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CMPSC121

Reflection

30 May 2021

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In this experiment I was able to understand how to use output manipulation, floating point arithmetic and strings. For the first program in this lab (calculating volume and surface area), nothing too surprising occurred while I wrote the program. I did have to stop and think about the arithmetic portion and verify that I properly used parentheses for the formula. I wanted to avoid using the pow() function for this first program as I could see I was going to be using it in the second part of this lab. I started to think about how I could make the formatting more dynamic with the use of .length() for a string value while programming the output portion of part 1. For part 2 (determining torque and diameter), I found this one to be a bit more challenging due to one item. I was trying to emulate the “inches” unit appended to the Diameter output in the sample execution provided for the lab. While doing so I realized that I would have to either adjust the spacing to allow the Diameter value + “ inches” to fit neatly under the Diameter heading. I wanted to try and avoid that last setw() value from having to be a different value (14) than the others which are set to 18 in my submitted lab. In other words, I wanted setw(18) to applied to the next value and to include “ inches” so something like:

setw(18) << D + “ inches”;

To do this I realized I needed to type cast D to a string. So I changed the code to:

setw(18) << to\_string(D) + “ inches”;

After making these changes, I understood that setprecision(3) would not be respected once D was converted to a string.

After some more adjustments, I reverted the changes and made all setw() equal to 18 and adjusted the last value to setw(14).

Lastly, I noticed myself typing setw(18) several times over so I added 18 as a constant called SPACING so I could adjust all values in one place.