Name: Somnath R. Shintre Roll No:

Class: TE CSE Batch:

**Title: -** Create class SavingsAccount. Use a static variable annualInterestRate to store the annual interest rate for all account holders. Each object of the class contains a private instance variable savingsBalance indicating the amount the saver currently has on deposit. Provide method calculateMonthlyInterest to

calculate the monthly interest by multiplying the savingsBalance by annualInterestRate divided by 12this interest should be added to savingsBalance. Provide a static method modifyInterestRate that sets the annualInterestRate to a new value

Write a program to test class SavingsAccount. Instantiate two savingsAccount objects, saver1 and saver2, with balances of Rs 2000.00 and Rs 3000.00, respectively. Set annualInterestRate to 4%, then calculate the monthly interest and print the new balances for both savers. Then set the annualInterestRate to 5%, calculate the next month's interest and print the new balances for both savers.

**Program:-**

class SavingsAccount {

    // Static Variable

    private static double annualInterestRate;

    // private instance variable

    private double savingsBalance;

    // Parameterized Constructor

    public SavingsAccount(double balance) {

        savingsBalance = balance;

        annualInterestRate = 0;

    }

    // Getters And Setters

    public double getSavingsBalance() {

        return this.savingsBalance;

    }

    public void setSavingsBalance(double savingsBalance) {

        this.savingsBalance = savingsBalance;

    }

    // Method to calculate monthly interest

    public void calculateMonthlyInterest() {

        savingsBalance = savingsBalance + (savingsBalance \* annualInterestRate) / 12;

    }

    // Static method to modify intrest rate

    public static void modifyInterestRate(double newInterestRate) {

        annualInterestRate = newInterestRate;

    }

}

public class Bank {

    public static void main(String[] args) {

        // Creating objects or instances

        SavingsAccount saver1 = new SavingsAccount(2000.00);

        SavingsAccount saver2 = new SavingsAccount(3000.00);

        System.out.println("\nsaver1's Current savings balance: " + saver1.getSavingsBalance());

        System.out.println("saver2's Current savings balance: " + saver2.getSavingsBalance());

        System.out.println("\nModifying Interest Rate to 4%");

        // Accessing Static Method

        SavingsAccount.modifyInterestRate(0.04);

        // Updating savings and Displaying

        saver1.calculateMonthlyInterest();

        saver2.calculateMonthlyInterest();

        System.out.println("Saver1's new balance : " + saver1.getSavingsBalance());

        System.out.println("Saver2's new balance : " + saver2.getSavingsBalance());

        System.out.println("\nModifying Interest Rate to 5%");

        // Accessing Static Method

        SavingsAccount.modifyInterestRate(0.05);

        // Updating Savings and Displaying

        saver1.calculateMonthlyInterest();

        saver2.calculateMonthlyInterest();

        System.out.println("Saver1's next month's new balance : " + saver1.getSavingsBalance());

        System.out.println("Saver2's next month's new balance : " + saver2.getSavingsBalance() + "\n");

    }

}

**Output:-**

