CS162 - Programming Assignment 7 - File Processing

The purpose of this assignment is to give you some practice working with files.

Overview

This assignment will build upon the previous assignment, adding the ability to load game configuration data from file.

Configuration data will consist of values to:
- set the window size (both horizontal and vertical)
- set the number of asteroids to start out with
- set the performance of the ship (rotation speed and engine power)

Data file details

Each line of the configuration file will contain a character representing the type of configuration data that follows, and then the associated data (space delimited), as follows:

W - Window size, followed by a width and height values (as integers)
A - initial Asteroid Quantity, followed by the number of asteroids to start with, as an integer.
S - Ship Performance, followed by the turning rate (how many degrees the ship turns each time a left/right arrow key is detected) and an engine thrust factor (how much the velocity changes each time the up arrow is detected)

An example file would look like this:

```
W 800 600
A 10
S 0.5 1.5
```

Processing

- The configuration file should be named the same as the executable except the extension will be .txt, not exe.
- When your program starts you should try to open the configuration file from the current working directory (don't provide a path!).
- If the config file exists, read and process its contents, and use the values to configure the game.
- If there is no file, or some configuration values are missing (e.g. there's an A but no W or S) then you should use default values in place of those that would have come from the file.
- If the values are crazy low or high, ignore them and fall back on the defaults.
- Each line of the file can be assumed to be formatted correctly, although not all lines may be there.

- Some extra stuff you might consider adding:
    - the ability to process additional configuration data
    - the ability to have a comment at the end of each line in the config file.

Note: You'll need to add extra public functions to the ship class for configuring it, as well as extra code (variables? function? mind-bending logic?) in the main file to read the file. The details are up to you.

Very Important Stuff

All programs should follow the class's coding conventions.
Submit the following:
- A zip file containing all the source files you created and your executable