

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:

9-12-22

Lab Program 5:

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Create a class Account that stores customer name, account number and type of account. From this derive the classes Cur-act and Sav-act to make them more specific to their requirements. Include the necessary methods in order to achieve the following tasks:

- Accept deposit from customer and update the balance.
- Display the balance.
- Compute and deposit interest.
- Permit withdrawal and update the balance.

Check for the minimum balance, impose penalty if necessary and update the balance.

import java.util.Scanner;

```
class Account {
    String name;
    int type;
    long accno;
    double balance;
    void setA()
    {
        Scanner s = new Scanner(System.in);
        System.out.print("Enter customer name: ");
        name = s.nextLine();

        System.out.print("Enter account number: ");
        accno = s.nextLong();
        System.out.print("Enter bank balance: ");
        balance = s.nextDouble();
    }
    void display()
    {
        System.out.println("Customer name is: " + name);
        if (type == 1)
            System.out.println("Customer account type is: Savings");
        else
            System.out.println("Customer account type is: Current");
        System.out.println("Customer account number is: " + accno);
        System.out.println("Current balance is: " + balance);
    }
}
```

```

void deposit()
{
    System.out.println("Enter the amount to be deposited:");
    Scanner x = new Scanner(System.in);
    double amt = x.nextDouble();
    balance += amt;
}

}
class Sav-act extends Account
{
    double interest;
    Scanner s = new Scanner(System.in);

    Sav-act() {
        type = 1;
    }

    void interest()
    {
        int time;
        float rate;
        System.out.println("Compound Interest details:");
        System.out.println("Enter time in years:");
        rate = s.nextFloat();
        System.out.println("Interest will be compounded 5 times a year");
        interest = balance * (Math.pow((1 + rate/100), time));
        balance += interest;
    }
}

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```

void withdraw()
{
    System.out.println("Enter the amount to be withdrawn:");
    double amt = s.nextDouble();
    if (balance > amt)
    {
        balance -= amt;
    }
    else
    {
        System.out.println("Amount to be withdrawn greater than balance!!!");
    }
}

}
class Curr-act extends Account
{
    double check = amt;
    Curr-act() {
        type = 2;
    }

    void cheque()
    {
        System.out.println("Enter the cheque amount:");
        Scanner s = new Scanner(System.in);
        check = amt = s.nextDouble();
        if (check - amt > balance - 5000)
        {
            System.out.println("Rs. 500 penalty imposed. Is it ok to proceed? Enter y for yes and n for no");
            String option = s.next();
            if (option.equals("y"))
            {
                balance = balance - check - 500;
            }
            else
            {
                System.out.println("no check debited");
            }
        }
    }
}

```

```

else
{
    system.out.println("Rupees" + check_amt + " debited");
    balen ac -= check_amt;
}
}
}
void withdraw()
{
    system.out.println("Enter the amount to be withdrawn:");
    Scanner s = new Scanner(System.in);
    double amt = s.nextDouble();
    if (balance > amt)
    {
        balance -= amt;
    }
    else
    {
        system.out.println("Amount to be withdrawn greater than balance!!");
    }
}
}
}
class Bank {
    public static void main (String ss []) {
        String op1, op2;
        Scanner s = new Scanner (System.in);
        System.out.println ("1. Savings or 2. Current");
        int q;
        q = s.nextInt();
        if (q == 1) {
            Sav-act s1 = new Sav-act ();
            while (true) {
                system.out.print ("Enter the choice : \n
                1. Set the values for Savings acc
                2. Display \n 3. deposit \n 4. Interest
                \n 5. withdraw \n 6. exit \n");
            }
        }
    }
}

```

```

op1 = s.nextInt();
switch (op1)
{
    case "1" : s1.setA();
                break;
    case "2" : s1.display();
                break;
    case "3" : s1.deposit ();
                break;
    case "4" : s1.cinterest ();
                break;
    case "5" : s1.withdraw ();
                break;
    case "6" : System.exit(0);
    }
}
}
else if (q == 2) {
    cur-act ct = new cur-act ();
    while (true) {
        system.out.print ("Enter the choice : \n
        1. set the values for current
        account \n 2. Display \n
        3. deposit \n 4. transfer check \n
        5. withdraw \n 6. exit \n");
    }
}
op2 = s.nextInt();
switch (op2)
{
    case "1" : c1.setA();
                break;
    case "2" : c1.display();
                break;
}
}

```



```

case "3" : c1.deposit();
            break;
case "4" : c1.chaque();
            break;
case "5" : c1.withdraw();
            break;
case "6" : system.exit(0);
}
}

```

OUTPUT:

1. Savings or 2. Current.

1.

Enter the choice:

1. Set the values for savings acc.
2. Display
3. deposit.
4. Interest
5. withdraws
6. Exit.

1

Enter Customer name: Aadi

Enter account number: 23~~0000~~34.

Enter bank balance: 20000

Enter the choice:

1. Set the values for savings acc
2. Display
3. deposit
4. Interest
5. withdraw
6. exit

Output:

1.Savings Account

```
jdt.ls-java-project\bin' 'Bank'
1. Savings or 2. Current?
1
Enter the choice:
1 .Set the values for savings acc
2. display
3. deposit
4. Interest
5. Withdraw
6. exit
1
Enter customer name: Sumukh
Enter account number: 344
Enter bank balance: 20000
Enter the choice:
1 .Set the values for savings acc
2. display
3. deposit
4. Interest
5. Withdraw
6. exit
4
Compound Interest details:
Enter time in years:
2
Enter rate of interest:
6
Interest will be compounded 5 times a year
Enter the choice:
1 .Set the values for savings acc
2. display
3. deposit
4. Interest
5. Withdraw
6. exit
2
Customer name is: Sumukh
Customer account type is: Savings
Customer account number is: 344
Current balance is: 22471.997573852605
```

```
Enter the choice:
1 .Set the values for savings acc
2. display
3. deposit
4. Interest
5. Withdraw
6. exit
3
Enter the amount to be deposited: 4000
Enter the choice:
1 .Set the values for savings acc
2. display
3. deposit
4. Interest
5. Withdraw
6. exit
2
Customer name is: Sumukh
Customer account type is: Savings
Customer account number is: 344
Current balance is: 26471.997573852605
```

```
Enter the choice:
1 .Set the values for savings acc
2. display
3. deposit
4. Interest
5. Withdraw
6. exit
5
Enter the amount to be withdrawn:
10000
Enter the choice:
1 .Set the values for savings acc
2. display
3. deposit
4. Interest
5. Withdraw
6. exit
2
Customer name is: Sumukh
Customer account type is: Savings
Customer account number is: 344
Current balance is: 16471.997573852605
Enter the choice:
1 .Set the values for savings acc
2. display
3. deposit
4. Interest
5. Withdraw
6. exit

```

2.Current Account

```
1. Savings or 2. Current?
2
Enter the choice:
1.Set the values for current account
2. display
3. deposit
4. transferCheck
5. Withdraw
6. exit
1
Enter customer name: Aadi
Enter account number: 234
Enter bank balance: 100
Enter the choice:
1.Set the values for current account
2. display
3. deposit
4. transferCheck
5. Withdraw
6. exit
4
Enter the cheque amount: 1000
Rs. 500 penalty imposed...Is it ok to proceed? Enter y for yes and n for no
y
Enter the choice:
1.Set the values for current account
2. display
3. deposit
4. transferCheck
5. Withdraw
6. exit
2
Customer name is: Aadi
Customer account type is: Current
Customer account number is: 234
Current balance is: -1400.0
```

```
Enter the choice:
1.Set the values for current account
2. display
3. deposit
4. transferCheck
5. Withdraw
6. exit
2
Customer name is: Aadi
Customer account type is: Current
Customer account number is: 234
Current balance is: 100.0
Enter the choice:
1.Set the values for current account
2. display
3. deposit
4. transferCheck
5. Withdraw
6. exit
4
Enter the cheque amount: 1000
Rs. 500 penalty imposed...Is it ok to proceed? Enter y for yes and n for no
n
no check debited
Enter the choice:
1.Set the values for current account
2. display
3. deposit
4. transferCheck
5. Withdraw
6. exit
2
Customer name is: Aadi
Customer account type is: Current
Customer account number is: 234
Current balance is: 100.0
```

```

javac12 java project\bin -d bin
1. Savings or 2. Current?
2
Enter the choice:
1.Set the values for current account
2. display
3. deposit
4. transferCheck
5. Withdraw
6. exit
1
Enter customer name: Aadi
Enter account number: 234
Enter bank balance: 8000
Enter the choice:
1.Set the values for current account
2. display
3. deposit
4. transferCheck
5. Withdraw
6. exit
4
Enter the cheque amount: 1000
Rupees 1000.0 debited
Enter the choice:
1.Set the values for current account
2. display
3. deposit
4. transferCheck
5. Withdraw
6. exit
2
Customer name is: Aadi
Customer account type is: Current
Customer account number is: 234
Current balance is: 7000.0

```

```

Enter the choice:
1.Set the values for current account
2. display
3. deposit
4. transferCheck
5. Withdraw
6. exit
3
Enter the amount to be deposited: 4000
Enter the choice:
1.Set the values for current account
2. display
3. deposit
4. transferCheck
5. Withdraw
6. exit
2
Customer name is: Aadi
Customer account type is: Current
Customer account number is: 234
Current balance is: 11000.0

```

```

Enter the choice:
1.Set the values for current account
2. display
3. deposit
4. transferCheck
5. Withdraw
6. exit
5
Enter the amount to be withdrawn:
6000
Enter the choice:
1.Set the values for current account
2. display
3. deposit
4. transferCheck
5. Withdraw
6. exit
2
Customer name is: Aadi
Customer account type is: Current
Customer account number is: 234
Current balance is: 5000.0

```