Document Info

Tommy, ART385, Project Two, 7 April 2020

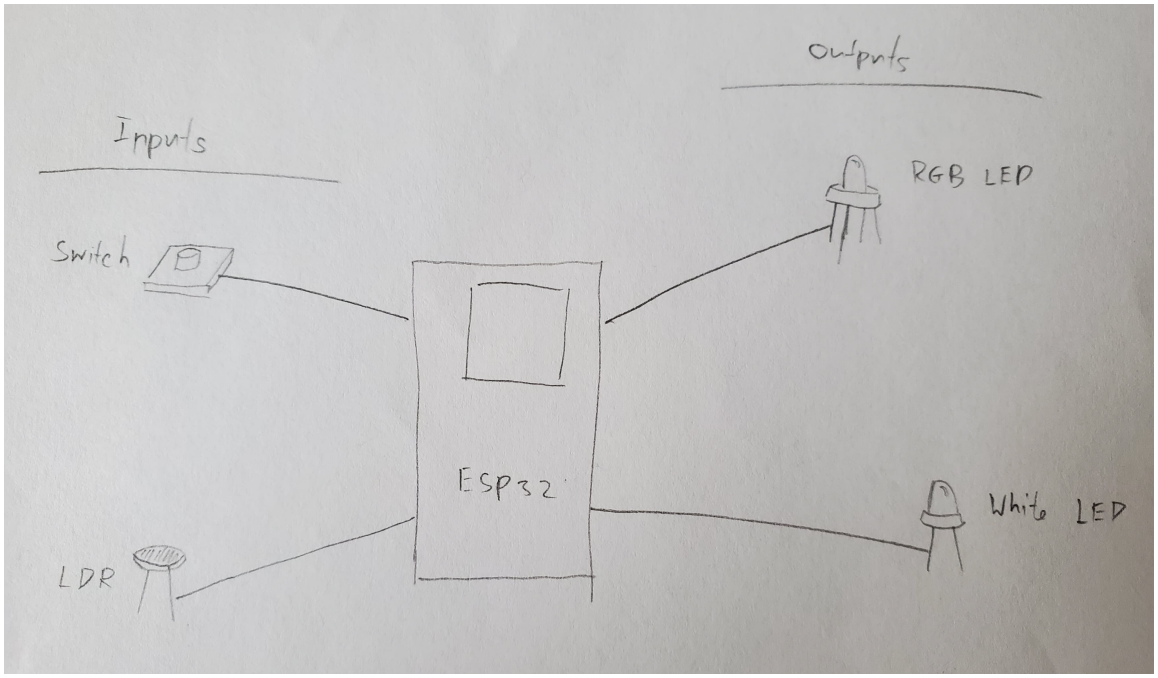
Project YouTube Link

https://youtu.be/evtO1H43zck

Project

Create an interactive environment using the ESP32 and other components as the hardware and Arduino's platform as the software. The interactive platform must contain a minimum of 2 inputs and 2 outputs.

Sketch



Overall Concept

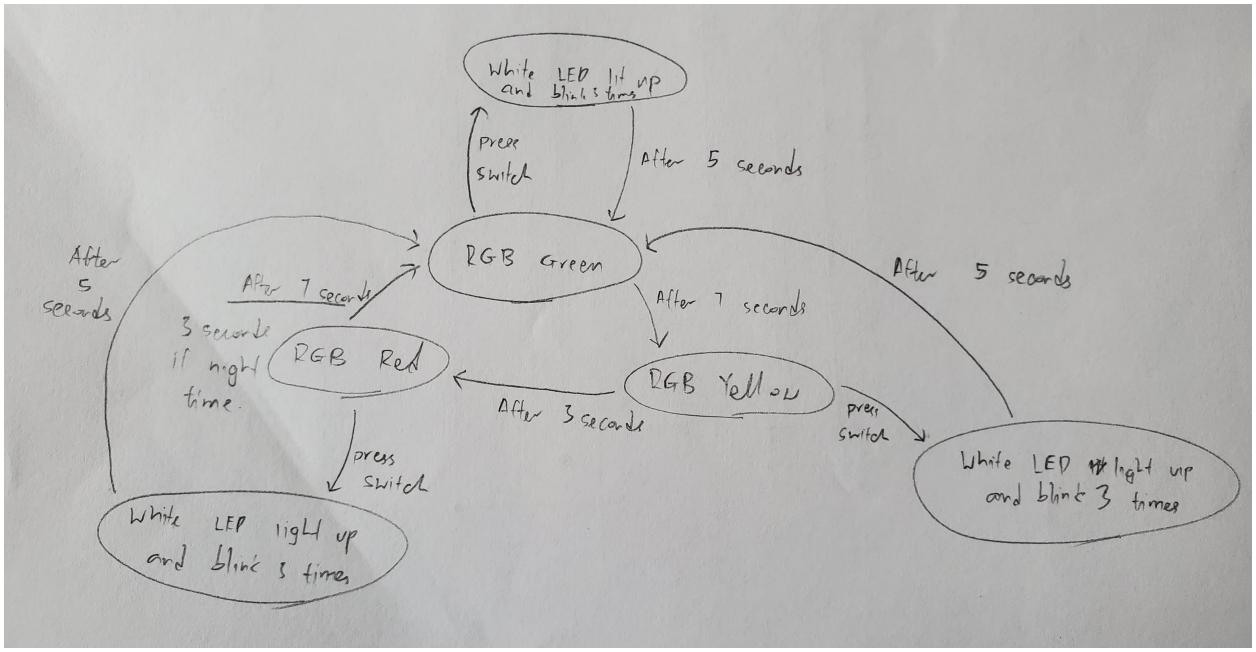
I based my project on a real-world function. I decided to create a traffic light system. The 2 inputs on my system are the switch and the LDR. The 2 outputs are the LED and the RGB LED. The switch represents the button that individuals press when they want to cross the road.

When the switch is pressed, the white LED will start blinking, this represents the light that flashes when people can cross the road. While the white LED is lit up, the traffic light will be red to stop all incoming traffic.

The LDR detects the light sensitivity to determine whether it is day or night. As there are fewer cars on the road at night and the red light is usually shorter in duration. So if the LDR detects a very low light level, it will assume that it is night time and the duration for the red light will decrease.

If there are no interactions, the RGB LED will continuously cycle between the 3 different colors just like a real traffic light. 7 seconds on the green light, 3 seconds on the yellow light that represents the warning, and 7 seconds on the red light. If it's night time, it becomes 3 seconds for the red light. I used 2 inputs and 2 outputs to closely as possible resemble a real-world traffic light.

Interaction Map



Schematic Diagram