# Lab Exercise 2

# OOAD

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.