1. Write a program that asks the user for two BigDecimal values and then displays the results when the given values are used with the BigDecimal methods add, subtract, multiply, divide, toString, equals and compareTo. For example, your program's output might appear as follows:

   Give two BigDecimal values to display the result of various method calls.

   Enter your first BigDecimal number: 3
   Enter your second BigDecimal number: 5

   3 + 5 = 8
   3 - 5 = -2
   3 * 5 = 15
   3 / 5 = 0.6
   3.toString() is 3
   5.toString() is 5
   3.equals(5) is false
   3.compareTo(5) is -1

2. Write a program that encodes a string supplied by the user. Replace all letters a with @, all letter e with #, all letters i with !, all letters o with & and all letters u with %. Demonstrate that the string " It is a beautiful day in the neighbourhood." is encoded as " !t !s @b#@%t!f%l d@y !n th# n#!ghb&%rh&&d."

3. Design and implement a class Frog. Each Frog object has a name and keeps track of the number of times it leaps. Define two constructos, set and get methods for each data field, and the method toString. Also, define a method jump that simply increments the number of times the frog has jumped by 1. Demonstrate your class by creating three Frog objects. The output from this demonstrations might appear as follows:

   Kermit has leapt 5 times.
   Kermit has leapt 8 times.
   Legs has leapt 0 times.
   Frogger has leapt 3 times.

4. Design and implement the class CupDispenser. Each CupDispenser object has a location and keeps track of the number of cups it currently contains. Define two constructors, set and get methods for each data field, and the method toString. Also define a method getOneCup that simply decrements the number of cups in the dispenser by 1. Demonstrate your class by creating several CupDispenser objects. Bonus: Define the method takeCupsFrom that removes all the cups from its argument, a CupDispenser object and adds them to its receiving object. For example, if cd1 contains 10 cups, and cd2 contains 20 cups, after the call cd1.takeCupsFrom(c2), cd1 will contain 30 cups and cd2 will be empty.