LAB PROGRAM 5

QUESTION:

Lab Program 5

Q. Develop a Java program to create a class Bank that maintains 2 kinds of account for its customers, one called savings and the other current account. The savings account provides compound interest & withdrawal facilities but no cheque book facility. The current account provides cheque book facility but no interest. Current account should also maintain a minimum balance and if the balance falls below this level, a service charge is imposed.

Create a class Account that stores customer name, account number & type of account. From this derive the classes Curr-acct & Sav-acct to make them more specific to their requirements. Include the necessary methods in order to achieve the following tasks:

(a) Accept deposit from customer & update the balance.

(b) Display the balance

(c) Compute & deposit interest

(d)   Permit withdrawal & update the balance. Check for min. balance, impose penalty if necessary & update the balance.

WRITTEN CODE

```java
import java.util.Scanner;

class Account {
    String name;
    int type;
    long accno;
    double balance;

    void setA() {
        Scanner x = new Scanner(System.in);
        System.out.println("Enter customer name: ");
        name = x.nextLine();
        System.out.print("Enter account number.");
        accno = x.nextLong();
        System.out.print("Enter bank balance: ");
        balance = x.nextDouble();
    }

    void display() {
        System.out.println("Customer name: " + name);
        if (type == 1) {
            System.out.println("Acc type: Savings");
        }
        else {
            System.out.println("Acc type: Current");
        }
        System.out.println("Acc number: " + accno);
        System.out.println(" current Balance:" + balance);
    }
}
```

```java
void deposit () {
    System.out.println ("Enter amt. to be deposited");
    Scanner x = new Scanner (System.in)
    double amt = x.nextDouble();
    balance = balance + amt;
}
}

class Sav_acct extends Account {
    double interest;
    Scanner s = new Scanner (System.in)

    Sav_acct () {
        type = 1;
    }
    void cinterest () {
        int time y;
        float irate;
        System.out.println ("compound Interest details :");
        System.out.println ("enter time in years: ");
        time y = s.nextInt();
        System.out.println ("enter rate of interest: ");
        irate = s.nextFloat();
        System.out.println ("Interest will be compounded 5
                                times a year");

        interest = balance * (Math.pow ((1+irate/5), (5* time y))
        balance += interest;

    }
```

```java
void withdraw() {
    System.out.println("Enter the amt to be withdrawn: ");
    double amt = s.nextDouble();
    if (balance > amt)
        balance -= amt;
    else
        System.out.println("Amt to be withdrawn greater
                             than balance");
}


class curr_acct extends Account {
    Scanner s = new Scanner(System.in);
    double cheque_amt;
    curr_acct() {
        type = 2
    }
    void cheque() {
        System.out.println("Enter the cheque amt: ");
        cheque_amt = s.nextDouble();
        if (cheque_amt > balance - 5000) {
            System.out.println("Rs. 500 penalty imposition?
                                y or no ");
            String option = s.next();
            if (option.equals("y"))
                balance = balance - cheque_amt - 500;
            else System.out.println("Rs. "+ cheque_amt + " left");
                balance -= cheque_amt;
        }
```

```java
void withdraw () {
    System.out.println ("enter the amt to be withdrawn ");
    double amt = s.nextDouble ();
    if (balance > amt)
        balance -= amt;
    else
        System.out.println ("Amount greater than balance
}

class Bank {
    public static void main (String ss[]) {
        int op1, op2;
        Scanner s = new Scanner (System.in);
        System.out.println (1. Savings  2. Current ?? ");
        int q;
        q = s.nextInt();
        if (q==1) {
            Sav_acct s1 = new Sav_acct ();
            while (true) {
                System.out.println ("1. Set details, 2. Display details.
                                    6. withdraw, 3. deposit, 4. Compound interest 6. Exit");
                op1 = s.nextInt ();
                switch (op1)
                case (1): s1.setA (); break;
                case (2): s1.display (); break;
                case (3): s1.deposit (); break;
                case (4): s1.cintenest (); break;
                case (5): s1.withdraw (); break;
                case (6): System.exit(0);
            } }
```

```
else if (q==2) {
    curr_acct c1 = new curr_acct();
    while (true) {
        System.out.println (1. enter details 2. display details
                            3. deposit amt  4. cheque  5. withdraw  6.exit);

        op2 = s.nextInt();

        switch (op2) {

            case (1) :  c1. setA(); break;
            case (2) :  c1. display(); break;
            case (3) :  c1. deposit(); break;
            case (4) :  c1. cheque(); break;
            case (5) :  c1. withdraw(); break;
            case (6) :  System.exit(0);

        }
    }
}
```

OUTPUT

```
C:\Users\anosh\OneDrive\Desktop\java practice>java Bank
1. Savings or    2. Current?
1
Enter the choice:
1 .Set the values for savings acc
2. display
3. deposit
4. Interest
5. Withdraw
6. exit
1
Enter customer name: Anoshor
Enter account number: 123024
Enter bank balance: 10000
Enter the choice:
1 .Set the values for savings acc
2. display
3. deposit
4. Interest
5. Withdraw
6. exit
4
Compound Interest details:
Enter time in years:
2
Enter rate of interest:
5
Interest will be compunded 5 times a year
Enter the choice:
1 .Set the values for savings acc
2. display
3. deposit
4. Interest
5. Withdraw
6. exit
3
Enter the amount to be deposited: 1200
```

```
C:\Users\anosh\OneDrive\Desktop\java practice>java Bank
1. Savings or   2. Current?
2
Enter the choice:
1.Set the values for current account
2. display
3. deposit
4. transferCheck
5. Withdraw
6. exit
1
Enter customer name: Paul
Enter account number: 024123
Enter bank balance: 8000
Enter the choice:
1.Set the values for current account
2. display
3. deposit
4. transferCheck
5. Withdraw
6. exit
4
Enter the cheque amount: 9000
Rs. 500 penalty imposed...Is it ok to proceed? Enter y for yes and n for no
y
Enter the choice:
1.Set the values for current account
2. display
3. deposit
4. transferCheck
5. Withdraw
6. exit
2
Customer name is: Paul
Customer account type is: Current
Customer account number is: 24123
Current balance is: -1500.0
```