# Module 5—Lab 5: Writing Classes

The following exercises are intended to help you apply and practise the concepts introduced in this module. This work is not submitted for marks. The questions are from the end of the chapter in your text under the “Exercises” or “Programming Projects” headings.

Try to answer the questions on paper first. Then insert the code in a Java program to see the actual result.

1. For each of the following pairs, which represents a class and which represents an object of that class?
2. Superhero, Superman
3. Justin, Person
4. Rover, Pet
5. Magazine, Time
6. Christmas, Holiday
7. List some attributes and operations that might be defined for a class called Meeting that represents a business meeting.
8. List some attributes and operations that might be defined for a class called Course that represents a college course (not a particular offering of a course, just the course in general).
9. Write a method called cube that accepts one integer parameter and returns that value raised to the third power.
10. Write a method called random100 that returns a random integer in the range of 1 to 100 (inclusive).
11. Write a method called alarm that prints the string “Alarm!” multiple times on separate lines. The method should accept an integer parameter that specifies how many times the string is printed. Print an error message if the parameter is less than 1.
12. Write a method called countA that accepts a String parameter and returns the number of times the character ‘A’ is found in the string.
13. Write a method called evenlyDivisible that accepts two integer parameters and returns true if the first parameter is evenly divisible by the second, or vice versa, and otherwise false. Return false if either parameter is zero.
14. Write a method called multiConcat that takes a String and an integer as parameters. Return a String that consists of the string parameter concatenated with itself count times, where count is the integer parameter. For example, if the parameter values are “hi” and 4, the return value is “hihihihi”. Return the original string if the integer parameter is less than 2.
15. Overload the multiConcat method from Exercise 5.25 such that if the integer parameter is not provided, the method returns the string concatenated with itself. For example, if the parameter is “test”, the return value is “testtest”.
16. Draw a UML class diagram for the CountFlips program.

Review your work by comparing with the solutions sheet.