Lab 8
100 Points total
Due Nov 9 Start of class

Exceptions (50 Points)

0. You must make your own custom exceptions for these problems. You can't just use Exception

1. (15 Points) Create a modification of the fraction Number class we made in class so that it will throw an exception if denominator is ever equal to zero. You will need exceptions at least in your setter and your constructor. Possibly elsewhere

2. (15 Points) Create a modification of the lunar calendar calculator so that method that calculates the due date will throw an exception if given an invalid date (e.g., 13/5/2000, 4/31/2000, or 3/2/-25). The method that captures user input and passes it the method for calculating should catch the exception and force the user to enter a correct value.

3. (10 Points) Create a method that takes one parameter a string. If that string contains a number followed by a metric unit of volume, then it will return a double value that represents the volume in litters.   If the string does not contain both a number and a metric unit of volume, throw an exception. You should recognize `ml,` `cl,` and L. Moreover, you should accept any type of capitalization.
  - **Hint**: To turn a string with spaces into an array of strings where each value between a space use: String data[] = userEntered.split("[ ]+");
  - **Hint**: to turn a string into a double use the method Double.parseDouble(stringy);
  - **Hint**: users may or may not enter a space between the number and the units. So, you should accept values like `12.4ml` and `12.4 ml`.

4. (10 Points) Create tests for part 1, 2, and 3, to make sure that you throw exceptions at the appropriate times. Remember tests cannot contain user input, so you'll need to separate your user input from the data processing.

Secret Turkey Attack (50 Points)

In this lab you will make a nice Thanksgiving dinner, which is invaded by turkey

   a. **Display a picture of a Thanksgiving dinner**

   b. **Make it so that when you click anywhere on the screen a turkey will fly and attack that area**

   c. **Make it so that the turkey makes a screaming sound.**

1. If you complete the above, then the best you can do will be a 35/50

2. **To get 40/50,** Make it so that the turkey keeps on moves around on the screen whenever you click. Keep making the screaming noise when you click

3.. **To get an 50/50,** make it so that whenever you click on the screen a turkey flies in from a random corner of the screen. So, you may have more than one turkey on the screen at a time if you are clicking a bunch. Each click should cause the scream to occur.