

Lab Program 1:

Writeup:

WEEK 1

```
import java.util.Scanner;
import java.lang.Math;
class RealSolution {
    private int a, b, c;
    void accept() {
        System.out.println("A Quadratic eqn. is of the form  

 $ax^2 + bx + c = 0$ ");
        System.out.println("Enter the values of a, b, c to find  

        out the roots of the equation");
        Scanner sc = new Scanner(System.in);

        System.out.print("Enter the value of a:");
        this.a = sc.nextInt();

        System.out.print("Enter value of b:");
        this.b = sc.nextInt();

        System.out.print("Enter value of c:");
        this.c = sc.nextInt();
    }

    double calculateD() {
        double D = (b*b) - 4*(a*c);
        if (D < 0)
            return -999;
        else
            return D;
    }

    void DisplayResult (double D) {
        double r1, r2;
        if (D == -999)
            System.out.println("Roots are complex");
        else
            {
                r1 = (-b + Math.sqrt(D)) / 2a;
                r2 = (-b - Math.sqrt(D)) / 2a;
                System.out.println("Roots are: " + r1 + " , " + r2);
            }
    }

    public static void main (String args[]) {
        RealSolution rs = new RealSolution();
        rs.accept();
        double Discriminate = rs.calculateD();
        rs.DisplayResult (Discriminate);
    }
}
```


Expected o/p:-

A Quadratic Equation is of the form $ax^2 + bx + c = 0$
Enter values of a,b,c in order to find Roots of eqn.

Enter value of a: 1

Enter value of b: 0

Enter value of c: -1

Roots are: -1.0, 1.0

Code:

Program Code.

```
1 import java.util.Scanner;
2 import java.lang.Math;
3 class RealSolution
4 {
5     private int a,b,c;
6
7     void accept()
8     {
9         System.out.println("A Quadratic Equation is of the form ax^2 + bx + c = 0");
10        System.out.println("Enter values of a,b,c in order to find out the roots of the eqn");
11        Scanner sc = new Scanner(System.in);
12
13        System.out.print("Enter the value of a: ");
14        this.a = sc.nextInt();
15
16        System.out.print("Enter the value of b: ");
17        this.b = sc.nextInt();
18
19        System.out.print("Enter the value of c: ");
20        this.c = sc.nextInt();
21    }
22
23    double calculatedD()
24    {
25        double D = (b*b) - (4*a*c);
26        if(D<0)
27            return -999;
28        else
29            return D;
30    }
31
32    void displayResult(double D)
33    {
34        double r1,r2;
35        if(D == -999)
36            System.out.print("Roots are complex");
37        else
38        {
39            r1 = (-b + Math.sqrt(D))/(2*a);
40            r2 = (-b - Math.sqrt(D))/(2*a);
41            System.out.println("Roots are:" + r1 + " " + r2);
42        }
43    }
44
45    public static void main(String args[])
46    {
47        RealSolution rs = new RealSolution();
48        rs.accept();
49        double Discriminate = rs.calculatedD();
50        rs.displayResult(Discriminate);
51    }
52 }
```

Output:


```
"C:\java\bin\java" -classpath "C:\Users\Madhusudhan\Desktop\JavaProgs" RealSolution
Process started (PID=3804) >>>
A Quadratic Equation is of the form  $ax^2 + bx + c = 0$ 
Enter values of a,b,c in order to find out the roots of the eqn
Enter the value of a: 1
Enter the value of b: 2
Enter the value of c: 1
Roots are:-1.0 -1.0
<<< Process finished (PID=3804). (Exit code 0)
===== READY =====
```


Lab Program 2:

Writeup:

WEEK 2

```
import java.util.Scanner;

class student {

    private String usn, name;
    private int[] credits = new int [5];
    private int[] marks = new int [5];
    private int[] grade = new int [5];

    void accept () {

        Scanner sc = new Scanner (System.in);
        System.out.print ("Enter your name");
        this.name = sc.nextLine();

        System.out.print ("Enter your usn:");
        this.usn = sc.next();

        System.out.print ("
        for ( int i = 0; i < credits.length ; i++) {

            System.out.print ("Enter marks in Subject" + (i+1) + ":");
            this.marks[i] = sc.nextInt();

            System.out.print ("Enter credits in Subject" + (i+1) + ":");
            this.credits[i] = sc.nextInt();

            System.out.println();
        }

        void display () {

            System.out.println ("Here are your details:");
            System.out.println ("USN: " + usn);
            System.out.println ("Name: " + name);
            for (int i = 0; i < credits.length ; i++) {
                System.out.println ("SUBJECT: " + (i+1) + " CREDITS: "
                                     + credits[i] + " MARKS: " + marks[i])
            }

        }

        void gradeCalc () {

            for (int i = 0; i < marks.length ; i++) {

                if (marks[i] >= 90)
                    grade[i] = 10;
                else if (marks[i] >= 80 & marks[i] < 90)
                    grade[i] = 9;
                else if (marks[i] >= 70 & marks[i] < 80)
                    grade[i] = 8;
            }

        }

    }
}
```



```

else if (marks[i] >= 60 & & marks[i] < 70)
    grade[i] = 7;
else if (marks[i] >= 50 & & marks[i] < 60)
    grade[i] = 6;
else if (marks[i] >= 40 & & marks[i] < 50)
    grade[i] = 4;
else
    grade[i] = 0;
}

```

```

}
double sgpa() {
    double sum = 0, totalCred = 0;
    gradeCalc();
    for (int i = 0; i < credits.length; i++) {
        sum += grade[i] * credits[i];
        totalCred += credits[i];
    }
    return sum / totalCred;
}

```

```

}
public static void main(String args[])
{
    Student std = new Student();
    std.accept();
    std.display();
    double gradept = std.sgpa();
    System.out.println("Your sgpa is: " + gradept);
}
}

```

Expected o/p:- (for 2 subject input)

Enter your Name: Madha Madhusudhan
 Enter your USN: 16M19EC074
 Enter marks in subject 1: 100
 Enter credits of subject 1: 4
 Enter marks in subject 2: 75
 Enter credits of subject 2: 3

Here are your details:-

USN:- 16M19EC074
 Name: Madha Madhusudhan
 Subject 1 credits: 4 marks: 100
 Subject 2 credits: 3 marks: 75
 sgpa is: 9.1428

Code:

```
1 import java.util.Scanner;
2
3 class Student
4 {
5     private String usn,name;
6     private int[] credits = new int[5];
7     private int[] marks = new int[5];
8     private int[] grade = new int[5];
9
10    //Accepts information from the user
11    void accept()
12    {
13        Scanner sc = new Scanner(System.in);
14        System.out.print("Enter your Name: ");
15        this.name = sc.nextLine();
16
17        System.out.print("Enter your USN: ");
18        this.usn = sc.next();
19
20        for(int i=0;i<credits.length;i++)
21        {
22            System.out.print("Enter marks in Subject " + (i+1) + ": ");
23            this.marks[i] = sc.nextInt();
24
25            System.out.print("Enter credits of Subject " + (i+1) + ": ");
26            this.credits[i] = sc.nextInt();
27
28            System.out.println();
29        }
30    }
31
32    //displays information entered by the user
33    void display()
34    {
35        System.out.println("Here are your details:");
36        System.out.println("USN: " + usn);
37        System.out.println("Name: " + name);
38        for(int i=0;i<credits.length;i++)
39        {
40            System.out.println("SUBJECT " + (i+1) + " CREDITS: " + credits[i] + " MARKS: " + marks[i]);
41        }
42    }
43
44    //To calculate grade point of each of the marks entered by user
45    void gradeCalc()
46    {
47        for(int i=0;i<marks.length;i++)
48        {
49            if(marks[i] >= 90)
50                grade[i] = 10;
51            else if(marks[i] >= 80 && marks[i] < 90)
52                grade[i] = 9;
53            else if(marks[i] >= 70 && marks[i] < 80)
54                grade[i] = 8;
55            else if(marks[i] >= 60 && marks[i] < 70)
56                grade[i] = 7;
57        }
58    }
```



```

59         else if(marks[i] >= 50 && marks[i] < 60)
60             grade[i] = 6;
61         else if(marks[i] >= 40 && marks[i] < 50)
62             grade[i] = 4;
63         else
64             grade[i] = 0;
65     }
66 }
67
68 //To calculate sgpa, returns a double value
69 double sgpa()
70 {
71     double sum = 0, totalCred = 0;
72     gradeCalc();
73
74     for(int i=0; i<credits.length; i++)
75     {
76         sum+= grade[i]*credits[i];
77         totalCred+= credits[i];
78     }
79
80     return sum/totalCred;
81 }
82
83 //main function
84 public static void main(String args[])
85 {
86     Student std = new Student();
87
88     std.accept();
89     std.display();
90     double gradePt = std.sgpa();
91     System.out.println("Your sgpa is: " + gradePt);
92 }
93
94 }

```


Output:

```
C:\Users\Madhusudhan\Desktop\JavaProgs>java Student
Enter your Name: Medha Madhusudhan
Enter your USN: 1BM19EC074
Enter marks in Subject 1: 100
Enter credits of Subject 1: 4

Enter marks in Subject 2: 96
Enter credits of Subject 2: 5

Enter marks in Subject 3: 67
Enter credits of Subject 3: 5

Enter marks in Subject 4: 76
Enter credits of Subject 4: 4

Enter marks in Subject 5: 88
Enter credits of Subject 5: 3

Here are your details:
USN: 1BM19EC074
Name: Medha Madhusudhan
SUBJECT 1 CREDITS: 4 MARKS: 100
SUBJECT 2 CREDITS: 5 MARKS: 96
SUBJECT 3 CREDITS: 5 MARKS: 67
SUBJECT 4 CREDITS: 4 MARKS: 76
SUBJECT 5 CREDITS: 3 MARKS: 88
Your sgpa is: 8.761904761904763
```


Lab Program 3:

Writeup:

```
{ WEEK - 3 }

import java.util.Scanner;

class Book {
    private String name, author;
    private double price;
    private int num-pages;

    Book() {
        this.name = "";
        this.author = "";
        this.price = 0.0;
        this.num-pages = 0;
    }

    public void setName (String n) {
        this.name = n;
    }

    public void setAuthor (String a) {
        this.author = a;
    }

    public void setPrice (double p) {
        this.price = p;
    }

    public void setPages (int q) {
        this.num-pages = q;
    }

    public String toString () {
        return "Name:" + this.name + "Author:" + this.author + "Price:" + this.price
            + "No. of Pages:" + this.num-pages;
    }

    public String getName () {
        return this.name;
    }

    public String getAuthor () {
        return this.author;
    }

    public double getPrice () {
        return this.price;
    }

    public int getPages () {
        return this.num-pages;
    }
}
```



```

public static void main (String[] args) {
    int n;
    Scanner sc = new Scanner(System.in);
    System.out.print("How many Book Details do you want to enter? ");
    n = sc.nextInt();
    Book[] b = new Book[n];

    for (int i=0; i<n; i++) {
        b[i] = new Book();
        System.out.println("Enter details for book "+ (i+1));

        System.out.print("Enter name: ");
        b[i].setName (sc.next());

        System.out.print("Enter author: ");
        b[i].setAuthor (sc.next());

        System.out.print("Enter price: ");
        b[i].setPrice (sc.nextDouble());

        System.out.print("Enter no. of pages: ");
        b[i].setPages (sc.nextInt());
    }

    for (int i=0; i<n; i++) {
        System.out.println("Book " + (i+1));
        String st = b[i].toString();
        System.out.println(st);
    }
}
}

```

Expected o/p:

How many books do you want to enter: 1
 Enter details for book 1
 Enter name: b1
 Enter author: a1
 Enter price: 25
 Enter no. of pages: 99
 Book 1
 Name: b1 Author a1 Price 25.0 no. of pages: 99

Code:

```
1 import java.util.Scanner;
2
3 class Book{
4     private String name,author;
5     private double price;
6     private int num_pages;
7
8     Book(){
9         this.name = "";
10        this.author = "";
11        this.price = 0.0;
12        this.num_pages = 0;
13    }
14
15    public void setName(String n){
16        this.name = n;
17    }
18    public void setAuthor(String a){
19        this.author = a;
20    }
21    public void setPrice(double p){
22        this.price = p;
23    }
24    public void setPages(int q){
25        this.num_pages = q;
26    }
27
28    public String toString(){
29
30        return "Name: " + this.name + " Author:" + this.author + " Price:" + this.price + " No. of Pages:" + this.num_pages;
31    }
32
33    public String getName(){
34        return this.name;
35    }
36
37    public String getAuthor(){
38        return this.author;
39    }
40
41    public double getPrice(){
42
43        return this.price;
44    }
45
46    public int getPages(){
47        return this.num_pages;
48    }
49
50    public static void main(String args[]){
51        int n;
52        Scanner sc = new Scanner(System.in);
53        System.out.print("How many book details do you want to enter: ");
54        n = sc.nextInt();
55        Book[] b = new Book[n];
56
57        for(int i=0;i<n;i++){
58            b[i] = new Book();
59            System.out.println("Enter Details for Book " + (i+1));
60
61            System.out.print("Enter Name: ");
62            b[i].setName(sc.next());
63
64            System.out.print("Enter Author: ");
65            b[i].setAuthor(sc.next());
66
67            System.out.print("Enter Price: ");
68            b[i].setPrice(sc.nextDouble());
69
70            System.out.print("Enter no. of pages: ");
71            b[i].setPages(sc.nextInt());
72        }
73
74        for(int i=0;i<n;i++){
75            System.out.println("Book " + (i+1));
76            String st = b[i].toString();
77            System.out.println(st);
78        }
79
80    }
81
82 }
```


Output:

```
"C:\java\bin\java" -classpath "C:\Users\Madhusudhan\Desktop\JavaProgs" Book
Process started (PID=19536) >>>
How may book details do you want to enter: 2
Enter Details for Book 1
Enter Name: b1
Enter Author: a1
Enter Price: 45
Enter no. of pages: 56
Enter Details for Book 2
Enter Name: b2
Enter Author: a2
Enter Price: 67
Enter no. of pages: 78
Book 1
Name: b1 Author:a1 Price:45.0 No. of Pages:56
Book 2
Name: b2 Author:a2 Price:67.0 No. of Pages:78
<<< Process finished (PID=19536). (Exit code 0)
===== READY =====
```


Lab Program 4:

Writeup:

```
{ LAB PROGRAM 4 }

import java.util.Scanner;

abstract class Shape {
    int base, height;
    Shape(int a, int b) {
        base = a;
        height = b;
    }
    Shape(int c) {
        base = c;
        height = c;
    }
    abstract void printArea();
}

class Rectangle extends Shape {
    Rectangle(int a, int b) {
        super(a, b);
    }
    void printArea() {
        System.out.print("area of rectangle : " + (base * height));
    }
}

class Triangle extends Shape {
    Triangle(int a, int b) {
        super(a, b);
    }
    void printArea() {
        System.out.print("area of triangle : " + (base * height / 2));
    }
}

class Circle extends Shape {
    Circle(int a) {
        super(a);
    }
    void printArea() {
        System.out.print("area of circle : " + (3.14 * base * base));
    }
}

class ShapeDemo {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int b, h, choice;
    }
}
```


while (true)

```
System.out.print("\nEnter choice 1. Rectangle 2. Triangle 3. Circle  
4. exit: ");
```

```
choice = sc.nextInt();
```

```
switch (choice) {
```

```
    case 1: System.out.print("Enter base: ");  
            b = sc.nextInt();  
            System.out.print("Enter height:");  
            h = sc.nextInt();  
            Rectangle r = new Rectangle(b, h);  
            r.printArea();  
            break;
```

```
    case 2: System.out.print("Enter base: ");  
            b = sc.nextInt();  
            System.out.print("Enter height:");  
            h = sc.nextInt();  
            Triangle t = new Triangle(b, h);  
            t.printArea();  
            break;
```

```
    case 3: System.out.print("Enter radius:");  
            b = sc.nextInt();  
            Circle ci = new Circle(b);  
            ci.printArea();  
            break;
```

```
    case 4: System.exit(0);
```

```
}
```

```
}
```

```
}
```

```
}
```


Code:

```
1  import java.util.Scanner;
2
3  abstract class Shape{
4      int base,height;
5      Shape(int a,int b){
6          base = a;
7          height = b;
8      }
9      Shape(int c){
10         base = c;
11         height = c;
12     }
13     abstract void printArea();
14 }
15
16 class Rectangle extends Shape{
17     Rectangle(int a,int b){
18         super(a,b);
19     }
20     void printArea(){
21         System.out.print("area of rectangle: " + (base*height));
22     }
23 }
24 class Triangle extends Shape{
25     Triangle(int a,int b){
26         super(a,b);
27     }
28     void printArea(){
29         System.out.print("area of triangle: " + (base*height/2));
30     }
31 }
32 class circle extends Shape{
33     circle(int a){
34         super(a);
35     }
36     void printArea(){
37         System.out.print("area of circle: " + (3.14*base*base));
38     }
39 }
40
41 class ShapeDemo{
42     public static void main(String args[]){
43
44         Scanner sc = new Scanner(System.in);
45         int b,h,choice;
46         while(true){
47             System.out.print("\nEnter choice 1.Rectangle 2.triangle 3.circle 4.exit: ");
48             choice = sc.nextInt();
49
50             switch(choice){
51                 case 1: System.out.print("Enter base: ");
52                     b = sc.nextInt();
53                     System.out.print("Enter height: ");
54                     h = sc.nextInt();
55                     Rectangle r = new Rectangle(b,h);
56                     r.printArea();
57                     break;
58                 case 2: System.out.print("Enter base: ");
59                     b = sc.nextInt();
60                     System.out.print("Enter height: ");
61                     h = sc.nextInt();
62                     Triangle t = new Triangle(b,h);
63                     t.printArea();
64                     break;
65                 case 3: System.out.print("Enter radius: ");
66                     b = sc.nextInt();
67                     circle ci = new circle(b);
68                     ci.printArea();
69                     break;
70                 case 4: System.exit(0);
71             }
72         }
73     }
74 }
75
76 }
```


Output:

```
C:\Users\Madhusudhan\Desktop\JavaProgs>javac ShapeDemo.java
C:\Users\Madhusudhan\Desktop\JavaProgs>java ShapeDemo

Enter choice 1.Rectangle 2.triangle 3.circle 4.exit: 1
Enter base: 4
Enter height: 6
area of rectangle: 24
Enter choice 1.Rectangle 2.triangle 3.circle 4.exit: 2
Enter base: 2
Enter height: 3
area of triangle: 3
Enter choice 1.Rectangle 2.triangle 3.circle 4.exit: 3
Enter radius: 14
area of circle: 615.44
Enter choice 1.Rectangle 2.triangle 3.circle 4.exit: 4
```


Lab Program 5:

Writeup:

```

{ Lab PROGRAM 5 }

import java.util.Scanner;
import java.lang.Math;

class account {
    double balance;
    String customer-name;
    int account-number;
    char account-type; // 's' for savings, 'c' for current

    account(String name, int num, char type) {
        customer-name = name;
        account-number = num;
        account-type = type;
        balance = 500;
    }

    String returnType() {
        if (account-type == 's' || account-type == 'S')
            return "savings";
        else if (account-type == 'c' || account-type == 'C')
            return "current";
        else
            return "None";
    }

    void display() {
        System.out.println("You have see your details:");
        System.out.println("customer-name: " + customer-name + " account-number: " + account-number + " account-type: " + returnType());
    }
}

class Curr-acc extends account {
    boolean check;
    double penalty = 50.0, min-balance = 400.0;

    Curr-acc(String name, int num, char type, boolean check) {
        super(name, num, type);
        check = check;
    }

    char checkOptions() {
        if (check)
            return 'Y';
        else
            return 'N';
    }
}

```

```

double addPenalty() {
    if (balance < 400)
        balance = balance - penalty;
    return balance;
}

double updateBalance(double n) {
    balance = addPenalty();
    System.out
    balance = balance + n;
    return balance;
}

void displayBalance() {
    balance = addPenalty();
    System.out.println("Your balance: " + balance);
}

void displayMin() {
    System.out.println("min-balance: " + min-balance + " penalty: " + penalty);
}

}

class Sav-acc extends account {
    int interest-rate;

    Sav-acc(String name, int num, char type) {
        super(name, num, type);
        interest-rate = 5;
    }

    double calcInterest(int n, int t) {
        double val;
        val = Math.pow(1 + (double) interest-rate / 100, n * t);
        return balance;
    }
}

class BankDemo {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int choice, n;
        String a;
        char c;
        boolean d;
        System.out.print("Enter your name: ");
    }
}

```



```

a = sc.nextInt();
System.out.print("Enter your account number: ");
b = sc.nextInt();
System.out.print("Enter acc type (S for savings, C for current)");
c = sc.nextInt().charAt(0);

if (c == 'C' || c == 'c') {
    System.out.print("Do you want check option (Y/N)?");
    bool = sc.next().charAt(0);
    if (bool == 'Y' || bool == 'y')
        d = true;
    else
        d = false;

    Customer acc = new SavAcc(a, b, c, d);
    acc.display();
    while (true) {
        double x;
        System.out.print("Enter your choice (1. deposit, 2. display balance (after penalty, if applicable) 3. withdraw 4. check min balance and penalty 5. exit)");
        choice = sc.nextInt();
        switch (choice) {
            case 1: System.out.print("How much do you want to deposit? ");
                x = sc.nextDouble();
                System.out.print("Balance has been updated to: " + acc.updateBalance(x));
                break;
            case 2: acc.displayBalance();
                break;
            case 3: System.out.print("How much do you want to withdraw? ");
                x = sc.nextDouble();
                System.out.print("Balance has been updated to: " + acc.updateBalance(-x));
                break;
            case 4: acc.displayMin();
                break;
            case 5: System.exit(0);
        }
    }
}

```

```

else if (c == 'S' || c == 's') {
    SavAcc a2 = new SavAcc(a, b, c);
    a2.display();
    while (true) {
        int P, Q;
        System.out.print("Enter choice (1. compute interest 2. deposit interest 3. exit)");
        choice = sc.nextInt();
        switch (choice) {
            case 1: System.out.print("Enter n (per time period): ");
                P = sc.nextInt();
                System.out.print("Enter time period in years: ");
                Q = sc.nextInt();
                System.out.print("Interest amt. for interest rate of 5% is: " + a2.calcInterest(P, Q));
                break;
            case 2: System.out.print("Enter n (per time period): ");
                P = sc.nextInt();
                System.out.print("Enter time period: ");
                Q = sc.nextInt();
                System.out.print("Balance has been updated to: " + a2.depositInterest(P, Q));
                break;
            case 3: System.exit(0);
        }
    }
}
System.exit(0);
}

```


Code:

```

1 import java.util.Scanner;
2 import java.lang.Math;
3
4 class account{
5     double balance;
6     String customer_name;
7     int account_number;
8     char account_type; //s for savings, c for current
9
10    account(String name,int num,char type){
11        customer_name = name;
12        account_number = num;
13        account_type = type;
14        balance = 0;
15    }
16
17    String toString(){
18        if(account_type == 's') { account_type = "s";
19            return "savings";
20        } else if(account_type == 'c') { account_type = "c";
21            return "current";
22        } else
23            return "None";
24    }
25    void display(){
26        System.out.println("Here are your details: "+customer_name+" "+account_number+" "+account_type+" "+toString());
27    }
28 }
29
30 class Curr_acct extends account{
31     boolean check;
32     double penalty=0,min_balance=100;
33
34     Curr_acct(String name,int num,char type,boolean check){
35         super(name,num,type);
36         check = check;
37     }
38     char checkpen(){
39         if(check)
40             return '-';
41         else
42             return '0';
43     }
44     double addpenalty(){
45         if(balance <= 400){
46             balance = balance - penalty;
47             return balance;
48         }
49     }
50     double updateBalance(double n){
51         balance = Addpenalty();
52         balance = balance + n;
53         return balance;
54     }
55     void displayBalance(){
56         balance = Addpenalty();
57         System.out.println("your balance: " + balance);
58     }
59     void displayMin(){
60         System.out.println("minimum balance: " + min_balance + " Penalty: "+ penalty);
61     }
62 }
63
64 class Sav_acct extends account{
65     int interest_rate;
66
67     Sav_acct(String name,int num,char type){
68         super(name,num,type);
69         interest_rate = 5;
70     }
71     double calcInterest(int n,int t){
72         double val;
73         val = Math.pow(1 + (double)interest_rate/(n*100),n*t);
74         return balance*(val - 1);
75     }
76     double depositInterest(int n,int t){
77         balance = balance*Math.pow(1 + (double)interest_rate/(n*100),n*t);
78         return balance;
79     }
80 }
81
82 class BankDemo{
83     public static void main(String[] args){
84         Scanner sc = new Scanner(System.in);
85         int choice,b;
86         String a;
87         char c,booi;
88         boolean d;

```



```

121 System.out.println("Enter your name: ");
122 s = sr.nextInt();
123 System.out.println("Enter your account number: ");
124 n = sr.nextInt();
125 System.out.println("Enter your account type (for example, 1 for savings): ");
126 t = sr.nextInt();
127
128 if (s < 0 || t < 0 || t > 1)
129     System.out.println("You must choose options greater than 0");
130 if (n < 0 || n > 10000000000L)
131     if (n < 0 || n > 10000000000L)
132         t = true;
133     else
134         t = false;
135
136 Curr_accnt a1 = new Curr_accnt(s, n, t);
137 a1.display();
138
139 while (true)
140 {
141     do
142     {
143         System.out.println("Enter your choice (1: deposit, 2: display balance, 3: interest, 4: withdraw, 5: check sum, balance not updated) -> ");
144         choice = sr.nextInt();
145         switch (choice)
146         {
147             case 1:
148                 System.out.println("How much do you want to deposit? ");
149                 x = sr.nextInt();
150                 System.out.println("Balance has been updated to $n." + a1.updateBalance(x));
151                 break;
152             case 2:
153                 System.out.println("Display balance");
154                 break;
155             case 3:
156                 System.out.println("How much do you want to withdraw? ");
157                 x = sr.nextInt();
158                 System.out.println("Balance has been updated to $n." + a1.updateBalance(-x));
159                 break;
160             case 4:
161                 System.out.println("Interest");
162                 break;
163             case 5:
164                 System.out.println("Exit");
165                 break;
166         }
167     } while (choice != 5);
168 }
169
170 if (s < 0 || t < 0 || t > 1)
171     do
172     {
173         Curr_accnt a2 = new Curr_accnt(s, n, t);
174         a2.display();
175     } while (true);
176
177
178 int p, q;
179 System.out.println("\nEnter your choice (1: compute interest, 2: deposit interest, 3: exit)");
180 choice = sr.nextInt();
181 switch (choice)
182 {
183     case 1:
184         System.out.println("Enter n (per time period): ");
185         p = sr.nextInt();
186         System.out.println("Enter time period in years: ");
187         q = sr.nextInt();
188         System.out.println("Interest amt. for interest rate of 3% is: " + a2.calcInterest(p, q));
189         break;
190     case 2:
191         System.out.println("Enter n (per time period): ");
192         p = sr.nextInt();
193         System.out.println("Enter time period: ");
194         q = sr.nextInt();
195         System.out.println("Balance has been updated to $n." + a2.depositInterest(p, q));
196         break;
197     case 3:
198         System.exit(0);
199 }
200
201 }
202
203 else
204     System.exit(0);
205 }
206

```


Output:

```
Process started (PID=29948) >>>  
Enter your name: Medha  
Enter your Account number: 1234  
Enter your account type(s for savings,c for current): s  
  
Here are your details:  
Name: Medha  
account number: 1234  
account type: Savings  
  
Enter your choice:  
1.compute interest  
2.deposit interest  
3.exit  
1  
Enter n(per time period): 12  
Enter time period in years: 3  
Interest amt. for interest rate of 5% is: 80.7361156667339  
Enter your choice:  
1.compute interest  
2.deposit interest  
3.exit  
2  
Enter n(per time period): 6  
Enter time period: 5  
Balance has been updated to Rs.641.3479817498815  
Enter your choice:  
1.compute interest  
2.deposit interest  
3.exit
```

