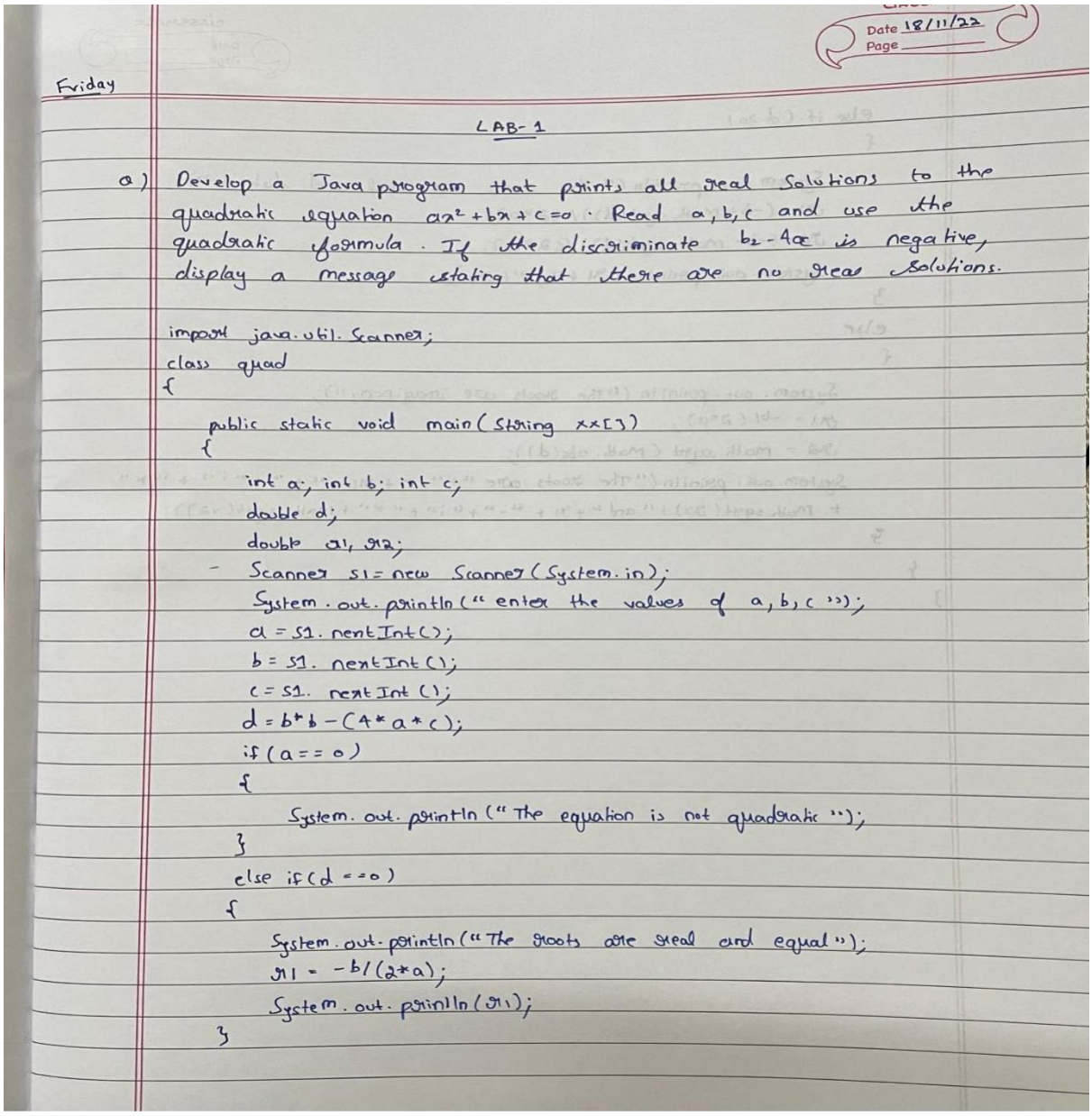
JAVA LAB RECORD

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.

CODE SNIPPET :



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LAB-1

a) Develop a Java program that prints all real solutions to the quadratic equation $ax^2+bx+c=0$. Read a, b, c and use the quadratic formula. If the discriminate b_2-4ac is negative, display a message stating that there are no real solutions.

```
import java.util.Scanner;
class quad
{
    public static void main(String xx[])
    {
        int a; int b; int c;
        double d;
        double r1, r2;
        Scanner s1 = new Scanner(System.in);
        System.out.println("enter the values of a, b, c ");
        a = s1.nextInt();
        b = s1.nextInt();
        c = s1.nextInt();
        d = b*b - (4*a*c);
        if(a==0)
        {
            System.out.println("The equation is not quadratic ");
        }
        else if(d==0)
        {
            System.out.println("The roots are real and equal ");
            r1 = -b/(2*a);
            System.out.println(r1);
        }
```

```
        else if (d >0)
        {
            System.out.println(" The roots are real and distinct ");
            r1 = (-b + Math.sqrt(d)) / (2*a);
            r2 = (-b - Math.sqrt(d)) / (2*a);
            System.out.println(r1 + ", " + r2);
        }
        else
        {
            System.out.println("The roots are imaginary");
            r1 = -b/(2*a);
            r2 = Math.sqrt(Math.abs(d));
            System.out.println("The roots are " + r1 + " + " + "i" + " * "
            + Math.sqrt(r2) + " and " + r1 + " - " + "i" + " * " + Math.sqrt(r2));
        }
    }
}
```

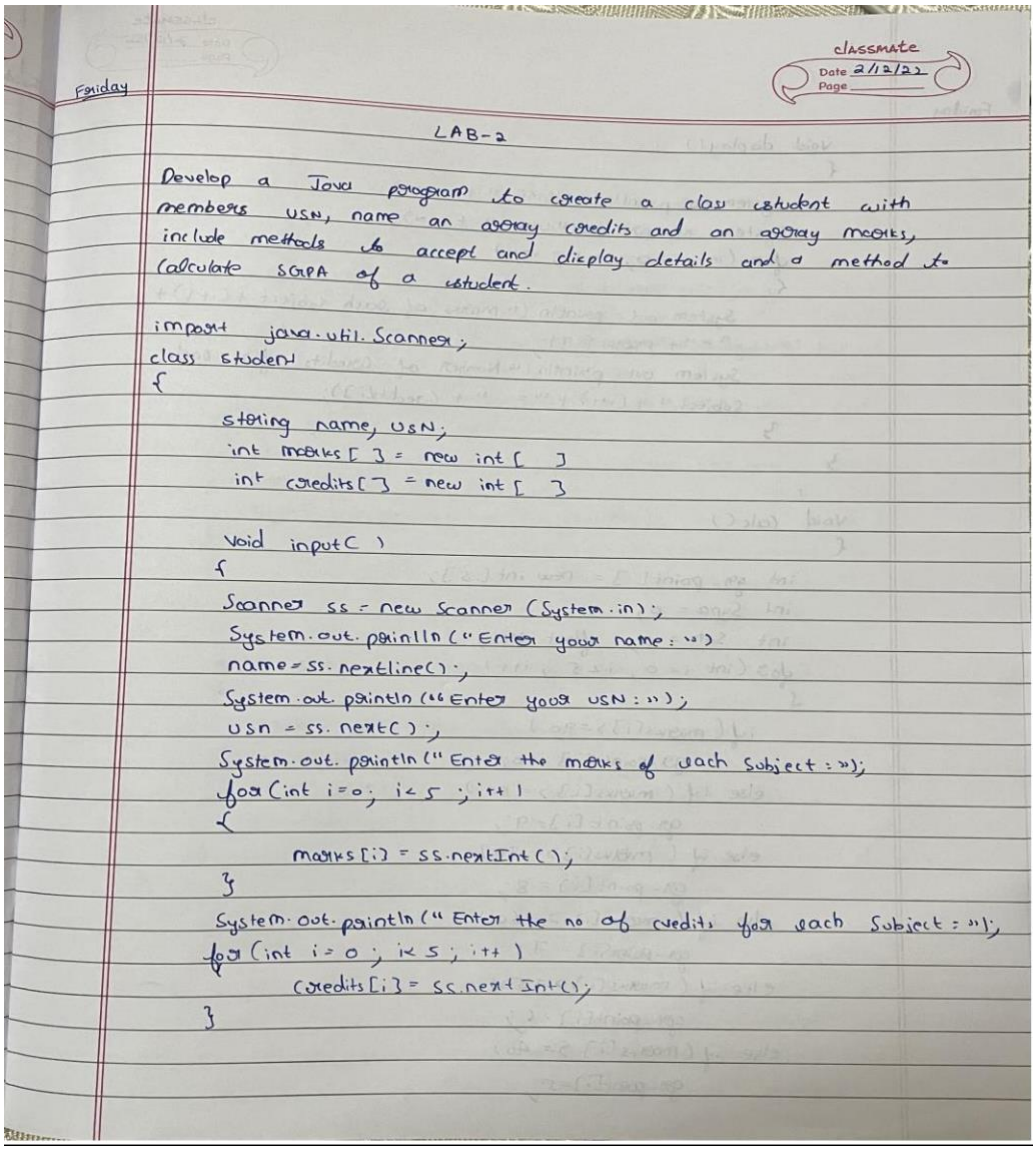
OUTPUT:

```
C:\Users\bmsce\Desktop\1BM21CS022>javac quad.java

C:\Users\bmsce\Desktop\1BM21CS022>java quad
enter the values of a,b,c
0 2 3
the equation is not quadratic

C:\Users\bmsce\Desktop\1BM21CS022>java quad
enter the values of a,b,c
3 -18 27
the roots are real and equal
3.0

C:\Users\bmsce\Desktop\1BM21CS022>java quad
enter the values of a,b,c
1 -1 -6
the roots are real and distinct
3.0, -2.0

C:\Users\bmsce\Desktop\1BM21CS022>java quad
enter the values of a,b,c
1 -2 5
the roots are imaginary
the roots are 1.0+i*2.0and1.0-i*2.0
```

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.

CODE SNIPPET:



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LAB-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.Scanner;
class student
{
    string name, usn;
    int marks[ ] = new int[ ]
    int credits[ ] = new int[ ]

    void input( )
    {
    Scanner ss = new Scanner (System.in);
    System.out.println("Enter your name : ")
    name = ss.nextline( );
    System.out.println("Enter your USN : ");
    usn = ss.next( );
    System.out.println(" Enter the marks of each subject : ");
    for(int i=0; i<5 ; i++)
    {
        marks[i] = ss.nextInt( );
    }
    System.out.println(" Enter the no of credits for each subject : ");
    for (int i = 0 ; i<5 ; i++ )
        credits[i] = ss.nextInt( );
    }
```

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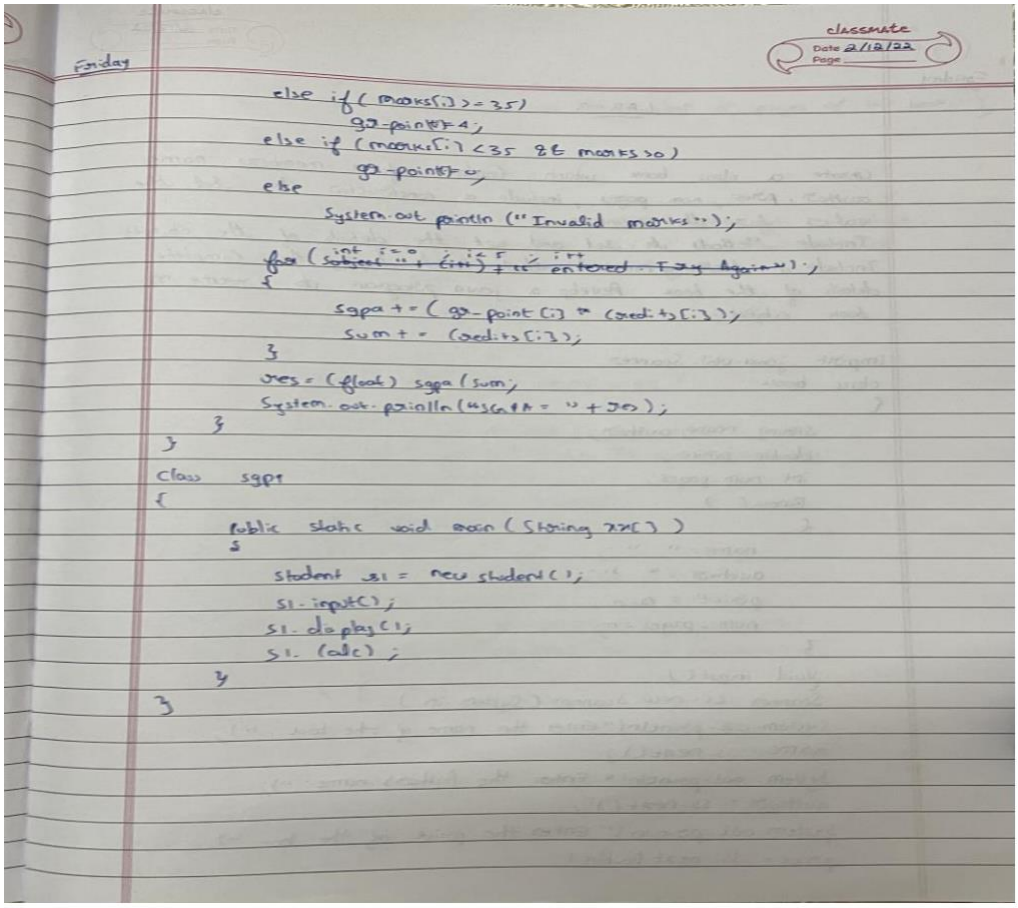
```
Void display()
{
    System.out.println("NAME: " + name);
    System.out.println("USN: " + usn);
    for (int i=0; i<5; i++)
    {
        System.out.println("Marks of each subject " + (i+1) +
        " = " + marks[i]);
        System.out.println("Number of Credits for each
        subject " + (i+1) + " = " + credits[i]);
    }
}

Void calc()
{
    int gr_point[] = new int[5];
    int Sgpa = 0;
    int sum = 0; float sres;
    for (int i=0; i<5; i++)
    {
        if(marks[i]>=90)
            gr_point[i]=10;
        else if(marks[i]>=80)
            gr_point[i]=9;
        else if(marks[i]>=70)
            gr_point[i]=8;
        else if(marks[i]>=60)
            gr_point[i]=7;
        else if(marks[i]>=50)
            gr_point[i]=6;
        else if(marks[i]>=40)
            gr_point[i]=5;
```



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            else if ( marks[i] >= 35)
                gp-point[i] = 4;
            else if (marks[i] < 35 && marks > 0)
                gp-point[i] = 0;
            else
                System.out.println ("Invalid marks");

            for (int i=0 ; i<5 ; i++) ("Subject " + (i+1) + " entered. Try Again");
            {
                sgpa += ( gp-point[i] * credits[i] );
                sum += (credits[i]);
            }
            res = (float) sgpa / sum;
            System.out.println("SGPA = " + res);
        }
    }
    class sgpa
    {
        public static void main ( String args[] )
        {
            student s1 = new student();
            s1.input();
            s1.display();
            s1.calc();
        }
    }
```

OUTPUT:

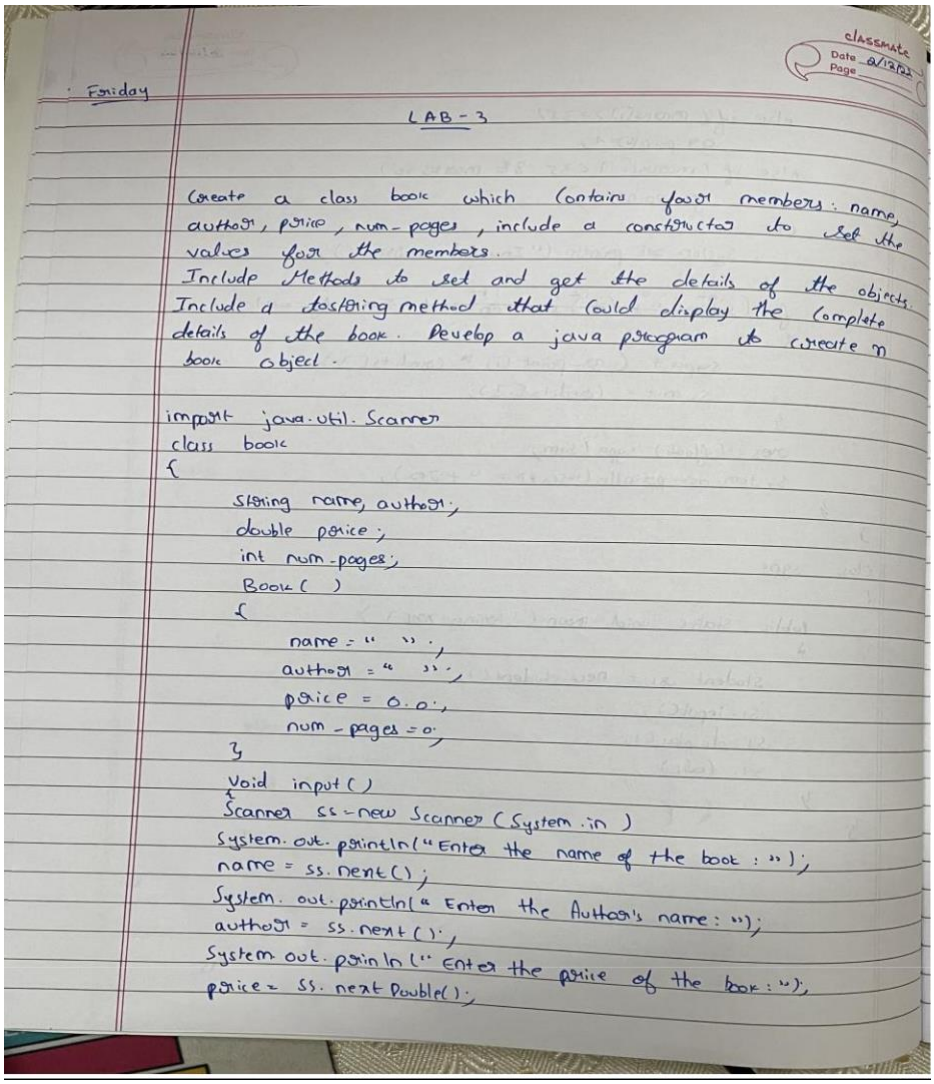
```
C:\Users\bmsce\Desktop>javac sgpa.java

C:\Users\bmsce\Desktop>java sgpa
Enter your name :
anagha
Enter your usn:
1bm21cs022
enter the marks of each subject:
89
90
67
99
95
enetr the number of credits of each subject:
4
4
3
2
4
NAME :anagha
USN :1bm21cs022
Marks of each subject is89
number of credits for each subject1= 4
Marks of each subject is90
number of credits for each subject2= 4
Marks of each subject is67
number of credits for each subject3= 3
Marks of each subject is99
number of credits for each subject4= 2
Marks of each subject is95
number of credits for each subject5= 4
sgpa= 9.235294
```

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.

CODE SNIPPET :



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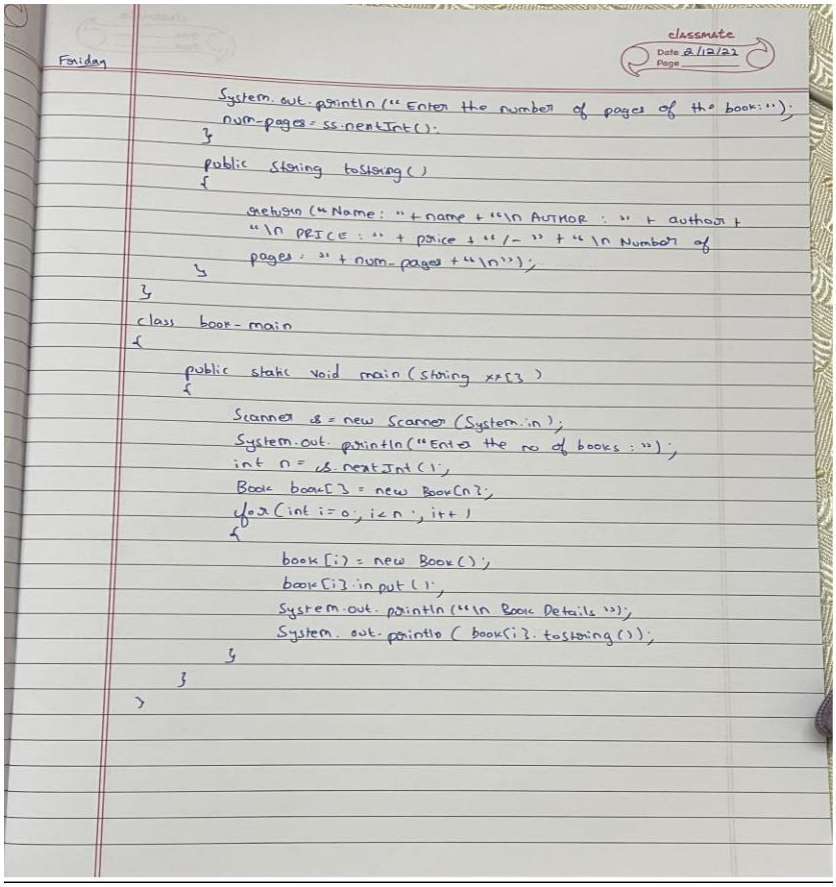
LAB - 3

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.

import java.util.Scanner
class book
{
    String name, author;
    double price;
    int num_pages;
    Book( )
    {
        name = " ";
        author = " ";
        price = 0.0;
        num_pages = 0;
    }
    void input( )
    {
    Scanner ss = new Scanner (System.in )
    System.out.println("Enter the name of the book : ");
    name = ss.next( );
    System.out.println(" Enter the Author's name : ");
    author = ss.next( );
    System.out.println(" Enter the price of the book : ");
    price = ss.nextDouble( );
```



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        System.out.println("Enter the number of pages of the book:");
        num_pages = ss.nextInt();
    }

    public String toString()
    {
        return("Name: " + name + "\n AUTHOR : " + author +
        "\n PRICE : " + price + "/- " + "\n Number of
        pages : " + num_pages + "\n");
    }
}
class book_main
{
    public static void main(String xx[])
    {
        Scanner s = new Scanner(System.in);
        System.out.println("Enter the no of books :");
        int n = s.nextInt();
        Book book[] = new Book[n];
        for(int i=0; i<n; i++)
        {
            book[i] = new Book();
            book[i].input();
            System.out.println("\n Book Details");
            System.out.println( book[i].toString());
        }
    }
}
```
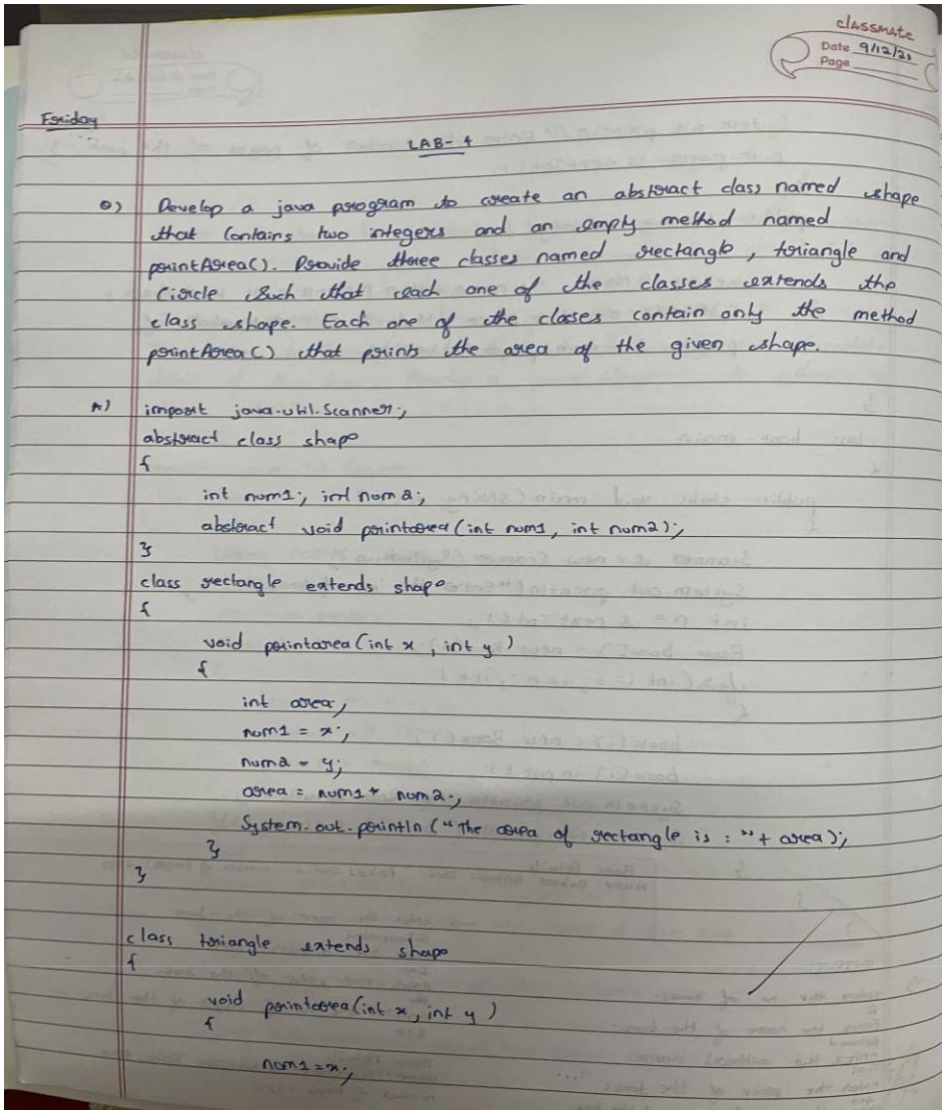

OUTPUT :

```
C:\Users\Anagha\Desktop>java book_main
enter the no of books :
2
Enter the name of the book :
Beloved
enter the author's name :
Toni
enter the price of the book :
400
enter the no of pages of the book :
350

Book Details
Name :Beloved Author :Toni Price: 400.0 number of pages: 350
Enter the name of the book :
Atonement
enter the author's name :
Ian
enter the price of the book :
400
enter the no of pages of the book :
350

Book Details
Name :Atonement Author :Ian Price: 400.0 number of pages: 350
```

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.

CODE SNIPPET :



```
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Q) 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.

A) import java.util.Scanner;
abstract class shape
{
    int num1; int num2;
    abstract void printarea(int num1, int num2);
}
class rectangle extends shape
{
    void printarea(int x, int y)
    {
        int area;
        num1 = x;
        num2 = y;
        area = num1 * num2;
        System.out.println("The area of rectangle is :" + area);
    }
}

class triangle extends shape
{
    void printarea(int x, int y)
    {
        num1 = x;
```

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```
        num2 = y;
        double area;
        area = (0.5)* num1 * num 2;
        System.out.println ("the area of the triangle is: " + area);
    }
}

class circle extends shape
{
    void printarea (int x, int y)
    {
        num1 = x;
        num2 = y;
        double area;
        area = (3.14)*num1* num 2;
        System.out.println ("The area of the Circle is : " + area);
    }
}

class shape_main
{
    public static void main (String xx[])
    {
        int a,b, r;
        Scanner ss = new Scanner (System.in);
        rectangle r1 = new rectangle();
        triangle t1= new triangle();
        circle c1 = new circle();
        System.out.println ("please enter the length & breadth of Rectangle");
        a = ss.nextInt();
        b= ss.nextInt();
        r1.printarea(a,b);
```

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```
        System.out.println ("please enter base & height of triangle");
        a = ss.nextInt();
        b=ss.nextInt();
        t1.printarea (a,b);
        System.out.println(" Please enter radius of Circle");
        r = ss.nextInt();
        c1.printcarea (r,r);
    }
}
```

OUTPUT:

```
Please enter length and breadth of rectangle
5 10
The area of rectangle is : 50
Please enter base and height of triangle
3 6
The area of triangle is : 9.0
Please enter the radius of Circle
5
The area of the Circle is : 78.5
```

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OUTPUT :

```
C:\Users\Anagha\Desktop\OOJ>java shape_main
please enter the length and breadth of rectangle
5 10
The area of the rectangle is : 50
please enter the base and height of triangle
6 3
the are of the triangle is : 9.0
please enter the radius of circle
5
the are of the circle is : 78.5
```

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 Cur-acct and Sav-acct to make them more specific to their requirements. Include the necessary methods in order to achieve the following tasks:

1) Accept deposit from customer and update the balance.

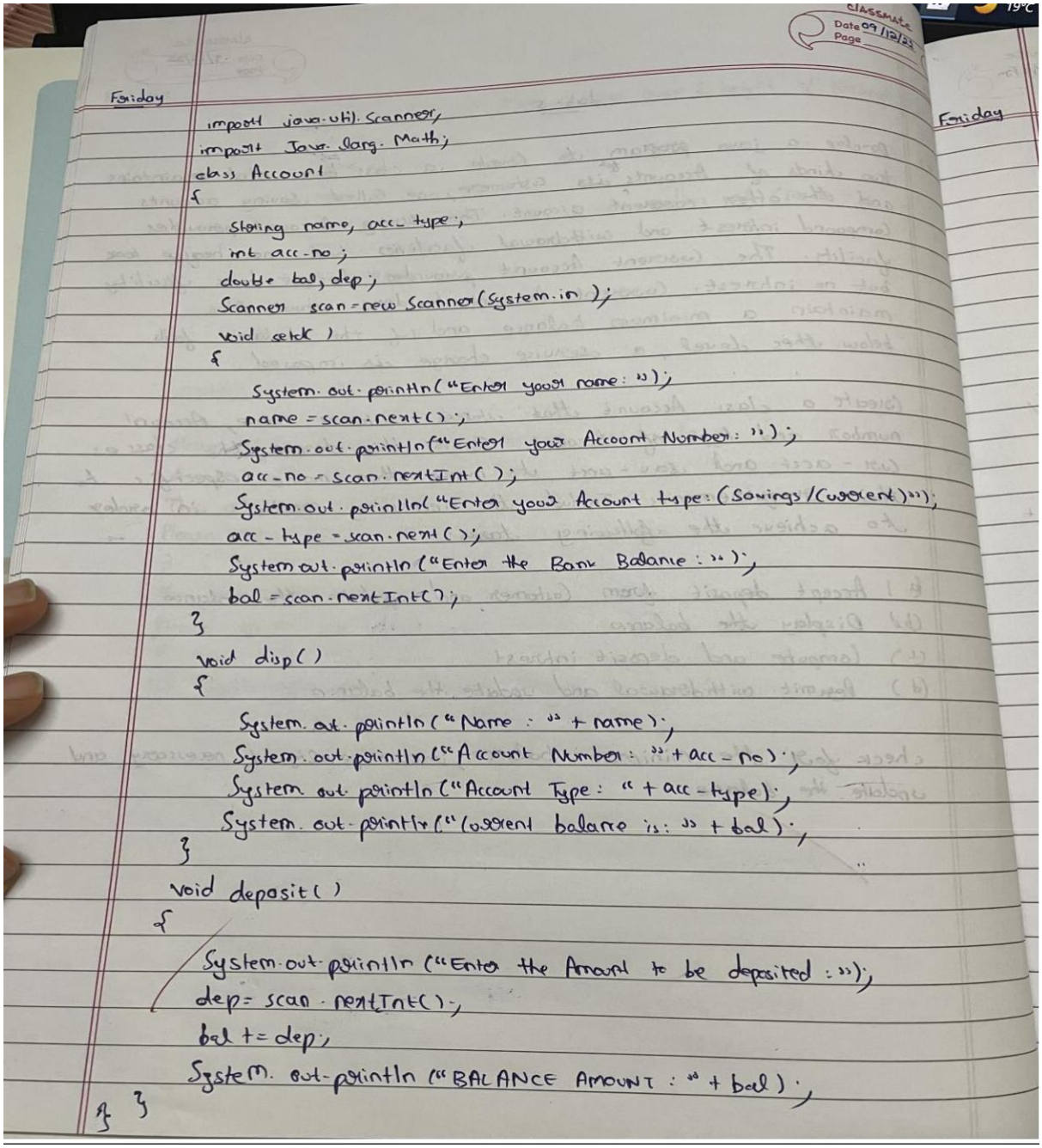
2)Display the balance.

3)Compute and deposit interest

4)Permit withdrawal and update the balance

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

CODE SNIPPET



```
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import java.util.Scanner;
import java.lang.Math;
class Account
{
    String name, acc_type;
    int acc_no;
    double bal, dep;
    Scanner scan = new Scanner(System.in);
    void setA()
    {
        System.out.println("Enter your name: ");
        name = scan.next();
        System.out.println("Enter your Account Number: ");
        acc_no = scan.nextInt();
        System.out.println("Enter your Account type: (Savings/Current)");
        acc_type = scan.next();
        System.out.println("Enter the Bank Balance: ");
        bal = scan.nextInt();
    }
    void disp()
    {
        System.out.println("Name : " + name);
        System.out.println("Account Number: " + acc_no);
        System.out.println("Account Type: " + acc_type);
        System.out.println("Current balance is: " + bal);
    }
    void deposit()
    {
        System.out.println("Enter the Amount to be deposited: ");
        dep = scan.nextInt();
        bal += dep;
        System.out.println("BALANCE AMOUNT: " + bal);
    }
}
```

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```
class Cur_acct extends Account
{
    int penal()
    {
        double min, pen;
        System.out.println("Enter Minimum balance and penalty amount if
        not followed :");
        min = 5000; pen = min * 0.05;
        if (bal < min)
        {
            bal -= pen;
            System.out.println("penalty imposed for having insufficient balance");
            return 0;
        }
        else
        {
            System.out.println("No penalty");
            return 1;
        }
    }
    void withdrawal()
    {
        double amt;
        System.out.println("Enter Amount to be withdrawn:");
        amt = scan.nextInt();
        int a = penal();
        if(a==1)
        {
            if(bal >= amt)
            {
                bal = bal - amt;
                System.out.println("Account Balance after withdrawal is :" + bal);
            }
        }
```

```
        else
        {
            System.out.println("The Amount Can't be withdrawn");
        }
    }
class sav-acct extends Account
{
    void cal-interest()
    {
        System.out.println("Enter time in years and Rate of interest");
        double t = scan.nextDouble();
        double r = scan.nextDouble();
        double CI = bal * Math.pow((1 + r/100), t);
        System.out.println("ACCOUNT BALANCE and Compounding interest :" +
        bal);
    }
    void withdrawal()
    {
        double amt;
        System.out.println("Enter Amount to be withdrawn");
        amt = scan.nextInt();
        if(bal >= amt)
        {
            bal = bal - amt;
            System.out.println("Account balance after withdrawal is " + bal);
        }
        else
        {
            System.out.println("The Amount Can't be withdrawn");
        }
    }
```

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```
class Bank
{
    public static void main(String arg[])
    {
        Scanner ss = new Scanner(System.in);
        Account b1 = new Account();
        b1.setd();
        if(b1.acc_type.equals("Savings"))
        {
            Sav_acct s1 = new Sav_acct();
            s1.name = b1.name;
            s1.acc_no = b1.acc_no;
            s1.acc_type = b1.acc_type;
            s1.bal = b1.bal;
            while(true)
            {
                System.out.println("Enter your choice: \n1. Deposit \n2. Calculate
                interest \n3. Withdrawal \n4. Display \n5. Exit");
                int choice = ss.nextInt();
                switch(choice)
                {
                    case 1: s1.deposit(); break;
                    case 2: s1.calc_interest(); break;
                    case 3: s1.withdrawal(); break;
                    case 4: s1.disp(); break;
                    case 5: System.exit(0);
                    default: System.out.println("Invalid input");
                }
            }
        }
    }
```

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```
else if (bl.acc.type.equals("current"))
{
    cur_acct c1 = new cur_acct();
    c1.name = bl.name;
    c1.acc_no = bl.acc_no;
    c1.acc_type = bl.acc_type;
    c1.bal = bl.bal;
    while(true)
    {
        System.out.println("Enter your choice: \n 1: Deposit \n 2.
        penalty check \n 3. withdrawal \n 4. Display \n 5. Exit");
        int choice = ss.nextInt();
        Switch (choice)
        {
            case 1: c1.deposit(); break;
            case 2: c1.penal(); break;
            case 3: c1.withdrawal(); break;
            case 4: c1.disp(); break;
            case 5: System.exit(0);
            default: System.out.println("Invalid input");
        }
    }
}
else
{
    System.out.println("Invalid Account type");
}
}
```

OUTPUT :

```
Enter your Name:
Dhiksha
Enter your Account Number:
123456
Enter your Account type: (Savings/Current)
Savings
Enter the Bank Balance:
30000
Enter your choice:
1.Deposit
2.Calculate interest
3.Withdraw
4.Display
5.Exit
1
Enter the amount to be deposited:
5000
Balance Amount: 35000.0
Enter your choice:
1.Deposit
2.Calculate interest
3.Withdraw
4.Display
5.Exit
3
Enter amount to be withdrawn:
5000
Account Balance after withdrawal is:30000.0
Enter your choice:
1.Deposit
2.Calculate interest
3.Withdraw
4.Display
5.Exit
2
Enter Time in years and Rate of interest
2 5.4
```

Command Prompt

```
Enter your choice:
1.Deposit
2.Calculate interest
3.Withdraw
4.Display
5.Exit
2
Enter Time in years and Rate of interest
2 5.4
Account Balance after compounding interest: 33327.48
Enter your choice:
1.Deposit
2.Calculate interest
3.Withdraw
4.Display
5.Exit
4
Name: Dhiksha
Account Number: 123456
Account Type: Savings
Current balance is: 33327.48
Enter your choice:
1.Deposit
2.Calculate interest
3.Withdraw
4.Display
5.Exit
5
```

```
C:\Users\Anagha\Desktop\OOJ\Lab6>java Bank
Enter your Name:
Anagha
Enter your Account Number:
135672
Enter your Account type: (Savings/Current)
Current
Enter the Bank Balance:
50000
Enter your choice:
1.Deposit
2.Penalty Check
3.Withdraw
4.Display
5.Exit
1
Enter the amount to be deposited:
300
BALANCE AMOUNT: 50300.0
Enter your choice:
1.Deposit
2.Penalty Check
3.Withdraw
4.Display
5.Exit
2
Enter Minimum balance & penalty amount if not followed:
No penalty
Enter your choice:
1.Deposit
2.Penalty Check
3.Withdraw
4.Display
5.Exit
```

Lab Program 6 :

Write a program that demonstrates handling of exceptions in inheritance tree. Create a base class called “Father” and derived class called “Son” which extends the base class. In Father class, implement a constructor which takes the age and throws the exception WrongAge( ) when the input age<0. In Son class, implement a constructor that cases both father and son’s age and throws an exception if son’s age is >=father’s age.

Code Snippet :

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Lab - 6

8) Write a program that demonstrates handling of exceptions in inheritance trees. Create a base class called "Father" and derived class called "son" which extends the base class. In Father class, implement a constructor which takes the age and throws the exception WrongAge() when the input age < 0. In Son class, implement a constructor that cases both father and son's age and throws an exception if Son's age is >= father's age.

```
import java.util.Scanner
class WrongAge extends Exception
{
    WrongAge() { }
    String msg = new String();
    WrongAge(String s)
    { msg = s; }
    public String toString()
    { return msg; }
}
class ErrorAge extends WrongAge
{
    String msg1 = new String();
    ErrorAge(String ss)
    { msg1 = ss; }
    public String toString()
    { return msg1; }
}
```

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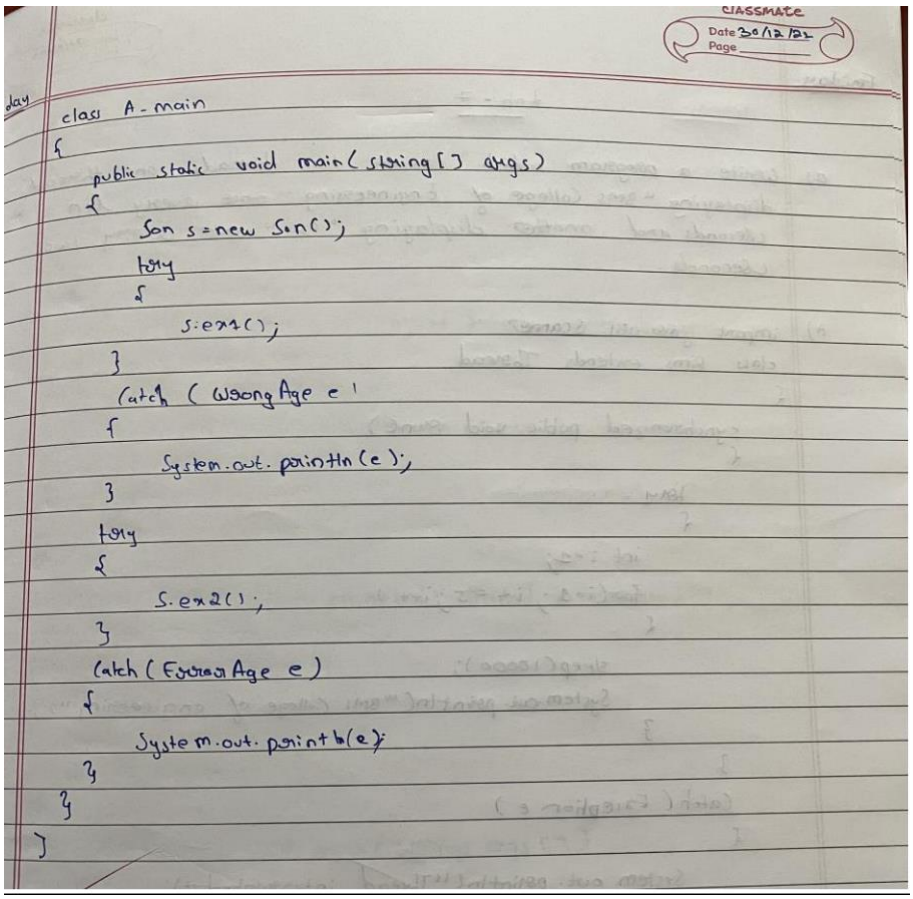
```
class Father
{
    int age;
    Scanner in = new Scanner(System.in);
    Father()
    {
        System.out.println("Enter the father's age: ");
        age = in.nextInt();
    }
    void ex1() throws WrongAge
    {
        if (age <= 0)
        throw new WrongAge("Invalid input. Fathers Age cannot be
        lesser than 0");
    }
}
class Son extends Father
{
    int age;
    Son()
    {
        System.out.println("Enter the Age of Son : ");
        age = in.nextInt();
    }
    void ex2() throws ErrorAge
    {
        if (age <= 0 || age > Super.age)
        {
            throw new ErrorAge("Age of father less than son");
        }
        else { System.out.println("FATHERS AGE: " + super.age + "\n SON'S AGE: " +a
        }
    }
}
```



```
class A_main
{
    public static void main(String[] args)
    {
        Son s=new Son();
        try
        {
            s.ex1();
        }
        catch (WrongAge e)
        {
            System.out.println(e);
        }
        try
        {
            s.ex2();
        }
        catch (FatherAge e)
        {
            System.out.println(e);
        }
    }
}
```

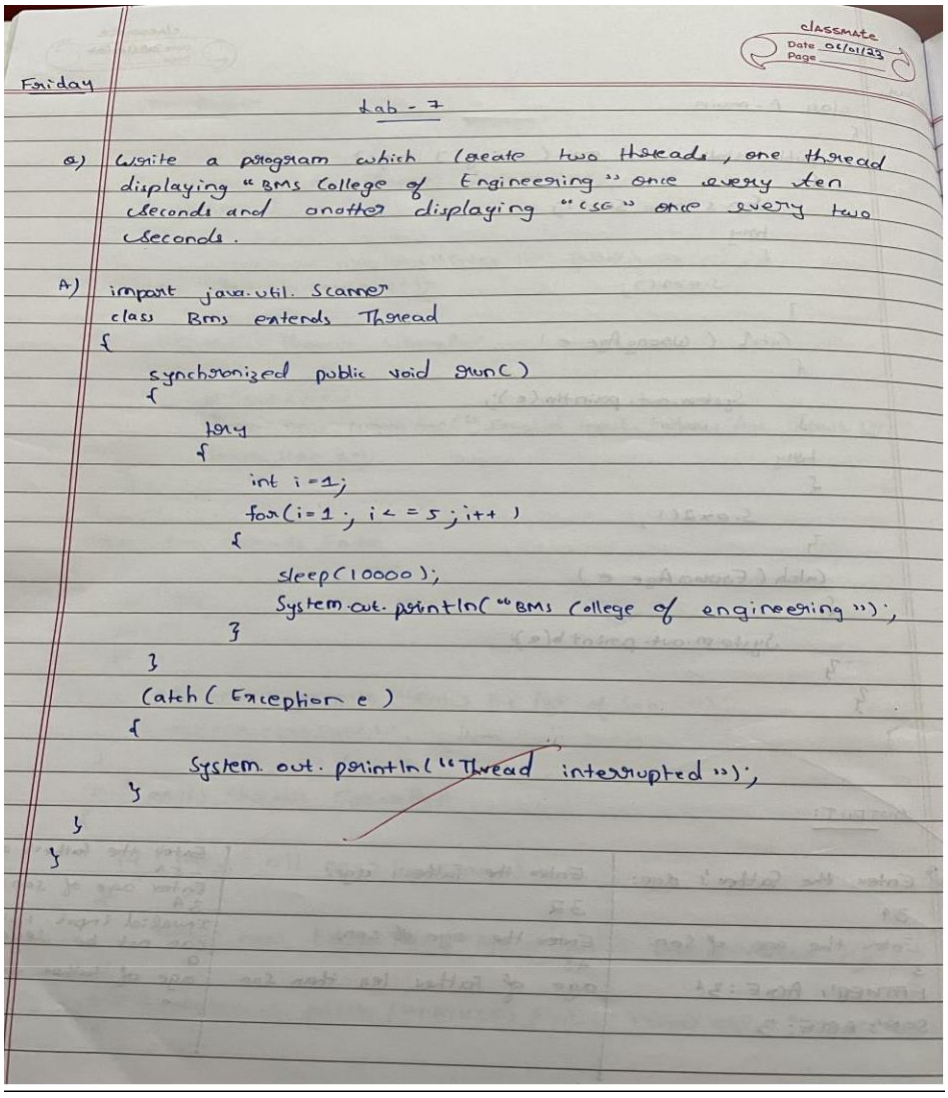
Output :

```
C:\Users\Anagha\Desktop\OOJ\Lab6>javac A_main.java

C:\Users\Anagha\Desktop\OOJ\Lab6>java A_main
Enter the father's age:
50
Enter the age of son:
17
FATHER'S AGE:50
SON'S AGE:17

C:\Users\Anagha\Desktop\OOJ\Lab6>java A_main
Enter the father's age:
23
Enter the age of son:
45
age of father less than son

C:\Users\Anagha\Desktop\OOJ\Lab6>java A_main
Enter the father's age:
-1
Enter the age of son:
3
Invalid input. Father's age can not be lesser than 0
age of father less than son
```

Lab Program 7 :

Write a program which creates two threads, one thread displaying “BMS College of Engineering” once every ten seconds and another displaying “CSE” once every two seconds.

Code Snippet :



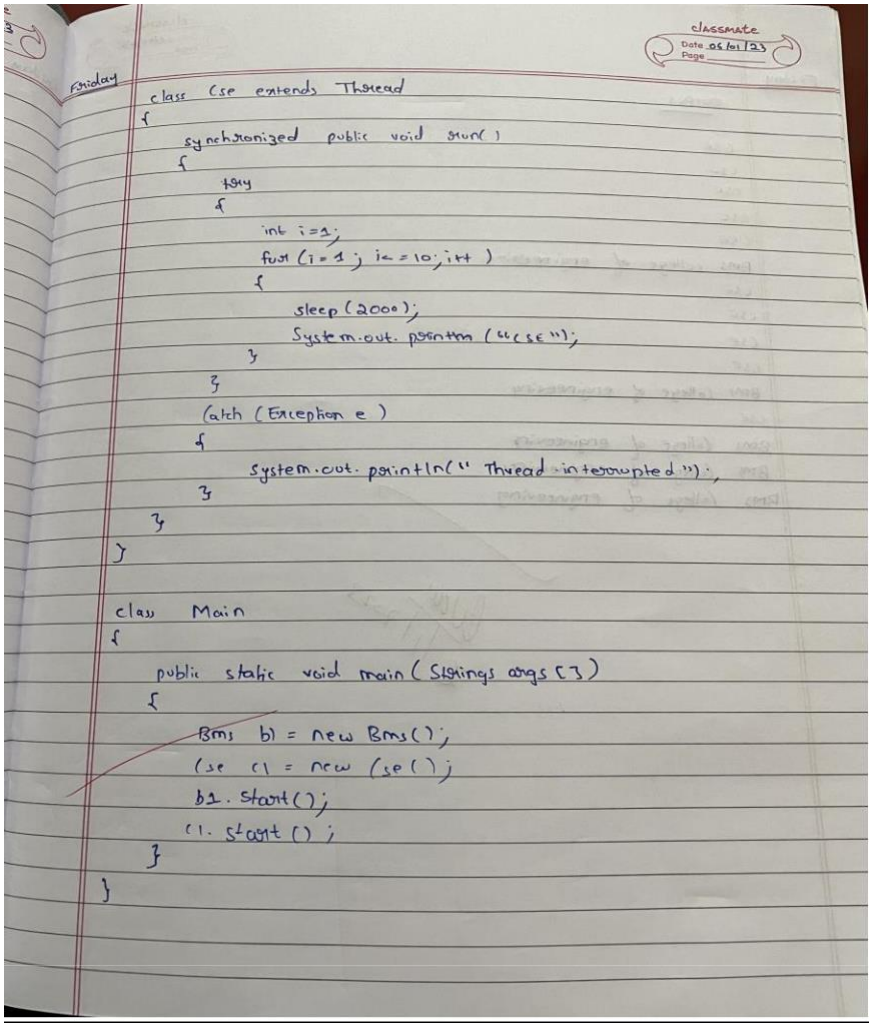
Friday

Lab - 7

Q) Write a program which create two threads, one thread displaying "BMS College of Engineering" once every ten seconds and another displaying "CSE" once every two seconds.

A)

```
import java.util.Scanner;
class Bms extends Thread
{
    synchronized public void run()
    {
        try
        {
            int i=1;
            for(i=1; i<=5; i++)
            {
                sleep(10000);
                System.out.println("BMS College of engineering");
            }
        }
        catch( Exception e )
        {
            System.out.println("Thread interrupted");
        }
    }
}
```



```
class Cse extends Thread
{
    synchronized public void run()
    {
        try
        {
            int i=1;
            for(i=1; i<=10; i++)
            {
                sleep(2000);
                System.out.println("CSE");
            }
        }
        catch (Exception e)
        {
            System.out.println("Thread interrupted");
        }
    }
}

class Main
{
    public static void main(String args[])
    {
        Bms b1 = new Bms();
        Cse c1 = new Cse();
        b1.start();
        c1.start();
    }
}
```

Output :

```
C:\Users\Anagha\Desktop\OOJ\lab 7>javac Main.java

C:\Users\Anagha\Desktop\OOJ\lab 7>java Main
CSE
CSE
CSE
CSE
BMS college of engineering
CSE
CSE
CSE
CSE
CSE
BMS college of engineering
CSE
BMS college of engineering
BMS college of engineering
BMS college of engineering
```

Lab Program 8 :

Create a package CIE which has two classes- Student and Internals. The class Personal has members like usn, name, sem. The class internals has an array that stores the internal marks scored in five courses of the current semester of the student. Create another package SEE which has the class External which is a derived class of Student. This class has an array that stores the SEE marks scored in five courses of the current semester of the student. Import the two packages in a file that declares the final marks of n students in all five courses.

CODE SNIPPET :

Lab - 8

8) Create a package CIE which has two classes - student and Internals. The class personal has members like usn, name, sem. The class internals has an array that stores the internal marks scored in five courses of the current semester of the student. Create another package SEE which has the class external which is a derived class of student. This class has an array that stores the SEE marks scored in five courses of the current semester of the student. Import the two packages in a file that declares the final marks of n students in all five courses.

Student.java :

```
package CIE;
import java.util.*;
public class student
{
    String usn;
    String name = new String();
    int sem;
    public void setinfo()
    {
        System.out.println("Enter usn, name, sem:");
        Scanner ss = new Scanner(System.in);
        usn = ss.next();
        name = ss.next();
        sem = ss.nextInt();
    }
```

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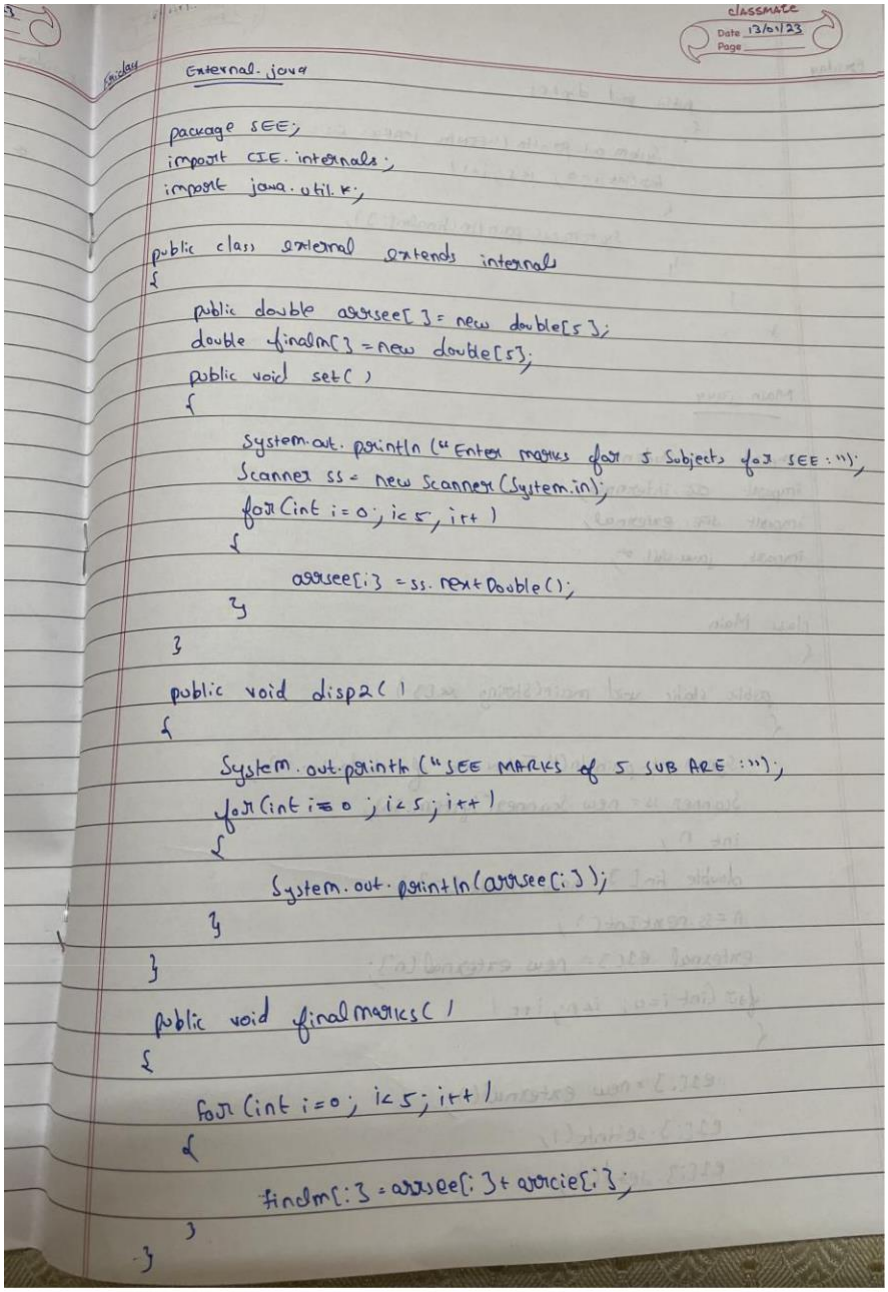
```
    public void display()
    {
        System.out.println("USN: " + usn);
        System.out.println("NAME" + name);
        System.out.println("SEM : " + sem);
    }
}
```

Internals.java :

```
package CIE;
import java.util.*;
public class internals extends student
{
    public double arrcie[] = new double[5];
    public void setd()
    {
        System.out.println("Enter marks for 5 subjects");
        Scanner ss = new Scanner(System.in);
        for(int i=0; i<5; i++)
        {
            arrcie[i] = ss.nextDouble();
        }
    }
    public void disp()
    {
        System.out.println("CIE marks of 5 SUB are :");
        for(int i=0; i<5; i++)
        {
            System.out.println(arrcie[i]);
        }
    }
}
```



External.java

```
package SEE;
import CIE.internals;
import java.util.*;

public class external extends internals
{
    public double arrsee[] = new double[5];
    double finalm[] = new double[5];
    public void set()
    {
        System.out.println("Enter marks for 5 Subjects for SEE :");
        Scanner ss = new Scanner(System.in);
        for(int i=0; i<5; i++)
        {
            arrsee[i] = ss.nextDouble();
        }
    }
    public void disp2()
    {
        System.out.println("SEE MARKS of 5 SUB ARE :");
        for(int i=0; i<5; i++)
        {
            System.out.println(arrsee[i]);
        }
    }
    public void finalmarks()
    {
        for(int i=0; i<5; i++)
        {
            finalm[i] = arrsee[i] + arrcie[i];
        }
    }
}
```

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```
public void disp()
{
    System.out.println("FINAL MARKS IS:");
    for(int i=0; i<5; i++)
    {
        System.out.println(finalm[i]);
    }
}
}
```

Main.java

```
import CIE.student;
import CIE.internals;
import SEE.external;
import java.util.*;

class Main
{
    public static void main(String xx[])
    {
        System.out.println("Enter no of students:");
        Scanner ss = new Scanner(System.in);
        int n;
        double fin[] = new double[5];
        n=ss.nextInt();
        external e1[]= new external[n];
        for(int i=0; i<n; i++)
        {
            e1[i] = new external();
            e1[i].setinfo();
            e1[i].setd();
```

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```
            e1[i].set();
            e1[i].finalmarks();
            e1[i].dispt();
        }
    }
}
```

OUTPUT:

```
Enter no of students:
2
Enter USN, name, sem:
1BM21CS023 Anagha 3
Enter marks for 5 subjects:
45
48
49
43
47
Enter marks for 5 subjects of SEE:
49
49
48
45
46
FINAL MARKS IS:
94.0
97.0
97.0
86.0
93.0
```

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```
Enter USN, name, sem:
1BM21CS001 Sneha 3
Enter marks for 5 subjects:
45
48
42
49
47
Enter marks for 5 subjects for SEE:
43
45
46
47
48
FINAL MARKS IS:
85.0
93.0
81.0
96.0
95.0
```

OUTPUT :

```
C:\Users\Anagha\Desktop\1BM21CS022>java Main
Enter no of students :
2
Enter usn,name,sem:
1BM21CS022 Anagha 3
Enter marks for 5 subjects :
45
48
49
43
47
Enter marks for 5 subjects for SEE  :
49
49
48
45
46
FINAL MARKS IS :
94.0
97.0
97.0
88.0
93.0
```

```
Enter usn,name,sem:
1BM21CS001 Sneha 3
Enter marks for 5 subjects :
45
48
42
49
47
Enter marks for 5 subjects for SEE  :
43
45
46
47
48
FINAL MARKS IS :
88.0
93.0
88.0
96.0
95.0
```