

OOJ LAB PROGRAM 5

WEEK 8

1

```
import java.util.Scanner;
```

```
import java.lang.Math;
```

```
class Account
```

```
{
```

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

```
    String acc_name;
```

```
    String acc_no;
```

```
    int acc_type;
```

```
    double balance;
```

```
    void CreateAccount()
```

```
    {
```

```
        System.out.println("Enter the Details of the new account: ");
```

```
        System.out.printf("Name: ");
```

```
        acc_name=ss.next();
```

```
        System.out.printf("Ideal Account number: ");
```

```
        acc_no=ss.next();
```

```
        if(acc_type==1)
```

```
        {
```

```
            System.out.printf("Enter the first Deposit Value: ");
```

```
            balance=ss.nextDouble();
```

```
            System.out.println("Thank you for creating an Account.");
```

```
        }
```

```
        else
```

```
        {
```

```
            System.out.println("Enter the first Deposit Value(above 5000): ");
```

```
            balance=ss.nextDouble();
```

```
            System.out.println("Thank you for creating an Account.\nYou will shortly receive your
```

```
Cheque Book.");
```

```
        }
```

```
    }
```

```
    String getAccountNo()
```

```
    {
```

```
        return acc_no;
```

```
    }
```

```
    void Display()
```

```
    {
```

```
        System.out.println("The Account Details are given as follows: ");
```

```

        System.out.println("Name: "+acc_name);
        System.out.println("Account Number: "+acc_no);
        if(acc_type==1)
            System.out.println("Account Type: Savings Account");
        else
            System.out.println("Account Type: Current Account");
        System.out.println("Balance: "+balance);
    }
}

class Sav_Acct extends Account
{
    void withdraw()
    {
        double amount;
        System.out.println("Enter the Amount to be withdrawn: ");
        amount=ss.nextDouble();
        balance-=amount;
    }

    void deposit()
    {
        double amount;
        System.out.println("Enter the Amount to be Deposited: ");
        amount=ss.nextDouble();
        balance+=amount;
    }

    void compound_interest()
    {
        byte years_of_dep;
        double interest;
        System.out.println("Enter the number of years for compound interest: ");
        years_of_dep=ss.nextByte();
        interest=(balance*Math.pow(1+(4.5/100),years_of_dep))-balance;
        System.out.println("The Compound interest is: "+interest);
    }
}

```

```

class Curr_Acct extends Account
{
    void withdraw()
    {

```

```

        double amount;
        System.out.println("Warning: A minimum of 5000 balance must be maintained\n\tIf failed, a
penalty of Rs.100 will be imposed.");
        System.out.println("Enter the Amount to be withdrawn: ");
        amount=ss.nextDouble();
        balance-=amount;
        penaltycheck();
    }

    void deposit()
    {
        double amount;
        System.out.println("Enter the Amount to be Deposited: ");
        amount=ss.nextDouble();
        balance+=amount;
    }

    void penaltycheck()
    {
        if(balance<5000)
        {
            int pen=100;
            System.out.println("The balance is less than 5000 a penalty of Rs.100 is imposed.");
            balance-=pen;
        }
    }
}

```

```

class Bank
{
    public static void main(String args[])
    {
        Sav_Acct S_acct[]=new Sav_Acct[10];
        Curr_Acct C_acct[]=new Curr_Acct[10];
        Scanner ss=new Scanner(System.in);
        String acctno;
        int ch,i=0,j=0;
        while(true)
        {
            System.out.println("Welcome to the bank.\n");
            System.out.println("Enter the action to be performed:");
            System.out.println("1: Create a Savings Account\n2: Create a Current Account");

```

```

System.out.println("3: Deposite \n4: Withdraw\n5:Display Balance\n6: Check Compound
Interest");
System.out.printf("Enter your choice: ");
ch=ss.nextInt();
switch(ch)
{
    case 1: S_acct[i]=new Sav_Acct();
        S_acct[i].acc_type=1;
        S_acct[i].CreateAccount();
        i++;
        break;

    case 2: C_acct[j]=new Curr_Acct();
        C_acct[j].acc_type=2;
        C_acct[j].CreateAccount();
        j++;
        break;

    case 3: System.out.println("Enter the account number: ");
        acctno=ss.next();
        for(int k=0;k<j;k++)
        {
            if(acctno.equals(C_acct[k].getAccountNo()))
            {
                System.out.println("This Account is a Current Account.");
                C_acct[k].deposit();
            }
        }
        for(int k=0;k<i;k++)
        {
            if(acctno.equals(S_acct[k].getAccountNo()))
            {
                System.out.println("This Account is a Savings Account.");
                S_acct[k].deposit();
            }
        }
        break;

    case 4: System.out.println("Enter the account number: ");
        acctno=ss.next();
        for(int k=0;k<j;k++)
        {
            if(acctno.equals(C_acct[k].getAccountNo()))
            {

```

```

        System.out.println("This Account is a Current Account.");
        C_acct[k].withdraw();
    }
}
for(int k=0;k<i;k++)
{
    if(acctno.equals(S_acct[k].getAccountNo()))
    {
        System.out.println("This Account is a Savings Account.");
        S_acct[k].withdraw();
    }
}
break;

case 5: System.out.println("Enter the account number: ");
        acctno=ss.next();
        for(int k=0;k<j;k++)
        {
            if(acctno.equals(C_acct[k].getAccountNo()))
                C_acct[k].Display();
        }
        for(int k=0;k<i;k++)
        {
            if(acctno.equals(S_acct[k].getAccountNo()))
                S_acct[k].Display();
        }
        break;
case 6: System.out.println("Enter the account number: ");
        acctno=ss.next();
        for(int k=0;k<j;k++)
        {
            if(acctno.equals(C_acct[k].getAccountNo()))
                System.out.println("This is a Current account .\nThis account does not provide
interest.");
        }
        for(int k=0;k<i;k++)
        {
            if(acctno.equals(S_acct[k].getAccountNo()))
                S_acct[k].compound_interest();
        }
        break;
    }
}
}

```

OUTPUT:-

```
Command Prompt - java Bank
Microsoft Windows [Version 10.0.19041.572]
(c) 2020 Microsoft Corporation. All rights reserved.

C:\Users\mithilraj>cd C:\Users\mithilraj\Desktop\java
C:\Users\mithilraj\Desktop\java>javac lab3.java
C:\Users\mithilraj\Desktop\java>java Bank
Welcome to the bank.

Enter the action to be performed:
1: Create a Savings Account
2: Create a Current Account
3: Deposit
4: Withdraw
5: Display Balance
6: Check Compound Interest
Enter your choice: 1
Enter the Details of the new account:
Name: mithil
Ideal Account number: 12345
Enter the First Deposit Value: 2000
Thank you for creating an Account.
Welcome to the bank.

Enter the action to be performed:
1: Create a Savings Account
2: Create a Current Account
3: Deposit
4: Withdraw
5: Display Balance
6: Check Compound Interest
Enter your choice: 2
Enter the Details of the new account:
Name: rajath
Ideal Account number: 67893
Enter the First Deposit Value(above 5000):
6000
Thank you for creating an Account.
You will shortly receive your Cheque Book.
Welcome to the bank.

Enter the action to be performed:
1: Create a Savings Account
2: Create a Current Account
3: Deposit
4: Withdraw
5: Display Balance
6: Check Compound Interest
Enter your choice: 4
```

```
Command Prompt - java Bank
6: Check Compound Interest
Enter your choice: 4
Enter the account number:
67890
Welcome to the bank.

Enter the action to be performed:
1: Create a Savings Account
2: Create a Current Account
3: Deposit
4: Withdraw
5: Display Balance
6: Check Compound Interest
Enter your choice: 4
Enter the account number:
67893
This Account is a Current Account.
Warning: A minimum of 5000 balance must be maintained.
If failed, a penalty of Rs.100 will be imposed.
Enter the Amount to be withdrawn:
2000
The balance is less than 5000 a penalty of Rs.100 is imposed.
Welcome to the bank.

Enter the action to be performed:
1: Create a Savings Account
2: Create a Current Account
3: Deposit
4: Withdraw
5: Display Balance
6: Check Compound Interest
Enter your choice: 5
Enter the account number:
12345
The Account Details are given as follows:
Name: mithil
Account Number: 12345
Account Type: Savings Account
Balance: 2000.0
Welcome to the bank.

Enter the action to be performed:
1: Create a Savings Account
2: Create a Current Account
3: Deposit
4: Withdraw
5: Display Balance
6: Check Compound Interest
Enter your choice:
```

EXECUTION:-

```
C:\Users\mithiraj\Desktop\java\lab3java - Notepad++
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?
lab3.java
1 import java.util.Scanner;
2 import java.lang.Math;
3
4 class Account
5 {
6     Scanner ss=new Scanner(System.in);
7     String acc_name;
8     String acc_no;
9     int acc_type;
10    double Balance;
11
12    void CreateAccount()
13    {
14        System.out.println("Enter the Details of the new account: ");
15        System.out.print("Name: ");
16        acc_name=ss.next();
17        System.out.print("Ideal Account number: ");
18        acc_no=ss.next();
19        if(acc_type==1)
20        {
21            System.out.print("Enter the first Deposite Value: ");
22            balance=ss.nextDouble();
23            System.out.println("Thank you for creating an Account.");
24        }
25        else
26        {
27            System.out.print("Enter the first Deposite Value(above 5000): ");
28            balance=ss.nextDouble();
29            System.out.println("Thank you for creating an Account.\nYou will shortly receive your Cheque Book.");
30        }
31    }
32
33    String getAccountNo()
34    {
35        return acc_no;
36    }
37
38    void Display()
39    {
40        System.out.println("The Account Details are given as follows: ");
41        System.out.println("Name: "+acc_name);
42        System.out.println("Account NumBer: "+acc_no);
43        if(acc_type==1)
44            System.out.println("Account Type: Savings Account");
45
46        else
47            System.out.println("Account Type: Current Account");
48        System.out.println("Balance: "+balance);
49    }
50
51    class Sav_Acct extends Account
52    {
53        void withdraw()
54        {
55            double amount;
56            System.out.println("Enter the Amount to be withdrawn: ");
57            amount=ss.nextDouble();
58            balance-=amount;
59        }
60
61        void deposit()
62        {
63            double amount;
64            System.out.println("Enter the Amount to be Deposited: ");
65            amount=ss.nextDouble();
66            balance+=amount;
67        }
68
69        void compound_interest()
70        {
71            byte years_of_dep;
72            double interest;
73            System.out.println("Enter the number of years for compound interest: ");
74            years_of_dep=ss.nextByte();
75            interest=(balance*Math.pow(1+(4.5/100), years_of_dep))-balance;
76            System.out.println("The Compound interest is: "+interest);
77        }
78    }
79
80    class Curr_Acct extends Account
81    {
82        void withdraw()
83        {
84            double amount;
85            System.out.println("Warning: A minimum of 5000 balance must be maintained\n\tIf failed, a penalty of Rs.100 will be imposed.");
86            System.out.println("Enter the Amount to be withdrawn: ");
87        }
88    }
89
90    length: 6,922 lines: 213 Ln: 213 Col: 2 Sel: 0|0 Windows (CR LF) UTF-8 INS
Type here to search
```

```
C:\Users\mithiraj\Desktop\java\lab3java - Notepad++
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?
lab3.java
44        System.out.println("Account Type: Savings Account");
45
46        else
47            System.out.println("Account Type: Current Account");
48        System.out.println("Balance: "+balance);
49    }
50
51    class Sav_Acct extends Account
52    {
53        void withdraw()
54        {
55            double amount;
56            System.out.println("Enter the Amount to be withdrawn: ");
57            amount=ss.nextDouble();
58            balance-=amount;
59        }
60
61        void deposit()
62        {
63            double amount;
64            System.out.println("Enter the Amount to be Deposited: ");
65            amount=ss.nextDouble();
66            balance+=amount;
67        }
68
69        void compound_interest()
70        {
71            byte years_of_dep;
72            double interest;
73            System.out.println("Enter the number of years for compound interest: ");
74            years_of_dep=ss.nextByte();
75            interest=(balance*Math.pow(1+(4.5/100), years_of_dep))-balance;
76            System.out.println("The Compound interest is: "+interest);
77        }
78    }
79
80    class Curr_Acct extends Account
81    {
82        void withdraw()
83        {
84            double amount;
85            System.out.println("Warning: A minimum of 5000 balance must be maintained\n\tIf failed, a penalty of Rs.100 will be imposed.");
86            System.out.println("Enter the Amount to be withdrawn: ");
87        }
88    }
89
90    length: 6,922 lines: 213 Ln: 213 Col: 2 Sel: 0|0 Windows (CR LF) UTF-8 INS
Type here to search
```

```
C:\Users\mithiraj\Desktop\java\lab3.java - Notepad++
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?
lab3.java
87      System.out.println("Enter the Amount to be withdrawn: ");
88      amount=ss.nextDouble();
89      balance-=amount;
90      penaltycheck();
91  }
92
93  void deposit()
94  {
95      double amount;
96      System.out.println("Enter the Amount to be Deposited: ");
97      amount=ss.nextDouble();
98      balance+=amount;
99  }
100
101  void penaltycheck()
102  {
103      if(balance<5000)
104      {
105          int pen=100;
106          System.out.println("The balance is less than 5000 a penalty of Rs.100 is imposed.");
107          balance-=pen;
108      }
109  }
110
111
112
113  class Bank
114  {
115      public static void main(String args[])
116      {
117          Sav Acct S_acct[]=new Sav Acct[10];
118          Curr Acct C_acct[]=new Curr Acct[10];
119          Scanner ss=new Scanner(System.in);
120          String acctno;
121          int ch,ie,j=0;
122          while(true)
123          {
124              System.out.println("Welcome to the bank.\n");
125              System.out.println("Enter the action to be performed:");
126              System.out.println("1: Create a Savings Account\n2: Create a Current Account");
127              System.out.println("3: Deposit\n4: Withdraw\n5: Display Balance\n6: Check Compound Interest");
128              System.out.printf("Enter your choice: ");
129              ch=ss.nextInt();
130              switch(ch)
```

Java source file length: 6,922 lines: 213 Ln: 213 Col: 2 Sel: 0 | 0 Windows (CR LF) UTF-8 INS

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```
C:\Users\mithiraj\Desktop\java\lab3.java - Notepad++
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lab3.java
132 case 1: S_acct[i]=new Sav_Acct();
133       S_acct[i].acc_type=i;
134       S_acct[i].CreateAccount();
135       i++;
136       break;
137
138 case 2: C_acct[j]=new Curr_Acct();
139       C_acct[j].acc_type=j;
140       C_acct[j].CreateAccount();
141       j++;
142       break;
143
144 case 3: System.out.println("Enter the account number: ");
145       acctno=ss.next();
146       for(int k=0;k<j;k++)
147       {
148         if(acctno.equals(C_acct[k].getAccountNo()))
149         {
150           System.out.println("This Account is a Current Account.");
151           C_acct[k].deposite();
152         }
153       }
154       for(int k=0;k<i;k++)
155       {
156         if(acctno.equals(S_acct[k].getAccountNo()))
157         {
158           System.out.println("This Account is a Savings Account.");
159           S_acct[k].deposite();
160         }
161       }
162       break;
163
164 case 4: System.out.println("Enter the account number: ");
165       acctno=ss.next();
166       for(int k=0;k<j;k++)
167       {
168         if(acctno.equals(C_acct[k].getAccountNo()))
169         {
170           System.out.println("This Account is a Current Account.");
171           C_acct[k].withdraw();
172         }
173       }
174       for(int k=0;k<i;k++)
175       {
176         if(acctno.equals(S_acct[k].getAccountNo()))
177         {
178           System.out.println("This Account is a Savings Account.");
179           S_acct[k].withdraw();
180         }
181       }
182       break;
183
184 case 5: System.out.println("Enter the account number: ");
185       acctno=ss.next();
186       for(int k=0;k<j;k++)
187       {
188         if(acctno.equals(C_acct[k].getAccountNo()))
189         {
190           C_acct[k].Display();
191         }
192       }
193       for(int k=0;k<i;k++)
194       {
195         if(acctno.equals(S_acct[k].getAccountNo()))
196         {
197           S_acct[k].Display();
198         }
199       }
200       break;
201 case 6: System.out.println("Enter the account number: ");
202       acctno=ss.next();
203       for(int k=0;k<j;k++)
204       {
205         if(acctno.equals(C_acct[k].getAccountNo()))
206         {
207           System.out.println("This is a Current account .\nThis account does not provide interest.");
208         }
209       }
210       for(int k=0;k<i;k++)
211       {
212         if(acctno.equals(S_acct[k].getAccountNo()))
213         {
214           S_acct[k].compound_interest();
215         }
216       }
217       break;
218
219 }
220
221 }
222
223 }
```

```
C:\Users\mithiraj\Desktop\java\lab3.java - Notepad++
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?
lab3.java
170       System.out.println("This Account is a Current Account.");
171       C_acct[k].withdraw();
172     }
173   }
174   for(int k=0;k<i;k++)
175   {
176     if(acctno.equals(S_acct[k].getAccountNo()))
177     {
178       System.out.println("This Account is a Savings Account.");
179       S_acct[k].withdraw();
180     }
181   }
182   break;
183
184 case 5: System.out.println("Enter the account number: ");
185       acctno=ss.next();
186       for(int k=0;k<j;k++)
187       {
188         if(acctno.equals(C_acct[k].getAccountNo()))
189         {
190           C_acct[k].Display();
191         }
192       }
193       for(int k=0;k<i;k++)
194       {
195         if(acctno.equals(S_acct[k].getAccountNo()))
196         {
197           S_acct[k].Display();
198         }
199       }
200       break;
201 case 6: System.out.println("Enter the account number: ");
202       acctno=ss.next();
203       for(int k=0;k<j;k++)
204       {
205         if(acctno.equals(C_acct[k].getAccountNo()))
206         {
207           System.out.println("This is a Current account .\nThis account does not provide interest.");
208         }
209       }
210       for(int k=0;k<i;k++)
211       {
212         if(acctno.equals(S_acct[k].getAccountNo()))
213         {
214           S_acct[k].compound_interest();
215         }
216       }
217       break;
218
219 }
220
221 }
222
223 }
```