Main.java

```java
import java.util.Scanner;
class Main {
 public static void main(String[] args)
 {
     Scanner sc=new Scanner(System.in);
     System.out.println("enter the values of a,b,c for the quadratic equation ");
     double a=sc.nextInt();
     double b=sc.nextInt();
     double c=sc.nextInt();
     double z=b*b-4*a*c;
     eqcheck ob=new eqcheck();
     if(z<0)
     {
         System.out.println("the roots are complex");
     }
     else if(z==0)
     {
         System.out.println("the roots are real and equal");
         ob.check(a,b,c);
         ob.display();
     }
     else{
          System.out.println("the roots are real and distinct");
         ob.check(a,b,c);
         ob.display();
     }
     }

}
class eqcheck
{
```

```
32 class eqcheck
33 {
34     double a;
35     double b;
36     double c;
37     double x1;
38     double x2;
39     void check(double a,double b,double c)
40     {
41         this.a=a;
42         this.b=b;
43         this.c=c;
44         double z=Math.pow(b*b-4*a*c,0.5);
45         x1=(-b+z)/(2*a);
46         x2=(-b-z)/(2*a);
47     }
48     void display()
49     {
50         System.out.println(x1);
51          System.out.println(x2);
52     }
53 }
54
```

```
enter the values of a,b,c for the quadratic equation
2
-4
-6
the roots are real and distinct
-1.0
0.0


...Program finished with exit code 0
Press ENTER to exit console.
```

```java
import java.util.*;
public class Main
    {
    String usn,name;
    static int credits[];
    static double marks[];
    void input(int n)
        {
        Scanner sc=new Scanner(System.in);
        System.out.println("enter usn and name");
        usn=sc.nextLine();
        name=sc.nextLine();
        System.out.println("enter marks along with credits");
        for(int i=0;i<n;i++)
        {
            marks[i]=sc.nextDouble();
            credits[i]=sc.nextInt();
            System.out.println();
        }
        }
        double calculate(int n)
        {
            int c,cred=0;
            double tot,total=0.0;
            for(int i=0;i<n;i++)
            {
                tot=marks[i];
                if(tot>=90)
                c=10;
                else if(tot>=80)
```

Main.java

```
30              c=10;
31              else if(tot>=80)
32              c=9;
33              else if(tot>=70)
34              c=8;
35              else if(tot>=60)
36              c=7;
37              else if(tot>=50)
38              c=6;
39              else if(tot>=40)
40              c=4;
41              else
42              c=0;
43          total=total+(c*credits[i]);
44          cred=cred+credits[i];
45          }
46          total=total/cred;
47          return(total);
48      }
49      void display(int n,double total)
50      {
51              System.out.println("name of the student : "+name);
52              System.out.println("usn of student : "+usn);
53              System.out.println("marks of student along with credits of coarse");
54              for(int i=0;i<n;i++)
55              {
56               System.out.println(marks[i]+" "+credits[i]);
57              }
58               System.out.println("sgpa of student : "+total);
59      }
```

Main.java

```
45              }
46              total=total/cred;
47              return(total);
48          }
49          void display(int n,double total)
50          {
51                  System.out.println("name of the student : "+name);
52                  System.out.println("usn of student : "+usn);
53                  System.out.println("marks of student along with credits of coars
54                  for(int i=0;i<n;i++)
55                  {
56                   System.out.println(marks[i]+" "+credits[i]);
57                  }
58                   System.out.println("sgpa of student : "+total);
59          }
60           public static void main (String[] args) {
61              Scanner sc=new Scanner(System.in);
62              Main obj=new Main();
63              System.out.println("enter number of coarses");
64              int n=sc.nextInt();
65              credits=new int[n];
66              marks=new double[n];
67              obj.input(n);
68              double total=obj.calculate(n);
69              obj.display(n,total);
70
71           }
72      }
73
74
75
```

```
enter number of coarses
5
enter usn and name
1BM19ET014
Deepthi L
enter marks along with credits
90
2

88
2

95
1

90
2

88
3
```

```
name of the student : Deepthi L
usn of student : 1BM19ET014
marks of student along with credits of coarse
90.0 2
88.0 2
95.0 1
90.0 2
88.0 3
sgpa of student : 9.5


...Program finished with exit code 0
Press ENTER to exit console.
```