COMP 1045 LAB 2

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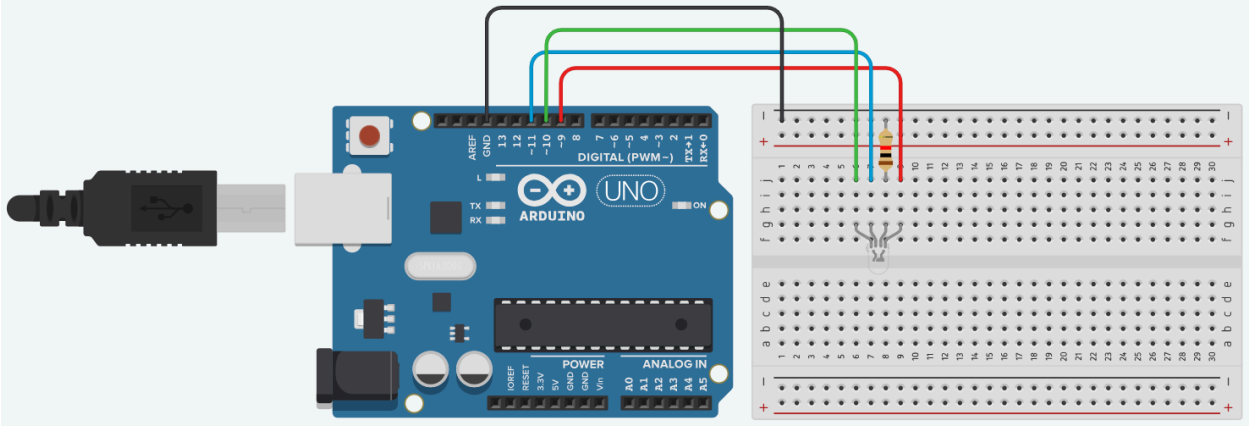
Thinkercad Link: https://www.tinkercad.com/things/kc8BZ9gLLOg-assignment2



Level 1: Copy and paste the source code from the second page of this lab.

Level 2: Create your own personalized 15 second light show. You need to use at least 3 different time variables between 500 and 1000 ms. Add comments every 5 seconds of your light show.

Level 3: Slow the Lights Down Challenge - Modify the program to progressively cycle through each of the colors 7 colors and have it get slower each time. For example, start at a rate of cycling all 7 colors in 1 second then after 10 cycles cycling it will take 10 seconds to complete the cycle. You should use a for loop to complete this task. There will be a bit of math to figure out how much the delay should increase by each cycle.

Level 1:

```
int RGBRedPin = 9;
int RGBGreenPin = 10;
int RGBBluePin = 11;
int waitTime = 2000;

void setup() {
  pinMode(9,OUTPUT);
  pinMode(10,OUTPUT);
```

```
  pinMode(11,OUTPUT);
}

void loop() {
  //Display Red
  digitalWrite(9, HIGH);
  delay(waitTime);
  digitalWrite(9, LOW);

  //Display Green
  digitalWrite(10, HIGH);
  delay(waitTime);
  digitalWrite(10, LOW);

  //Display Blue
  digitalWrite(11, HIGH);
  delay(waitTime);
  digitalWrite(11, LOW);

  //Display Magenta
  digitalWrite(9, HIGH);
  digitalWrite(11, HIGH);
  delay(waitTime);
  digitalWrite(9, LOW);
  digitalWrite(11, LOW);

  //Display Yellow
  digitalWrite(9, HIGH);
  digitalWrite(10, HIGH);
  delay(waitTime);
  digitalWrite(9, LOW);
  digitalWrite(10, LOW);

  //Display Cyan (Blue + Green)
  digitalWrite(11, HIGH);
  digitalWrite(10, HIGH);
  delay(waitTime);
  digitalWrite(11, LOW);
  digitalWrite(10, LOW);
```

```
  //Display White (Red + Blue + Green)
  digitalWrite(9, HIGH);
  digitalWrite(11, HIGH);
  digitalWrite(10, HIGH);
  delay(waitTime);
  digitalWrite(9, LOW);
  digitalWrite(11, LOW);
  digitalWrite(10, LOW);
}
```

Level 2:

```
int RGBRedPin = 9;
int RGBGreenPin = 10;
int RGBBluePin = 11;
int waitTime = 3000;

void setup() {
  pinMode(9,OUTPUT);
  pinMode(10,OUTPUT);
  pinMode(11,OUTPUT);
}

void loop() {
  //First 5 Seconds
  //Display Blue
  digitalWrite(11, HIGH);
  delay(waitTime);
  digitalWrite(11, LOW);

  //Color Magenta for 5 seconds
  digitalWrite(9, HIGH);
  digitalWrite(11, HIGH);
  delay(500);
  digitalWrite(9, LOW);
  digitalWrite(11, LOW);

  //Display Green
  digitalWrite(10, HIGH);
  delay(waitTime);
```

```
  digitalWrite(10, LOW);

  //10Seconds Below
  //Display Yellow
  digitalWrite(9, HIGH);
  digitalWrite(10, HIGH);
  delay(waitTime);
  digitalWrite(9, LOW);
  digitalWrite(10, LOW);

  // Display Cyan (Blue + Green)
  digitalWrite(9, HIGH);
  digitalWrite(10, HIGH);
  delay(1000);
  digitalWrite(9, LOW);
  digitalWrite(10, LOW);

  //Display Green
  digitalWrite(10, HIGH);
  delay(waitTime);
  digitalWrite(10, LOW);

  //Last 5 Seconds
  //Display Red
  digitalWrite(9, HIGH);
  delay(waitTime);
  digitalWrite(9, LOW);

  //Display Yellow
  digitalWrite(9, HIGH);
  digitalWrite(10, HIGH);
  delay(800);
  digitalWrite(9, LOW);
  digitalWrite(10, LOW);

  //Display Red
  digitalWrite(9, HIGH);
  delay(waitTime);
  digitalWrite(9, LOW);
}
```

Level 3:

```
int RGBRedPin = 9;
int RGBGreenPin = 10;
int RGBBluePin = 11;
int delayTime = 1000;


void setup() {
  pinMode(9,OUTPUT);
  pinMode(10,OUTPUT);
  pinMode(11,OUTPUT);
}

void loop() {
  for (int i = 0; i < 7; i++) {
    //Display Red
    digitalWrite(9, HIGH);
    delay(delayTime/7);
    digitalWrite(9, LOW);

    //Display Green
    digitalWrite(10, HIGH);
    delay(delayTime/7);
    digitalWrite(10, LOW);

    //Display Blue
    digitalWrite(11, HIGH);
    delay(delayTime/7);
    digitalWrite(11, LOW);

    //Display Magenta (Red + Blue)
    digitalWrite(9, HIGH);
    digitalWrite(11, HIGH);
    delay(delayTime/7);
    digitalWrite(9, LOW);
    digitalWrite(11, LOW);

    //Display Yellow (Red + Green)
    digitalWrite(9, HIGH);
```

```
    digitalWrite(10, HIGH);
    delay(delayTime/7);
    digitalWrite(9, LOW);
    digitalWrite(10, LOW);

    //Display Cyan (Blue + Green)
    digitalWrite(11, HIGH);
    digitalWrite(10, HIGH);
    delay(delayTime/7);
    digitalWrite(11, LOW);
    digitalWrite(10, LOW);

    //Display White (Red + Blue + Green)
    digitalWrite(9, HIGH);
    digitalWrite(10, HIGH);
    digitalWrite(11, HIGH);
    delay(delayTime/7);
    digitalWrite(9, LOW);
    digitalWrite(10, LOW);
    digitalWrite(11, LOW);

    i = i + 1;
  }
}
```