9-1-24

1. Develop a Java Program to create a class Bank that maintains 2 kinds of account for its customers, one called savings account & the other current account. The savings account provides compound interest & 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 & if the balance falls below this level, a service charge is imposed. Create a class Account that stores customer name, account number & type of account. From this derive the classes Cur-acct & 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 & deposit interest.
d) Permit withdrawal & update the balance.

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

```
import java.util.Scanner;
class Account {
    String customerName;
    int accountNumber;
    String accountType;
    double balance;

    public Account(String customerName, int accountNumber,
String accountType, double balance) {
    this.customerName = customerName;
    this.accountNumber = accountNumber;
    this.accountType = accountType;
    this.balance = 0 Balance;
}
public void deposit(double amount){
    balance += amount;
    System.out.println("Account Deposit successful. Updated
Balance: " + balance);
}
public void displayBalance(){
    System.out.println("Account Balance: " + balance);
}
}
class CurAcct extends Account{
    double minBalance;
    double serviceCharg;
public CurAcct(String customerName, int accountNumber,
 super(customerName, accountNumber, "Current");
this.minBalance = 1000;
this.serviceCharge = 50;
}
public void deposit(double amount){
    super.deposit(amount);
    checkMinBalance();
}
```

```
public void displayBalance(){
  super.displayBalance();
  checkMinBalance();
}
private void checkMinBalance(){
  if(balance < minBalance){
    balance -= serviceCharge;
    System.out.println("Service charge applied.
Updated balance:"+balance);
  }
}
}
class SavAcct extends Account{
  double interestRate;

  public SavAcct(String CustomerName, int
accountNumber){
  super(CustomerName, accountNumber, "Savings");
  this.interestRate = 0.05;
}
public void computeInterest(){
  double interest = balance * interestRate;
  balance += interest;
  System.out.println("Interest computed
and deposited. Updated balance:"+balance);
}
public void displayBalance(){
  super.displayBalance();
  computeInterest();
}
public void withdraw(double amount){
  if(balance >= amount){
    balance -= amount;
    System.out.println("Withdrawal successful.
```

```
        Updated balance:" + balance);
    }else{
        System.out.println("Insufficient funds for
        withdrawal.");
    }
}
}
public class Bank{
    public static void main(String[]args){
    Scanner scanner = new Scanner(System.in);

    System.out.print("Enter your name:");
    String currentName = scanner.nextLine();
    System.out.print("Enter Account number:");
    int currentNumber = scanner.nextInt();
    CurAcct currentAccount = new CurAcct(currentName,
    currentNumber);

    System.out.print("Enter the amount to deposit
    into current account:");
    double currentDeposit = scanner.nextDouble();
    currentAccount.deposit(currentDeposit);
    currentAccount.displayBalance();

    scanner.nextLine();
    System.out.print("\nEnter name:");
    String savingsName = scanner.nextLine();
    System.out.print("Enter savings account number:");
    int savingsNumber = scanner.nextInt();
    SavAcct SavingAccount = new SavAcct(savingsName,
    savingsNumber);
```

```
System.out.print("Enter the amount to withdraw
from the savings account: ");
double savingsWithdraw = scanner.nextDouble();
savingAccount.withdraw(savingsWithdraw);
scanner.close();
  }
}
```

→ OUTPUT :

```
Enter your Name : Joe
Enter current account number : 2567
Enter the amount to deposit into the current account:
5000
Deposit successful. Updated balance : 5000.0
Account Balance : 5000.0

Enter your Name : Safa
Enter savings account number : 5678
Enter the amount to deposit into the savings account
4500
Deposit successful. Updated balance : 4500.0
Account Balance : 4500.0
Interest computed and deposited. Updated balance : 472
Enter the amount to withdraw from the savings
account: 500
Withdrawal successful. Updated balance : 4225.0
```