import java.lang.Math;

import java.util.Scanner;

class Bank {

public static void main(String args []){

Scanner scanner = new Scanner(System.in);

String name, accNo;

CurrentAccount cacc;

SavingsAccount sacc;

int choice;

System.out.println("Enter an option");

System.out.println("1 : Open a Savings Account");

System.out.println("2 : Open a Current Account");

choice = scanner.nextInt();

System.out.println("Enter your Name and Account NO");

name = scanner.next();

accNo = scanner.next();

switch(choice){

case 1: sacc = new SavingsAccount(name, accNo);

System.out.println("Enter your starting balance");

sacc.balance = scanner.nextDouble();

int opt = 0;

System.out.println("1 : Deposit");

System.out.println("2 : Withdraw");

System.out.println("3 : Display Balance");

System.out.println("4: Quit");

while(opt != 4){

System.out.println("Select an option");

opt = scanner.nextInt();

switch(opt){

case 1: System.out.println("Enter the amount you want to deposit");

double damount = scanner.nextDouble();

sacc.deposit(damount);

break;

case 2: System.out.println("Enter the amount you want to withdraw");

double wamount = scanner.nextDouble();

sacc.withdraw(wamount);

break;

case 3:

sacc.display();

sacc.interestCalculator(1);

break;

case 4: break;

}

}

break;

case 2: cacc= new CurrentAccount(name, accNo);

System.out.println("Enter your starting balance");

cacc.balance = scanner.nextDouble();

opt = 0;

System.out.println("1 : Deposit");

System.out.println("2 : Withdraw");

System.out.println("3 : Display Balance");

System.out.println("4: Quit");

while(opt != 4){

System.out.println("Select an option");

opt = scanner.nextInt();

switch(opt){

case 1: System.out.println("Enter the amount you want to deposit");

double damount = scanner.nextDouble();

cacc.deposit(damount);

break;

case 2: System.out.println("Enter the amount you want to withdraw");

double wamount = scanner.nextDouble();

cacc.withdraw(wamount);

break;

case 3:

cacc.display();

break;

case 4: break;

}

}

break;

}

}

}

abstract class Account {

String customerName;

String accountNumber;

int accountType;

double balance = 0;

Account(String customerName, String accountNumber, int accountType) {

this.customerName = customerName;

this.accountNumber = accountNumber;

this.accountType = accountType;

}

abstract public void withdraw(double amount);

public void deposit(double amount) {

balance += amount;

System.out.println("Your Balance is : " + balance);

}

public void display() {

System.out.println("Balance is:" + balance);

}

}

class SavingsAccount extends Account {

final double rateOfInterest = 0.06;

final int term = 4;

SavingsAccount(String customerName, String accountNumber) {

super(customerName, accountNumber, 1);

}

public void withdraw(double amount) {

if ((balance - amount) > 0.00)

balance -= amount;

else

System.out.println("Insufficient Balance");

this.display();

}

public void interestCalculator(int period) {

double principal = this.balance, interestEarned;

double quarterlyInterest = rateOfInterest / term;

double quarterlyPeriod = period \* term;

interestEarned = principal \* Math.pow((1 + quarterlyInterest), quarterlyPeriod) - principal;

System.out.println("Interest earned for this balance (compounded quarterly) for one year is :" + interestEarned);

}

}

class CurrentAccount extends Account {

final double penaltyPercent = 0.10;

final double minimumBalance = 5000.00;

CurrentAccount(String customerName, String accountNumber) {

super(customerName, accountNumber, 2);

System.out.println("Cheque book has been issued");

}

public void withdraw(double amount) {

if ((balance - amount) > 0.00)

balance -= amount;

else

System.out.println("Insufficient Balance");

this.display();

if (balance < minimumBalance){

System.out.println("A penalty of " + balance\*penaltyPercent + "has been imposed");

balance -= balance \* penaltyPercent;

}

}

}

output:



