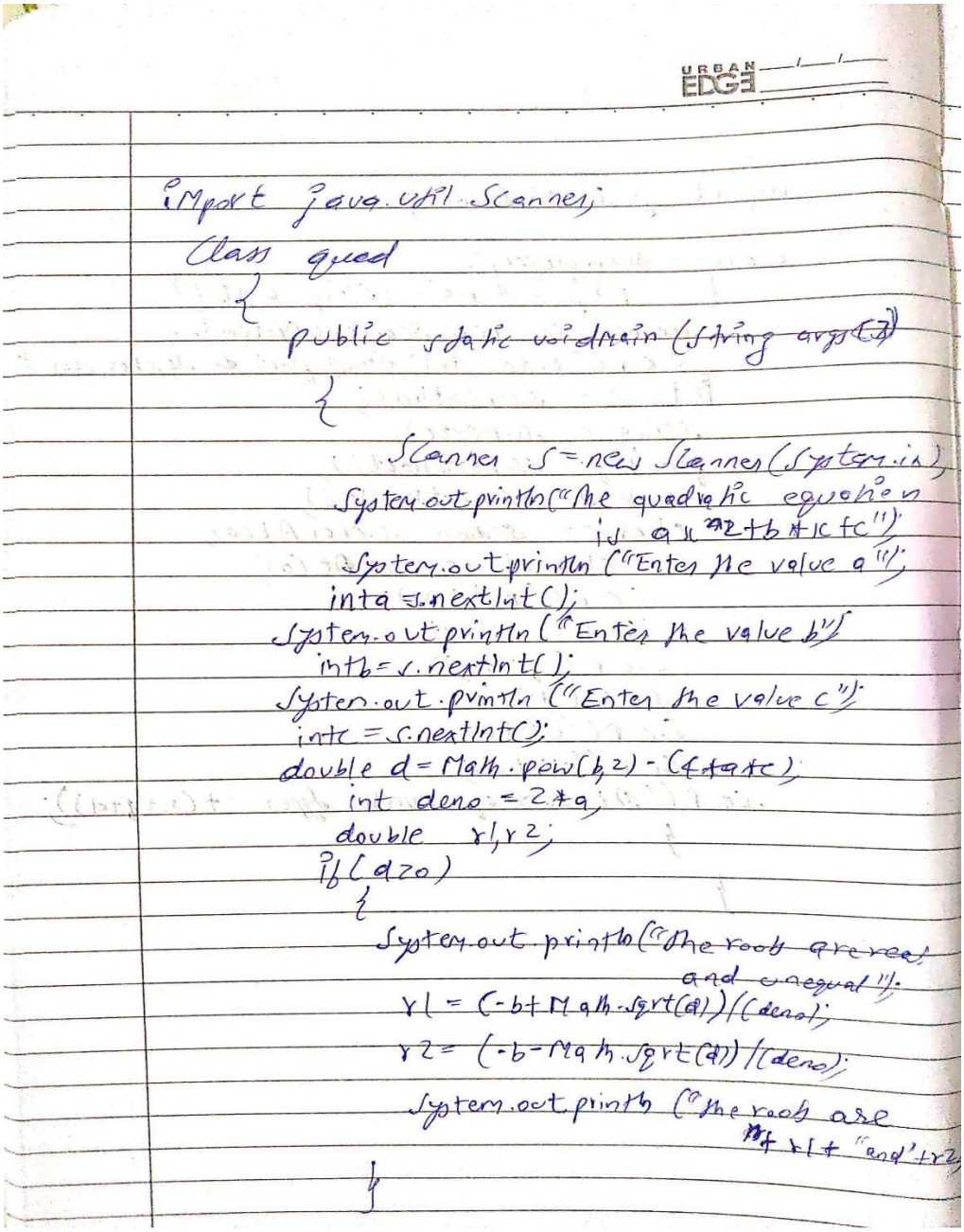
LAB PROGRAM-1

Develop a Java program that prints all real solutions to the quadratic equation ax2 +bx+c = 0. Read in a, b, c and use the quadratic formula. If the discriminate b2-4ac is negative, display a message stating that there are no real solutions.



```
import java.util.Scanner;
class quad
{
    public static void main(String args[])
    {
        Scanner s=new Scanner(System.in);
        System.out.println("the quadratic equation
                            is ax**2+bx+c");
        System.out.println("Enter the value a");
        int a=s.nextInt();
        System.out.println("Enter the value b");
        int b=s.nextInt();
        System.out.println("Enter the value c");
        int c=s.nextInt();
        double d=Math.pow(b,2)-(4*a*c);
        int deno=2*a;
        double r1,r2;
        if(d>0)
        {
            System.out.println("the roots are real
                                and unequal");
            r1=(-b+Math.sqrt(d))/(deno);
            r2=(-b-Math.sqrt(d))/(deno);
            System.out.println("the roots are
                                "+r1+" and "+r2);
        }
```

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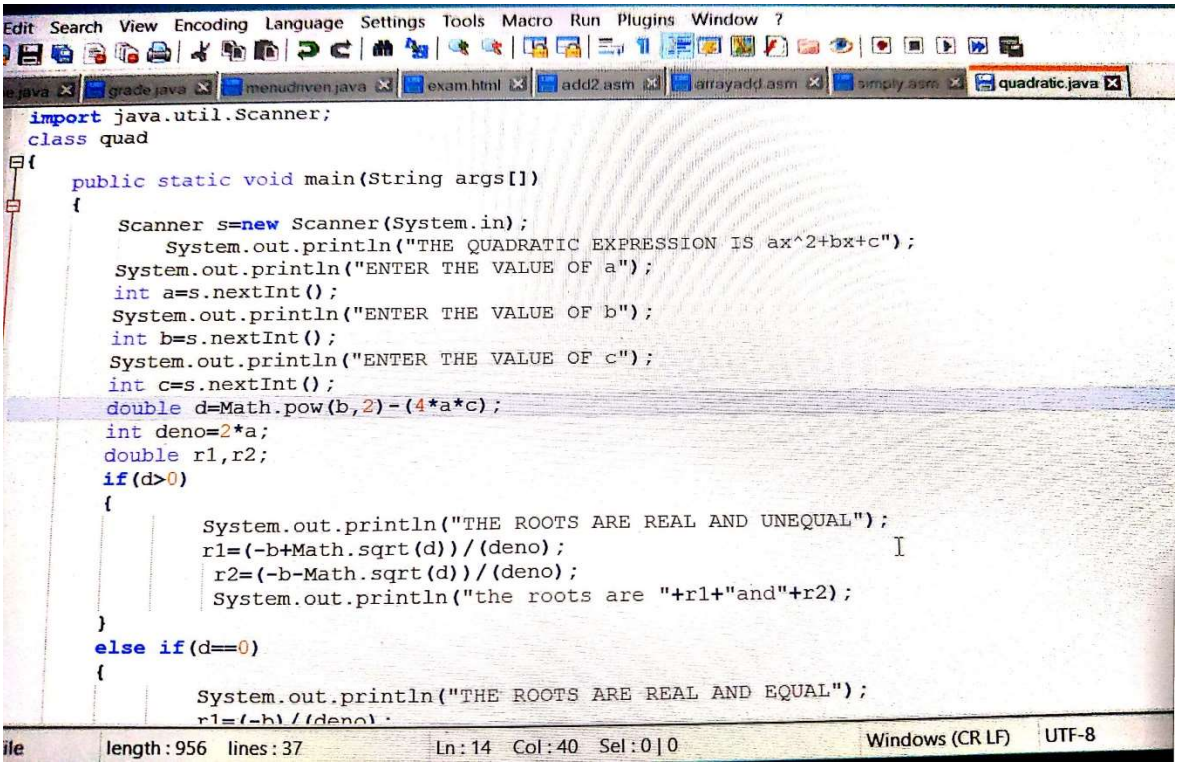
```
else if (d == 0)
  {
    System.out.println("The roob are
                        real and equal");

    r1 = (-b)/(deno);

    r2 = (-b)/(deno);
    System.out.println("The roob are"
                        +r1+"and"+
                        r2);

  }
  else
    {
    System.out.println("there are no
                        real solutions for
                        the equation");

    }

  }
}
```



```
import java.util.Scanner;
class quad
{
    public static void main(String args[])
    {
        Scanner s=new Scanner(System.in);
            System.out.println("THE QUADRATIC EXPRESSION IS ax^2+bx+c");
        System.out.println("ENTER THE VALUE OF a");
        int a=s.nextInt();
        System.out.println("ENTER THE VALUE OF b");
        int b=s.nextInt();
        System.out.println("ENTER THE VALUE OF c");
        int c=s.nextInt();
        double d=Math.pow(b,2)-(4*a*c);
        int deno=2*a;
        double r1,r2;
        if(d>0)
        {
                System.out.println("THE ROOTS ARE REAL AND UNEQUAL");
                r1=(-b+Math.sqrt(d))/(deno);
                 r2=(-b-Math.sqrt(d))/(deno);
                 System.out.println("the roots are "+r1+"and"+r2);
        }
        else if(d==0)
        {
                System.out.println("THE ROOTS ARE REAL AND EQUAL");
```

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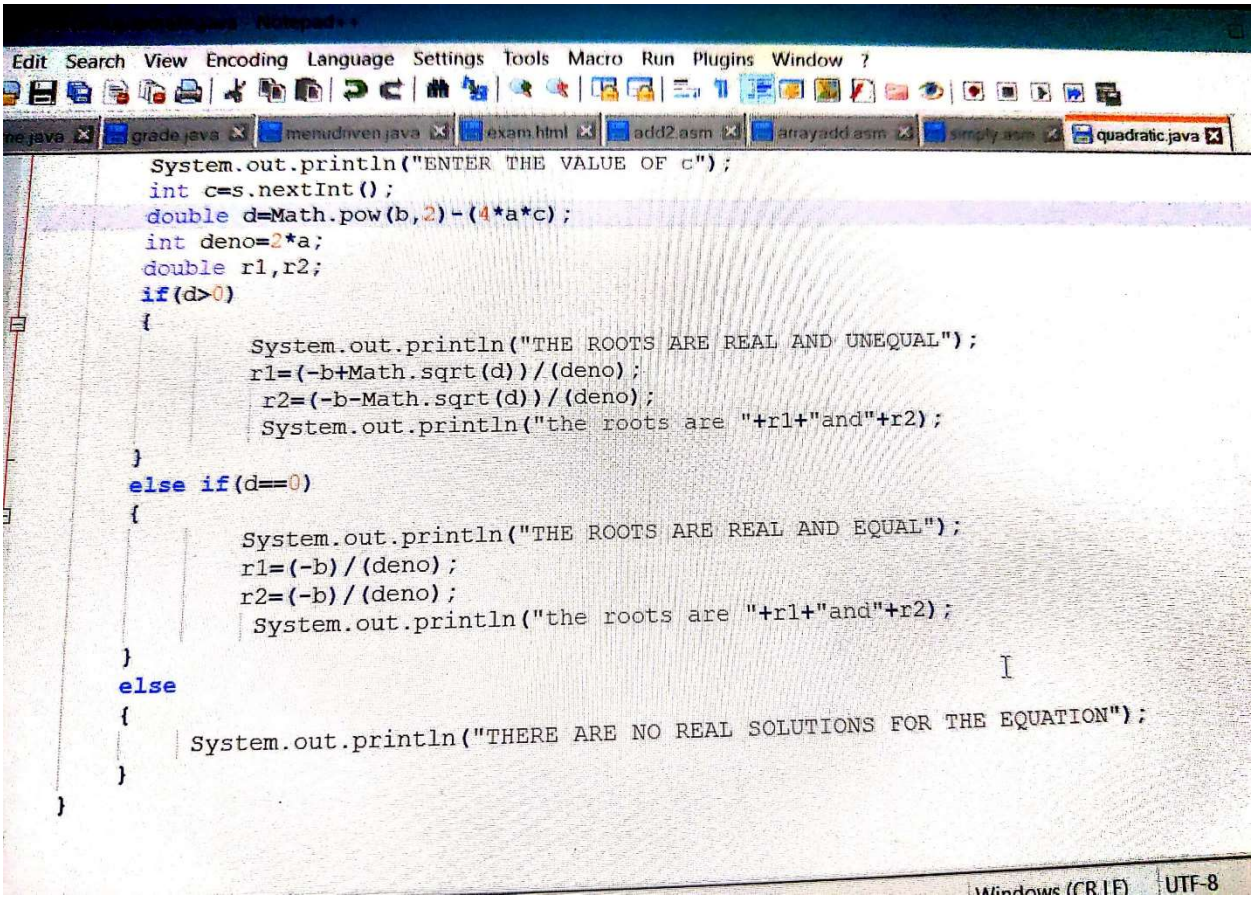

```
        System.out.println("ENTER THE VALUE OF c");
        int c=s.nextInt();
        double d=Math.pow(b,2)-(4*a*c);
        int deno=2*a;
        double r1,r2;
        if(d>0)
        {
                System.out.println("THE ROOTS ARE REAL AND UNEQUAL");
                r1=(-b+Math.sqrt(d))/(deno);
                 r2=(-b-Math.sqrt(d))/(deno);
                 System.out.println("the roots are "+r1+"and"+r2);
        }
        else if(d==0)
        {
                System.out.println("THE ROOTS ARE REAL AND EQUAL");
                r1=(-b)/(deno);
                r2=(-b)/(deno);
                 System.out.println("the roots are "+r1+"and"+r2);
        }
        else
        {
            System.out.println("THERE ARE NO REAL SOLUTIONS FOR THE EQUATION");
        }
    }
```

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grade.java | menudriven.java | exam.html | add2.asm | arrayadd.asm | simply.asm | quadratic.java

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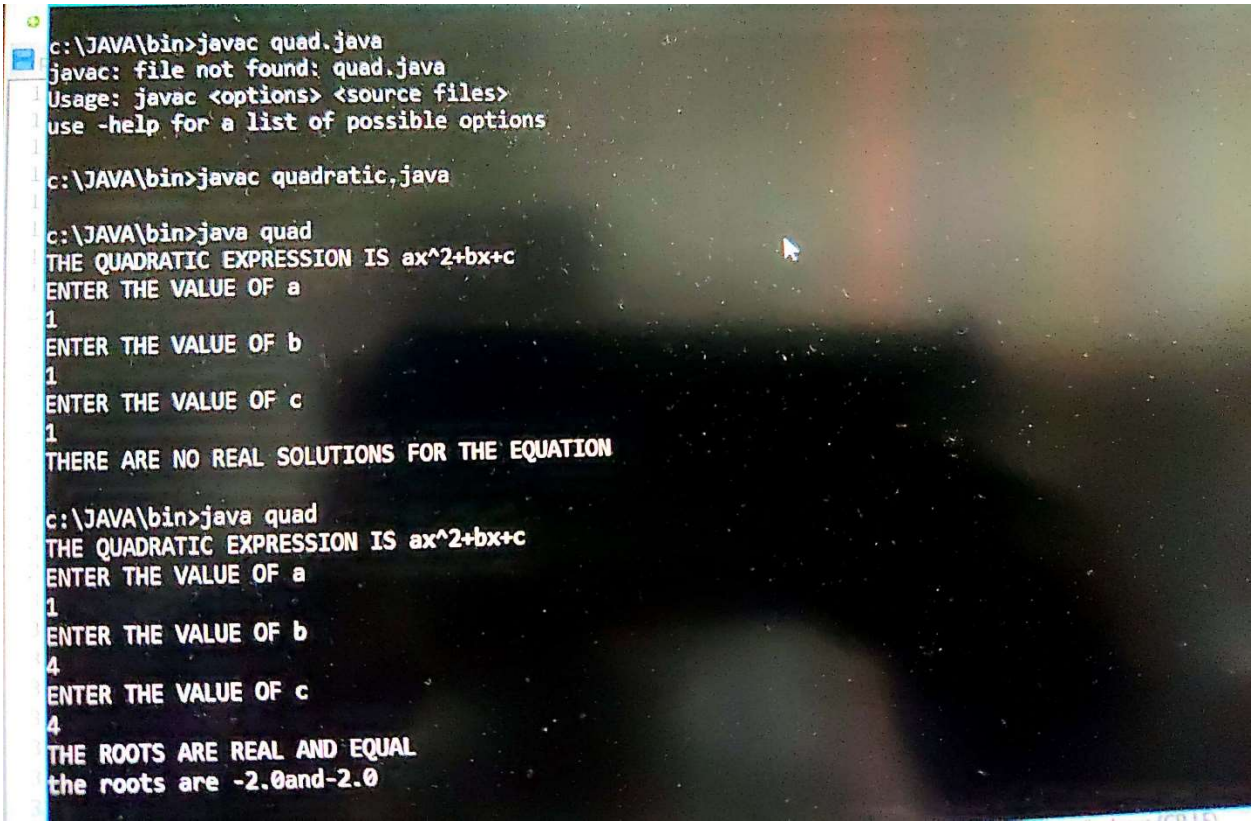

LAB PROGRAM-2

Develop a Java program to create a class Student with members usn, name, an arraycredits and an array marks. Include methods to accept and display details and a method to calculate SGPA of a student.

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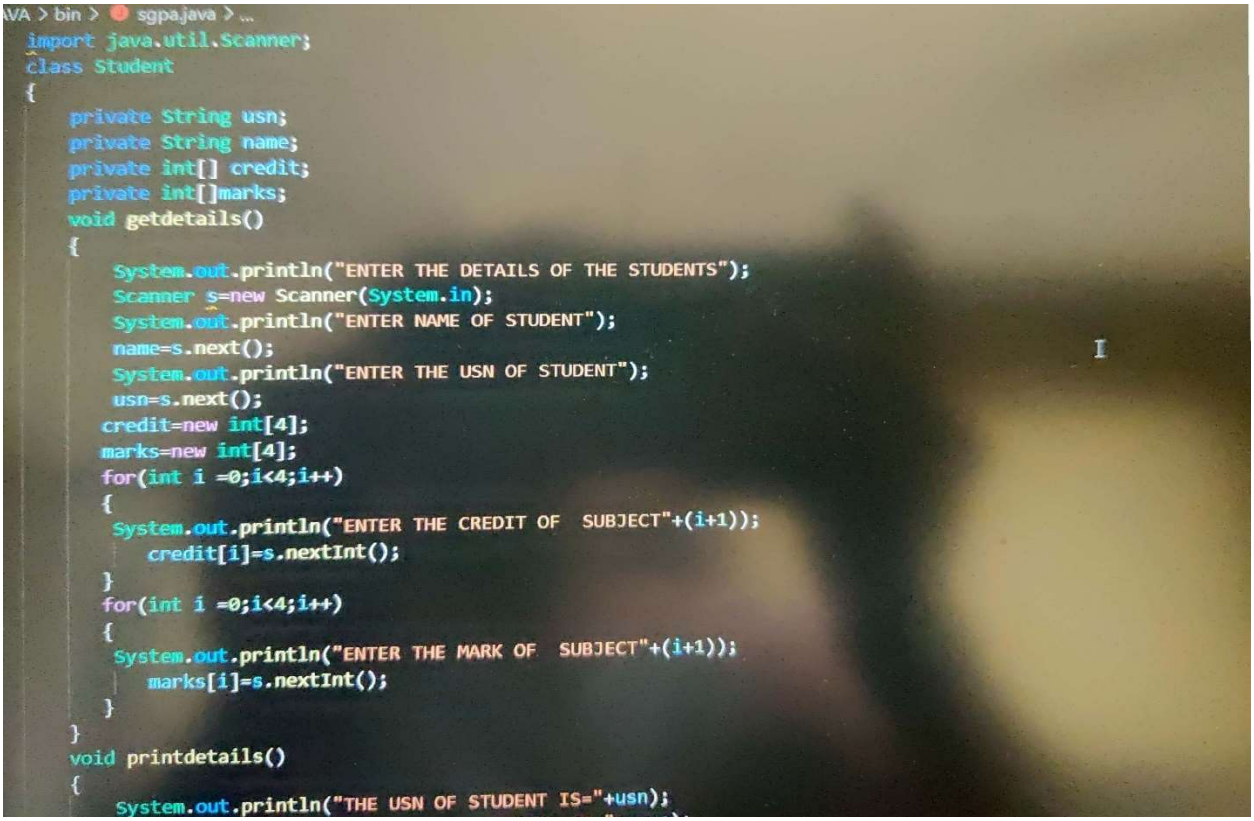
Lab program-2

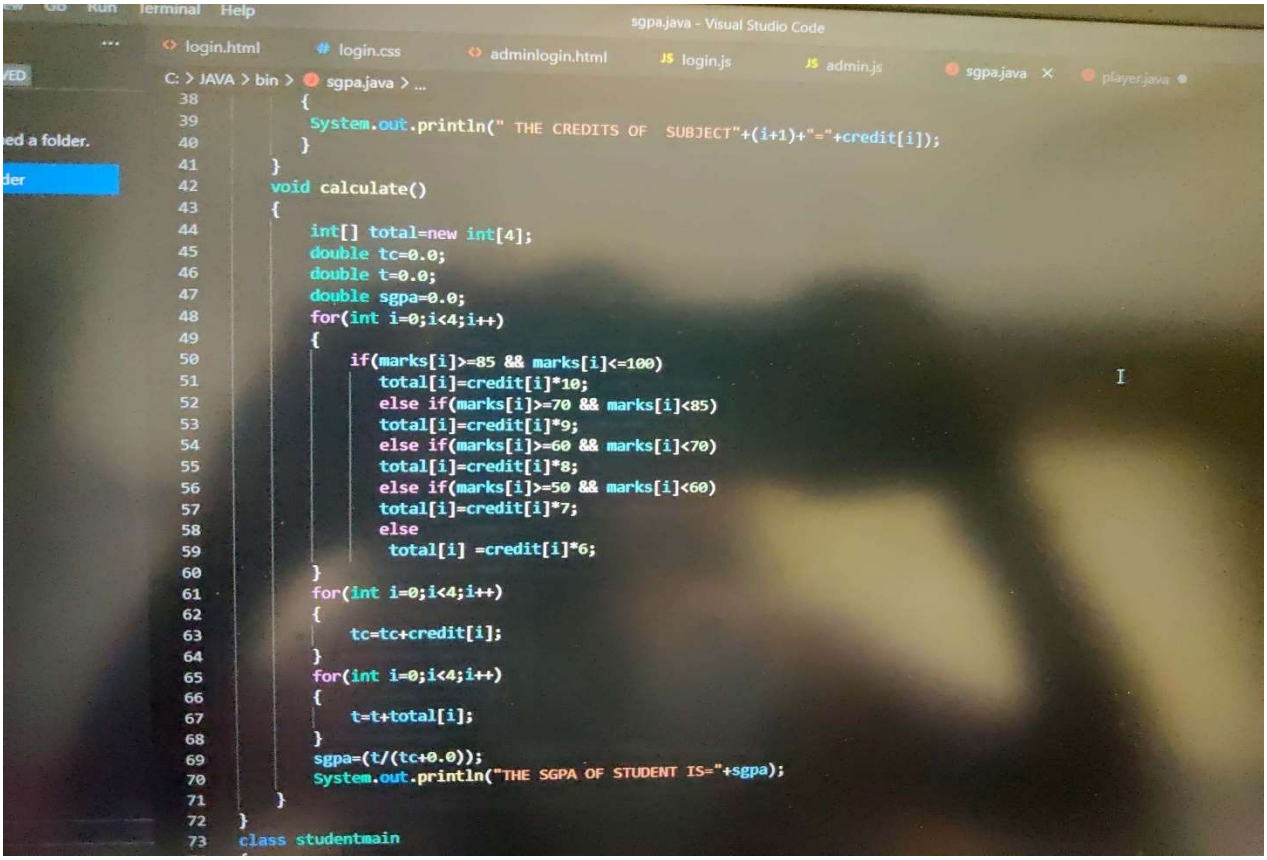
```
import java.util.Scanner;
class student
{
    private String usn;
    private String name;
    private int[] credit;
    private int[] marks;
    void getdetails()
    {
        sop("enter details of student");
        Scanner s=new Scanner(System.in);
        sop("Enter name");
        name=s.next();
        sop("Enter USN");
        usn=s.next();
        credit=new int[4];
        Marks=new int[4];
        for(int i=0;i<4;i++)
        {
            sop("Enter credit of subject"+(i+1));
            credit[i]=s.nextInt();
        }
        for(int i=0;i<4;i++)
        {
            sop("Enter mark of subject"+(i+1));
            marks[i]=s.nextInt();
        }
    }
    Void printdetails()
    {
```

```
SOP("USN of student is = "+usn);
SOP("Name of student is "+name);
for(int i=0; i<4; i++)
    {
        SOP("Mark of subj "+(i+1)+" = "+mark[i]);
    }
for(int i=0; i<4; i++)
    {
        SOP("Credits of subject "+(i+1)+" = "+credit[i]);
    }
}
Void calculate()
{
int[] total = new int[4];
    double tc = 0.0;
    double t = 0.0;
    double sgpa = 0.0;
for(int i=0; i<4; i++
    {
        if(mark[i]>=85 && mark[i]<=100)
            total[i] = credit[i] * 10;
    else if(mark[i]>=70 && mark[i]<85)
            total[i] = credit[i] * 9;
    else if(mark[i]>=60 && mark[i]<70)
            total[i] = credit[i] * 8;
```

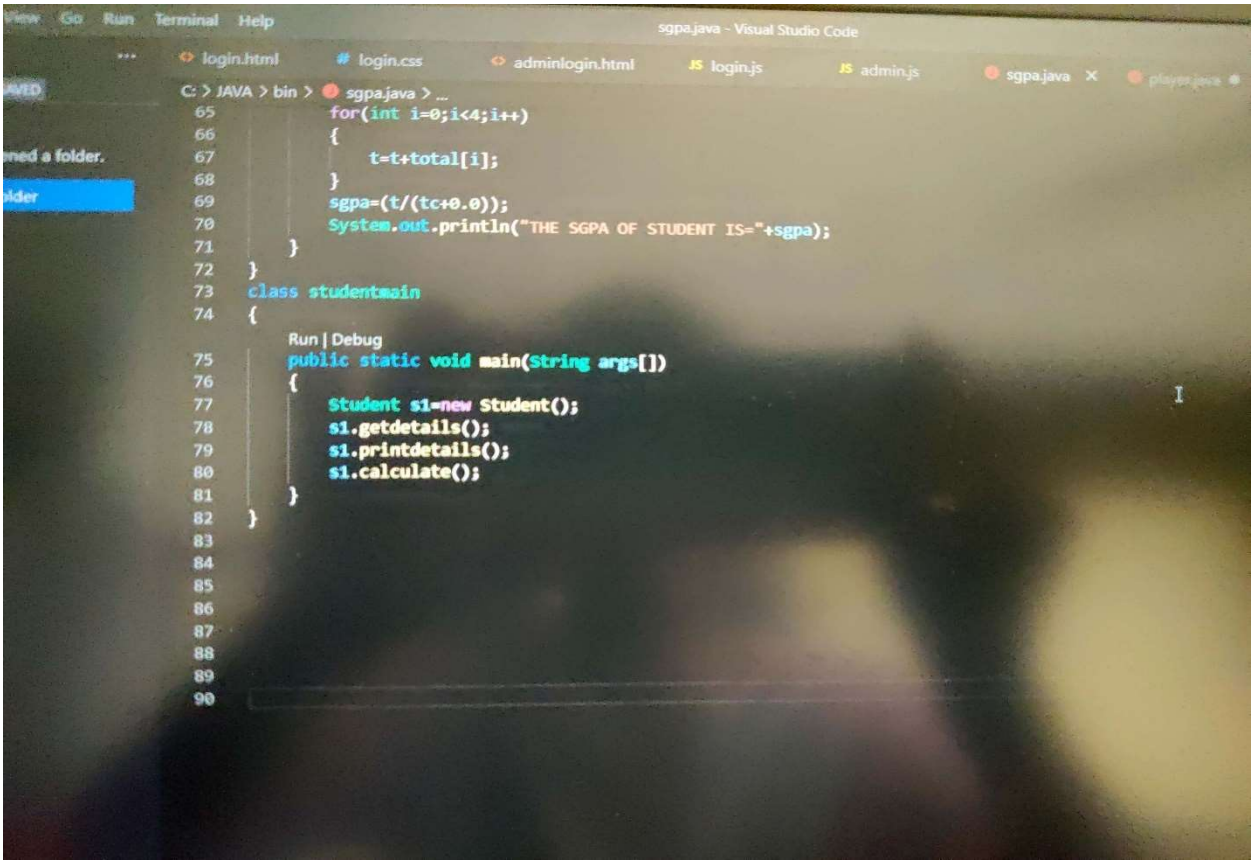
```
else if (Mark[i]>=50&& Mark[i]<60)
        total[i]=credit[i]*7;
        else
            total[i]= credit[i]*6;
    }

for(int i=0;i<4;i++)
    {
        tc= tc+credit[i];
    }
    for (int i=0;i<4;i++)
        {
            t=t+total[i];
        }
        sgpa= (t/(tc*10));
        System.out.println("The sgpa of student is"+sgpa);
    }
}
class studentmain
  {
    public static void main (String arg[])
        {
          student s1=new student();
            s1.getdetails();
            s1.printdetails();
            s1.calculate();
        }
    }
```

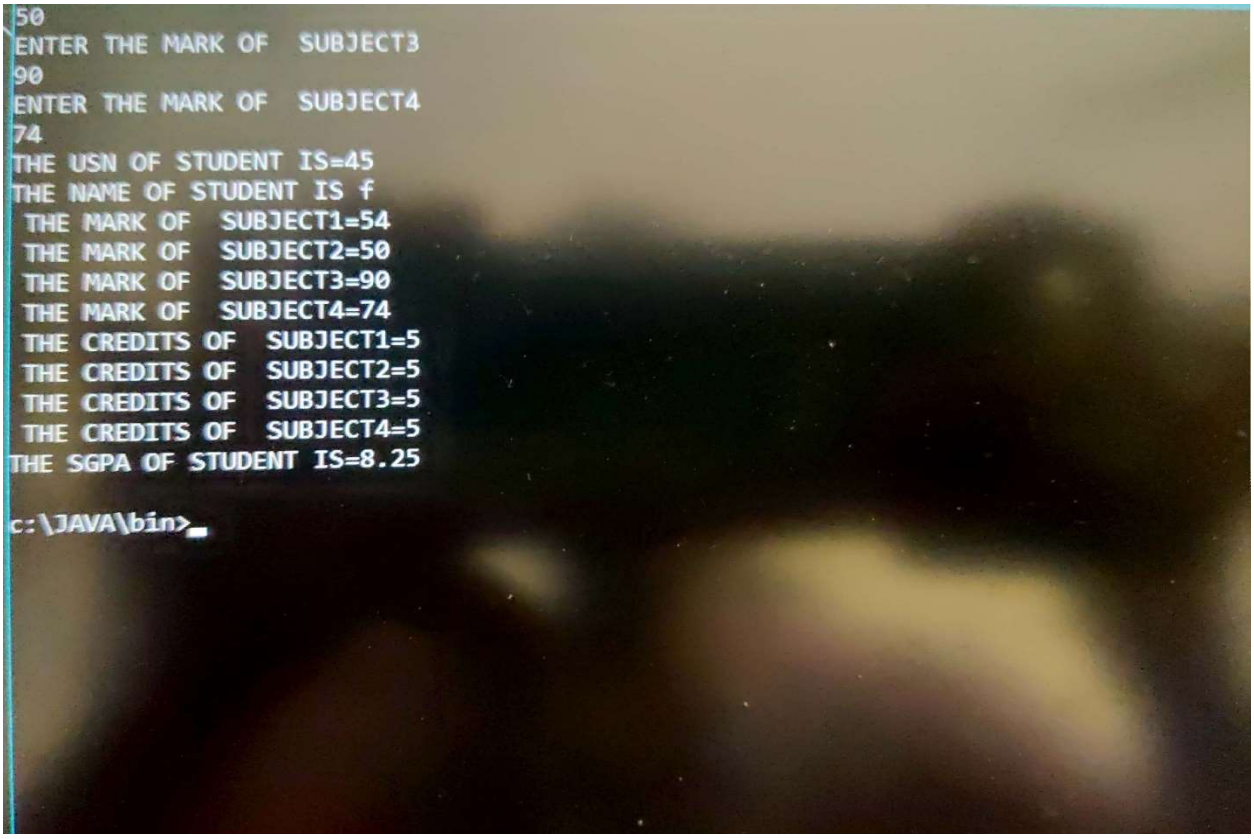


```
\VA > bin > sgpa.java > ...
import java.util.Scanner;
class Student
{
    private String usn;
    private String name;
    private int[] credit;
    private int[]marks;
    void getdetails()
    {
        System.out.println("ENTER THE DETAILS OF THE STUDENTS");
        Scanner s=new Scanner(System.in);
        System.out.println("ENTER NAME OF STUDENT");
        name=s.next();
        System.out.println("ENTER THE USN OF STUDENT");
        usn=s.next();
       credit=new int[4];
       marks=new int[4];
       for(int i =0;i<4;i++)
       {
        System.out.println("ENTER THE CREDIT OF  SUBJECT"+(i+1));
           credit[i]=s.nextInt();
       }
       for(int i =0;i<4;i++)
       {
        System.out.println("ENTER THE MARK OF  SUBJECT"+(i+1));
           marks[i]=s.nextInt();
       }
    }
    void printdetails()
    {
        System.out.println("THE USN OF STUDENT IS="+usn);
```



```
Run  Terminal  Help                                    sgpa.java - Visual Studio Code
login.html  login.css  adminlogin.html  login.js  admin.js  sgpa.java  player.java
C: > JAVA > bin > sgpa.java > ...
ed a folder.
der
38              {
39               System.out.println(" THE CREDITS OF  SUBJECT"+(i+1)+"="+credit[i]);
40              }
41          }
42          void calculate()
43          {
44              int[] total=new int[4];
45              double tc=0.0;
46              double t=0.0;
47              double sgpa=0.0;
48              for(int i=0;i<4;i++)
49              {
50                  if(marks[i]>=85 && marks[i]<=100)
51                     total[i]=credit[i]*10;
52                     else if(marks[i]>=70 && marks[i]<85)
53                     total[i]=credit[i]*9;
54                     else if(marks[i]>=60 && marks[i]<70)
55                     total[i]=credit[i]*8;
56                     else if(marks[i]>=50 && marks[i]<60)
57                     total[i]=credit[i]*7;
58                     else
59                      total[i] =credit[i]*6;
60              }
61              for(int i=0;i<4;i++)
62              {
63                  tc=tc+credit[i];
64              }
65              for(int i=0;i<4;i++)
66              {
67                  t=t+total[i];
68              }
69              sgpa=(t/(tc+0.0));
70              System.out.println("THE SGPA OF STUDENT IS="+sgpa);
71          }
72      }
73      class studentmain
```


View Go Run Terminal Help
sgpa.java - Visual Studio Code
login.html
login.css
adminlogin.html
login.js
admin.js
sgpa.java
C: > JAVA > bin > sgpa.java > ...
for(int i=0;i<4;i++)
{
t=t+total[i];
}
sgpa=(t/(tc+0.0));
System.out.println("THE SGPA OF STUDENT IS="+sgpa);
}
}
class studentmain
{
Run | Debug
public static void main(String args[])
{
Student s1=new Student();
s1.getdetails();
s1.printdetails();
s1.calculate();
}
}


50
ENTER THE MARK OF SUBJECT3
90
ENTER THE MARK OF SUBJECT4
74
THE USN OF STUDENT IS=45
THE NAME OF STUDENT IS f
THE MARK OF SUBJECT1=54
THE MARK OF SUBJECT2=50
THE MARK OF SUBJECT3=90
THE MARK OF SUBJECT4=74
THE CREDITS OF SUBJECT1=5
THE CREDITS OF SUBJECT2=5
THE CREDITS OF SUBJECT3=5
THE CREDITS OF SUBJECT4=5
THE SGPA OF STUDENT IS=8.25
c:\JAVA\bin>

LAB PROGRAM-3

Create a class Book which contains four members: name, author, price,num_pages. Include a constructor to set the values for the members. Include methods to set and get the details of the objects. Include a toString( ) method that could display the complete details of the book. Develop a Java program to create n book objects.

Info about toString( ) method:

```
class Test
{
int a=10;

public String toString() // when an object is printed this method is automatically called
{ return(&amp;quot;a=&amp;quot;+a);} //return statement with String is required
}

class TestMain
{
public static void main (String ss[])
{
Test t1=new Test ();
System.out.println (t1);
//t1 - First example where an object is printed directly
//calls toString method with the object given as the invoking object
}
}
```

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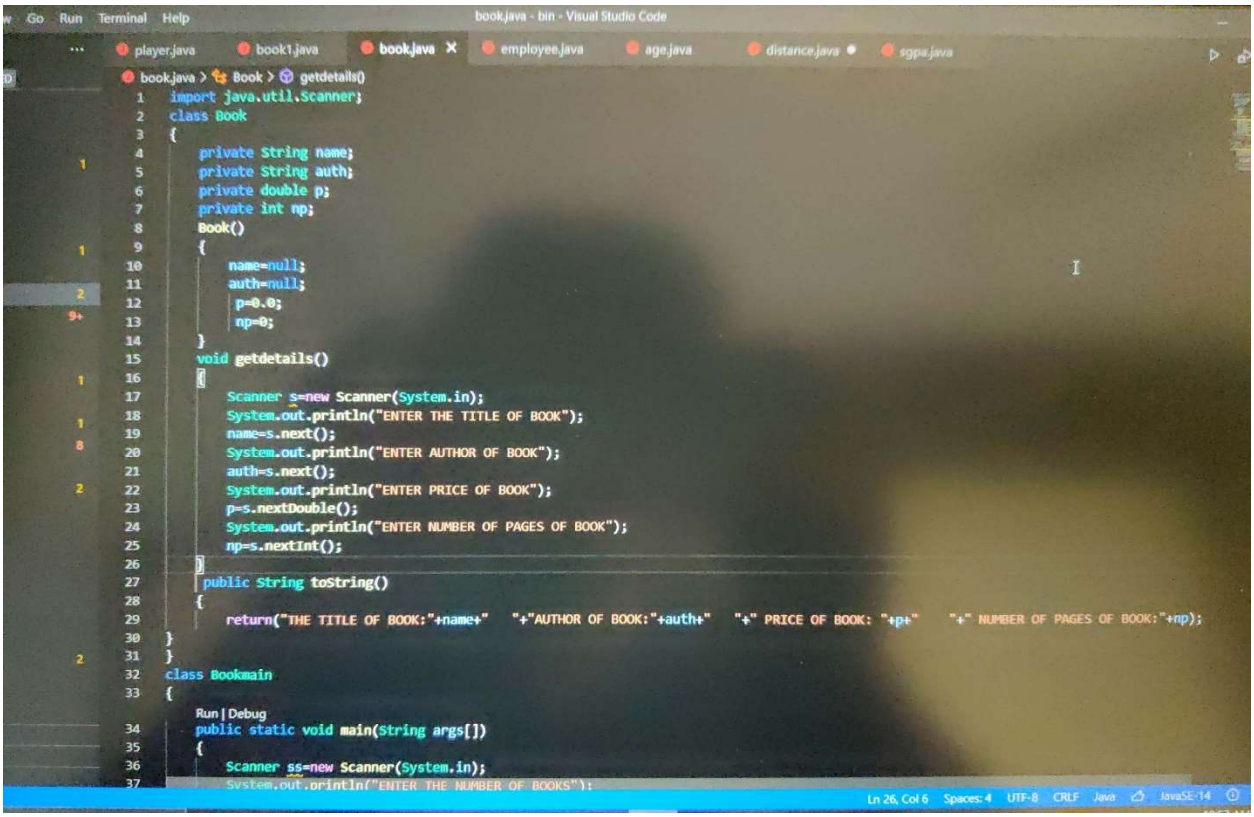
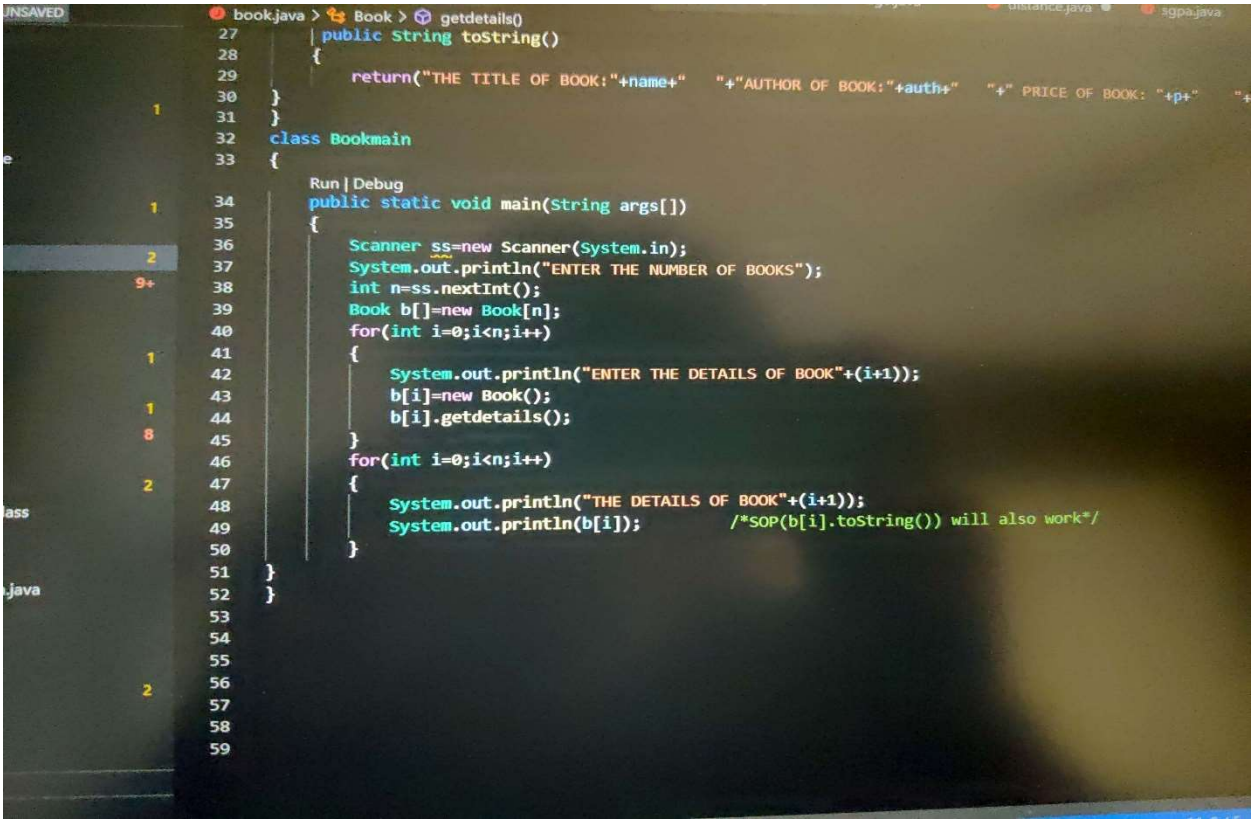
LAB 3 program

```
import java.util.Scanner;
class Book
{
    private String name;
    private String auth;
    private double p;
    private int np;

    Book()
    {
        name=null;
        auth=null;
        p=0.0;
        np=0;
    }
    void getdetails()
    {
        Scanner s = new Scanner(System.in);

        SOP("Enter title of the book");
        name=s.next();
        SOP("Enter author of the book");
        auth=s.next();
        SOP("Enter price of book");
        p=s.nextDouble();
        SOP("Enter no of pages of book");
        np=s.nextInt();
    }
```

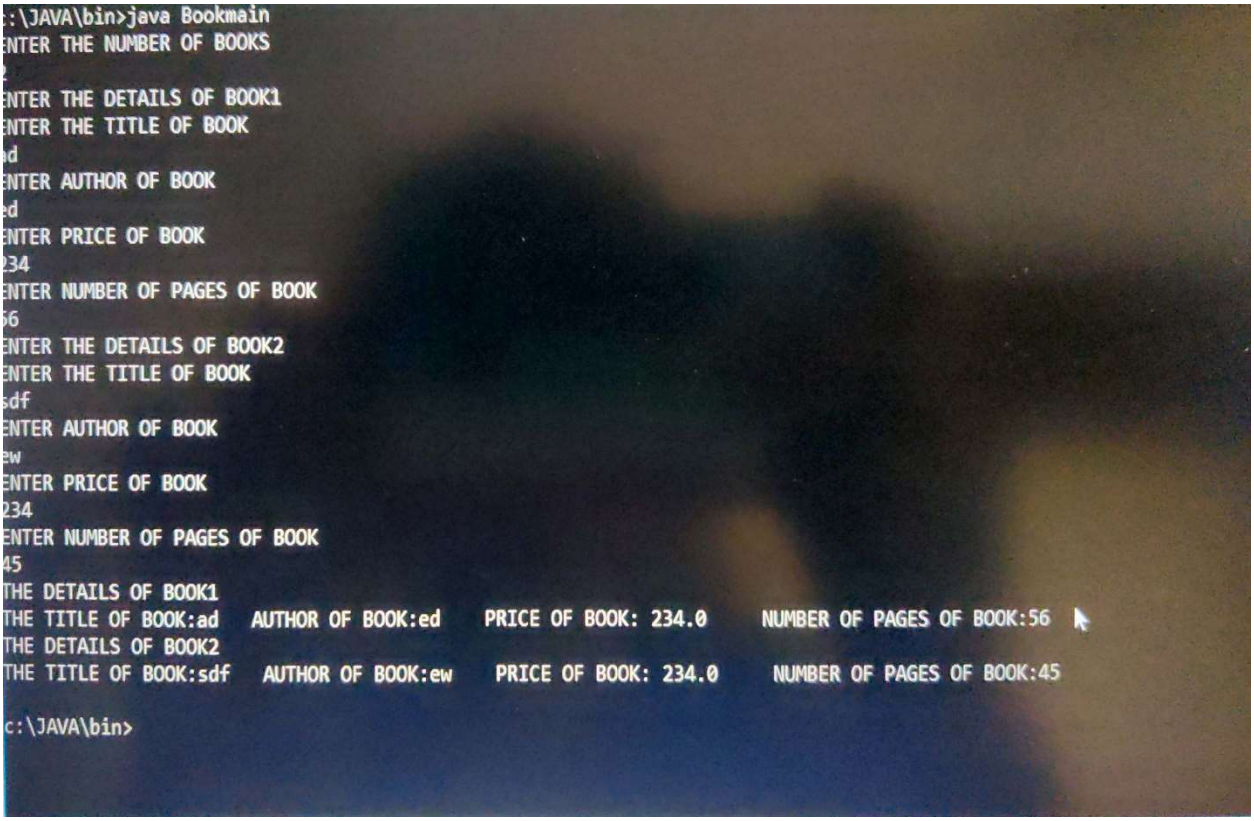
```
public String toString()
{
return("The title of book:"+name+" "+"Author of
book:"+auth+" "+"Price of book:"+pt
+" "+"No of pages:"+np);
}

class bookmain
{
public static void main(String args[])
{
Scanner ss=new Scanner(System.in);
SOP("Enter no of books");
int n=ss.nextInt();
Book b[]=new Book[n];
for(int i=0;i<n;i++)
{
SOP("Enter details of book"+(i+1));
b[i]=new Book();
b[i].getdetails();
}
for(int i=0;i<n;i++)
{ SOP("details of book"+(i+1));
SOP(b[i]);
}}}
```



```
import java.util.Scanner;
class Book
{
    private String name;
    private String auth;
    private double p;
    private int np;
    Book()
    {
        name=null;
        auth=null;
        p=0.0;
        np=0;
    }
    void getdetails()
    {
        Scanner s=new Scanner(System.in);
        System.out.println("ENTER THE TITLE OF BOOK");
        name=s.next();
        System.out.println("ENTER AUTHOR OF BOOK");
        auth=s.next();
        System.out.println("ENTER PRICE OF BOOK");
        p=s.nextDouble();
        System.out.println("ENTER NUMBER OF PAGES OF BOOK");
        np=s.nextInt();
    }
    public String toString()
    {
        return("THE TITLE OF BOOK:"+name+"   "+"AUTHOR OF BOOK:"+auth+"   "+" PRICE OF BOOK: "+p+"    "+" NUMBER OF PAGES OF BOOK:"+np);
    }
}
class Bookmain
{
    Run | Debug
    public static void main(String args[])
    {
        Scanner ss=new Scanner(System.in);
        System.out.println("ENTER THE NUMBER OF BOOKS");
```



```
    public String toString()
    {
        return("THE TITLE OF BOOK:"+name+"   "+"AUTHOR OF BOOK:"+auth+"   "+" PRICE OF BOOK: "+p+"    "+
    }
}
class Bookmain
{
    Run | Debug
    public static void main(String args[])
    {
        Scanner ss=new Scanner(System.in);
        System.out.println("ENTER THE NUMBER OF BOOKS");
        int n=ss.nextInt();
        Book b[]=new Book[n];
        for(int i=0;i<n;i++)
        {
            System.out.println("ENTER THE DETAILS OF BOOK"+(i+1));
            b[i]=new Book();
            b[i].getdetails();
        }
        for(int i=0;i<n;i++)
        {
            System.out.println("THE DETAILS OF BOOK"+(i+1));
            System.out.println(b[i]);          /*SOP(b[i].toString()) will also work*/
        }
    }
}
```



LAB PROGRAM-4

Develop a Java 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.

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LAB 4 - program

```
import java.util.Scanner;
abstract class Shape {
    double a;
    double b;
Shape (double a, double b)
    {
        this.a = a;
        this.b = b;
    }
    abstract double area();
}
class Rectangle extends Shape
  {
    Rectangle (double a, double b)
    {
        super (a, b);
    }
    double area()
    {
        SOP("Area of Rectangle");
        return a*b;
    }
}
```

```
class Triangle extends Shape
{
    Triangle (double a, double b)
    {
        super (a, b);
    }
    double area()
    {
        sop ("Area of triangle");
        return (a*b)/2;
    }
}
class Circle extends Shape {
    final double pi = 3.14;
    Circle (double a, double b) {
        super (a, b); }
    double area()
    {
        sop ("Area of Circle");
        return pi * Math.pow (a, 2);
    }
}
```

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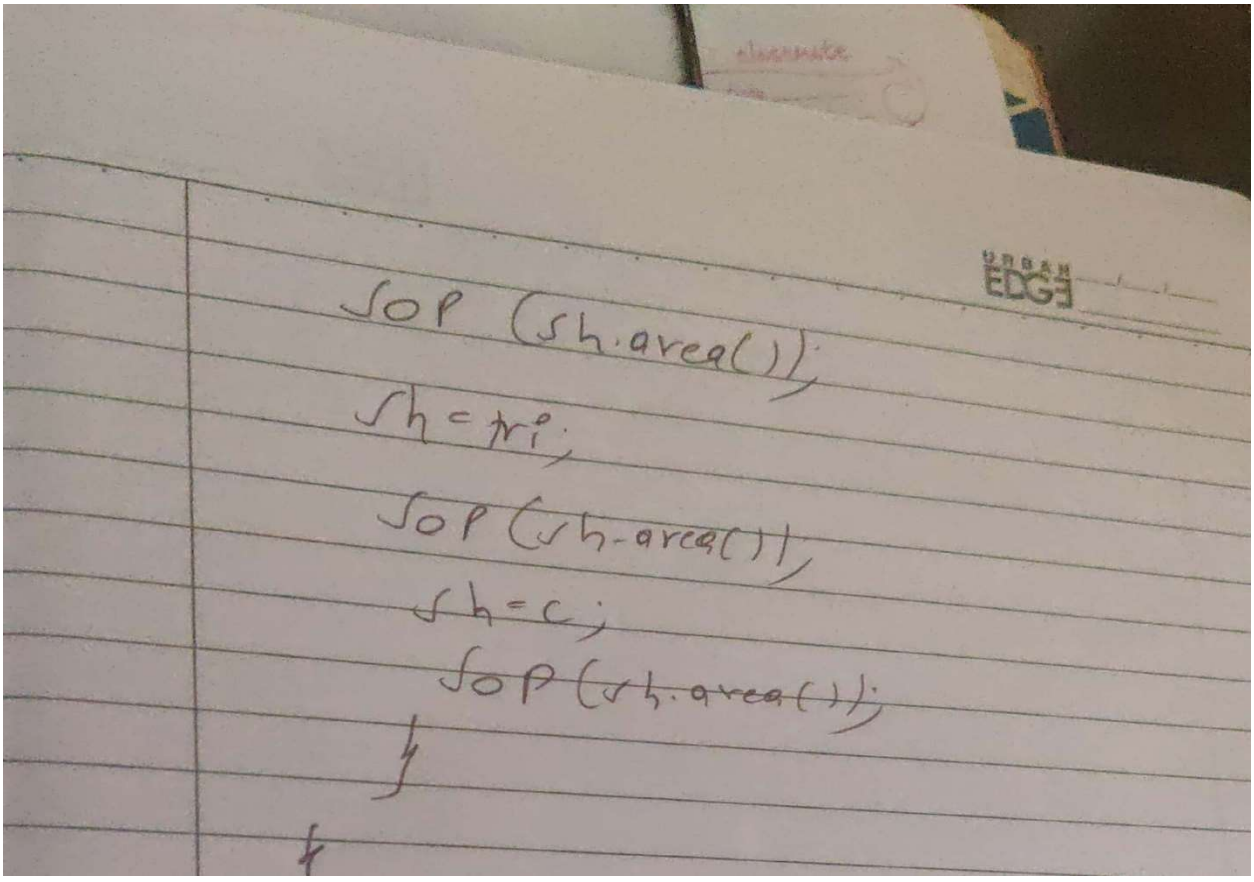
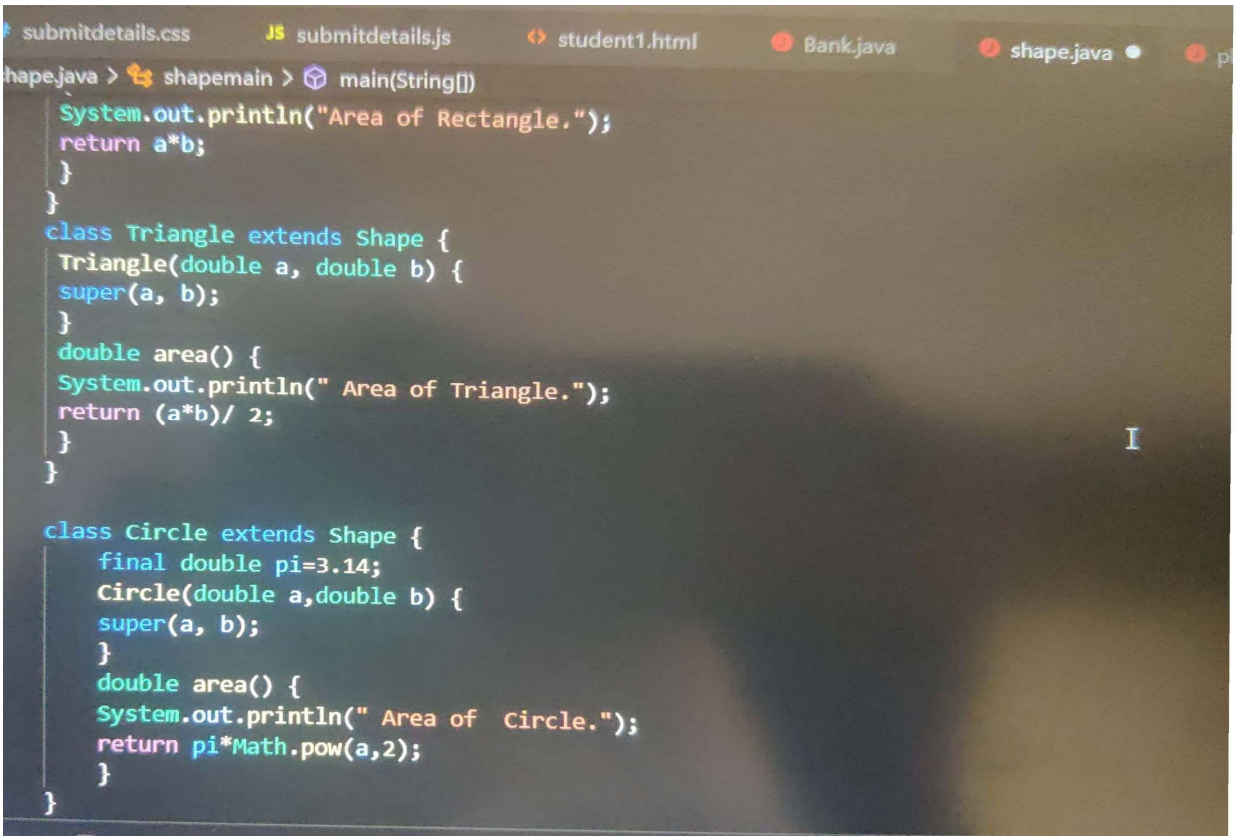
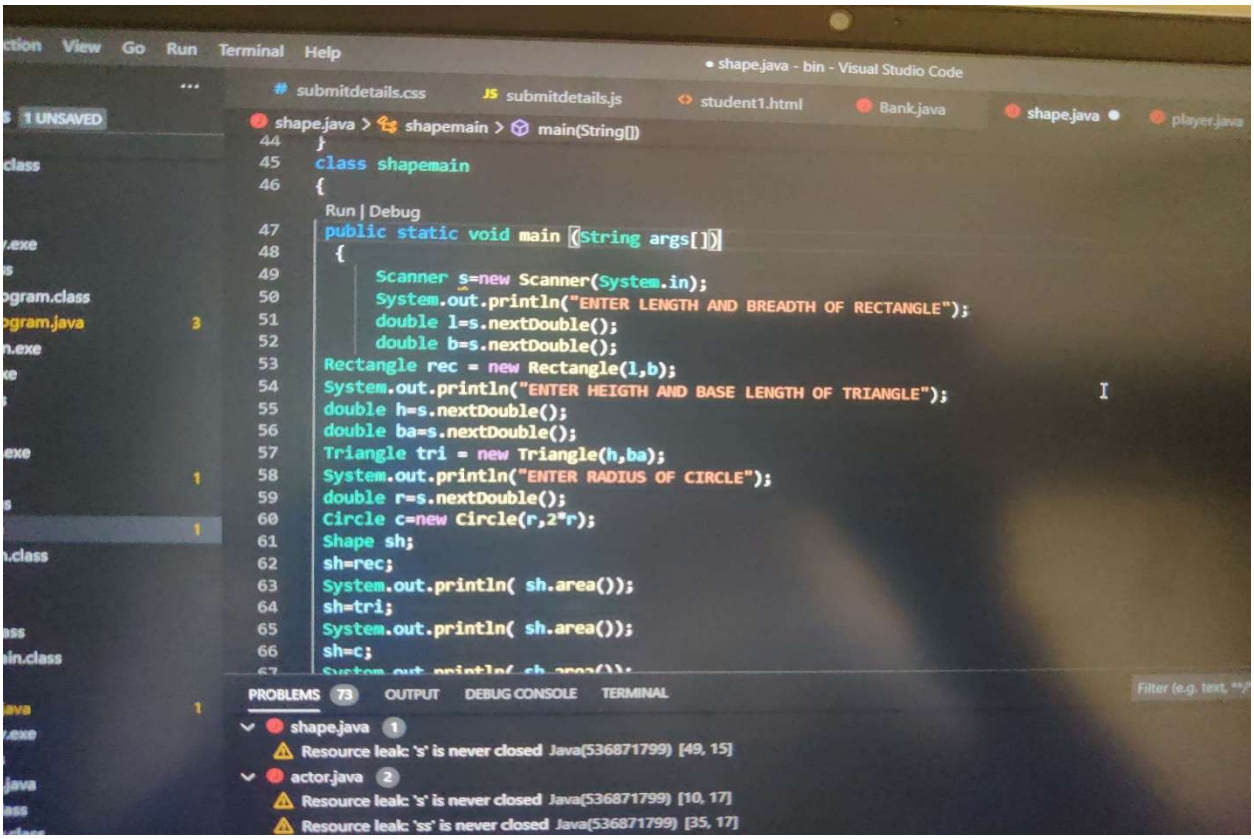
```
class shapemain
{
public static void main (String args[])
{
Scanner s= new Scanner (System.in);
SOP ("Enter length & breadth of
                    rectangle");
double l = s.nextDouble();
double b = s.nextDouble();

Rectangle rec = new Rectangle (l, b);
SOP ("Enter height and base of
                    triangle");

double h = s.nextDouble();
double ba = s.nextDouble();
Triangle tri = new Triangle (h, ba);
SOP ("Enter radius of circle");
double r = s.nextDouble();
Circle c = new Circle (r, 2*r);
Shape sh;
sh = rec;
```

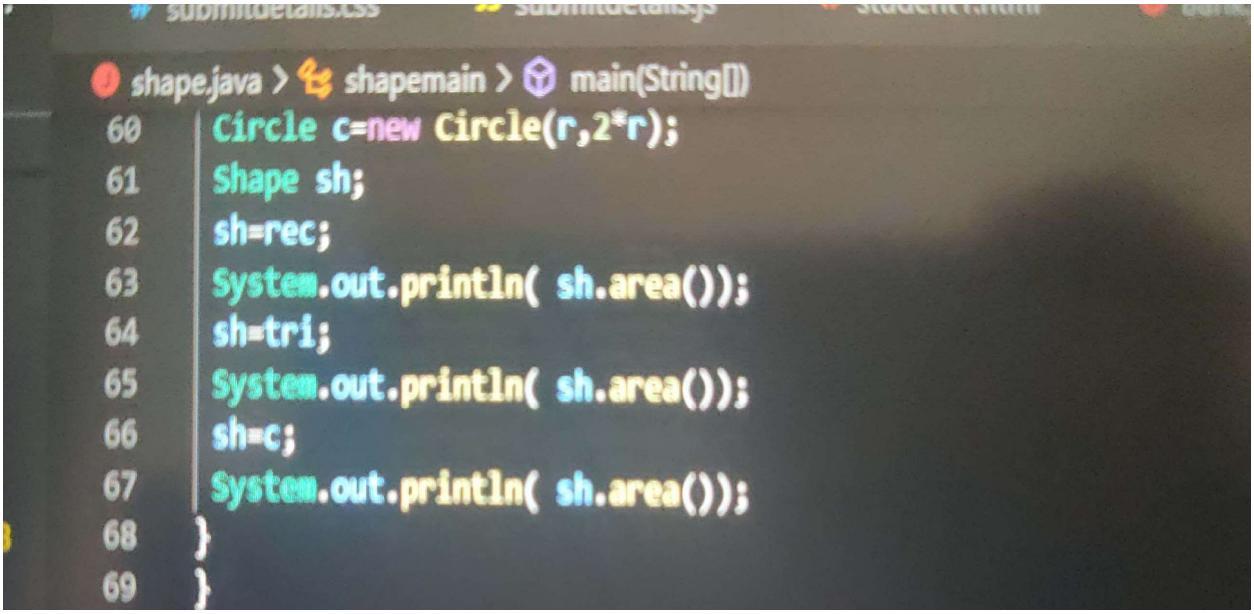


shape.java > shapemain > main(String[])

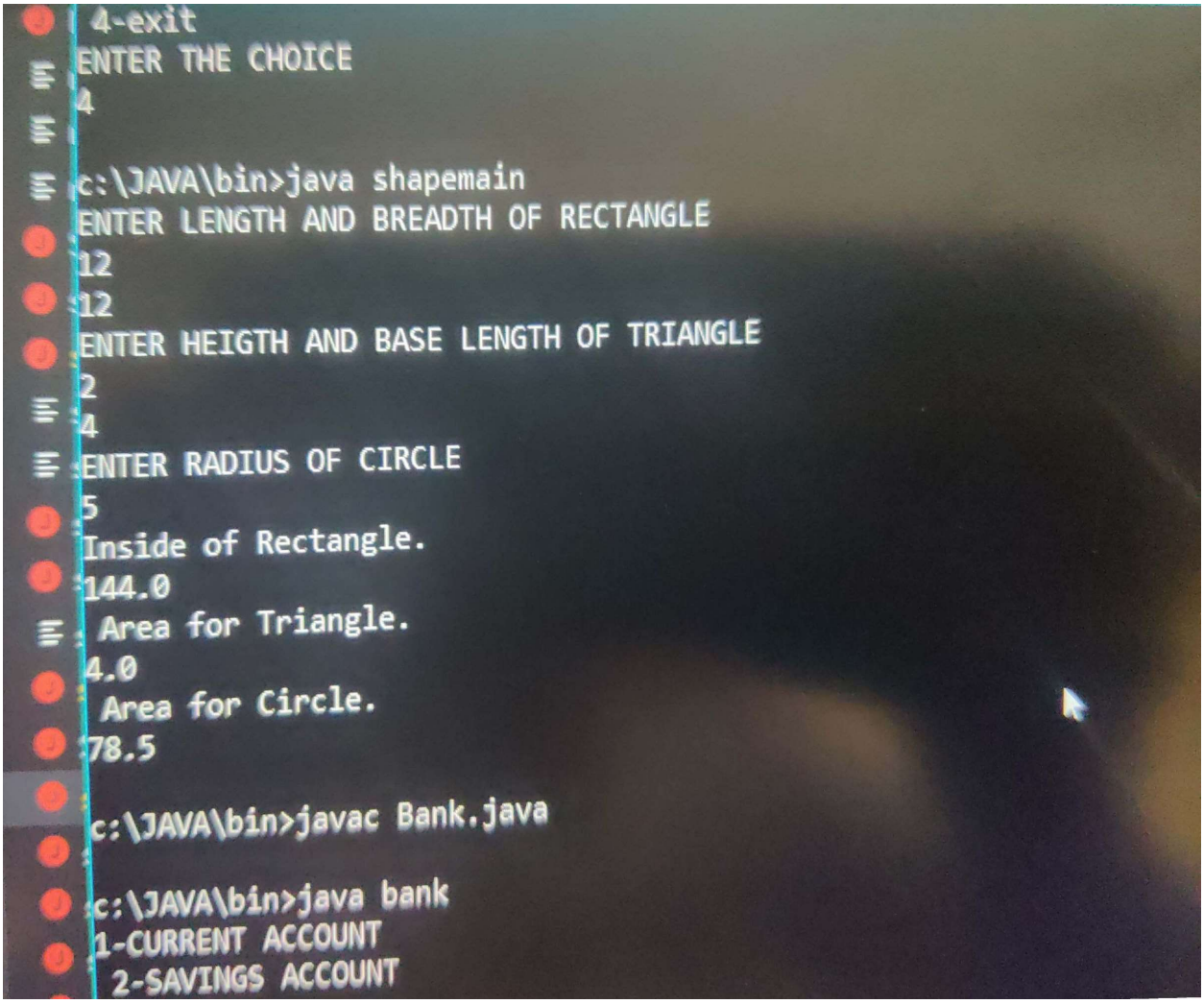
```java
import java.util.Scanner;
abstract class Shape {
 double a;
 double b;
 Shape(double a, double b)
{
 this.a = a;
 this.b = b;
 }
 abstract double area();
}

class Rectangle extends Shape
 {
 Rectangle(double a, double b)
 {
 super(a, b);
 }
 double area()
 {
 System.out.println("Area of Rectangle.");
 return a*b;
 }
}
```


submitdetails.css
submitdetails.js
student1.html
Bank.java
shape.java
hape.java > shapemain > main(String[])
System.out.println("Area of Rectangle.");
return a*b;
}
}
class Triangle extends Shape {
Triangle(double a, double b) {
super(a, b);
}
double area() {
System.out.println(" Area of Triangle.");
return (a*b)/ 2;
}
}
class Circle extends Shape {
final double pi=3.14;
Circle(double a,double b) {
super(a, b);
}
double area() {
System.out.println(" Area of Circle.");
return pi*Math.pow(a,2);
}
}


ction View Go Run Terminal Help
• shape.java - bin - Visual Studio Code
submitdetails.css
submitdetails.js
student1.html
Bank.java
shape.java
player.java
shape.java > shapemain > main(String[])
1 UNSAVED
class shapemain
{
Run | Debug
public static void main (String args[])
{
Scanner s=new Scanner(System.in);
System.out.println("ENTER LENGTH AND BREADTH OF RECTANGLE");
double l=s.nextDouble();
double b=s.nextDouble();
Rectangle rec = new Rectangle(l,b);
System.out.println("ENTER HEIGTH AND BASE LENGTH OF TRIANGLE");
double h=s.nextDouble();
double ba=s.nextDouble();
Triangle tri = new Triangle(h,ba);
System.out.println("ENTER RADIUS OF CIRCLE");
double r=s.nextDouble();
Circle c=new Circle(r,2*r);
Shape sh;
sh=rec;
System.out.println(sh.area());
sh=tri;
System.out.println(sh.area());
sh=c;
PROBLEMS 73
OUTPUT
DEBUG CONSOLE
TERMINAL
shape.java 1
Resource leak: 's' is never closed Java(536871799) [49, 15]
actor.java 2
Resource leak: 's' is never closed Java(536871799) [10, 17]
Resource leak: 'ss' is never closed Java(536871799) [35, 17]



```
shape.java > shapemain > main(String[])
60      Circle c=new Circle(r,2*r);
61      Shape sh;
62      sh=rec;
63      System.out.println( sh.area());
64      sh=tri;
65      System.out.println( sh.area());
66      sh=c;
67      System.out.println( sh.area());
68    }
69    }
```



```
 4-exit
ENTER THE CHOICE
4

c:\JAVA\bin>java shapemain
ENTER LENGTH AND BREADTH OF RECTANGLE
12
12
ENTER HEIGTH AND BASE LENGTH OF TRIANGLE
2
4
ENTER RADIUS OF CIRCLE
5
Inside of Rectangle.
144.0
 Area for Triangle.
4.0
 Area for Circle.
78.5

c:\JAVA\bin>javac Bank.java

c:\JAVA\bin>java bank
1-CURRENT ACCOUNT
 2-SAVINGS ACCOUNT
```

LAB PROGRAM-5

Develop a Java program to create a class Bank that maintains two kinds of account for its customers, one called savings account and the other current account. The savings account provides compound interest and withdrawal facilities but no cheque book facility. The current account provides cheque book facility but no interest. Current account holders should also maintain a minimum balance and if the balance falls below this level, a service charge is imposed. Create a class Account that stores customer name, account number and type of account. From this derive the classes Curr-acct and Sav-acct to •Accept deposit from customer and update the balance. • Display the balance. • Compute and deposit interest • Permit withdrawal and update the balance • Check for the minimum balance, impose penalty if necessary and update the balance

}

Lab Program-5

```
import java.util.Scanner;

abstract class Account
{
    Scanner s=new Scanner(System.in);
    String name;
    long num;
    String type;
    double bal;
    Account(){}
Account(String name, long num, String type,
                                    double bal)
    {
        this.name = name;
        this.num = num;
        this.type = type;
    }  this.bal = bal;
```

```
double Min = 2000.00;
abstract void deposit();
abstract void withdrawal();
abstract void display();
}

class Curact extends Account
{
    Curact(String name, long num, String type,
                                    double bal)
    {
        super(name, num, type, bal);
    }

    Void withdrawal()
{
    Sol("Enter amount");
    int amt = S.nextInt();
    if (bal == 0 || amt > bal)
        Sop("Withdraval not
                        possible");
    else
    {
        bal = bal - amt;
```

```
        sop("Amount of "+amt+" is withdrawed");
        sop("Rem balance ="+bal);
    }
}
void deposit()
    {
        sop("Enter amount");
        int amt=s.nextInt();
        bal=bal+amt;
        sop("Remaining balance of
                account ="+bal);
    }
void display()
    {
        if(bal<min)
        {
            sop("Amt of 14J/- is
                deducted");
            bal=bal-14J;
            sop("Balance"+bal);
        }
        else
            sop("Balance"+bal);
    }
}
```

URBAN EDGE

```
class Savact extends Account
 {
   Savact (String name, long num, String type,
                                  double bal)
     {
       super (name, num, type, bal);
     }
  Void  withdrawal ()
    {
      sop("Enter amount");
       int amt = s.nextInt();
      if (bal == 0 || (amt > bal)
          {
            sop ("Withdrawal not
                                possible");
          }
        else
          {
            bal = bal - amt;
        sop("Amount of "+amt+" is with-
                                drawed from acc");
        sop ("Rem balance is" + bal);
      }
 }
```

URBAN EDGE

```
void deposit()
 {
   SOP("Enter amt to be deposited");
     int amt1=s.nextInt();
   SOP("The rate of interest is 5%");
     double ci=amt1*(1+0.05);
      bal=bal+ci;
   SOP("The balance="+bal);
  }
  Void display()
   {
     SOP("Balance="+bal);
   }
 }

class bank
 {
   public static void main(String
                            args[])
    {
      Scanner s=new Scanner(System.in);
    SOP("1-Current account
                  2-Savings account");
```

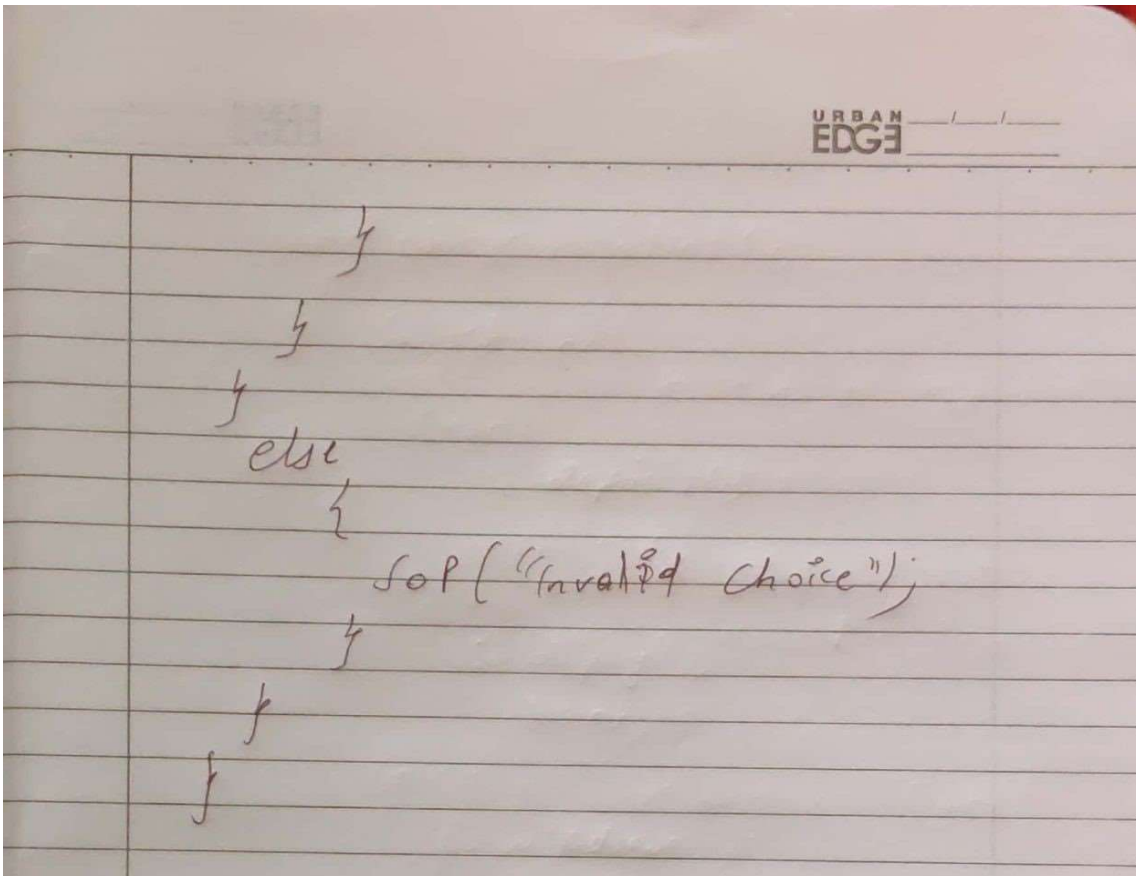
URBAN EDGE

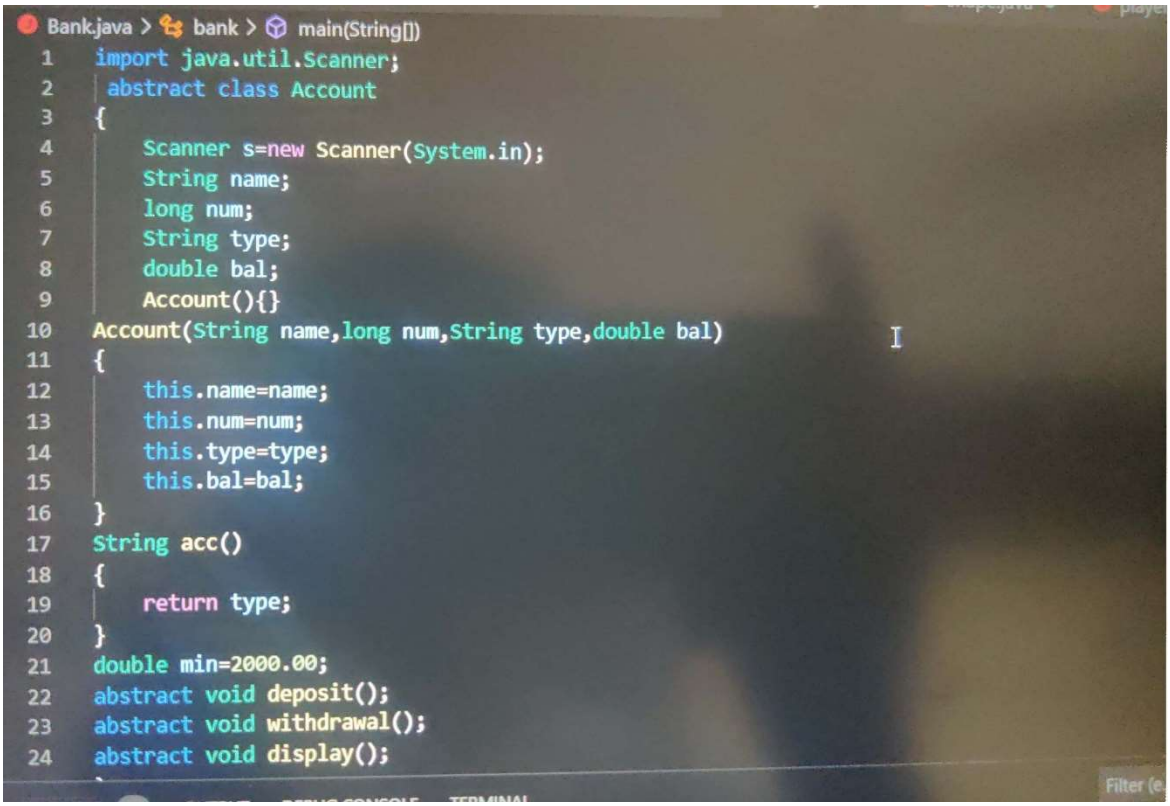
```
int c=s.nextInt();
    String nam;
    long n;
    double openbal;
    if (c==1)
    {
SoP ("Enter name, acc no and
                    opening balance");
    nam=s.next();
    n=s.nextLong();
    openbal=s.nextDouble();
Curact cu=new Curact(nam, n, "current
                    openbal);
    int i=0;
    while (i!=4)
{
    SoP ("1:Deposit In 2: Display
        In 3: Withdrawal Inf exit");
    SoP ("Enter choice");
```

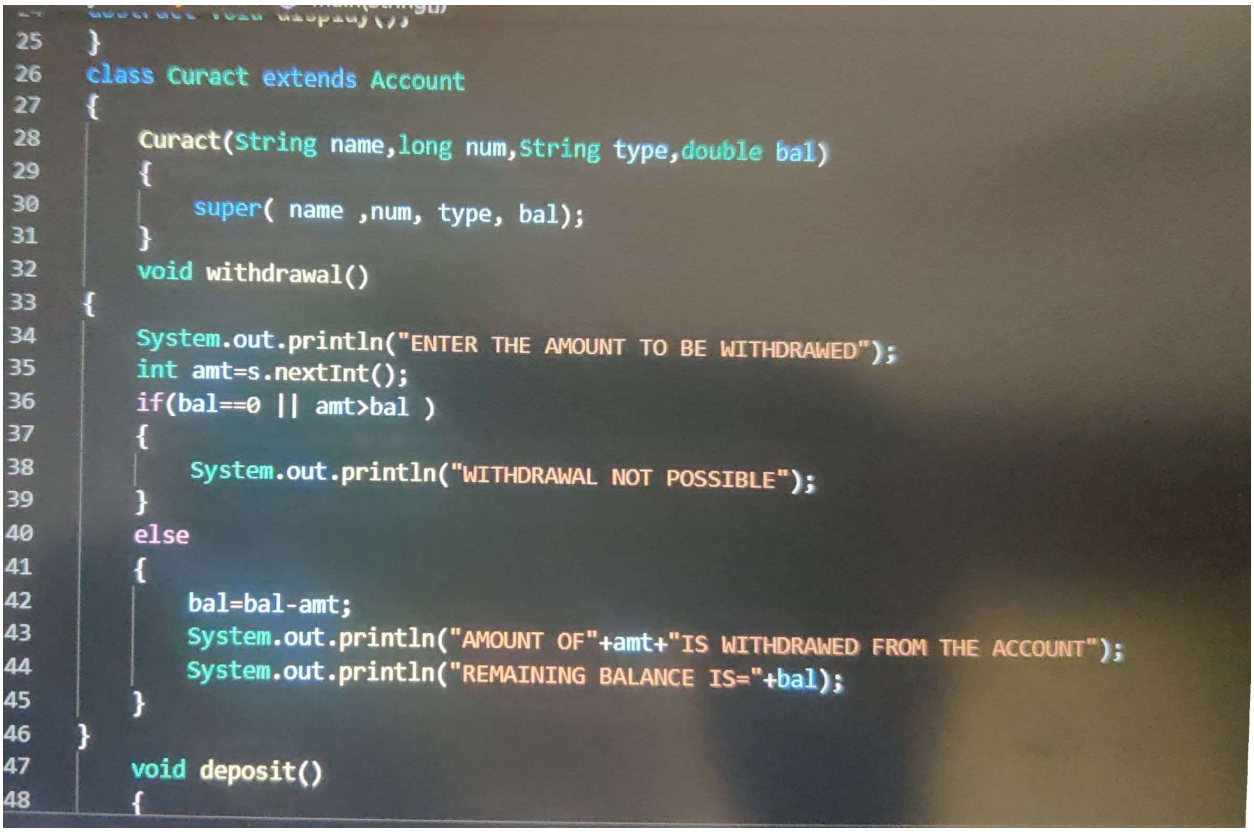
URBAN EDGE

```
int ch=s.nextInt();
switch(ch){
case1:
    w.deposit();
    break;
case 2:
    w.display();
    break;
case 3:
    w.withdrawal();
    break;
case 4:
    System.exit(0);
    break;
default:
    sop("Invalid choice");
}
}
}
else if (c==2)
  sop("Enter name, acc no and opening
                                balance");
  nam=s.next();
  n=s.nextLong();
  openbal=s.nextDouble();
```

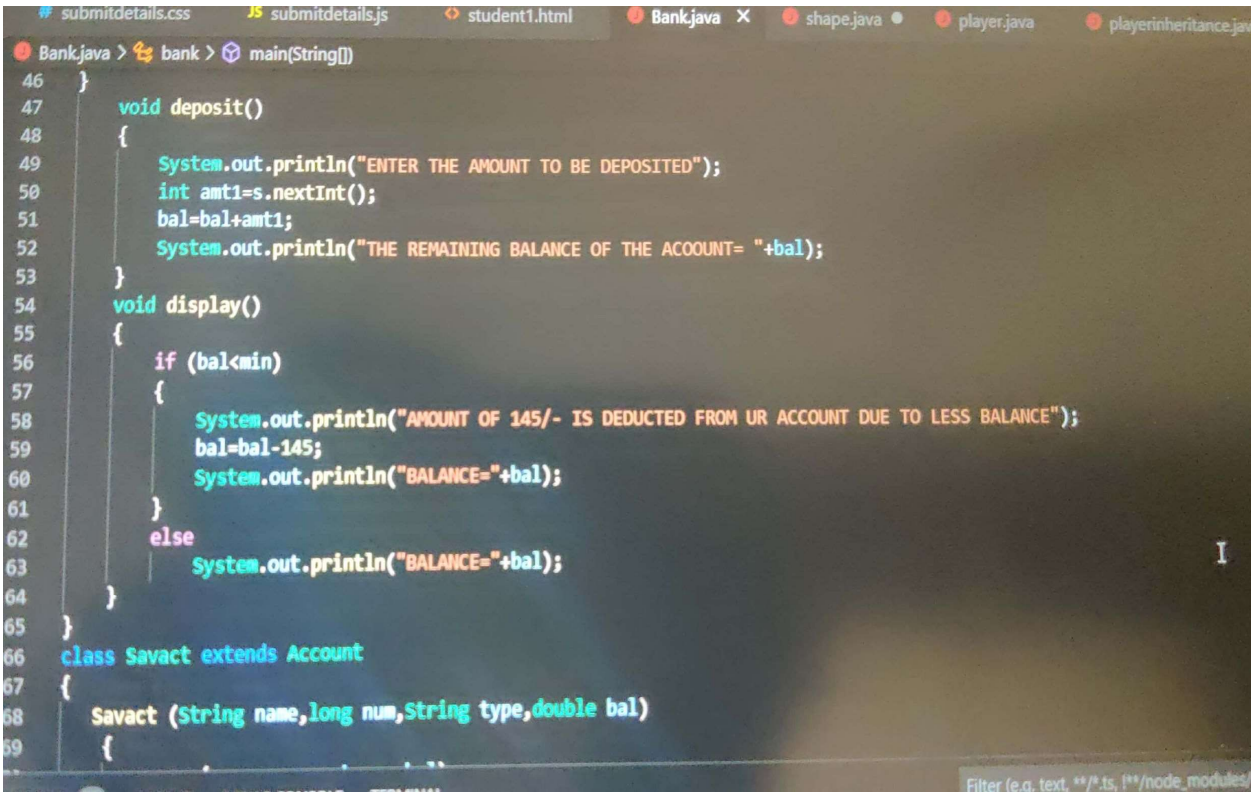
```
SavAct sa
        = new SavAct(nam, n, "saving",
                                    openbal);
    int j=0;
    while (j!=4)
    {
      SOP("1-Deposit \n 2-Display \n
                3-Withdrawal \n 4-Exit");
      SOP("Enter choice");
      int ch1 = s.nextInt();
      switch(ch1){
        case1:
            sa.deposit();
            break;
        case2:
            sa.display();
            break;
        case3:
            sa.withdrawal();
            break;
        case4:
            System.exit(0);
            break;
        default:
            SOP("Invalid choice");
```


URBAN EDGE
}
}
else
{
sop("Invalid choice");
}
}


Bank.java > bank > main(String[])
import java.util.Scanner;
abstract class Account
{
Scanner s=new Scanner(System.in);
String name;
long num;
String type;
double bal;
Account(){}
Account(String name,long num,String type,double bal)
{
this.name=name;
this.num=num;
this.type=type;
this.bal=bal;
}
String acc()
{
return type;
}
double min=2000.00;
abstract void deposit();
abstract void withdrawal();
abstract void display();



```
25  }
26  class Curact extends Account
27  {
28      Curact(String name,long num,String type,double bal)
29      {
30          super( name ,num, type, bal);
31      }
32      void withdrawal()
33  {
34      System.out.println("ENTER THE AMOUNT TO BE WITHDRAWED");
35      int amt=s.nextInt();
36      if(bal==0 || amt>bal )
37      {
38          System.out.println("WITHDRAWAL NOT POSSIBLE");
39      }
40      else
41      {
42          bal=bal-amt;
43          System.out.println("AMOUNT OF"+amt+"IS WITHDRAWED FROM THE ACCOUNT");
44          System.out.println("REMAINING BALANCE IS="+bal);
45      }
46  }
47      void deposit()
48      {
```

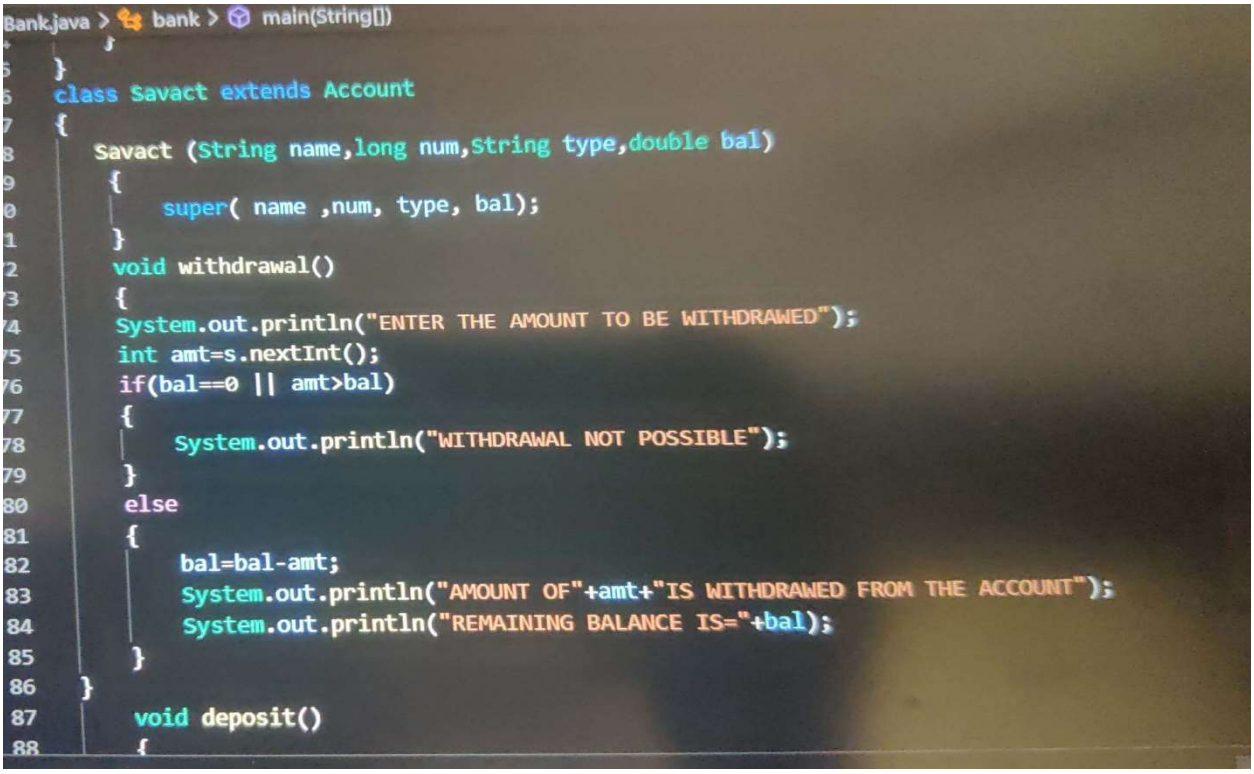


submitdetails.css | submitdetails.js | student1.html | Bank.java | shape.java | player.java | playerinheritance.jav

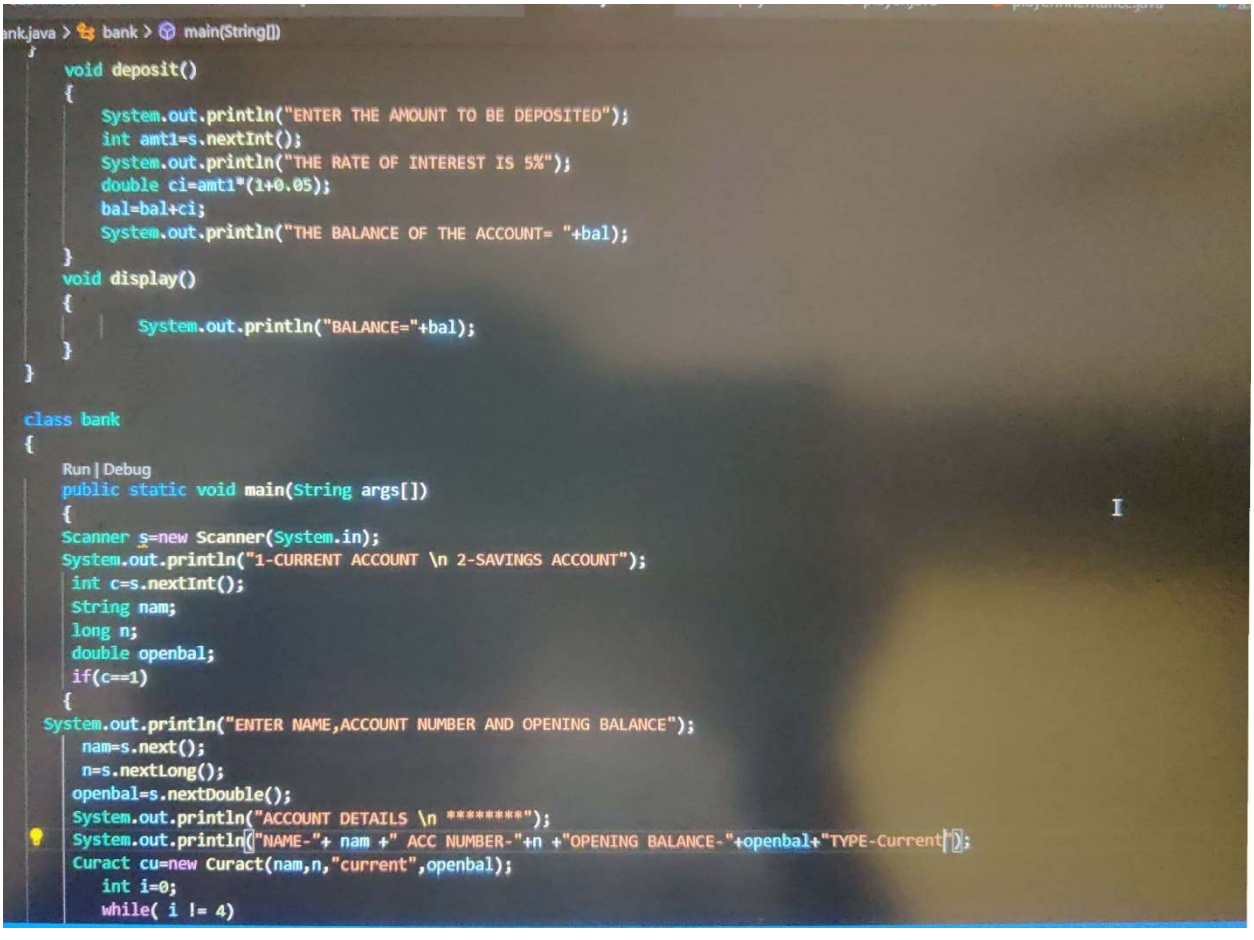
Bank.java > bank > main(String[])

```
46  }
47      void deposit()
48      {
49          System.out.println("ENTER THE AMOUNT TO BE DEPOSITED");
50          int amt1=s.nextInt();
51          bal=bal+amt1;
52          System.out.println("THE REMAINING BALANCE OF THE ACOOUNT= "+bal);
53      }
54      void display()
55      {
56          if (bal<min)
57          {
58              System.out.println("AMOUNT OF 145/- IS DEDUCTED FROM UR ACCOUNT DUE TO LESS BALANCE");
59              bal=bal-145;
60              System.out.println("BALANCE="+bal);
61          }
62          else
63              System.out.println("BALANCE="+bal);
64      }
65  }
66  class Savact extends Account
67  {
68      Savact (String name,long num,String type,double bal)
69      {
```

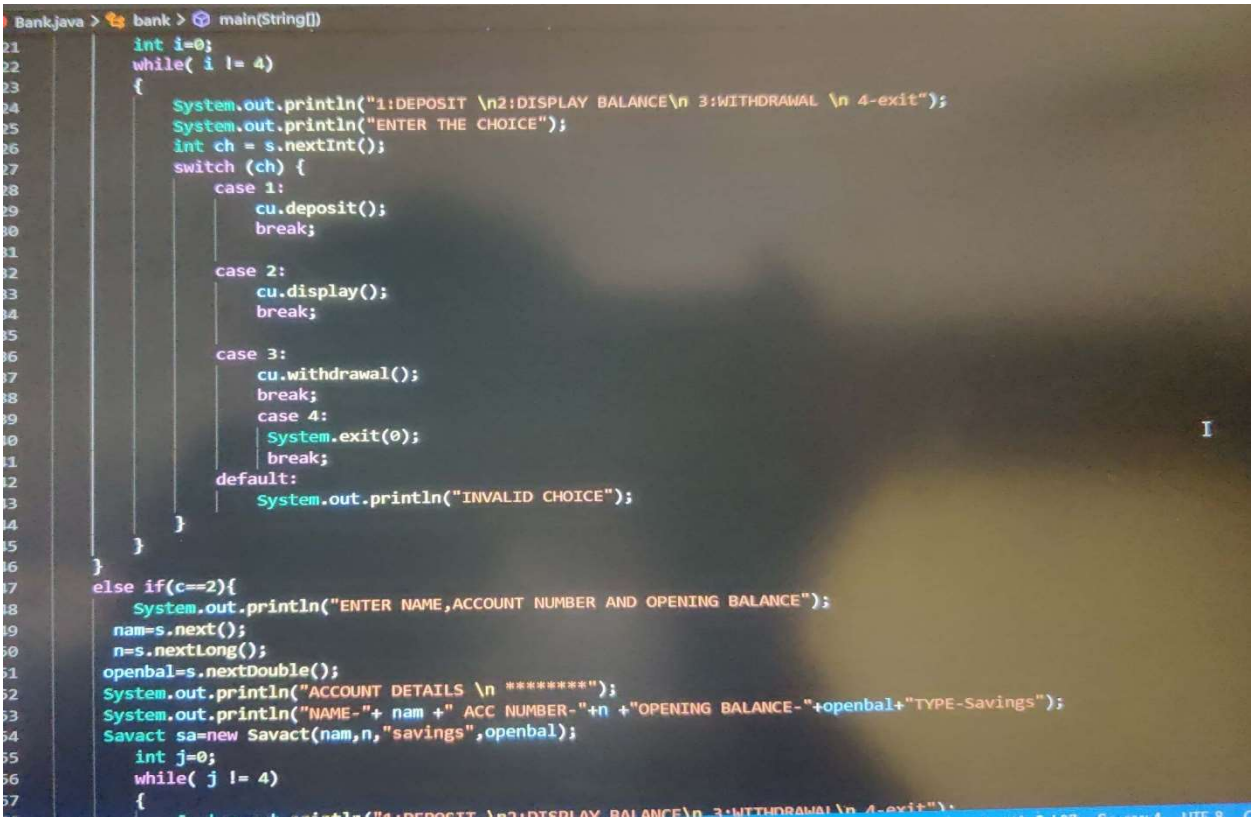
Filter (e.g. text, **/*.ts, !**/node_modules/



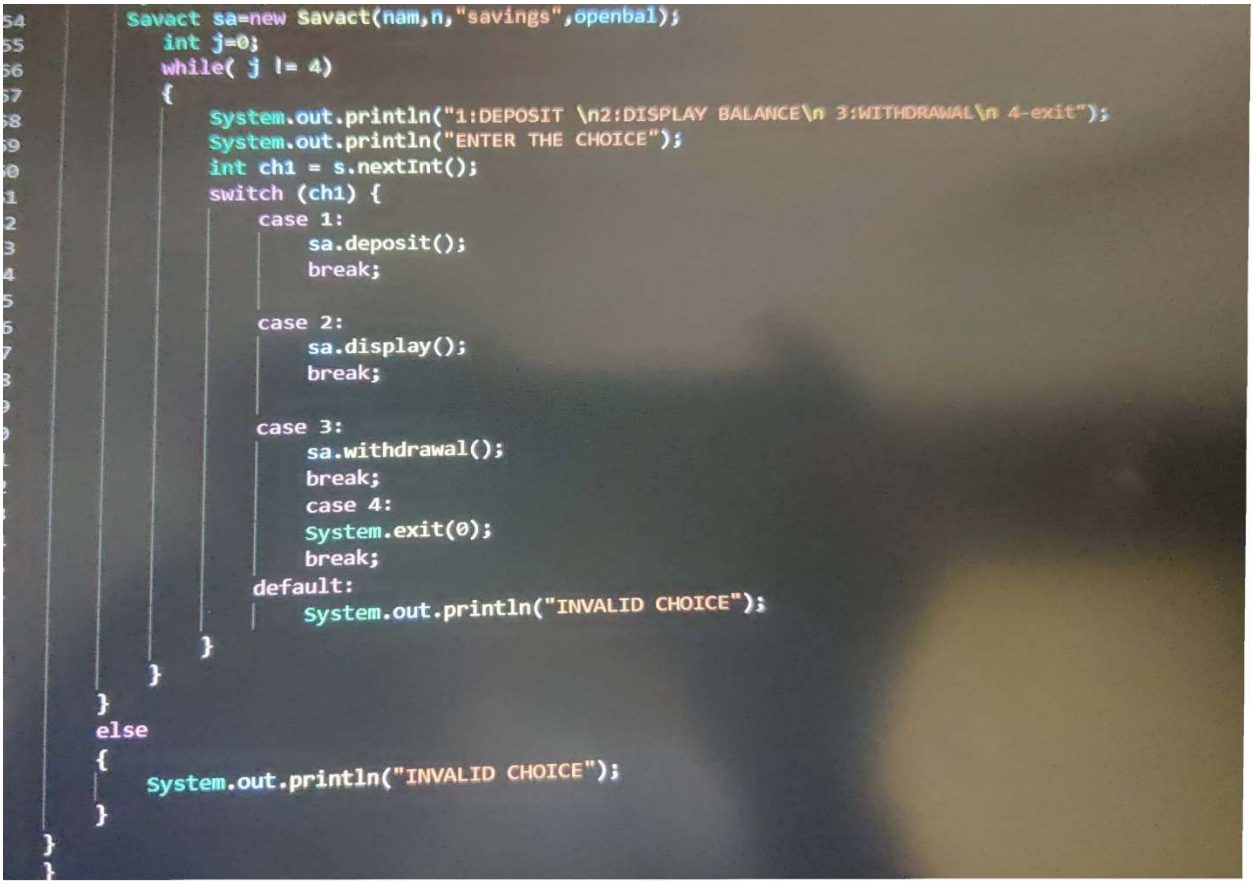
```
Bank.java > bank > main(String[])
    }
}
class Savact extends Account
{
    Savact (String name,long num,String type,double bal)
    {
        super( name ,num, type, bal);
    }
    void withdrawal()
    {
    System.out.println("ENTER THE AMOUNT TO BE WITHDRAWED");
    int amt=s.nextInt();
    if(bal==0 || amt>bal)
    {
        System.out.println("WITHDRAWAL NOT POSSIBLE");
    }
    else
    {
        bal=bal-amt;
        System.out.println("AMOUNT OF"+amt+"IS WITHDRAWED FROM THE ACCOUNT");
        System.out.println("REMAINING BALANCE IS="+bal);
    }
}
    void deposit()
    {
```



```
nk.java > bank > main(String[])
    void deposit()
    {
        System.out.println("ENTER THE AMOUNT TO BE DEPOSITED");
        int amt1=s.nextInt();
        System.out.println("THE RATE OF INTEREST IS 5%");
        double ci=amt1*(1+0.05);
        bal=bal+ci;
        System.out.println("THE BALANCE OF THE ACCOUNT= "+bal);
    }
    void display()
    {
        System.out.println("BALANCE="+bal);
    }
}

class bank
{
    Run | Debug
    public static void main(String args[])
    {
    Scanner s=new Scanner(System.in);
    System.out.println("1-CURRENT ACCOUNT \n 2-SAVINGS ACCOUNT");
    int c=s.nextInt();
    String nam;
    long n;
    double openbal;
    if(c==1)
    {
    System.out.println("ENTER NAME,ACCOUNT NUMBER AND OPENING BALANCE");
     nam=s.next();
     n=s.nextLong();
    openbal=s.nextDouble();
    System.out.println("ACCOUNT DETAILS \n ********");
    System.out.println("NAME-"+ nam +" ACC NUMBER-"+n +"OPENING BALANCE-"+openbal+"TYPE-Current");
    Curact cu=new Curact(nam,n,"current",openbal);
       int i=0;
       while( i != 4)
```



```
Bank.java > bank > main(String[])
        int i=0;
        while( i != 4)
        {
            System.out.println("1:DEPOSIT \n2:DISPLAY BALANCE\n 3:WITHDRAWAL \n 4-exit");
            System.out.println("ENTER THE CHOICE");
            int ch = s.nextInt();
            switch (ch) {
                case 1:
                    cu.deposit();
                    break;

                case 2:
                    cu.display();
                    break;

                case 3:
                    cu.withdrawal();
                    break;
                    case 4:
                     System.exit(0);
                     break;
                default:
                    System.out.println("INVALID CHOICE");
            }
        }
    }
    else if(c==2){
        System.out.println("ENTER NAME,ACCOUNT NUMBER AND OPENING BALANCE");
      nam=s.next();
      n=s.nextLong();
     openbal=s.nextDouble();
     System.out.println("ACCOUNT DETAILS \n ********");
     System.out.println("NAME-"+ nam +" ACC NUMBER-"+n +"OPENING BALANCE-"+openbal+"TYPE-Savings");
     Savact sa=new Savact(nam,n,"savings",openbal);
        int j=0;
        while( j != 4)
        {
```



```
    Savact sa=new Savact(nam,n,"savings",openbal);
        int j=0;
        while( j != 4)
        {
            System.out.println("1:DEPOSIT \n2:DISPLAY BALANCE\n 3:WITHDRAWAL\n 4-exit");
            System.out.println("ENTER THE CHOICE");
            int ch1 = s.nextInt();
            switch (ch1) {
                case 1:
                    sa.deposit();
                    break;

                case 2:
                    sa.display();
                    break;

                case 3:
                    sa.withdrawal();
                    break;
                    case 4:
                    System.exit(0);
                    break;
                default:
                    System.out.println("INVALID CHOICE");
            }
        }
    }
    else
    {
        System.out.println("INVALID CHOICE");
    }
}
}
```

```
c:\JAVA\bin>javac Bank.java

c:\JAVA\bin>java bank
1-CURRENT ACCOUNT
 2-SAVINGS ACCOUNT
1
ENTER NAME,ACCOUNT NUMBER AND OPENING BALANCE
nithin
12344
3000
1:DEPOSIT
2:DISPLAY BALANCE
 3:WITHDRAWAL
 4-exit
ENTER THE CHOICE
1
ENTER THE AMOUNT TO BE DEPOSITED
2000
THE REMAINING BALANCE OF THE ACOOUNT= 5000.0
1:DEPOSIT
2:DISPLAY BALANCE
 3:WITHDRAWAL
 4-exit
ENTER THE CHOICE
3
ENTER THE AMOUNT TO BE WITHDRAWED
2000
AMOUNT OF2000IS WITHDRAWED FROM THE ACCOUNT
REMAINING BALANCE IS=3000.0
1:DEPOSIT
```

```
3000
1:DEPOSIT
2:DISPLAY BALANCE
 3:WITHDRAWAL
 4-exit
ENTER THE CHOICE
3
ENTER THE AMOUNT TO BE WITHDRAWED
2000
AMOUNT OF2000IS WITHDRAWED FROM THE ACCOUNT
REMAINING BALANCE IS=1000.0
1:DEPOSIT
2:DISPLAY BALANCE
 3:WITHDRAWAL
 4-exit
ENTER THE CHOICE
2
AMOUNT OF 145/- IS DEDUCTED FROM UR ACCOUNT DUE TO LESS BALANCE
BALANCE=855.0
1:DEPOSIT
2:DISPLAY BALANCE
 3:WITHDRAWAL
 4-exit
ENTER THE CHOICE
4
```