LEARNING PROFILE FOR ASSIGNMENT#1, QUESTION#6

Triangle.java

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| *Name* | *:* | *Tyler Lucas* | *Due Date* | *:* | *N/A* |
| *Student ID* | *:* | *3305203* | *Submission Date* | *:* | *2017/05/09* |

# 1. Problem Statement

“The Pythagorean Theorem relates the lengths of the three sides of any right triangle. The legs of a right triangle (the two sides of the triangle that meet at the right angle) are customarily labelled as having lengths “a” and “b”, and the hypotenuse (the long side of the triangle, opposite the right angle) is labelled as having length “c”. The lengths are related by the following equation: a ^2 + b^2 = c ^2.” – refer to <http://www.purplemath.com/modules/pythagthm.htm> for details.

This equation allows you to find the length of a side of a right triangle when they’ve given you the lengths for the other two sides, and, going in the other direction, allows you to determine if a triangle is a right triangle when they’ve given you the lengths for all three sides.

This equation can alternatively be written as c = sqrt of (a^2+b^2). You can find the square root of a number by calling the standard function Math.sqrt. For example, the statement double y = Math.sqrt(x) sets y to the square root of x.

1. Given the right triangles described below, write a program to compute the lengths of the remaining sides using a program.
2. a = 48 and c = 80
3. a = 84 and c = 91
4. Determine if the following triangles are right-angled triangles:
5. a = 45, b = 55, and c = 75
6. a = 28, b = 45, and c = 53

# 2. Description of the Code

Outputs temperature in Fahrenheit given an input temperature in Celsius.

# **3.** Errors and Warnings

Table 1: List of Errors and Warnings Encountered in the Program

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| --- | --- | --- | --- |
| **#** | **Errors / Warnings** | **Details** | **How I solved them** |
| 1 | CelsiusToFahrenheit class wasn’t found in CelsiusToFahrenheit project. | [v. 1.0] I had set the main class as "private". | I changed the class and main method from “private” to “public”. |
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# 4. Sample Input and Output

[Version 1.2-1.3, input “0”]

Enter temperature in integer degrees Celsius: 0

0 degrees Celsius is equivalent to 32 degrees Fahrenheit.

[Version 1.2-1.3, input “60.5” (float type input)]

Enter temperature in integer degrees Celsius: 60.5

Exception in thread "main" java.util.InputMismatchException

at java.util.Scanner.throwFor(Scanner.java:864)

at java.util.Scanner.next(Scanner.java:1485)

at java.util.Scanner.nextInt(Scanner.java:2117)

at java.util.Scanner.nextInt(Scanner.java:2076)

at CelsiusToFahrenheit.main(CelsiusToFahrenheit.java:34)

C:\Users\tyblu\Documents\repos\comp268-random\CelsiusToFahrenheit\nbproject\build-impl.xml:1040: The following error occurred while executing this line:

C:\Users\tyblu\Documents\repos\comp268-random\CelsiusToFahrenheit\nbproject\build-impl.xml:805: Java returned: 1

# 5. Discussion

The first error, where a class couldn’t be found in the project, was caused by setting either or both the class and the main method to private. I first ran into this error when attempting the *HelloWorld* sample program[[1]](#footnote-1). Having read the class Style Guide in which it says “Create private fields with getters/setters rather than leaving fields public,” as well as Controlling Access to Members of a Class[[2]](#footnote-2) in which it says “Use private unless you have a good reason not to,” I mistakenly thought this applied to the main class and method as well, as I’m still not sure what the differences are between a class, method, and object. Searching online didn’t reveal a solution right away, as few experienced programmers would think that something this simple could go awry, but I eventually found the answer here: <https://goo.gl/P2OdMJ>. Of course, the next page in the textbook had the answer as well:

The word “public” in the first line of main() means that this routine can be called from outside the program. This is essential because the main() routine is called by the Java interpreter, which is something external to the program itself.[[3]](#footnote-3)

I’ll have to keep an eye out to

1. (Eck, 2014, p. 21) [↑](#footnote-ref-1)
2. (Oracle, 2015) [↑](#footnote-ref-2)
3. (Eck, 2014, p. 22) [↑](#footnote-ref-3)