

Lab 4 Program:

3/11/20

18M19CS090

Mohammed Ibrahim Rahil S

code:

```
import java.util.Scanner;

abstract class shape {
    float a, b;
    abstract void printArea();
    Scanner ss = new Scanner(System.in);
}

class Rectangle extends shape {
    void printArea() {
        System.out.print("Enter Length: ");
        a = ss.nextFloat();
        System.out.print("Enter Breadth: ");
        b = ss.nextFloat();
        System.out.print("Area of Rectangle is " + (a*b) + "\n");
    }
}

class Triangle extends shape {
    void printArea() {
        System.out.print("Enter Base Length: ");
        a = ss.nextFloat();
        System.out.print("Enter Height: ");
        b = ss.nextFloat();
        System.out.print("Area of Triangle is " + (0.5*(a*b)) + "\n");
    }
}

class Circle extends shape {
    void printArea() {
        System.out.print("Enter Radius: ");
        a = ss.nextFloat();
        System.out.print("Area of Circle is " + (3.14*a*a) + "\n");
    }
}
```

```

class AreaMain {
    public static void main (String args[]) {
        int i;
        Scanner ss = new Scanner (System.in);
        do {
            System.out.print ("1. Rectangle 2. Triangle 3. Circle\n4. Exit Enter Your choice: ");
            i = ss.nextInt();
            if (i == 1) {
                Rectangle r = new Rectangle();
                r.printArea();
            } else if (i == 2) {
                Triangle t = new Triangle();
                t.printArea();
            } else if (i == 3) {
                Circle c = new Circle();
                c.printArea();
            } else if (i == 4) {
                break;
            } else {
                System.out.println ("Enter Valid choice!!");
            }
        } while (i > 0);
    }
}

```



ShapeArea.java

Saved

```
1 import java.util.Scanner;
2 abstract class Shape{
3     float a,b;
4     abstract void printArea();
5     Scanner ss=new Scanner(System.in);
6 }
7
8 class Rectangle extends Shape{
9     void printArea(){
10         System.out.print("Enter Length:");
11         a=ss.nextFloat();
12         System.out.print("Enter Breadth:");
13         b=ss.nextFloat();
14         System.out.print("Area of Rectangle is "+(a*b)+"\n");
15     }
16 }
17 class Triangle extends Shape{
18     void printArea(){
19         System.out.print("Enter Base Length:");
20         a=ss.nextFloat();
21         System.out.print("Enter Height:");
22         b=ss.nextFloat();
23         System.out.print("Area of Triangle is "+(0.5*(a*b))+"\n");
24     }
25 }
26 class Circle extends Shape{
27     void printArea(){
28         System.out.print("Enter Radius:");
29         a=ss.nextFloat();
30         System.out.print("Area of Circle is "+(3.14*a*a)+"\n");
31     }
32 }
33 class AreaMain{
34     public static void main(String args[]){
35         int i;
36         Scanner ss=new Scanner(System.in);
37         do{
38             System.out.print("\n1.Rectangle\n2.Triangle\n3.Circle\n4.Exit\nEnter Your Choice:");
39             i=ss.nextInt();
40             if(i==1){
41                 Rectangle r=new Rectangle();
42                 r.printArea();
43             }
44             else if(i==2){
45                 Triangle t=new Triangle();
46                 t.printArea();
47             }
48             else if(i==3){
49                 Circle c=new Circle();
50                 c.printArea();
51             }
52             else if(i==4)
53                 break;
54             else{
55                 System.out.println("Enter Valid Choice!!");
56             }
57         }while(i>0);
58     }
59 }
```



```
1.Rectangle
2.Triangle
3.Circle
4.Exit
Enter Your Choice:1
Enter Length:2
Enter Breadth:2.2
Area of Rectangle is 4.4
```

```
1.Rectangle
2.Triangle
3.Circle
4.Exit
Enter Your Choice:2
Enter Base Length:34
Enter Height:11
Area of Triangle is 187.0
```

```
1.Rectangle
2.Triangle
3.Circle
4.Exit
Enter Your Choice:3
Enter Radius:23
Area of Circle is 1661.06
```

```
1.Rectangle
2.Triangle
3.Circle
4.Exit
Enter Your Choice:4
```

```
Process finished.
```

code:

```
import java.util.Scanner;

class Account {
    String on;
    char t;
    int ano;
    float bal = 0, wit = 0;
    Scanner ss = new Scanner(System.in);

    void dep() {
        System.out.print("Enter Amount to be Deposited: ");
        bal = ss.nextFloat();
        System.out.print("Balance = " + bal);
    }

    void withd() {
        System.out.print("Enter Amount to be withdrawn: ");
        wit = ss.nextFloat();
        bal -= wit;
        System.out.print("Balance = " + bal);
    }

    void bal() {
        System.out.print("Balance = " + bal);
    }
}

class sav-acct extends Account {
    void interest() {
        float per; double in; int yr;
        System.out.print("Enter Rate of Interest (%) and years Invested: ");

        per = ss.nextFloat();
        yr = ss.nextInt();
        in = bal * Math.pow((1 + (per/100)), yr);
        System.out.print("Deposit Interest = " + in);
    }
}
```



```

class curr_acct extends Account {
    void pen() {
        if (bal <= 2000) {
            bal -= 100;
            System.out.print("\n Penalty of rs. 100 levied");
            System.out.print("\n Balance = " + bal);
        }
        else {
            System.out.print("\n Minimum Balance Maintained");
        }
    }
}

```

```

class BankMain {
    public static void main(String args[]) {
        Scanner ss = new Scanner(System.in);
        System.out.println("***** Bank *****");
        Account A = new Account();
        System.out.print("Enter Name:");
        A.n = ss.next();
        System.out.print("Enter Account No:");
        A.no = ss.nextInt();
        System.out.print("Enter 5 for Saving or  
C for Current:");
        A.t = ss.next().charAt(0);
        int i;
        if (A.t == 'S' || A.t == 's') {
            sav_acct sav = new sav_acct();
            do {
                System.out.print("\n\n 1. Deposit\n 2. Withdraw\n 3. View Balance\n 4. View Deposit Interest\n 5. Exit\n Enter Choice:");
                i = ss.nextInt();
            } while (i != 5);
        }
    }
}

```

```

    if (i == 1)
        sav. dep();
    else if (i == 2)
        sav. withd();
    else if (i == 3)
        sav. bal();
    else if (i == 4)
        sav. interest();
    else if (i == 5)
        break;
    else
        System.out.print("Enter Valid choice!!");
} while (i > 0);
}

if (A.t == 'C' || A.t == 'c') {
    curr_acct cur = new curr_acct();
    do {
        System.out.print("\n 1. Deposit \n 2. Withdraw \n 3. View Balance \n 4. Exit \n Enter choice : ");

        i = ss.next Int();
        if (i == 1)
            cur. dep();
        else if (i == 2) {
            cur. withd();
            cur. pen();
        }
        else if (i == 3)
            cur. bal();
        else if (i == 4)
            break;
        else
            System.out.print("Enter Valid choice!!");
    }
}
}

```

```

Bank.java
Saved
1 import java.util.Scanner;
2 class Account{
3     String cn;
4     char t;
5     int ano;
6     float bal=0,wit=0;
7     Scanner ss=new Scanner(System.in);
8     void dep(){
9         System.out.print("Enter Amount to be Deposited:");
10        bal=ss.nextFloat();
11        System.out.print("Balance = "+bal);
12    }
13    void withd(){
14        System.out.print("Enter Amount to be Withdrawn:");
15        wit=ss.nextFloat();
16        bal-=wit;
17        System.out.print("Balance = "+bal);
18    }
19    void bal(){
20        System.out.print("Balance = "+bal);
21    }
22 }
23 class sav_acct extends Account{
24     void interest(){
25         float per;double in;int yr;
26         System.out.print("Enter Rate of Interest(%) and years Invested:");
27         per=ss.nextFloat();
28         yr=ss.nextInt();
29         in=bal*Math.pow((1+(per/100)),yr);
30         System.out.print("Deposit Interest = "+in);
31     }
32 }
33 class curr_acct extends Account{
34     void pen(){
35         if(bal<=2000)
36         {
37             bal-=100;
38             System.out.print("\nPenalty of rs.100 levied");
39             System.out.print("\nBalance = "+bal);
40         }
41         else
42         {
43             System.out.print("\nMinimum Balance Maintained");
44         }
45     }
46 }
47 class BankMain
48 {
49     public static void main(String args[])
50     {
51         Scanner ss=new Scanner(System.in);
52         System.out.println("*****Bank*****");
53         Account A=new Account();
54         System.out.print("Enter Name:");
55         A.cn=ss.next();
56         System.out.print("Enter Account No:");
57         A.ano=ss.nextInt();
58         System.out.print("Enter S for Savings or C for Current:");
59         A.t=ss.next().charAt(0);
60         int i;
61         if(A.t=='S' || A.t=='s'){
62             sav_acct sav=new sav_acct();
63             do{
64                 System.out.print("\n1.Deposit\n2.Withdraw\n3.View Balance\n4.View Deposit Interest\n5.Exit\nEnter Cho
65                 i=ss.nextInt();
66                 if(i==1){
67                     sav.dep();
68                 }
69                 else if(i==2){
70                     sav.withd();
71                 }
72                 else if(i==3){
73                     sav.bal();
74                 }
75                 else if(i==4){
76                     sav.interest();
77                 }
78                 else if(i==5){
79                     break;
80                 }
81                 else{
82                     System.out.print("Enter Valid Choice!!");
83                 }
84             }while(i>0);
85         }
86         if(A.t == 'C' || A.t=='c'){
87             curr_acct cur=new curr_acct();
88             do{
89                 System.out.print("\n1.Deposit\n2.Withdraw\n3.View Balance\n4.Exit\nEnter Choice:");
90                 i=ss.nextInt();
91                 if(i==1){
92                     cur.dep();
93                 }
94                 else if(i==2){
95                     cur.withd();
96                     cur.pen();
97                 }
98                 else if(i==3){
99                     cur.bal();
100                }
101                else if(i==4){
102                    break;
103                }
104                else{
105                    System.out.print("Enter Valid Choice!!");
106                }
107            }while(i>0);
108        }
109    }

```


*****Bank*****

Enter Name:Ahmed

Enter Account No:123456

Enter S for Savings or C for Current:S

1.Deposit

2.Widthdraw

3.View Balance

4.View Deposit Interest

5.Exit

Enter Choice:1

Enter Amount to be Deposited:5000

Balance = 5000.0

1.Deposit

2.Widthdraw

3.View Balance

4.View Deposit Interest

5.Exit

Enter Choice:2

Enter Amount to be Withdrawn:600

Balance = 4400.0

1.Deposit

2.Widthdraw

3.View Balance

4.View Deposit Interest

5.Exit

Enter Choice:3

Balance = 4400.0

1.Deposit

2.Widthdraw

3.View Balance

4.View Deposit Interest

5.Exit

Enter Choice:4

Enter Rate of Interest(%) and years Invested:4 2

Deposit Interest = 4759.039650878913

1.Deposit

2.Widthdraw

3.View Balance

4.View Deposit Interest

5.Exit

Enter Choice:5

Process finished.

```
1.Deposit
2.Widthdraw
3.View Balance
4.Exit
Enter Choice:1
Enter Amount to be Deposited:3000
Balance = 3000.0
```

```
1.Deposit
2.Widthdraw
3.View Balance
4.Exit
Enter Choice:2
Enter Amount to be Withdrawn:1200
Balance = 1800.0
Penalty of rs.100 levied
Balance = 1700.0
```

```
1.Deposit
2.Widthdraw
3.View Balance
4.Exit
Enter Choice:3
Balance = 1700.0
```

```
1.Deposit
2.Widthdraw
3.View Balance
4.Exit
Enter Choice:5
Enter Valid Choice!!
```

```
1.Deposit
2.Widthdraw
3.View Balance
4.Exit
Enter Choice:4
```

```
Process finished.
```