Tidewater Community College

Project 3

Wire Resistance

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EGR 125: Intro to Engineering Methods

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July 2019

Program Performance

This project performs well and accomplishes the goals provided. It provides readable menu options to the user. The program provides opportunity to fix invalid input by using looping structures. Functions are utilized to perform calculations, perform conversions, and to format string input for consistency. Error messages are produced to help understand what went wrong. It also allows the user the option of re-running the program.

Extra Credit Features

One extra credit feature is the use of a vector class. It is used to contain pointers to 1D arrays, and thus behaves like a dynamic 2D array. Another extra feature is the use of the map class, which behaves as a dictionary, allowing values to be mapped to strings for easy lookup of the coefficients associated with a material (map[“string”] = value; cout << map[“string”];).

Potential Improvements

A possible improvement to this program is to provide options to the user to allow multiple units for input. This would make the program move flexible regarding data input. Another improvement would be to utilize the unique\_ptr class (smart pointers), which provides a destructor for the pointer once it is out of scope. Utilizing smart pointers would reduce the chance of having a memory leak due to not freeing memory on normal pointers. Unfortunately, this class was introduced in C++11 and is not available in older versions.