Introduction to Programming, PIC10A
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Winter 2018

Homework 2

Due 5pm, Friday, January 19

For this assignment, submit `heron.cpp` for problem 1 and `hrt.cpp` for problem 2.

Problem 1: (Heron's formula)

Write a program that takes in 3 lengths of a triangle and outputs its area. The input and output should be exactly:

```
What is the length of the first side?
[User enters a decimal number]
What is the length of the second side?
[User enters a decimal number]
What is the length of the third side?
[User enters a decimal number]
The area of the triangle is [area of the triangle]
```

Your code should work for all reasonable inputs that correspond to the sides of a triangle. (For example, don't worry about negative inputs.) You may not use `stdafx.h`. Name your file `heron.cpp`.

Problem 2: (Human readable time)

Write a program that converts time provided in seconds into a human readable form. (Can you tell how long 238472352 seconds are?) The input and output should be exactly:

```
Input time in seconds
[User enters a non-negative integer]
The time is X year(s), X day(s), X hour(s), x minute(s), and X
second(s)
```

For example, the output to an input of 61 is

```
The time is 0 year(s), 0 day(s), 0 hour(s), 1 minute(s), and 1
second(s)
```

and the output to an input 3612 is

```
The time is 0 year(s), 0 day(s), 1 hour(s), 0 minute(s), and 12
second(s)
```

Assume no leap years, i.e., every year is exactly 365 days. Your program must work with inputs ranging from 0 seconds to 1000 years. Do not use floating point numbers. You may not use `stdafx.h`. Name your file `hrt.cpp`

Hint: You might want something much “longer” than an int?

http://en.cppreference.com/w/cpp/language/types

Hint: If you are working on MacOS or Linux, this is a problem where your code can actually behave differently on a windows machine.