Lab Exercise 2

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1. Create a class **Rectangle**. The class has attributes length and width, each of which defaults to 1. It has methods that calculate the perimeter and the area of the rectangle. It has set and get methods for both length and width. The set methods should verify that length and width are each floating-point numbers larger than 0.0 and less than 20.0.

Write a program to test class Rectangle.

2. 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 12—this 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 2000.00 INR and 3000.00 INR, 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.