SOS (LED's and Arrays)

Time required: 30 minutes

Please read all the directions carefully before beginning the assignment.

1. Comment your code as shown in the tutorials and other code examples.

2. Follow all directions carefully and accurately.

3. Think of the directions as minimum requirements.

Understanding

Demonstrate understanding of:

arrays

A variable stores only a single value. Arrays store more than one instance of a variable, they store a list of variables/values. Please go to the following web site to learn more about arrays.

https://startingelectronics.org/software/arduino/learn-to-program-course/17-arrays/

Tutorial Assignment

1. Start the Arduino IDE. Save the sketch as **SOS**.

2. Complete and test the program as pictured with the requirements listed.

Requirements

1. Complete and successfully run the program as displayed.

2. Comment your code.

Tutorial

```
 1 /**
 2    @file    SOS.ino
 3    @author  William A Loring
 4    @version V1.0.0
 5    @date revised 06/07/2017  created: 12/17/16
 6    @Description: LED's and arrays
 7 */
 8 #include <MeMCore.h>  // Include mBot library
 9 // Initialize global variables
10 MeRGBLed led(0, 30);  // Setup the onboard LED object
11 // Array of integers for SOS durations in morse code
12 const int DURATIONS[] = {200, 200, 200, 500, 500, 500, 200, 200, 200};
13
14 // Initialization code, only runs once
15 void setup() {
16    led.setpin(13); // Set the pin to access the onboard LED's
17 }
18
19 // Loop forever
20 void loop() {
21    for (int i = 0; i < 9; i++) { // Step through the array 0-8
22      flash(DURATIONS[i]); // Call the flash function with the durations values from the array
23    }
24    delay(1000);
25 }
26
27 // Function to blink Led's in SOS
28 void flash(int delayTime)
29 {
30    led.setColor(60, 0, 0); // Set both LED's to Red
31    led.show();              // Use .show() to make new color take effect.
32    delay(delayTime);        // Delay in milliseconds
33    led.setColor(0, 0, 0);   // Set both LED's off
34    led.show();              // Use .show() to make new color take effect.
35    delay(delayTime);        // Delay in milliseconds
36 }
```

Assignment

Start with your tutorial project and add the following.

1. Use the buzzer to send an SOS.

Assignment Submission

- **All students** → Attach finished programs to the assignment in Blackboard.

- **In class assignment submission** → Demonstrate in person.

- **Online submission** → A link to a YouTube video recording showing the assignment placed in the submission area in BlackBoard.