Lab program 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.

```
import java.util.*;

class Account

{

String name;

int acc_no;

char acc_type;

double balance;

double deposit;

boolean cheq;


void get(char c)

{

acc_type=c;

if(c=='s' || c=='S')

cheq=false;

else

cheq=true;

Scanner sc=new Scanner(System.in);

System.out.println("Enter your name");

name=sc.nextLine();

System.out.println("Enter your account number");

acc_no=sc.nextInt();

System.out.println("Enter the current balance available");

balance=sc.nextDouble();
```

```
}

void putd()
{
System.out.println("Account details");
System.out.println("Name:"+name);
System.out.println("Account number:"+acc_no);
System.out.println("Account type:"+acc_type);
System.out.println("Balance="+balance);
}

void deposit()
{
Scanner sc=new Scanner(System.in);
System.out.println("Enter the amount to be deposited");
deposit=sc.nextDouble();
balance=balance+deposit;
System.out.println("Amount has been deposited");
}

void display()
{
System.out.println("Balance amount="+balance);
}

void check()
{
if(cheq==false)
System.out.println("Cheque book facility is unavailable");
else
System.out.println("Cheque book facility available");
```

```
}
}

class Savings extends Account
{
double rate,s_withdraw,amt,t,pr;
int n,ch;

void ci()
{
Scanner sc=new Scanner(System.in);
System.out.println("Enter the principal deposit amount");
pr=sc.nextDouble();
System.out.println("Enter the rate");
rate=sc.nextDouble();
System.out.println("Enter the term in years");
t=sc.nextDouble();
System.out.println("Enter the number of times the intest is compounded");
n=sc.nextInt();
amt=pr*Math.pow((1+(rate/100)),(n*t));
balance=balance+amt;
System.out.println("Interest is compounded and added to the balance");
}

void with_s()
{
Scanner sc=new Scanner(System.in);
System.out.println("Enter the amount to be withdrawn");
s_withdraw=sc.nextDouble();
if(s_withdraw>balance)
System.out.println("Insufficient balance");
```

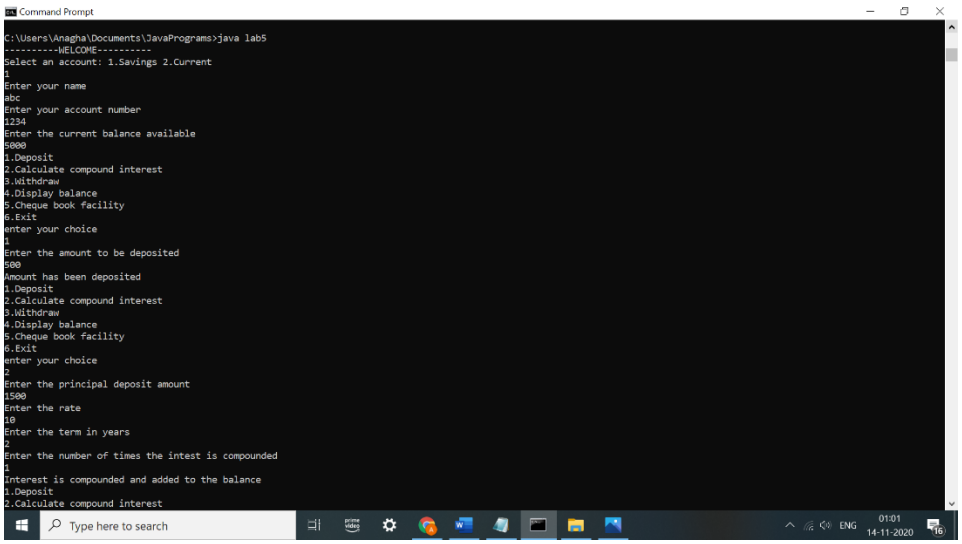
```
else
{
balance=balance-s_withdraw;
System.out.println("Amount has been withdrawn and balance is updated");
};
}
}

class Current extends Account
{
double penalty,c_withdraw,min;
Current()
{
penalty=100;
min=1000;
}

void with_c()
{
Scanner sc=new Scanner(System.in);
System.out.println("Enter the amount to be withdrawn");
c_withdraw=sc.nextDouble();
if(c_withdraw>balance)
{
System.out.println("Insufficient balance");
return;
}
else
{
balance=balance-c_withdraw;
System.out.println("Amount has been withdrawn and balance is updated");
```

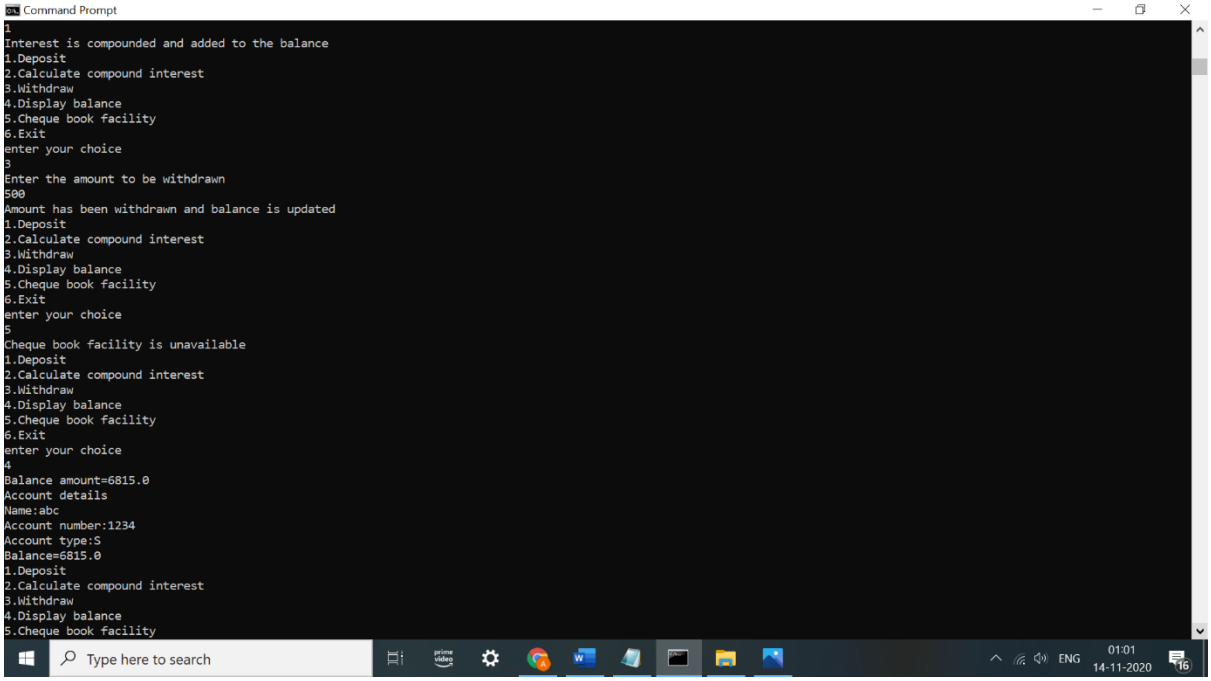
```
}
if(balance<min)
{
System.out.println("Balance below the minimum value. Service penalty charge of Rs.100 applicable");
 if(balance<penalty)
 System.out.println("Insufficient funds!Penalty will be deducted after replenishing balance");
 else
 {
 balance=balance-penalty;
 System.out.println("Penalty charge has been deducted. Current balance="+balance);
 }
}
}
}


class lab5
{
public static void main(String args[])
{
int cch,chh;
Scanner sc=new Scanner(System.in);
System.out.println("----------WELCOME----------");
System.out.println("Select an account: 1.Savings 2.Current");
int ch=sc.nextInt();
if(ch==1)
{
 Savings s=new Savings();
s.get('S');
do{
System.out.println("1.Deposit\n2.Calculate compound interest\n3.Withdraw\n4.Display balance\n5.Cheque book facility\n6.Exit");
```

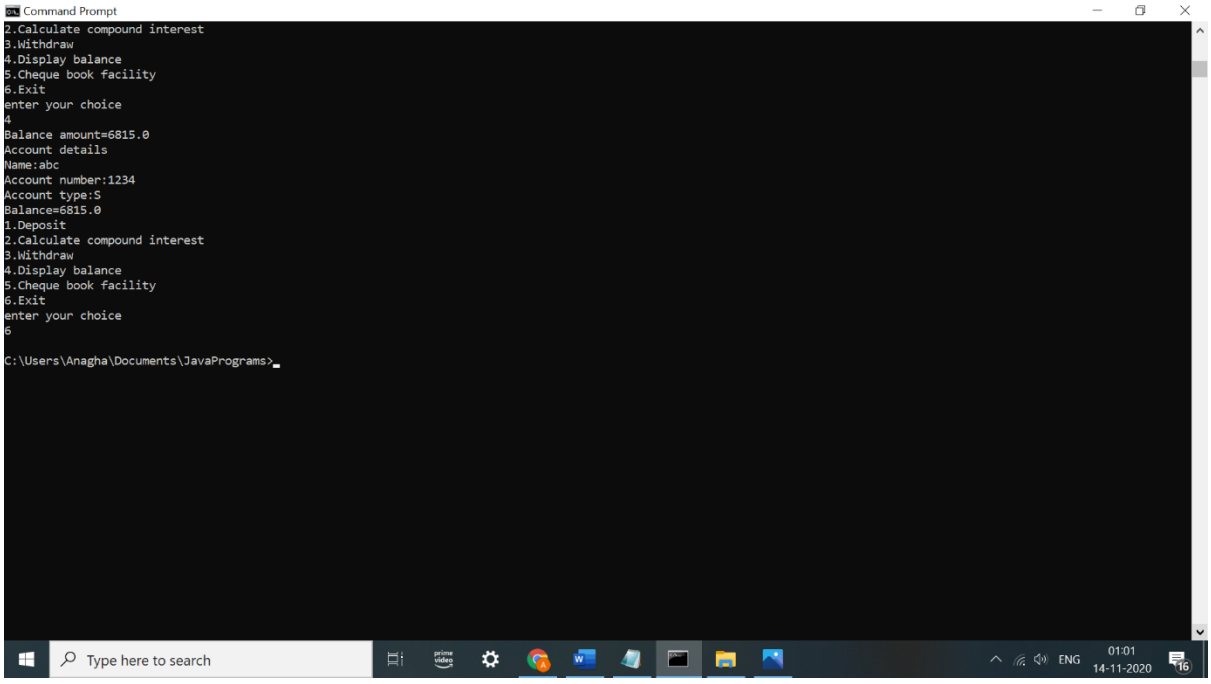
```
System.out.println("enter your choice");
chh=sc.nextInt();
switch(chh)
{
case 1:s.deposit();
      break;
case 2:s.ci();
      break;
case 3:s.with_s();
      break;
case 4:s.display();
      s.putd();
      break;
case 5:s.check();
      break;
case 6:break;
default:System.out.println("Wrong option!");
       break;
}
}while(chh!=6);


}
else if(ch==2)
{
Current cr=new Current();
cr.get('C');
do{
System.out.println("1.Deposit\n2.Cheque book facility\n3.Withdraw\n4.Display balance\n5.Exit");
cch=sc.nextInt();
switch(cch)
{
```

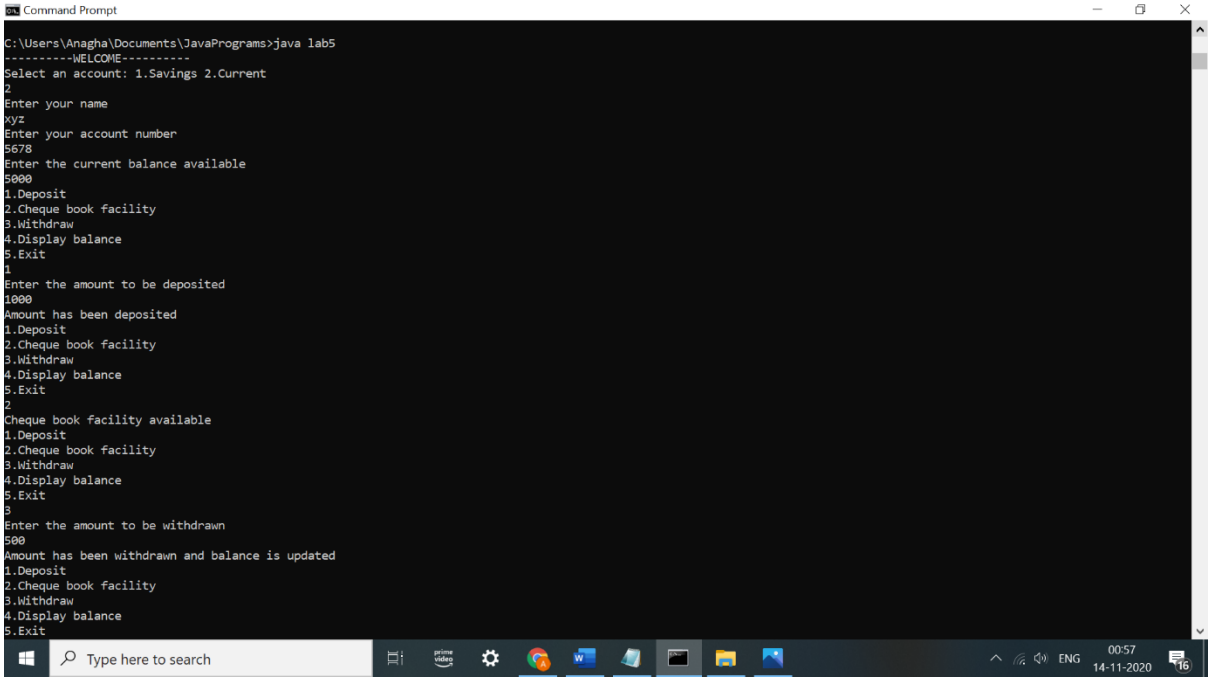
```
case 1:cr.deposit();
      break;
case 2:cr.check();
      break;
case 3:cr.with_c();
      break;
case 4:cr.display();
      cr.putd();
      break;
case 5:break;
default:System.out.println("Wrong option!");
       break;
}
}while(cch!=5);


}


else
System.out.println("Wrong!");
}
}
```

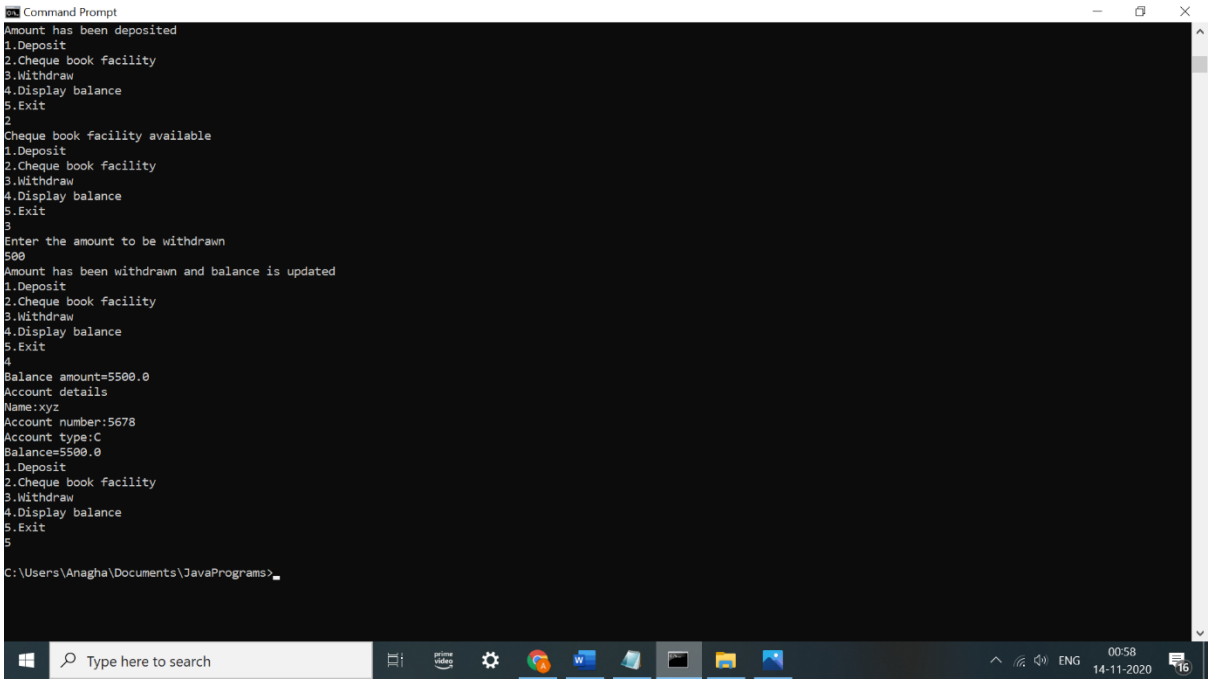
OUTPUT




Command Prompt
1
Interest is compounded and added to the balance
1.Deposit
2.Calculate compound interest
3.Withdraw
4.Display balance
5.Cheque book facility
6.Exit
enter your choice
3
Enter the amount to be withdrawn
500
Amount has been withdrawn and balance is updated
1.Deposit
2.Calculate compound interest
3.Withdraw
4.Display balance
5.Cheque book facility
6.Exit
enter your choice
5
Cheque book facility is unavailable
1.Deposit
2.Calculate compound interest
3.Withdraw
4.Display balance
5.Cheque book facility
6.Exit
enter your choice
4
Balance amount=6815.0
Account details
Name:abc
Account number:1234
Account type:S
Balance=6815.0
1.Deposit
2.Calculate compound interest
3.Withdraw
4.Display balance
5.Cheque book facility
Type here to search
ENG
01:01
14-11-2020


Command Prompt
2.Calculate compound interest
3.Withdraw
4.Display balance
5.Cheque book facility
6.Exit
enter your choice
4
Balance amount=6815.0
Account details
Name:abc
Account number:1234
Account type:S
Balance=6815.0
1.Deposit
2.Calculate compound interest
3.Withdraw
4.Display balance
5.Cheque book facility
6.Exit
enter your choice
6
C:\Users\Anagha\Documents\JavaPrograms>
Type here to search
ENG
01:01
14-11-2020


Command Prompt
C:\Users\Anagha\Documents\JavaPrograms>java lab5
----------WELCOME----------
Select an account: 1.Savings 2.Current
2
Enter your name
xyz
Enter your account number
5678
Enter the current balance available
5000
1.Deposit
2.Cheque book facility
3.Withdraw
4.Display balance
5.Exit
1
Enter the amount to be deposited
1000
Amount has been deposited
1.Deposit
2.Cheque book facility
3.Withdraw
4.Display balance
5.Exit
2
Cheque book facility available
1.Deposit
2.Cheque book facility
3.Withdraw
4.Display balance
5.Exit
3
Enter the amount to be withdrawn
500
Amount has been withdrawn and balance is updated
1.Deposit
2.Cheque book facility
3.Withdraw
4.Display balance
5.Exit
Type here to search
ENG
00:57
14-11-2020


Command Prompt
Amount has been deposited
1.Deposit
2.Cheque book facility
3.Withdraw
4.Display balance
5.Exit
2
Cheque book facility available
1.Deposit
2.Cheque book facility
3.Withdraw
4.Display balance
5.Exit
3
Enter the amount to be withdrawn
500
Amount has been withdrawn and balance is updated
1.Deposit
2.Cheque book facility
3.Withdraw
4.Display balance
5.Exit
4
Balance amount=5500.0
Account details
Name:xyz
Account number:5678
Account type:C
Balance=5500.0
1.Deposit
2.Cheque book facility
3.Withdraw
4.Display balance
5.Exit
5
C:\Users\Anagha\Documents\JavaPrograms>
Type here to search
ENG
00:58
14-11-2020