    }
    void display()
    {
        System.out.println("Aadharno is :"+Aadharno);
        System.out.println("Name is: "+name);
        System.out.println("Panno is :"+Panno);
    }
public static void main(String args[])
{
    BufferedReader br = new BufferedReader(new InputStreamReader (System.in));
    Person p, p1, p2, p3, p4;
    int a;
    String n, pno;
    try
    {
        System.out.println("Enter Aadhar no");
        a = br.readLine();
        System.out.println("Enter name");
        n = br.readLine();
        System.out.println("Enter panno");
        pno = br.readLine();
        p = new Person(a,n,pno);
        System.out.println("Enter Aadhar no");
        a = br.readLine();
        System.out.println("Enter name");
        n = br.readLine();
        System.out.println("Enter panno");
        pno = br.readLine();
        p1 = new Person(a,n,pno);
        System.out.println("Enter Aadhar no");
        a = br.readLine();
        System.out.println("Enter name");
        n = br.readLine();
        p2 = new Person(a,n);
```

```
        System.out.println("Enter Aadhar no");
        a = Integer.parseInt(br.readLine());
        System.out.println("Enter name");
        n = br.readLine();
        p3 = new Person(a,n);
        System.out.println("Enter Aadhar no");
        a = Integer.parseInt(br.readLine());
        System.out.println("Enter name");
        n = br.readLine();
        System.out.println("Enter panno");
        pno = br.readLine();
        p4 = new Person(a,n,pno);
        p.display();
        p1.display();
        p2.display();
        p3.display();
        p4.display();
    }
    catch(Exception e)
    {
        System.out.println("Exception caught"+e);
    }
}
}
```

Slip30_2

```
import java.awt.*;
import java.awt.event.*;
import javax.swing.*;

class BuildGUI extends JFrame implements ActionListener {
        JFrame actualWindow;
        JPanel container;
        JTextField txt_num1, txt_num2, txt_result;
        JButton btn_div;

        BuildGUI() {
            actualWindow = new JFrame("Experiment 4");
            container = new JPanel();
            container.setLayout(new FlowLayout());

            txt_num1 = new JTextField(20);
            txt_num2 = new JTextField(20);
            txt_result = new JTextField(20);

            btn_div = new JButton("Divide");
            btn_div.addActionListener(this);

            container.add(txt_num1);
            container.add(txt_num2);
            container.add(btn_div);
            container.add(txt_result);

            actualWindow.add(container);
```

```
            actualWindow.setSize(300, 300);
            actualWindow.setVisible(true);
        }

        @Override
        public void actionPerformed(ActionEvent e) {
            int num1, num2;
            try {
                num1 = Integer.parseInt(txt_num1.getText());
                num2 = Integer.parseInt(txt_num2.getText());
                txt_result.setText(num1/num2+"");
            }
            catch(NumberFormatException nfe) {
                JOptionPane.showMessageDialog(actualWindow,"Please do enter only integers");
            }
            catch(ArithmeticException ae) {
                JOptionPane.showMessageDialog(actualWindow,"Divisor can not be ZERO");
            }
        }
}
public class Slip30_2 {

    public static void main(String[] args) {
        new BuildGUI();

    }

}
```

Slip29_1

```
import java.util.Scanner;
 class Customer
{
int cno;
  String cname,cmob,cadd;

 public static void main(String [] args)
 {
  int i=0;
  {

  Scanner sc = new Scanner(System.in);
  Customer ob[]=new Customer[5];

  for(i=0;i<5;i++)
  {
   System.out.println("Enter cno,cname,cmob,cadd");
   ob[i]=new Customer();
   ob[i].cno=sc.nextInt();
   ob[i].cname=sc.next();
   ob[i].cmob=sc.next();
   ob[i].cadd=sc.next();
  }
```

```
  String mb;
  System.out.print("enter mob to search");
   for(i=0;i<5;i++)
    {
     if(mb.equals(ob[i]).cmob)
     {
      System.out.println("Name"+ob[i].cname);
     }

    }
  }
 }
 }
```

Slip29_2

```
import java.io.*;
class Vehicle{
        String company;
        double price;
        public void accept() throws IOException{
        System.out.println("Enter the Company and price of the Vehicle: ");
        BufferedReader br=new BufferedReader(new InputStreamReader(System.in));
        company=br.readLine();
        price=Double.parseDouble(br.readLine());

        }
        public void display(){
        System.out.println("Company: "+company+" Price: "+price);
        }
}

class LightMotorVehicle extends Vehicle
{
        double mileage;
        public void accept() throws IOException
        {
            super.accept();
            System.out.println("Enter the mileage of the vehicle: ");
            BufferedReader br=new BufferedReader(new InputStreamReader(System.in));
            mileage=Double.parseDouble(br.readLine());
        }
        public void display()
        {
            super.display();
            System.out.println("Mileage: "+mileage);
        }
}

class HeavyMotorVehicle extends Vehicle
{
    double captons;
    public void accept() throws IOException
    {
        super.accept();
```

```
        System.out.println("Enter the capacity of vehicle in tons: ");
        BufferedReader br=new BufferedReader(new InputStreamReader(System.in));
        captons=Double.parseDouble(br.readLine());
    }
 public void display(){
  super.display();
  System.out.println("Capacity in tons: "+captons);
 }
}

public class Slip29_2
 {
 public static void main(String [] args) throws IOException{
  int i;
  System.out.println("Enter the type of vehicle: ");
  BufferedReader br=new BufferedReader(new InputStreamReader(System.in));
  System.out.println("1.Light Vehicle");
  System.out.println("2.Heavy Vehicle");
  int ch=Integer.parseInt(br.readLine());
  switch(ch){
  case 1:
   System.out.println("Enter the number of Light vehicles: ");
   int n=Integer.parseInt(br.readLine());
   LightMotorVehicle [] l=new LightMotorVehicle[n];
   for(i=0;i<n;i++){
    l[i]=new LightMotorVehicle();
    l[i].accept();
   }
   for(i=0;i<n;i++){
    l[i].display();
   }
   break;
  case 2:
   System.out.println("Enter the number of Heavy vehicles: ");
   int m=Integer.parseInt(br.readLine());
   HeavyMotorVehicle [] h=new HeavyMotorVehicle[m];
   for(i=0;i<m;i++){
     h[i]=new HeavyMotorVehicle();
     h[i].accept();
    }
   for(i=0;i<m;i++){
    h[i].display();
   }
   break;
   }
  }
}
```

Slip28_1

```
import java.io.File;
import java.util.Scanner;
class Slip28_1
{
```

```
   public static void main(String args[ ])
   {
      Scanner obj=new Scanner(System.in);
      String fname=obj.next();
      File f1 = new File(fname);
      System.out.println("File Name: " + f1.getName());
      f1.setWritable(false);
      System.out.println(f1.exists() ? "File exists" : "File does not exist");
      System.out.println(f1.canWrite() ? "File is writeable" : "File is not writeable");
      System.out.println(f1.canRead() ? "File is readable" : "File is not readable");
      String fileName = f1.toString();
      int index = fileName.lastIndexOf('.');
      if(index > 0)
         {
         }
      else
         {
         }
      String type = fileName.substring(index + 1);
      System.out.println("File type is " + type);
      System.out.println("File doesn't have type");
      System.out.println("File size: " + f1.length() + " Bytes");
   }
}
```

Slip28_2

```
import javax.swing.*;
import java.util.*;
import java.text.*;
import java.awt.*;
import java.awt.event.*;
class Slip28_2 extends KeyAdapter
{
JLabel l1,l2;
 JTextField t1,t2;
Slip28_2()
{
JFrame ob=new JFrame("Temperature Converter");
l1=new JLabel("Celsius");
l2=new JLabel("Fahreheit");
t1=new JTextField(10);
t2=new JTextField(10);
ob.add(l1); ob.add(t1);
ob.add(l2); ob.add(t2);
ob.setVisible(true);
t1.addKeyListener(this);
ob.setLayout(new FlowLayout());
ob.setSize(400,400);
ob.setDefaultCloseOperation(3);
}
public void keyReleased(KeyEvent ke)
{
try
{
```

```
Double cels=Double.parseDouble(t1.getText());
Double S= (cels * 1.8) + 32;
Formatter fob=new Formatter();
fob.format("%.2f",S);
t2.setText(""+S);
}
catch(Exception e)
{
System.out.println("Enter Vaules in Box");
}
}
public static void main(String []args)
{
Slip28_2 ob=new Slip28_2();
Scanner sc=new Scanner(System.in);
}
}
```

Slip24_1

```
abstract class Bank {
    abstract int getBalance();
}

// Subclass BankA
class BankA extends Bank {
    private int balance = 100; // Initial balance

    @Override
    int getBalance() {
        return balance;
    }
}

// Subclass BankB
class BankB extends Bank {
    private int balance = 150; // Initial balance

    @Override
    int getBalance() {
        return balance;
    }
}

// Subclass BankC
class BankC extends Bank {
    private int balance = 200; // Initial balance

    @Override
    int getBalance() {
        return balance;
    }
}
```

```
public class Main {
    public static void main(String[] args) {
        // Create objects for each bank subclass
        BankA bankA = new BankA();
        BankB bankB = new BankB();
        BankC bankC = new BankC();

        // Call getBalance method for each bank
        System.out.println("Balance of Bank A = Rs." + bankA.getBalance());
        System.out.println("Balance of Bank B = Rs." + bankB.getBalance());
        System.out.println("Balance of Bank C = Rs." + bankC.getBalance());
    }
}
```

Slip24_2

```
import java.awt.Graphics;
import javax.swing.JPanel;
import java.awt.*;
import java.applet.*;
import javax.swing.*;
import java.awt.event.MouseAdapter;
import java.awt.event.MouseEvent;
import java.awt.*;
import java.awt.event.*;
import java.awt.geom.*;
import javax.swing.JPanel;
 class Ovals extends JPanel
{
 private Graphics g;
 private int prevX, prevY;
 private String drawtype;
 public Ovals()
 {
  addMouseListener(new MouseAdapter()
  {
   public void mousePressed(MouseEvent me)
   {
 selectpaint();
   }
  });
 }
 private void selectpaint()
  {
   g=getGraphics();
   Dimension d = getSize();
   int x =d.width/2;
   int y = d.height/2;
   int r1=(int) ((d.width < d.height)? 0.4*d.width: 0.4*d.height);

   g.setColor(Color.red);
   g.fillOval(x-r1, y-r1, 2*r1, 2*r1);
   int r2 =(int) ((d.width < d.height)? 0.3*d.width: 0.3* d.height);

   g.setColor(Color.blue);
```

```
   g.fillOval(x-r2, y-r2, 2*r2, 2*r2);
   int r3= (int) ((d.width < d.height)? 0.2*d.width: 0.2 *d.height);

   g.setColor(Color.yellow);
   g.fillOval(x-r3, y-r3, 2*r3, 2*r3);
  }
 // to choose polygon to draw
 public static void main(String[] args)
 {
  Ovals ovalsPanel = new Ovals();
  JFrame newFrame = new JFrame();
  newFrame.getContentPane().add(new Ovals());
  newFrame.setDefaultCloseOperation( JFrame.EXIT_ON_CLOSE); //
newFrame.add( ovalsPanel );
  newFrame.setSize( 550, 550 );
  newFrame.setVisible(true);
 }

}
```

Slip21_1

```
import java .io.*;
class InvalidDateException extends Exception
{
}
class MyDate
{
    int day,mon,yr;

        void accept(int d,int m,int y)
        {
            day=d;
            mon=m;
            yr=y;
        }
        void display()
        {
            System.out.println("Date is valid : "+day+"/"+mon+"/"+yr);
        }
}
class Slip21_1
{
    public static void main(String arg[]) throws Exception
    {
        System.out.println("Enter Date  :  dd mm yyyy ");
        BufferedReader br = new BufferedReader(new InputStreamReader(System.in));
        int day=Integer.parseInt(br.readLine());
        int mon=Integer.parseInt(br.readLine());
        int yr=Integer.parseInt(br.readLine());
        int flag=0;
        try
            {
                if(mon<=0 || mon>12)
```

```
                throw  new InvalidDateException();
            else
            {
                if(mon==1 || mon==3 || mon==5 || mon==7 || mon==8 || mon==10 || mon==12)
                {
                    if(day>=1 && day <=31)
                        flag=1;
                    else
                        throw  new InvalidDateException();
                }
                else if (mon==2)
                {
                    if(yr%4==0)
                    {
                        if(day>=1 && day<=29)
                            flag=1;
                        else throw  new InvalidDateException();
                    }
                    else
                    {
                        if(day>=1 && day<=28)
                            flag=1;
                        else throw  new InvalidDateException();
                    }
                }
                else
                {
                    if(mon==4 || mon == 6 || mon== 9 || mon==11)
                    {
                        if(day>=1 && day <=30)
                            flag=1;
                        else throw  new InvalidDateException();
                    }
                }
            }
            if(flag== 1)
            {
                MyDate dt = new MyDate();
                dt.accept(day,mon,yr);
                dt.display();
            }
        }
      catch (InvalidDateException mm)
      {
          System.out.println("Invalid Date");
      }

   }
}
```

Slip21_2

```
import java.util.Scanner;
public class Employee {
```

```
int id;
String name;
String deptname;
float salary;
static int numberofobjects=0;
Employee(){
id=0;
name="";
deptname="";
salary=0;
}
Employee(int id,String name,String deptname,float salary ){
this.id=id;
this.name=name;
this.deptname=deptname;
this.salary=salary;
numberofobjects++;
}
public void display(){
System.out.println("Employee Id :"+id);
System.out.println("Employee name: "+name);
System.out.println("Employee Department: "+deptname);
System.out.println("Employee Salary :"+salary);
}
public static void main(String[] args){
int n=0;
Scanner sc=new Scanner(System.in);
System.out.print("How many employees you want to enter :");
n=sc.nextInt();
Employee[] ob=new Employee[n];
for(int i=0;i<n;i++){
sc= new Scanner(System.in);
System.out.println("Enter Id of employee "+(i+1)+" :");
int id=sc.nextInt();
System.out.println("Enter Name of employee "+(i+1)+" :");
sc.nextLine();
String name= sc.nextLine();
System.out.println("Enter dept name of employee "+(i+1)+" :");
String deptname=sc.nextLine();
System.out.println("Enter salary of employee "+(i+1)+" :");
float salary = sc.nextFloat();
ob[i]=new Employee(id,name,deptname,salary);
System.out.println("\nNumber of Objects : "+numberofobjects);

}
for(int i=0;i<n;i++)
{
ob[i].display();
}
}
}
```

Slip20_1

```
import java.io.InputStreamReader;
import java.io.BufferedReader;
import java.io.IOException;
class Continent{
String con;
InputStreamReader i = new InputStreamReader(System.in);
BufferedReader r = new BufferedReader(i);
void con_input() throws IOException
{
System.out.println("Enter the continent name:");
con = r.readLine();
}
}
class Country extends Continent
{
String cou;
void cou_input()throws IOException
{
System.out.println("Enter the country name:");
cou = r.readLine();}
}
class State extends Country
{
String sta;
void sta_input()throws IOException
{
System.out.println("Enter the state name:");
sta = r.readLine();}
}
class Slip20_1 extends State
{
String pla;
void pla_input()throws IOException
{
System.out.println("Enter the place name:");
pla = r.readLine();}
public static void main(String args[])throws IOException
{
Main s = new Main();
s.con_input();
s.cou_input();
s.sta_input();
s.pla_input();
System.out.println("place is:"+s.pla);
System.out.println("state is:"+s.sta);
System.out.println("country is:"+s.cou);
System.out.println("continent is:"+s.con);
}
}
```

Slip20_2

```
// addition/Addition.java

package addition;
```

```
public class Addition {
    public int add(int a, int b) {
        return a + b;
    }

    public double subtract(double a, double b) {
        return a - b;
    }
}

// maximum/Maximum.java

package maximum;

public class Maximum {
    public int max(int a, int b) {
        return Math.max(a, b);
    }
}

// Operation.java (Main Package)


import addition.Addition;
import maximum.Maximum;

public class Operation {
    public static void main(String[] args) {
        Addition addition = new Addition();
        Maximum maximum = new Maximum();

        // Addition Operations
        int sum = addition.add(5, 3);
        System.out.println("Sum: " + sum);

        double difference = addition.subtract(7.5, 2.3);
        System.out.println("Difference: " + difference);

        // Maximum Operation
        int maxVal = maximum.max(10, 25);
        System.out.println("Maximum Value: " + maxVal);
    }
}
```

Slip19_1

```
import java.util.*;

class Slip19_1
{
 public static void main(String args[])
 {
  Scanner sc = new Scanner(System.in);
```

```
        int i,j,row,col,sum=0;
  System.out.println("Enter the number of rows:");
  row = sc.nextInt();
  System.out.println("Enter the number of columns:");
  col = sc.nextInt();

  int[][] mat = new int[row][col];

     System.out.println("Enter the elements of the matrix") ;
     for(i=0;i<row;i++)
     {
      for(j=0;j<col;j++)
      {
          mat[i][j] = sc.nextInt();
      }
  }

     System.out.println("The elements of the matrix") ;
     for(i=0;i<row;i++)
     {
      for(j=0;j<col;j++)
      {
           System.out.print(mat[i][j]+"\t");
      }
         System.out.println("");
  }

     for(i=0;i<row;i++)
     {
      for(j=0;j<col;j++)
      {
    if(i==j) //this condition checks for diagonal
    {
     sum = sum + mat[i][j];
    }
       }
  }

     System.out.printf("SUM of DIAGONAL elements of the matrix = "+sum) ;
  }
}
```

Slip19_2

```
import javax.swing.*;
import java.awt.event.*;

public class TYSBScCompSciSubjects {

    public static void main(String[] args) {
        JFrame frame = new JFrame("TYBSc(Comp. Sci.) Subjects");
        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);

        JLabel label = new JLabel("Select Subject:");
```

```
        JTextField textField = new JTextField(20);
        JButton button = new JButton("Show Selected Subject");

        String[] subjects = {"Discrete Mathematics", "Data Structures and Algorithms", "Object Oriented Prog
ramming", "Web Technologies", "Operating Systems"};
        JComboBox<String> comboBox = new JComboBox<>(subjects);

        comboBox.addActionListener(new ActionListener() {
            @Override
            public void actionPerformed(ActionEvent e) {
                String selectedSubject = (String) comboBox.getSelectedItem();
                textField.setText(selectedSubject);
            }
        });

        JPanel panel = new JPanel();
        panel.add(label);
        panel.add(comboBox);
        panel.add(textField);
        panel.add(button);

        frame.getContentPane().add(panel);
        frame.pack();
        frame.setLocationRelativeTo(null);
        frame.setVisible(true);
    }
}
```

Slip18_1

```
import java.awt.*;
import javax.swing.*;

   public class Slip18_1
   {
    JFrame f;
    Slip18_1()
    {
 f=new JFrame();

 JButton b1=new JButton("NORTH");
 JButton b2=new JButton("SOUTH");
 JButton b3=new JButton("EAST");
 JButton b4=new JButton("WEST");
 JButton b5=new JButton("CENTER");

 f.add(b1,BorderLayout.NORTH);
 f.add(b2,BorderLayout.SOUTH);
 f.add(b3,BorderLayout.EAST);
 f.add(b4,BorderLayout.WEST);
 f.add(b5,BorderLayout.CENTER);

 f.setSize(300,300);
```

```
 f.setVisible(true);
  }
 public static void main(String[] args)
 {
 new Slip18_1();
 }
}
```

Slip 18_2

```
import java.io.*;
class Cricket {
String name;
int inning, tofnotout, totalruns;
float batavg;
public Cricket(){
name=null;
inning=0;
tofnotout=0;
totalruns=0;
batavg=0;
}
public void get() throws IOException{
BufferedReader br=new BufferedReader(new InputStreamReader(System.in));
System.out.println("Enter the name, no of innings, no of times not out, total runs: ");
name=br.readLine();
inning=Integer.parseInt(br.readLine());
tofnotout=Integer.parseInt(br.readLine());
totalruns=Integer.parseInt(br.readLine());
}
public void put(){
System.out.println("Name="+name);
System.out.println("no of innings="+inning);
System.out.println("no times notout="+tofnotout);
System.out.println("total runs="+totalruns);
System.out.println("bat avg="+batavg);
}
static void avg(int n, Cricket c[]){
try{
for(int i=0;i<n;i++){
c[i].batavg=c[i].totalruns/c[i].inning;
}
}catch(ArithmeticException e){
System.out.println("Invalid arg");

}
}
static void sort(int n, Cricket c[]){
String temp1;
int temp2,temp3,temp4;
float temp5;
for(int i=0;i<n;i++){
for(int j=i+1;j<n;j++){
if(c[i].batavg<c[j].batavg){
temp1=c[i].name;
```

```
c[i].name=c[j].name;
c[j].name=temp1;
temp2=c[i].inning;
c[i].inning=c[j].inning;
c[j].inning=temp2;
temp3=c[i].tofnotout;
c[i].tofnotout=c[j].tofnotout;
c[j].tofnotout=temp3;
temp4=c[i].totalruns;
c[i].totalruns=c[j].totalruns;
c[j].totalruns=temp4;
temp5=c[i].batavg;
c[i].batavg=c[j].batavg;
c[j].batavg=temp5;
}
}
}
}
}
public class Slip18_2 {
public static void main(String args[])throws IOException{
BufferedReader br=new BufferedReader(new InputStreamReader(System.in));
System.out.println("Enter the limit:");
int n=Integer.parseInt(br.readLine());
Cricket c[]=new Cricket[n];
for(int i=0;i<n;i++){
c[i]=new Cricket();
c[i].get();
}
Cricket.avg(n,c);
Cricket.sort(n, c);
for(int i=0;i<n;i++){
c[i].put();
}
}

}
```

Slip1_1

```
// Java program to find all the
// prime numbers from 1 to N

import java.io.InputStreamReader;
import java.nio.Buffer;
import java.util.Scanner;
import java.io.BufferedReader;

class gfg {

    // Function to print all the
    // prime numbers till N
    static void prime_N(int N) {
        // Declaring the variables
```

```
        int x, y, flg;

        // Printing display message
        System.out.println(
                "All the Prime numbers within 1 and " + N
                        + " are:");

        // Using for loop for traversing all
        // the numbers from 1 to N
        for (x = 2; x <= N; x++) {

            // Using flag variable to check
            // if x is prime or not
            flg = 1;

            for (y = 2; y * y <= x; y++) {
                if (x % y == 0) {
                    flg = 0;
                    break;
                }
            }

            // If flag is 1 then x is prime but
            // if flag is 0 then x is not prime
            if (flg == 1)
                System.out.print(x + " ");
        }
    }

    // The Driver code
    public static void main(String[] args) {
        int N;
        Scanner s = new Scanner(System.in);
        System.out.println("Enter the N: ");
        N = s.nextInt();

        prime_N(N);
    }
}
```

Slip1_2

```
import java.io.*;
import java.util.*;
import java.io.IOException;
import java.io.BufferedReader;
import java.io.InputStreamReader;

abstract class staffN {
    String name, address;
}

class FullTimeStaff extends staff {
    String department, name, address;
    double salary;
```

```
    public void accept() throws IOException {
        System.out.println("Enter the name, address, department and salary: ");
        BufferedReader br = new BufferedReader(new InputStreamReader(System.in));
        name = br.readLine();
        address = br.readLine();
        department = br.readLine();
        salary = Double.parseDouble(br.readLine());
    }

    public void display() {
        System.out.println("Name: " + name);
        System.out.println("Address: " + address);
        System.out.println("Department: " + department);
        System.out.println("Salary: " + salary);
        System.out.println("----------------------");
    }
}

public class staff {
    public static void main(String[] args) throws IOException {
        int i;
        BufferedReader br = new BufferedReader(new InputStreamReader(System.in));
        System.out.println("Enter the number of Office Staff: ");
        int n = Integer.parseInt(br.readLine());
        FullTimeStaff[] l = new FullTimeStaff[n];
        for (i = 0; i < n; i++) {
            l[i] = new FullTimeStaff();
            l[i].accept();
        }
        for (i = 0; i < n; i++) {
            l[i].display();
        }

    }
}
```

Slip2_1

```
import java.util.Scanner;

public class slip2a {

    public static void main(String[] Strings) {
        Scanner sc = new Scanner(System.in); // System.in is a standard input stream
        System.out.print("Enter a Names: ");
        String str = sc.nextLine(); // reads string

        Scanner input = new Scanner(System.in);

        System.out.print("Input weight in KG: ");
        double weight = input.nextDouble();

        System.out.print("Input height in CM: ");
```

```
        double inches = input.nextDouble();

        System.out.print("Name:" + str);

        double BMI = (weight / (inches * inches)) * 10000;
        System.out.print("Body Mass Index is " + BMI + "\n");
    }
}
```

Slip2_2

```
import java.io.*;
class Cricket {
 String name;
 int inning, tofnotout, totalruns;
 float batavg;
 public Cricket(){
  name=null;
  inning=0;
  tofnotout=0;
  totalruns=0;
  batavg=0;

 }
 public void get() throws IOException{
BufferedReader br=new BufferedReader(new InputStreamReader(System.in));
System.out.println("Enter the name, no of innings, no of times not out, total runs: ");
name=br.readLine();
inning=Integer.parseInt(br.readLine());
tofnotout=Integer.parseInt(br.readLine());
totalruns=Integer.parseInt(br.readLine());
}
public void put(){
System.out.println("Name="+name);
System.out.println("no of innings="+inning);
System.out.println("no times notout="+tofnotout);
System.out.println("total runs="+totalruns);
System.out.println("bat avg="+batavg);
}
static void avg(int n, Cricket c[]){
try{
for(int i=0;i<n;i++){
c[i].batavg=c[i].totalruns/c[i].inning;
}
}catch(ArithmeticException e){
System.out.println("Invalid arg");
}
}
static void sort(int n, Cricket c[]){
String temp1;
int temp2,temp3,temp4;
float temp5;
for(int i=0;i<n;i++){
for(int j=i+1;j<n;j++){
if(c[i].batavg<c[j].batavg){
```

```
temp1=c[i].name;
c[i].name=c[j].name;
c[j].name=temp1;
temp2=c[i].inning;
c[i].inning=c[j].inning;
c[j].inning=temp2;
lOMoARcPSD|32313583
 temp3=c[i].tofnotout;
c[i].tofnotout=c[j].tofnotout;
c[j].tofnotout=temp3;
temp4=c[i].totalruns;
c[i].totalruns=c[j].totalruns;
c[j].totalruns=temp4;
temp5=c[i].batavg;
c[i].batavg=c[j].batavg;
c[j].batavg=temp5;
}
}
}
}
}
class Name {
public static void main(String args[])throws IOException{
BufferedReader br=new BufferedReader(new InputStreamReader(System.in));
System.out.println("Enter the limit:");
int n=Integer.parseInt(br.readLine());
Cricket c[]=new Cricket[n];
for(int i=0;i<n;i++){
c[i]=new Cricket();
c[i].get();
}
Cricket.avg(n,c);
Cricket.sort(n, c);
for(int i=0;i<n;i++){
c[i].put();
}
}

------------------------------------------------------------
Slip3_1

class Slip3_1 {
    public static void main(String arg[]) {
        String name[] = new String[10];
        int l = arg.length;
        String temp;
        for (int i = 0; i < l; i++) {
            name[i] = arg[i];
        }
        for (int j = 0; j < l; j++) {
            for (int k = j + 1; k < l; k++) {
                if ((name[j].compareTo(name[k])) > 0) {
                    temp = name[j];
                    name[j] = name[k];
                    name[k] = temp;
```

```
            }
          }
        }
        System.out.println("Sorted City Are-");
        for (int i = 0; i < l; i++) {
            System.out.println(name[i]);
        }
    }
}
```

Slip3_2

```
import java.util.*;

class Patient {
    String name;
    int age;
    int oxylevel;
    int HRCTreport;

    Patient(String name, int age, int oxylevel, int HRCTreport) {
        this.name = name;
        this.age = age;
        this.oxylevel = oxylevel;
        this.HRCTreport = HRCTreport;
    }
}

public class Slip3_2 extends Exception {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("How many patient you want insert:");
        int number = sc.nextInt();
        Patient[] ob = new Patient[number];
        for (int j = 0; j < number; j++) {
            System.out.println("Enter Name ");
            String name = sc.next();
            System.out.println("Enter Age ");
            int age = sc.nextInt();
            System.out.println("Enter oxygen level");
            int oxylevel = sc.nextInt();
            System.out.println("Enter HRCT report");
            int HRCTreport = sc.nextInt();
            ob[j] = new Patient(name, age, oxylevel, HRCTreport);
        }

        for (int j = 0; j < number; j++) {
            if (ob[j].oxylevel < 95 && ob[j].HRCTreport > 10)
                try {

                    throw new NullPointerException("\n");
                } catch (Exception e) {
                    System.out.println("Patient  is Covid Positive(+) and Need to Hospitalized ");

                }
```

```
            else {
                System.out.println("name: " + ob[j].name);
                System.out.println("age " + ob[j].age);
                System.out.println("oxygen level " + ob[j].oxylevel);
                System.out.println("HRCT report " + ob[j].HRCTreport);
                System.out.println("");
            }
        }
    }
}
```

Slip4_1

```
class Slip4_1
{
 public static void main(String args[])
{
 int original[][]={{1,3,4},{2,4,3},{3,4,5}};

//creating another matrix to store output of a matrix
int transpose[][]=new int[3][3];

//Code to transpose a matrix
for(int i=0;i<3;i++)
{
 for(int j=0;j<3;j++)
{
 transpose[i][j]=original[j][i];
}
}

System.out.println("Original Matrix:");
for(int i=0;i<3;i++){
for(int j=0;j<3;j++){
System.out.print(original[i][j]+" ");
}
System.out.println();//new line
}
System.out.println("Converted Matrix :");
for(int i=0;i<3;i++){
for(int j=0;j<3;j++){
System.out.print(transpose[i][j]+" ");
}
System.out.println();//new line
}
}}
```

Slip4_2

```
import java.awt.*;
import java.awt.event.*;
import javax.swing.*;
class InvalidPasswordException extends Exception
```

```
{}
class Slip4_2 extends JFrame implements ActionListener
{
    JLabel name, pass;
    JTextField nameText;
    JPasswordField passText;
    JButton login, end;
    static int cnt=0;
        Slip4_2()
    {
         name = new JLabel("Name : ");
         pass = new JLabel("Password : ");
         nameText = new JTextField(20);
         passText = new JPasswordField(20);
         login = new JButton("Login");
         end = new JButton("End");
         login.addActionListener(this);
          end.addActionListener(this);
                            setLayout(new GridLayout(3,2));
          add(name);
          add(nameText);
          add(pass);
          add(passText);
          add(login);
          add(end);
          setTitle("Login Check");
          setSize(300,300);
          setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
          setVisible(true);
     }
     public void actionPerformed(ActionEvent e)
     {
              if(e.getSource()==end)
         {
                        System.exit(0);

         }
         if(e.getSource()==login)
         {
            try
            {
                String user = nameText.getText();
                String pass = new String(passText.getPassword());
                                if(user.compareTo(pass)==0)
                {  JOptionPane.showMessageDialog(null,"Login Successful","Login",JOptionPane.INFORMATI
ON_MESSAGE);
                    System.exit(0);
                 }
                 else
                 {
                     throw new InvalidPasswordException();
                 }
               }
               catch(Exception e1)
               {
```

```
                cnt++;
                JOptionPane.showMessageDialog(null,"Login Failed","Login",JOptionPane.ERROR_MESSA
GE);
                 nameText.setText("");
                 passText.setText("");
                 nameText.requestFocus();
                 if(cnt == 3)
                {
         JOptionPane.showMessageDialog(null,"3 Attempts Over","Login",JOptionPane.ERROR_MESSAG
E);
                    System.exit(0);
                                                }
             }
        }
   }
  public static void main(String args[])
 {
             new Slip4_2();
 }
}

---------------------------------------------------------------------
Slip5_!

import java.io.*;

class Continent
{
   String con;
BufferedReader br  = new BufferedReader(new InputStreamReader(System.in));

 void con_input() throws IOException
 {
      System.out.println("Enter Continent Name:  ");
      con = br.readLine();
 }
}

class Country extends Continent
{
 String cou ;

 void cou_input() throws IOException
 {
      System.out.println("Enter Country Name:  ");
      cou = br.readLine();
 }
}

class State extends Country
{
 String sta;
 void sta_input() throws IOException
 {
      System.out.println("Enter State Name:  ");
```

```
      sta = br.readLine();
 }
}

class Slip5_1
{
 public static void main( String argsp[] )throws IOException
 {
  State s = new State();
  s.con_input();
  s.cou_input();
  s.sta_input();

   System.out.println("Continent: "+s.con);
  System.out.println("Country: "+s.cou);
  System.out.println("State: "+s.sta);
 }
}

Slip5_2

import java.util.*;

class Slip5_2 {
   public static void main(String args[]){
      Scanner s = new Scanner( System.in );
      int p, q, m, n;
      System.out.print("Enter number of rows in first matrix: ");
      p = s.nextInt();
      System.out.print("Enter number of columns in first matrix: ");
      q = s.nextInt();
      System.out.print("Enter number of rows in second matrix: ");
      m = s.nextInt();
      System.out.print("Enter number of columns in second matrix: ");
      n = s.nextInt();

      int a[][] = new int[p][q];
      int b[][] = new int[m][n];
      int c[][] = new int[m][n];
      System.out.println("Enter all the elements of first matrix:");
      for (int i = 0; i < p; i++) {
         for (int j = 0; j < q; j++) {
            a[i][j] = s.nextInt();
         }
      }
      System.out.println("Enter all the elements of second matrix:");
      for (int i = 0; i < m; i++) {
         for (int j = 0; j < n; j++) {
            b[i][j] = s.nextInt();
         }
      }
      System.out.println("First Matrix:");
      for (int i = 0; i < p; i++) {
         for (int j = 0; j < q; j++) {
            System.out.print(a[i][j]+" ");
```

```
    }
    System.out.println("");
  }
  System.out.println("Second Matrix:");
  for (int i = 0; i < m; i++) {
    for (int j = 0; j < n; j++) {
      System.out.print(b[i][j]+" ");
    }
    System.out.println("");
  }

  while (true) {
    System.out.println("\n***Menu***");
    System.out.println("1. Matrix Addition");
    System.out.println("2. Matrix Multiplication");
    System.out.println("3. Exit");
    System.out.println("Enter action number (1-3): ");
    int command;
    if ( s.hasNextInt() ) {
      command = s.nextInt();
      s.nextLine();
    }
    else {
      System.out.println("\nILLEGAL RESPONSE. YOU MUST ENTER A NUMBER.");
      s.nextLine();
      continue;
    }
    switch(command) {
      case 1:
      if (p == m && q == n){
        for (int i = 0; i < p; i++)
        for (int j = 0; j <n; j++) {
          for (int k = 0; k < q; k++) {
            c[i][j] = a[i][j] + b[i][j];
          }
        }

      System.out.println("Matrix after addition:");
      for (int i = 0; i <p; i++){
        for (int j = 0; j < n; j++) {
          System.out.print(c[i][j]+" ");
        }
        System.out.println("");
      }
    }
    else
    {
      System.out.println("Addition would not be possible");
    }
    break;
    case 2:
    if (p == m && q == n){
      for (int i = 0; i < p; i++) {
        for (int j = 0; j < n; j++) {
          for (int k = 0; k < q; k++) {
```

```
                    c[i][j] = a[i][j] * b[i][j];
                }
            }
        }
        System.out.println("Matrix after Multiplication:");
        for (int i = 0; i < p; i++){
            for (int j = 0; j < n; j++) {
                System.out.print(c[i][j]+" ");
            }
            System.out.println("");
        }
      }
      else{
        System.out.println("Multiplication would not be possible");
      }
      break;
      case 3:
          System.out.println("Exit");
      default: System.out.println("Wrong choice!!");
    }

  }
}
}
```

Slip6_1

```
class Employee {
    private int empid;
    private String empname;
    private String empdesignation;
    private double empsal;

    public

    Employee(int empid, String empname, String empdesignation, double empsal)

    {
        this.empid = empid;
        this.empname = empname;
        this.empdesignation = empdesignation;
        this.empsal = empsal;
    }

    @Override
    public String toString() {
        return "Employee Details:\n" +
                "Empid: " + empid + "\n" +
                "Empname: " + empname + "\n" +
                "Empdesignation: " + empdesignation + "\n" +
                "Empsal: " + empsal;
    }
}
```

```
public class EmployeeTest {
    public static void main(String[] args) {
        Employee emp1 = new Employee(101, "John", "Software Engineer", 10000.0);
        Employee emp2 = new Employee(102, "Mary", "Data Scientist", 12000.0);
        Employee emp3 = new Employee(103, "Peter", "Product Manager", 15000.0);

        System.out.println(emp1);
        System.out.println(emp2);
        System.out.println(emp3);
    }
}
```

Slip6_2

```
import java.io.BufferedReader;
import java.io.IOException;
import java.io.InputStreamReader;
abstract class Order{
String id,description;
}
class PurchaseOrder extends Order{
String Customername,Vendorname;
public void accept() throws IOException{
System.out.println("Enter the id,description,names of customers and vendors: ");
BufferedReader br=new BufferedReader(new InputStreamReader(System.in));
id=br.readLine();
description=br.readLine();
Customername=br.readLine();
Vendorname=br.readLine();
}
public void display(){
System.out.println("id: "+id);
System.out.println("Description: "+description);
System.out.println("Customername: "+Customername);
System.out.println("Vendorname: "+Vendorname);
System.out.println("----------------------");
}
}
class SalesOrder extends Order{
String Customername,Vendorname;
public void accept() throws IOException{
System.out.println("Enter the id,description,names of customers and vendors: ");
BufferedReader br=new BufferedReader(new InputStreamReader(System.in));
id=br.readLine();
description=br.readLine();
Customername=br.readLine();
Vendorname=br.readLine();
}
public void display(){
System.out.println("id: "+id);
System.out.println("Description: "+description);
System.out.println("Customername: "+Customername);
System.out.println("Vendorname: "+Vendorname);
System.out.println("----------------------");
}
```

```
}
public class Main {
public static void main(String [] args) throws IOException{

int i;
System.out.println("Select Any One: ");
BufferedReader br=new BufferedReader(new InputStreamReader(System.in));
System.out.println("1.Purchase Order");
System.out.println("2.Sales Order");
int ch=Integer.parseInt(br.readLine());
switch(ch){
case 1:
System.out.println("Enter the number of purchase Orders: ");
int n=Integer.parseInt(br.readLine());
PurchaseOrder [] l=new PurchaseOrder[n];
for(i=0;i<n;i++){
l[i]=new PurchaseOrder();
l[i].accept();
}
for(i=0;i<n;i++){
l[i].display();
System.out.println ("Object is created");
}
break;
case 2:
System.out.println("Enter the number of sales orders: ");
int m=Integer.parseInt(br.readLine());
SalesOrder [] h=new SalesOrder[m];
for(i=0;i<m;i++){
h[i]=new SalesOrder();
h[i].accept();
}
for(i=0;i<m;i++){
h[i].display();
System.out.println(" Object is created ");
}
break;

}
}
}
```

Slip8_1

```
import java.io.*;

public class Slip8_1{
    public static void main(String[] args)throws IOException {
        BufferedReader ob = new BufferedReader(new InputStreamReader(System.in));
        System.out.print("Radius: ");
         double radius=Double.parseDouble(ob.readLine());
        if(radius<=0){
            System.out.println("\nInvalid input");
            return;
```

```
        }
        double vol= (4*Math.pow(radius,3)*Math.PI)/3;
        double sa= (4*Math.PI*Math.pow(radius,2));
        System.out.println("\nVolume = " + vol);
        System.out.println("Surface area = " + sa);
    }
}
```

Slip8_2

```
import javax.swing.*;
import java.awt.*;
import java.awt.event.*;


public class Slip8_2 {
    public static void main(String[] args) {
        new MyFrame("Mouse Events");
    }
}

class MyFrame extends JFrame {
    TextField click_text_field, mouse_move_field;
    Label click_text_label, mouse_move_label;
    int x,y;
    Panel panel;
    MyFrame(String title) {
        super(title);
        this.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        setLayout(new FlowLayout());

        panel =new Panel();
        panel.setLayout(new GridLayout(2,2,5,5));
        click_text_label = new Label("Co-ordinates of clicking");
        mouse_move_label = new Label("Co-ordinates of movement");
        click_text_field=new TextField(20);
        mouse_move_field =new TextField(20);
        panel.add(click_text_label);
        panel.add(click_text_field);
        panel.add(mouse_move_label);
        panel.add(mouse_move_field);
        add(panel);
        addMouseListener(new MyClick());
        addMouseMotionListener(new MyMove());
        setSize(500,500);
        setVisible(true);
    }
    class MyClick extends MouseAdapter {
        public void mouseClicked(MouseEvent me) {
            x=me.getX();
            y=me.getY();
            click_text_field.setText("X="+x+" Y="+y);
        }
    }
    class MyMove extends MouseMotionAdapter
```

```
    {
        public void mouseMoved(MouseEvent me)
        {
            x=me.getX();
            y=me.getY();
            mouse_move_field.setText("X="+ x +" Y="+y);
        }
    }
}
```

Slip9_2

```
import java.util.Scanner;

interface ProductMarker {}

class Product implements ProductMarker {
    int id;
    String name;
    int cost;
    int quantity;
    static int count = 0; // Use static count to track total instances

    Product() {
        id = 0;
        name = " ";
        cost = 0;
        quantity = 0;
    }

    Product(int id, String name, int cost, int quantity) {
        this.id = id;
        this.name = name;
        this.cost = cost;
        this.quantity = quantity;
        count++; // Increment count when a new Product is created
    }
}

public class Products {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.println("How many products?");
        int number = scanner.nextInt();
        System.out.println();

        Product products[] = new Product[number];
        System.out.println("Enter Product data");

        for (int k = 0; k < number; k++) {
            System.out.println("Product Id ");
            int id = scanner.nextInt();
            System.out.println("Product name ");
```

```
            String name = scanner.next();
            System.out.println("Product cost ");
            int cost = scanner.nextInt();
            System.out.println("Product quantity ");
            int quantity = scanner.nextInt();
            System.out.println();
            products[k] = new Product(id, name, cost, quantity);
        }

        // Testing for marker interface
        if (products[0] instanceof ProductMarker) {
            System.out.println("Class is using ProductMarker");
        }

        System.out.println("Product details\n");

        for (Product product : products) {
            System.out.println("Product Id: " + product.id);
            System.out.println("Product name: " + product.name);
            System.out.println("Product cost: " + product.cost);
            System.out.println("Product quantity: " + product.quantity);
            System.out.println();
        }

        System.out.println("Total objects created: " + Product.count);
    }
}
```
