

## Lab 5

Q) Develop a Java program to create a class Bank that maintains two kinds of accounts 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 facilities. 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 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.

- i) Accept deposit from customer and update the balance.
- ii) Display the balance
- iii) Compute and Deposit Interest
- iv) Permit withdrawal and update the balance
- v) Check for the minimum balance, impose penalty if necessary and update the balance.

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

```
class Account {
```

```
    protected String customerName;
```

```
    protected int accountNumber;
```

```
    protected double balance;
```

```
    public Account (String customerName, int accountNumber,  
                    double balance) {
```

```
        this.customerName = customerName;
```

```
        this.accountNumber = accountNumber;
```

```
        this.balance = balance;
```

```
    }
```

```
    public void deposit (double amount) {
```

```
        if (amount > 0) {
```

```
            balance += amount;
```

```
            System.out.println("Deposited: " + amount);
```

```
        } else {
```

```
            System.out.println("Invalid Deposit Amount");
```

```
        }
```

```
    }
```

```
public void displayBalance () {  
    System.out.println ("Balance: " + balance);  
}
```

}

}

```
class SavAcct extends Account {  
    private double interestRate;
```

```
    public SavAcct (String customerName, int accountNumber,  
        double balance, double interestRate) {
```

```
        super (customerName, accountNumber, balance);
```

```
        this.interestRate = interestRate;
```

}

```
    public void compDepInterest () {
```

```
        double interest = balance * (interestRate / 100);
```

```
        balance += interest;
```

```
        System.out.println ("Interest Added: " + interest);
```

}

```
    public void withdraw (double amount) {
```

```
        if (amount <= balance) {
```

```
            balance -= amount;
```

```
            System.out.println ("Withdrawal: " + amount);
```

} else {

System.out.println("Insufficient Balance  
for Withdrawal");

}

}

}

class CurAcct extends Account {

private double minimumBalance;

private double serviceCharge;

public CurAcct (String customerName, int accountNumber,  
double balance, double minimumBalance, double  
serviceCharge) {

super(customerName, accountNumber, balance);

this.minimumBalance = minimumBalance;

this.serviceCharge = serviceCharge;

}

public void withdraw (double amount) {

if (amount <= balance) {

balance -= amount;

System.out.println("Withdrawn: " + amount);



```
if (balance < minimumBalance) {  
    balance -= serviceCharge;  
    System.out.println("Service  
    Charge imposed: " + serviceCharge);  
}
```

```
} else {
```

```
    System.out.println("Insufficient Balance for  
    Withdrawal");  
}
```

```
}
```

```
}
```

```
}
```

```
public class Bank {
```

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

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

```
        SavAcct savAcc = new SavAcct ("Aaryan", 12345,  
        1000, 5);
```

```
        CurAcct curAcc = new CurAcct ("Jany", 67890, 2000,  
        500, 50);
```

```
        System.out.println("Choose Account Type: In 1:  
        Savings Account In 2: Current Account");
```

```
int choice = sc.nextInt();
```

```
switch (choice) {
```

```
    case 1:
```

```
        System.out.println("Savings Account  
        Selected");
```

```
        savAcc.deposit(500);
```

```
        savAcc.compDepInterest();
```

```
        savAcc.withdraw(300);
```

```
        savAcc.displayBalance();
```

```
        break;
```

```
    case 2:
```

```
        System.out.println("Current Account  
        Selected");
```

```
        curAcc.deposit(500);
```

```
        curAcc.withdraw(1800);
```

```
        curAcc.displayBalance();
```

```
        break;
```

```
    default:
```

```
        System.out.println("Invalid Choice");
```

```
}
```

```
sc.close();
```

```
}
```

```
}
```

## Output

1. Savings Account
2. Current Account

1

Savings Account Selected

Deposited : 500.0

Interest added: 75.0

Withdrawn : 300.0

Balance: 1275.0

Choose Account Type:

1. Savings Account
2. Current Account

2

Current Account Selected

Deposited : 500.0

Withdrawn : 1800.0

Balance: 700.0

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