Part I: Using If-Then-Else

- Create a New Project named Lab3, and a New Class called Calculator.
- Use a Scanner object to obtain user input. To do so, recall the template, shown below in Listing 1

```java
import java.util.Scanner;
public class Calculator {
    public static void main(String[] args) {
        // set up a Scanner variable
        Scanner keyboard = new Scanner(System.in);

        // declare variables to gather input
        // print to request input
        // get input from Scanner variable
        // . . . rest of program . .
    }
}
```

- You should ask the user to input a single line of this format `<int 1> <operator> <int 2>`, where `<operator>` must be one of the following: +, -, /, and *.
- Read these inputs into an int, String, and int variable, respectively, using the Scanner methods. When obtaining the inputs, recall how do deal with the annoyance with reading in a String after a number has been obtained. See Lecture 2 slides.
- Once the input has been obtained in these variables, apply the desired operation (+, -, /, and *), and print out the result.

  - This means you need to test to see what operator the user entered. For now, use if-else statements to compare the operator. Remember that with Strings, you do not use == or != to test equivalence and non-equivalence. Instead, you should use if (str1.equals(str2)) and if (!str1.equals(str2)), respectively.
  - With the division operator, the answer should also print out the fraction, if any should exist! For instance, 5 / 3 should yield 1 and 2/3, and 16 / 4 should yield 4. Note that, if the fraction does not exist, don’t attempt to print it!
Also when dividing, beware of division-by-zero errors. When the divisor is 0, you should not carry out the computation, but instead, print out an error message.

Here are some sample runs of the Calculator program:

-----
Enter an expression: 4 + 0
4
-----
Enter an expression: 32 / 0
Divide by zero error!
-----
Enter an expression: 31 / 9
3 and 4/9
-----
Enter an expression: 32 / 4
8

Part II: Using switch Statements

Switch partners!
Create another class within the same project, called Calculator2.
This calculator should behave exactly as before, but now use switch statements only to determine the operator that the user entered.
You will still use an if-then-else to format the fraction output.
When using switch, you must be mindful of the fall-through mechanism, and using break; statements where necessary.

Part VI: Submitting Your Lab

After you have completed the lab, please do the following to submit your work.
Zip up all necessary files.
Rename the zip file to LastName1_LastName2_Lab3.zip, where the LastNames are the respective last names of the authors.
Submit it on Moodle. You may submit as often as you’d like before the deadline. I will grade the most recent copy.