30/10/24

LAB-5

8) Develop a Java program to create a class Bank that maintains two kinds of accounts for its customers, one savings and one current. The savings account provides compound interest and withdrawal facilities but no cheque book facility. The current account holders should also maintain a minimum balance and if the balance falls below this level, service charge is levied. Create a class Account that stores customer name, account number and type of account. From this class derive current account and savings account to make them more specific to their requirements. Include necessary methods to achieve the following:

(i) Accept deposit from customer to update balance.
(ii) Display balance
(iii) Compute and deposit interest
(iv) Permit withdrawal and update balance
(v) Check for minimum balance, & impose penalty if necessary

Source Code

```
import java.util.*;
class Account{
    protected String CustName;
    protected int AccNo;
    protected double balance;
    public Account(String CustName, int AccNo, double balance){
      this.CustName = CustName;
      this.AccNo = AccNo;
      this.balance = balance;}
    public void deposit(double amount){
        if(amount>0){
            balance+=amount;
            System.out.println("Deposited: "+amount);}
        else
            System.out.println("Invalid Deposit Amount");
}
```

```
    public void displayBalance(){
        System.out.println("Balance: " + balance); }
}

class SavAcct extends Account{
    private double interestRate;
    public SavAcct(String CustomerName, int accno, double Balance,
     double interestRate){
        super(CustomerName, accno, Balance);
        this.interestRate = interestRate;
    }
    public void CompInterest(){
        double interest = balance * (interestRate/100);
        balance += interest;
        System.out.println("Interest Added: " + interest); }
    public void withdraw(double amount){
        if(amount <= balance)
        {   balance -= amount;
            System.out.println("Withdrawn: " + amount); }
        else
            System.out.println("Insufficient Balance for withdrawal");
    }
}

class CurrAcct extends Account{
    private double minimumBalance;
    private double servicecharge;
    public CurrAcct(String CustomerName, int accno, double Balance,
     double minimumBalance, double servicecharge){
        super(CustomerName, accno, Balance);
        this.minimumBalance = minimumBalance;
        this.servicecharge = servicecharge; }
```

```
public void withdraw (double amount) {
    if (amount <= balance) {
        balance -= amount;
        System.out.println ("Withdrawn: " + amount);
        if (balance < minimumBalance) {
            balance -= serviceCharge;
            System.out.println ("Service charge imposed: "
            + serviceCharge); }
    }
}
}

public class Bank {
    public static void main (String[] args) {
        Scanner sc = new Scanner (System.in);
        SavAcct SavAcc = new SavAcct ("Aaron", 12345, 10000, 5);
        CurrAcct CurrAcc = new CurrAcct ("Aaron", 12345, 10000, 5000, 500);
        System.out.println ("Choose Account Type \n1. Savings Account
        \n2. Current Account: ");
        int ch = sc.nextInt ();
        switch (ch) {
            case 1: System.out.println ("Savings Account Selected");
                SavAcc.deposit (700);
                SavAcc.CompInterest ();
                SavAcc.withdraw (500);
                SavAcc.displayBalance ();
                break;
            case 2: System.out.println ("Current Account Selected");
                CurrAcc.deposit (800);
                CurrAcc.withdraw (200);
                CurrAcc.displayBalance ();
                break;
```

```
            default : System.out.println ("Invalid Choice");
        }
        sc.close();
    }
}
```

Output

```
Choose Account Type
1. Savings Account
2. Current Account :
1
Savings Account Selected
Deposited : 700.0
Interest Added : 535.0
Withdrawn : 500.0
Balance : 10735.0

Choose Account Type
1. Savings Account
2. Current Account
2
Current Account Selected
Deposited : 800.0
Withdrawn : 200.0
Balance : 10600.0
```

Seen
13/11/24