Traffic Lights project for Android Things course

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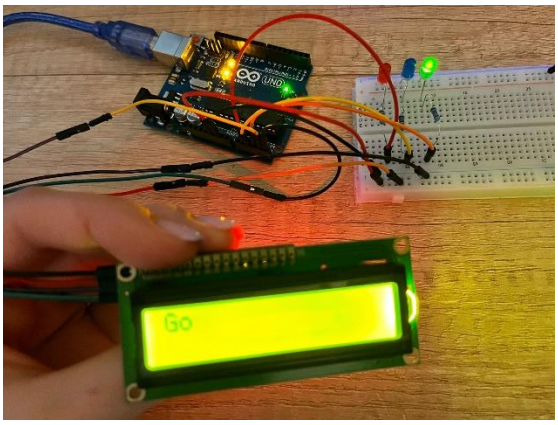
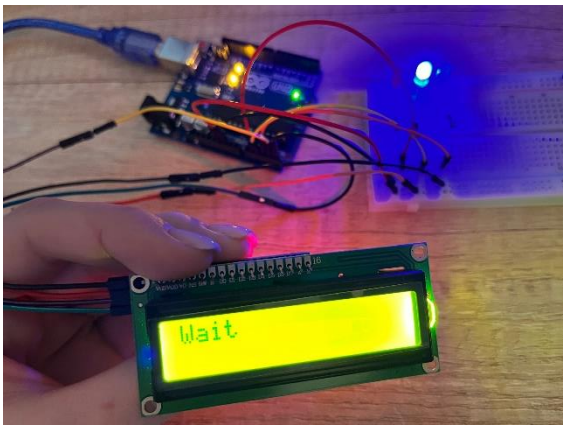
GitHub link here

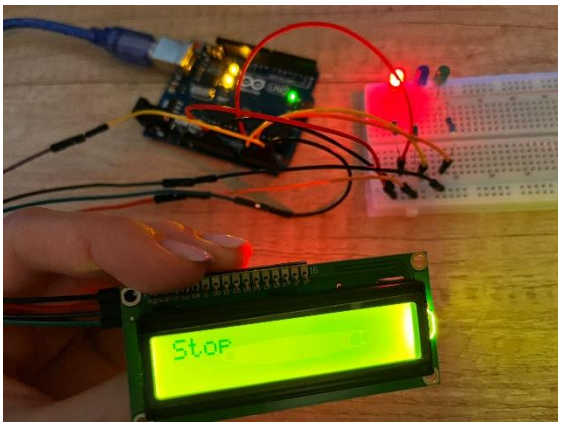
Project Description

For the individual Android Things project I have decided to do Traffic Lights. It focuses on a single junction traffic light system with a led display. When the red led is lighted, on the display it shows “Stop”, for the green light it is “Go”, and for the yellow one (blue in my case, because I did not have a yellow led) it displays “Wait”. The green and red lights stay on for 5 seconds, the blue light stays on for 3 seconds.

Schematics







Prerequisites

- Arduino Uno
- 5MM Led: Red
- 5MM Led: Green
- 5MM Led: Blue
- Jumper Wires
- Breadboard
- Resistors
- LCD Display 16x2 with i2c adapter

Setup and Build

Colored Leds

- I added the colored leds in the breadboard. I connected anode of red led to A1 (Pins from Arduino One). For the yellow (blue) anode one I connected it to A2. For the green anode one I connected it to A3. For the cathode nodes (shorter leg) I connected them to Ground (Gnd). For each anode I used a 1k resistor.

Display

- An i2c adapter was used. It was very useful because the number of wires was reduced. I only needed 4 wires instead of 12.

LiquidCrystal_I2C

- The LiquidCrystal_I2C was added to the Arduino IDE and included in the project. The header “Wire.h” was also included for communication with the I2C device. The “LiquidCrystal_I2C” library helped to better communicate with display.

Running steps

After the setup is done, I connected the Arduino One to my laptop and ran the code.