OOJ

OOJ Lab Exercises - 4 and 5

[Week 8]

*) Lab-4 :-

CODE :-

```
import java.util.*;
abstract class Shape
{
 int a,b;
 abstract void printArea();
}
class Rectangle extends Shape
 {
 void printArea()
 {
 Scanner ss= new Scanner(System.in);
 System.out.println("Enter length and breadth of the rectangle ");
        a=ss.nextInt();
        b=ss.nextInt();
        double area;
      area=(double) a*b;
System.out.println("The area of Rectangle is "+area);
```

```
    }
  }
class Triangle extends Shape
{
  void printArea()
  {
    Scanner ss = new Scanner(System.in);
  System.out.println("Enter base length and
height of the triangle");
        a = ss.nextInt();
        b = ss.nextInt();
      double area;
    area = (double) 0.5*a*b;
System.out.println("The area of triangle is "+area);
}
}
class Circle extends Shape
{
  void printArea()
  {
    Scanner ss = new Scanner(System.in)
  System.out.println("Enter radius of the circle");
      a = ss.nextInt();
      double area;
      area = (double) 3.14*a*a;
```

```
        System.out.println("The area of Circle is "
                                        +area);
    }
}
class Shapemain
{
    public static void main (String args[])
    {
        int ch;
        Scanner ss = new Scanner (System.in);
        Rectangle r= new Rectangle();
        Triangle t = new Triangle();
        Circle c = new Circle();
    while(true) {
System.out.println("Enter the choice of shape whose
area has to be calculated");
System.out.println("1.Rectangle\n 2. Triangle\n 3. Circle
                        \n 4. Exit");
        ch = ss.nextInt();
        switch (ch)
    {
        case 1:
            r.printArea();
            break;
```

```
            case 2:
                t.printArea();
                break;
            case 3:
                c.printArea();
                break;
            case 4:
                System.exit(0);
                break;
            default:
            System.out.println("Invalid choice!");
        }
    }
}
```

*) Lab-5:-

```
import java.util.*;
abstract class Account {
    String cName, acctype;
    long accno;
    double bal;
    final double minBal = 1000.0;
  Account (String cName, long accNo, double bal,
                String accType)
  {
    this.accNo = accNo;
    this.cName = cName;
    this.bal = bal;
    this.accType = accType;
  }
  abstract void addBal(double amt);
  abstract void dispBal();
  abstract void withBal(double amt);
}
class Curr.acct extents Account {
    Curr_acct(String cName, long accNo,
              double bal)
```

```
{
    super (cName, accNo, bal, "current");
    System.out.println("Name : " + cName + "\t
accno : " + accNo + "\t bal : " + bal + "\ttype : " + acctype);
}
void addBal (double amt) {
        this.bal += amt;
}
void dispBal() {
    System.out.println ("your balance is : " +
                        this.bal);
}
void checkBal ()
{
if (this.bal < minBal) {
System.out.println (" Insufficient balance, penalty
imposed");
    this.bal -= this.bal *0.02;
}
}
void withBal (double amt) {
        this.bal -= amt;
        checkBal ();
}}
```

```
class Sav_acct extends Account {
    Sav_acct (String cName, long accNo, double bal) {
        super (cName, accNo, bal, "Savings");
        System.out.println ("name : " + cName + "\t
accno : " + accNo + "\t bal : " + bal + "\t type : " +
        accType);
}
void addBal (double amt) {
        this.bal += amt;
        addIntr();
    }
    void addIntr() {
        this.bal += this.bal * 0.07;
    }
    void dispBal() {
        System.out.println ("your balance is " + this.bal);
    }
    void withBal (double amt) {
        this.amt -= amt;
    }
}
```

```
class Bank{
public static void main(String[] args){
        Scanner sc = new Scanner(System.in);
    Double amt;
    System.out.println("Enter your details:");
    System.out.println("Name:");
    String x=sc.next();
   System.out.println("Account Number:");
   long y=sc.nextLong();
    for(;;)
{
    System.out.println("Type of account:\n1. Current account\n2. Savings account\n3. Exit");
    int t=sc.nextInt();

if(t==1){
    System.out.println("The current account provides cheque book facility but no interest");
    Curr_acct c=new Curr_acct(x,y,5000);
for(;;)
    System.out.println("1. Deposit\n2. Display Balance\n3. Withdraw\n4. Exit");
```

```
int ch = sc.nextInt();
switch (ch) {
case 1:
    System.out.println("Enter the amount to be added");
        amt = sc.nextDouble();
        c.addBal(amt);
        break;
case 2:
        c.dispBal();
        break;
case 3:
        System.out.println("Enter the amount to be withdrawn");
        amt = sc.nextDouble();
        c.withBal(amt);
        break;
case 4:
        System.exit(0);
default:
    System.out.println("Invalid choice! Try again");
    }
  }
}
```

```
else if (t==2){
System.out.println("The savings account provides compound interest and withdrawal facilities but no cheque book facility");
Sav_acct s = new Sav_acct (x,y,5000);
for(;;)
{
System.out.println("1. Deposit \n2. Display Balance \n3. Withdrawal \n4. Exit");
int ch = sc.nextInt();
switch(ch){
case1:
System.out.println("Enter the amount to be added");
amt = sc.nextDouble();
s.addBal(amt); break;
case2: c: dispBal();
break;
case3: System.out.println("Enter the amount to be withdrawn");
amt = sc.next Double();
c.withBal(amt);
break;
```

```
case 4: System.exit(0);
        default:
        System.out.println("Invalid choice! Try again");
    }
  }
}
else if (t==3)
        System.exit(0);
  else
     System.out.println("Invalid choice! Try again");
    }
  }
}
```