LAB-5

Develop a Java program to create a class Bank that maintains two kinds of account for its customers, one called savings account and the other current account. The savings account provides compound interest and withdrawal facilities 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 Curr-acct and 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 and update the balance. b) Display the balance. c) Compute and deposit interest d) Permit withdrawal and update the balance Check for the minimum balance, impose penalty if necessary and update the balance.

SOLUTION:

```
import java.util.*;

import java.lang.*;


class Account {


        String name, abc;

        int accNo;

        char accType;

        double bal = 0;

        double deposit;

        Scanner in = new Scanner(System.in);
```

```
void input_data() {

        System.out.println("Enter your account type (S/C):");
        abc = in.nextLine();
        accType = abc.charAt(0);
}

void deposit() {

        System.out.println("Enter an amount to deposit: ");
        deposit = in.nextDouble();

        bal += deposit;
        System.out.println("Balance has been updated. ");
}

void view_balance() {

        System.out.println("Balance = " + bal);
}

public static void main(String[] args) {
```

```
Scanner s = new Scanner(System.in);
int x;
Account a1 = new Account();
a1.input_data();

if(a1.accType == 'C' || a1.accType == 'c'){

    Current a2 = new Current();

    do {
        System.out.println("WELCOME  TO YOUR CURRENT
ACCOUNT");
        System.out.println("1.  Deposit ");
        System.out.println("2.  Check Balance ");
        System.out.println("3.  Issue Cheque ");
        System.out.println("4.  Exit");
        System.out.println("Enter  your choice: ");
        x = s.nextInt();

        switch(x) {
            case 1: a2.deposit();
            break;
            case 2: a2.check_balance();
            break;
            case 3: a2.issue_cheque();
```

```
                                    break;
                                    case 4: System.exit(0);
                                    break;
                                    default: System.out.println("ERROR.  INVALID
CHOICE.");
                            }

                    } while(x <= 4 && x >= 1);
            }
            else if (a1.accType == 'S' || a1.accType == 's'){

                    Savings a3 = new Savings();

                    do {
                            System.out.println("WELCOME  TO YOUR SAVINGS
ACCOUNT");
                            System.out.println("1.  Deposit");
                            System.out.println("2.  View Balance");
                            System.out.println("3.  Withdraw ");
                            System.out.println("4.  Calculate compound interest ");
                            System.out.println("5.  Exit ");
                            System.out.println("Enter  your choice: ");
                            x = s.nextInt();

                            switch(x) {
```

```
                                    case 1: a3.deposit();
                                    break;
                                    case 2: a3.view_balance();
                                    break;
                                    case 3: a3.withdraw_balance();
                                    break;
                                    case 4: a3.compute_CI();
                                    break;
                                    case 5: System.exit(0);
                                    break;
                                    default: System.out.println("ERROR.  INVALID
CHOICE.");
                                }


                        } while(x <= 5 && x >=1);
                }
                else System.out.println("INVALID  ACCOUNT TYPE");
        }
}

class Current extends Account {

        Current() {
```

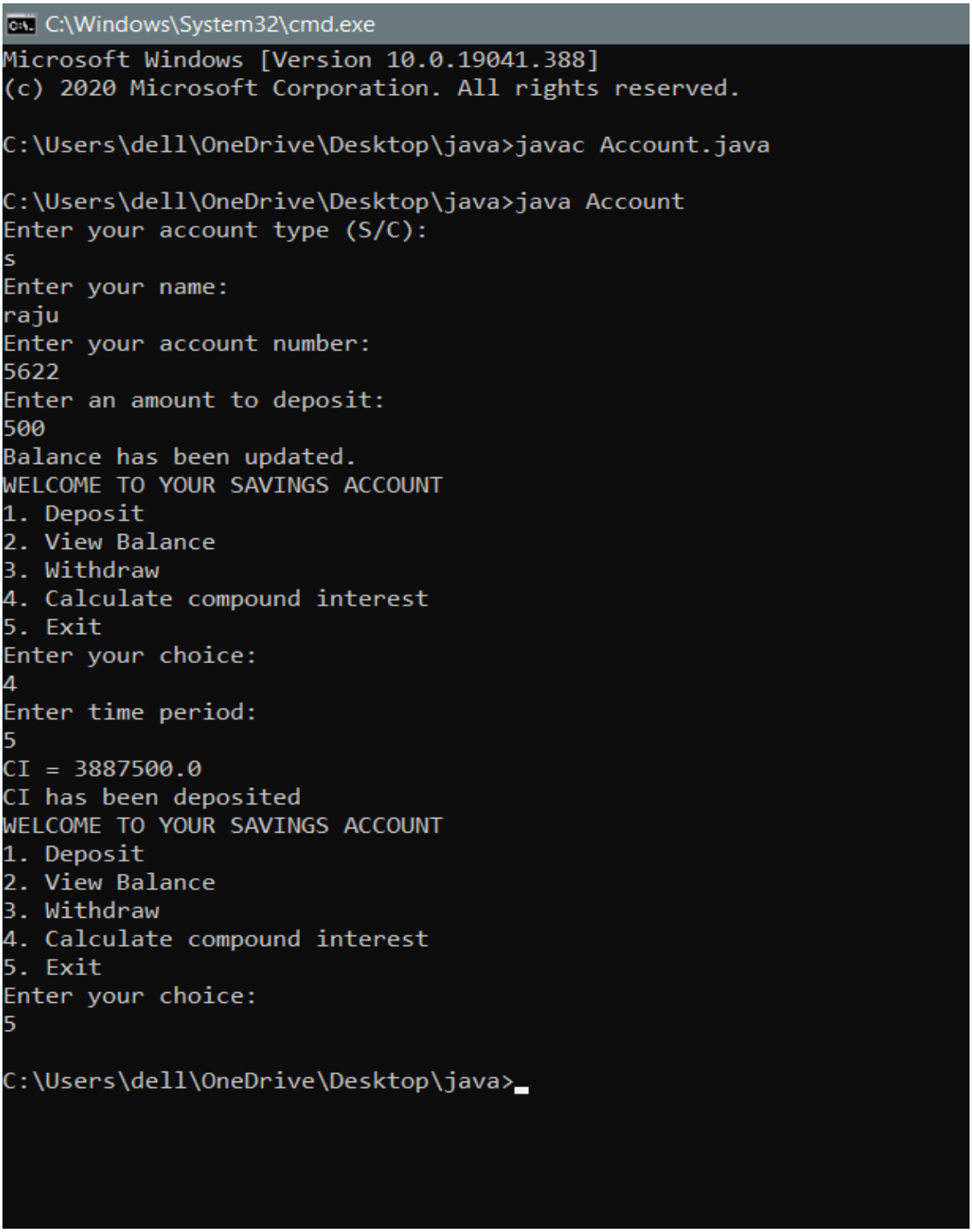
```
            System.out.println("Enter your name: ");
            name = in.nextLine();

            System.out.println("Enter your account number: ");
            accNo = in.nextInt();

            deposit();
        }

        double chq_amount;

        void issue_cheque() {

            System.out.println("Enter amount for which cheque is to be
issued.");
            chq_amount = in.nextDouble();
            if(chq_amount > bal) {
                System.out.println("ERROR! Insufficient balance in
account.");
            }
            else {
                bal -= chq_amount;
                System.out.println("Cheque has been issued
SUCCESSFULLY");
            }
```

```
    }


    void check_balance() {


        if(bal < 1000) {


            System.out.println("Current  available balance is lesser than
minimum required balance.");
            bal -= 100;
            System.out.println("Service charge of Rs.100 has been
deducted from your balance.");
        }
        view_balance();
    }
}


class Savings extends Account {


    double CI, withdrawal_ammount,  time;


    Savings() {


        System.out.println("Enter  your name: ");
        name = in.nextLine();
```

```
            System.out.println("Enter your account number: ");
            accNo = in.nextInt();

            deposit();
        }

        void compute_CI() {

            System.out.println("Enter time period: ");
            time = in.nextInt();
            CI = (bal*(Math.pow(6, time))) - bal;
            System.out.println("CI = " + CI);
            bal += CI;
            System.out.println("CI has been deposited");
        }

        void withdraw_balance() {

            System.out.println("Enter the amount you want to withdraw: ");
            withdrawal_ammount = in.nextDouble();

            if(withdrawal_ammount > bal) {
                    System.out.println("ERROR! THE ENTERED AMOUNT IS
GREATER THAN THE AVAILABLE BALANCE...");
```

```
                }
                else {
                        bal -= withdrawal_ammount;
                        System.out.println("AMOUNT  HAS SUCCESSFULLY BEEN
WITHDRAWN!");
                }
        }

}
```

OUTPUT:


C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.19041.388]
(c) 2020 Microsoft Corporation. All rights reserved.
C:\Users\dell\OneDrive\Desktop\java>javac Account.java
C:\Users\dell\OneDrive\Desktop\java>java Account
Enter your account type (S/C):
s
Enter your name:
raju
Enter your account number:
5622
Enter an amount to deposit:
500
Balance has been updated.
WELCOME TO YOUR SAVINGS ACCOUNT
1. Deposit
2. View Balance
3. Withdraw
4. Calculate compound interest
5. Exit
Enter your choice:
4
Enter time period:
5
CI = 3887500.0
CI has been deposited
WELCOME TO YOUR SAVINGS ACCOUNT
1. Deposit
2. View Balance
3. Withdraw
4. Calculate compound interest
5. Exit
Enter your choice:
5
C:\Users\dell\OneDrive\Desktop\java>