```java
import java.util.Scanner;
import java.lang.Math;

class account{
    double balance;
    String customer_name;
    int account_number;
    char account_type; //s for savings,c for current

    account(String name,int num,char type){
        customer_name = name;
        account_number = num;
        account_type = type;
        balance = 500;
    }

    String retAcctType(){
        if(account_type == 'S' || account_type == 's')
            return "Savings";
        else if(account_type == 'C' || account_type == 'c')
            return "Current";
        else
            return "None";
    }
    void display(){
        System.out.println("\nHere are your details: "+"\nName: "+customer_name +"\naccount number: "+account_number+"\naccount type: "+retAcctType());
    }

}
class Curr_acct extends account{
    boolean check;
    double penalty=50.0,min_balance=400.0;

    Curr_acct(String name,int num,char type,boolean cheque){
        super(name,num,type);
        check = cheque;
    }
    char checkOption(){
        if(check)
            return 'Y';
        else
            return 'N';
    }
    double Addpenalty(){
        if(balance <= 400)
            balance = balance - penalty;
        return balance;
    }

    double updateBalance(double n){
        balance = Addpenalty();
        balance = balance + n;
        return balance;
    }
    void displayBalance(){
        balance = Addpenalty();
        System.out.println("your balance: " + balance);
    }
    void displayMin(){
        System.out.println("minimum balance: " + min_balance +" Penalty: "+ penalty);
    }

}
class Sav_acct extends account{
    int interest_rate;

    Sav_acct(String name,int num,char type){
        super(name,num,type);
        interest_rate = 5;
    }
    double calcInterest(int n,int t){
        double val;
        val = Math.pow(1 + (double)interest_rate/(n*100),n*t);
        return balance*(val - 1);
    }
    double depositInterest(int n,int t){
        balance = balance*Math.pow(1 + (double)interest_rate/(n*100),n*t);
        return balance;
    }
}

class BankDemo{
    public static void main(String[] args){
        Scanner sc = new Scanner(System.in);
        int choice,b;
        String a;
        char c,bool;
        boolean d;
```

```
        System.out.print("Enter your name: ");
        a = sc.next();
        System.out.print("Enter your Account number: ");
        b = sc.nextInt();
        System.out.print("Enter your account type(s for savings,c for current): ");
        c = sc.next().charAt(0);

        if(c == 'c' || c =='C'){
            System.out.print("Do you want cheque option(y/n)?");
            bool = sc.next().charAt(0);
            if(bool == 'Y'|| bool == 'y')
                d = true;
            else
                d = false;

            Curr_acct a1 = new Curr_acct(a,b,c,d);
            a1.display();

            while(true){
                double x;
                System.out.println("\nEnter your choice:\n1.deposit\n2.display balance(after penalty,if applicabe)\n3.withdraw\n4.check min. balance and penalty\n5.exit ");
                choice = sc.nextInt();
                switch(choice){
                    case 1:System.out.print("How much do you want to deposit?");
                           x = sc.nextDouble();
                           System.out.print("Balance has been updated to Rs." + a1.updateBalance(x));
                           break;
                    case 2:a1.displayBalance();
                           break;
                    case 3:System.out.print("How much do you want to withdraw?");
                           x = sc.nextDouble();
                           System.out.print("Balance has been updated to Rs." + a1.updateBalance(-x));
                           break;
                    case 4:a1.displayMin();
                           break;
                    case 5:System.exit(0);
                }
            }
        }
        else if(c == 's' || c == 'S'){
            Sav_acct a2 = new Sav_acct(a,b,c);
            a2.display();

            while(true){
                int p,q;
                System.out.println("\nEnter your choice:\n1.compute interest\n2.deposit interest\n3.exit");
                choice = sc.nextInt();
                switch(choice){
                    case 1:System.out.print("Enter n(per time period): ");
                           p = sc.nextInt();
                           System.out.print("Enter time period in years: ");
                           q = sc.nextInt();
                           System.out.print("Interest amt. for interest rate of 5% is: " + a2.calcInterest(p,q));
                           break;
                    case 2:System.out.print("Enter n(per time period): ");
                           p = sc.nextInt();
                           System.out.print("Enter time period: ");
                           q = sc.nextInt();
                           System.out.print("Balance has been updated to Rs." + a2.depositInterest(p,q));
                           break;
                    case 3:System.exit(0);
                }
            }
        }
        else
            System.exit(0);
    }
}
```

Output:

```
Process started (PID=29948) >>>
Enter your name: Medha
Enter your Account number: 1234
Enter your account type(s for savings,c for current): s

Here are your details:
Name: Medha
account number: 1234
account type: Savings

Enter your choice:
1.compute interest
2.deposit interest
3.exit
1
Enter n(per time period): 12
Enter time period in years: 3
Interest amt. for interest rate of 5% is: 80.7361156667339
Enter your choice:
1.compute interest
2.deposit interest
3.exit
2
Enter n(per time period): 6
Enter time period: 5
Balance has been updated to Rs.641.3479817498815
Enter your choice:
1.compute interest
2.deposit interest
3.exit
```

```
Enter your name: Medha
Enter your Account number: 2345
Enter your account type(s for savings,c for current): c
Do you want cheque option(y/n)?n

Here are your details:
Name: Medha
account number: 2345
account type: Current

Enter your choice:
1.deposit
2.display balance(after penalty,if applicabe)
3.withdraw
4.check min. balance and penalty
5.exit
1
How much do you want to deposit?45
Balance has been updated to Rs.545.0
Enter your choice:
1.deposit
2.display balance(after penalty,if applicabe)
3.withdraw
4.check min. balance and penalty
5.exit
2
your balance: 545.0

Enter your choice:
1.deposit
2.display balance(after penalty,if applicabe)
3.withdraw
4.check min. balance and penalty
5.exit
```