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Preliminary Report on Fan Regulator for Heating and Cooling

After beginning the project, I found that the hard part was not going to be as difficult as I had expected. The project is coming along very well and is very similar to the plans I had made prior. I have reevaluated a portion of my project and am still trying to figure out a way around a problem I am having. While this is holding me up a bit, I am looking into adding to my total project to make it better. In total, about 40% of my project is now complete. However, after I overcome my obstacle I have encountered, the project should make major advances.

When starting the coding for the project, I found it much easier to switch to python to program on my Raspberry Pi. This proved especially true when designing the temperature sensor and because of its simplicity, I am contemplating adding another temperature sensor to help simulate the change in fan speeds within rooms of different temperatures.

So far I have gotten my Raspberry Pi setup and running with a DS18B20 temperature sensor. The sensor also uses a 4.7k resistor as a pullup resistor from the DATA to VCC lines. In addition to this, I have a small outline written for my code to implement the fan speeds based on the varying temperatures in different rooms. I have run a complete test of my temperature sensor and it retrieves both a Celsius value and a Fahrenheit value every second. While it reads a value every second now, the final program will be changed to a larger sleep period.

The things I still need to do for my project are centered on implementing a change in voltage for my fan system. I have looked into a digital potentiometer and can only find one that operates with voltages between 1-7 volts while my fans that I am working with are 115 volts. Things that I am considering are possibly voltage multipliers or even boost converters to get my voltage up after the potentiometer. Once this is completed, I need to finish my program that will implement the calculations and voltage control for the fans.