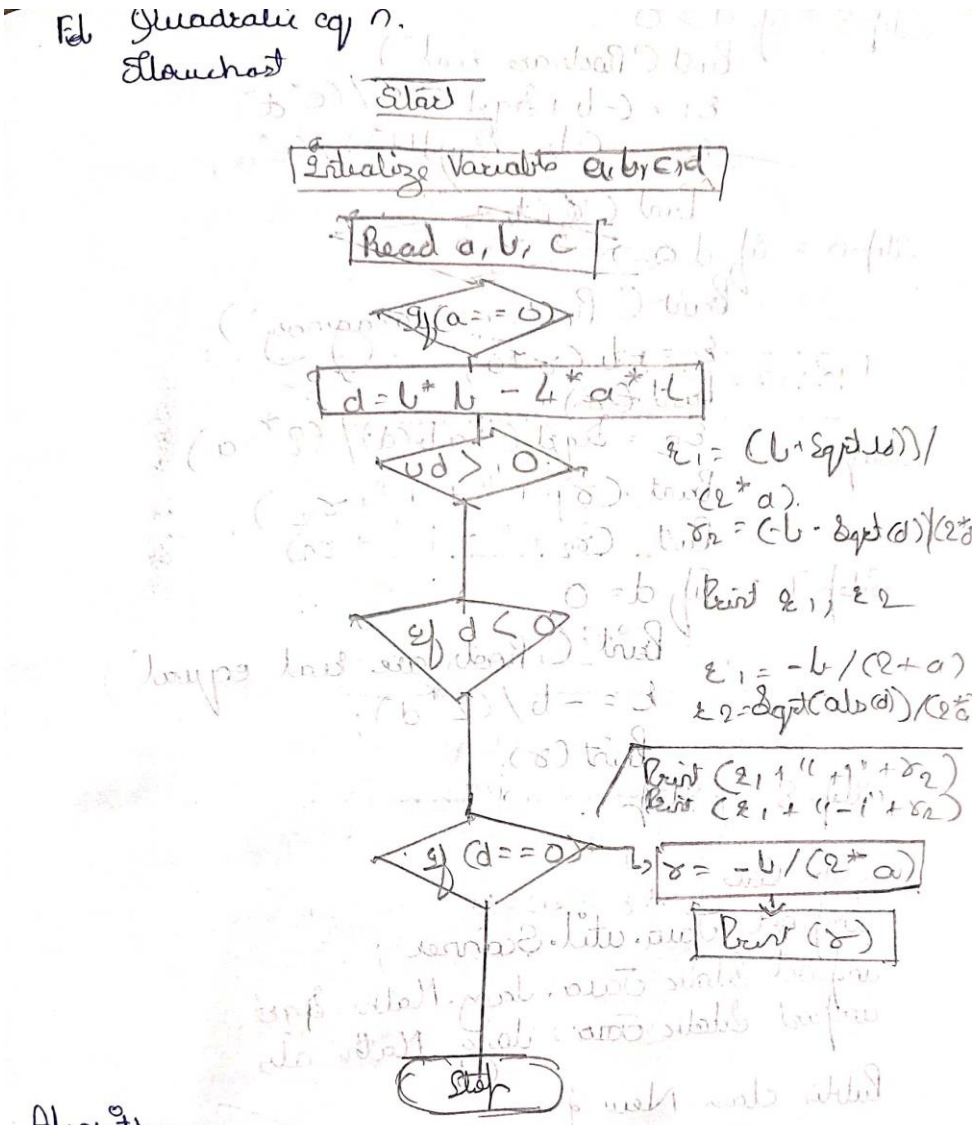
WEEK 1

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



Algorithm

Step 1 : Start

Step 2 : Initialize Variable a, b, c, d & Read a, b, c

Step 3 : if (a=0)
Print ("invalid input")
go to Step 8

Step 4 : d = b*b - 4*a*c

Step 5 : if d > 0
Print ("Roots are real")
r1 = (-b + Sqrt(d)) / (2*a)
r2 = (-b - Sqrt(d)) / (2*a)
Print (r1 * r2).

Step 6 : if d <= 0.
Print ("Roots are imaginary").
r = -b (2*a);
Print (r).
r2 = Sqrt (+ abs(d)) / (2* a)
Print (r1 + " + i " + r2)
Print (r2 + " - i " + r2)

Step 7 : if d = 0
Print ("Roots are real equal")
r = -b / (2*d);
Print (r).

Step 8 : Stop.

Java Code :

```
import Java.util.Scanner;
import static Java.lang.Maths.Sqrt
import static Java.lang Maths.abs
Public class New {
    Public static Void Main (String [] args) {
    Scanner in = New Scanner System.in)
    System.out.Println ("Enter Coefficients of
    a quadratic equation");
    int a = in.nextInt()
    int b = in.nextInt();
    int c = in.nextInt();
```

```
if (a==0) {
    System.out.println("Enter valid input");
}
else {
    int d = b*b - 4*a*c;
    if (d > 0) {
        System.out.println("Roots are equal");
        float r1 = (float) (-b + Sqrt(d))/(2*a);
        float r2 = (float) (-b-Sqrt(d))/(2*a);
        System.out.println(r1);
        System.out.println(r2);
    }
    else if (d<0) {
        System.out.println("Roots are imaginary")
        float r1 = (float)-b/(2*a);
        float r2 = (float) Sqrt(abs(d))/(2*a);
        System.out.println(r1 + "+i" + r2);
        System.out.println(r2 + "-i" + r2)
    }
    else {
        System.out.println("Roots are equal");
        float r = (float) -b/(r*d);
        System.out.println(r);
    }
}
```

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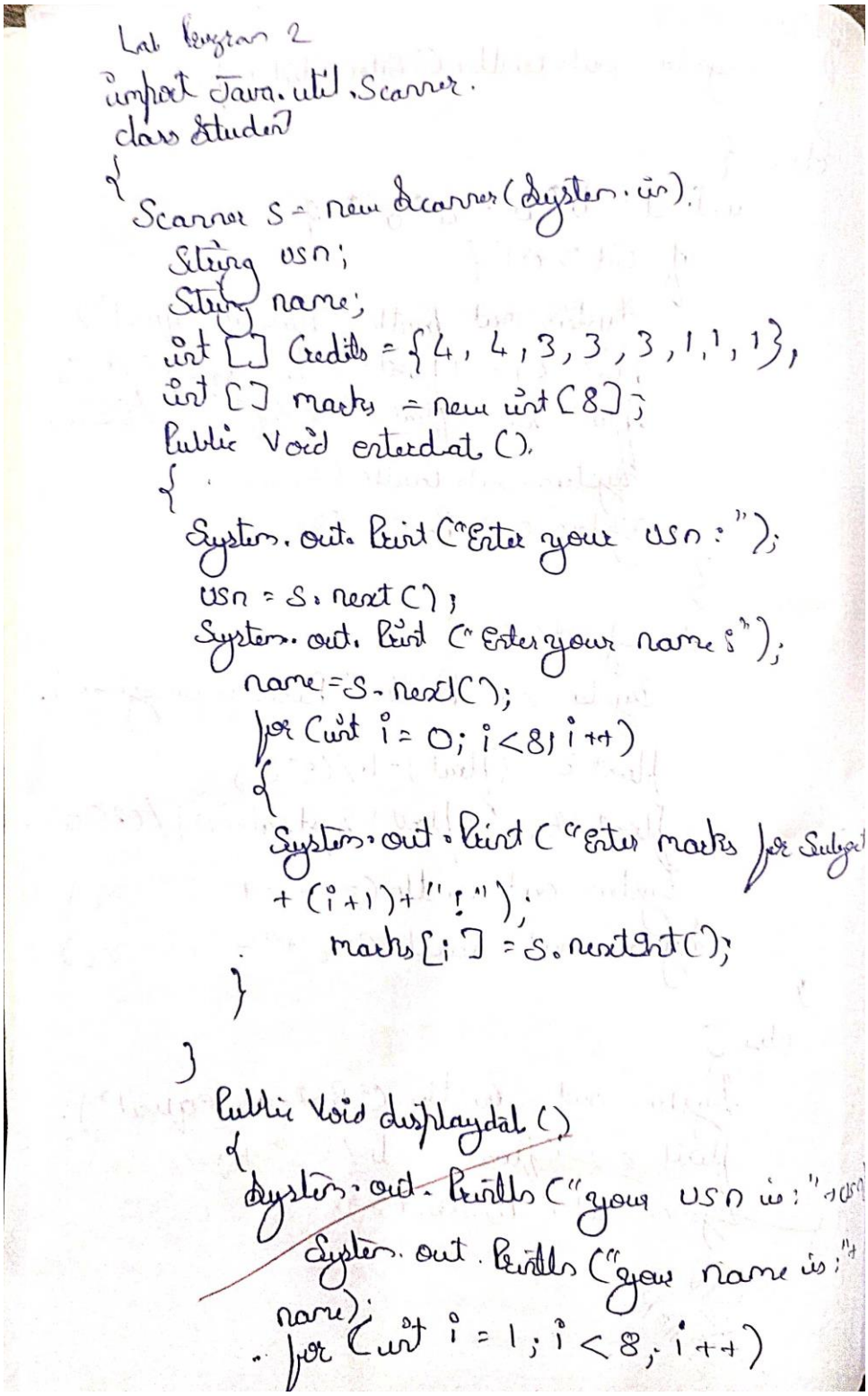
```
My Name is Anish Budavi
My USN is 2023BMS02596
Enter the coefficients of a, b, and c:
1
3
2
Roots are real and distinct
Root1 = -1.0 Root2 = -2.0
```

WEEK2

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.



```
Lab program 2
import java.util.Scanner;
class Student
{
Scanner s = new Scanner(System.in);
  String usn;
  String name;
  int [] Credits = {4, 4, 3, 3, 3, 1, 1, 1};
  int [] marks = new int[8];
  Public Void enterdet();
  {
   System.out.Print("Enter your usn:");
   usn = s.next();
   System.out.Print("Enter your name:");
     name = s.next();
      for(int i = 0; i<8; i++)
      {
       System.out.Print("Enter marks for Subject
       +(i+1)+"!");
          marks[i] = s.nextInt();
      }
  }
   Public Void displaydet()
   {
    System.out.Println("your usn is:"+usn
       System.out.Println("your name is:"+
     name);
     for(int i = 1; i<8; i++)
```

```
{
System.out.Println("your marks for Subject
"+i+" is "+marks[i]);
}
}
Public Void Sgpa()
{float g=0;
for(int j=0; j<8; j++)
{ int v;
v = Credits[j] * ((marks[j] / 10)+1);
g = g+v;
}
System.out.Println("your Sgpa is :"+(g/20));
}
}
Public class Main
{ Public Static Void main(String[] args) {
Student P = new Student();
P.enterdata();
P.displaydet();
P.Sgpa();
}
}
```

Algorithm

Step 1:- Start

Step 2:- initializing Variables USN, name, Credits mark,

Step 3] Input Values for USN, Name, Creditsmark,

Step 4> Creat author method to Calculat SGPA

Step 5) In SGPA method initialize Variable, total Credit and Total sum to 0;

Step 6] For loop Condition (i = 0, i<5, i++).

Total Credit + = Credits (i])

total sum = gradepoint mark (i])

Step 7) Return Value for SGPA function as total/Total Cred

Step 8] Creat gradepoint method & check for marks Collected

Step 9] End.

```
my name is Anish Budavi
my USN is 2023BMS02596
Enter the number of subjects:
6
Enter the USN:
2023BMS02596
Enter the name:
ANISH BUDAVI
Enter details for student ANISH (USN: 2023BMS02596)
Enter credits for subject 1: 9
Enter marks for subject 1: 90
Enter credits for subject 2: 10
Enter marks for subject 2: 96
Enter credits for subject 3: 8
Enter marks for subject 3: 88
Enter credits for subject 4: 9
Enter marks for subject 4: 92
Enter credits for subject 5: 8
Enter marks for subject 5: 92
Enter credits for subject 6: 9
Enter marks for subject 6: 93
Details for student ANISH (USN: 2023BMS02596)
Subject 1 - Credits: 9, Marks: 90
Subject 2 - Credits: 10, Marks: 96
Subject 3 - Credits: 8, Marks: 88
Subject 4 - Credits: 9, Marks: 92
Subject 5 - Credits: 8, Marks: 92
Subject 6 - Credits: 9, Marks: 93
SGPA: 9.849056603773585
```

WEEK3

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.

Lab Program 3

Create a class Book which Contains four members name, author, Price num Pages include a Constructors to Set the Values for the members Include methods to Set and get the details of the object Include a String () method that Could display the details of the Book. Develop a Java Program that Could display the details of the book Develop a Java Program to create n book object

Code

```
import Java.util.
class Book {
String name;
String author;
int Price;
int numPages;

Public Book (String name, String author, int Price,
int numPages) {
this.name = name;
this.author = author;
this.Price = Price;
this.numPages = numPages;
}

Public void setName (String name){
this.name = name;
}

Public String getName() {
return name;
}
```

```
}
Public Void SetAuthor (String author) {
  this.author = author;
}
Public String getAuthor() {
  return author;
}
Public Void SetPrice(int Price) {
  this.Price = Price;
}
Public int getPrice(int Price) {
  return Price;
}
Public Void SetNumPage(int numPages) {
this.numPages = numPages;
}
Public int getNumPage() {
return numPages;
}
Public String toString() {
return "Name of the Book is "+name+"\n the
author of the book is "+author+"\n the Price of
the book is "+Price+"\n the total number of the
Pages of the book is "+numPages;
}
}
```

```
class Demo1 {
public static void main (String args [])
{
Scanner input = new Scanner (System.in);
int n = input.nextInt ();
Book [] b = new Book [n];
for (int i = 0, i<n, i++) {
System.out.println ("Enter details for book "+(i+1)
" :");
System.out.println ("Name :");
String name = input.nextLine()
System.out.println ("Author");
String author = input.nextLine
System.out.println ("Price is:")
int price = input.nextInt ();
System.out.println ("number of pages in
book is:");
int numPage = input.nextInt ();
b[i] = new book (name, author, price, numPage);
}
System.out.println ("The book details are:");
for (book book : b) {
System.out.println ();
}
input.close ();
}
}
```

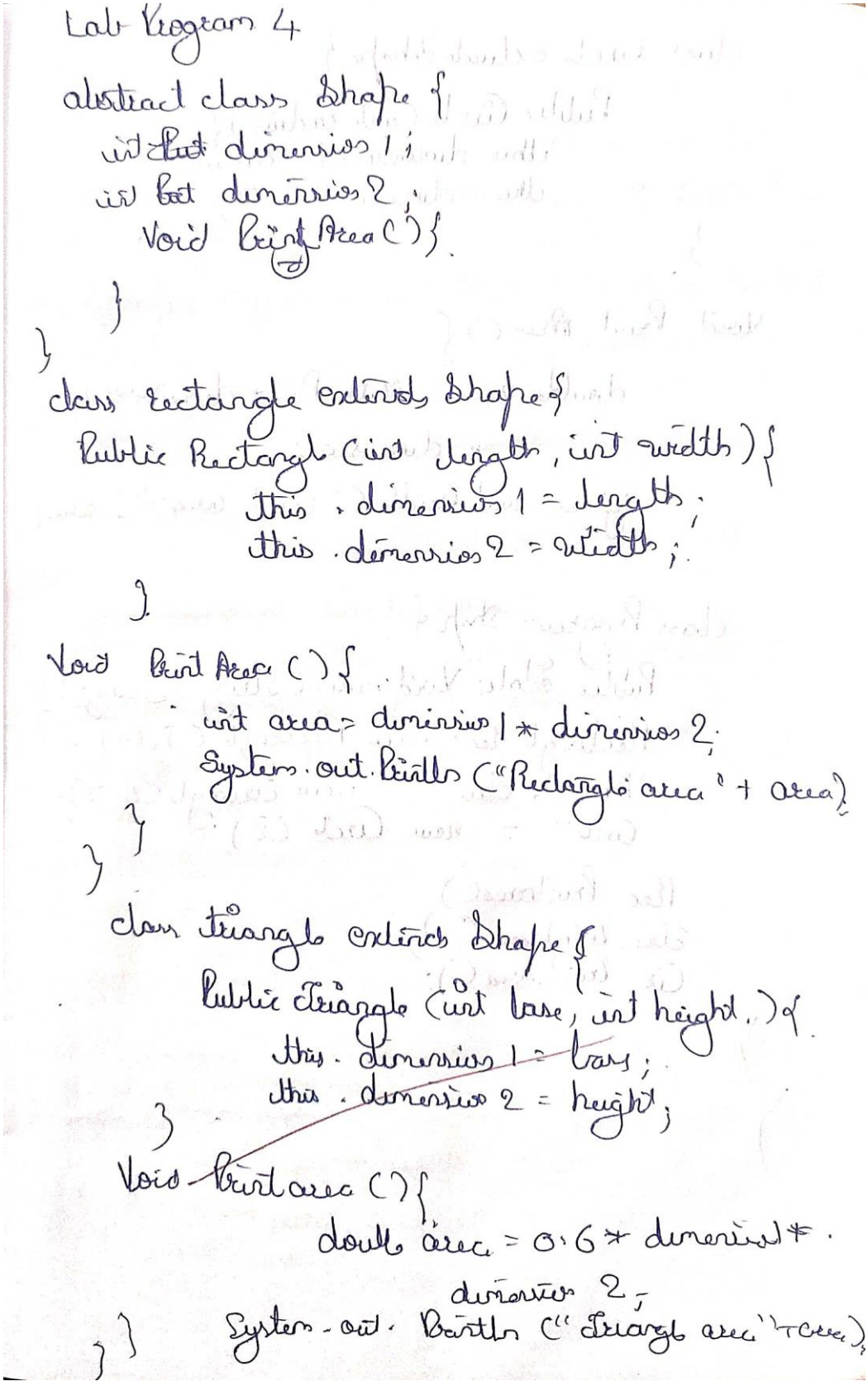
```
Anish Budavi
2023BMS02596
Enter the number of books:
2
Enter name of the book:
Science
Enter author of the book:
Darshan
Enter the price of the book:
600
Enter the number of pages of the book:
200
Enter name of the book:
History
Enter author of the book:
Abhishek
Enter the price of the book:
599
Enter the number of pages of the book:
199

Book Details:
Book 1:
Book name: Science
Author name: Darshan
Price: 600
Number of pages: 200

Book 2:
Book name: History
Author name: Abhishek
Price: 599
Number of pages: 199
```

WEEK4

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 Program 4
abstract class Shape {
  int dimension1;
  int dimension2;
    void printArea(){}
  }
}
class rectangle extends Shape{
  Public Rectangle(int length, int width){
        this.dimension1 = length;
        this.dimension2 = width;
  }
void PrintArea(){
      int area = dimension1 * dimension2;
      System.out.println("Rectangle area" + area);
  }}
  class triangle extends Shape{
      Public Triangle(int base, int height.){
          this.dimension1 = base;
          this.dimension2 = height;
      }
  void PrintArea(){
          double area = 0.6 * dimension1 *
                        dimension2;
      System.out.println("Triangle area"+area);
  }}
```

```
class Circle extends Shape {
    Public Circle (int radius) {
        this.dimension1 = radius
        this.dimension2 = 0;
    }

Void Print Area() {
    double area = Math.PI (* dimension1
        * dimension2.
    System.out.println("Circle area:" + a

class Program Shape {
    Public Static Void main (String [] args)
    Rectangle Rec = new Rectangle (5, 10);
    Triangle Tri = new Triangle (4, 7);
    Circle = new Circle (2);

    Rec. PrintArea();
    Tri. PrintArea();
    Cir. PrintArea();
}
}
```

Algorithm

1) Start
2) Creat abstract class Shape & Create Variable
3) Creat class Rectangle, Triangle, & Circle that extend the class Shape
4) Specify different Print Area method in each & overide the existing PrintArea method
5) Set the area in triangle class as

area = 0.5 * dimension1 * dimension2 ;

and area in Rectangle class as

area = dimension1 * dimension2

and area in Circle class as

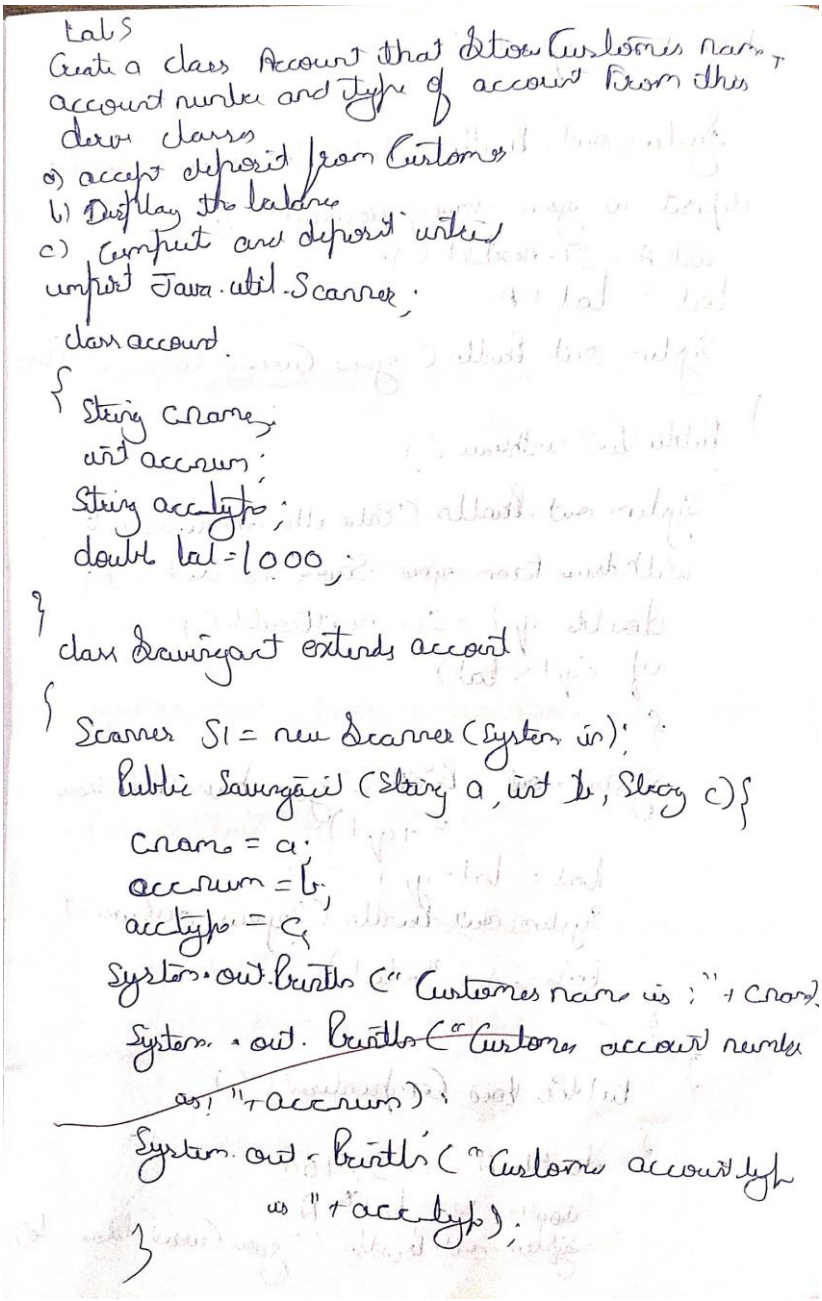
area = math PI * dimension * dimension2

6) In main method Creat Constructor and Call the PrintArea() method to Print the value of the area of Rectangle, Circle and Triangle classes

```
My name is Anish Budavi
USN is 2023BMS02596
Enter length and width for Rectangle:
2
3
Rectangle Area: 6
Enter base and height for Triangle:
5
9
Triangle Area: 22.5
Enter radius for Circle:
3
Circle Area: 28.274333882308138
```

WEEK5

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:



```
Lab 5
Create a class Account that stores Customers name,
account number and type of account From this
derive classes
a) accept deposit from Customer
b) Display the balance
c) Compute and deposit interest
import Java.util.Scanner;
class account
{
String cname;
int accnum;
String acctype;
double bal=1000;
}
class Savingact extends account
{
Scanner S1 = new Scanner(System.in);
  Public Savingact(String a, int b, String c){
  cname = a;
  accnum = b;
  acctype = c;
System.out.println("Customers name is :"+cname);
System.out.println("Customer account number
as! "+accnum);
System.out.println("Customer account type
is "+acctype);
}
```

```
Public Void deposit ( ).
{
 System.out.println ("Enter the amount to be
deposit in your Saving account:");
 int A = SI.nextInt ( ).
 bal = bal + A;
 System.out.println ("your Current balance is:"+bal
}
 Public Void withdraw ( )
 {
  System.out.println ("Enter the amount to be
  withdraw From your Saving account:");
   double q1 = SI.nextDouble ( );
   if (q1 > bal).
   {
   System.out.println("you have withdraw
                    "+q1);
      bal = bal - q1;
      System.out.println ("your current
      balance is:"+bal);
   }
 }
   Public Void Computerint ( )
   { double A = 0.5/100;
     double w = bal * A;
     System.out.println ("your Current balance
```

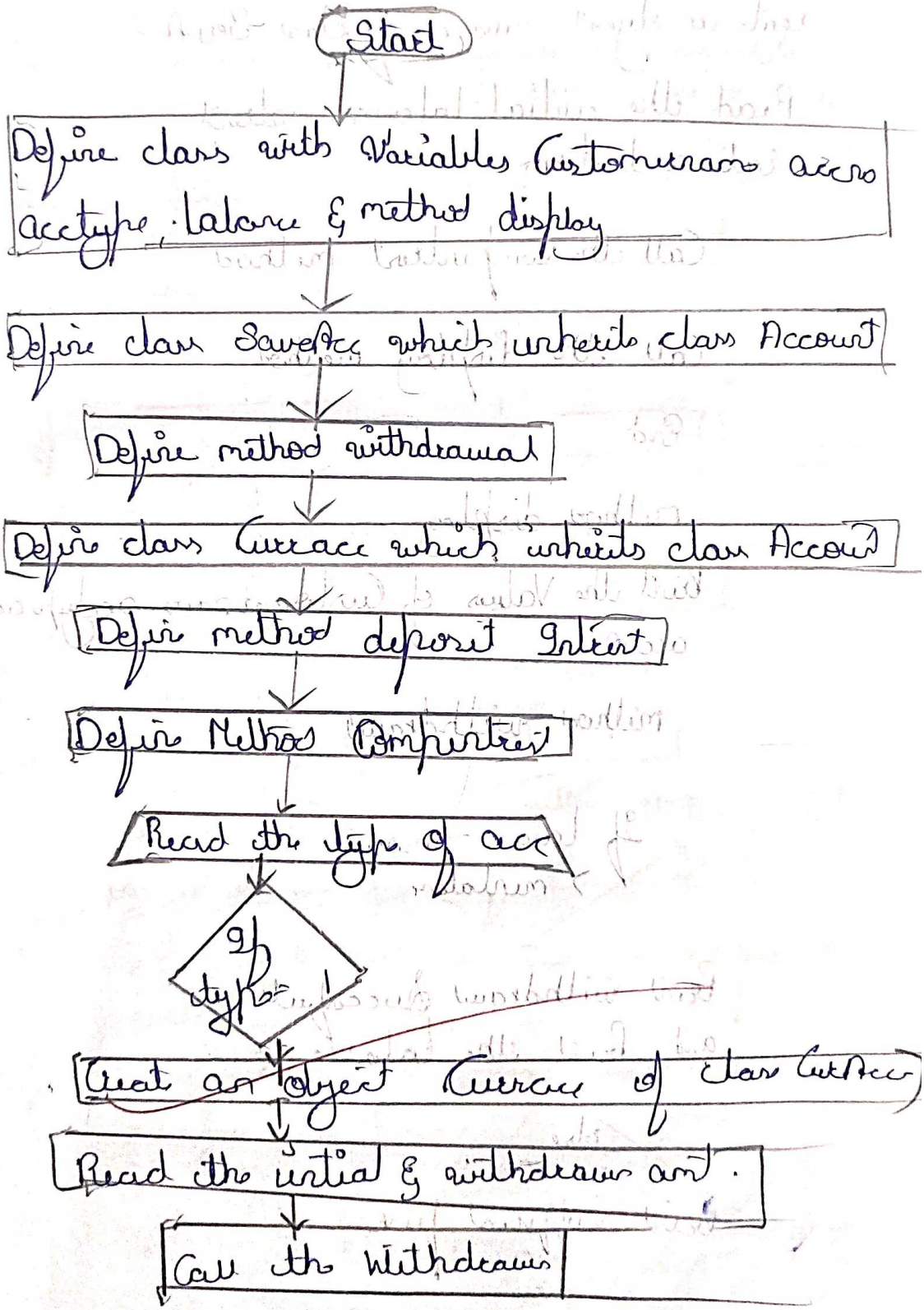
```
}
}
class Currentacct extends accoun
{
 doubl c;
 Scanner S2 = new
 Scanner (System.in)
 Public Currentacct (String a, int b, String c){
   cname = a;
   accnum = b;
   acctype = c;
   System.out.println("Customer name is :" cnam);
   System.out.println("Customer account number is
                        + accnum);
   System.out.println("Customer account type
                        is "+acctype)
 }
 Public Void deposit()
   {
     System.out.println("Enter the amount to
        be Deposit in your Current account");
        int B = S2.nextInt();
        bal = bal + B + 2000;
        System.out.println("your Curre
           balance is : "+ bal);
     }
```

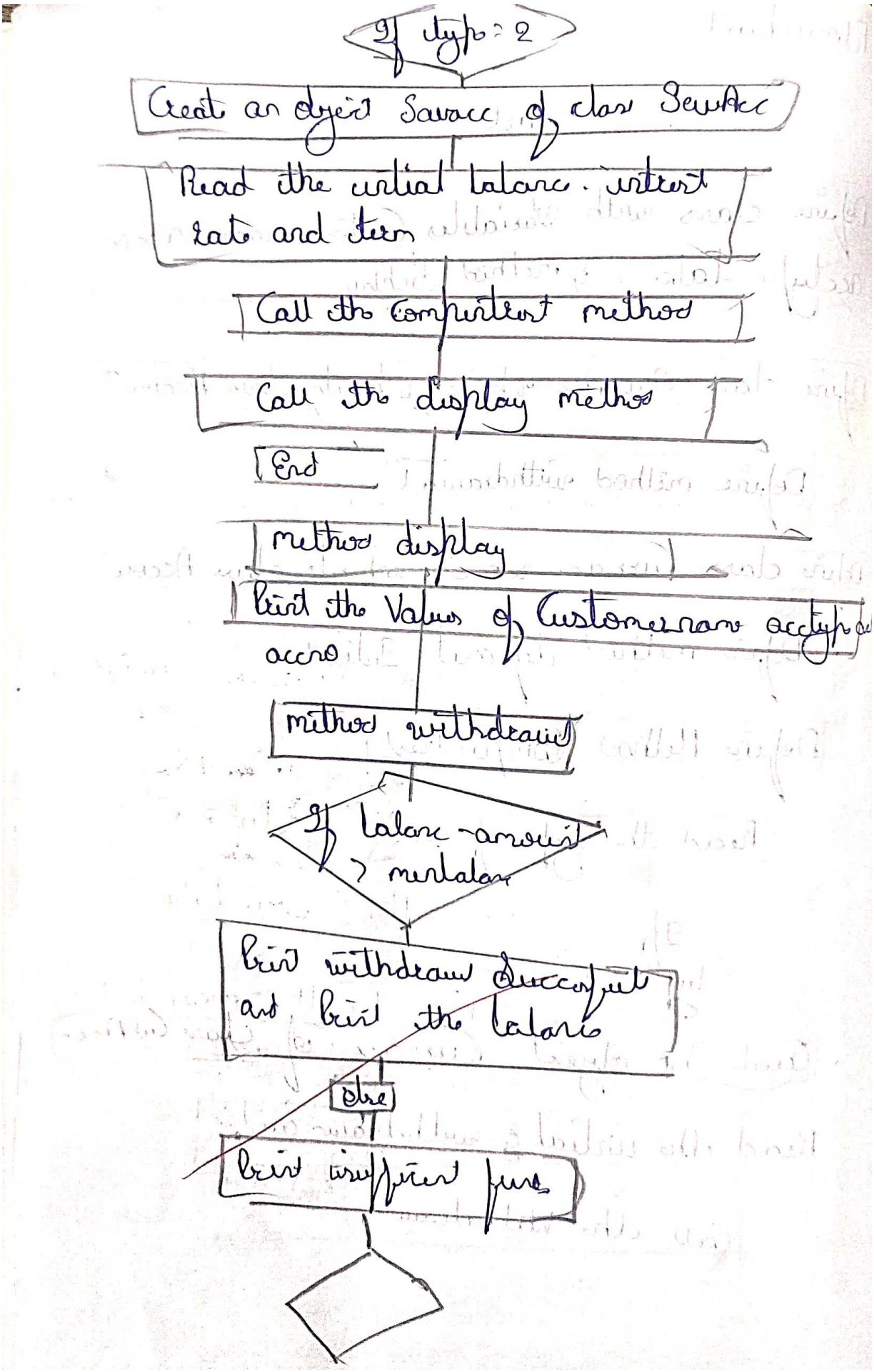
```
Public Void withdraw ()
{
System. out. println ("Enter the amount to be
withdrawn from your Current account.");
double q2 = S2.nextDouble();
if (q2>bal)
{
System. out. println ("Not enough amount
}
else
{
System.out. println ("you have withdrawn
bal = bal - q2
System.out. println ("your balance is
below require balance !!, a penalty
has be imposed");
System. out. println (" Current balance is:"
bal);
}
}
}
Public Void getchq ()
{
System . out . println ("Enter the amount for
which cheque has to be issued");
c = S2. nextDouble ();
}
```

```
Public void cashchq()
{
  if(e>bal)
  {
  System.out.println("cheque bounced");
}
else
{
  System.out.println("Via Cashing a cheque you
                      have withdrawn "+e);
  bal = bal - e
  System.out.println("Current balance is : "+bal);
        if(bal<3000)
        {
         bal = bal-100;
        System.out.println("your balance is
        below 3000
        balance is :"+bal);
  }
  }
}
}
```

```
Public class Main3
{
    Public Static Void main(String [] args) {
    Scanner S = new Scanner(System.in);
      Savingsacct Sav = new
    Savingsacct (" Abhishek ", 199, "Savings");
        Sav.deposit();
        Sav.Computeinterest();
        Sav.withdraw();
        Currentacct Cur = new Currentacct("
        Aman ", 200, "Current");
            Cur.deposit();
            Cur.Withdraw();
            Cur.getchq();
            Cur.Cashchq();
    }
}
```

Flowchart


Start
Define class with Variables Customername accno acctype, balance & method display
Define class SaveAcc which inherits class Account
Define method withdrawal
Define class CurrAcc which inherits class Account
Define method deposit Interest
Define Methods Computation
Read the type of acc
if type = 1
Creat an object CurrAcc of class CurrAcc
Read the initial & withdrawn amt.
Call the Withdrawn


if type = 2
Creat an object Savacc of class Savacc
Read the initial balance. interest rate and term
Call the compinterest method
Call the display metho
End
method display
Print the Values of Customername accty
accno
method withdraw
if balance-amount > minbalance
Print withdraw Successfull and Print the balance
else
Print insufficient fund

Algorithm

Step 1 : Start

Step 2 : Define class Account with Variable Customer name accno, acctype, balance and method display

Step 3 : Define class SavAcc which inherits class Account

Step 4 : Define class CurrAcc which inherits class account

Step 5 : Define method withdraw in the CurrAcc class

Step 6 : Define methods deposit interest Comp interest withdraw

Step 7 : Read the type of acc from

Step 8 : If the acc is of type == 1,
Read the initial balance & withdrawal and
Pass it to the object of Curr class

Step 9 : check if withdrawal is possible or not in withdrawal function

Step 10 : If the acc is of type == 2

Step 11 : Calculate the Compound interest

Step 12 : Display the detail of the user along

Step 13 : Stop

13/1/24.

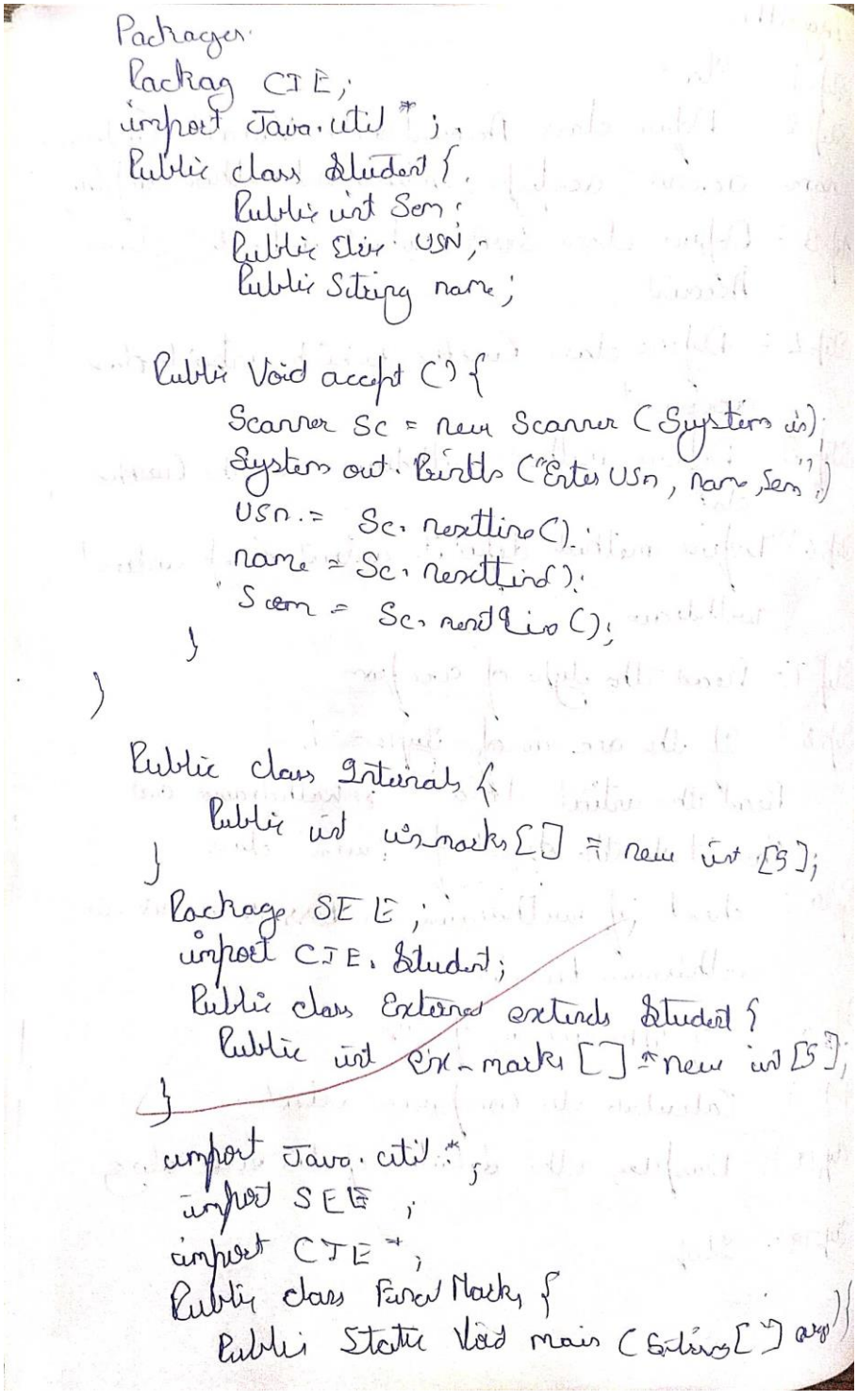
```
My name is Anish Budavi
USN is 2023BMS02596
Enter customer name:
Anish Budavi
Enter account number:
2792378396
Enter initial balance:
90000
Enter account type (Current/Savings):
Savings

1. Deposit
2. Display Balance
3. Deposit Interest for Savings Account
4. Withdraw
5. Exit
Enter your choice: 2
Account Balance: $90000.0

1. Deposit
2. Display Balance
3. Deposit Interest for Savings Account
4. Withdraw
5. Exit
Enter your choice: 5
Exiting program. Goodbye!
```

WEEK6

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.



```
Packages:
Packag CIE;
import Java.util *;
Public class Student {
    Public int Sem;
    Public Stir USN;
    Public String name;

Public Void accept () {
    Scanner Sc = new Scanner (System.in);
    System.out.println ("Enter Usn, Name, Sem");
    USN = Sc.nextline();
    name = Sc.nextline();
    Sem = Sc.nextLine();
    }
}

Public class Internals {
    Public int ia_marks[] = new int [5];
}
Package SEE;
import CIE.Student;
Public class External extends Student {
    Public int ex_marks [] = new int [5];
}
import Java.util.*;
import SEE;
import CIE*;
Public class Final Marks {
    Public Static Void main (Strings[] args)
```

```
int in_marks[] = new int[5];
Scanner sc = new Scanner(System.in);
System.out.println("Enter no of Student");
int n = sc.nextInt();
SEE.External st[] = new SEE.External[n];
CIE.Internal s[] = new CIE.Internal[n];
for(int i=0; i<n; i++){
    st[i] = new SEE.External();
    s[i] = new CIE.Internals();
    System.out.println("Enter details "+(i+1))
    s[i].accept();
    for(int j=0; j<5; j++){
        System.out.println("Enter details "+(i+1))
        s[i].accept();
        for(int j=0; j<5; j++){
            System.out.println("Enter internal
and External marks of Subject"+(j+1));
        s[i].in_mark[j] = sc.nextInt();
        st[i].ex_marks[j] = sc.nextInt();
        finalmarks[j] = s[i].in_marks[j]
                + st[i].ex_marks[j];
}
System.out.println("Final marks of"
                + st[i].name);
for(int k=0; k<5; k++){
    System.out.println("Course"+(k+1)+"="
    +f.marks[k]);
}
}
}
```

Algorithm

Step 1:- Start

Step 2:- Create a Package CIE.

Step 3:- Define class Student with name, USN, Sem and define class internals with an array of marks

Step 4:- Create a Package SEE and define class external which inherits Students from Package CIE

Step 5:- Read the number of Students from user

Step 6:- Create arrays st and ef of class External and internal respectively of Package CIE and SEE

Step 7:- Read the details of the Students with the accept() method

Step 8:- Read the internal and See marks from Students and Calculate the final marks

Step 9:- Display the final marks of each subject along with the name

Step 10:- End

2/2/24.

Output.

123 John - Semester 5 - Final Marks: 842
456 Alice - Semester 5 - Final Marks: 748
789 Bob - Semester 5 - Final Marks: 898

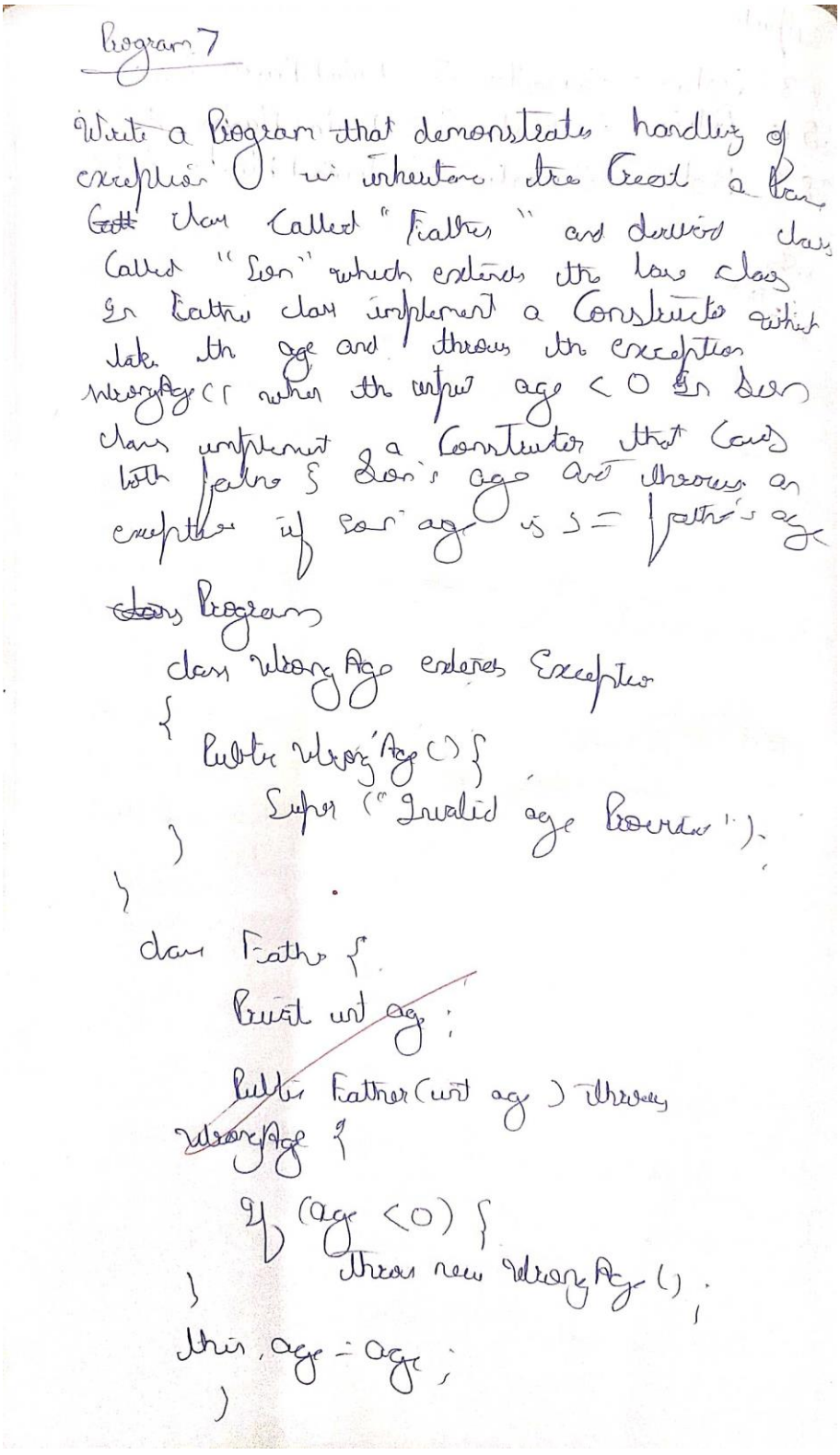
SS
2/2/24

```
D:\JAVA LAB PROGRAM LISTS\lab 6>java FinalMarks
Naem:Anish
USN:2023BMS02596
Enter n:
1
Enter details 1
Enter USN, Name, Sem:

2023BMS
Anish
3
Enter internal and external of sub 1
34
32
Enter internal and external of sub 2
45
434
Enter internal and external of sub 3
23
23
Enter internal and external of sub 4
43
23
Enter internal and external of sub 5
23
34
Final marks of Anish
Course 1 = 66
Course 2 = 479
Course 3 = 46
Course 4 = 66
Course 5 = 57
```

WEEK7

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.



Program 7

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 take the age and throws the exception WrongAge() when the input age < 0 In Son class implement a Constructor that cases both father & Son's age and throws an exception if son age is >= father's age

```
class Program
    class WrongAge extends Exception
    {
      Public WrongAge() {
          Super ("Invalid age Recorded");
      }
    }
    class Father {
        Privit int age;
        Public Father(int age ) throws
    WrongAge {
        if (age <0) {
            throw new WrongAge();
    }
    this.age = age;
    }
```

```
    }
    Public int getAge(){
        return age;
    }
}
class Son extends Father{
    private int SonAge;

Public Son(int fatherAge, int SonAge)
throws WrongAge{
        Super(fatherAge);
        if(SonAge >= fatherAge){
            throw new WrongAge();
    }
    this.SonAg = SonAge;
}
Public int getSonAg(){
        return SonAg;
    }
}
Public class Main{
    Public static void main(String[] args){
try{
        Father father = new Father(30);
        System.out.println("Father age:"+
        father.getAg();
```

```
Son Son1 = new Son(50, 30);
age : 0 + Son1, Son = new Son();
```

object with Son's age greater than father's age.

```
Son Son2 = new Son(50, 55);
System.out.println("Son's age:
    Son2.getSonAge());
}

Catch (WrongAge e) {
System.out.println(e.getMessage())

}
}
}
```

Output

Father Age = 50.

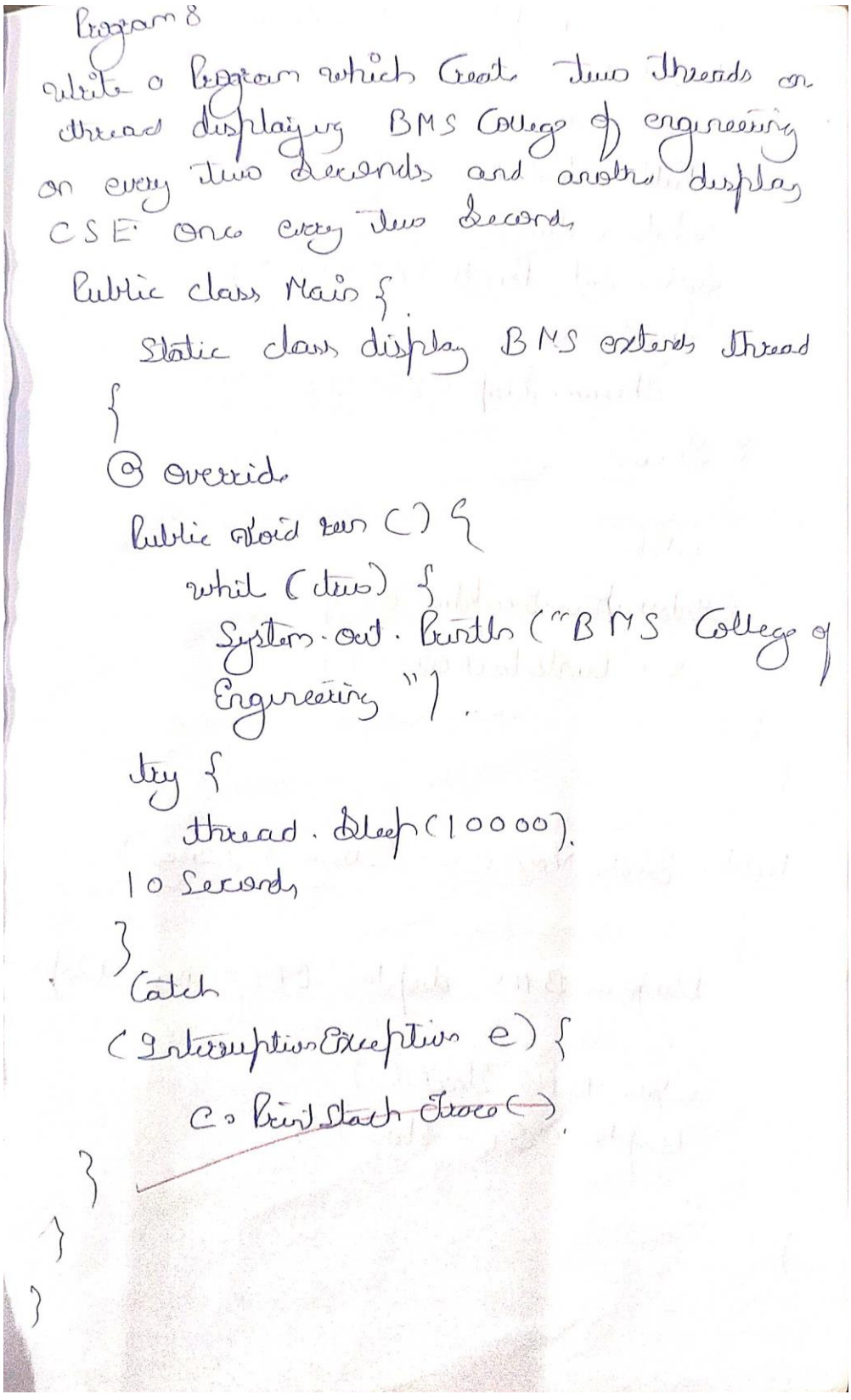
Son's Age = 30

Invalid age provided

```
My name is Anish Budavi
USN is 2023BMS02596
Enter father's age:
49
Enter son's age:
21
Father's age: 49
Son's age: 21
```

WEEK8

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.



Program 8

Write a Program which Creat Two Threads or thread displaying BMS College of engineering on every two seconds and anoth displays CSE once every two Seconds

```
Public class Main {
    Static class display BMS extends Thread
    {
    @ Overrid
    Public Void run () {
        whil (true) {
            System.out.Println ("BMS College of
            Engineering ").
    try {
        thread.Sleep (10000).
    10 Seconds
    }
    Catch
    (InterruptionException e) {
        e.Print Stack Trace ().
    }
}
}
```

```
static class Display CSE extends
Thread {
@ override
  Public void run() {
while (true) {
System.out.println ("CSE")
 try {
   thread.sleep (2000);
2 Seconds
}
  Catch
(InterruptionException e) {
  e.printStackTrace();
}
}
}
Pu  Public static void main (String [] args)
{
    {
      Display BMS displayBMS = new Dis
      CSE()
      displayBMS.start()
       Display CSE.start()
    }
}
```

Algorithm

Output

BMS College of Engineering

CSE

CSE

CSE

CSE

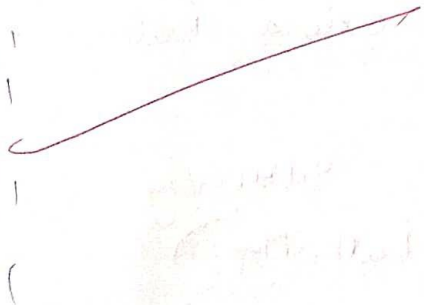
CSE

BMS College of engineering

CSE

CSE

CSE



Algorithm Program 8

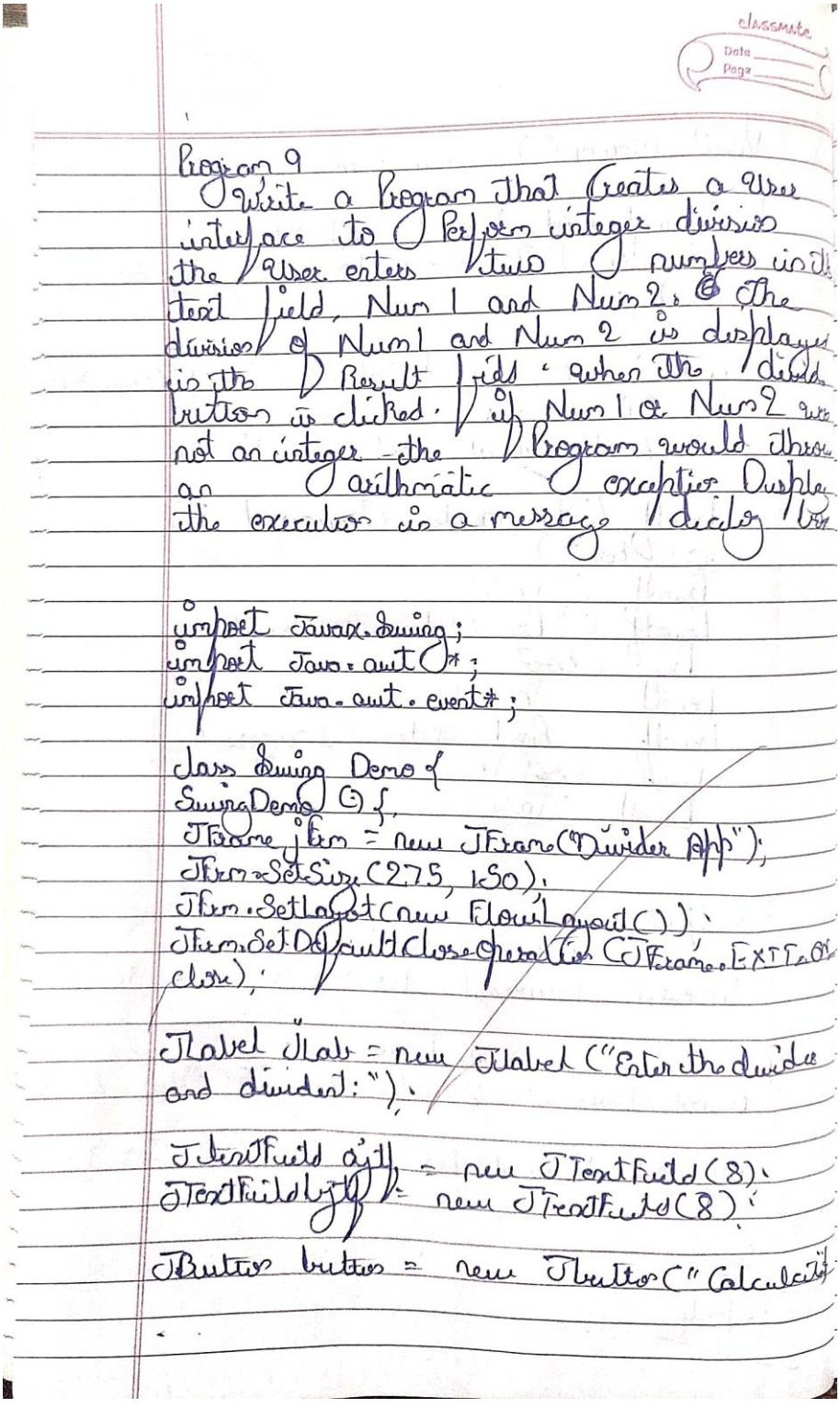
Step 1 :- Start
Step 2 :- Creat class Main
Step 3 :- Creat Static class Display BMS extends thread
Step 4 :- Void run ( )
Step 5 :- while (true)
Step 6 :- try
Step 7 :- Step for 10 Second
Catch
Print exception
Step 8 :- Creat Static class Display CSE extends thread
Step 9 :- Void run ( )
Step 10 :- while (true)
Print CSE
Step 11 :- try
Step 12 :- Catch
Step 13 :- Call Display CSE
Step 14 :- Creat Stat Display BMS
Step 15 :- Stop

SB
16/12/24.

```
My name is Anish Budavi
USN is 2023BMS02596
BMS College of Engineering
CSE
CSE
CSE
CSE
CSE
BMS College of Engineering
CSE
CSE
CSE
CSE
CSE
BMS College of Engineering
CSE
CSE
CSE
CSE
CSE
```

WEEK9

Write a program that creates a user interface to perform integer divisions. The user enters two numbers in the text fields, Num1 and Num2. The division of Num1 and Num2 is displayed in the Result field when the Divide button is clicked. If Num1 or Num2 were not an integer, the program would throw a NumberFormatException. If Num2 were Zero, the program would throw an Arithmetic Exception Display the exception in a message dialog box.



Program 9

Write a Program that Creates a User interface to Perform integer division the User enters two numbers in the text field, Num 1 and Num 2. The division of Num1 and Num 2 is displayed in the Result field when the divide button is clicked. If Num 1 or Num 2 were not an integer the Program would throw an arithmatic exception Display the exception in a message dialog box

```
import Javax.Swing;
import Java.awt.*;
import Java.awt.event*;

class Swing Demo {
SwingDemo() {
JFrame jfrm = new JFrame("Divider App");
jfrm.SetSize(275, 150);
jfrm.SetLayout(new FlowLayout());
jfrm.SetDefaultCloseOperation(JFrame.EXIT_ON_
close);

JLabel jlab = new JLabel("Enter the dividend
and divident:");

JTextField ajtf = new JTextField(8);
JTextField bjtf = new JTextField(8);

JButton button = new JButton("Calculate
```

```
JLabel err = new JLabel();
JLabel qlab = new JLabel();
JLabel blab = new JLabel();

JLabel anslab = new JLabel();

jfrm.add(err);
jfrm.add(jlab);
jfrm.add(ajtf);
jfrm.add(bjtf);
jfrm.add(button);
jfrm.add(qlab);
jfrm.add(blab);
jfrm.add(anslab);

ActionListener l = new ActionListener() {
  Public Void actionPerformed(ActionEvent ait) {
    System.out.println("Action event from a text
    field");
  }
};

ajtf.addActionListener(l);
bjtf.addActionListener(l);

button.addActionListener(new ActionListener() {
  Public Void actionPerformed(ActionEvent ait) {
  try {
    int a = Integer.ParseInt(ajtf.getText());
    int b = Integer.ParseInt(bjtf.getText());
    int ans = a/b;

    qlab.setText("\nA = " + a);
    blab.setText("\nB = " + b);
    anslab.setText("\nAns = " + ans);
  }
```

```
Catch (NumberFormatException e) {
    alab.setText("");
    blab.setText("");
    anslab.setText("");
    err.setText("Enter only Integers!");
}
Catch (ArithmaticException e) {
    alab.setText("");
    blab.setText("");
    anslab.setText("");
    err.setText("B Should be Non Zero!");
}
}
});
Types.setVisible(true);
}
Public Static Void main(String args[]){
SwingUtilities.invokeLater(new Runnable()
{
Public Void run(){
new SwingDemo();
}
});
}
}
```

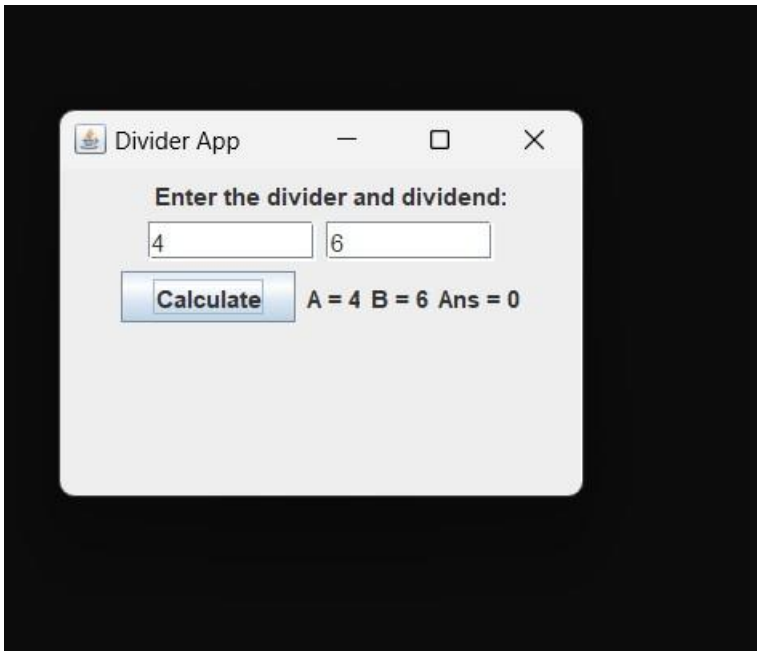
output

Enter the divider & divisd

2000 4.3

Calculat A = 2000 B = 4.3

Ans = 4.6.


Divider App
Enter the divider and dividend:
4
6
Calculate
A = 4 B = 6 Ans = 0