

Problem:

1. Write 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 20.0. Include a predicate method **isSquare** which determines if the rectangle is a square.
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 and \$3000.00, respectively. Set **annualInterestRate** to 4%, then calculate the monthly interest for each of 12 months and print the new balances for both savers. Next, set the **annualInterestRate** to 5%, calculate the next month's interest and print the new balances for both savers.