```
import java.util.Scanner;
class Student {
    String usn;
    String name;
    int numSubjects;
    int[] credits;
    int[] marks;
    double sgpa;


    public void acceptDetails() {
        Scanner sc = new Scanner(System.in);

        System.out.print("Enter USN: ");
        usn = sc.nextLine();

        System.out.print("Enter Name: ");
        name = sc.nextLine();

        System.out.print("Enter the number of subjects: ");
        numSubjects = sc.nextInt();

        credits = new int[numSubjects];
        marks = new int[numSubjects];

        for (int i = 0; i < numSubjects; i++) {
            System.out.print("Enter credits for subject " + (i + 1) + ": ");
            credits[i] = sc.nextInt();

            System.out.print("Enter marks for subject " + (i + 1) + ": ");
            marks[i] = sc.nextInt();
```

```
    }
}


public void displayDetails() {
    System.out.println("\nStudent Details:");
    System.out.println("USN: " + usn);
    System.out.println("Name: " + name);
    System.out.println("Subjects and Marks:");

    for (int i = 0; i < numSubjects; i++) {
        System.out.println("Subject " + (i + 1) + ": Marks = " + marks[i] + ", Credits = " + credits[i]);
    }
}


public void calculateSGPA() {
    int totalCredits = 0;
    int totalGradePoints = 0;

    for (int i = 0; i < numSubjects; i++) {
        int grade = calculateGrade(marks[i]);
        totalGradePoints += grade * credits[i];
        totalCredits += credits[i];
    }

    sgpa = (double) totalGradePoints / totalCredits;
}
private int calculateGrade(int marks) {
    if (marks >= 90) {
        return 10;
```

```
        } else if (marks >= 80) {
            return 9;
        } else if (marks >= 70) {
            return 8;
        } else if (marks >= 60) {
            return 7;
        } else if (marks >= 50) {
            return 6;
        } else if (marks >= 40) {
            return 5;
        } else {
            return 0;
        }
    }


    public void displaySGPA() {
        System.out.printf("SGPA:" + sgpa);
    }

    public static void main(String[] args) {
        Student student = new Student();
        student.acceptDetails();
        student.displayDetails();
        student.calculateSGPA();
        student.displaySGPA();
    }
}
```

```
import java.util.Scanner;

class Book {
    int price;
    String author;
    String name;
    int pages;

    public Book(int price, String author, String name, int pages) {
        this.price = price;
        this.author = author;
        this.name = name;
        this.pages = pages;
    }

    public void setter() {
        System.out.println("enter the price,author,name and pages of the book");
        Scanner sc = new Scanner(System.in);
         price=sc.nextInt();
         author= sc.next();
         name=sc.next();
         pages=sc.nextInt();
    }

    public void getter() {

        System.out.println(price);
        System.out.println(author);
```

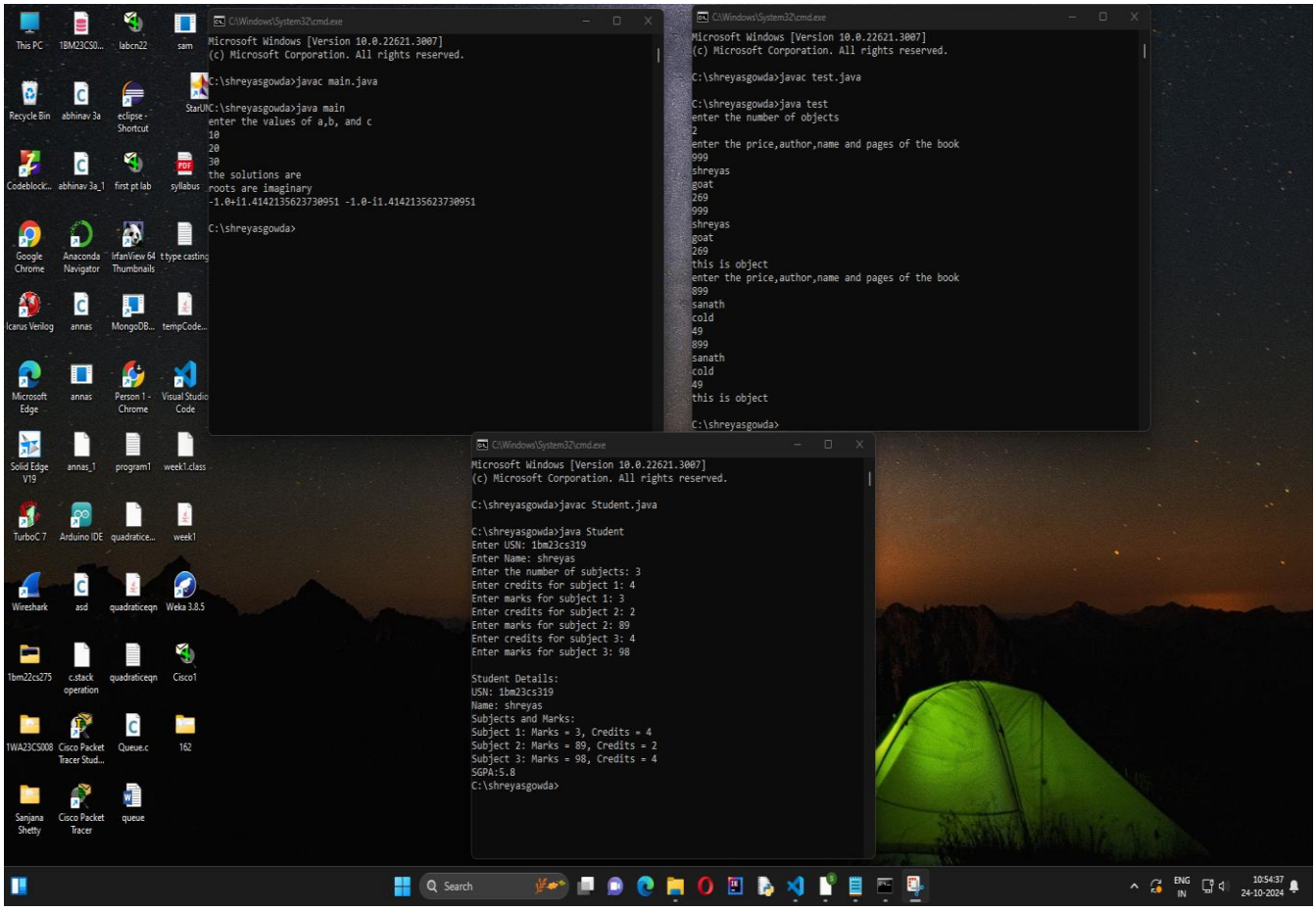
```
        System.out.println(name);
        System.out.println(pages);
    }

    public String toString() {
            return "this is object";
    }
}



public class test {
    public static void main(String[] args) {
        Scanner s1 = new Scanner(System.in);
        System.out.println("enter the number of objects");
        int n = s1.nextInt();

       Book []b1 = new Book[n];
        for(int i=0;i<n;i++){
            b1[i] = new Book(200,"virat","the century",111);

            // b1[i].getter();
            b1[i].setter();
            b1[i].getter();

            System.out.println(b1[i]);

        }
```

```
    }
}
```

```
import java.util.Scanner;
class quadratic {
   float d;
   Scanner sc = new Scanner(System.in);

   void check()

   {
      System.out.println("enter the values of a,b, and c");
      int a = sc.nextInt();
      int b = sc.nextInt();
      int c = sc.nextInt();


      if (a == 0) {
         System.out.println("invalid equation");
      }
      else{
         d= b*b - 4*a*c;

         System.out.println("the solutions are");
         if(d>0){
            System.out.println("roots are unique ");
            double r1 = (-b+Math.sqrt(d))/(2*a);
            double r2 = (-b-Math.sqrt(d))/(2*a);
            System.out.println(r1 +" " + r2);
         }
         if(d==0){
            System.out.println("roots are equal ");
            double r = -b/(2*a);
            System.out.println(r);
```

```
        }
        if(d<0){
            System.out.println("roots are imaginary");
            double r1 = Math.sqrt(-d)/(2*a);
            double r2= (-b)/(2*a);
            System.out.println(r2+"+i"+r1 + " "+r2+"-i"+r1 );
        }









      }

   }


}




public class main {
   public static void main(String[] args) {
      quadratic q1 = new quadratic();
       q1.check();
```

```
    }
}
```


C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.22621.3007]
(c) Microsoft Corporation. All rights reserved.
C:\shreyasgowda>javac main.java
C:\shreyasgowda>java main
enter the values of a,b, and c
10
20
30
the solutions are
roots are imaginary
-1.0+i1.4142135623730951 -1.0-i1.4142135623730951
C:\shreyasgowda>
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.22621.3007]
(c) Microsoft Corporation. All rights reserved.
C:\shreyasgowda>javac test.java
C:\shreyasgowda>java test
enter the number of objects
2
enter the price,author,name and pages of the book
999
shreyas
goat
269
999
shreyas
goat
269
this is object
enter the price,author,name and pages of the book
899
sanath
cold
49
899
sanath
cold
49
this is object
C:\shreyasgowda>
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.22621.3007]
(c) Microsoft Corporation. All rights reserved.
C:\shreyasgowda>javac Student.java
C:\shreyasgowda>java Student
Enter USN: 1bm23cs319
Enter Name: shreyas
Enter the number of subjects: 3
Enter credits for subject 1: 4
Enter marks for subject 1: 3
Enter credits for subject 2: 2
Enter marks for subject 2: 89
Enter credits for subject 3: 4
Enter marks for subject 3: 98
Student Details:
USN: 1bm23cs319
Name: shreyas
Subjects and Marks:
Subject 1: Marks = 3, Credits = 4
Subject 2: Marks = 89, Credits = 2
Subject 3: Marks = 98, Credits = 4
SGPA:5.8
C:\shreyasgowda>
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IN
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