JAVA PROGRAMMING LANGUAGE
Assignment 4

1. Define a class called *Fraction*. This class is used to represent a ratio of two integers.

    - Include mutator methods that allow the user to set the numerator and the denominator.

    - Also include a method that returns the value of numerator divided by denominator as a double.

    - Include an additional method that outputs the value of the fraction reduced to lowest terms (e.g., instead of outputting 20/60, the method should output 1/3). This will require finding the greatest common divisor for the numerator and denominator, then dividing both by that number.

    Embed your class in a test program.

2. Define a class called *Odometer* that will be used to track fuel and mileage for an automobile. The class should have instance variables to track the miles driven and the fuel efficiency of the vehicle in miles per gallon. Include a mutator method to reset the odometer to zero miles, a mutator method to set the fuel efficiency, a mutator method that accepts miles driven for a trip and adds it to the odometer's total, and an accessor method that returns the number of gallons of gasoline that the vehicle has consumed since the odometer was last reset. Use your class with a test program that creates several trips with different fuel efficiencies. You should decide which variables should be public, if any.

3. Each delegate to a certain conference must wear a tag showing their name and the organization they represent as shown below.

```
################################################################################
###                        ANNUAL CONFERENCE                                ###
################################################################################
### NAME:                                                                   ###
###                                                                         ###
################################################################################
### ORGANIZATION:                                                           ###
###                                                                         ###
################################################################################
```

    Write a class *TagMaker* that prints out tags. Supply methods to
    - Set the name
    - Set the organization
    - Print tag with the name and organization
    - Clear the name and organization
    - Print a blank tag