

5. Develop a Java program to create a class Bank that maintains two kinds of account for its customers, one called a 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 Cur-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.

Complete the observation and execution of both the above programs tomorrow.



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

class Account
{
    String customerName, accNum;
    int typeOfAcc;
    double balance = 0, depo, withdraw;
    void accType()
    {
        Scanner ss = new Scanner(System.in);
        System.out.println("Choose the account type that  
you want to create \n 1. Saving account \n 2.  
current account");
        typeOfAcc = ss.nextInt();
    }
    void set()
    {
        Scanner ss = new Scanner(System.in);
        System.out.println("Enter your name,  
account number");
        customerName = ss.nextLine();
        System.out.println("Enter the balance");
        balance = ss.nextDouble();
        System.out.println("The balance in the  
account is " + balance);
    }
    void deposit()
    {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the  
amount you want to deposit");
    }
}
```




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```
        dupo = sc.nextDouble();
        balance += dupo;
    }
}

class CurAcct extends Account {
    double minBal = 1000; pen
    void Penalty()
    {
        if (balance < minBal)
        {
            balance = balance - (balance * 0.50);
            System.out.println("A penalty is
            applied as your balance is less than the
            minimum balance");
        }
    }

    void withdraw() {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the amount in
        cheque that you want to withdraw");
        withdraw = sc.nextDouble();
        if (withdraw < balance) {
            if ((balance - withdraw) < minBal) {
                System.out.println("A penalty will be
                imposed if you want to continue press 1
                else press 2");
                int c = sc.nextInt();
                switch(c) {
                    case 1: balance = balance balance - withdraw;
                        Penalty();
                        break;
                }
            }
        }
    }
}
```



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```
case 2: break;
```

```
{
```

```
}
```

```
else {
```

```
    balance = balance - withdraw;
```

```
}
```

```
}
```

```
else
```

```
{ System.out.println("Insufficient balance");
```

```
}
```

```
void display ()
```

```
{
```

```
    System.out.println("The balance in the  
    account is " + balance);
```

```
class Sav-acct extends Account {
```

```
    void interest () {
```

```
        int t;
```

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

```
        System.out.println("Enter the time in  
        years");
```

```
        t = sss.nextInt();
```

```
        balance = balance * Math.pow((1 + 5/100), t);
```

```
}
```

```
void withdraw () {
```

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

```
    System.out.println("Enter the amount  
    you want to withdraw");
```

```
    withdraw = sss.nextDouble();
```

```
    if (withdraw < balance) {
```

```
        balance = balance - withdraw; }
```



```
else
{
    System.out.println("Insufficient balance");
}
```

```
void display() {
    System.out.println("The balance in the  
account is " + balance);
}
}
```

```
class Bank
```

```
{
```

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

```
    {
```

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

```
        int op;
```

```
        Account a = new Account();
```

```
        a.acctype();
```

```
        if (a.typeOfAcc == 1)
```

```
        {
```

```
            Sav_acct s = new Sav_acct();
```

```
            s.set();
```

```
            while (true)
```

```
            {
```

```
                System.out.println("Enter the choice")
```

```
                "\n 1. Display \n 2. Deposit \n 3. Upadate  
your ba interest \n 4. Withdraw \n 5. Exit");
```

```
                op = ss.nextInt();
```

```
                switch (op)
```

```
                {
```



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```
case 1: s.display();  
        break;  
case 2: s.deposit();  
        break;  
case 3: s.interest();  
        break;  
case 4: s.withdrawl();  
        break;  
case 5: System.exit(0);
```

}

}

}

```
else if (a.typeOfAcce==2)
```

```
{
```

```
Cur-acct c = new Cur-acct();
```

```
c.set();
```

```
while(true)
```

```
{
```

```
System.out.println("Enter the choice :");
```

```
\n 1. display\n 2. deposit\n 3. Withdrawal\n 4. Exit\n");
```

```
op = sc.nextInt();
```

```
switch(op)
```

```
{
```

```
case 1: c.display();
```

```
        break;
```

```
case 2: c.deposit();
```

```
        break;
```

```
case 3: c.withdrawl();
```

```
        break;
```

```
case 4: System.exit(0);
```




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

out put:

Choose the account type that you
want to create

1. Savings account
 2. Current account
- 1

Enter your name , account number

Asha

abcd1234

Enter the balance

50000

The balance in the account is 50000.0

Enter the choice

1. Display
2. Deposit
3. Update your interest
4. Withdraw
5. Exit

2

Enter the amount you want
to deposit
1000



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Enter the choice:

1. Display
2. Deposit
3. ~~Exit~~ Update your interest
4. Withdraw
5. ~~Exit~~

4

Enter the amount you want to withdraw

10000

Enter the choice:

1. Display
2. Deposit
3. Update your interest
4. Withdraw
5. Exit

3

Enter the time in years.

1

Enter the choice

1. Display
2. Deposit
3. Update your interest
4. Withdraw
5. Exit

1

The balance in the account is 43,050.00

Enter the choice

1. Display
2. Deposit
3. Update your interest



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4. Withdraw

5. Exit

5.

choose the account type that you want to create

1. Savings account
2. Current account

2

Enter your name, account number

Deepa

12345678

Enter the balance

3000

The balance in the account is 3000.0

Enter the choice

1. ~~Dep~~ Display
2. deposit
3. withdraw
4. Exit

3

Enter the amount in the cheque that you want to withdraw

2500

A penalty will be imposed if you want to continue press 1 else press 2

1



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A penalty is applied as you balance is less than minimum balance.

Enter the choice

1. Display
2. deposit
3. withdraw
4. Exit

1.

The balance in the account is 250.

Enter the choice

1. Display
2. deposit
3. withdraw
4. Exit

4.

~~05/12/2022~~

Output:

```
Command Prompt
Microsoft Windows [Version 10.0.19045.2251]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Hp>E:

E:\>cd E:\Desktop\Java Programming

E:\Desktop\Java Programming>javac Bank.java

E:\Desktop\Java Programming>java Bank
Choose the account type that you want to create
1.savings account
2.current account
1
Enter your name, account number
Asha
abcd1234
Enter the balance
50000
The balance in the account is 50000.0
Enter the choice:
1.Display
2.Deposit
3.Update your Interest
4. Withdraw
5. Exit
2
Enter the amount you want to deposit
1000
```

```
Command Prompt

Enter the amount you want to deposit
1000
Enter the choice:
1.Display
2.Deposit
3.Update your Interest
4. Withdraw
5. Exit
4
Enter the amount you want to withdraw
10000
Enter the choice:
1.Display
2.Deposit
3.Update your Interest
4. Withdraw
5. Exit
3
Enter the time in years
1
Enter the choice:
1.Display
2.Deposit
3.Update your Interest
4. Withdraw
5. Exit
1
The balance in the account is 41000.0
Enter the choice:
```

```
Command Prompt
1
The balance in the account is 41000.0
Enter the choice:
1.Display
2.Deposit
3.Update your Interest
4. Withdraw
5. Exit
5
E:\Desktop\Java Programming>java Bank
Choose the account type that you want to create
1.savings account
2.current account
2
Enter your name, account number
Deepa
1234afds
Enter the balance
3000
The balance in the account is 3000.0
Enter the choice:
1. display
2. deposit
3. Withdraw
4. exit
3
Enter the amount in the cheque that you want to withdraw
2500
```

```
Command Prompt
Enter the amount in the cheque that you want to withdraw
2500
A penalty will be imposed if you want to continue press 1 else press 2
1
A penalty is applied as your balance is less than the minimum balance
Enter the choice:
1. display
2. deposit
3. Withdraw
4. exit
1
The balance in the account is 250.0
Enter the choice:
1. display
2. deposit
3. Withdraw
4. exit
2
Enter the amount you want to deposit
1000
Enter the choice:
1. display
2. deposit
3. Withdraw
4. exit
1
The balance in the account is 1250.0
Enter the choice:
1. display
```



```
Command Prompt
1. display
2. deposit
3. Withdraw
4. exit
1
The balance in the account is 1250.0
Enter the choice:
1. display
2. deposit
3. Withdraw
4. exit
4
E:\Desktop\Java Programming>
```