Lab 4

```java
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 the 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);
    }
}
```

```java
class Circle extends Shape
{
    void printArea()
    {
        Scanner ss = new Scanner(System.in);
        System.out.println("Enter the 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!");
            }
        }
    }
}
```

```java
Lab 5:
import java.util.Scanner;
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 extends 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 + "\t type : " + 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;  } }
```

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    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 +
        "\tbal:" + 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.bal -= 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();
```

```java
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, 50000);
for(;;)
{
    System.out.println("1: Deposit \n2: Display Balance \n
    3: 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");
    }
}
```

```java
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:
Withdraw \n4: exit ");
int ch = sc.nextInt ();
switch (ch) {
case 1:
System.out.println (" Enter the amount to be added:");
amt = sc.nextDouble ();
s.addBal (amt);
break;

case 2:
    s.dispBal ();
    break;

case 3:
System.out.println (" Enter the amount to be withdrawn: ");
amt = sc.nextDouble ();
s.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");
}
}
```