9/1/24

1) Develop a java program to create a class Bank that maintains two kinds of account for its customers, one called saving account and the other current account. The saving 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 & update the balance.
b) display the balance
c) Compute and deposit interest
d) permit withdrawal & update the balance
e) check the minimum balance, impose penalty if necessary & update the balance.

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

class BankAccount {
    protected String customerName;
    protected int accountNumber;
    protected double balance;
    public BankAccount(String customerName, int accountNumber, double
                                                        balance){

        this.customerName = customerName;
        this.accountNumber = accountNumber;
        this.balance = balance;
    }
    public void displayAccountDetails(){

        System.out.println("customer name:" + customerName);
        System.out.println("Account number:" + accountNumber);
        System.out.println("Type of Account: Savings Account");
        System.out.println("balance - " + balance);
    }
}
class SavingsAccount extends BankAccount {
    private double interestRate;
    public SavingsAccount(String customerName, int accountNumber,
    double balance, double interestRate){
            super(customerName, accountNumber, balance);
            this.interestRate = interestRate;
    }
    public void deposit(double amount){
            balance += amount;
    }
    public void withdraw(double amount){
            balance -= amount;
    }
    public void compateInterest(){
            balance += balance * interestRate /100;
    }
    public void ~~compat~~ displayAccountDetails(){
        super.displayAccountDetails();
        System.out.println("Interest Rate" + interestRate + "%");
    }
}
class Main {
    public static void main(String[] args){
        Scanner scanner = new Scanner(System.in);
        SavingsAccount[] accounts = new SavingsAccount[2];
        int choice;
        String customerName;
```

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int accountNumber;
double balance;
double withdrawalAmount;
double interestRate;

for (int i=0; i<2; i++){
    System.out.print("Enter customer name: ");
    customerName = scanner.next();
    System.out.print("Enter account Number ");
    accountNumber = scanner.nextInt();
    System.out.print("Enter the deposit amount: ");
    balance = scanner.nextDouble();
    accounts[i] = new SavingsAccount(customerName,
    accountNumber, balance, 2);
}
do {
    System.out.println("\n --- MENU ---- ");
    System.out.println("1. Deposit");
    System.out.println("2. withdraw")
    System.out.println("3. compute interest for Savings
                        Account");
    System.out.println("4. Display account details");
    System.out.println("5. exit");
    System.out.print("Enter your choice");
    choice = scanner.nextInt();

switch (choice){

    case 1:
        System.out.print("Enter the type of acct:");
        String accountType = scanner.next();
        System.out.print("Enter the deposit amount:")
        depositAmount = scanner.nextDouble();
        accounts[0].deposit(depositAmount);
        break;
    case 2:
        System.out.println("Enter the type of acct:");
        accountType = scanner.next();
        System.out.print("Enter the withdrawal amt:");
        withdrawalAmount = scanner.nextDouble();
        accounts[0].withdraw(withdrawalAmount);
        break;
case 3:
        accounts[0].computeInterest();
        break;
```

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case 4:
    accounts[0].displayAccountDetails();
    break;
case 5:
    System.out.println("Exiting...");
    break;
default:
    System.out.println("Invalid choice. Please try again.");
}
} while (choice != 5);
scanner.close();
}
}
```

o/p:

```
Enter customer name: Rachana
Enter account Number: 112
Enter the deposit amount: 20000
Enter customer name: Prathruthi
Enter account Number: 213
Enter the deposit amount: 30000
--- MENU ---
1. Deposit
2. Withdraw
3. compute interest for Savings Account
4. Display account details
5. Exit
Enter your choice 1
Enter the type of account: Savings
Enter the deposit amut: 30000
--- MENU ---
1. Deposit
2. Withdraw
3. Compute interest for Savings Account
4. Display account details
5. Exit
Enter your choice 3
--MENU ---
1. Deposit
2. Withdraw
3. Compute interest for Savings Account
4. Display account details
5. Exit
Enter your choice = 4
Customer name: Rachana
Account number: 112
Type of Account: Savings account
balance = 53040.0
Interest Rate: 3.0%
```

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```
C:\WINDOWS\system32\cmd.

C:\Users\DELL\OneDrive\Desktop\java lab programs>javac Bank.java

C:\Users\DELL\OneDrive\Desktop\java lab programs>java Main
Enter customer name: rachana
Enter account Number: 123
Enter the deposit amount: 20000
Enter customer name: prakruthi
Enter account Number: 456
Enter the deposit amount: 10000

-----MENU-----
1. Deposit
2. Withdraw
3. Compute interest for Savings Account
4. Display account details
5. Exit
Enter your choice: 2
Enter the type of account: 123
Enter the withdrawal amount: 500

-----MENU-----
1. Deposit
2. Withdraw
3. Compute interest for Savings Account
4. Display account details
5. Exit
Enter your choice: 4
Customer name: rachana
Account number: 123
Type of Account: Savings account
balance - 19500.0
Interest Rate: 2.0%

-----MENU-----
1. Deposit
```