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2024_28_III_OOPS Using Java Lab

2028_REC_OOPS using Java_Week 5_Q2

Attempt : 1
Total Mark : 10
Marks Obtained : 10

Section 1 : Coding

1. Problem Statement

You are working as a developer for CityBank, which wants to build a basic account management system.

Each customer at the bank has:

An Account Number (integer)A Customer Name (string)An Initial Balance (double)

The bank allows two types of transactions:

Deposit – increases the balance.Withdrawal – decreases the balance only if enough funds are available.

If the withdrawal amount is greater than the balance, the withdrawal should not happen, and the balance should remain the same.

You are required to implement this system using:

A class with attributes for account details.A constructor to initialize account details.Setter methods to update details if needed.Getter methods to retrieve details.Objects of the class to represent customers.

Finally, display each customer’s account details after all transactions.

Input Format

The first line of input contains an integer N, representing the number of customers.

For each customer:

- The next line contains the account number (integer).
- The following line contains the customer name (string).
- The next line contains the initial balance (double).
- The next line contains the deposit amount (double).
- The next line contains the withdrawal amount (double).

Output Format

For each customer, print the details in the following format:

1. Account Number: <account_number>
2. Customer Name: <customer_name>
3. Final Balance: <final_balance> (rounded to one decimal place)

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 1
1234
Rahul Sharma
5000
2000
3000

Output: Account Number: 1234
Customer Name: Rahul Sharma

Final Balance: 4000.0

Answer

```
// You are using Java
import java.util.Scanner;

class CustomerAccount {
    private int accountNumber;
    private String customerName;
    private double balance;

    // Constructor
    public CustomerAccount(int accountNumber, String customerName, double
initialBalance) {
        this.accountNumber = accountNumber;
        this.customerName = customerName;
        this.balance = initialBalance;
    }

    // Deposit method
    public void deposit(double amount) {
        if (amount >= 0) {
            this.balance += amount;
        }
    }

    // Withdraw method
    public void withdraw(double amount) {
        if (amount <= this.balance) {
            this.balance -= amount;
        }
        // else do nothing (withdrawal is ignored)
    }

    // Getters
    public int getAccountNumber() {
        return accountNumber;
    }

    public String getCustomerName() {
        return customerName;
    }
```

```
    public double getBalance() {
        return Math.round(balance * 10.0) / 10.0;  // Round to 1 decimal place
    }
}

public class Main {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

        int n = Integer.parseInt(sc.nextLine().trim());  // Number of customers
        CustomerAccount[] customers = new CustomerAccount[n];

        for (int i = 0; i < n; i++) {
            int accNum = Integer.parseInt(sc.nextLine().trim());
            String custName = sc.nextLine().trim();
            double initBalance = Double.parseDouble(sc.nextLine().trim());
            double depositAmt = Double.parseDouble(sc.nextLine().trim());
            double withdrawAmt = Double.parseDouble(sc.nextLine().trim());

            // Create customer object
            CustomerAccount customer = new CustomerAccount(accNum,
custName, initBalance);

            // Perform transactions
            customer.deposit(depositAmt);
            customer.withdraw(withdrawAmt);

            // Store customer
            customers[i] = customer;
        }

        // Output results
        for (CustomerAccount c : customers) {
            System.out.println("Account Number: " + c.getAccountNumber()
                    + " Customer Name: " + c.getCustomerName()
                    + " Final Balance: " + c.getBalance());
        }

        sc.close();
    }
}
```

Status : Correct ***Marks : 10/10***