Lab 11

Parts 1, 2 and 3 involve an integer calculator, which you made back in Lab 3 part 5. You can either use your version of the code or the one I provided on the website. If you use your own code, you should wrap the calculator code in a separate method and then run that method in main, similar to the provided code. (Parts 1, 2 and 3 deal with exceptions.)

**Part 1.** We needed an extra if-statement inside the division case to not crash the program. Instead of having an if-statement, use a try and catch block to stop this error from happening. Think about where the try block should start and end. (Hint: the error is called “ArithmeticException”.)

**TLDR:**
Your program should not crash with exception ArithmeticException.

**Part 2.** The calculator might also crash when you type in the inputs. For example, you give something other than integers for “first” and “second”. Handle this runtime error with a try and catch block as well. Again, think about where the try block should start and end. (Hint: the error type is “InputMismatchException”. You will have to import this from java.util.InputMismatchException)

**TLDR:**
Your program should also not crash on exception InputMismatchException now.

**Part 3.** Parts 1 and 2 had the try and catch blocks inside the method where the error occurred. Rewrite the code so the try and catch blocks are inside main() instead of the method where the errors actually happen. (Note: as stated above, your code for parts 1 and 2 should not have been inside main().)

**TLDR:**
Your program should not crash and the try and catch blocks are inside a separate method.

For parts 4 and 5, we will use the BouncingBall.java code on the website. The code is fully functional and will have a ball that bounces (before sinking into the ground...).

**Part 4.** Add a feature so that if you click the mouse on the window, the ball will warp to that position. Also change the ball’s velocity to 0 after warping.

**Part 5.** Modify the previous part by instead of moving the current ball to where the mouse was clicked, add a new ball there (so there are multiple balls). You should be able to add as many balls as you want (and they should all bounce).