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;
public class Quadratic
public static void main(String args[])
  double a,b,c;
  double root1, root2;
  Scanner in=new Scanner(System.in);
  System.out.println("Enter value of a: ");
  a=in.nextDouble();
  System.out.println("Enter value of b: ");
  b=in.nextDouble();
  System.out.println("Enter value of c: ");
  c=in.nextDouble();
  double determinant=(b*b)-(4*a*c);
  double sq=Math.sqrt(determinant);
  // condition for real and different roots
  if(determinant>0)
  root1=((-b+sq)/(2*a));
  root2=(-b-sq)/(2*a);
  System.out.println("Root 1= "+root1+"\t"+"Root2= "+root2);
  // condition for real and equal roots
  else if(determinant==0)
  root1=root2=(-b+sq)/(2*a);
  System.out.println("Root 1=Root 2= "+root1);
  // condition for roots that are not real
  else
  double real=-b/(2*a);
  double img=Math.sqrt(-determinant)/(2*a);
  System.out.println("Root 1= "+real+"+"+img+"i"+"\t"+"Root2= "+real+"-"+img+"i");
 }
                                  [Snehas-MacBook-Pro:~ snehasrivastava$ javac Quadratic.java
                                  [Snehas-MacBook-Pro:~ snehasrivastava$ java Quadratic
                                  Enter value of a:
                                  Enter value of b:
                                  Enter value of c:
                                                          Root2= -0.2-0.4i
                                  Root 1 = -0.2 + 0.4i
                                  [Snehas-MacBook-Pro:~ snehasrivastava$ java Quadratic
OUTPUT:
                                  Enter value of a:
                                  Enter value of b:
                                  Enter value of c:
                                  6.25
                                  Root 1= 2.0+1.5i
                                                          Root2= 2.0-1.5i
                                  |Snehas-MacBook-Pro:~ snehasrivastava$ java Quadratic
                                  Enter value of a:
                                  Enter value of b:
```

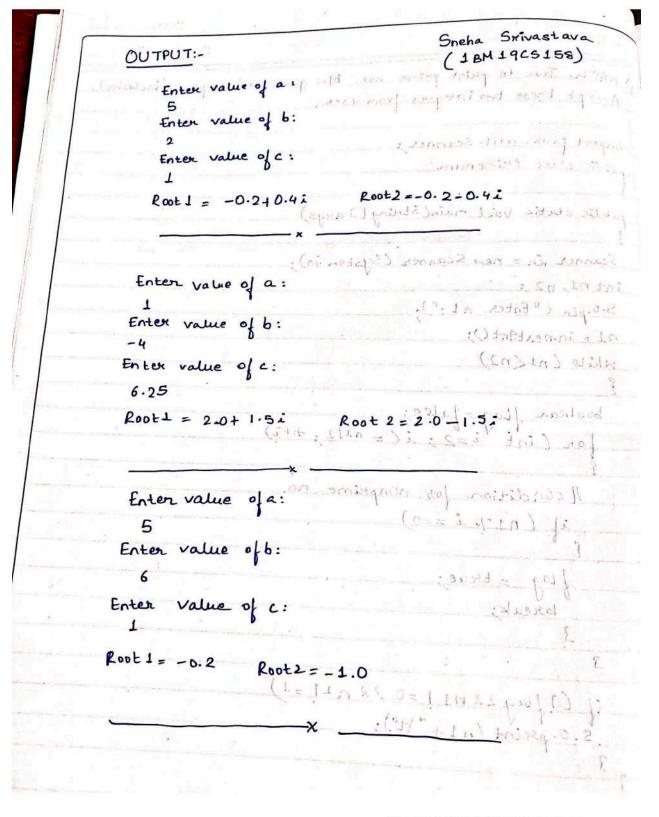
Enter value of c:

Root2= -1.0 Snehas-MacBook-Pro:~ snehasrivastava\$

Root 1 = -0.2

	Date
Ex	pt. No. LAB PROGRAM-1 (1BM19CS158) Page No. 6
7>	Develop a Java program that prints all real solutions to the
	quadrastic 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;
	public class puadratic
_	1
	public static void main (String args [])
	· £
	double a, b, c;
	double root1, root2;
	Scanner In = new Scanner (System.in);
	5.0.pln(" Enter value of a:").
	a = in.nextDouble();
	S.O.pln(" Entervalue of b:");
	b = in.nextDouble();
	S.O.pln(" Enter value of c:");
	C=in.nextDouble();
	double determinant = (b*b) -(4 *a*c);
	double sq = Math.sqrt (determinant); Il condition for real and different roots
	i) (determinant)0)
	٤٦
	xoot1 = ((-b+sq)/(2+a));
	5.0.pln(" Root 1 = "+ noot 1 + "It"+ "Root 2 = "+ noot 2);
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Il condition for real of else of Ideterminant = i noot! = noot 2 = (-1) s.o.pln ("Root! = R Il condition for root else double real = -6 (buble ing = Math.s -0-pln ("Root! = "+ ne	end equal xoots =0) b+sq)/(2*a); oot2="+ xoot1); ts that are not xe 2*a);	aL	
else s (determinant =) noots = noot 2 = (- S.O.pln ("Roots = R) // condition for noon else double neal = -6/(=0) b+sq)/(2*a); oot2="+ noot1); ts that are not ne		
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Il condition for 100. else S double real = -6/(ts that are not re		
else S double real = -6/(2 * a);		
S double Heal = -6] (2 * a); qrt(-determinan	t)/(2*a):	
double real = -6/(ouble ing = Math.s O-pln("Root1 = "+ 40	2+a); qrt(-determinan	t)/(2*a):	
ouble ing = Math.s O-pln("Root1 = "+ +10	grt (- determinan	t)/(2*a):	
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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 SGPA of a student.

```
import java.util.*;
public class Student
   String name;
   String USN;
   int marks[]=new int[5];
   int credits[]=new int[5];
     int tot=0;
     int i;
     int grade=0:
  void read_data()
  {
       Scanner obj=new Scanner(System.in);
       System.out.println("ENTER THE NAME OF THE STUDENT:\n");
       name=obj.next();
       System.out.println("ENTER THE USN:\n");
       USN=obj.next();
       System.out.println("ENTER THE CREDITS AND MARKS FOR 5 SUBJECTS:\n");
       for(i=0; i<5; i++)
          System.out.println("CREDITS FOR SUBJECT "+(i+1)+": ");
          credits[i]=obj.nextInt();
          System.out.println("\nMARKS FOR SUBJECT "+(i+1)+": ");
          marks[i]=obj.nextInt();
  }
   void calc_SGPA()
     for(i=0;i<5;i++)
       if(marks[i]>=90 && marks[i]<=100)
          grade = 10;
       else if(marks[i]>=75 && marks[i]<90)
          grade = 9;
       else if(marks[i]>=60 && marks[i]<75)
          grade = 8;
       else if(marks[i]>=50 && marks[i]<60)
          grade = 7;
       else if(marks[i]>=45 && marks[i]<50)
          grade = 6;
       else if(marks[i]>=40 && marks[i]<45)
          grade = 5;
       else if(marks[i]<40)
          grade = 0;
          tot = tot + grade * credits[i];
    tot = tot/20;
     System.out.println("Total SGPA:" +tot);
```

[Snehas-MacBook-Pro:~ snehasrivastava\$ javac Student.java

```
}
void details()
{
    System.out.println("NAME:"+name);
    System.out.println("USN:"+USN);
    System.out.println("MARKS and CREDITS OF ALL 5 SUBJECTS:");
    for(i=0;i<5;i++)
    {
        System.out.print(marks[i]+"\t");
        System.out.println(credits[i]);
    }
    calc_SGPA();
}

public static void main(String args[])
{
    Student ob=new Student();
    ob.read_data();
    ob.calc_SGPA();
    ob.details();
}
</pre>
```

```
Snehas-MacBook-Pro:~ snehasrivastava$ java Student
ENTER THE NAME OF THE STUDENT:
Sneha
ENTER THE USN:
1BM19CS158
ENTER THE CREDITS AND MARKS FOR 5 SUBJECTS:
CREDITS FOR SUBJECT 1:
MARKS FOR SUBJECT 1:
87
CREDITS FOR SUBJECT 2:
MARKS FOR SUBJECT 2:
CREDITS FOR SUBJECT 3:
MARKS FOR SUBJECT 3:
CREDITS FOR SUBJECT 4:
MARKS FOR SUBJECT 4:
CREDITS FOR SUBJECT 5:
MARKS FOR SUBJECT 5:
95
Total SGPA:8
NAME: Sneha
USN:1BM19CS158
MARKS and CREDITS OF ALL 5 SUBJECTS:
87
        4
        4
65
90
        3
73
        4
Total SGPA:8
Snehas-MacBook-Pro:~ snehasrivastava$
```

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	LAB PROGRAM-2	Sneha Ski vastava	
	ALGORITHM :-	(1BM19cs130)	T
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STEP: 4:-	Required variables array created	A STATE OF THE STA	1400
	void read-data () method create	d to Head name, USA	d
STEP. S.	Credits & marks of the studen	t. alikem #ai	
8 111.0.	void calc_SCZPA() method a	reated so a to calcul	la
	the SCIPA of 5 subjects acco	uding to the marks	
C TED /	and grade points of every	subject.	
C TEO C	sorn after calculation	nwinted	
5 1EP: 7.	creation of void details () r	nethod to display all +	the
	the scheen .	i.e. Name 175NI WADI	ه صا
C	The state of the s		
STEP:8:	Now, man method () is con	Pated I	
	* A 1/4 Trans	A company of the second	C
STEP:9:	the object ob ralle all	41-2 rb .	
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STEP: 10:	1 1)	En Es.	
	of class Student.	long with the close	
STEP:11:	STAP	3	
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1000	P-17-042-16		TITOMIA
	import java .util.*;		raare taire
	public class Student		
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	String name;	Company See Linited	A SAMPARA TITLE
A 302(1)	String USN;	ad date () mel	ale Alich Little
	int marks (] = ne H in	t C5] January A	CHECKITES .
Catenta	int credits [] = new in	ale Sc. (Ca) +	Pillia Ford C
A P. S. A.	int tot = 0;	100 d to A9	We Soul
	int in the contract		
	int grade = 0;	alles colon	LILLY SOLLY
all the	void read-data()		
A 16 16	STREET L.P. Norte 13 A		
	Scanner obj = new Sca	ner (System in	Chedi(
30 - 0	S.O. PLA ("ENTER THE N	AME OF THE S	TUDENT : In ")
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mak. 60	USN = obj. next();	06. secol data	. 5-1,
	S.O. PLA ("ENTER THE CR	EDITS AND MARK	S FOR 5 SUBJECTEN
92 SA	Jon (i=0; i(5; i+1)	() main ()	26011 2000 PH (200
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	S. O. PLA (" CREDITS FOR SUE	JECT"+ (i+1)+	" ")
	Credits [i] = obj. nextIn	= L).	
	S.O.pln L" In MARKS FOR SI	DAJECT " LIST AL	.".).
	marks [i] = obj .nextInt()		.),
	3		
	3	and the same	
	void calc-SGPA()		
	1		
	Jos (i=0; i(5; i++)		
William .	4	Vandament 1	

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if (marks [i] ) = 90 28 marks [1] = 100)
  e il (marks [i]) =60 28 marks [i] (75)
 else if (marks[i])=50 le marks[i] (60).
 else if ( marks [i] > -45 & 8 marks [i] (45)
  else if (marks [i] < 40)
  tot -tot + grade * credits [i];
 S.o.pln ("Total SapA:"+tot);
void details()
 S.O. pln ("NAME:"+name);
 S.O. pln (" USN: " + USN);
 S.O. pin (" MARKS Fand CREDITS OF ALL 5 SUBJECTS:");
  Joh (i = 0; i(5; i++)
 5.0.p (max ks [i]+"\L");
 S.o.pln (credits [i]),
 (al - SGIPA();
```

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Student ob = new St	udent ();
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ob. cale - SGIPA();	14.4-12
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	and the same
	websited services in the

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.*;
class Book1
  String name, author;
  double price;
  int num_pages;
    public Book1()
    this.name="":
    this.author="":
    this.price=0.0;
    this.num pages=0;
    public void DETAILS()
    Scanner ob=new Scanner(System.in);
    System.out.println("ENTER THE NAME OF THE BOOK\n");
    name=ob.nextLine();
    System.out.println("ENTER THE NAME OF THE AUTHOR");
    author=ob.nextLine();
    System.out.println("ENTER THE PRICE OF THE BOOK");
    price=ob.nextDouble();
    System.out.println("ENTER THE NUMBER OF PAGES OF THE BOOK");
    num_pages=ob.nextInt();
   public void ToString()
   System.out.println("****DETAILS OF THE BOOK****");
   System.out.println("NAME OF THE BOOK:"+name);
   System.out.println("NAME OF THE AUTHOR:"+author);
   System.out.println("PRICE OF THE BOOK:"+price);
   System.out.println("NO. OF PAGES OF THE BOOK:"+num_pages);
   public static void main(String args[])
    int i=0,n;
    Book1 obj=new Book1();
    Scanner ob1=new Scanner(System.in);
    System.out.println("ENTER THE LIMIT");
    n=ob1.nextInt();
    for(i=1;i \le n;i++)
      obj.DETAILS();
      obj.ToString();
}
```

```
Snehas-MacBook-Pro:~ snehasrivastava$ javac Book1.java
Snehas-MacBook-Pro:~ snehasrivastava$ java Book1
ENTER THE LIMIT
ENTER THE NAME OF THE BOOK
Computer Applications
ENTER THE NAME OF THE AUTHOR
Sumita Arora
ENTER THE PRICE OF THE BOOK
ENTER THE NUMBER OF PAGES OF THE BOOK
1020
****DETAILS OF THE BOOK****
NAME OF THE BOOK: Computer Applications
NAME OF THE AUTHOR: Sumita Arora
PRICE OF THE BOOK:980.0
NO. OF PAGES OF THE BOOK: 1020
ENTER THE NAME OF THE BOOK
Understanding JAVA
ENTER THE NAME OF THE AUTHOR
Vijay Kumar Pandey
ENTER THE PRICE OF THE BOOK
759.98
ENTER THE NUMBER OF PAGES OF THE BOOK
894
****DETAILS OF THE BOOK****
NAME OF THE BOOK: Understanding JAVA
NAME OF THE AUTHOR: Vijay Kumar Pandey
PRICE OF THE BOOK: 759.98
NO. OF PAGES OF THE BOOK:894
ENTER THE NAME OF THE BOOK
00J Concepts
ENTER THE NAME OF THE AUTHOR
Mc-GrawHill
ENTER THE PRICE OF THE BOOK
1345.86
ENTER THE NUMBER OF PAGES OF THE BOOK
2985
****DETAILS OF THE BOOK****
NAME OF THE BOOK: OOJ Concepts
NAME OF THE AUTHOR:Mc-GrawHill
PRICE OF THE BOOK: 1345.86
NO. OF PAGES OF THE BOOK: 2985
Snehas-MacBook-Pro:~ snehasrivastava$
```

	Date 16/10/2020
xpt.	No Page No Page No
nu	meate a class Book which contains four members: name, author, price, un-pages. Include a constructor to set the values for the
gr	embers. Include methods to set & get the details of the objects. nelude a to String () method that could display the complete details the book. Develop a Java program to create n book objects.
1	
ىن	mpont java.util.*;
	class Book 1
5	
	Character to the second to the second
	String name, author; double price;
	4
	int num-pages;
	public Books ()
	this. name="
	this. author=";
+	this. pxice = 0.0;
+	this. num-pages = 0;
-	
_	All and the little flowers
+	public void DETAILS()
	Scanner ob = New Scanner (System in);
	S.O. pla (" ENTER THE WAME OF THE BOOK In");
1	name = ob. next line ();
+	S.O. PLA (" ENTER THE NAME OF THE AUTHOR").

	Date
pt. No	Page No <u>13</u>
author = ob. nextline();	
S.O. PLA ("ENTER THE PRICE OF THE BOOK");	
price = ob.next Double();	
SOPENE ENTER THE NUMBER OF PAGES OF TH	IE BOOK");
num-pages = ob. nextInt();	
public void To Storing ()	
2	
S.o.pln ("**** DETAILS OF THE BOOK ***	<u>*"); </u>
s.o.pln ("NAME OF THE BOOK:"+name);	*
Sorth ("NAME OF THE AUTHOR :"+ auth	ion);
So-pla (" PRICE OF THE BOOK = "+ price);	
S.O. ILO (" NO. OF PAGES OF THE BOOK : "+	num-pages);
3	the state of the s
public static void main (String args []	I have settled the first above
1	
int i=0,n;	معطب ويتباهطون
Books obj = new Books();	from the base and the
Scanner Ob1 = New Scanner (System.in);	telding never between
S.O. PLA (" ENTER THE LIMIT");	
n = ob1. nextInt();	
{or (i=1; i(=n; i++)	
Obj. DETAILS ();	· · ·
Obj. To String ();	
] Programme in the state of the	
1	Signature :

	ALGORITHN
S	ep 2:- import java. util. * package 1 create class Book 1.
41	- 3:- Required valuables 1:5. Harry
_	declarea.
St	ep 5:- method DETAILS() is created in oxder to enter the
St	details of the book, i.e. name of the book, author,
	price & no. of pages.
St	ep 6:- Another method To String () is created. rept:- The method To String () basically prints all the
1	de tal 12
5	(1) matter is created
5	tep 8:- Now, main or method obj to call the Junetions. tep 9:- An object is created obj to call the Junetions. tep 10:- Scanner object obt is also created in order t
S	A los lone is executed for a book objects meet
V	calls the methods DETAILS() & To String(). calls the methods DETAILS() & To String(). calls the methods DETAILS() & To String().
Si	of class Books.
5	tep13:- Stop.

Output :-

ENTER THE LINIT

ENTER THE NAME OF THE MATTHER BOOK
Computer Applications

ENTER THE NAME OF THE AUTHOR
Sumita Arona

ENTER THE PRILE OF THE BOOK

980

ENTER THE NUMBER OF PAGES OF THE BOOK

*** DETAILS OF THE BOOK ****

NAME OF THE BOOK: Computer Applications
NAME OF THE AUTHOR: Sumita Anona

PRICE OF THE BOOK: 980.0

NO. OF PAGES OF THE BOOK: 1020

ENTER THE NAME OF THE BOOK Understanding Java

ENTER THE NAME OF THE AUTHOR Vijay Kumar Pandey

ENTER THE PRICE OF THE BOOK

ENTER THE NUMBER OF PACKES OF THE BOOK

NAME OF THE BOOK: Understanding JAVA
NAME OF THE AUTHOR: Vijay Kumar Pandey
NO. OF PAGE

NO. OF PAGES OF THE BOOK: 894

ENTER THE NAME OF THE BOOK OOT concepts comman and a later - later dood again a days ENTER THE NAME OF THE AUTHOR Mc-Grantill strate and to a see a discount sheden be escalared ENTER THE PRICE OF THE BOOK ENTER THE NUMBER OF PAGES OF THE BOOK 2985 **** DETAILS OF THE BOOK *** NAME OF THE BOOK: OUT Concepts NAME OF THE AUTHOR: MC-GranHill PRICE OF THE BOOK: 1345.86 NO- OF PAGES OF THE BOOK : 2985 this names. this, author public void DETAILS Scanness ob = 18 11 Scanness Chysterial S.O. Put (" EN THE THE WAYE OF THE name a cb. pertuna (). S.F. PL. (ENJER JEE WHIELE INE your

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.

```
import java.util.*;
import java.lang.Math.*;
abstract class shape{
     public int a;
     public int b;
     abstract public void printArea();
     Scanner s=new Scanner(System.in);
}
class rectangle extends shape{
     public void printArea(){
          System.out.print("Enter length and breadth of rectangle: ");
          float a=s.nextFloat();
          float b=s.nextFloat();
          float area=a*b;
          System.out.println("Area="+area+"sq.units");
     }
}
class triangle extends shape{
     public void printArea(){
          System.out.print("Enter three sides of triangle: ");
          float a=s.nextFloat();
          float b=s.nextFloat();
          float c=s.nextFloat();
          float d=(a+b+c)/2;
          double area=Math.sqrt(d*(d-a)*(d-b)*(d-c));
          System.out.println("Area="+area+"sq.units");
     }
}
class circle extends shape{
     public void printArea(){
          System.out.print("Enter radius of circle: ");
          float a=s.nextFloat();
          float area=22/7*a*a;
          System.out.println("Area="+area+"sq.units");
     }
}
class shapedemo{
     public static void main(String args[]){
          shape r=new rectangle();
          shape t=new triangle();
          shape c=new circle();
```

```
for(int i=0; i<100; i++){
          System.out.println("\n1)Triangle\n2)Rectangle\n3)Circle\n");
          System.out.println("Enter your choice: ");
          Scanner s=new Scanner(System.in);
          int ch=s.nextInt();
          switch(ch){
                case 1: t.printArea();
                     break;
                case 2: r.printArea();
                     break;
                case 3: c.printArea();
                     break:
                     default:
                System.out.println("Invalid choice");
          }
     }
}
```

```
Snehas-MacBook-Pro:~ snehasrivastava$ nano shapedemo.java
Snehas-MacBook-Pro:~ snehasrivastava$ javac shapedemo.java
Snehas-MacBook-Pro:~ snehasrivastava$ java shapedemo
1)Triangle
2)Rectangle
3)Circle
Enter your choice:
Enter three sides of triangle: 5
Area=6.49519052838329sq.units
1)Triangle
2)Rectangle
3)Circle
Enter your choice:
Enter radius of circle: 6
Area=108.0sq.units
1)Triangle
2)Rectangle
3)Circle
Enter your choice:
Enter length and breadth of rectangle: 5
Area=40.0sq.units
1)Triangle
2)Rectangle
3)Circle
Enter your choice:
Invalid choice
```

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114	import java . Lang. Math. * :
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	abstract class shape & woll 18 17.2 : 5/01
	publicaintraining and 1001
	· (public sint by promy rulling). 0.3
	abstract public void printArea ();
	Scanner s = new Scanner (System. in);
	3 close shoped care
	Class rectangle extends shape it it il illing
عاءات	public void print Axea () {
	S.O.p ("Entex length and breadth of rectangle:");
Variation of the same of the s	loat a = s. next=Float (); 1 = + god?
	loat b=s. nextFloats (), > = = 3 god >
] loat avea = axb); (a = 1 /11) 10]
	8.0.pln ("Area="+ area+ "sq.units"); "
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	3 [": siets you wint") of 0.2
	class trangle extends shape 3 1 2 2000
	public void print Area () 2 m. 2 1/3 haj
Secretary of the second	S.o.p(" Enter three sides of (treiangle :1").
	float a = s. next Float(); 1 : 1 = 200
	loat b = S. next Float(); rd
	float c = s.nextFloat();
	float d = (a+b+c)/2;
	double area = Math. sqrt (d* (d-a) * (d-b) * (d-c));
	5.0. pln ("Axea =" + axea+ "sq.units");
	1
	1 (" sieds bileval") 1/4.a.2.

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		MITTEL
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loat area = 22/7+ax	a :	
S.O. pountin ("Area" + area +	"sa woits").	
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Shape t = new triangle();	: 0 1001	
shape c = nen circlet)	= d 1001	
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3.0.pln ("Enter your choice:	"]-	
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case 1: t. printArea();	Let a leall	
break; solition		
case 2: r.pxint Axea ();		
bace a b.	. B	1
case 8: (C. print Area ());	A Dien Allen	1
· ("elinu break; 10 +" - or	(A") 211.0.2	
default;		
5.0. pln [" Inva	Lid choice").	
3 3 3		7

111 4.	ALL STATES OF A ST	(3
	OUTNT: javac shapedemo.java	
	ja va Shapedemo	
	1) Triangle	<u> </u>
	2) Rectangle	
	3) Cixcle	TAB
	Enter your choice:	
	1 three	
	Enter sides of triangle: 5	
2 2., 1	7	
	3	
	Area = 6.49 5190 52 838329 sq. units	1
	1) Tociangle	
	2) Rectangle 11 11 11 11 11 11 11 11 11 11 11 11 11	1
	3) Circle, I man 19	
	Entex your choice:	
	3	
	Enter nadius of circle: 6	
100	Area = 108.0 sq.units	3
) Triangle	
) Rectangle	
) Cixcle	
	Enter your choice:	
	2 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
- L	Enter length and breadth of rectangle: 5	
8	And the property of the second	
	Area = 40.0 sq. units	TW Telesco
12 12 12 12) Toxiangle	
	2) Rectangle	
	3) Cincle	
	Enter your choice:	- 1
	Invalid choice	9

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 make them more specific to their requirements. Include the necessary methods in order to achieve the following tasks:

- ·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.

```
import java.util.*;
class Account
     String name, type;
     int acc no:
     double amount:
     Scanner in=new Scanner(System.in);
     void type(int choice)
          if(choice==1)
               type="Savings Account";
          if(choice==2)
              type="Current Account";
     void input()
          System.out.println("Enter the Name, Account number and Balance:");
          name=in.next();
          acc_no=in.nextInt();
          amount=in.nextDouble();
     void deposit()
          System.out.println("Enter the amount to be deposited:");
          double x=in.nextDouble();
          amount=amount+x;
     void display()
          System.out.println("Name:"+name);
         System.out.println("Account number:"+acc_no);
          System.out.println("Type:"+type);
          System.out.println("balance:"+amount);
    }
class Savings_acc extends Account
     double a, cinterest;
     Scanner in=new Scanner(System.in);
```

```
void withdrawal()
          System.out.println("Enter amount to be withdrawn:");
          double amtw=in.nextDouble();
          if(amtw<=amount)
               amount=amount-amtw;
          else
               System.out.println("Invalid amount");
     void cmp interest()
          System.out.println("Enter the rate and time:");
          r=in.nextInt();
          t=in.nextInt();
          a=amount^* Math.pow(1 + (r *0.01),t);
          cinterest= a - amount;
     }
     void display()
          super.display();
          System.out.println("Compound Interest after " + t + " years: "+cinterest);
          System.out.println("Amount after " + t + " years: "+a);
     }
class Current_acc extends Account
     double min=10000;
     void input()
     {
          super.input();
     void service_charge()
          if(amount<min)
          amount=amount-500;
     void display()
          super.display();
class bankdemo
     public static void main(String args[])
          Scanner in=new Scanner(System.in);
          System.out.println("Choose type of account.");
          System.out.println("1.Savings account.");
System.out.println("2.Current account.");
          int choice=in.nextInt();
          if(choice==1)
               Savings_acc b=new Savings_acc();
               b.type(choice);
               b.input();
               System.out.println("Do you want to deposit or withdraw?\n1.Deposit.
\n2.Withdraw\n");
               int ch=in.nextInt();
```

```
if(ch==1)
               b.deposit();
                else if(ch==2)
                b.withdrawal();
                System.out.println("Invalid choice");
                b.cmp_interest();
               b.display();
          else if(choice==2)
                Current_acc b=new Current_acc();
               b.type(choice);
                b.input();
               b.deposit();
               b.service_charge();
               b.display();
          }
          else
                System.out.println("Invalid choice");
     }
}
```

```
Snehas-MacBook-Pro:~ snehasrivastava$ java bankdemo
Choose type of account.
1. Savings account.
2.Current account.
1
Enter the Name, Account number and Balance:
Sneha
86956473
8900369.78
Do you want to deposit or withdraw?
1.Deposit.
2.Withdraw
Enter the amount to be deposited:
12300
Enter the rate and time:
5
9
Name: Sneha
Account number:86956473
Type:Savings Account
balance:8912669.78
Compound Interest after 9 years: 4913806.329413034
Amount after 9 years: 1.3826476109413033E7
Snehas-MacBook-Pro:~ snehasrivastava$ java bankdemo
Choose type of account.
1.Savings account.
2.Current account.
Enter the Name, Account number and Balance:
86904512
76409.75
Enter the amount to be deposited:
Name:Smita
Account number: 86904512
Type:Current Account
balance:79899.75
Snehas-MacBook-Pro:~ snehasrivastava$
```

		6/11/2020
	LAB PROGRAM-5 (1BM19CS158)	
	import java. util. *;	Ling
	class Account	
	s throng to	
,	String name, type;	2.2
	int acc no : in a substantial	
	double amount; , and of ravorms and restrict)]	0.15
	Scanner in = new Scanner (System in);	214.6
	void type (int choice)	1
	£	3 4
	1 (choice ==1) 1 1 1 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2	
	type = "Savings Account";	
	il (choice = =2)	219
	type= "Couvert Account";	71
	3 1 1 1 1 1 2 mount - hel may 2 a lad singul	
	void input() site de l'in de la serie de l	
	₹	
	S.O-pla ("Enter the Name, Account number and &	Balance:");
	name = in. next ();	
	acc-no=in, nextSnt();	
	amount= in.nextDouble();	
	1	
	void deposit()	Y
	٤	
	s.o.pln(" Enter the amount to be deposited:"):
	double x = in. next Double ();	
	amount = amount + 2;	
	3 And the second of the second	
	void display ()	_
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10	
	//
	
	S.O.pla ("Name: "+name); () yalged blow
	S.O. pln ("Account number: " + acc-no);
a)	S.o.pin (" Type: " + type); () palged . mayor
(Jesustai	S. O. pln ("balance: "+ amount), to bring no)
	soph (" Amount after "4 tx" "years. "4 a); - [
4)	
4)	class Savings-acc extends Am Account
9)	class Current ace extends Accounts 1
9)	double a, cintexest;
_0)	int v, t;
(ف	
<u></u>	Scannez in= new Scanner (system.in); No blov
4)	Void Withdrawall)
4)	Super. in public
3	S.O. pln (" Enter amount to be withdrawn:");
4	double antw=in.nextDouble (): 1002 biov
4)	il (antw (= amount)
4)	amount = amount - anthys) !!
a)	else and Innomia = innomia
4)	5.0.pln ("Invalid amount");
-	Void display ()
2	Void comp-interest()
3	(); eupen. clisplay ();
	S.o. pln (" Enter the rate and time: ");
•	~ = in. nextdnt ();
2	t = in.next got(); and send earls
	a = amount * Math. pon (1+(x x 0.01), +);
0	(ccinterestie a - amountis, ade - iden
	3
0	Serance in a new Scanner (System in)
C. C. C.	
P	

	vaid display() ("man+": small") nlg-0.8	
	Su pla 1" Account number " , acc no)	
	Super. display(); (gyd " gyl")	
	3.0. pin (" Compound Interest after "+ tt years: "+ cinter	est)
	s.o. pin ("Compound Interest after "+ t+" years: "+ cinter s.o.pin ("Amount after "+ t+ "years: "+ a);	
	3	
	chase bonings were extende from Account	
	class Current-acc extends Account	
	E . Jase while a shipp	
	double min = 10000; : div dai	
	Sannes ins new Scenner Coughan Utingni biov	
	void withdrawalls	
	super. in put();	
3	S. O. plant" to too amount to be uitidamen: 8.	
	void service - charge On nie worms which	
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	il (amount/min) one = toward	1, 1
	amount = amount - 500 : 3213	
	5.0.pln ("Invalid ancunt").	
ing V	void display()	
	() sessestintegraphion	
	super. display ();	
	S.O. Pln (" Enter the rate and time "); 8	
	in nextently; Landston ni a most	
	class bankdemo (1) 300 3,50,01 = 3	
NA.	(= a mount & Math. pour (1) (x 4 0.01), 1) . 1	
	public static void main (String args [])	
	3	
	Scanner in = NEW Scanner (System.in);	

	//_
j ,	S.O. pln ("Choose type of account."); S.O. pln ("1. Savings account.");
) <u> </u>	S.O.pla (11. Savings account.");
	s.o.pin (" 2. Current account.");
	int choice = in. next fot();
	il (choice == 1)
)	6 2
	Savings-acc b = new Savings-acc ();
	b.type (choice);
	b.input();
	S.o.pln ("Do you want to deposit ox withdraw?) n1. Deposit
	In2. Withdraw In ");
	int ch = in. nextInt();
,	if (ch == 1)
	b. deposit ();
	else il (ch==2)
	b. withdrawal ();
	else
	s.o.pln("Invalid choice");
	b. emp_interest ();
	b. display (1;
	}
	else il (choice == 2)
	2
	Current_acc b = new Current_acc();
	b.type (choice);
	b. input ();
	b. deposit ();
	b. service-charge ();
	, b. display ();