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PROGRAM-5

a) 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.

```
import java.util.Scanner;

class Account{
    private String customer_name;
    private int acc_no;
    protected double balance;

    public Account(String customer_name,
    int acc_no, double balance){
        this.customer_name=customer_name
        this.acc_no=acc_no;
        this.balance=balance;
    }
    public double getBalance(){
        return balance;
    }
```

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```
public void deposit(double amount){
    if(amount > 0){
        balance += amount;
        System.out.println("Deposited: "
        + amount);
    } else{
        System.out.println("Deposit
        amount must be positive");
    }
}
public void withdraw(double amount)
{
    if (amount <= getBalance()){
        balance -= amount;
        System.out.println("withdrew: "
        + amount + "balance is:" + balance);
    }
else
    System.out.println("Insufficient
    funds!");
}
public void displayBalance(){
    System.out.println("Current
    Balance: " + balance);
}
}
```

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

    public SavingsAccount(String customerName
    int accountNumber, double initialBalance,
```

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```
        double interestRate) {
            super (customerName, accountNumber
                initialBalance);
            this.interestRate = interestRate;
        }
    public void computeAndDepositInterest(){
            double interest = getBalance() *
                                interestRate / 100;
            deposit (interest);
        }
}
class CurrentAccount extends Account{
        private double minimumBalance;
        private double serviceCharge;

        public CurrentAccount (String customerNam
        int accountNumber, double initialBalance,
        double minimumBalance, double serviceCharge
        {
            super(customerName, accountNumber,
                initialBalance);
            this.minimumBalance = minimumBalance;
            this.serviceCharge = serviceCharge;
        }

        public void checkMinimumBalance(){
            if (getBalance() < minimumBalance) {
                System.out.println ("Balance is
                below minimum");
                balance -= serviceCharge;
```

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```
            System.out.println("Deducted
            service charge:"+ serviceCharge);
            System.out.println("Balance afte
            deduction is: " + balance);
        }
    }
}

public class Bank{
    public static void main (String[] args){
        Scanner sc= new Scanner(System.in);
        System.out.println("Enter customer name:"
        String name= sc.nextLine();
        System.out.println("Enter accno:");
        int acc_no = sc.nextInt();
        System.out.println("Enter initial balance:"
        double balance = sc.nextDouble();
        System.out.println("Enter minimum balance:"
        double minimum_balance=sc.nextDouble();
        System.out.println("Enter interest rate:");
        double interest_rate=sc.nextDouble();
        System.out.println("Enter service charge:"
        double service_charge=sc.nextDouble();
        System.out.println("Enter choice:\n
        1. Current acc \n 2. Savings acc");
        int ch = sc.nextInt();
        System.out.println("Customer name is:"
        name + "\nAccount number:"+ acc_no);

        switch (ch){
            case(1):
```

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```
System.out.println("Account is
current type");
Current Account ca = new CurrentAccount
(name, acc_no, balance, minimum_balance
service_charge);
do{ System.out.println("Enter choice:
\n 1. deposit \n 2. withdraw \n 3. displa
balance");
int c = sc.nextInt();
ca.checkMinimumBalance();
if (c==1){
    system.out.println("Enter amount
    to be deposited:");
    double amt = sc.nextDouble();
        ca.deposit(amt); }
else if (c==2) {
    System.out.println("Enter amoun
    to withdraw:");
    double amt = sc.nextDouble();
    ca.withdraw(amt); }
else if (c==3) {
    ca.displayBalance(); }
else
    System.exit(0);
} while(true);
```

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```
case (2):
        System.out.println("Account is
        savings type");
        SavingsAccount sa = new
        SavingsAccount(name, acc_no, balance
        interest_rate);
        do{ System.out.println("Enter
        Choice : \n1. deposit \n 2. withdraw\
        3. display balance");
        int ch = sc.nextInt();
        if (ch==1){
            System.out.println("Enter
            amount to be deposited:");
            double amt=sc.nextDouble();
                sa.deposit(amt); }
        else if (ch==2){
            System.out.println("Enter
            amount to withdraw:");
            double amt = sc.nextDouble();
            sa.withdraw(amt); }
        else if (ch==3){
            sa.computeAndDepositInterest();
            sa.displayBalance(); }
        else {
            System.exit(0);
        }
    } while (true);
}
}
}
```

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```
>> Output:
Enter customer name:
Ahmed
Enter accno:
03465
Enter initial balance:
15000
Enter minimum balance:
10000
Enter interest rate:
3
Enter service charge:
2.75
Enter choice:
1. Current acc
2. Savings acc
2
Customer name is: Ahmed
Account number: 3465
Account is savings type
Enter choice:
1. deposit
2. withdraw
3. display balance
2
enter amount to withdraw:
3000
withdrew: 3000.0  balance is: 12000.0
```