7/11/24

Q5 Develop a java program to create class Bank that maintains two kinds of account for its customers, one called savings account and the other current account. The saving account provides compound interest and withdrawal facility but no cheque book facility. The current account provides cheque book facility but no interest. Current account holders 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 and type of account. From this derive the classes cur_act and sav_act to make them more specific to their order to achieve the following tasks:

a). Accept deposit from customer and update the balance
b). Display the balance
c). Compute and deposit interest
d). Permit withdrawal and update the balance.
Checks for the minimum balance, impose penalty if necessary and update the balance.

=>

```
import java.util.*;
abstract class Account
{
    String cust_name, Acc_num;
    double balance;
    Account (String cust_name, String Acc_num,
            double inti_balance){
        this.cust_name = cust_name;
        this.Acc_num = Acc_num;
        this.balance = inti_balance;
    }
    abstract void deposit (double amt);
    abstract void display_Balance();
    abstract void withdraw (double amt);
}

class Sav_Acct extends Account{
    double interestRate;
    Sav_Acct (String cust_name, String Acc_num,
            double inti_balance ){
        super(cust_name, Acc_num, intia_balance);
        this.interestRate = interestRate;
    }
    void deposit(double amt){
        balance += amt;
    }
    void displayBalance(){
        System.out.println("Saving Balance :"+balance);
    }
    void withdraw(double amt){
        if (amt <= balance){
            balance -= amt;
        }
    }
}
```

```
    void computeAndDepositInterest(){
        balance += balance * interestRate/100;
    }
}

class Cur_Acct extends Account {
    static final double MIN_BALANCE=1000, SERVICE_
        CHARGE = 50;
    Cur_Acct (String Cust_name, String Acc_num,
            double inti_balance) {
        super (Cust_name, Acc_num, inti_balance);
    }
    void deposit (double amt) {
        balance += amt;
    }
    void displayBalance() {
        System.out.println ("Saving Balance: "+balance);
    }
    void withdraw (double amt) {
        if (amt <= balance) {
            balance -= amt;
            if (balance < MIN_BALANCE) {
                balance -= SERVICE_CHARGE;
            }
        }
    }
}
class Bank
{
    public static void main (String [] args) {
        Scanner scn = new Scanner (System.in);
```

```
System.out.println("Enter account type (savings/current):");
String type = scn.nextLine();

System.out.println("Enter account name:");
String name = scn.nextLine();

System.out.println("Enter account number:");
String num = scn.nextLine();

Account account;
if (type.equals("savings")){
    System.out.println("Initial balance and
                        interest rate:");
    account = new Sav_Acct (name, number,
                            scn.nextDouble());
}
else {
    System.out.println("1. Deposit  2. Display Balance.
                        3. Withdraw  4. Interest  5. Exit");
    System.out.println("Initial balance");
    account = new Cur_Acct (name, number,
                            scn.nextDouble());
}
while (true){
    System.out.println("1. Deposit  2. Display Balance
                        3. Withdraw  4. Interest.
                        5. Exit");
    int choice = scn.nextInt();
    switch (choice){
        case 1 : account.deposit (scn.nextDouble());
                 break;
        case 2 : account.displayBalance();
                 break;
```

```
case 3: account.withdraw(scn.nextDouble());
        break;
case 4: if(account instanceof Sav_Acct){
          ((Sav_Acct)account).ComputeAnd
          DepositInterest();
        }
        break;
case 5: return;
    }
  }
}
```

O/P

Enter account type (Savings/current): Savings
Enter account name : ~~John~~ Srishti
Enter account number : 1A0010321
Initial balance : 650
1. Deposit 2. Display Balance 3. Withdraw
4. Interest 5. Exit.
2.
Saving Balance = 650.0
1
1000
2
Saving Balance = 1650.0
3
500
2
Saving Balance = 1150.0
5.