# Tybcs Java Slips Solution 2022

Advance Java (Savitribai Phule Pune University)

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# TY BCS

# Java Programming - I

## Solved Practical Slips

## 2022-23

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**Solution Credit goes to**

**Akshay, Deep, Atharv, Maithili, Sakshi, Shreya, Prajakta**

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**Slip 1_1**: Write a Program to print all Prime numbers in an array of 'n' elements.(use command line arguments)

**Solution:**

```
class PrNo
{
    public static void main (String[] args)
    {
        int size = args.length;
        int[] array = new int [size];
        for(int i=0; i<size; i++)
        {
            array[i] = Integer.parseInt(args[i]);
        }
        for(int i=0; i<array.length; i++)
        {
            boolean isPrime = true;

            for (int j=2; j<array[i]; j++)
            {

                if(array[i]%j==0)
                {
                    isPrime = false;
                    break;
                }
            }

            if(isPrime)

                System.out.println(array[i] + " are the prime numbers in the array ");
        }
    }
}
```

**Slip 1_2:** Define an abstract class Staff with protected members id and name. Define a parameterized constructor. Define one subclass OfficeStaff with member department. Create n objects of OfficeStaff and display all details.

**Solution:**

```
import java.util.*;

abstract class Staff
{
            protected int id;
            protected String name;
```

```
        public Staff(int id,String name)
        {
                this.id=id;
                this.name=name;
        }
}
class OfficeStaff extends Staff
{
        String dept;
        OfficeStaff(int id,String name,String dept)
        {
                super(id,name);
                this.dept=dept;
        }
        public void display()
        {
                System.out.println("ID :"+id+" Name :"+name+" Department :"+dept);
        }
        public static void main(String args[])
        {
                int n,id;
                String name,dept;
                Scanner sc=new Scanner(System.in);
                System.out.println("How many staff members?");
                n=sc.nextInt();
                OfficeStaff ob[]=new OfficeStaff[n];
                System.out.println("Enter details of "+n+" staff");
                for(int i=0;i<n;i++)
                {

                        System.out.println("Enter id,name, department");
                        id=sc.nextInt();
                        name=sc.next();
                        dept=sc.next();
                        ob[i]=new OfficeStaff(id,name,dept);
                }
                System.out.println("Entered Details are\n");
                for(int i=0;i<n;i++)
                {
                        ob[i].display();
                }
        }
}
```

---

**Slip2_1**: Write a program to read the First Name and Last Name of a person, his weight and height using command line arguments. Calculate the BMI Index which is defined as the individual's body massdivided by the square of their height.

(Hint : BMI = Wts. In kgs / $(ht)^2$

---

```
// body mass index
class BM {
  public static void main(String args[]) {
    String fname = args[0];
                    String lname = args[1];
    double weight = Double.parseDouble(args[2]);
    double height = Double.parseDouble(args[3]);
    double BMI = weight / (height * height);
                    System.out.println("First name is:" +fname);
                    System.out.println("Last Name is:" + lname);
                    System.out.println("weight is:" + weight);
                    System.out.println("height is:"+ height);
    System.out.println("The Body Mass Index (BMI) is " + BMI + " kg/m2");
  }
}
```

---

**Slip2_2**: Define a class CricketPlayer (name,no_of_innings,no_of_times_notout, totatruns, bat_avg). Create an array of n player objects .Calculate the batting average for each player using static method avg(). Define a static sort method which sorts the array on the basis of average. Displaythe player details in sorted order.

---

```
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;
   }
  }
 }
}
}

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:** Write a program to accept 'n' name of cities from the user and sort them in ascendingorder.

```
import java.util.Scanner;

class SortStr
{
   public static void main(String args[])
   {
      String temp;
      Scanner SC = new Scanner(System.in);

      System.out.print("Enter the value of N: ");
      int N= SC.nextInt();
      SC.nextLine(); //ignore next line character

      String names[] = new String[N];

      System.out.println("Enter names: ");
      for(int i=0; i<N; i++)
      {
         System.out.print("Enter name [ " + (i+1) +" ]: ");
         names[i] = SC.nextLine();
      }

      //sorting strings

      for(int i=0; i<N; i++)
      {
         for(int j=1; j<N; j++)
         {
            if(names[j-1].compareTo(names[j])>0)
            {
               temp=names[j-1];
               names[j-1]=names[j];
               names[j]=temp;
            }
         }
      }
      System.out.println("\nSorted names are in Ascending Order: ");
      for(int i=0;i<N;i++)
      {
         System.out.println(names[i]);
      }
```

```
    }
}
```

---

**Slip 3_2:** Define a class patient (patient_name, patient_age, patient_oxy_level,patient_HRCT_report). Create an object of patient. Handle appropriate exception while patient oxygen level less than 95% and HRCT scan report greater than 10, then throw user defined Exception "Patient is CovidPositive(+) and Need to Hospitalized" otherwise display its information.

---

```
import java.io.*;
class CovidException extends Exception{
public CovidException(){
System.out.println("Patient is Covid Positive and needs to be hospitalized");
}
}
class Patient{
String name;
int age;
double level,hrct;
public Patient(String name,int age,double level,double hrct)
{
this.name=name;
this.age=age;
this.level=level;
this.hrct=hrct;
}
public static void main(String[] args)throws IOException
{
String name;
int age;
double level,hrct;
BufferedReader br=new BufferedReader(new InputStreamReader(System.in));
System.out.println("Enter name: ");
name=br.readLine();
System.out.println("Enter the age: ");
age=Integer.parseInt(br.readLine());
System.out.println("Oxygen level: ");
level=Double.parseDouble(br.readLine());
System.out.println("HRCT report: ");
```

```
hrct=Double.parseDouble(br.readLine());
Patient ob=new Patient(name,age,level,hrct);
try{
if(ob.level<95 && ob.hrct>10)

throw new CovidException();

else
System.out.println("Patient Info: \n"+"Name: "+ob.name+"\nAge: "+ob.age+"\nHRCT
  report: "+ob.hrct+"\nOxygen level:"
+ob.level);
}catch(CovidException e){
}
}
}
```

---

**Slip4_1:** Write a program to print an array after changing the rows and columns of a giventwo-dimensional array.

---

```
import java.util.*;
class ArrTrans
{
  public static void main(String args[])
  {
  System.out.println("enter the row and column");
  Scanner sc = new Scanner(System.in);
  int r = sc.nextInt();
  int c = sc.nextInt();
  int mat[][] = new int[r][c];
  System.out.println("enter the array elts:");
  for(int i=0;i<r;i++)
  {
          for(int j=0;j<c;j++)
          {

          mat[i][j] = sc.nextInt();
          }
  }
  System.out.println("the matrix is:");
          for(int i=0;i<c;i++)
          {
```

```
        for(int j=0;j<r;j++)
        {
        System.out.print("  " +mat[j][i]);
        }
        System.out.println(" ");
        }
  }
}
```

**Slip4_2:** Write a program to design a screen using Awt that will take a user name and password. If the user name and password are not same, raise an Exception with appropriate message. User can have 3 login chances only. Use clear button to clear the TextFields.

```
import java.awt.*;
import java.awt.event.*;
class InvalidPasswordException extends Exception
{
  InvalidPasswordException()
  {
  System.out.println(" User name and Password is not same");
  }
}
class PasswordDemo extends Frame implements ActionListener
{
Label uname,upass;
TextField nametext;
TextField passtext,msg;
Button login,Clear;
Panel p;
int attempt=0;
char c=  '*' ;
public void login()
{
  p=new Panel();
  uname=new Label("Use Name: " ,Label.CENTER);
  upass=new Label ("Password: ",Label.RIGHT);
  nametext=new TextField(20);
  passtext =new TextField(20);
  passtext.setEchoChar(c);
  msg=new TextField(10);
  msg.setEditable(false);
  login=new Button("Login");
```

```
  Clear=new Button("Clear");
  login.addActionListener(this);
  Clear.addActionListener(this);
  p.add(uname);
  p.add(nametext);
  p.add(upass);
  p.add(passtext);
  p.add(login);
  p.add(Clear);
  p.add(msg);
  add(p);
  setTitle("Login ");
  setSize(290,200);
  setResizable(false);
  setVisible(true);
}
public void actionPerformed(ActionEvent ae)
{
  Button btn=(Button)(ae.getSource());
  if(attempt<3)
              {
              if((btn.getLabel())=="Clear")
                   {
                        nametext.setText("");
                        passtext.setText("");
                   }
              if((btn.getLabel()).equals("Login"))
              {
  try
              {
                   String user=nametext.getText();
                   String upass=passtext.getText();
                   if(user.compareTo(upass)==0)
  {
              msg.setText("Valid");
              System.out.println("Username is valid");
}
else
{
throw new InvalidPasswordException();
}
}
catch(Exception e)
```

```
{
msg.setText("Error");
}
attempt++;
}
}
else
{
System.out.println("you are using 3 attempt");
System.exit(0);
}
}
public static void main(String args[])
{
PasswordDemo pd=new PasswordDemo();
pd.login();
}
}
```

**Slip5_1:** Write a program for multilevel inheritance such that Country is inherited from Continent.State is inherited from Country. Display the place, State, Country and Continent.

```
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 Main 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);
}
}
```

**Slip5_2:** Write a menu driven program to perform the following operations on multidimensional arrayie matrices :

- Addition
  Multiplication

```
import java.util.*;
class Matrix
{
                    Scanner sc = new Scanner(System.in);
                    int a = sc.nextInt();
                    int b = sc.nextInt();
                    int M[][] = new int[a][b];
                    void accept()
                    {
```

```
                int a = this.a;
                int b = this.b;
                System.out.println("enter the "+(a*b)+ " values to matrix:");
                for(int i=0;i<a;i++)
                {
                        for(int j=0;j<b;j++)
                        {
                                this.M[i][j] = sc.nextInt();
                        }

                }
                }
                 void display()
                {
                        for(int i =0;i<a;i++)
                        {
                                for(int j =0;j<b;j++)
                                {
                                        System.out.print("    "+this.M[i][j]);
                                }
                        System.out.println(" ");
                        }
                }
public static void main(String a[])
{
                System.out.println("enter size 2*2 or 3*3 or ...");
                Matrix m1 = new Matrix();
                m1.accept();
                System.out.println("values to matrix 1:");
                m1.display();

                System.out.println("enter the size:");
                Matrix m2 = new Matrix();
                m2.accept();
                System.out.println("values to matrix 2:");
                m2.display();

                int choice;
                Scanner scanner = new Scanner(System.in);
                while(true) {
                System.out.println("Press 1: Addition, 2: Multiplication, 3: Exit");
                choice = scanner.nextInt();
                switch (choice) {
                case 1:
                System.out.println("Addition is:" );
                for(int i=0;i<m1.a;i++)
                {
                        for(int j=0;j<m1.b;j++)
                        {
                                System.out.print("    "+ (m1.M[i][j]+m2.M[i][j]));
```

```
                        }
                        System.out.println(" ");
                    }
                    break;
                    case 2:
                        System.out.println("Multiplication is:");
                        for(int i=0;i<m2.a;i++)
                        {
                            for(int j=0;j<m2.b;j++)
                            {
                                System.out.print("    "+
(m1.M[i][j]*m2.M[i][j]));
                            }
                            System.out.println(" ");
                        }
                        break;

                    case 3:
                        System.exit(0);
                        }
                    }
                     }
}
```

**Slip6_1:** Write a program to display the Employee(Empid, Empname, mpdesignation, Empsal)information using toString().

```
.
class Emp
{
   int id,salary;
   String name;
   String desig;
   Emp(int id, String name, int salary ,String desig)
   {
      this.id=id;
      this.name=name;
      this.salary=salary;
      this.desig=desig;
   }
   public String toString() // overrides toString() method
   {
      return id+" "+name+" "+salary+" "+desig;
   }
   public static void main(String args[])
   {
      Emp E1=new Emp(111,"Rakesh",50000,"bsc cs");
      Emp E2=new Emp(112,"Suresh",25000,"msc cs");
      System.out.println("Employee details: "+E1);
      System.out.println("Employee details: "+E2);
```

```
    }
}
```

**Slip6_2:** Create an abstract class “order” having members id, description. Create two subclasses “PurchaseOrder” and “Sales Order” having members customer name and Vendor name respectively. Definemethods accept and display in all cases. Create 3 objects each of Purchase Order and Sales Order and accept and display details.

```
import java.io.BufferedReader;
import java.io.IOException;
import java.io.InputStreamReader;
abstract class Order{
String id,des;
}
class Porder extends Order{
String cnm, vnm;
public void accept()throws IOException{
System.out.println("enter id, description,names of customers and vendors");
BufferedReader br = new BufferedReader(new InputStreamReader(System.in));
id = br.readLine();
des= br.readLine();
cnm = br.readLine();
vnm = br.readLine();
}
public void display(){
System.out.println("id"+id);
System.out.println("Description"+des);
System.out.println("Customer Name"+cnm);
System.out.println("Vendor Name"+vnm);
System.out.println("--------------------");
}
}

class Sorder extends Order
{
String cnm, vnm;
public void accept()throws IOException{
System.out.println("enter id, description,names of customers and vendors");
BufferedReader br = new BufferedReader(new InputStreamReader(System.in));
id = br.readLine();
des= br.readLine();
cnm = br.readLine();
vnm = br.readLine();
}
public void display(){
System.out.println("id:"+id);
System.out.println("Description:"+des);
System.out.println("Customer Name:"+cnm);
System.out.println("Vendor Name:"+vnm);
```

```
System.out.println("--------------------");
}
}
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:");
System.out.println("3.Exit:");

int ch = Integer.parseInt(br.readLine());
switch(ch){
case 1:
System.out.println("enter the no of purchas order:");
int n = Integer.parseInt(br.readLine());
Porder[] l = new Porder[n];
for(i=0;i<n;i++)
{
l[i] = new Porder();
l[i].accept();
}
for(i=0;i<n;i++)
{
l[i].display();
System.out.println("Object is created:");
}
case 2:
System.out.println("enter the no of sales order:");
int m = Integer.parseInt(br.readLine());
Porder[] h = new Porder[m];
for(i=0;i<m;i++)
{
h[i] = new Porder();
h[i].accept();
}
for(i=0;i<m;i++)
{
h[i].display();
System.out.println("Object is created:");
}

case 3:
System.out.println("exit:");
System.exit(0);
}
}
}
```

**Slip7_1:** Design a class for Bank. Bank Class should support following operations;

a. Deposit a certain amount into an account
b. Withdraw a certain amount from an account
c. Return a Balance value specifying the amount with details

```
class Bank
{
private double balance;

public Bank()
{
balance = 0;

}

public Bank(double initialBalance)
{
balance = initialBalance;
}

public void deposit(double amount)
{
balance = balance + amount;
}

public void withdraw(double amount)
{
balance = balance - amount;
}

public double getBalance()
{
return balance;
}

public static void main(String[] args)
{
Bank b = new Bank(1000);
b.withdraw(250);
System.out.println("the withdraw is:"+ b.balance);
b.deposit(400);
System.out.println("the deposit is:"+ b.balance);
System.out.println("the balance is:"+ b.getBalance());
}
```

```
}
```

---

**Slip7_2:** Write a program to accept a text file from user and display the contents of a file in reverse order and change its case.

---

```
import java.io.*;
import java.util.*;
class ReverseFile
{
  public static void main(String args[])throws IOException
  {
            Scanner sc = new Scanner(System.in);
            System.out.println("enter file name:");
            String fnm = sc.next();
            File f = new File(fnm);
            if(f.isFile())
            {
                BufferedInputStream bis = new BufferedInputStream(new
  FileInputStream(fnm));
                int size =bis.available();
                for(int i = size-1;i>=0;i--)
                {
                        bis.mark(i);
                        bis.skip(i);
                        char ch=((char)bis.read());
                        if(Character.isLowerCase(ch))
                                ch=Character.toUpperCase(ch);
                        else if(Character.isUpperCase(ch))
                                ch = Character.toLowerCase(ch);
                        System.out.print(ch);
                        bis.reset();
                }
                bis.close();
            }
            else
                System.out.println("file not found");
```

```
  }
}
```

**Slip8_1:** Create a class Sphere, to calculate the volume and surface area of sphere.(Hint : Surface area=4*3.14(r*r), Volume=(4/3)3.14(r*r*r))

```
import java.util.*;
class Sphere
{
   public static void main (String[] args)
   {
     Scanner sc=new Scanner(System.in);
     System.out.println("Enter the radius of the sphere: ");
     double radius=sc.nextDouble();
     double surface_area = (4*3.14*(radius*radius));
     double volume = ((double)4/3)*3.14*(radius*radius*radius);
     System.out.println("The surface area of the sphere = "+surface_area);
     System.out.println("The volume of sphere = "+volume);
   }
}
```

**Slip8_2:** Design a screen to handle the Mouse Events such as MOUSE_MOVED and MOUSE_CLICKED and display the position of the Mouse_Click in a TextField.

```
import java.awt.*;
import java.awt.event.*;
class MyFrame extends Frame
{
        TextField t,t1;
        Label l,l1;
        int x,y;
        Panel p;
        MyFrame(String title)
        {
                super(title);
                setLayout(new FlowLayout());
                p=new Panel();
                p.setLayout(new GridLayout(2,2,5,5));
                t=new TextField(20);
                l= new Label("Co-ordinates of mouse clicking");
                l1= new Label("Co-ordinates of mouse movement");
                t1=new TextField(20);
                p.add(l);
                p.add(t);
                p.add(l1);
                p.add(t1);
```

```
                add(p);
                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();
                        t.setText("X="+x+" Y="+y);
                }
        }
        class MyMove extends MouseMotionAdapter
        {
                public void mouseMoved(MouseEvent me)
                {
                        x=me.getX();
                        y=me.getY();
                        t1.setText("X="+ x +" Y="+y);
                }
        }
}
class frame1
{
        public static void main(String args[])
        {
        MyFrame f = new MyFrame("Set A-2");
        }
}
```

**Slip9_1:** Define a "Clock" class that does the following ;

a. Accept Hours, Minutes and Seconds
b. Check the validity of numbers
c. Set the time to AM/PM mode
Use the necessary constructors and methods to do the above task

```
import java.util.*;
class Clock
{
        int hours,minutes,seconds;
        Clock()
        {
                System.out.println("enter the time in HH MM SS format");
                Scanner sc=  new Scanner(System.in);
                this.hours = sc.nextInt();
```

```
            this.minutes = sc.nextInt();
            this.seconds = sc.nextInt();
        }
        void isTimeValid()
        {
            if(hours>=0 && hours<24 && minutes>0 &&minutes<60
 &&seconds>0 && seconds<60)
                System.out.println("time is valid");
            else
                System.out.println("time is not valid");
        }
            void setTimeMode()
            {
                if(hours<12)
                {
                    System.out.println("time ="
 +hours+":"+minutes+":"+seconds +" AM");
                }
                else
                    hours = hours-12;
                    System.out.println("time ="
 +hours+":"+minutes+":"+seconds +" PM");
            }
            public static void main(String args[])
            {

                Clock c = new Clock();
                c.isTimeValid();
                c.setTimeMode();
            }
}
```

**Slip9_2:** Write a program to using marker interface create a class Product (product_id, product_name, product_cost, product_quantity) default and parameterized constructor. Create objectsof classproduct and display the contents of each object and Also display the object count.

```
import java.util.*;

interface MarkerInt {

}

class product implements MarkerInt {
   int pid, pcost, quantity;
```

```
    String pname;
    static int cnt;
    // Default constructor

    product() {
        pid = 1;
        pcost = 10;
        quantity = 1;
        pname = "pencil";
        cnt++;
    }

    // Parameterized constructor

    product(int id, String n, int c, int q) {
        pid = id;
        pname = n;
        pcost = c;
        quantity = q;
        cnt++;
        System.out.println("\nCOUNT OF OBJECT IS : " + cnt + "\n");
    }

    public void display() {

        System.out.println("\t" +pid + "\t" + pname + "\t" + pcost + "\t" + quantity);

    }
}

class MarkerInterface {

    public static void main(String[] args) {

        Scanner sc = new Scanner(System.in);

        System.out.println("Enter Number of Product : ");
        int n = sc.nextInt();

        product pr[] = new product[n];
        for (int i = 0; i < n; i++) {

            System.out.println("\nEnter " + (i + 1) + " Product Details :\n");
```

```
        System.out.println("Enter Product ID: ");
        int pid = sc.nextInt();

        sc.nextLine();
        System.out.println("Enter Product Name: ");
        String pn = sc.nextLine();

        System.out.println("Enter Product Cost:");
        int pc = sc.nextInt();

        System.out.println("Enter Product Quantity:");
        int pq = sc.nextInt();

        pr[i] = new product(pid, pn, pc, pq);

      }
      System.out.println("\n\t\t Product Details\n");
      System.out.println("\tId\tPname\tCost\tQuantity\n");
      for (int i = 0; i < n; i++) {
        pr[i].display();
      }

      sc.close();
    }

}
```

---

**Slip10_1:** Write a program to find the cube of given number using functional interface.

---

```
import java.util.*;
interface Cube
{
float cube();
}
class Draw implements Cube
{
public float cube()
{
System.out.println("enter the number");
Scanner sc= new Scanner (System.in);
float cu = sc.nextInt();
```

```
double cue = cu*cu*cu;
System.out.println("cube of no is:"+cue);
return 0;
}
public static void main(String args[])
{
 Draw d = new Draw();
d.cube();
}
}
```

---

**Slip10_2:** Write a program to create a package name student. Define class StudentInfo with method to display information about student such as rollno, class, and percentage. Create another class StudentPer with method to find percentage of the student. Accept student details like rollno, name, class and marks of 6 subject from user.

---

**PackageFIle**

```
package student;
class StudentInfo
{
    public int r_no;
    public String name, clas;
    public int a,b,c,d,e,f;
    int sum=0;
          double per;

    public void display()
    {
      System.out.println("Roll_no : "+r_no);
      System.out.println("Name    : "+name);
                System.out.println("class    :"+clas);
      System.out.println("-----MARKS-------");
      System.out.println("Sub 1     : "+a);
      System.out.println("Sub 2     : "+b);
      System.out.println("Sub 3     : "+c);
                System.out.println("Sub 4     : "+d);
                System.out.println("Sub 5     : "+e);
                System.out.println("Sub 6     : "+f);
      System.out.println("Total     : "+sum);
      System.out.println("percentage: "+per);
      System.out.println("------------------");
```

```
    }
}

        public class StudentPer extends StudentInfo {
   public StudentPer(int roll, String nm, String cla,int m1,int m2,int m3,int m4, int
m5,int m6)
    {
      r_no = roll;
                clas = cla;
      name = nm;
      a = m1;
      b = m2;
      c = m3;
           d = m4;
                e = m5;
                f = m6;
      sum = a+b+c+d+e+f;
                per = sum/6;
    }
}
```

**Main File**

```
import student.StudentPer;
import java.util.*;
import java.lang.*;
import java.io.*;
class StudentMain
{
    public static void main(String[] args)
    {
        String nm, clas;
        int roll;
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter Roll no:= ");
        roll = sc.nextInt();
        System.out.print("Enter Name:= ");
        nm = sc.next();
                  System.out.print("Enter class:= ");
        clas= sc.next();

        int m1,m2,m3,m4,m5,m6;
        System.out.print("Enter 6 sub mark:= ");
        m1 = sc.nextInt();
        m2 = sc.nextInt();
        m3 = sc.nextInt();
                  m4 = sc.nextInt();
```

```
                m5 = sc.nextInt();
                m6 = sc.nextInt();

        StudentPer s = new  StudentPer(roll,nm,clas,m1,m2,m3,m4,m5,m6);

        s.display();
    }
}
```

---

**Slip11_1:** Define an interface "Operation" which has method volume( ).Define a constant PI having a value 3.142 Create a class cylinder which implements this interface (members – radius,height). Createone object and calculate the volume.

---

```
import java.io.*;
interface Operation
{
   final static float pi=3.142f;
   void area();
   void volume();
}
class Cylinder implements Operation
{
   double radius,height;
   void input() throws Exception
   {
      BufferedReader br = new BufferedReader(new InputStreamReader(System.in));
      System.out.print("\n Enter the radius and height=");
      radius=Double.parseDouble(br.readLine());
      height=Double.parseDouble(br.readLine());
   }
   public void area()
   {
      double a=(2*pi*radius*height)+(2*pi*radius*radius);
      System.out.println("the area of cylinder is " +a);
   }
    public void volume()
   {
      double v=pi*radius*radius*height;
      System.out.println("the volume of cylinder is "+v);
   }
}
 class slipno11a
{
   public static void main(String args[]) throws Exception
   {
      Cylinder C1=new Cylinder();
      C1.input();
      C1.area();
```

---

```
    C1.volume();
  }
}
```

**Slip11_2:** Write a program to accept the username and password from user if username and password arenot same then raise "Invalid Password" with appropriate msg.

```
import java.awt.*;
import java.awt.event.*;
import javax.swing.*;
class InvalidPasswordException extends Exception
{}
class Userpassword extends JFrame implements ActionListener
{
        JLabel name, pass;
        JTextField nameText;
        JPasswordField passText;
        JButton login, end;
        static int cnt=0;
        Userpassword()
        {
         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. INFORMATION_MESSAGE);
                        System.exit(0);
                }
                        else
                        {
                        throw new InvalidPasswordException();
                        }
        }
        catch(Exception e1)
```

```
                {
                        cnt++;
                        JOptionPane.showMessageDialog(null, "Login Failed", "Login",
JOptionPane.ERROR_MESSAGE);
                        nameText.setText("");
                        passText.setText("");
                        nameText.requestFocus();
                        if(cnt==3)
                        {
                                JOptionPane.showMessageDialog(null,"3 Attempts Over",
"Login", JOptionPane.ERROR_MESSAGE);
                                System.exit(0);
                        }

                }
        }
        }
        public static void main(String args[])
        {
         new Userpassword();
        }
}
```

**Slip12_1:** Write a program to create parent class College(cno, cname, caddr) and derived classDepartment(dno, dname) from College. Write a necessary methods to display College details.

```
import java.util.*;
class college
{
   int no;
   String name;
   String addr;
```

```
}
class Dept extends college
{
   int dno;
   String dname;
   Scanner sc = new Scanner(System.in);
   public void accept()
   {
      System.out.println("enter no");
         no=sc.nextInt();
      System.out.println("enter name");
         name=sc.next();
      System.out.println("enter college address");
         addr=sc.next();
      System.out.println("enter depatrment no");
         dno=sc.nextInt();
      System.out.println("enter department name");
         dname=sc.next();
   }
   public void display()
   {
      System.out.println("college no"+no);
      System.out.println("college name"+name);
      System.out.println("college address"+addr);
      System.out.println("department number"+dno);
      System.out.println("department number"+dname);
   }
   public static void main(String a[])
   {
      Dept ob=new Dept();
      ob.accept();
      ob.display();
```

```
  }
}
```

**Slip12_2:** Write a java program that works as a simple calculator. Use a grid layout to arrange buttons forthe digits and for the +, -, *, % operations. Add a text field to display the result.

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

public class Slip12 extends JFrame implements ActionListener
{
      String msg=" ";
      int v1,v2,result;
      JTextField t;
      JButton b[]=new JButton[10];
      JButton add,sub,mul,div,clear,equals;
      char choice;
      JPanel p,p1;
      public Slip12()
      {
            setLayout(new BorderLayout());
             p =new JPanel();
            t=new JTextField(20);
            p.add(t);

            p1=new JPanel();
            p1.setLayout(new GridLayout(5,4));
            for(int i=0;i<10 i="" span="">
            {
                  b[i]=new JButton(""+i);
            }
            equals=new JButton("=");
            add=new JButton("+");
            sub=new JButton("-");
            mul=new JButton("*");
            div=new JButton("/");
            clear=new JButton("C");


            for(int i=0;i<10 i="" span="">
            {
                  p1.add(b[i]);
            }

            p1.add(equals);
            p1.add(add);
            p1.add(sub);
            p1.add(mul);
```

```
        p1.add(div);
        p1.add(clear);

        for(int i=0;i<10 i="" span="">
        {
              b[i].addActionListener(this);
        }
        add.addActionListener(this);
        sub.addActionListener(this);
        mul.addActionListener(this);
        div.addActionListener(this);
        clear.addActionListener(this);
        equals.addActionListener(this);

        add(p,BorderLayout.NORTH);
        add(p1);

}

public void actionPerformed(ActionEvent ae)
{
        String str = ae.getActionCommand();
        char ch = str.charAt(0);
        if ( Character.isDigit(ch))
        t.setText(t.getText()+str);
        else
        if(str.equals("+"))
        {
              v1=Integer.parseInt(t.getText());
              choice='+';
              t.setText("");
        }
        else if(str.equals("-"))
        {
              v1=Integer.parseInt(t.getText());
              choice='-';
              t.setText("");
        }
        else if(str.equals("*"))
        {
              v1=Integer.parseInt(t.getText());
              choice='*';
              t.setText("");
        }
        else if(str.equals("/"))
        {
              v1=Integer.parseInt(t.getText());
              choice='/';
              t.setText("");
        }

        if(str.equals("="))
```

```
            {
                  v2=Integer.parseInt(t.getText());
                  if(choice=='+')
                        result=v1+v2;
                  else if(choice=='-')
                        result=v1-v2;
                  else if(choice=='*')
                        result=v1*v2;
                  else if(choice=='/')
                        result=v1/v2;

                  t.setText(""+result);
            }
            if(str.equals("C"))
            {
                  t.setText("");
            }
      }
      public static void main(String args[])
      {
            New Slip12();
      }
}
```

---

**Slip13_1:** Write a program to accept a file name from command prompt, if the file exits then displaynumber of words and lines in that file.

---

```
import java.io.*;

class slip13_1

{

      public static void main(String argd[]) throws Exception

      {

            String fname=argd[0];

            File f=new File(fname);

            if(f.isFile())

            {

                  FileInputStream fis=new FileInputStream(fname);

                  int ch,cnt=0;

                  while((ch=fis.read())!=-1)
```

```
                {
                        if(ch=='\n')
                        {
                                cnt++;
                        }
                }
                System.out.println("Number of line in Given file is "+cnt);
        }
        else
        {
                System.out.println("file not exists");
        }
    }
}
```

**Slip 13_2**: Write a program to display the system date and time in various formats shown below:Current date is : 31/08/2021
Current date is : 08-31-2021
Current date is : Tuesday August 31 2021
Current date and time is : Fri August 31 15:25:59 IST 2021Current date and time is : 31/08/21 15:25:59 PM +0530

```
import java.text.SimpleDateFormat;
import java.util.Date;

class slip13_2
{
        public static void main(String[] args)
        {
                Date date = new Date();
                SimpleDateFormat formatter = new SimpleDateFormat("dd/MM/yyyy");
                String strDate= formatter.format(date);
```

```
                System.out.println(strDate);

                SimpleDateFormat formatter1 = new SimpleDateFormat("MM-dd-yyyy");
                String strDate1= formatter1.format(date);
                System.out.println(strDate1);

                SimpleDateFormat formatter2 = new SimpleDateFormat("EEEEE
MMMMM dd yyyy");
                String strDate2= formatter2.format(date);
                System.out.println(strDate2);

                SimpleDateFormat formatter3 = new SimpleDateFormat("EEEEE
MMMMM dd HH:mm:ss z yyyy");
                String strDate3= formatter3.format(date);
                System.out.println(strDate3);

                SimpleDateFormat formatter4 = new SimpleDateFormat("dd/MM/yyyy
HH:mm:ss a");
                String strDate4= formatter4.format(date);
                System.out.println(strDate4);
        }
}
```

==========

**Slip14_1:** Write a program to accept a number from the user, if number is zero then throw user definedexception “Number is 0” otherwise check whether no is prime or not (Use static keyword).

```
import java.util.Scanner;
import java.util.*;
class Zerono extends Exception
{}
class Prime
{
        static int count=0;
        public static void main(String args[])
        {
                int no,i,j;
                Scanner sc=new Scanner(System.in);
                try
                {
                        System.out.println("enter no");
                        no=sc.nextInt();
                        if(no==0)
                                throw new Zerono();
                        if(no>0)
                        {
                                for(i=2;i<=no/2;i++)
                                {
```

```
                        if(no%i==0)
                        {
                                count++;
                        }

                    }


                }
                if(count==0)
                        System.out.println("No is Prime");
                else
                        System.out.println("Not a Prime number");

            }

            catch(Zerono ob)
            {
                    System.out.println("no can not be zero");
            }
        }
}
```

---

**Slip14_2:** Write a Java program to create a Package "SY" which has a class SYMarks (members – ComputerTotal, MathsTotal, and ElectronicsTotal). Create another package TY which has a class TYMarks (members – Theory, Practicals). Create 'n' objects of Student class (having rollNumber, name, SYMarks and TYMarks). Add the marks of SY and TY computer subjectsand calculate the Grade ('A' for >= 70, 'B' for >= 60 'C' for >= 50, Pass Class for > =40 else'FAIL') and display the result of the student in proper format

---

**Package**

```
package SY;

public class SYMarks
{
        int ct,mt,et;
        public SYMarks(int ct,int mt,int et)
        {
                this.ct=ct;
                this.mt=mt;
                this.et=et;
```

```
        }
        public void display()
        {
                System.out.println("\nMarks are;");
                System.out.println("Computer\tMaths\tElectronics");
                System.out.println(ct+"\t"+mt+"\t"+et);
        }
}
```

**Package 2**

```
package TY;

public class TYMarks
{
        int Theory,Practicals;
        public TYMarks(int Theory,int Practicals)
        {
                this.Theory=Theory;
                this.Practicals=Practicals;
        }
        public void display()
        {
                System.out.println("\nMarks are:");
                System.out.println("Theory\tPracticals");
                System.out.println(Theory+"\t"+Practicals);
        }
}
```

**Mainfile**

```
import SY.SYMarks;
import TY.TYMarks;
```

```
import java.io.*;

class SYTY
{
	int rollno;
	int ComputerTotal, MathsTotal, ElecTotal, Theory, Practicals;
	String name;
	BufferedReader br =new BufferedReader(new InputStreamReader(System.in));


	public SYTY()
	{}

	public SYTY(int rollno,String name) throws Exception
	{
		this.rollno = rollno;
		this.name = name;

		System.out.println("Enter SY marks: ");

		System.out.println("\nEnter computer marks");
		ComputerTotal = Integer.parseInt(br.readLine());

		while((ComputerTotal<0 || ComputerTotal>100))
		{
			System.out.println("\n\tInvalid marks.....");

			System.out.println("Please ReEnter the marks: ");
			ComputerTotal = Integer.parseInt(br.readLine());
```

```
            }

            System.out.println("\nEnter maths marks");
            MathsTotal=Integer.parseInt(br.readLine());

            while((MathsTotal<0 || MathsTotal>100))
{
  System.out.println("\n\tInvalid marks.....");

                    System.out.println("Please Reenter the marks: ");
   MathsTotal=Integer.parseInt(br.readLine());
            }

            System.out.println("\nEnter electronics marks");
            ElecTotal = Integer.parseInt(br.readLine());

            while((ElecTotal<0 || ElecTotal>100))
{
  System.out.println("\n\tInvalid marks.....");

                    System.out.println("Please Reenter the marks: ");
   ElecTotal = Integer.parseInt(br.readLine());
}

            SYMarks sy = new SYMarks(ComputerTotal, MathsTotal, ElecTotal);

            System.out.print("\nEnter TY marks: ");

            System.out.print("\nEnter theory marks ");
```

```
            Theory = Integer.parseInt(br.readLine());

            while((Theory<0 || Theory>100))
{
   System.out.println("\n\tInvalid marks.....");
                    System.out.println("Please Reenter the marks: ");
   Theory = Integer.parseInt(br.readLine());
}

            System.out.print("\nEnter practicals marks ");
            Practicals = Integer.parseInt(br.readLine());

            while((Practicals<0 || Practicals>100))
{
   System.out.println("\n\tInvalid marks.....");

                    System.out.println("Please Reenter the marks: ");
                    Practicals = Integer.parseInt(br.readLine());
}

            TYMarks ty = new TYMarks(Theory, Practicals);

            CalculateGrade();
  }


  public void getdata() throws Exception
  {
            System.out.println("\nEnter number of students: ");
```

```
            int n=Integer.parseInt(br.readLine());

            SYTY object[]=new SYTY[n];

            for(int i=0; i<n; i++)
            {
                System.out.println("\nEnter name: ");
                String name = br.readLine();

                System.out.println("\nEnter roll no: ");
                int roll = Integer.parseInt(br.readLine());

                object[i] = new SYTY(roll,name);
                System.out.println("----------------------");
            }
        }

        public void CalculateGrade()
        {
            double percentage;

            percentage = (ComputerTotal+ MathsTotal + ElecTotal + Theory +
Practicals)/5;
            System.out.println("Result:");

            if(percentage >= 70)
            System.out.println("Grade:A");
```

```
            else if(percentage >= 60)
          System.out.println("Grade:B");

            else if(percentage >= 50)
          System.out.println("Grade:C");

            else if(percentage >= 40)
          System.out.println("Grade:PASS");
            else
            System.out.println("Grade:FAIL\n\tTry Again.....");
        }

        public static void main(String args[]) throws Exception
        {
            SYTY st = new SYTY();
            st.getdata();
        }
}
```

**Slip15_1:** Accept the names of two files and copy the contents of the first to the second. First file havingBook name and Author name in file.

```
import java.io.*;
import java.util.*;

 class demoFile
{
            public static void main(String args[]) throws Exception
```

```
        {
                Scanner  sc= new Scanner(System.in);
                System.out.println("Enter the first file");
                String f1=sc.next();
                System.out.println("Enter the second file");
                String f2=sc.next();

                        FileInputStream fis=new FileInputStream(f1);
                        FileOutputStream fos=new FileOutputStream(f2);
                        int ch;
                        while((ch=fis.read())!=-1)
                        {
                                fos.write(ch);
                        }
                        System.out.println("file copied...");
                        fis.close();
                        fos.close();
        }
}
```

---

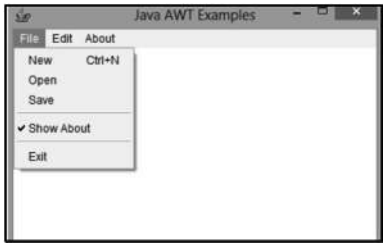
**Slip16_1:** Write a program to find the Square of given number using function interface.

---

```
interface Square {
   int calculate(int x);
}
class Slip16_1 {
   public static void main(String args[])
   {
                //you can read value from user
      int a = 5;
      Square s = (int x) -> x * x;
      int ans = s.calculate(a);
      System.out.println(ans);
   }
}
```

---

**Slip16_2:** Write a program to design a screen using Awt that,




```
import javax.swing.*;
import java.awt.*;
class MeEx
{
                JMenu File;
        JMenu Edit;
        JMenu About;
        JMenuItem i1, i2, i3, i4, i5;

        MeEx(){
        JFrame f= new JFrame("Menu and MenuItem Example");
        JMenuBar mb=new JMenuBar();
        File=new JMenu("File");
        Edit=new JMenu("Edit");
        About=new JMenu("About");
        i1=new JMenuItem("New   Ctrl+N");
        i2=new JMenuItem("Open");
        i3=new JMenuItem("Save");
                i4=new JMenuItem("Show About");
                i5=new JMenuItem("Exit");
                File.add(i1); File.add(i2);
File.add(i3);File.addSeparator();File.add(i4);File.addSeparator();File.add(i5);
        mb.add(File);
        mb.add(Edit);
        mb.add(About);
        f.setJMenuBar(mb);
        f.setSize(400,400);
        f.setLayout(null);
        f.setVisible(true);
}
public static void main(String args[])
{
new MeEx();
}
}
```

**Slip17_1:** Design a Super class Customer (name, phone-number). Derive a class Depositor(accno , balance) from Customer. Again, derive a class Borrower (loan-no, loan-amt) from Depositor. Write necessary member functions to read and display the details of 'n'customers.

```
import java.util.*;
class Customer {
	String name;
	int Pno;
}
class Depositer extends Customer
{
	int accno;
	double bal;
}
class Borrower extends Depositer
{
	int loanno;
	double loanamt;

	void read()
	{
		System.out.println("enter name, Phone number, accno, bal, loanno,
loanamt");
		Scanner sc = new Scanner(System.in);
		this.name = sc.next();
		this.Pno = sc.nextInt();
		this.accno = sc.nextInt();
		this.bal = sc.nextDouble();
		this.loanno = sc.nextInt();
		this.loanamt = sc.nextDouble();
	}
	void display()
	{
		System.out.println("The details are:");
		System.out.println("name: " +this.name);
		System.out.println("phone number: "+this.Pno);
		System.out.println("accout number: " +this.accno);
		System.out.println("Balance: " +this.bal);
		System.out.println("loan number: "+this.loanno);
		System.out.println("loan amount: "+this.loanamt);
		System.out.println("-----------------------------------");

	}

	public static void main(String args[]){
	int i;
	Scanner sc = new Scanner(System.in);
	System.out.println("enter total number:");
```

```
        int n =sc.nextInt();
        Borrower[] l = new Borrower[n];
        for(i=0;i<n;i++){
                l[i] = new Borrower();
                l[i].read();
                }
                for(i=0;i<n;i++){
                l[i].display();
                }
        }
}
```

---

**Slip17_2:** Write Java program to design three text boxes and two buttons using swing. Enter different strings in first and second textbox. On clicking the First command button, concatenation of two strings should be displayed in third text box and on clicking second command button, reverse of string should display in third text box

---

```
import java.util.*;
import javax.swing.*;
import java.awt.event.*;
class TextField implements ActionListener{
   JTextField tf1,tf2,tf3;
   JButton b1,b2;
   TextField(){
      JFrame f= new JFrame();
      tf1=new JTextField();
      tf1.setBounds(50,50,150,20);
      tf2=new JTextField();
      tf2.setBounds(50,100,150,20);
      tf3=new JTextField();
      tf3.setBounds(50,150,150,20);
      tf3.setEditable(false);
      b1=new JButton("concatenation");
      b1.setBounds(30,200,100,50);
      b2=new JButton("reverse");
      b2.setBounds(150,200,100,50);
      b1.addActionListener(this);
      b2.addActionListener(this);
      f.add(tf1);f.add(tf2);f.add(tf3);f.add(b1);f.add(b2);
      f.setSize(300,300);
      f.setLayout(null);
      f.setVisible(true);
      f.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
   }
   public void actionPerformed(ActionEvent e) {
         StringBuffer sb = new StringBuffer();
      String s1=tf1.getText();
      String s2=tf2.getText();
```

```
    if(e.getSource()==b1){
    String s3= s1+s2;
                tf3.setText(s3);
    }else if(e.getSource()==b2){
      String str = s1;
                        String strArray = "";
                        for (int i = str.length()-1; i>=0 ; i--){
                        strArray+=str.charAt(i);
                        }
                        tf3.setText(strArray);
  }
}
public static void main(String[] args) {
   new TextField();
} }
```

**Slip18_1:** Write a program to implement Border Layout Manager.

```
import java.awt.*;
import javax.swing.*;
class FrameDemo extends JFrame
{
        FrameDemo()
        {
                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");
                setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);

                add(b1,BorderLayout.NORTH);
                add(b2,BorderLayout.SOUTH);
                add(b3,BorderLayout.EAST);
                add(b4,BorderLayout.WEST);
                add(b5,BorderLayout.CENTER);
                setSize(300,300);
                setVisible(true);
        }
        public static void main(String[] args)
        {
                FrameDemo ob=new FrameDemo();
        }
}
```

**Slip18_2:**

Define a class CricketPlayer (name,no_of_innings,no_of_times_notout, totatruns,

bat_avg).

Create an array of n player objects. Calculate the batting average for each player using staticmethod avg(). Define a static sort method which sorts the array on the basis of average.

Display the player details in sorted order.

```
import java.util.Scanner;
class cricket
{
        int inning, tofnotout, totalruns;
        String name;
        float batavg;
        int i;
        cricket()
{
        name= null;
        inning= 0;
        tofnotout= 0;
        totalruns=0;
        batavg= 0;
}
void get()
{
        Scanner s1= new Scanner(System.in);
        System.out.println("name, no of innings, no of time(s) not out, total runs");
        name= s1.nextLine();
        inning= s1.nextInt();
        tofnotout= s1.nextInt();
        totalruns= s1.nextInt();
}
void put()
{
        System.out.println("name: "+name);
        System.out.println("no of innings: "+inning);
        System.out.println("no of time(s) not out: "+tofnotout);
        System.out.println("total runs: "+totalruns);
        System.out.println("batting average: "+batavg);
}
static void avg(int n, cricket c[])
{
        for(int i=0; i<n; i++)
        {
        c[i].batavg= c[i].totalruns/c[i].inning;
        }
}
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;
                        }
                }
        }
        }
}
class setBb
{
        public static void main(String args[])
        {
                Scanner s1= new Scanner(System.in);
                System.out.println("Enter The Limit: ");
                int n= s1.nextInt();
                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();
                }
        }
```

```
}
```

**Slip19_1:** Write a program to accept the two dimensional array from user and display sum of its diagonal elements.

```
import java.util.Scanner;
class Array
{
	public static void main(String args[])
	{
		int m, n, i, j,sum=0;
		Scanner sc=new Scanner(System.in);

		System.out.print("Enter order of matrix: ");
		m = sc.nextInt();



		int array[][] = new int[m][m];
		System.out.println("Enter the elements of the array: ");
		for (i = 0; i < m; i++)
			for (j = 0; j < m; j++)
				array[i][j] = sc.nextInt();

		System.out.println("Elements of the array are: ");
		for (i = 0; i < m; i++)
		{
			for (j = 0; j < m; j++)
			{
				System.out.print(array[i][j] + " ");
				if(i==j)
				sum+=array[i][j];
			}
			System.out.println();
		}
		System.out.println("Sum of Diagonal elements is "+sum);

	}
}
```

**Slip19_2**: Write a program which shows the combo box which includes list of T.Y.B.Sc.(Comp. Sci) subjects. Display the selected subject in a text field

```
import java.awt.*;
import javax.swing.*;
import java.awt.event.*;
class ComboBoxExample
{
```

```
        JFrame f;
   JTextField t1;
        ComboBoxExample()
{
   f=new JFrame("ComboBox Example");
   final JLabel label = new JLabel();
   t1=new JTextField(10);
   label.setHorizontalAlignment(JLabel.CENTER);
   label.setSize(400,100);
   JButton b=new JButton("Show");
   b.setBounds(200,100,75,20);
   String languages[]={"C","C++","C#","Java","PHP"};
   final JComboBox cb=new JComboBox(languages);
   cb.setBounds(50, 100,90,20);
   f.add(cb); f.add(label); f.add(b);
   f.add(t1);
   f.setLayout(new FlowLayout());
   f.setSize(350,350);
   f.setVisible(true);
   b.addActionListener(new ActionListener()
 {
     public void actionPerformed(ActionEvent e)
        {
        String data = "Programming language Selected: "  +
cb.getItemAt(cb.getSelectedIndex());
        t1.setText(data);
        }
 });
}
        public static void main(String[] args)
         {
                new ComboBoxExample();
        }
}
```

---

**Slip20_1**: Write a Program to illustrate multilevel Inheritance such that country is inherited from continent. State is inherited from country. Display the place, state, country and continent.

---

```
import java.util.*;
class continent
{
        String c1;

}
class country extends continent
{
        String c2;
```

```
}
class state extends country
{
                String s1;
                String p1;

public void display()
        {
                System.out.println("Continent name: "+c1+"\n"+"Country name:
"+c2+"\n"+"State Name: "+s1+"\n"+"Place: "+p1);
        }
public static void main(String args[])
        {
                state ob=new state();
                Scanner sc=new Scanner(System.in);
                System.out.println("Enter the continent");
                ob.c1=sc.next();
                System.out.println("Enter the Country");
                ob.c2=sc.next();
                System.out.println("Enter the state");
                ob.s1=sc.next();
                System.out.println("Enter the place");
                ob.p1=sc.next();
                ob.display();

        }
}
```

---

**Slip20_2:** Write a package for Operation, which has two classes, Addition and Maximum. Addition has two methods add () and subtract (), which are used to add two integers and subtract two, float values respectively. Maximum has a method max () to display the maximum of two integers

---

**Package**

```
package         operation;
import  java.util.*;
 class Addition
 {

          public int ans,n1,n2;
          public float answer,num1,num2;
          public Addition(int n1,int n2,float num1,float num2)
          {
                   this.n1=n1;
                   this.n2=n2;
```

```
                this.num1=num1;
                this.num2=num2;

        }
        public  void add()
        {

                ans=n1+n2;
                System.out.println("addition is="+ans);
        }

        public  void sub()
         {

                 answer=num1-num2;
                System.out.println("subtraction is="+answer);
         }

}
public class Maximum extends Addition
{

        public Maximum(int  n1,int n2, float num1, float num2)
        {
                super(n1,n2,num1,num2);
        }
        public void max()
        {
                if (n1>n2)
                 System.out.println(n1+" is greater than "+n2);
                else
                System.out.println(n2+" is greater than "+n1);
        }
}
```

**MainFile**

```
import operation.Maximum;
import java.util.*;
class Arithmatic
{
        public static void main (String args[])
        {

                int n1,n2;
                float num1,num2;
                Scanner sc=new Scanner(System.in);
                System.out.println("Enter first no=");
                n1=sc.nextInt();
```

```
                System.out.println("Enter second no=");
                n2=sc.nextInt();
                System.out.println("Enter third no=");
                num1=sc.nextFloat();
                System.out.println("Enter fourth no=");
                num2=sc.nextFloat();

        Maximum ob1=new Maximum(n1,n2,num1,num2);

        ob1.add();
        ob1.sub();
        ob1.max();

        }
}
```

---

**Slip21_1:** Define a class MyDate(Day, Month, year) with methods to accept and display a MyDateobject. Accept date as dd,mm,yyyy. Throw user defined exception "InvalidDateException" if the date is invalid.

---

```
import java.util.*;

class InvalidDateException extends Exception
{

}
class MyDate
{
   int day,month,year;
   public void accept()
   {
      System.out.println("Enter Date, Month and Year");
      try
      {
         Scanner sc=new Scanner(System.in);

         day=sc.nextInt();
         if(day<1 || day>31)
            throw new InvalidDateException();
         month=sc.nextInt();
         if(month>12 ||month<1)
            throw new InvalidDateException();
         year=sc.nextInt();
         if(year>10000 ||year<1000)
            throw new InvalidDateException();
      }
      catch(InvalidDateException e)
      {
```

```
            System.out.println("Invalid Date entered");
            System.exit(0);
        }
        catch(Exception e)
        {
            System.out.println("Enter Valid Date");
            System.exit(0);
        }
    }
    public void display()
    {
        System.out.println("Entered Date is "+day+":"+month+":"+year);
    }
    public static void main(String args[])
    {
        MyDate ob=new MyDate();
        ob.accept();
        ob.display();
    }
}
```

**Slip21_2:** Create an employee class(id,name,deptname,salary). Define a default and parameterized constructor. Use 'this' keyword to initialize instance variables. Keep a count of objects created. Create objects using parameterized constructor and display the object count after each object is created. (Use static member and method). Also display the contents of each object.

```
class Employee
{
        int id;
        String name,deptname;
        double sal;
        static int cnt=0;
        Employee()
        {
                cnt++;
                displayCount();
        }
        Employee(int id,String name,String deptname,double sal)
        {
                this.id=id;
                this.name=name;
                this.deptname=deptname;
                this.sal=sal;
                cnt++;
                displayCount();
        }
        public static void displayCount()
        {
```

```
                        System.out.println("Total Objects created "+cnt);

        }
        public void displayData()
        {

        System.out.println(this.id+"\t\t"+this.name+"\t\t\t"+this.deptname+"\t\t"+this.
sal);

        }
        public static void main(String args[])
        {
                Employee e1=new Employee(101,"Maithili","HR",120020.20);

                Employee e2=new Employee(102,"Soham","IT",140020.20);
                Employee e3=new Employee(104,"Akshay","Accounts",100020.20);
                System.out.println("EID\t\tName\t\t\tDepartment\t\tSalary");
                e1.displayData();
                e2.displayData();
                e3.displayData();
        }
}
```

---

**Slip22_1:** Write a program to create an abstract class named Shape that contains two integers and an empty method named printArea(). Provide three classes named Rectangle, Triangle and Circle such that each one of the classes extends the class Shape. Each one of the classes contain only the method printArea() that prints the area of the given shape. (use method overriding).

---

```
import java.util.*;
abstract class Shape
{       int n1,n2;
        public abstract void printArea();

}
class Rectangle extends Shape
{
        Rectangle(int a,int b)
        {
                n1=a;
                n2=b;
        }
        public void printArea()
        {
                float area;
                area=n1*n2;
                System.out.println("area of rectangle="+area);
```

```
	}
}
class Triangle extends Shape
{
	Triangle(int a,int b)
	{
		n1=a;
		n2=b;
	}
	public void printArea()
	{
		float area;
		area=(n1*n2)/2;
		System.out.println("area of triangle="+area);
	}
}
class Circle extends Shape
{
	Circle(int a)
	{
		n1=a;
	}
	public void printArea()
	{
		System.out.println("area of circle="+3.142*n1*n1);
	}
}
class Area
{
	public static void main(String args[])
	{
		Scanner sc=new Scanner(System.in);
		System.out.println("enter 2 values");
		int n1=sc.nextInt();
		int n2=sc.nextInt();
		Rectangle ob=new Rectangle(n1,n2);

		ob.printArea();

		Triangle tr=new Triangle(n1,n2);
		tr.printArea();

		Circle cr=new Circle(n1);
		cr.printArea();
	}
}
```

**Slip22_2:** Write a program that handles all mouse events and shows the event name at the center of the Window, red in color when a mouse event is fired. (Use adapter classes).

```
import java.awt.*;
import java.awt.event.*;
import javax.swing.*;
class MouseEvents extends JFrame implements MouseListener, MouseMotionListener
{
String str="";
JTextArea ta;
Container c;
int x,y;
MouseEvents()
{
        c=getContentPane();
        c.setLayout(new FlowLayout());;

        ta=new JTextArea("Click the mouse or move it", 5,20);
        ta.setFont(new Font("Arial",Font.BOLD,30));
        ta.setForeground(new Color(255,0,0));
        c.add(ta);
        ta.addMouseListener(this);
        ta.addMouseMotionListener(this);


}
public void mouseClicked(MouseEvent me)
{
        int i=me.getButton();
        if(i==1)
        str+="Clicked Button: Left";
        else if(i==2)
        str+="Clicked Button: Middle";
        else if(i==3)
        str+="Clicked Button: Right";
        this.display();

}
public void mouseEntered(MouseEvent me)
{
        str+="Mouse Entered ";
        this.display();
}
public void mouseExited(MouseEvent me)
```

```
{
        str+="MouseExited";
        this.display();

}
public void mousePressed(MouseEvent me)
{
        x=me.getX();
        y=me.getY();
        str+="MousePressed at: "+x+"\t"+y;
        this.display();
}
public void mouseReleased(MouseEvent me)
{
        x=me.getX();
        y=me.getY();
        str+="Mouse Released at:"+x+"\t"+y;
        this.display();

}
public void mouseDragged(MouseEvent me)
{
        x=me.getX();
        y=me.getY();
        str+="MouseDragged at:"+x+"\t"+y;
        this.display();
}
public void mouseMoved(MouseEvent me)
{
        x=me.getX();
        y=me.getY();
        str+="Mouse Moved at:"+x+"\t"+y;
        this.display();
}
public void display()
{
        ta.setText(str);
        str="";
}
        public static void main(String[] args) {

         MouseEvents mes=new MouseEvents();
         mes.setSize(400,400);
         mes.setVisible(true);
         mes.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
                }

                }
```

**Slip23_1:** Define a class MyNumber having one private int data member. Write a default constructor to initialize it to 0 and another constructor to initialize it to a value (Use this). Write methods isNegative, isPositive, isZero, isOdd, isEven. Create an object in main.Use command line arguments to pass a value to the Object

```
import java.util.*;
class slip23_1
{
	private int data;
	slip23_1()
	{
		data=0;
	}
	slip23_1(int data)
	{
		this();
		this.data=data;
	}
	public void isPositive(int x)
	{
		if(x>0)
		{
			System.out.println(x+" Number is Positive ");
		}
	}
	public void isNegetive(int x)
	{
		if(x<0)
		{
			System.out.println(x+" Number is Negetive");
		}
	}
	public void isEven(int x)
	{
		if(x%2==0)
		{
			System.out.println(x+" Number is Even");
		}
	}
	public void isOdd(int x)
	{
		if(x%2!=0)
		{
			System.out.println(x+" Number is Odd ");
		}
	}
```

```
	public void isZero(int x)
	{
		if(x==0)
		{
			System.out.println(x+" Number is Zero ");
		}
	}
	public static void main(String args[])
	{
		int data=Integer.parseInt(args[0]);
		slip23_1 ob =new slip23_1(data);
		ob.isPositive(data);
		ob.isNegetive(data);
		ob.isEven(data);
		ob.isOdd(data);
		ob.isZero(data);
	}

}
```

**Slip23_2:** Write a simple currency converter, as shown in the figure. User can enter the amount of "Singapore Dollars", "US Dollars", or "Euros", in floating-point number. The convertedvalues shall be displayed to 2 decimal places. Assume that 1 USD = 1.41 SGD,
1 USD = 0.92 Euro, 1 SGD = 0.65 Euro

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

class slip23_2 extends KeyAdapter
{
	JLabel l1,l2,l3;
	JTextField t1,t2,t3;
	slip23_2()
	{
		JFrame ob=new JFrame();
		l1=new JLabel("US Dollars");
		l2=new JLabel("Singapore Dollars");
		l3=new JLabel("Euros");
		t1=new JTextField(10);
		t2=new JTextField(10);
		t3=new JTextField(10);
		ob.add(l1); ob.add(t1);
		ob.add(l2); ob.add(t2);
		ob.add(l3); ob.add(t3);
		ob.setVisible(true);
```

```
            t1.addKeyListener(this);
            ob.setLayout(new FlowLayout());
            ob.setSize(400,400);
            ob.setDefaultCloseOperation(3);
        }

        public void keyReleased(KeyEvent ke)
        {
            try
            {
                Double USD=Double.parseDouble(t1.getText());
                Double S=1.41;
                Double E=0.92;
                //Double sgd =Double.parseDouble(t1.getText());
                Double SGD= USD * S;
                //Double euro =Double.parseDouble(t1.getText());
                Formatter fob=new Formatter();
                fob.format("%.2f",SGD);
                Double Euro=USD * E;
                fob.format("%.2f",Euro);
                t2.setText(""+SGD);
                t3.setText(""+Euro);

            }
            catch(Exception e)
            {
                System.out.println("Enter Vaules in Box");
            }

        }
        public static void main(String []args)
        {
            slip23_2 ob=new slip23_2();
            Scanner sc=new Scanner(System.in);


        }

}
```

---

**Slip24:** Create an abstract class 'Bank' with an abstract method 'getBalance'.
Rs.100, Rs.150 andRs.200 are deposited in banks A, B and C respectively.
'BankA', 'BankB' and 'BankC'
are subclasses of class 'Bank', each having a method named 'getBalance'. Call this methodby creating an object of each of the three classes.

---

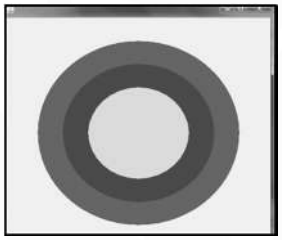
```
abstract class Bank
{
   public abstract void getBalance();
}
class BankA extends Bank
{
   int bal=100;
   public void getBalance()
   {
      System.out.println("Balance of BankA is "+bal);
   }
}
class BankB extends Bank
{
   int bal=150;
   public void getBalance()
   {
      System.out.println("Balance of BankB is "+bal);
   }
}
class BankC extends Bank
{
   int bal=200;
   public void getBalance()
   {
      System.out.println("Balance of BankC is "+bal);
   }
   public static void main(String args[])
   {
```

```
        BankA a=new BankA();
        BankB b=new BankB();
        BankC c=new BankC();
        a.getBalance();
        b.getBalance();
        c.getBalance();
    }
}
```

---

**Slip24_2:** Program that displays three concentric circles where ever the user clicks the mouse on a frame.

The program must exit when user clicks 'X' on the frame.



---

```
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);
    }
}
```

**Slip25_1:**Create a class Student(rollno, name ,class, per), to read student information from the console and display them (Using BufferedReader class)

```
import java.io.* ;

class Student

{

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

            {
```

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

                    BufferedReader br=new BufferedReader(r);

                            System.out.println("Enter name:");
                              String name = br.readLine();

                            System.out.println("Enter roll no.:");

                                    String number=br.readLine();

          System.out.println("Enter percentage:");
             String marks=br.readLine();

                            System.out.println("Enter class");
                                    String classname=br.readLine();

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

                            System.out.println("Roll No.:"+number);

                            System.out.println("Marks:"+marks);

                            System.out.println("Class:"+classname);
}

}
```

---

**Slip25_2:** Create the following GUI screen using appropriate layout manager. Accept the name, class,hobbies from the user and display the selected options in a textbox.

---

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

public class HobbiesDemo extends JFrame implements ActionListener,ItemListener
{
        JLabel l1,l2,l3,l4,l5;
        JTextField tf1;
        JRadioButton rb1,rb2,rb3;
        ButtonGroup bg;
        JCheckBox cb1,cb2,cb3;
        JPanel p1,p2,p3,p4;
```

```
        HobbiesDemo ()
        {
                l1=new JLabel("Your Name : ");
                l2=new JLabel("Your Class :");
           l3=new JLabel("Your Hobbies :");
                l4=new JLabel(" ");
                l5=new JLabel(" ");

                tf1=new JTextField();

        rb1=new JRadioButton("FY");
        rb2=new JRadioButton("SY");
        rb3=new JRadioButton("TY");
        rb1.addActionListener(this);
        rb2.addActionListener(this);
        rb3.addActionListener(this);


        bg=new ButtonGroup();
        bg.add(rb1);
        bg.add(rb2);
        bg.add(rb3);

        cb1=new JCheckBox("Music");
        cb2=new JCheckBox("Dance");
        cb3=new JCheckBox("Sports");
        cb1.addItemListener(this);
        cb2.addItemListener(this);
        cb3.addItemListener(this);

        p1=new JPanel();
        p1.setLayout(new GridLayout(1,2));
        p1.add(l1);     p1.add(tf1);

        p2=new JPanel();
p2.setLayout(new GridLayout(4,1));
p2.add(l2);
        p2.add(rb1);
        p2.add(rb2);
        p2.add(rb3);

        p3=new JPanel();
p3.setLayout(new GridLayout(4,1));
p3.add(l3);
        p3.add(cb1);
        p3.add(cb2);
        p3.add(cb3);
```

```
            p4=new JPanel();
        p4.setLayout(new GridLayout(1,2));
    p4.add(l4);
            p4.add(l5);

            BorderLayout bob=new BorderLayout();
            setLayout(bob);

            add(p1,BorderLayout.NORTH);
            add(p2,BorderLayout.WEST);
            add(p3,BorderLayout.EAST);
            add(p4,BorderLayout.SOUTH);

            setTitle("INFORMATION");
            setSize(500,300);
            setVisible(true);
            setDefaultCloseOperation(EXIT_ON_CLOSE);

    }
    public void actionPerformed(ActionEvent ae)
    {
            String s="NAME : "+tf1.getText()+ " CLASS :  " +ae.getActionCommand();
            l4.setText(s);
    }
    public void itemStateChanged(ItemEvent ie)
    {
            String s="";

            if(cb1.isSelected())
                    s=s+cb1.getText()+" ";
            if(cb2.isSelected())
                    s=s+cb2.getText()+" ";
            if(cb3.isSelected())
                    s=s+cb3.getText()+" ";
            l5.setText(" HOBBIES : "+s);
    }

    public static void main(String args[])
    {
            HobbiesDemo hob=new HobbiesDemo();
    }
}
```

**Slip26_1:** Define a Item class (item_number, item_name, item_price). Define a default and parameterized constructor. Keep a count of objects created. Create objects using parameterized constructor and display the object count after each object is created.(Use static member and method). Also display the contents of each object

class Item

```
{
   int ino;
   String iname;
   double iprice;
   static int count=0;
   Item()
   {  }
   Item(int no,String nm,double d)
   {
      ino=no;
      nm=iname;
      iprice=d;
      count++;
   }
   public  void display()
   {
      System.out.println("Total objects created "+count);
      System.out.println(ino+" "+iname+" "+iprice);
   }
   public static void main(String args[])
   {
     Item ob1=new Item(1,"Laptop",20000.00);
     ob1.display();
     Item ob2=new Item(1,"Laptop",20000.00);
     ob2.display();
   }
}
```

---

**Slip26_2**: Define a class 'Donor' to store the below mentioned details of a blood donor. name, age, address, contactnumber, bloodgroup, date of last donation. Create 'n' objects of this class for all the regular donors at Pune. Write these objects to a file. Read these objects from the file and display only those donors' details whose blood group is 'A+ve' and had not donated for the recent six months.

---

```
import java.io.*;
import java.util.*;

 class Donor
{
        String name, address,group;
        int age, contact, lod;

        public Donor(String Name,String address, String group,int age,int contact,int lod)
        {
                this.name=name;
                this.address=address;
                this.group=group;
                this.age=age;
```

```
                this .contact=contact;
                this.lod=lod;
        }

        public static void main(String args[])
        {
                Scanner s=new Scanner(System.in);
        System.out.println("Enter how many records you want");
        int n=s.nextInt();
try
{
ObjectOutputStream o=new ObjectOutputStream(new FileOutputStream("save.txt"));
Donor d[]=new Donor[n];
for(int i=0;i<n;i++)
{
        System.out.println("Name: ");
        String name=s.next();
        System.out.println("Age: ");
        int age=s.nextInt();
        System.out.println("Address: ");
        String address=s.next();
        System.out.println("Contact: ");
        String contact=s.next();
        System.out.println("Group: ");
        String group=s.next();
        System.out.println("Last donation: ");
        int lod=s.nextInt();
        o.writeObject(d[i]);
}
}
catch(IOException e)
{
System.out.println(e);
}
try
{
ObjectInputStream z=new ObjectInputStream(new FileInputStream("save.txt"));
for(int i=0;i<n;i++)
{
Donor d=(Donor)z.readObject();
if(d.group.equals("A+ve")&&d.lod>=6)
System.out.println(d);
}
}
catch(Exception e)
{
        System.out.println(e);
}
```

```
}
}
```

**Slip27_1:** Define an Employee class with suitable attributes having getSalary() method, which returns salary withdrawn by a particular employee. Write a class Manager which extends a class Employee, override the getSalary() method, which will return salary of manager by adding traveling allowance, house rent allowance etc.

```
import java.util.*;
class Employee
{
	int BasicSalary=35000;
	public void getSalary()
	{
		System.out.println("Employee Salary:"+BasicSalary);
	}

}
class Manager extends Employee
{
	int traveling =2000;
	int rent =5000;

	public void getSalary()
	{

		System.out.println("Manager Salary:"+(BasicSalary+traveling+rent));
		System.out.println("Basic Salary:"+BasicSalary);
		System.out.println("Travaling Allowance:"+traveling);
		System.out.println("House rent:"+rent);

	}
	public static void main(String[] args)
	{
		Scanner sc=new Scanner(System.in);
		System.out.println("Press 1 for Employee Salary and 0 for Manager");
		int ch=sc.nextInt();
		if(ch==1)
		{
			Employee Eob=new Employee();
			Eob.getSalary();
		}
		else if(ch == 0)
		{
			Manager Mob=new Manager();
			Mob.getSalary();
		}
		else
```

```
                System.out.println("Entered Wrong Choice");

        }
}
```

---

**Slip27_2:** Write a program to accept a string as command line argument and check whether it is a file ordirectory. Also perform operations as follows:

i) If it is a directory,delete all text files in that directory. Confirm delete operation from user before deleting text files. Also, display a count showing the number of files deleted,if any, from the directory.

ii) If it is a file display various details of that file.

---

```
import java.util.*;
import java.io.*;

class slip27_2
{

        public static void main(String[] args)
        {
                Scanner sc=new Scanner(System.in);
                String fname=args[0];
                File f=new File(fname);
                if(f.isFile())
                {
                        System.out.println("File Name:"+ f.getName());
                        System.out.println("File Length:"+ f.length());
                        System.out.println("File Absolute Path:"+ f.getAbsolutePath());
                        System.out.println("File Path:"+ f.getPath());

                }
                else if(f.isDirectory())
                {
                        System.out.println("Sure you want Delete All Files (Press 1)");
                        int n=sc.nextInt();
                        if(n==1)
                        {
                                String[] s1=f.list();
                                String a=".txt";
                                for(String str: s1)
                                {
                                        System.out.println(str);
                                        if(str.endsWith(a))
                                        {
                                                File f1=new File(fname, str);
                                                System.out.println(str+"-->Deleted");
                                                f1.delete();
```

```
                        }
                    }

                }
                else
                    System.out.println("OKKKK");
            }
        }
}
```

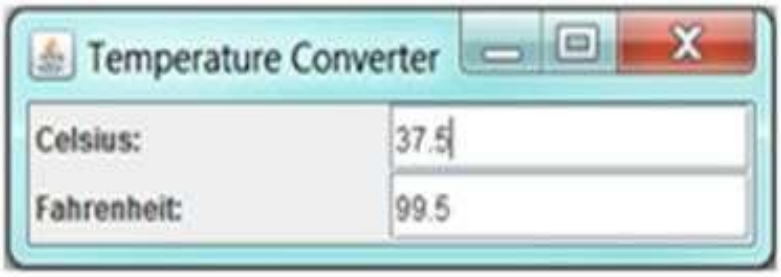
**Slip28_1:** Write a program that reads on file name from the user, then displays information about whether the file exists, whether the file is readable, whether the file is writable, the type of file and the length of the file in bytes.

```
import java.util.*;

import java.io.*;

class FileReader

{

    public static void main(String ar[])

    {

        Scanner sc=new Scanner(System.in);

        System.out.println("enter file name");


        String f1=sc.next();

        File f=new File(f1);


        if(f.exists())

        {

            System.out.println("Name of the File is "+f.getName());


            if(f.canRead())

                System.out.println("File is Readable ");

            else

                System.out.println("File is not Readable ");
```

```
                if(f.canWrite())
                        System.out.println("File is Writeable");
                else
                        System.out.println("File is not Writeable");


                        System.out.println("Length of the File= "+f.length());
        }
        else
                System.out.println("File not found!");
    }
}
```

**Slip28_2:** Write a program called SwingTemperatureConverter to convert temperature values between Celsius and Fahrenheit. User can enter either the Celsius or the Fahrenheit value, in floating-point number. Hints: To display a floating-point number in a specific format (e.g., 1 decimal place), use the static method String.format(), which has the same form

as printf(). For example, String.format("%.1f", 1.234) returns String "1.2".




```
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);
}

}
```

**Slip29_1:** Write a program to create a class Customer(custno,custname,contactnumber,custaddr). Write a method to search the customer name with given contact number and display the details.

```
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:** Write a program to create a super class Vehicle having members Company and price.

Derive two different classes LightMotorVehicle(mileage) and HeavyMotorVehicle (capacity_in_tons). Accept the information for "n" vehicles and display the information inappropriate form. While taking data, ask user about the type of vehicle first.

```
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);
```

```
   }
}

class Sa3
{
 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;
  }
 }

}
```

**Slip30_1:** Write program to define class Person with data member as Personname,Aadharno, Panno. Accept information for 5 objects and display appropriate information (use this keyword).

```
import java.util.*;
class person
{
	String Personname;
	int Adharno, Panno;

	public void display()
	{
		System.out.println("Name of the Person:"+Personname+"    "+ "Adhar number is: "+ Adharno+"    "+"Pan numberis:"+ Panno);
	}

	public void accept()
	{
		Scanner sc=new Scanner(System.in);
		System.out.println("Enter name of the person:");
		Personname=sc.next();
		System.out.println("Enter Adhar number of the person:");
		Adharno=sc.nextInt();
		System.out.println("Enter Pan number of the person:");
		Panno=sc.nextInt();
	}

	public static void main(String args[])
	{ int i;
		person ob=new person();
		for(i=1;i<=5;i++)
		{
			ob.accept();
			ob.display();
		}
	}
}
```

**Slip30_2:** Write a program that creates a user interface to perform integer divisions. The user enters two numbers in the text fields, Number1 and Number2. The division of Number1 and Number2 is displayed in the Result field when the Divide button is clicked. If Number1 or Number2 were not an integer, the program would throw a NumberFormatException. If Number2 were Zero, the program would throw an Arithmetic Exception Display the exception in a message
dialog box

```
import javax.swing.*;
import java.awt.*;
import java.awt.event.*;
class Division extends JFrame implements ActionListener
{
		JButton btn1;
		JTextField t1,t2;
		JLabel l1,l2,Result;
		Division()
		{
				t1=new JTextField(10);
				t2=new JTextField(10);
				Result=new JLabel();
				l1=new JLabel("Enter First number");
				l2=new JLabel("Enter Second number");
				btn1=new JButton("Divide");
				add(l1);
				add(t1);
				add(l2);
				add(t2);
				add(btn1);
				add(Result);
				setLayout(new FlowLayout());
				btn1.addActionListener(this);
				setVisible(true);
				setSize(300,400);
		}
		public void actionPerformed(ActionEvent ae)
		{
				try
				{
					int v1=Integer.parseInt(t1.getText());
					int v2=Integer.parseInt(t2.getText());
					int ans=v1/v2;

					Result.setText(ans+" ");
				}
				 catch(NumberFormatException e)
				 {
					System.out.println("Enter a valid number!");
				 }
```

```
                        catch(ArithmeticException o)
                        {
                                System.out.println("Divided by zero");
                        }
                }
                public static void main(String args[])
        {
                Division ob1=new Division();
        }
}
```

---