

LAB RECORD FOR OOJ LAB 2020

Test1

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USN:1BM19CS216

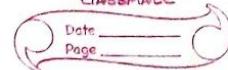
Section:3 D

Date:09/10/2020

USN : 1BM19CS216

LAB PROGRAM : 1

Develop a Java program that prints all real solutions to the quadratic equation $ax^2 + bx + c = 0$. Read in a, b, c and use the quadratic formula. If the discriminant $b^2 - 4ac$ is negative, display a message stating that there are no real solutions.

LAB-1

- Develop a Java program that prints all real solutions to the quadratic equation $ax^2+bx+c=0$. Read in a,b,c and use the quadratic formula. If the discriminante b^2-4ac is negative, display a message stating that there are no real solution.

```

import java.util.Scanner;
import java.lang.Math;
class Quadratic
{
    public static void main(String args[])
    {
        double r1, r2;
        Scanner scan = new Scanner(System.in);
        System.out.println("Enter the coefficients a, b, c: ");
        double a = scan.nextFloat();
        double b = scan.nextFloat();
        double c = scan.nextFloat();
        double d = (b*b) - (4*a*c);
        if (d > 0)
        {
            r1 = (-b + Math.sqrt(d)) / (2*a);
            r2 = (-b - Math.sqrt(d)) / (2*a);
            System.out.println("Root1 = " + r1 + " and Root2 = " + r2);
        }
        else if (d == 0)
        {
            r1 = r2 = -b / (2*a);
        }
    }
}

```

```
System.out.println("Root1=Root2 = " + r1);
```

{

else

{

```
System.out.println("There are no real solutions");
```

```
double r = -b / (2 * a);
```

```
double i = Math.sqrt(-d) / (2 * a);
```

```
System.out.printf("Root1 = %.2f + %.2fi and  
Root2 = %.2f - %.2fi", r, i, r, i);
```

{

{

{

{

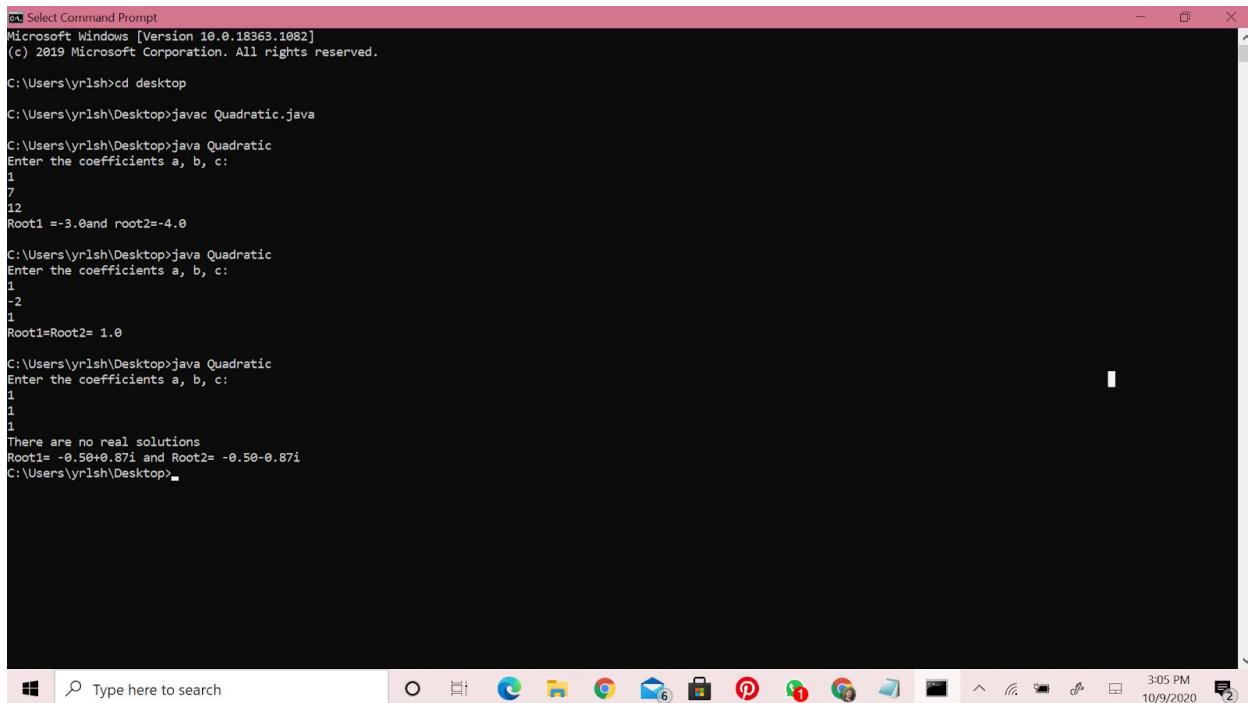
```

import java.util.Scanner;
import java.lang.Math;
class Quadratic
{
    public static void main(String args[])
    {
        double r1,r2;

        Scanner scan = new Scanner(System.in);
        System.out.println("Enter the coefficients a, b, c: ");
        double a = scan.nextFloat();
        double b = scan.nextFloat();
        double c = scan.nextFloat();
        double d=(b*b)-(4*a*c);
        if(d>0)
        {
            r1=(-b+Math.sqrt(d))/(2*a);
            r2=(-b-Math.sqrt(d))/(2*a);
            System.out.println("Root1 =" +r1+ "and root2=" +r2);
        }
        else if(d==0)
        {
            r1=r2=-b/(2*a);
            System.out.println("Root1=Root2= " +r1);
        }
        else
        {
            System.out.println("There are no real solutions");
            double r=-b/(2*a);
            double i=Math.sqrt(-d)/(2*a);
            System.out.printf("Root1= %.2f+%.2fi and Root2= %.2f-%.2fi",r,i,r,i);
        }
    }
}

```

THE OUTPUT FOR PROGRAM 1:



```
cmd Select Command Prompt
Microsoft Windows [Version 10.0.18363.1082]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\Users\yrlsh>cd desktop
C:\Users\yrlsh\Desktop>javac Quadratic.java
C:\Users\yrlsh\Desktop>java Quadratic
Enter the coefficients a, b, c:
1
7
12
Root1 = -3.0 and Root2=-4.0
C:\Users\yrlsh\Desktop>java Quadratic
Enter the coefficients a, b, c:
1
-2
1
Root1=Root2= 1.0
C:\Users\yrlsh\Desktop>java Quadratic
Enter the coefficients a, b, c:
1
1
1
There are no real solutions
Root1= -0.50+0.87i and Root2= -0.50-0.87i
C:\Users\yrlsh\Desktop>
```

LAB PROGRAM: 2

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

Lab Program 2

Week-4

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

```
import java.util.*;  
class Student {  
    private String USN;  
    private String name;  
    private int credits[];  
    private int marks[];  
    private int n;  
  
    void accept() {  
        Scanner s = new Scanner(System.in);  
        System.out.println("Enter the student details:");  
        System.out.print("USN  
USN = s.next();  
System.out.print("Name  
name = s.next();  
System.out.print("Enter the number of  
subjects : ");  
n = s.nextInt();  
credits = new int[n];  
marks = new int[n];  
System.out.print("Enter details for one subjects  
: ");
```

```
for( int i=0; i < n; i++ )  
{
```

```
    System.out.println("Enter credits for subject :  
                        + (i+1));
```

```
    credits[i] = s.nextInt();
```

```
    System.out.println("Enter marks for subject :  
                        + (i+1));
```

```
    marks[i] = s.nextInt();
```

```
}
```

```
{
```

```
void display()  
{
```

```
    System.out.println("-----");
```

```
    System.out.println("The Student's details are :");
```

```
    System.out.println("USN : " + usn);
```

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

```
    System.out.println("Marks in each subject :");
```

```
    for( int i=0; i < n; i++ )
```

```
{
```

```
        System.out.println("Subject " + (i+1) + " = " + marks[i]);
```

```
    }
```

```
double calculate()
```

```
{
```

```
    int tcp = 0, tc = 0;
```

```
    for( int i=0; i < n; i++ )
```

```
{
```

```
        tc = tc + credits[i];
```

```
        if( marks[i] >= 50 )
```

```

    }
    tcp = tcp + ((marks[i] / 10) + 1) * credits[i];
}
else if (marks[i] >= 40 && marks[i] < 50)
{
    tcp = tcp + (4 * credits[i]);
}
return (double)tcp / tc;
}

public class Main
{
    public static void main (String args[])
    {
        Student s1 = new Student();
        s1.accept();
        s1.display();
        System.out.println ("SGPA : " + s1.calculate());
        System.out.println ("-----");
    }
}

```

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

```

class Student {
    private String usn;
    private String name;
    private int credits[];
    private int marks[];
    private int n;

    void accept()
    {
        Scanner s=new Scanner(System.in);
        System.out.println("Enter the student details: ");
        System.out.println("USN = ");
        usn=s.next();
        System.out.println("Name = ");
        name=s.next();
        System.out.println("Enter the number of subjects: ");
        n=s.nextInt();
        credits=new int[n];
        marks=new int[n];
        System.out.println("Enter details for the subjects: ");
        for(int i=0;i<n;i++)
        {
            System.out.println("Enter credits for subject : " + (i+1));
            credits[i]=s.nextInt();
            System.out.println("Enter marks for subject : "+ (i+1));
            marks[i]=s.nextInt();
        }
    }

    void display()
    {
        System.out.println("-----");
        System.out.println("The Student's details are: ");
        System.out.println("USN : "+usn);
        System.out.println("Name : "+name);
        System.out.println("Marks in each subject :");
        for(int i=0;i<n;i++)
        {
            System.out.println("Subject "+(i+1)+" = "+marks[i]);
        }
    }

    double calculate()
    {
        int tc=0,tc=0;
        for(int i=0;i<n;i++)

```

```

    {
        tc=tc+credits[i];
        if(marks[i]>=50)
        {
            tcp=tcp+(((marks[i]/10)+1)*credits[i]);
        }
        else if(marks[i]>=40 && marks[i]<50)
        {
            tcp=tcp+(4*credits[i]);
        }
    }
    return (double)tcp/tc;
}
}

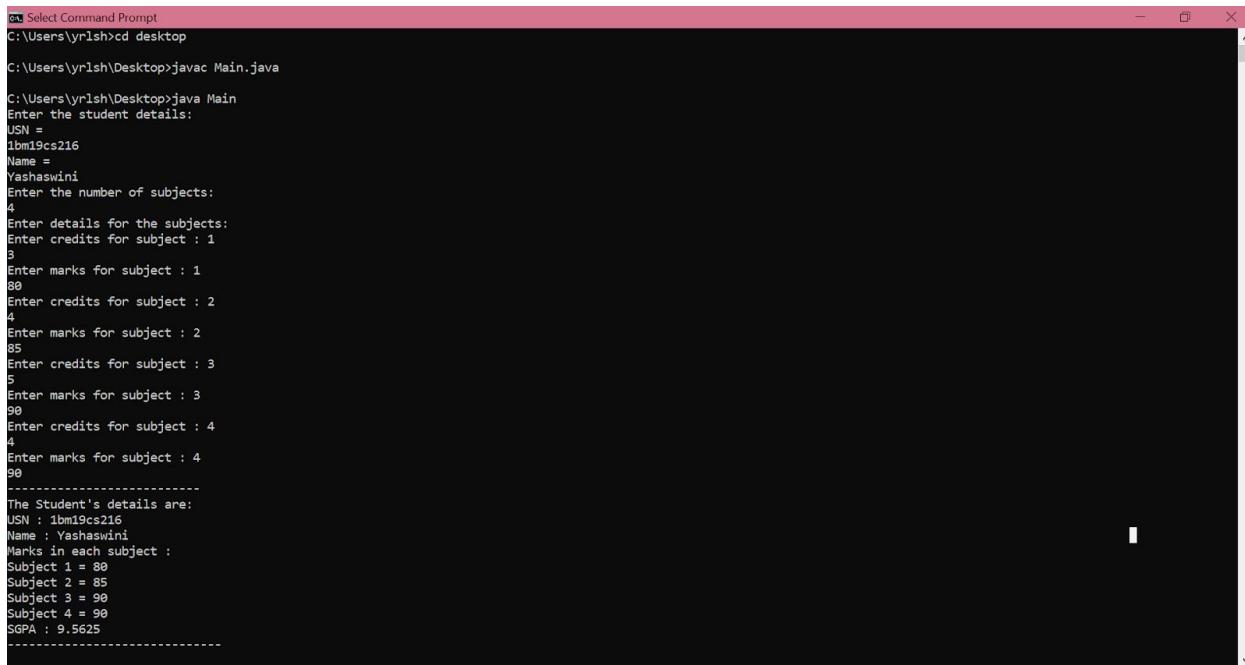
```

```

public class Main
{
    public static void main(String args[])
    {
        Student s1=new Student();
        s1.accept();
        s1.display();
        System.out.println("SGPA : "+s1.calculate());
        System.out.println("-----");
    }
}

```

THE OUTPUT FOR PROGRAM 2:



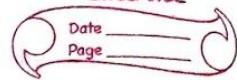
```
cmd Select Command Prompt
C:\Users\yr1sh>cd desktop
C:\Users\yr1sh\Desktop>javac Main.java
C:\Users\yr1sh\Desktop>java Main
Enter the student details:
USN =
1bm19cs216
Name =
Yashaswini
Enter the number of subjects:
4
Enter details for the subjects:
Enter credits for subject : 1
3
Enter marks for subject : 1
88
Enter credits for subject : 2
4
Enter marks for subject : 2
85
Enter credits for subject : 3
5
Enter marks for subject : 3
90
Enter credits for subject : 4
4
Enter marks for subject : 4
90
-----
The Student's details are:
USN : 1bm19cs216
Name : Yashaswini
Marks in each subject :
Subject 1 = 88
Subject 2 = 85
Subject 3 = 90
Subject 4 = 90
SGPA : 9.5625
```

1BM19CS216

Date: 6/11/2020
USN:1BM19CS216

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 object



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.

```
import java.util.Scanner;
```

```
class Book
```

```
{ int depositBalance;
```

```
 int withdraw;
```

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

```
class Book {
```

```
 String name;
```

```
 String author;
```

```
 float price;
```

```
 int numPages;
```

```
 Book()
```

```
{ }
```

```
 Book(String name, String author, int price, int  
 numPages)
```

```
1    this.name=name;
1    this.author=author;
1    this.price=price;
1    this.num_pages=num_pages;
3

void display()
{
Scanner inp=new Scanner(System.in);
System.out.println("Enter the name of the book:");
name=inp.next();
System.out.println("Enter the name of the
author:");
name=inp.next();
System.out.println("Enter the price of the book:");
price=inp.nextFloat();
System.out.println("Enter the number of pages
of the book:");
num_pages=inp.nextInt();
}

public String toString()
{
return ("Name :" + name + "\n" + "Author :" + author
+ "\n" + "Price :" + price + "\n" + "Number
of Pages :" + num_pages);
}
}
```



class Bookmain {

 public static void main (String args [])

 {

 Scanner a = new Scanner (System.in);

 System.out.println ("Enter the number of books");

 int n = a.nextInt();

 Book b[] = new Book[n];

 for (int i = 0; i < n; i++)

 {

 b[i] = new Book();

 System.out.println ("Enter the details of " + (i + 1) + ". book");

 b[i].display();

 }

 for (int i = 0; i < n; i++)

 {

 System.out.println ("Details of book " + (i + 1));

 System.out.println (b[i]);

 }

}

14

Officer.

```

import java.util.*;
class Book {
String name;
String author;
float price;
int num_pages;
Book()
{}
Book(String name,String author,int price,int num_pages)
{
this.name=name;
this.author=author;
this.price=price;
this.num_pages=num_pages;
}
void display()
{
Scanner inp=new Scanner(System.in);
System.out.println("Enter the name of the book:");
name=inp.next();
System.out.println("Enter the Author's name:");
author=inp.next();
System.out.println("Enter the price of the book:");
price=inp.nextFloat();
System.out.println("Enter the number of pages of the book:");
num_pages=inp.nextInt();
}
public String toString()
{
return ("Name: "+name + "\n" + "Author: "+author + "\n" + "Price: "+price + "\n" +"Number of pages: "+num_pages );
}
}
class BookMain {
public static void main(String args[])
{
Scanner a=new Scanner(System.in);
System.out.println("Enter the number of books:");
int n=a.nextInt();
Book b[]=new Book[n];
for(int i=0;i<n;i++)
{
b[i]=new Book();
System.out.println("Enter the details of "+(i+1)+" book");
b[i].display();
}
for(int i=0;i<n;i++)

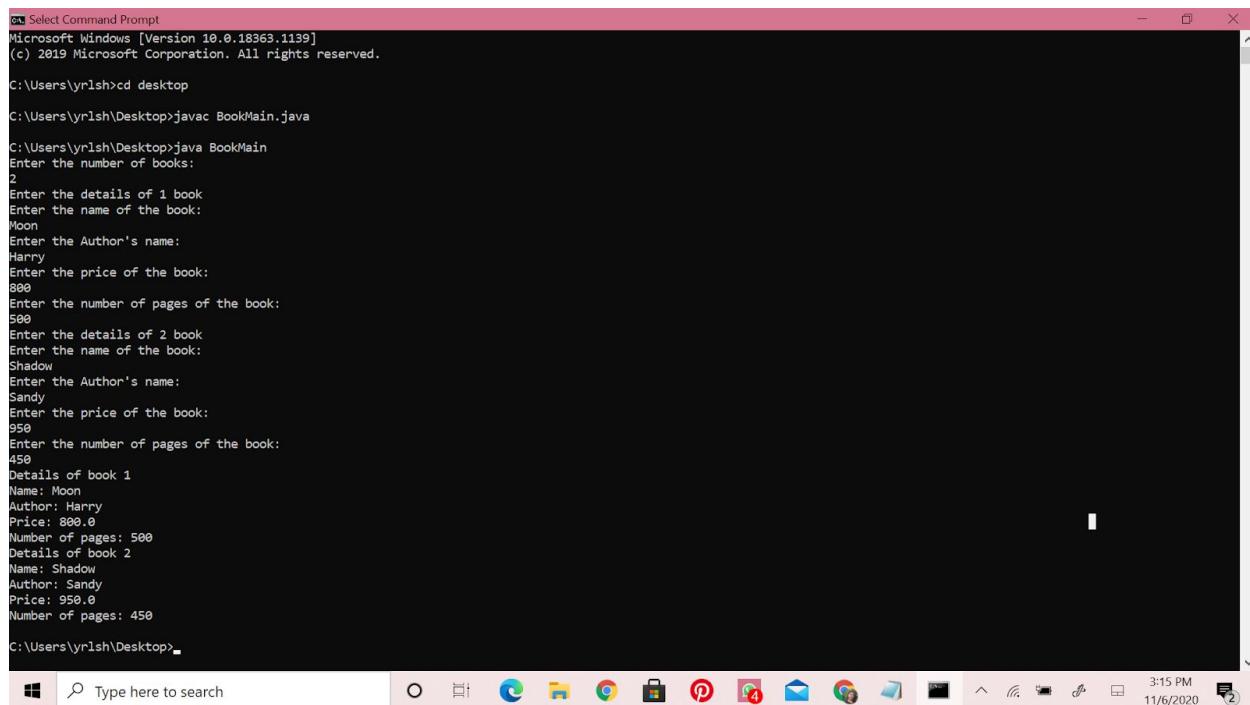
```

```

{
System.out.println("Details of book "+(i+1));
System.out.println(b[i]);
}
}
}

```

The output for program 3:



The screenshot shows a Windows Command Prompt window titled "Select Command Prompt". The window displays the following command-line session:

```

Select Command Prompt
Microsoft Windows [Version 10.0.18363.1139]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\Users\yrish>cd desktop
C:\Users\yrish\Desktop>javac BookMain.java
C:\Users\yrish\Desktop>java BookMain
Enter the number of books:
2
Enter the details of 1 book
Enter the name of the book:
Moon
Enter the Author's name:
Harry
Enter the price of the book:
800
Enter the number of pages of the book:
500
Enter the details of 2 book
Enter the name of the book:
Shadow
Enter the Author's name:
Sandy
Enter the price of the book:
950
Enter the number of pages of the book:
450
Details of book 1
Name: Moon
Author: Harry
Price: 800.0
Number of pages: 500
Details of book 2
Name: Shadow
Author: Sandy
Price: 950.0
Number of pages: 450
C:\Users\yrish\Desktop>

```

The window also shows the taskbar at the bottom with various pinned icons.

USN:1BM19CS216

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.

Lab 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 one method printArea() that prints the area of the given shape.

```

import java.util.Scanner;

abstract class Shape {
    int length, breadth;
    void printArea() {
        double areaR;
        areaR = (length * breadth);
        System.out.println("The area of rectangle is " + areaR + " cm^2");
    }
}

class Triangle extends Shape {
    double areaT;
    void printArea() {
    }
}

```

```
areaT = (0.5) * (length * breadth);  
System.out.println("The area of triangle is  
" + areaT + "cm^2");
```

{
3
3

```
class Circle extends Shape  
{
```

```
    double areaC;  
    void printArea()  
    areaC = (3.14) * (length * length);  
    System.out.println("The area of circle is  
" + areaC + "cm^2");
```

{
3

```
class main  
{
```

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

```
        Scanner A=new Scanner (System.in);
```

```
        Rectangle R1=new Rectangle();
```

```
        Triangle T1=new Triangle();
```

```
        Circle C1=new Circle();
```

```
        System.out.println("---- Area of generator  
of Rectangle, Triangle and circle---");
```

System.out.println("Enter the length and breadth
of rectangle in cm: \n");

RL.length = A.nextInt();

RL.breadth = A.nextInt();

System.out.println ("Enter the length and
base of triangle. in cm: \n");

Tl.length = A.nextInt();

Tl.breadth = A.nextInt();

System.out.println ("Enter the radius of
circle in cm: \n");

Cl.length = A.nextInt();

Rl.printArea();

Tl.printArea();

Cl.printArea();

g

3

import java.util.Scanner;

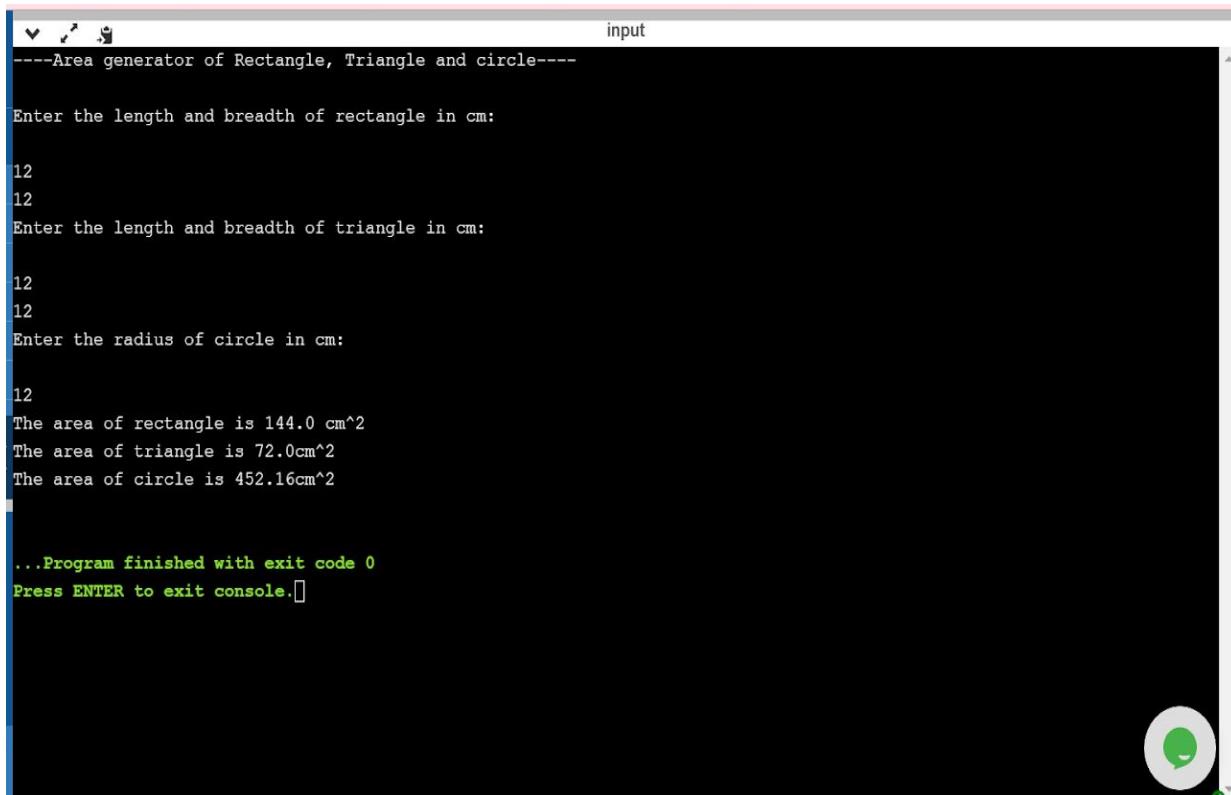
```

abstract class Shape
{
    int length,breadth;
    void printArea()
    {}
}
class Rectangle extends Shape
{
    double areaR;
    void printArea(){
        areaR=(length*breadth);
        System.out.println("The area of rectangle is "+areaR+" cm^2");
    }
}
class Triangle extends Shape
{
    double areaT;
    void printArea(){
        areaT=(0.5)*(length*breadth);
        System.out.println("The area of triangle is "+areaT+"cm^2");
    }
}
class Circle extends Shape
{
    double areaC;
    void printArea(){
        areaC=(3.14)*(length*length);
        System.out.println("The area of circle is "+areaC+"cm^2");
    }
}
class Main
{
    public static void main(String args[])
    {
        Scanner A=new Scanner(System.in);
        Rectangle R1=new Rectangle();
        Triangle T1=new Triangle();
        Circle C1=new Circle();
        System.out.println("----Area generator of Rectangle, Triangle and circle--- \n ");
        System.out.println("Enter the length and breadth of rectangle in cm:\n");
        R1.length=A.nextInt();
        R1.breadth=A.nextInt();
        System.out.println("Enter the height and base of triangle in cm:\n");
        T1.length=A.nextInt();
        T1.breadth=A.nextInt();
    }
}

```

```
System.out.println("Enter the radius of circle in cm:\n");
C1.length=A.nextInt();
R1.printArea();
T1.printArea();
C1.printArea();
}
}
```

The Output for program 4:



```
input
----Area generator of Rectangle, Triangle and circle----

Enter the length and breadth of rectangle in cm:

12
12
Enter the length and breadth of triangle in cm:

12
12
Enter the radius of circle in cm:

12
The area of rectangle is 144.0 cm^2
The area of triangle is 72.0cm^2
The area of circle is 452.16cm^2

...Program finished with exit code 0
Press ENTER to exit console.[]
```

date:6/11/2020

usn:1bm19cs216

Lab Program 5:

Develop a Java program to create a class Bank that maintains two kinds of accounts 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 make them more specific to their requirements. Include the necessary methods in order to achieve the following tasks:

a) Accept deposit from customer and update the balance.

b) Display the balance.

c) Compute and deposit interest

d) Permit withdrawal and update the balance

Check for the minimum balance, impose penalty if necessary and update the balance.

Lab 5:

```
import java.util.*;  
import java.lang.Math;  
class Account  
{  
    String name;  
    int acctno;  
    char type;  
    double balance ;  
    double dep;  
    boolean cheq;  
  
    void get (char c)  
    {  
        type = c;  
        if (c == 's' || c == 'S')  
            cheq = false;  
        else cheq = true;  
        Scanner sc = new Scanner (System.in);  
        System.out.println ("Enter your name");  
        name = sc.nextLine();  
        System.out.println ("Enter your account no.");  
        acctno = sc.nextInt();  
        System.out.println ("Enter the current balance  
        in your account");  
        balance = sc.nextDouble();  
    }  
  
    void putd()  
    {  
        System.out.println ("Account details");  
    }  
}
```

```
System.out.println("Name : " + name);
System.out.println("Account number : " + accno);
System.out.println("Account type : " + type);
System.out.println("balance : " + balance);  
g
```

```
void dep()
```

```
{
```

```
Scanner ss = new Scanner(System.in);
System.out.print("Enter the amount to be deposited");
dep = ss.nextDouble();
balance = balance + dep;
System.out.println("Amount has been deposited and balance has been updated");
}
```

```
void display()
```

```
{
```

```
System.out.println("Balance amount is " + balance);
```

```
}
```

```
3
```

```
class Saving extends Account
```

```
{
```

```
double rate;
```

```
double s-with;
```

```
int n;
```

```
//  
int ch;  
double amt;  
double term;  
double pr;  
  
void ci()  
{  
Scanner ss = new Scanner (System.in);  
System.out.println ("Enter principal deposit  
amount");  
pr = ss.nextDouble();  
System.out.println ("Enter the rate of  
interest ");  
rate = ss.nextDouble();  
System.out.println ("Enter the terms (years)");  
term = ss.nextDouble();  
System.out.println ("Enter the number of times  
interest is compounded annually");  
n = ss.nextInt();  
amt = pr * Math.pow ((1 + (rate/100)),  
(n*term));  
balance = amt;  
System.out.println ("Interest is compounded  
and deposited");  
  
void withdraw()  
{  
Scanner ss = new Scanner (System.in);  
System.out.println ("Enter the amount to  
be withdrawn");  
}
```

```
snum = ss.nextDouble();  
if (snum > balance)  
System.out.println("Insufficient balance");  
else  
{
```

```
balance = balance - snum;  
System.out.println("Money has been withdrawn  
and balance is updated");  
}
```

```
}
```

```
class Current extends Account
```

```
{
```

```
double cnum;
```

```
double pen;
```

```
double min;
```

```
Current()  
{
```

```
pen = 100;
```

```
min = 500;
```

```
}
```

```
void withdraw()
```

```
{
```

```
Scanner xx = new Scanner(System.in);  
System.out.println("Enter the amount to be  
withdrawn");  
cnum = xx.nextDouble();
```

```
if (cnum > balance)  
{
```

```
System.out.println("Insufficient funds!");  
}
```

return;

}

else

{

balance = balance - withdraw;

System.out.println("Amount has been withdrawn
and balance has been updated"); }

if (balance < min)

{

System.out.println("Balance is below the
minimum threshold. Service penalty
charge = 100/-");

if (balance < pen)

System.out.println("Due to insufficient
funds penalty charge will be deducted
from account after repleting. Current
balance is " + balance);

}

balance = balance - pen;

System.out.println("Penalty charge has
been deducted from acc. balance .

Current balance is " + balance);

}

}

}

class Bank {

public static void (String sss [])

{

```
int cch, chh  
Scanner sc = new Scanner (System.in),  
System.out.println (" welcome ");  
System.out.println (" 1. Saving ; 2.Curre  
int ch = sc.nextInt()  
if (ch==1)  
{  
    Saving s = new Saving()  
    s.get ('s')  
    do {  
        System.out.println (" 1. Deposit \n 2. Calculate  
        interest \n 3. withdraw \n 4. Display  
        \n 5. Exit ");  
        System.out.println (" Enter your choice ");  
        chh = sc.nextInt();  
        switch (chh)  
        {  
            case 1 :  
                s.dep ()  
                break;  
            case 2 :  
                s.wrm_s ();  
                break;  
            case 4 :  
                s.display ()  
                break;
```

case 5:
break;

default:

System.out.println("wrong opt.");
break;

}

while (ch != 5);

}

else if (ch == 2)

{

Current cr = new Current()

cr.get('C')

do {

System.out.println("1. Deposit 2. Withdraw
3. Display 4. Exit");

cash = sc.nextInt()

switch (ccn)

}

case 1:

cr.dep()

break;

case 2:

cr.withd()

break;

case 3:

break; cr.display()

break;

case 4:
break;

default:

System.out.println ("wrong option.");
break;

}

}

while (ch1 == 5);

}

else

System.out.println ("Wrong ?");

}

}

```

import java.util.*;
import java.lang.Math;
class Account
{
    String name;
    int acctno;
    char type;
    double balance;
    double dep;
    boolean cheq;

    void get(char c)
    {
        type = c;
        if(c=='s' || c == 'S')
            cheq=false;
        else cheq=true;
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter your name");
        name = sc.nextLine();
        System.out.println("Enter your account number");
        acctno = sc.nextInt();
        System.out.println("Enter the current balance in your account");
        balance= sc.nextDouble();
    }

    void putd()
    {
        System.out.println("Account details");
        System.out.println("Name: "+name);
        System.out.println("Account number: "+acctno);
        System.out.println("Account type :" +type);
        System.out.println("balance: " +balance);
    }

    void dep()
    {
        Scanner ss = new Scanner(System.in);
        System.out.println("Enter the amount to be deposited");
        dep= ss.nextDouble();
        balance=balance +dep;
        System.out.println("Amount has been deposited and balance has been
updated");
    }

    void display()
    {
        System.out.println("Balance amount is "+balance);
    }
}

```

```

    }

}

class Saving extends Account
{
    double rate;

    double s_with;
    int n;

    int ch;
    double amt;
    double term;
    double pr;

    void ci()
    {
        Scanner ss = new Scanner(System.in);
        System.out.println("Enter principal deposit amount");
        pr = ss.nextDouble();
        System.out.println("Enter the rate of interest");
        rate = ss.nextDouble();
        System.out.println("Enter the term(years)");
        term = ss.nextDouble();
        System.out.println("Enter the number of times interest in
compounded annually");
        n = ss.nextInt();
        amt = pr* Math.pow((1+(rate/100)),(n*term));
        balance+= amt;
        System.out.println("Interest is compounded and deposited;
balance is updated");

    }

    void with_s()
    {

        Scanner ss = new Scanner(System.in);
        System.out.println("Enter the amount of money to be withdrawn");
        s_with = ss.nextDouble();
    }
}

```

```

        if(s_with>balance)
            System.out.println("Insufficient balance");
        else
            {balance= balance - s_with;
             System.out.println("Money has been withdrawn and balance has been
updated");}
    }

class Current extends Account
{
    double c_with;
    double pen;
    double min;
    Current()
    {
        pen=100;
        min=500;
    }

    void with_c()
    {
        Scanner xx = new Scanner(System.in);
        System.out.println("Enter the amount to be withdrawn");
        c_with= xx.nextDouble();
        if(c_with>balance)
            {System.out.println("Insufficient funds!");
             return;}
        else
            {balance= balance- c_with;
             System.out.println("Amount has been withdrawn and balance has been
updated");}
        if(balance<min)
        {
            System.out.println("Balance is below the minimum threshold.
Service penalty charge = 100/- .");
            if(balance<pen)
                System.out.println("Due to insufficient funds, penalty charge will
be deducted from account after replenishing. Current balance is "+balance);
            else
            {

```

```

        balance= balance-pen;
        System.out.println("Penalty charge has been deducted
from account balance. Current balance is "+balance);
    }
}

}

class Bank
{
    public static void main(String sss[])
    {
        int cch, chh;
        Scanner sx = new Scanner(System.in);
        System.out.println("-----");
        System.out.println("WELCOME");
        System.out.println("-----");
        System.out.println("Is it a Savings account or current account? 1: SAVINGS ;2:
CURRENT");
        int ch= sx.nextInt();
        if(ch==1)
        {
            Saving s = new Saving();
            s.get('S');
            do{
                System.out.println("1. Deposit money\n2. Calculate compound interest\n3.
Withdraw money\n4. Display balance \n5. Exit");
                System.out.println("Enter your choice");
                chh= sx.nextInt();
                switch(chh)
                {
                    case 1:
                    s.dep();
                    break;

                    case 2:
                    s.ci();
                    break;

                    case 3:
                    s.with_s();
                    break;

                    case 4:
                    s.display();
                    break;
                }
            }
        }
    }
}

```

```

        break;

    case 5:
        break;

    default:
        System.out.println("Wrong option.");
        break;
    }
}while(chh!=6);

}

else if(ch==2)
{
    Current cr = new Current();
    cr.get('C');
    do{
        System.out.println("1. Deposit money\n2. Withdraw money\n3. Display
balance\n4. Exit");
        cch= sx.nextInt();
        switch(cch)
        {
            case 1:
                cr.dep();
                break;

            case 2:
                cr.with_c();
                break;

            case 3:
                cr.display();
                break;

            case 4:
                break;

            default:
                System.out.println("Wrong option.");
                break;
        }
}while(cch!=5);
}

```

```

        }
        else System.out.println("Wrong!");
    }
}

```

THE OUTPUT:

```

Select Command Prompt - java Bank
C:\Users\yash\Desktop>java Bank
-----
WELCOME
-----
Is it a Savings account or current account? 1: SAVINGS ; 2: CURRENT
1
Enter your name
yash
Enter your account number
1234
Enter the current balance in your account
60000
1. Deposit money
2. Calculate compound interest
3. Withdraw money
4. Display balance
5. Exit
Enter your choice
2
Enter principal deposit amount
5000
Enter the rate of interest
2.5
Enter the term(years)
4
Enter the number of times interest in compounded annually
5
Interest is compounded and deposited; balance is updated
1. Deposit money
2. Calculate compound interest
3. Withdraw money
4. Display balance
5. Exit
Enter your choice
4
Balance amount is 68193.08220145197

```

```

Command Prompt - java Bank
WELCOME
-----
Is it a Savings account or current account? 1: SAVINGS ; 2: CURRENT
2
Enter your name
yashu
Enter your account number
3456
Enter the current balance in your account
98000
1. Deposit money
2. Withdraw money
4. Display balance
5. Exit
1
Enter the amount to be deposited
1234567
Amount has been deposited and balance has been updated
1. Deposit money
2. Withdraw money
4. Display balance
5. Exit
3
Balance amount is 1332567.0
1. Deposit money
2. Withdraw money
4. Display balance
5. Exit
2
Enter the amount to be withdrawn
1200
Amount has been withdrawn and balance has been updated
1. Deposit money
2. Withdraw money
4. Display balance
5. Exit

```

Thank you !