

Advanced Placement Computer Science

Unit 6 – Data Types, Variables, and Arithmetic

Each unit, you will have an assignment that includes some reading, some questions from the reading, called Review Exercises, and between one and three programming exercises.

Calendar of Meeting Places for September

6					11 <u>Lab</u> Using Turtle, Vic <u>Class</u> Begin Unit 6 – Lesson 6.1	12
13	14 <u>Class</u> Weekly Quiz #1		16 <u>Class/Lab</u> Lesson 6.2 and Running Pace Calculator		18 <u>Lab</u> Running Pace Calculator and Triangle Calculator	19
20	21 <u>Class</u> Weekly Quiz #2		23 <u>Lab</u> Triangle Calculator and Challenge		25 <u>Class</u> Test: Units 1, 2, 3, 6	26

Assignment Type	Description
Reading	Java Methods – Chapter 6
Homework Exercises	<u>None</u>

Program #1 – Running Pace Calculator

This program will ask for an input of a time in the format hh:mm:ss and the distance, in miles, that a person has ran. Your program will calculate the average mile pace of this runner as well as the average km pace.

Note: this should be a rather quick program to write because the input and output has already been done for you. The goal of this program is to have you use math operations and get some experience with variables.

Program #2 – Triangle calculator

Using graphics that are available in any Java program, create a program that will allow the user to:

- click on three (3) points with the mouse (**done for you**)
- draw the triangle formed from those three points (**done for you**)
- find and display the perimeter and area of the triangle (**You need to do in the `Triangle` class**)

(hint: Heron’s Formula will compute the area of a triangle given that you have the lengths of the sides)

Note: There are 4 Java files that you will need to **add** to a new **Repl** named **TriangleCalculator**:
`TriangleCalculator.java`, `Triangle.java`, `TriangleCalculatorFrame.java` and
`TriangleCalculatorPanel.java`.

Note: The only programming you will be doing is in **`Triangle.java`**

Challenge (*if you are shooting for an A in this class*)

Complete the Fraction Calculator program. There are 2 Java files that you will need to add to an Empty Project: `Fraction.java` and `FractionCalculator.java`. You will find these on my website.

Please read the descriptions, preconditions, and postconditions for each method and write the appropriate java code so that your fraction calculator functions properly.

Note: The user interface is already complete for you in `FractionCalculator.java`.

Note: The only programming you will be doing is in **`Fraction.java`**

I will check the functionality of your programming exercises as you complete them in the lab.