LAB 5

Q. 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.

PROGRAM:

```
import java.util.*;

import java.lang.*;


class Account{

        String name;

        int acct_num;

        char acct_type;

        double balance = 0;

        Scanner in = new
Scanner(System.in);


        void input_details()
```

```
        {

        System.out.println("Ent
er Your Name: ");
                name =
in.nextLine();

        System.out.println("Ent
er you Account Number: ");
                acct_num =
in.nextInt();

        System.out.println("Ple
ase enter your Account type
[C/S] : ");
                acct_type =
in.next().charAt(0);
        }


        void deposit(){

        System.out.println("Ent
er the amount to deposit: ");
                double dep =
in.nextDouble();
                balance =+ dep;

        System.out.println("Am
ount Successfully
Deposited!!");

        System.out.println("Acc
ount Balance: "+balance);
```

```
        System.out.println();

        }

        void view_balance(){

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

        System.out.println();
        }

}

class Current extends
Account{

        Double cheq_amnt;

        void issue_cheque(){

        System.out.println("Ent
er the Amount to issue the
Cheque: ");
                cheq_amnt =
in.nextDouble();

        if(cheq_amnt>balance)
{

        System.out.println("Un
```

```
able to Issue
Cheque!!Entered Amount
Unavailable in Account
Balance!!");

        System.out.println();
                }
                else{
                        balance =
balance - cheq_amnt;

        System.out.println("Ch
eque For
Rs."+cheq_amnt+"only
Issued Successfully!!");

        System.out.println();
                }


        }

        void check_balance(){


                if(balance<5000
&& balance>0)
                {

        System.out.println("Cur
rent Account Balance is
below the Minimum Required
Balance!!");
                        balance =
balance - 1000;
```

```
        System.out.println("Ser
vice Charge of Rs. 1000
deducted from Account
Balance!!");

        System.out.println();
                }
                view_balance();

        }
}

class Savings extends
Account{

        Double
withdraw_amnt,CI;

        void withdraw(){



        System.out.println("Ent
er the Amount to Withdraw:
");
                withdraw_amnt =
in.nextDouble();

        if(withdraw_amnt>bala
nce){

        System.out.println("Ent
```

```
ered Amount Unavailable in
Account Balance!!");

        System.out.println();
                }
                else{
                        balance =
balance - withdraw_amnt;

        System.out.println("Suc
cessfully Withdrawn
Rs."+withdraw_amnt+" from
Account!!");

        System.out.println();
                }
        }

        void compute_CI(){



        System.out.println("Ent
er time period(years): ");
                int time =
in.nextInt();
                CI =
(balance*Math.pow(1+(0.02/
12),12*time)) - balance;

        System.out.println("Co
mpound Interest for "+time+"
years compounded monthly
at a rate of 2% : Rs."+CI);
```

```
                balance =
balance + CI;


        System.out.println("Inte
rest Has Been Successfully
Deposited!!");


        System.out.println();

        }


}


class Lab5{

        public static void
main(String args[]){

                int choice;

                Scanner in = new
Scanner(System.in);

                Account A = new
Account();

                A.input_details();



        if(A.acct_type=='c' ||
A.acct_type=='C')

                {


                        Current Ac
= new Current();


        System.out.println("****
```

```
***CURRENT
ACCOUNT*******");


                    do{

        System.out.println();

        System.out.println("-----
-----MENU------------");

        System.out.println("[1]
DEPOSIT AMOUNT");

        System.out.println("[2]
VIEW BALANCE");

        System.out.println("[3]I
SSUE CHEQUE");

        System.out.println("[4]
EXIT");

        System.out.println();

        System.out.println("Ent
er your choice:");

        choice = in.nextInt();

        System.out.println();

        switch(choice)
                        {
```

```
        case 1:
        Ac.deposit();

        break;

        case 2:
        Ac.check_balance();

        break;

        case 3:
        Ac.issue_cheque();

        break;

        case 4:
        System.exit(0);

        break;

        default:
System.out.println("Invalid
Input!!!");



                                }

        }while(choice <= 4 &&
choice >= 1);
                }
```

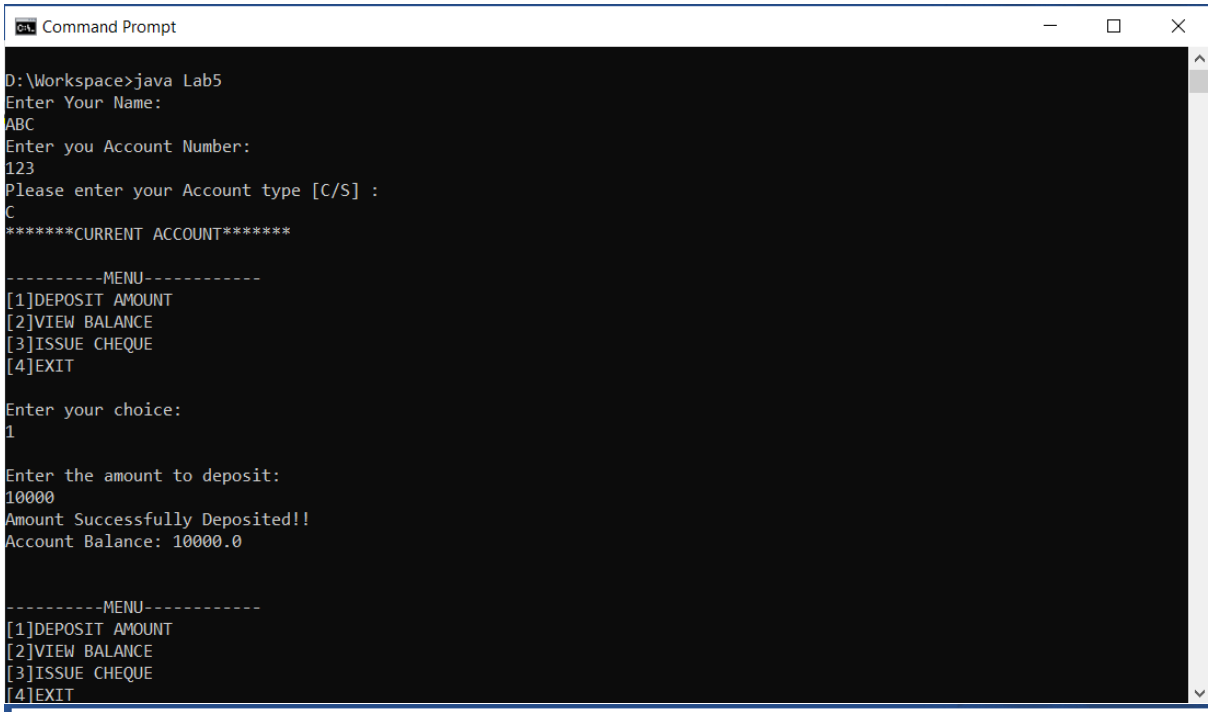
```
                else
if(A.acct_type=='s' ||
A.acct_type=='S')
                {


                        Savings As
= new Savings();

        System.out.println("****
***SAVINGS
ACCOUNT*******");


                        do{

        System.out.println();

        System.out.println("-----
-----MENU------------");

        System.out.println("[1]
DEPOSIT AMOUNT");

        System.out.println("[2]
VIEW BALANCE");

        System.out.println("[3]
WITHDRAW");

        System.out.println("[4]
COMPUTE COMPOUND
INTEREST");

        System.out.println("[5]
EXIT");
```

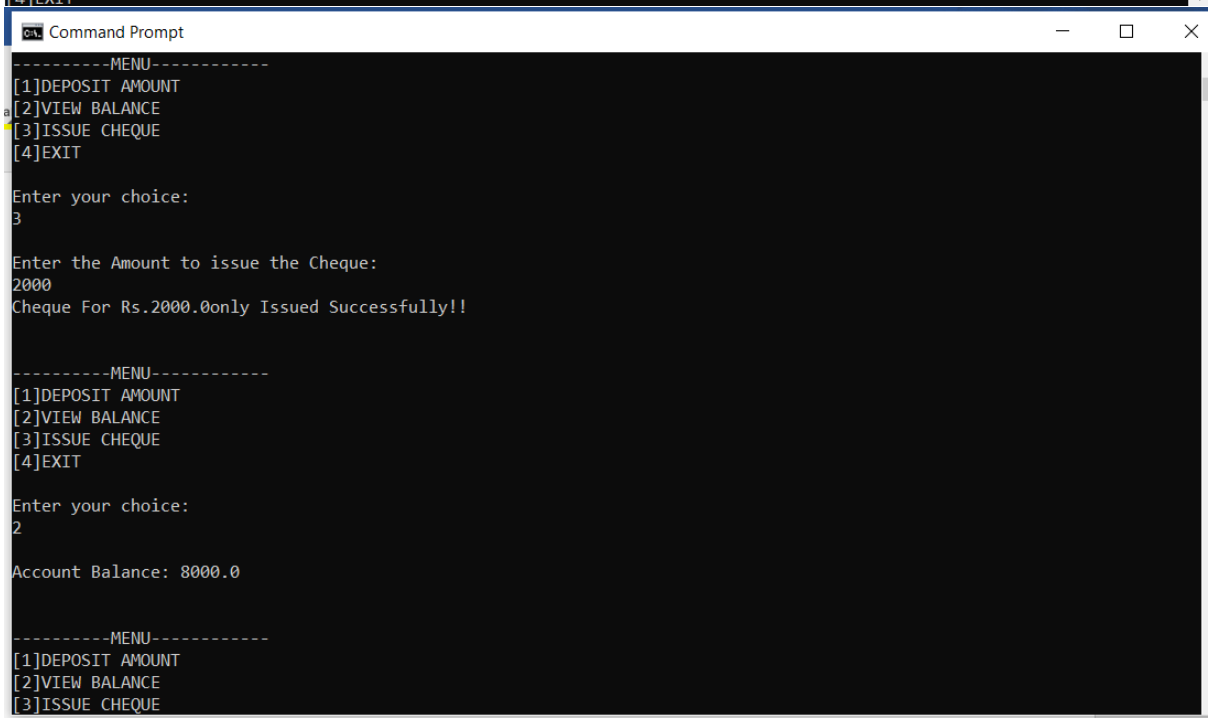
```
        System.out.println();

        System.out.println("Ent
er your choice:");

        choice = in.nextInt();

        System.out.println();

        switch(choice)
                                {

        case 1:
        As.deposit();

        break;

        case 2:
        As.view_balance();

        break;

        case 3:
        As.withdraw();

        break;

        case 4:
As.compute_CI();

        break;
```

```
        case 5:
        System.exit(0);

        break;

        default:
System.out.println("Invalid
Input!!!");



                                }

        }while(choice <= 5 &&
choice >= 1);
                }
                else
                {

        System.out.println("INV
ALID ACCOUNT TYPE!!!");
                }
        }
}
```

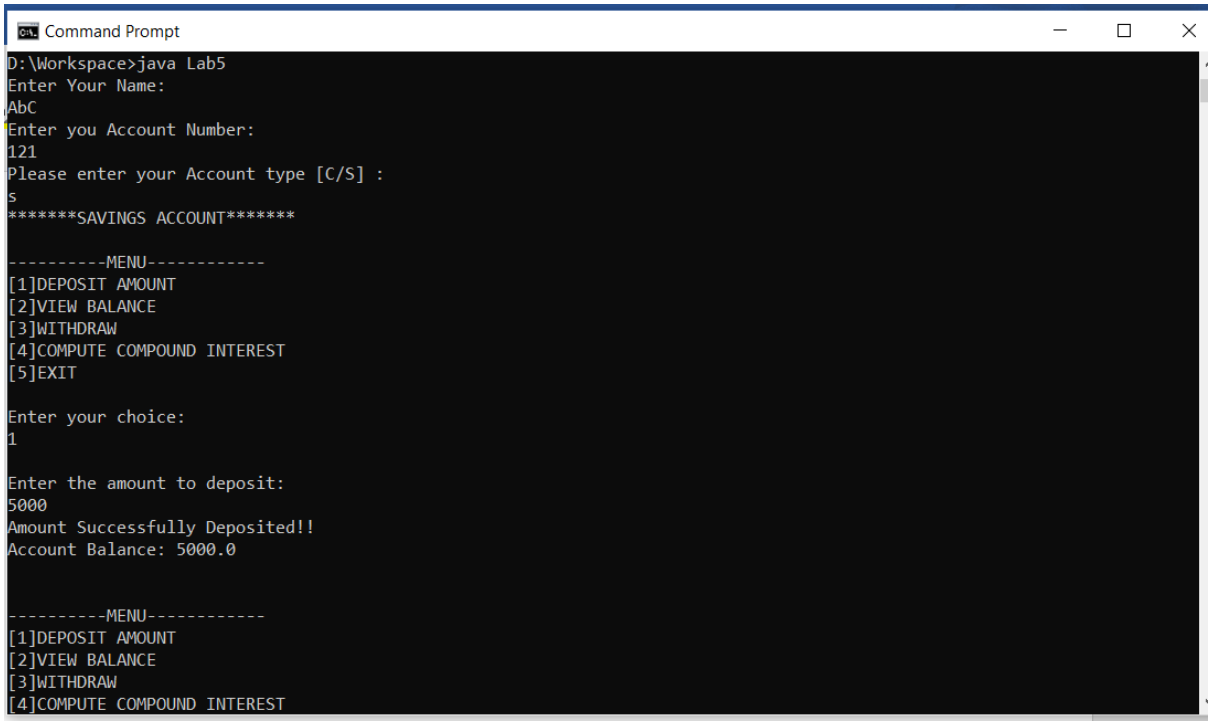
OUTPUT:

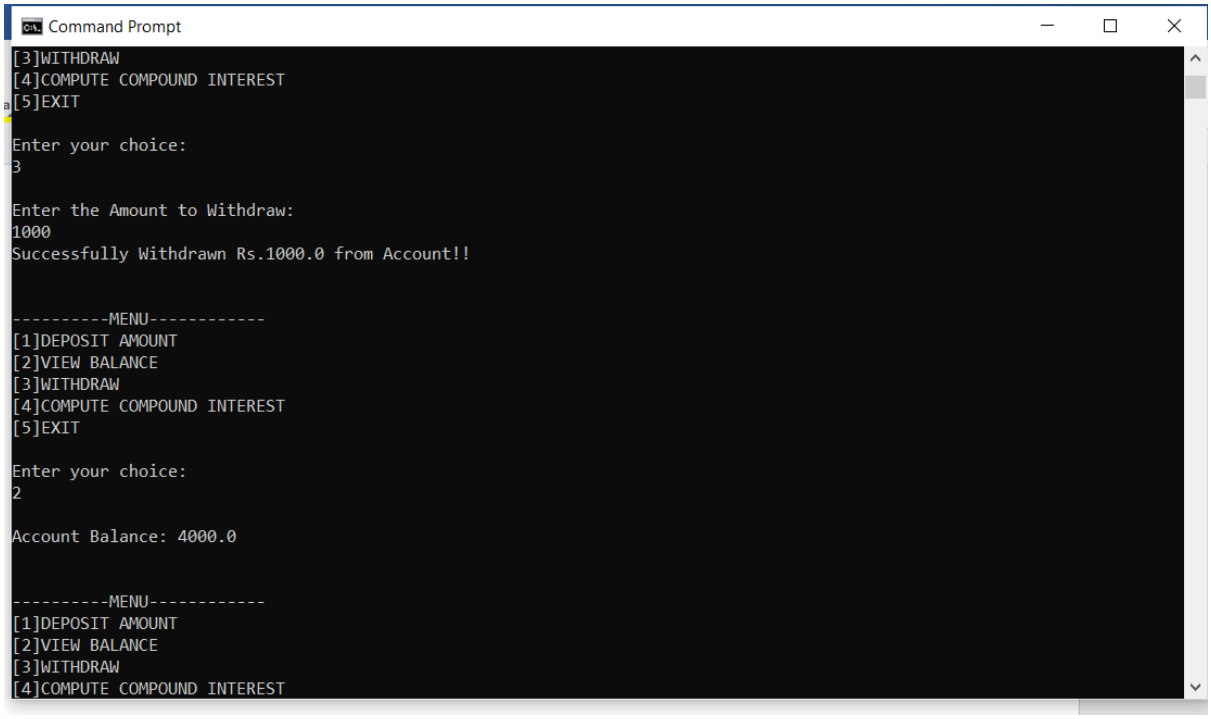
(Current Account)

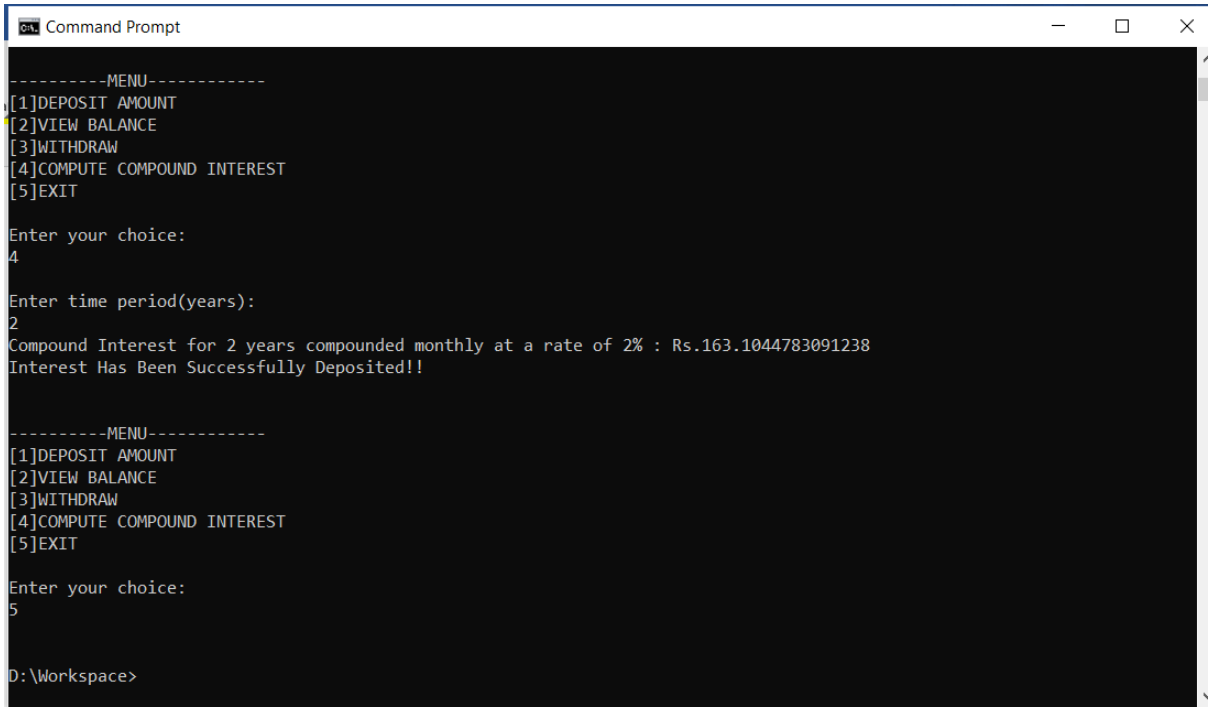




(Savings Account)






Command Prompt
----------MENU------------
[1]DEPOSIT AMOUNT
[2]VIEW BALANCE
[3]WITHDRAW
[4]COMPUTE COMPOUND INTEREST
[5]EXIT
Enter your choice:
4
Enter time period(years):
2
Compound Interest for 2 years compounded monthly at a rate of 2% : Rs.163.1044783091238
Interest Has Been Successfully Deposited!!
----------MENU------------
[1]DEPOSIT AMOUNT
[2]VIEW BALANCE
[3]WITHDRAW
[4]COMPUTE COMPOUND INTEREST
[5]EXIT
Enter your choice:
5
D:\Workspace>