**Exceptions & Try-Catch Tree**

* *ArrayIndexOutOfBoundsException*: due to the nature of how I parsed user input (expecting them to put a slash in their rational number and having the program separate the integers before and after the slash through an array), any input that didn’t involve at least one slash in it threw out the ArrayOutofBoundException.
* *NumberFormatException*: however, after throwing and catching that exception, the NumberFormatException appeared for input that had more than one slash in it (e.g. “88//8,” “8/8/8/88,” 8//8/88”). I caught this error and had the program only take the digits before the first slash and the digits after the last slash.
* *StringIndexOutOfBoundsException*: after throwing and catching that exception, the StringsIndexOutOfBoundsException happened due to how I handled substrings in the program in order to account for the slash error. Since this exception didn’t really affect how the program was run (from what I could see), I just threw and caught the exception without adding additional alternative code to deal with it.

1. *DenominatorIsNegativeException|DenominatorIsZeroException* : I had the program throw out my own exceptions if the denominator was negative or zero and account for it accordingly (e.g., printing out an error message into the text field or flipping the signs of the fraction with a negative denominator).

* After catching the ArrayIndexOutOfBoundsException and any of its subsequent internal exceptions while dealing with the try-block, I had the program deal with what I concluded to be the most common mistake a user might make: inputting an integer instead of a fraction, such as “7,” instead of “7/1.” So I just had the program interpret “7” as “7/1.”
* *NumberFormatException*: to account for the NumberFormatException in which the user puts special characters, doubles, Strings, etc. (anything that couldn’t be parsed as as a fraction or integer) or entered a number greater than or less than Int.MAX/Int.MIN for the numerator or denominator, I also added a try-catch block that gave the user an error message. This was an internal exception within the ArrayIndexOutofBoundsException and thus the try-catch block was within the ArrayIndexOutofBoundsException’s catch block.