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Project 6 Design Document

1. System Design.

In this assignment we had to create a smart home alarm that will play different sounds and display lights when the temperature changes. When the temperature is below 70℉. the onboard led light will turn green and a 100hz sounds is played, when the temperature is between 70℉ and 75℉ the light will turn yellow and a 200hz sound will play and finally when the temperature is above 75℉ the light will turn red and a 400hz sound will play. The temperature will constantly display to text using Bluetooth as well.

A difficulty I had was correctly connecting the temperature sensor. I connected wrong inputs and got really incorrect readings. The ADC was quite precise, I think one issue could have been some build up of temperature directly on the breadboard which could impact the accuracy of the reading. The range was just an estimate of my rooms temperature during the time of working on the project.

1. Experiment.

I conducted the experiments in my room and It was difficult to get the temperature to fluctuate 5℉ or so when testing so the route I took was taking my fingers and manually heating up the temperature to simulate the room heating up. For the lower temperatures I just inputted a lower value in debugging.

Diagram: