Taylor Malligan

ART385

Project 2: Real World Input and Output (Hardware)

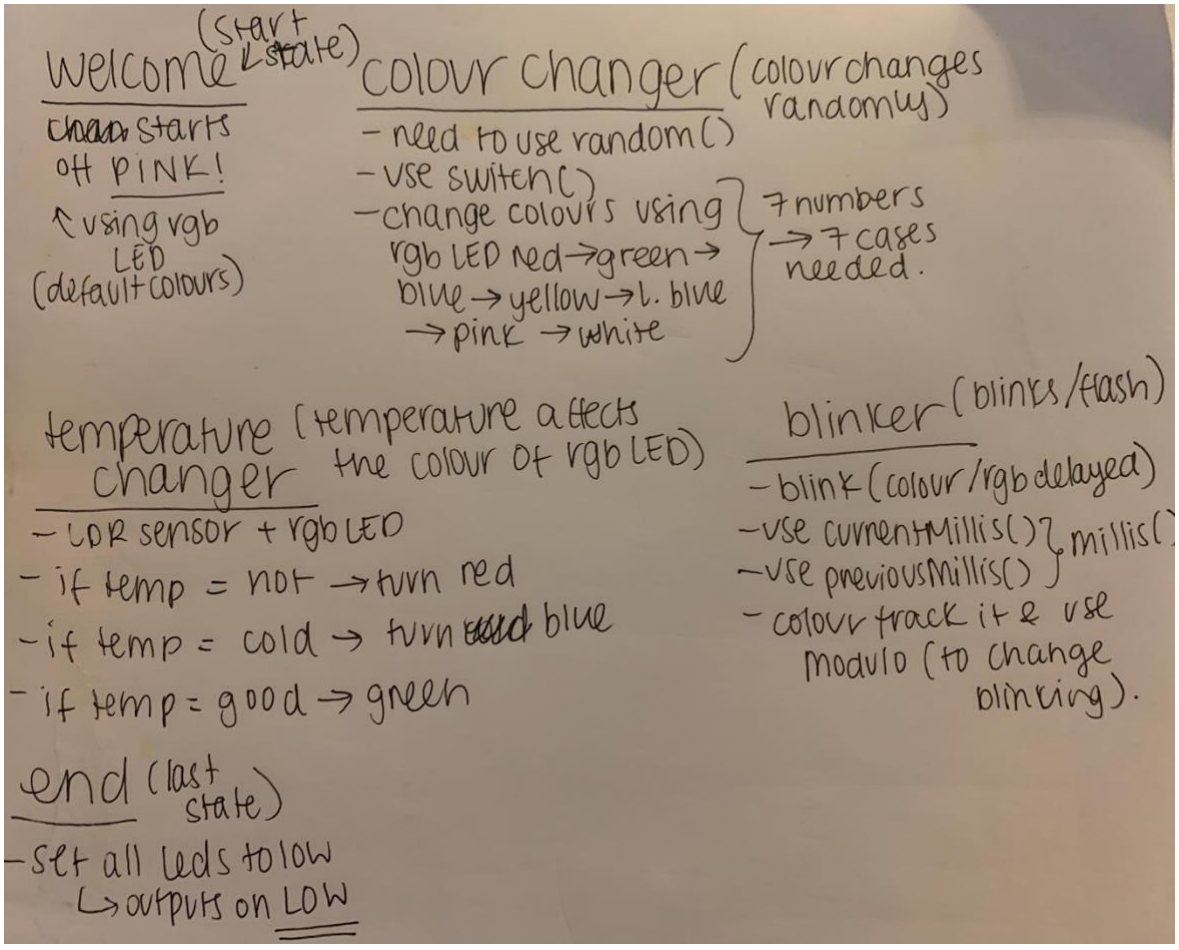
April 7, 2020

Project 2: Real World Input and Output (Hardware)

The Assignment:

For this project, we were assigned to create an interactive physical computing system using hardware such as the ESP32, sensors, LEDs or push buttons as well as using Arduino. However, the only condition for this project was that we had to have two input devices and two output devices.

Hand-drawn Sketch:



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Concept:

The concept for my project was to showcase different functionalities that we have been learning in class and to present them in our work. For example, in my project- I wanted to have four different states with various functions; my first state was my "welcome" state where I used an RGB LED and coded it in order for the RGB LED to be pink. This followed my second state, where the user would have to press the button attached onto the breadboard one time; this would randomly change the color of the RGB LED light to either red, green, blue, yellow, light blue or pink. For this state, I wanted to implement the switch() and random() function that we had learnt in class into my Arduino code. The "blinker" state would start when the user pressed the button twice. This state utilized the Millis() function where it allowed the RGB LED light to blink/flicker for a few seconds before changing to a different color. My "temperature color changer" state began when the push button was pressed three times and was designed using the LDR sensor and the RGB LED light where I used if/else statements to change the color of the light. For example, if the LDR measured that was above the specific temperature, it would turn red. Correspondingly, if the temperature was below the specific temperature, it would turn blue to mimic 'coldness.' If the temperature was at the perfect level, then it would turn green. Lastly, "the end" state would turn on when the push button was pressed four times and would enable all the LEDs to be at its lowest setting.

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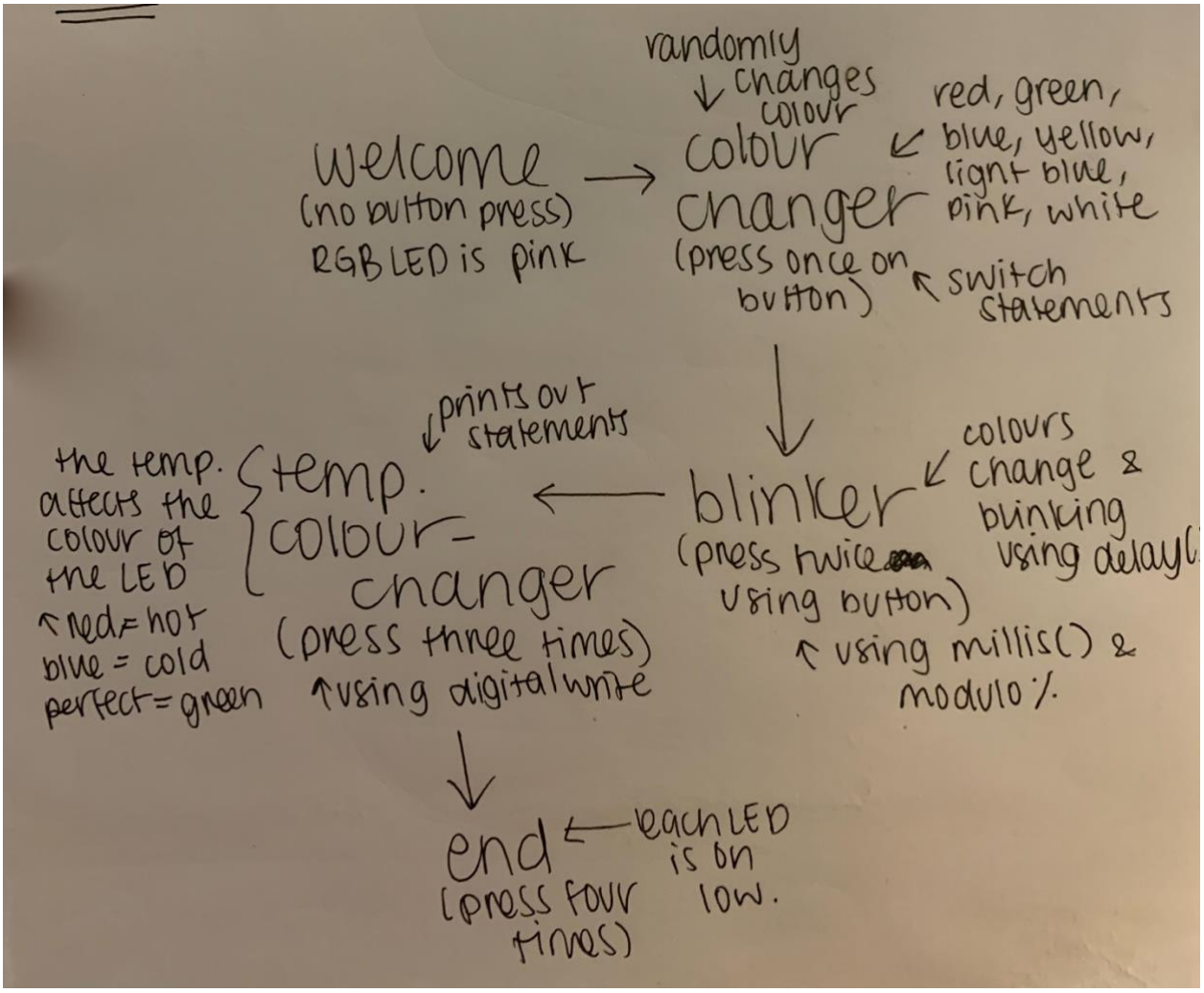
Interaction Map:



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Schematic Diagram: