Desgin Feedback Session Submission

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Materials Presented

ESP32 data sheet https://cdn-learn.adafruit.com/downloads/pdf/adafruit-huzzah32-esp32-feather.pdf

IS31FL3218 LED Driver datasheet https://www.mouser.com/datasheet/2/198/IS31FL3218_DS-1949531.pdf

Questions asked

I am concerned with if the speed of changing color when controlling 175 leds will be fast enough, we are using i2c from the esp to the IS31FL3218 led driver to change color, which should be able to handle 400kHz.

I am concerned with how much current the power supply with need,we are using 175 rgb leds.

Will the led leads be able to hold the weight of 6 layers above them aka holding 150 leds on the bottom?

Feedback recieved

Was advised that creating a skeleton for the led cube could be a good way to ensure that I will have enough strength for the leds to hold themselves.

Feedback given

To Hang Preston in the Temperature Measuring group Was asking about the simplest way to audibly alert the user. I reccomended a buzzer or beeper, a discrete part that would not need the use of any sort of amplifier as a speaker might do. The user could simply know when they hear a beep that the reading is finished. A question that I had for their design was whether no contact meant that you don't have to touch the person to measure their temperature, or if that means that the measurer doesn't even have to touch the device, controlled wirelessly on another computer or phone.

Xinrui in the pet door porject group asked questions about using a proximity sensor and how to avoid opening when a pet walks by the door. I suggested taking readings over time and when the average of say 5 seconds suggests that the pet is waiting at the door then open it. This would make the door more resilient against pets walking past the door which you wouldn't want to open the door for.

Russel was also in a Temperature group and had questions on how to make the measurement accurate when the ambient temperature may change the measurement of a forehead reading significantly. I was equally puzzled but eventually stumbled upon a scientific paper (https://www.medrxiv.org/content/10.1101/2020.12.04.20243923v2.full) that described correcting for exactly that, by calibrating your reading based on the ambient temperature you can have a reliable measurement.