

### **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 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.

### **CODE SNIPPET :**

Friday

```
import java.util.Scanner;
import java.lang.Math;
class Account
{
    String name, acc_type;
    int acc-no;
    double bal, dep;
    Scanner scan = new Scanner(System.in);
    void setk()
    {
        System.out.println("Enter your name: ");
        name = scan.next();
        System.out.println("Enter your Account Number: ");
        acc-no = scan.nextInt();
        System.out.println("Enter your Account type: (Savings/CURRENT)");
        acc-type = scan.next();
        System.out.println("Enter the Bank Balance: ");
        bal = scan.nextInt();
    }
    void disp()
    {
        System.out.println("Name : " + name);
        System.out.println("Account Number : " + acc-no);
        System.out.println("Account Type : " + acc-type);
        System.out.println("Current balance is: " + bal);
    }
    void deposit()
    {
        System.out.println("Enter the Amount to be deposited: ");
        dep = scan.nextInt();
        bal += dep;
        System.out.println("BALANCE AMOUNT : " + bal);
    }
}
```

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```
class cur-acc extends Account
{
    int penal()
    {
        double min, pen;
        System.out.println("Enter minimum balance and penalty amount if  
not followed ::");
        min = 5000; pen = min * 0.05;
        if (bal < min)
        {
            bal = pen;
            System.out.println("penalty imposed for having insufficient balance");
            return 0;
        }
        else
        {
            System.out.println("No penalty");
            return 1;
        }
    }
    void withdrawal()
    {
        double amt;
        System.out.println("Enter Amount to be withdrawn ::");
        amt = scan.nextInt();
        int a = penal();
        if (a == 1)
        {
            if (bal >= amt)
            {
                bal = bal - amt;
                System.out.println("Account Balance after withdrawal is :: " + bal);
            }
        }
    }
}
```



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else

{

System.out.println("The Amount Can't be withdrawn");

}

}

class sav-acc extends Account

{

void calc-interest()

{

System.out.println("Enter time in years and Rate of interest");

double t = scan.nextDouble();

double r = scan.nextDouble();

double CI = bal \* Math.pow((1 + r/100), t);

System.out.println("Account BALANCE and Compounding interest: " + bal);

}

void withdraw()

{

double amt;

System.out.println("Enter Amount to be withdrawn");

amt = scan.nextInt();

if (bal &gt;= amt)

{

bal = bal - amt;

System.out.println("Account balance after withdrawal is " + bal);

}

else

{

System.out.println("The Amount Can't be withdrawn");

}

}

class Basic

{

public static void main(String[] args) {

Scanner ss = new Scanner(System.in);

Account b1 = new Account();

b1.setd();

if (b1.acc-type.equals("Savings")) {

Sav-acc s1 = new Sav-acc();

s1.name = b1.name;

s1.acc-no = b1.acc-no;

s1.acc-type = b1.acc-type;

s1.bal = b1.bal;

while (true) {

{

System.out.println("Enter your choice: 1. Deposit 2. Calculate  
interest 3. Withdrawal 4. Display 5. Exit");

int choice = ss.nextInt();

switch (choice) {

{

case 1: s1.deposit(); break;

case 2: s1.calc-interest(); break;

case 3: s1.withdrawal(); break;

case 4: s1.display(); break;

case 5: System.exit(0);

default: System.out.println("Invalid input");

}

}

}



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else if (b1.acc-type.equals("current"))

{

curr-acc c1 = new curr-acc(b1.name);

c1.name = b1.name;

c1.acc-no = b1.acc-no;

c1.acc-type = b1.acc-type;

c1.bal = b1.bal;

while (true)

{

System.out.println("Enter your choice: 1. Deposit 2. Withdrawal 3. Display 4. Exit");

int choice = ss.nextInt();

Switch (choice)

{

case 1: c1.deposit(); break;

case 2: c1.withdrawal(); break;

case 3: c1.display(); break;

case 4: c1.exit(); break;

case 5: System.out.println("Invalid input");

default: System.out.println("Invalid input");

}

}

}

else

{

System.out.println("Invalid Account type");

}

}

## OUTPUT:

```
Enter your Name:
Dhiksha
Enter your Account Number:
123456
Enter your Account type: (Savings/Current)
Savings
Enter the Bank Balance:
30000
Enter your choice:
1.Deposit
2.Calculate interest
3.Withdraw
4.Display
5.Exit
1
Enter the amount to be deposited:
5000
Balance Amount: 35000.0
Enter your choice:
1.Deposit
2.Calculate interest
3.Withdraw
4.Display
5.Exit
3
Enter amount to be withdrawn:
5000
Account Balance after withdrawal is:30000.0
Enter your choice:
1.Deposit
2.Calculate interest
3.Withdraw
4.Display
5.Exit
2
Enter Time in years and Rate of interest
2 5.4
```

C:\ Command Prompt

```
Enter your choice:
1.Deposit
2.Calculate interest
3.Withdraw
4.Display
5.Exit
2
Enter Time in years and Rate of interest
2 5.4
Account Balance after compounding interest: 33327.48
Enter your choice:
1.Deposit
2.Calculate interest
3.Withdraw
4.Display
5.Exit
4
Name: Dhiksha
Account Number: 123456
Account Type: Savings
Current balance is: 33327.48
Enter your choice:
1.Deposit
2.Calculate interest
3.Withdraw
4.Display
5.Exit
5
```



```
C:\Users\Anagha\Desktop\OOJ\Lab6>java Bank
Enter your Name:
Anagha
Enter your Account Number:
135672
Enter your Account type: (Savings/Current)
Current
Enter the Bank Balance:
50000
Enter your choice:
1.Deposit
2.Penalty Check
3.Withdraw
4.Display
5.Exit
1
Enter the amount to be deposited:
300
BALANCE AMOUNT: 50300.0
Enter your choice:
1.Deposit
2.Penalty Check
3.Withdraw
4.Display
5.Exit
2
Enter Minimum balance & penalty amount if not followed:
No penalty
Enter your choice:
1.Deposit
2.Penalty Check
3.Withdraw
4.Display
5.Exit
```

```
Enter Minimum balance & penalty amount if not followed:
No penalty
Enter your choice:
1.Deposit
2.Penalty Check
3.Withdraw
4.Display
5.Exit
3
Enter amount to be withdrawn:
300
Enter Minimum balance & penalty amount if not followed:
No penalty
Account Balance after withdrawal is:50000.0
Enter your choice:
1.Deposit
2.Penalty Check
3.Withdraw
4.Display
5.Exit
4
Name: Anagha
Account Number: 135672
Account Type: Current
Current balance is: 50000.0
Enter your choice:
1.Deposit
2.Penalty Check
3.Withdraw
4.Display
5.Exit
5
```