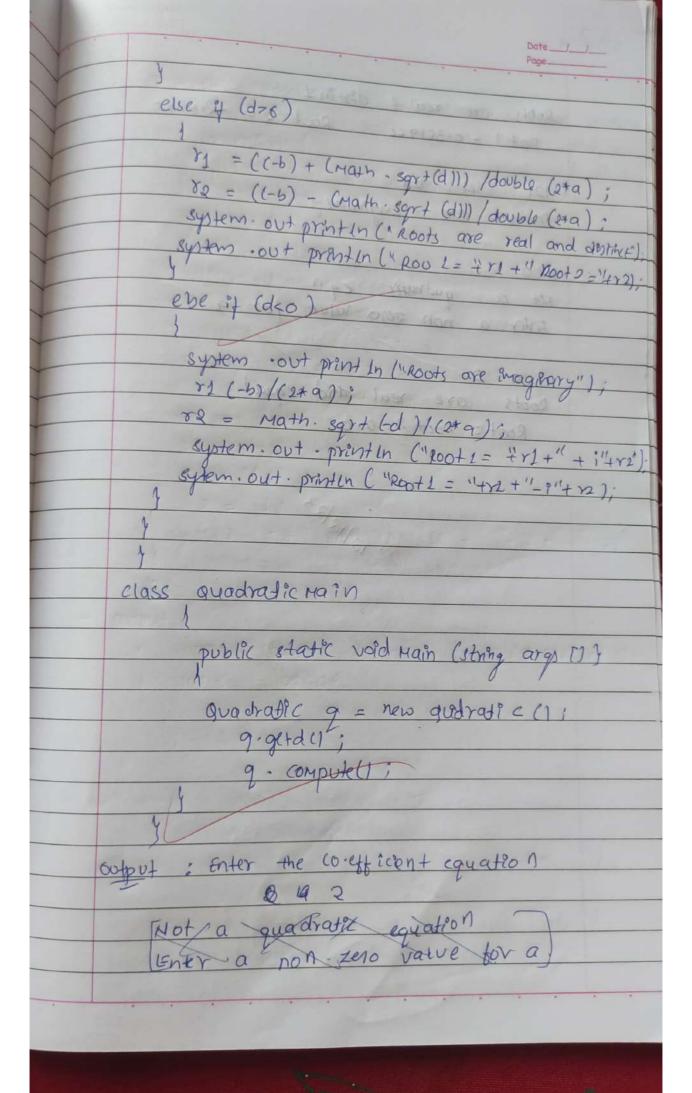
8. Superatt formela: Suspent jour off summer; class guadratte int o, b, c; double 41, 40, 83 wid get du sconner = new sconner (system + in); of 0, b, c); printing the coefficients Q = 3 next [n+1]; b= g. nextint (); C= 8. next (n+1); void complete the same white (a = = 6) system out - print in (" not a quadrate equation) aftern. out print l'untera non-sero value por es Browner 3= new Scanner (System : 3n); 0 = 3. rextin+1); d = b* b-4904 () 1/10/20 m = (+b)/(2*a) system out mentin ("bots are real 3 441"); Experior out profile ("Roof = Root 2 = "+x1),



Roots are real of destint. RO+1 -0-381966 ROOT 2 = -2.6180 121 21 121 121 121 Roots are Enginary NOT a quedratec egn Enter a non-zero value for g 1" saloos on stoom of tense & Roots are real and equal Root = Root 2 0.0-+ 174 = + toos") astrong too enoting EX Fig. " + 5x+" = 1+00") where the or contra 10/10/23 out on a tortenue 1510 what day best States of the Da Horling and a per Morbard

```
import java.util.Scanner;
class Quadratic {
    int a, b, c;
    double r1, r2, d;
    void getd() {
        Scanner s = new Scanner(System.in);
        System.out.println("Enter the coefficients of a, b, c");
        a = s.nextInt();
        b = s.nextInt();
        c = s.nextInt();
    }
    void compute() {
        while (a == 0) {
            System.out.println("Not a quadratic equation");
            System.out.println("Enter a non-zero value for a:");
            Scanner s = new Scanner(System.in);
            a = s.nextInt();
        }
        d = b * b - 4 * a * c;
        if (d == 0) {
            r1 = -b / (2.0 * a);
            System.out.println("Roots are real and equal");
            System.out.println("Root1 = Root2 = " + r1);
        } else if (d > 0) {
```

```
if (d == 0) {
24
25
                r1 = -b / (2.0 * a);
26
                System.out.println("Roots are real and equal");
27
                System.out.println("Root1 = Root2 = " + r1);
28
            } else if (d > 0) {
                r1 = (-b + Math.sqrt(d)) / (2.0 * a);
29
                r2 = (-b - Math.sqrt(d)) / (2.0 * a);
30
31
                System.out.println("Roots are real and distinct");
                System.out.println("Root1 = " + r1 + " Root2 = " + r2);
32
            } else if (d < 0) {</pre>
33
34
                System.out.println("Roots are imaginary");
                r1 = -b / (2.0 * a);
35
36
                r2 = Math.sqrt(-d) / (2.0 * a);
37
                System.out.println("Root1 = " + r1 + " + i" + r2);
                System.out.println("Root2 = " + r1 + " - i" + r2);
38
39
40
        }
41
42
43 class QuadraticMain {
        public static void main(String args[]) {
44
45
            Quadratic q = new Quadratic();
46
            q.getd();
47
            q.compute();
48
        }
49
50
```

```
# LAB-2 Prams:
                                      Date 19 / h / 23
    8. Develop a Java program to create a class student
       with numbers usn name an array credits and an
       array Marks. Include Methods to accept and display
       defails and a method to calculate SGPA of
        import java util scanner;
        class subject &
         int subject marks;
            int grade;
         class student 1
              string name;
           string usn:
            double sapa;
      scanner si
             subject (1 subject
        student ()
              subjects = new subject [8];
             For (int 1=0, 128; 1++)
               Subjects [i] = new subject ();
              3 = new Scanner (system in);
         void get Student Details () {
          system. out . print (" Enter Name :").
             name = S. nextline ();
            system . out . print ("Enter USN: ");
USN = s. next line();
adopted sure of a subjects Til grade sta
```

void get marks () lange for (ort i=0; i28; i++) system, out println ("Enter details for subject" + ":"); System. Out. print ("Morks; "); Subjects [i] - subjectmorts = s. nex+1n+1). system. out print ("credits") + subjects [i] credits = s. nax) In+11; is (subject [i] subject marks > = 90) { subject [i] grade = 10; else is (Subjects [i] - Subject Marles > = 75) 1 subjects (i) grade = 9; selve in (Subject & E17 - subject marks >= 10) 1 subjects [7] grade = 8; else if (subjects Fig. subject Marks >=50) 1 Subjects [i] grade = 7; else if (Subjects [i] . wbg act marks >=40)1 3ubjocts [i] : grade = 6; else 1 subjects [4), grade = 01 void compate 3GPA () 1 double total gredits = 0; double neighted sum = 0: for (int =0; 128; i++) { total credits + = subjects [i]. credits;
weighted sum + = subjects [i]. grade * subjects [i]

SGPA = weighted sum / total credits public class Main 1 class Main &
public static vold Magn (string [) args student s1 = new student (); SI get Student retails (); 33. Compute SGPA (1; system out println ("In Result:"); system out print in ("usx1:"+ st. usn); system. out. print in ("shepA:" + ss. sapa); =) appl. Inter name: Pooja. Enter USX : 16M22Cs194 Enter detalls for subject 1: Marks: 85 credits: 4 Enter details for subject 2: marks: 79 · credits : 4 Enter details for subject 3: marks: 70 credits : 3

Enter details for subject 5: marks: 88 credits: 3 Enter details for subject e; marks : 77 credits:3 Enter detoils for subject 7; Marks: \$7 ovedits: # Enter the details for subject 8? maries: 98 cred Pts : 2 HUMBRALL ALTER OF THE EAST Result? Name: 70099. USN : 16M22 CS194 39PA: 9.11923. \$ 19/12/23 DONE : PEGO

```
import java.util.Scanner;
class Subject {
    int subjectMarks, credits;
    char grade;
class Student {
    String name, usn;
    double SGPA;
    Scanner s;
    Subject[] subjects;
    Student() {
        int i;
        subjects = new Subject[8];
        for (i = 0; i < 8; i++)
            subjects[i] = new Subject();
        s = new Scanner(System.in);
    void getStudentDetails() {
        System.out.println("Enter student name:");
        name = s.nextLine();
        System.out.println("Enter student USN:");
        usn = s.nextLine();
    }
    void getMarks() {
        for (int i = 0; i < 8; i++) {
            System.out.println("Enter marks for subject " + (i + 1) + ":");
            subjects[i].subjectMarks = s.nextInt();
            System.out.println("Enter credits for subject " + (i + 1) + ":");
            subjects[i].credits = s.nextInt();
            // Calculate grade based on marks
            if (subjects[i].subjectMarks >= 90) {
                subjects[i].grade = 'S';
            } else if (subjects[i].subjectMarks >= 80) {
                subjects[i].grade = 'A';
            } else if (subjects[i].subjectMarks >= 70) {
                subjects[i].grade = 'B';
            } else if (subjects[i].subjectMarks >= 60) {
```

```
Subjects[I].graue
        } else if (subjects[i].subjectMarks >= 60) {
            subjects[i].grade = 'C';
        } else if (subjects[i].subjectMarks >= 50) {
            subjects[i].grade = 'D';
        } else if (subjects[i].subjectMarks >= 40) {
            subjects[i].grade = 'E';
        } else {
            subjects[i].grade = 'F';
    }
}
void computeSGPA() {
    double totalCredits = 0;
    double weightedGradePoints = 0;
    for (int i = 0; i < 8; i++) {
        totalCredits += subjects[i].credits;
        switch (subjects[i].grade) {
            case 'S':
                weightedGradePoints += 10 * subjects[i].credits;
                break;
            case 'A':
                weightedGradePoints += 9 * subjects[i].credits;
                break;
            case 'B':
                weightedGradePoints += 8 * subjects[i].credits;
                break;
            case 'C':
                weightedGradePoints += 7 * subjects[i].credits;
                break;
            case 'D':
                weightedGradePoints += 6 * subjects[i].credits;
                break;
            case 'E':
                weightedGradePoints += 5 * subjects[i].credits;
                break;
            default:
                // 'F' grade, no points
                hnooki
```

```
break;
                default:
                    // 'F' grade, no points
                    break;
        }
        SGPA = weightedGradePoints / totalCredits;
    }
    void displayResult() {
        System.out.println("\nStudent Details:");
        System.out.println("Name: " + name);
        System.out.println("USN: " + usn);
        System.out.println("SGPA: " + SGPA);
public class Main {
    public static void main(String[] args) {
        Student s1 = new Student();
        s1.getStudentDetails();
        s1.getMarks();
        s1.computeSGPA();
        s1.displayResult();
    }
```

Microsoft Windows [Version 10.0.22000.2538] (c) Microsoft Corporation. All rights reserved. C:\Users\Admin\Desktop\java>javac Main.java C:\Users\Admin\Desktop\java>java Main Enter Name: pooja Enter USN: 1bm22cs194 Enter details for Subject 1: Marks: 85 Credits: 4 Enter details for Subject 2: Marks: 79 Credits: 4 Enter details for Subject 3: Marks: 90 Credits: 3 Enter details for Subject 4: Marks: 84 Credits: 3 Enter details for Subject 5: Marks: 88 Credits: 3 Enter details for Subject 6: Marks: 77 Credits: 3 Enter details for Subject 7: Marks: 77 Credits: 4 Enter details for Subject 8: Marks: 98 Credits: 2 Result: Name: pooja USN: 1bm22cs194 SGPA: 9.192307692307692

C:\Users\Admin\Desktop\java>