```java
import java.util.Scanner;

public class Main {
    public static void main(String[] args) {
        double a, b, c, root1, root2;
        double disc;
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the value of b:");
        b = sc.nextDouble();
        System.out.println("Enter the value of a:");
        a = sc.nextDouble();
        System.out.println("Enter the value of c:");
        c = sc.nextDouble();
        disc = b*b-4*a*c;
        if(disc > 0)
        {
            root1 = (-b + Math.sqrt(b*b - 4*a*c))/(2*a);
            root2 = (-b - Math.sqrt(b*b - 4*a*c))/(2*a);
            System.out.println("First root is:" + root1);
            System.out.println("Second root is:" + root2);
        }
        else if(disc == 0)
        {
            root1 = -b/(2*a);
            System.out.println("Both roots are equal to:" + r);
        }
        else if(disc < 0)
        {
            System.out.println("Real roots dont exist");
        }
    }
}
```

# LAB - Program - 2

```java
import java.util.Scanner;

class Student {
    private String USN;
    private String name;
    private double SGPA = 0;
    private int n;  // n = no. of subjects
    private int totalCredits = 0;

    void accept () {
        Scanner scan = new Scanner (System.in);
        System.out.print ("Enter the USN:");
        USN = scan.nextLine ();
        System.out.print ("Enter the name: ");
        name = scan.nextLine ();
        System.out.println ("Enter the no. of subjects: ");
        n = scan.nextInt ();
        int credits [] = new int [n];
        double marks [] = new double [n];
        System.out.println ("Enter the details of the subject: ");
        for (int i = 0; i < n; i++) {
            System.out.print ("Enter the number of credits of subject " +(i+1)+": ");
            credits [i] = scan.nextInt ();
            System.out.print ("\n Enter the marks of the subject " +(i+1)+": ");
            marks [i] = scan.nextInt ();
            calculate (credits [i], marks [i], i);
        }
    }
}
```

```java
void calculate (int credit, double mark, int j){
    total credits = total Credits + credit;
    if (mark >= 90 && mark <= 100)
        SGPA = SGPA + (10 * credit);
    else if (mark >= 80 && mark <= 89)
        SGPA = SGPA + (9 * credit);
    else if (mark >= 70 && mark <= 79)
        SGPA = SGPA + (8 * credit)
    else if (mark >= 60 && mark <= 69)
        SGPA = SGPA + (7 * credit)
    else if (mark >= 50 && mark <= 59)
        SGPA = SGPA + (6 * credit)
    else if (mark >= 40 && mark <= 49)
        SGPA = SGPA + (5 * credit)
    else
        System.out.println ("Student has failed in subject" + (j+1));
}

void display () {
    System.out.println ("Details of the student are: ");
    System.out.println ("Name: " + name);
    System.out.println ("USN: " + (SGPA/totalCredits));
    System.out.println ("SGPA = " + (SGPA/totalCredits));
}
}

public class LabProgram2 {
    public static void main (String [] args) {
        Student stu = new Student ();
        stu.accept ();
        stu.display ();
    }
}
```

# LAB - Program-3

```java
import java.util.Scanner;

class Books {
    String name;
    String author;
    int price;
    int num_pages;

    Books(String name, String author, int price, int num_pages) {
        this.name = name;
        this.author = author;
        this.price = price;
        this.num_pages = num_pages;
    }
    public String toString() {
        return "\n The name of the book is: " + name +
    "\n Name of author is: " + author + "\n Price of the book is: "
    + price + "\n Number of pages: " + num_pages;
    }
}
class Book {
    public static void main(String[] args) {
    Scanner s = new Scanner(System.in);
    int n;
System.out.print("Enter the number of books:");
    n = s.next.Int();
    Books[] B = new Books[n];
    String nam;
    String auth;
    int pric;
    int numpages;
```

```java
for (int i = 0; i < n; i++) {
    System.out.println("\n Enter the name of the book: ");
    nam = s.next();
    System.out.println("Enter the name of the author: ");
    auth = s.next();
    System.out.println("Enter the price of the book: ");
    pir = s.nextInt();
    B[i] = new Books(nam, auth, pir, numpages);
}
    System.out.println("Enter the number of books of which
        you want to see the details: ");
    int k;
    k = s.nextInt();
    System.out.println(B[k-1].tostring());
}
}
```