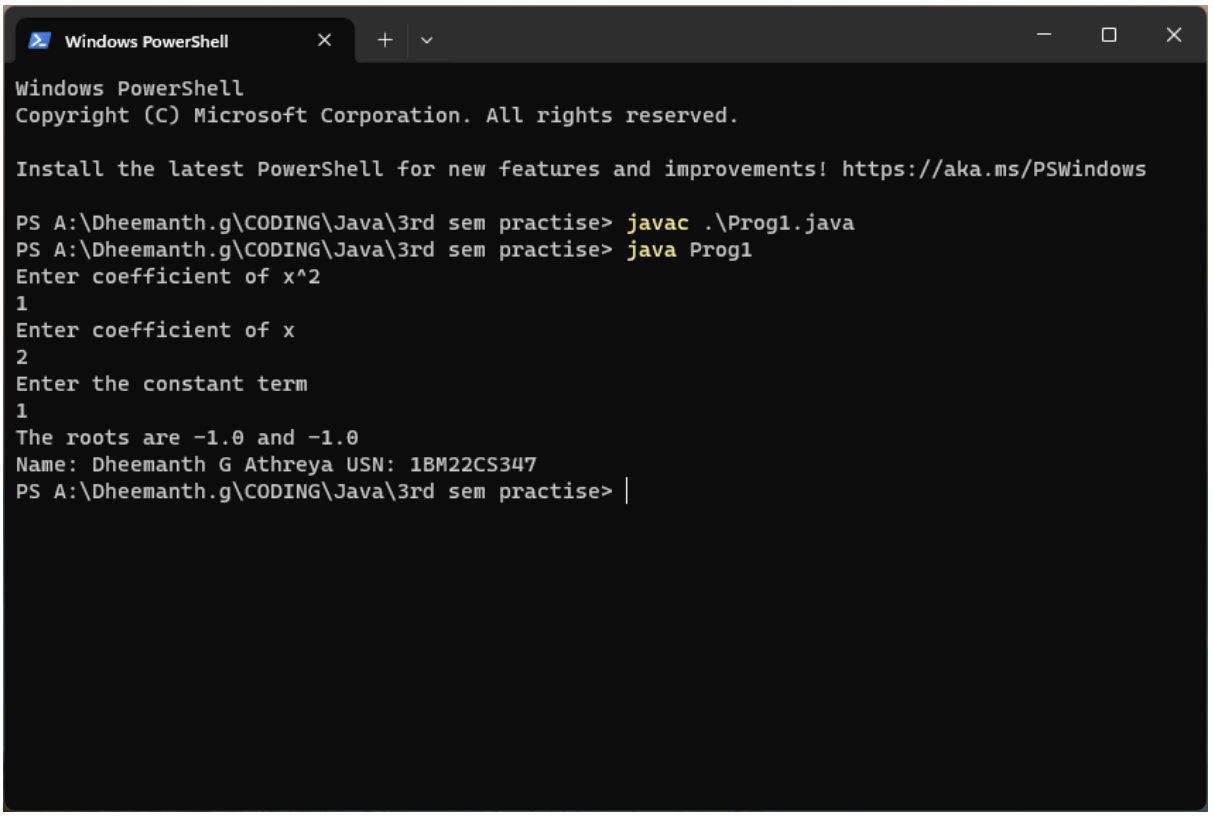
PROGRAM 1

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:

```
import java.util.*;

public class Prog1 {
   public static void main(String[] args) {
      Scanner sc = new Scanner(System.in);
      System.out.println("Enter coefficient of x^2");
      int a = sc.nextInt();
      System.out.println("Enter coefficient of x");
      int b = sc.nextInt();
      System.out.println("Enter the constant term");
      int c = sc.nextInt();
      double dis = (b * b) - (4 * a * c);

      if (dis >= 0) {
         double r1 = (-b + Math.sqrt(dis)) / (2 * a);
         double r2 = (-b - Math.sqrt(dis)) / (2 * a);
         System.out.println("The roots are " + r1 + " and " + r2);
      } else {
         System.out.println("There are no real solutions");
      }
      System.out.println("Name: Dheemanth G Athreya USN: 1BM22CS347");
   }
}
```

Output:


Windows PowerShell
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.
Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows
PS A:\Dheemanth.g\CODING\Java\3rd sem practise> javac .\Prog1.java
PS A:\Dheemanth.g\CODING\Java\3rd sem practise> java Prog1
Enter coefficient of x^2
1
Enter coefficient of x
2
Enter the constant term
1
The roots are -1.0 and -1.0
Name: Dheemanth G Athreya USN: 1BM22CS347
PS A:\Dheemanth.g\CODING\Java\3rd sem practise>

PROGRAM 2

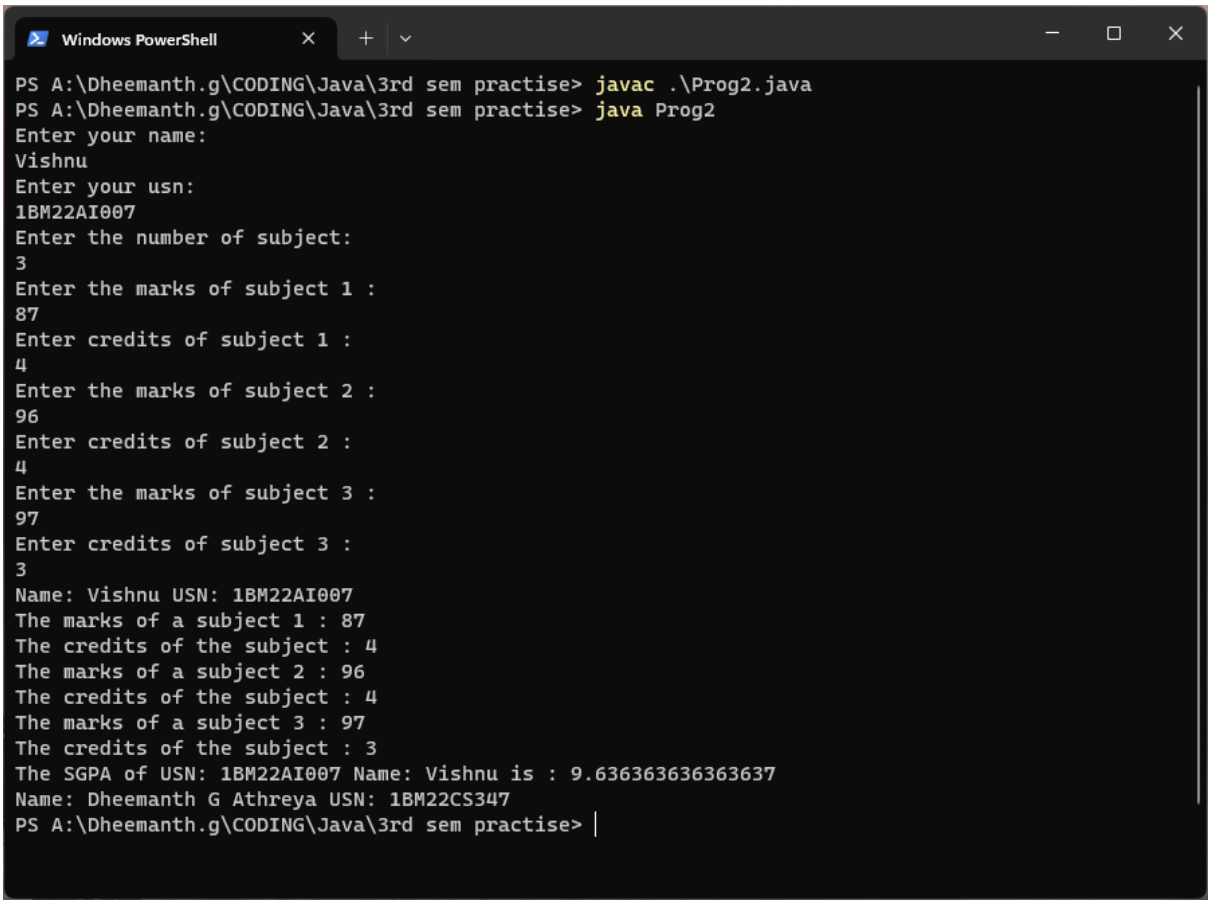
Develop a Java program to create a class Student with members usn, name, an array credits and an array marks. Include methods to accept and display details and a method to calculate SGPA of a student.

Code:

```
import java.util.*;

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

	public void accept(){
		Scanner in = new Scanner(System.in);
		System.out.println("Enter your name: ");
		name=in.nextLine();
		System.out.println("Enter your usn: ");
		usn=in.nextLine();
		System.out.println("Enter the number of subject: ");
		int n;
		n=in.nextInt();
		marks = new int[n];
		credits = new int[n];
		for(int i=0;i<n;i++){
			System.out.println("Enter the marks of subject "+(i+1)+" :");
			marks[i]=in.nextInt();
			System.out.println("Enter credits of subject "+(i+1)+" : ");
			credits[i]=in.nextInt();
		}
		in.close();
	}
```

```
	public void display(){
		System.out.println("Name: "+name+" USN: "+usn);
		for(int i=0;i<marks.length;i++){
			System.out.println("The marks of a subject "+(i+1)+" : "+marks[i]);
			System.out.println("The credits of the subject : "+credits[i]);
		};
	}
	public void sgpa(){
		double score=0; double sum=0;
		for(int i=0;i<marks.length;i++){
			double grade;
			if(marks[i]>=90)grade=10;
			else if(marks[i]>=80 && marks[i]<90)grade=9;
			else if(marks[i]>=70 && marks[i]<80)grade=8;
			else if(marks[i]>=60 && marks[i]<70)grade=7;
			else if(marks[i]>=50 && marks[i]<60)grade=6;
			else if(marks[i]>=40 && marks[i]<50)grade=5;
			else grade=4;
			sum=sum+credits[i];
			score=score+credits[i]*grade;
		}
		score=score/sum;
		System.out.println("The SGPA of USN: "+usn+" Name: "+name+" is : "+score);
	}
}
public class Prog2{
	public static void main(String[]args){
		Student s= new Student();
		s.accept();
		s.display();
		s.sgpa();
		System.out.println("Name: Dheemanth G Athreya USN: 1BM22CS347");
	}
}
```

Output:


Windows PowerShell
PS A:\Dheemanth.g\CODING\Java\3rd sem practise> javac .\Prog2.java
PS A:\Dheemanth.g\CODING\Java\3rd sem practise> java Prog2
Enter your name:
Vishnu
Enter your usn:
1BM22AI007
Enter the number of subject:
3
Enter the marks of subject 1 :
87
Enter credits of subject 1 :
4
Enter the marks of subject 2 :
96
Enter credits of subject 2 :
4
Enter the marks of subject 3 :
97
Enter credits of subject 3 :
3
Name: Vishnu USN: 1BM22AI007
The marks of a subject 1 : 87
The credits of the subject : 4
The marks of a subject 2 : 96
The credits of the subject : 4
The marks of a subject 3 : 97
The credits of the subject : 3
The SGPA of USN: 1BM22AI007 Name: Vishnu is : 9.636363636363637
Name: Dheemanth G Athreya USN: 1BM22CS347
PS A:\Dheemanth.g\CODING\Java\3rd sem practise>

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.

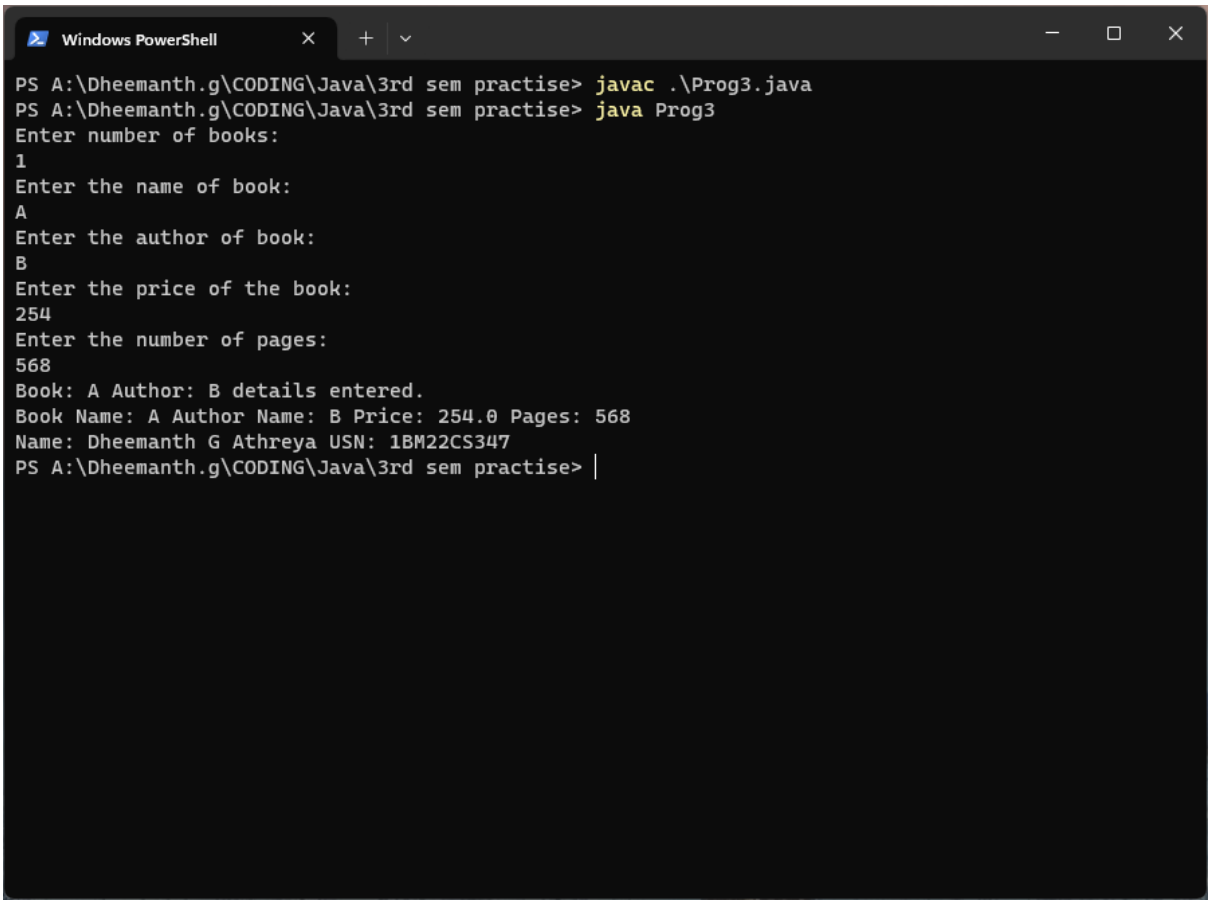
Code:

```
import java.util.*;

class Book{
   private String name;
   private String author;
   private double price;
   private int num_pages;
   public Book(){
   }
   public Book(String name,String author, double price, int num_pages){
      this.author=author;
      this.name=name;
      this.price=price;
      this.num_pages=num_pages;
   }

   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(double price){
        this.price=price;
    }

    public double getPrice(){
        return price;
    }

    public void setPages(int num_pages){
        this.num_pages=num_pages;
    }

    public int getPages(){
        return num_pages;
    }

    public String toString(){
         return "Book Name: "+name+" Author Name: "+author+" Price: "+price+"
Pages: "+num_pages;
    }

}
public class Prog3{
    public static void main(String[]args)
    {
        Scanner in =new Scanner(System.in);
        System.out.println("Enter number of books: ");
        int n=in.nextInt();
        Book [] books= new Book[n];
        for(int i=0;i<n;i++)
        {
            books[i]=new Book();
            System.out.println("Enter the name of book: ");
```

```
            String name=in.next();
            in.nextLine();
            System.out.println("Enter the author of book: ");
            String author=in.next();
            in.nextLine();
            System.out.println("Enter the price of the book: ");
            double price=in.nextDouble();
            System.out.println("Enter the number of pages: ");
            int num_pages=in.nextInt();

books[i].setName(name);books[i].setAuthor(author);books[i].setPrice(price);bo
oks[i].setPages(num_pages);
                        System.out.println("Book:  "+books[i].getName()+"  Author:
"+books[i].getAuthor()+" details entered.");
        }
        for(int i=0;i<n;i++)
        {
           String s=books[i].toString();System.out.println(s);
        }
        System.out.println("Name: Dheemanth G Athreya USN: 1BM22CS347");
        in.close();
    }
}
```

Output:


Windows PowerShell
PS A:\Dheemanth.g\CODING\Java\3rd sem practise> javac .\Prog3.java
PS A:\Dheemanth.g\CODING\Java\3rd sem practise> java Prog3
Enter number of books:
1
Enter the name of book:
A
Enter the author of book:
B
Enter the price of the book:
254
Enter the number of pages:
568
Book: A Author: B details entered.
Book Name: A Author Name: B Price: 254.0 Pages: 568
Name: Dheemanth G Athreya USN: 1BM22CS347
PS A:\Dheemanth.g\CODING\Java\3rd sem practise>

PROGRAM 4

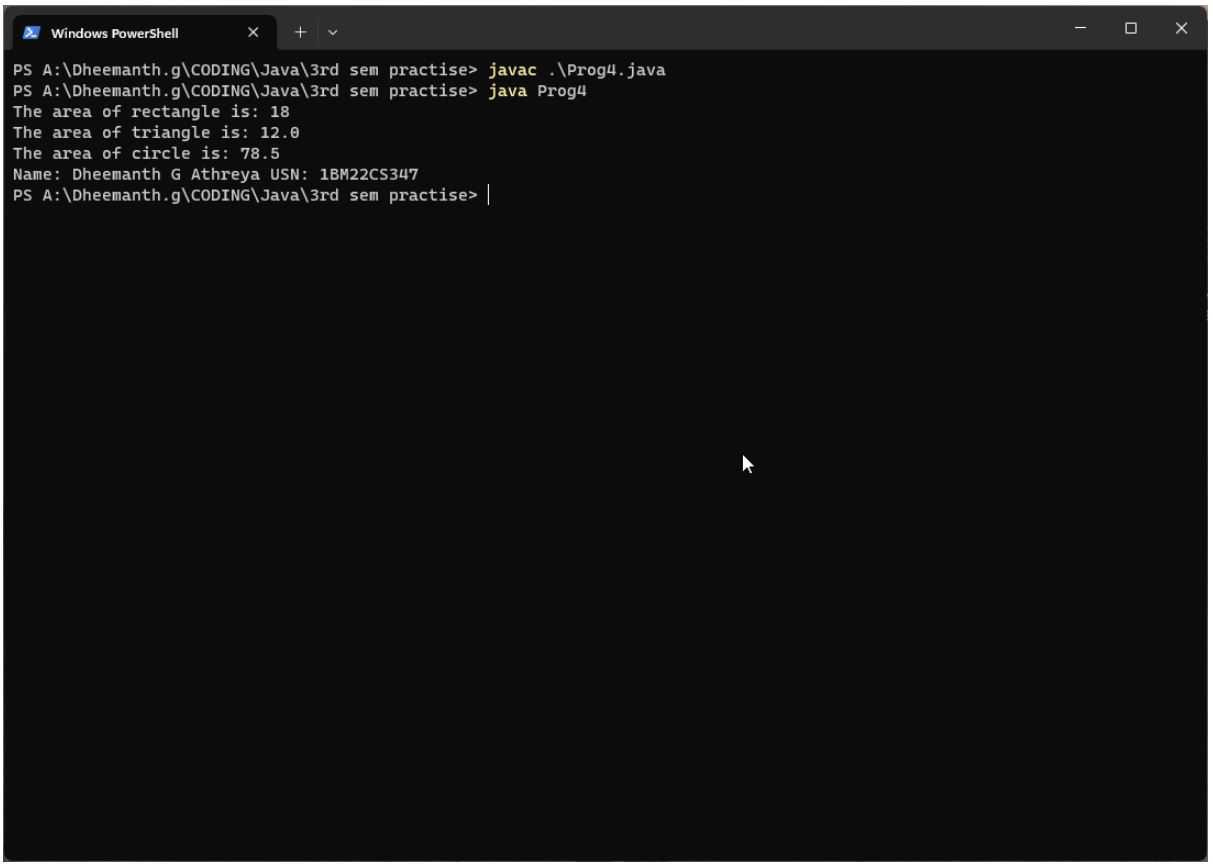
Develop a Java program to create an abstract class named Shape that contains two integers and an empty method named printArea( ). Provide three classes named Rectangle, Triangle and Circle such that each one of the classes extends the class Shape. Each one of the classes contain only the method printArea( ) that prints the area of the given shape.

Code:

```
abstract class Shape{
   Shape(){
   }
   abstract void printArea();
}

class Rectangle extends Shape{
   private int a, b;
      Rectangle(int a, int b)
   {
      this.a=a;
      this.b=b;
   }
   void printArea()
   {
      System.out.println("The area of rectangle is: "+(a*b));
   }
}

class Triangle extends Shape{
   private int a, b;
   Triangle(int a, int b)
   {
      this.a=a;
      this.b=b;
   }
```

```
    void printArea()
    {
        System.out.println("The area of triangle is: "+(0.5*a*b));
    }
}

class Circle extends Shape{
    private int a;
    Circle(int a)
    {
        this.a=a;
    }
    void printArea()
    {
        System.out.println("The area of circle is: "+(3.14*a*a));
    }
}

public class Prog4{
    public static void main(String[]args)
    {
        Shape rectangle=new Rectangle(3,6);
        Shape triangle=new Triangle(4,6);
        Shape circle=new Circle(5);
        rectangle.printArea();
        triangle.printArea();
        circle.printArea();
        System.out.println("Name: Dheemanth G Athreya USN: 1BM22CS347");
    }
}
```

Output:


Windows PowerShell
PS A:\Dheemanth.g\CODING\Java\3rd sem practise> javac .\Prog4.java
PS A:\Dheemanth.g\CODING\Java\3rd sem practise> java Prog4
The area of rectangle is: 18
The area of triangle is: 12.0
The area of circle is: 78.5
Name: Dheemanth G Athreya USN: 1BM22CS347
PS A:\Dheemanth.g\CODING\Java\3rd sem practise>

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:

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.

Code:

```
import java.util.Scanner;
class Account{
   String name;
   String type;
   int acc_num;
   double dep;

   public void info(String name,String type,int acc_num, double dep){
      this.name=name;
      this.type=type;
      this.acc_num=acc_num;
      this.dep=dep;
   }

   public void details(){
      System.out.println("Name: "+name);
      System.out.println("Account Type: "+type);
```

```
        System.out.println("Account Number: "+acc_num);
        System.out.println("Current Balance: "+dep);
    }

}

class Savings extends Account{
    public void deposit(double amount){
        dep=dep+amount;
        System.out.println("Balance: "+dep);

    }
    public void withdraw(double amount)
    {
        if(dep<amount)
        {
            System.out.println("Enter sufficient funds.");
        }
        else{
            dep=dep-amount;
        }
        System.out.println("Balance: "+dep);
    }
    public void interest(double t, double r){
        double dep1=dep*Math.pow((1+r/100.0),t);
        System.out.println("Interest: "+(dep1-dep));dep=dep1;
        System.out.println("Amount : "+dep);
    }
}

class Current extends Account{
    public void deposit(double amount){
        dep=dep+amount;
        System.out.println("Balance: "+dep);
    }
```

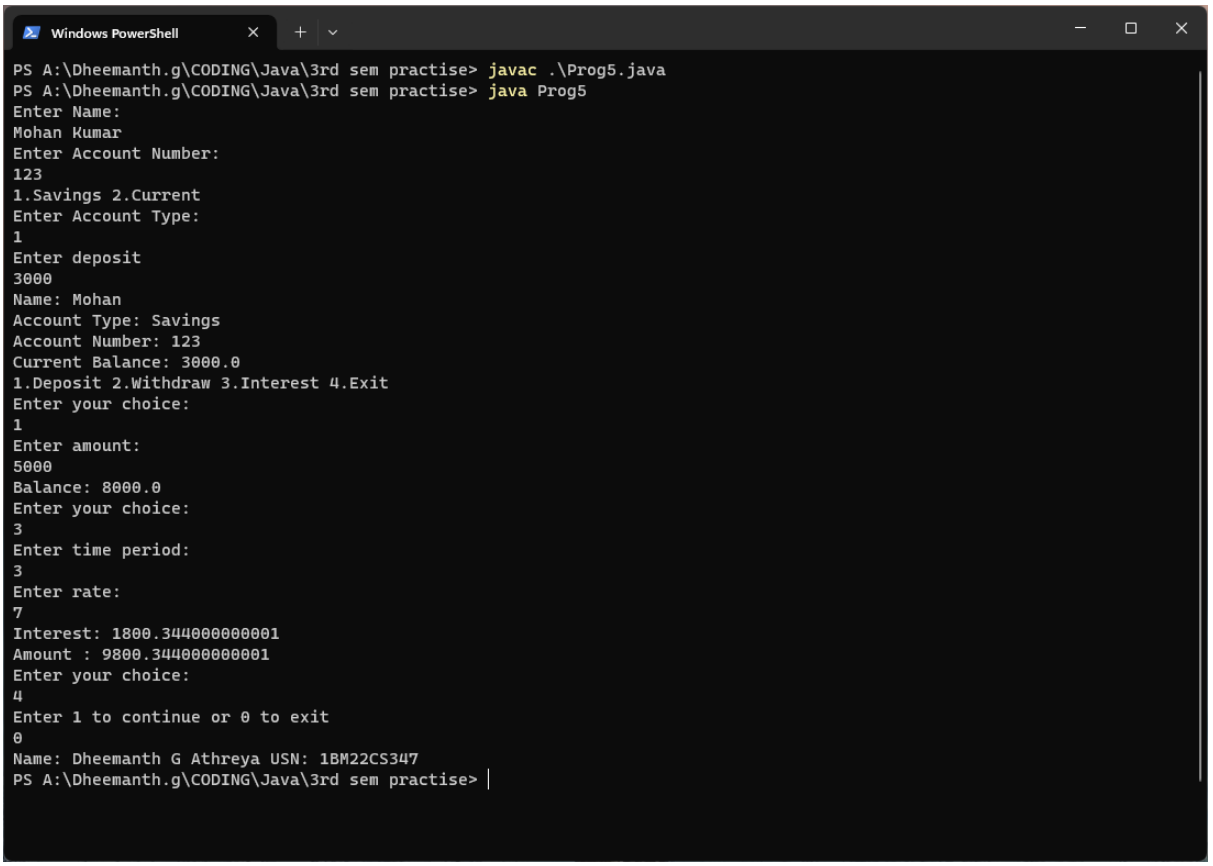
```
   public void withdraw(double amount)
   {
      if(dep<amount)
      {
         System.out.println("Enter insufficient funds.");
      }
      else{
         dep=dep-amount;
      }
      check(dep);
   }

   public void check(double amount)
   {
      if(dep<2000)
      {
         if(dep<500)
         {
            dep=0;
         }
         else
         {
            dep=dep-500;
         }
               System.out.println("IAmount less than Rs. 2000, Rs. 500 deducted.
Rs.");
      }
      System.out.println("Balance: "+dep);
   }
}

public class Prog5
{
   public static void main(String[]args)
   {
      Scanner in = new Scanner(System.in);
      int c1=1;
```

```
        while(c1==1)
        {
           System.out.println("Enter Name: ");
           String name=in.next();
           in.nextLine();
           System.out.println("Enter Account Number: ");
           int acc_no=in.nextInt();
           int choice1;
           System.out.println("1.Savings 2.Current");
           System.out.println("Enter Account Type: ");
           choice1=in.nextInt();
           switch (choice1){
              case 1:
                 Savings s = new Savings();
                 System.out.println("Enter deposit");
                 double balance=in.nextDouble();
                 s.info(name,"Savings",acc_no,balance);
                 s.details();
                      System.out.println("1.Deposit 2.Withdraw 3.Interest 4.Exit");int
choice2;
                 do{
                 System.out.println("Enter your choice: ");
                 choice2=in.nextInt();
                 switch (choice2){
                    case 1:
                       System.out.println("Enter amount: ");
                       double amount1 = in.nextDouble();
                       s.deposit(amount1);
                       break;
                    case 2:
                       System.out.println("Enter amount: ");
                       double amount2 = in.nextDouble();
                       s.withdraw(amount2);
                       break;
                    case 3:
                       System.out.println("Enter time period: ");
                       double time=in.nextDouble();
```

```
            System.out.println("Enter rate: ");
            double rate=in.nextDouble();
            s.interest(time,rate);
            break;
        case 4:
            break;
        default:
            System.out.println("Invalid choice.");
    }}while(choice2>=1&&choice2<=3);
    break;
case 2:
    Current c=new Current();
    do{
        System.out.println("Enter deposit(>2000)");
        balance=in.nextDouble();
    }while(balance<2000);
    c.info(name,"Current",acc_no,balance);
    c.details();
    System.out.println("1.Deposit 2.Withdraw 3.Exit");
    int choice3;
    do{
    System.out.println("Enter your choice: ");
    choice3=in.nextInt();
    switch (choice3){
        case 1:
            System.out.println("Enter amount: ");
            double amount1 = in.nextDouble();
            c.deposit(amount1);
            break;
        case 2:
            System.out.println("Enter amount: ");
            double amount2 = in.nextDouble();
            c.withdraw(amount2);
            break;
        case 3:
            break;
        default:
```

```
                    System.out.println("Invalid choice.");
                }}while(choice3>=1&&choice3<=2);
            default:
                System.out.println("Invalid Choice");
        }
        System.out.println("Enter 1 to continue or 0 to exit");
        int c2 =in.nextInt();c1=c2;
    }
    in.close();

    System.out.println("Name: Dheemanth G Athreya USN: 1BM22CS347");
  }
}
```

Output:


Windows PowerShell
PS A:\Dheemanth.g\CODING\Java\3rd sem practise> javac .\Prog5.java
PS A:\Dheemanth.g\CODING\Java\3rd sem practise> java Prog5
Enter Name:
Mohan Kumar
Enter Account Number:
123
1.Savings 2.Current
Enter Account Type:
1
Enter deposit
3000
Name: Mohan
Account Type: Savings
Account Number: 123
Current Balance: 3000.0
1.Deposit 2.Withdraw 3.Interest 4.Exit
Enter your choice:
1
Enter amount:
5000
Balance: 8000.0
Enter your choice:
3
Enter time period:
3
Enter rate:
7
Interest: 1800.344000000001
Amount : 9800.344000000001
Enter your choice:
4
Enter 1 to continue or 0 to exit
0
Name: Dheemanth G Athreya USN: 1BM22CS347
PS A:\Dheemanth.g\CODING\Java\3rd sem practise>

PROGRAM 6

Create a package CIE which has two classes- Student and Internals. The class Student 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:

CIE Package

Internals.java

```
package CIE;

public class Internals {
   int [] marks=new int[5];
   public void setMarks(int [] marks)
   {
      this.marks=marks;
   }
   public int [] getMarks(){
      return marks;
   }
}
```

Student.java

```
package CIE;
public class Student{
   String usn;
   String name;
   int sem;
   public Student(){

   }
```

```
    public void setUSN(String usn){
        this.usn=usn;
    }
    public void setName(String name){
        this.name=name;
    }
    public void setSem(int sem)
    {
        this.sem=sem;
    }
    public String getName(){
        return name;
    }
    public String getUSN(){
        return usn;
    }
    public int getSem(){
        return sem;
    }
}
```

SEE Package
Externals.java

```
package SEE;
import CIE.Student;

public class Externals extends Student{
    int [] marks=new int[5];
    public Externals()
    {
        super();
    }
    public void setMarks(int [] marks)
    {
        this.marks=marks;
    }
```

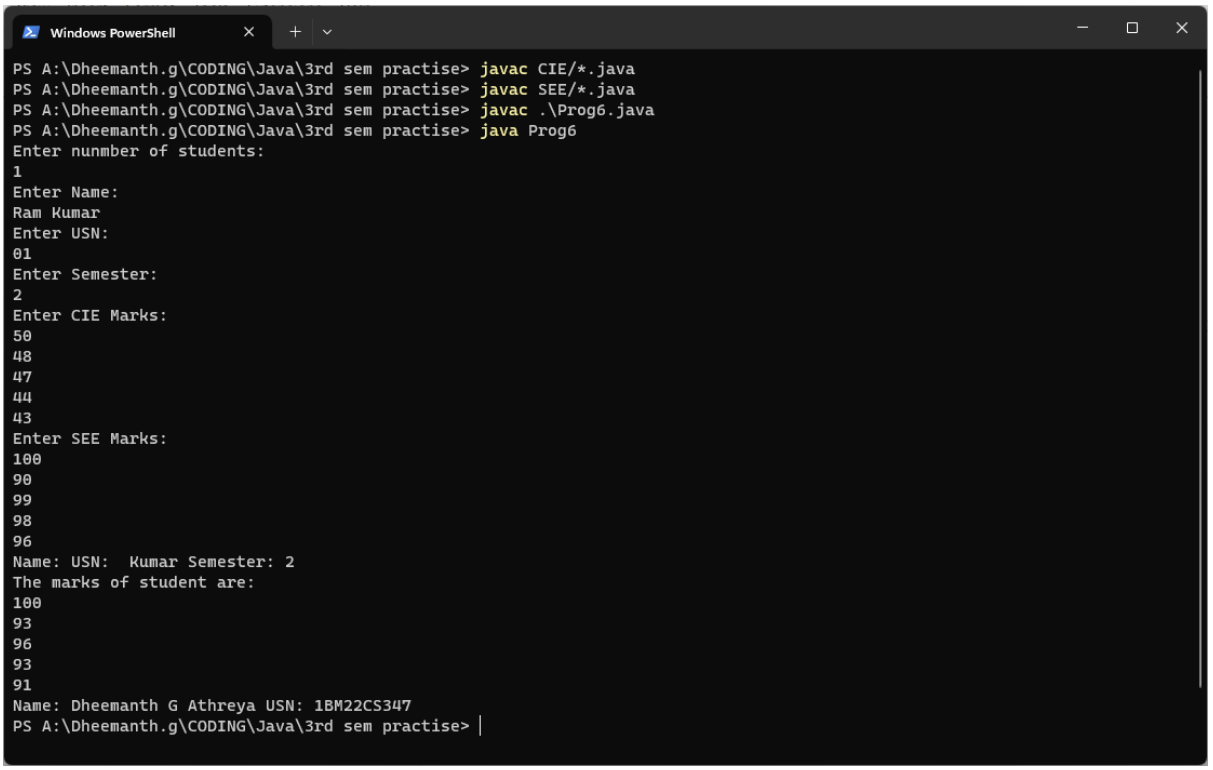
```
    public int [] getMarks(){
        return marks;
    }
}
```

Prog6.java

```
import CIE.*;
import SEE.*;
import java.util.*;
public class Prog6 {
    public static void main(String[]args)
    {

        Scanner in=new Scanner(System.in);
        System.out.println("Enter nunmber of students:");
        int n=in.nextInt();int [] marks5=new int[5];
        Externals[] E=new Externals[n];
        Internals[] I=new Internals[n];
        for(int i=0;i<n;i++)
        {
            E[i]=new Externals();I[i]=new Internals();
            System.out.println("Enter Name:");
            String name=in.nextLine(); in.next();
            System.out.println("Enter USN:");
            String usn=in.nextLine(); in.next();
            System.out.println("Enter Semester:");
            int sem=in.nextInt();
            System.out.println("Enter CIE Marks:");int[] marks1=new int[5];
            E[i].setName(name);
            E[i].setUSN(usn);
            E[i].setSem(sem);
            for(int j=0;j<5;j++)
            {
                marks1[j]=in.nextInt();
            }
            I[i].setMarks(marks1);
```

```
        System.out.println("Enter SEE Marks:");int [] marks2=new int[5];
        for(int j=0;j<5;j++)
        {
           marks2[j]=in.nextInt();
        }
        E[i].setMarks(marks2);
        int[] marks3=E[i].getMarks();int[] marks4=I[i].getMarks();
        System.out.println("Name: "+E[i].getName()+"USN: "+E[i].getUSN()+"
Semester: "+E[i].getSem());
        System.out.println("The marks of student are:");
        for(int j=0;j<5;j++)
        {
           marks5[j]=(marks3[j]/2)+marks4[j];
           System.out.println((marks5[j]));

        }
      }
      in.close();
      System.out.println("Name: Dheemanth G Athreya USN: 1BM22CS347");
   }
}
```

Output:


Windows PowerShell
PS A:\Dheemanth.g\CODING\Java\3rd sem practise> javac CIE/*.java
PS A:\Dheemanth.g\CODING\Java\3rd sem practise> javac SEE/*.java
PS A:\Dheemanth.g\CODING\Java\3rd sem practise> javac .\Prog6.java
PS A:\Dheemanth.g\CODING\Java\3rd sem practise> java Prog6
Enter nunmber of students:
1
Enter Name:
Ram Kumar
Enter USN:
01
Enter Semester:
2
Enter CIE Marks:
50
48
47
44
43
Enter SEE Marks:
100
90
99
98
96
Name: USN: Kumar Semester: 2
The marks of student are:
100
93
96
93
91
Name: Dheemanth G Athreya USN: 1BM22CS347
PS A:\Dheemanth.g\CODING\Java\3rd sem practise>

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 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.

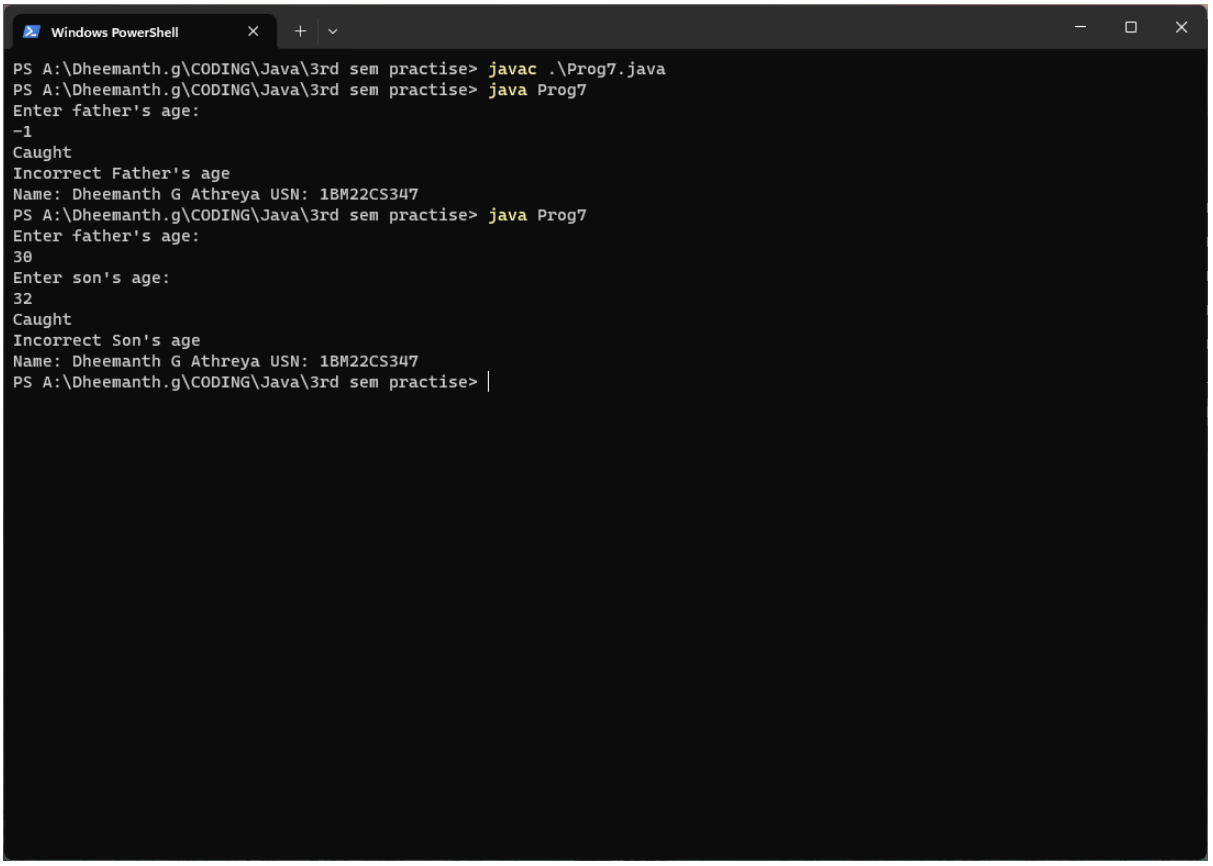
Code:

```
import java.util.*;

class WrongAge extends Exception{
   public WrongAge(String s){
      super(s);
   }
}

class Father{
   int f;
   public Father(){}
   public Father(int f){this.f = f;}
   public void checkFage() throws WrongAge{
      try{
         if(f<0){
            throw new WrongAge("Incorrect Father's age");
         }
      }
```

```
        catch(WrongAge e){
            throw new WrongAge("Incorrect Father's age");
        }
    }
    public void printFage(){
        System.out.println("Father's age: " + f);
    }
}

class Son extends Father{
    int s, f;
    public Son(){}
    public Son(int f){super(f);}
    public Son(int s, int f){
        super(f);
        this.f = f;
        this.s = s;
    }
    public void checkSage() throws WrongAge{
        try{
            if(s >= f){
                throw new WrongAge("Incorrect Son's age");
            }
        }
        catch(WrongAge e){
            throw new WrongAge("Incorrect Son's age");
        }
    }
```

```
    public void printSage(){
        System.out.println("Son's age: "+s);
    }
}

public class Prog7 {
    public static void main(String[] args) {
        Scanner in = new Scanner(System.in);
        try{
            System.out.println("Enter father's age: ");
            int a1 = in.nextInt();
            Son son1 = new Son(a1);
            son1.checkFage();
            System.out.println("Enter son's age: ");
            int a2 = in.nextInt();
            Son son2 = new Son(a2, a1);
            son2.checkSage();
            son1.printFage();
            son2.printSage();
        }
        catch(WrongAge e){
            System.out.println("Caught");
            System.out.println(e.getMessage());
        }
        System.out.println("Name: Dheemanth G Athreya USN: 1BM22CS347");
    }
}
```

Output:


Windows PowerShell
PS A:\Dheemanth.g\CODING\Java\3rd sem practise> javac .\Prog7.java
PS A:\Dheemanth.g\CODING\Java\3rd sem practise> java Prog7
Enter father's age:
-1
Caught
Incorrect Father's age
Name: Dheemanth G Athreya USN: 1BM22CS347
PS A:\Dheemanth.g\CODING\Java\3rd sem practise> java Prog7
Enter father's age:
30
Enter son's age:
32
Caught
Incorrect Son's age
Name: Dheemanth G Athreya USN: 1BM22CS347
PS A:\Dheemanth.g\CODING\Java\3rd sem practise>

PROGRAM 8

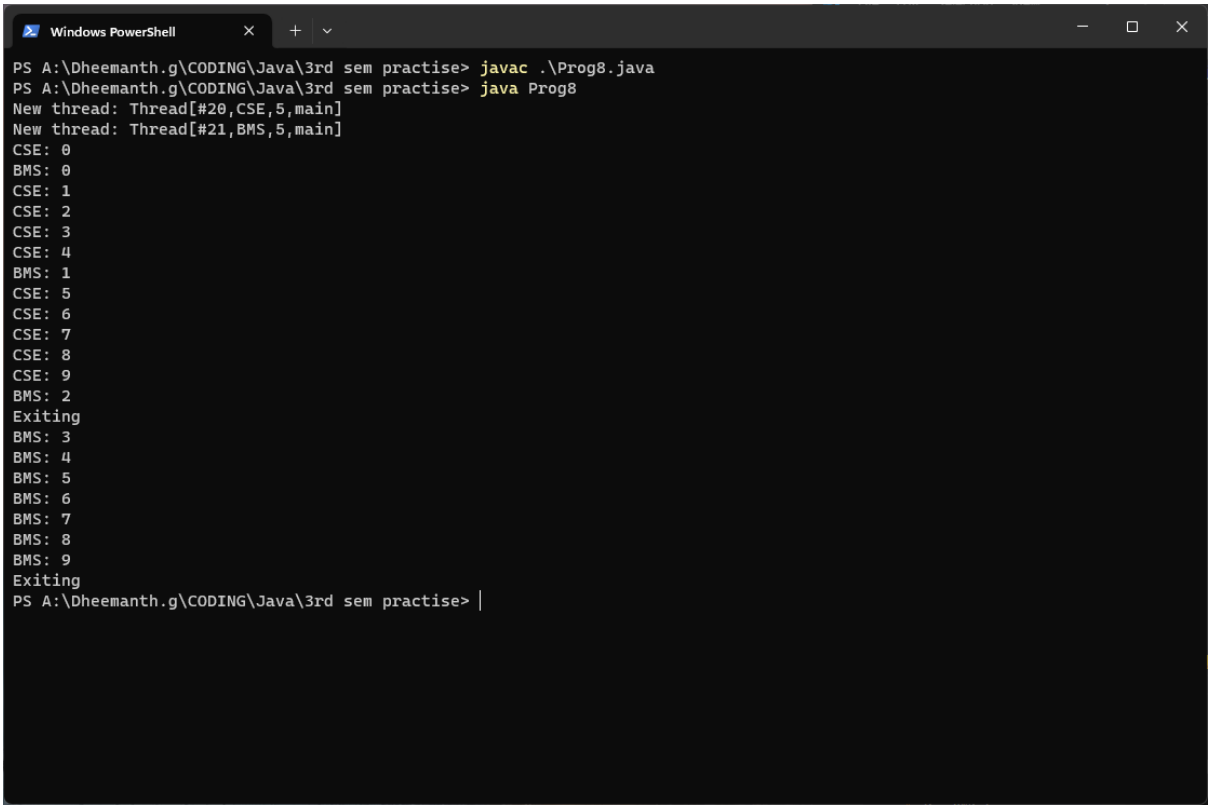
Write a program which creates two threads, one thread displaying “BMS” once every ten seconds and another displaying “CSE” once every two seconds.

Code:

```
class NewThread implements Runnable {
   String Name;
   Thread t;
   int n;

   NewThread(String threadName, int n) {
      Name = threadName;
      this.n = n;
      t = new Thread(this, Name);
      System.out.println("New thread: " + t);
      t.start();
   }

   public void run() {
      try {
         for (int i = 0; i < 10; i++) {
            System.out.println(Name + ": " + i);
            Thread.sleep(n);
         }
      } catch (InterruptedException e) {
         System.out.println(Name + "Interrupted");
      }
      System.out.println("Exiting");
   }
}
```

```
public class Prog8 {
    public static void main(String[] args) {
        NewThread ob1 = new NewThread("CSE", 2000);
        NewThread ob2 = new NewThread("BMS", 10000);
    }
}
```

Output:


Windows PowerShell
PS A:\Dheemanth.g\CODING\Java\3rd sem practise> javac .\Prog8.java
PS A:\Dheemanth.g\CODING\Java\3rd sem practise> java Prog8
New thread: Thread[#20,CSE,5,main]
New thread: Thread[#21,BMS,5,main]
CSE: 0
BMS: 0
CSE: 1
CSE: 2
CSE: 3
CSE: 4
BMS: 1
CSE: 5
CSE: 6
CSE: 7
CSE: 8
CSE: 9
BMS: 2
Exiting
BMS: 3
BMS: 4
BMS: 5
BMS: 6
BMS: 7
BMS: 8
BMS: 9
Exiting
PS A:\Dheemanth.g\CODING\Java\3rd sem practise>

PROGRAM 9

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.

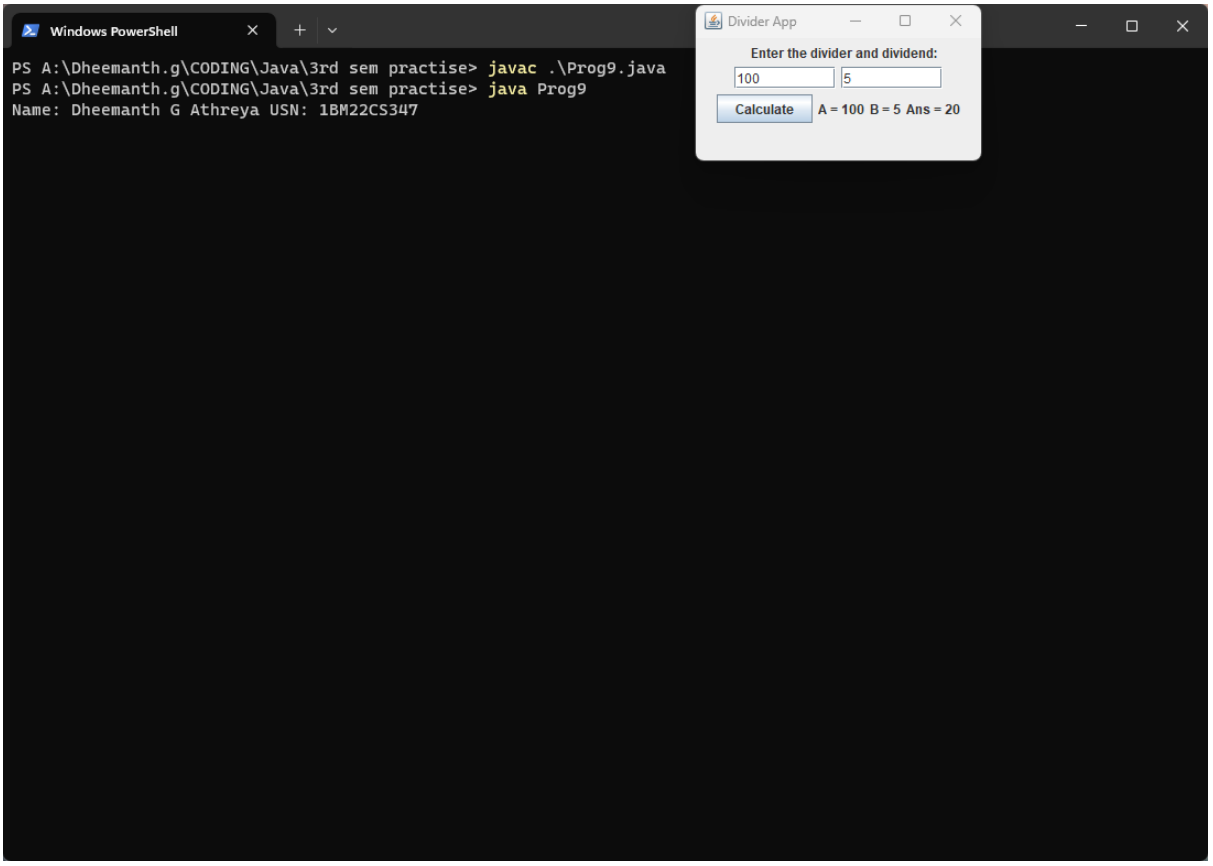
Code:

```
import javax.swing.*;
import java.awt.*;
import java.awt.event.*;

class Prog9 {
   Prog9() {
      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 divider and dividend:");

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

      JButton button = new JButton("Calculate");

      JLabel err = new JLabel();
      JLabel alab = 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(alab);
jfrm.add(blab);
jfrm.add(anslab);

ActionListener l = new ActionListener() {
   public void actionPerformed(ActionEvent evt) {
      System.out.println("Action event from a text field");
   }
};
ajtf.addActionListener(l);
bjtf.addActionListener(l);

button.addActionListener(new ActionListener() {
   public void actionPerformed(ActionEvent evt) {
      try {
         int a = Integer.parseInt(ajtf.getText());
         int b = Integer.parseInt(bjtf.getText());
         int ans = a / b;

         alab.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 (ArithmeticException e) {
                alab.setText("");
                blab.setText("");
                anslab.setText("");
                err.setText("B should be NON zero!");
            }
        }
    });

    jfrm.setVisible(true);
  }

  public static void main(String args[]) {
    SwingUtilities.invokeLater(new Runnable() {
      public void run() {
        new Prog9();
      }
    });
    System.out.println("Name: Dheemanth G Athreya USN: 1BM22CS347");
  }
}
```

Output:


Windows PowerShell
PS A:\Dheemanth.g\CODING\Java\3rd sem practise> javac .\Prog9.java
PS A:\Dheemanth.g\CODING\Java\3rd sem practise> java Prog9
Name: Dheemanth G Athreya USN: 1BM22CS347
Divider App
Enter the divider and dividend:
100
5
Calculate
A = 100 B = 5 Ans = 20