ECGR4161 – Introduction to Robotics
Lab Assignment #1
Shengkai Xu
02-10-2021

Objective:

As usual, there are two parts of lab. First, student was instructed to install and setup Energia IDE (a Arduino IDE like for TI launchpad micro controllers. Second part of the lab was focus on the programming of the RGB LED on the TI MSP-EXP432P401R board. In this case student are proved an example of the code for the board to blink Red LED every second. Lab requested RGB LED blink in order of: off -> red -> blue -> green -> red&blue -> red&green -> blue&green -> red&blue&green -> off(repeat) with 0.5sec of delay in each LED color change.

URL of the video:
https://youtu.be/3eDsLFUVrrA
https://youtu.be/9-GpwTS-vTc (revision with much less line of code)

Commentary:

I have used example of blink code that was provide and modified to the lab required, there is also second reversion of code which produced the same results as first code, but signification less code which can see it below. I used function to act as single toggle led triggers. There are three value in the function since when using example “red&blue” color need to toggle two LED light in the same time or when there is three LED light needed example as “red&blue&green” to change color to non primary color (red, blue and green).

Code Snippet:

```

#define RED 75          // Define RED of the tri-color LED as pin 75
#define GREEN 76        // Define GREEN of the tri-color LED as pin 76
#define BLUE 77         // Define BLUE of the tri-color LED as pin 77
#define BLANK 0

int ledToggle(int color1, int color2, int color3) {
  digitalWrite(color1, HIGH);
  digitalWrite(color2, HIGH);
  digitalWrite(color3, HIGH);
  delay(500);
  digitalWrite(color1, LOW);
  digitalWrite(color2, LOW);
  digitalWrite(color3, LOW);
  delay(500);
}

void setup() {          // put your setup code here, to run once:
  // initialize one digital pin as outputs.
  pinMode(RED, OUTPUT);       //RED LED
  pinMode(GREEN, OUTPUT);
  pinMode(BLUE, OUTPUT);
}

void loop() {     // put your main code here, to run repeatedly:
  ledToggle (RED, BLANK, BLANK);
  ledToggle (BLUE, BLANK, BLANK);
  ledToggle (GREEN, BLANK, BLANK);
  ledToggle (RED, BLANK, BLUE);
  ledToggle (RED, BLANK, GREEN);
  ledToggle (BLUE, BLANK, GREEN);
  ledToggle (RED, BLUE, GREEN);

}

```