ECGR5196 LAB 2

GROUP: 29

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VIDEO LINK:

https://drive.google.com/drive/folders/1DlGaiaChuohQGhLfaMQKAh8pc6fPK2UG?usp=sharing

https://drive.google.com/file/d/1am5pzm8-h3tSkqxy2Q5c7vQEozh2ADkM/view?usp=sharing

OBJECTIVES:

- Downloading, Installing and Configuring the Energia tool.
- Programming the MSP432 board's RGB LED.

COMMENTARY:

This is a two-part lab. Part 1 is the download, installation and configuration of the Energia Tool for the MSP432 board on the Robot Vehicle and Part 2 is writing a simple code to control the RGB LED on the MSP432 board to follow this pattern **"Off -> red -> blue -> green -> red&blue -> red&green -> blue&green -> red&blue&green -> Off (repeat)"** with a delay of 0.5 seconds between each interval. The video will show the RGB LED following that sequence.

The Energia tool makes it easy to program the MSP432 board. It handles most of the heavy load i.e setting the clock cycle for each GPIO peripheral.

No problems were encountered during the lab work.

CODE:

```
//*******************************************************************
// Blink - verify my MSP432 board works by blinking one LED
// Anyaegbu Somto, 2021-02-21
// Off -> red -> blue -> green -> red&blue -> red&green -> blue&green -> red&blue&green -> Off
(repeat)
```

```
//********************************************************************


#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



void setup() {                  // put your setup code here, to run once:

  // initialize one digital pin as outputs.
  pinMode(RED, OUTPUT);             //RED LED
  pinMode(GREEN, OUTPUT);           //GREEN LED
  pinMode(BLUE, OUTPUT);            //BLUE LED


}

void loop() {    // put your main code here, to run repeatedly:
  digitalWrite(RED, HIGH);        // turn the RBG (RED) LED on (HIGH is the voltage level)
  delay(500);                     // wait for half a second
  digitalWrite(RED, LOW);         // turn the RBG (RED) LED off by making the voltage LOW
  delay(500);                     // wait for half a second

  digitalWrite(BLUE, HIGH);       // turn the RBG (BLUE) LED on (HIGH is the voltage level)
  delay(500);                     // wait for half a second
  digitalWrite(BLUE, LOW);        // turn the RBG (BLUE) LED off by making the voltage LOW
  delay(500);                     // wait for half a second

  digitalWrite(GREEN, HIGH);      // turn the RBG (GREEN) LED on (HIGH is the voltage level)
  delay(500);                     // wait for half a second
  digitalWrite(GREEN, LOW);       // turn the RBG (GREEN) LED off by making the voltage LOW
  delay(500);                     // wait for half a second

  digitalWrite(RED, HIGH);        // turn the RBG (RED) LED on (HIGH is the voltage level)
  digitalWrite(BLUE, HIGH);       // turn the RBG (BLUE) LED on (HIGH is the voltage level)
  delay(500);                     // wait for half a second
```

```
    digitalWrite(RED, LOW);        // turn the RBG (RED) LED off by making the voltage LOW
    digitalWrite(BLUE, LOW);       // turn the RBG (BLUE) LED off by making the voltage LOW
    delay(500);                    // wait for half a second

    digitalWrite(RED, HIGH);       // turn the RBG (RED) LED on (HIGH is the voltage level)
    digitalWrite(GREEN, HIGH);     // turn the RBG (GREEN) LED on (HIGH is the voltage level)
    delay(500);                    // wait for half a second
    digitalWrite(RED, LOW);        // turn the RBG (RED) LED off by making the voltage LOW
    digitalWrite(GREEN, LOW);      // turn the RBG (GREEN) LED off by making the voltage LOW
    delay(500);                    // wait for half a second

    digitalWrite(BLUE, HIGH);      // turn the RBG (BLUE) LED on (HIGH is the voltage level)
    digitalWrite(GREEN, HIGH);     // turn the RBG (GREEN) LED on (HIGH is the voltage level)
    delay(500);                    // wait for half a second
    digitalWrite(BLUE, LOW);       // turn the RBG (BLUE) LED off by making the voltage LOW
    digitalWrite(GREEN, LOW);      // turn the RBG (GREEN) LED off by making the voltage LOW
    delay(500);                    // wait for half a second

    digitalWrite(RED, HIGH);       // turn the RBG (RED) LED on (HIGH is the voltage level)
    digitalWrite(BLUE, HIGH);      // turn the RBG (BLUE) LED on (HIGH is the voltage level)
    digitalWrite(GREEN, HIGH);     // turn the RBG (GREEN) LED on (HIGH is the voltage level)
    delay(500);                    // wait for half a second
    digitalWrite(RED, LOW);        // turn the RBG (RED) LED off by making the voltage LOW
    digitalWrite(BLUE, LOW);       // turn the RBG (BLUE) LED off by making the voltage LOW
    digitalWrite(GREEN, LOW);      // turn the RBG (GREEN) LED off by making the voltage LOW
    delay(500);                    // wait for half a second
}
```