# Lab 5 - Embedded Systems II

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CS312 - Computer Architecture II

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In this lab you will be code a simple Morse Code SOS using Arrays in Arduino.

## 1 Description

You are required to code a Morse Code SOS using `arrays`, a `for` loop and an external function. The basic Arduino functions are just as in the previous lab exercise, however now you will need to do the following as **global** or in **setup** function:

1. Create an `array` which store the timing data for the entire SOS signal in Morse code.
2. Use 2000ms for **S** and 5000ms for **O**
3. Use PIN 13 as the output

In **loop** function write a **single** `for` loop, what iterate through the entire Morse Code SOS array and sends the signal to an external function.

Create an external **function** that sets the PIN to HIGH and LOW depending on the timing sequence from array.

You are only allowed to use one `array` and one `for` loop as described above.

### 1.1 Hardware

Four Arduino UNO's, LEDs, resistors, hookup wire, and a breadboard is available in Hebeler 214D during lab sessions and office hours. Otherwise, any personal Arduino device can be used to test your code.

In addition you can generate a simulation in `www.circuits.io` using the following Figure 1 as your reference.

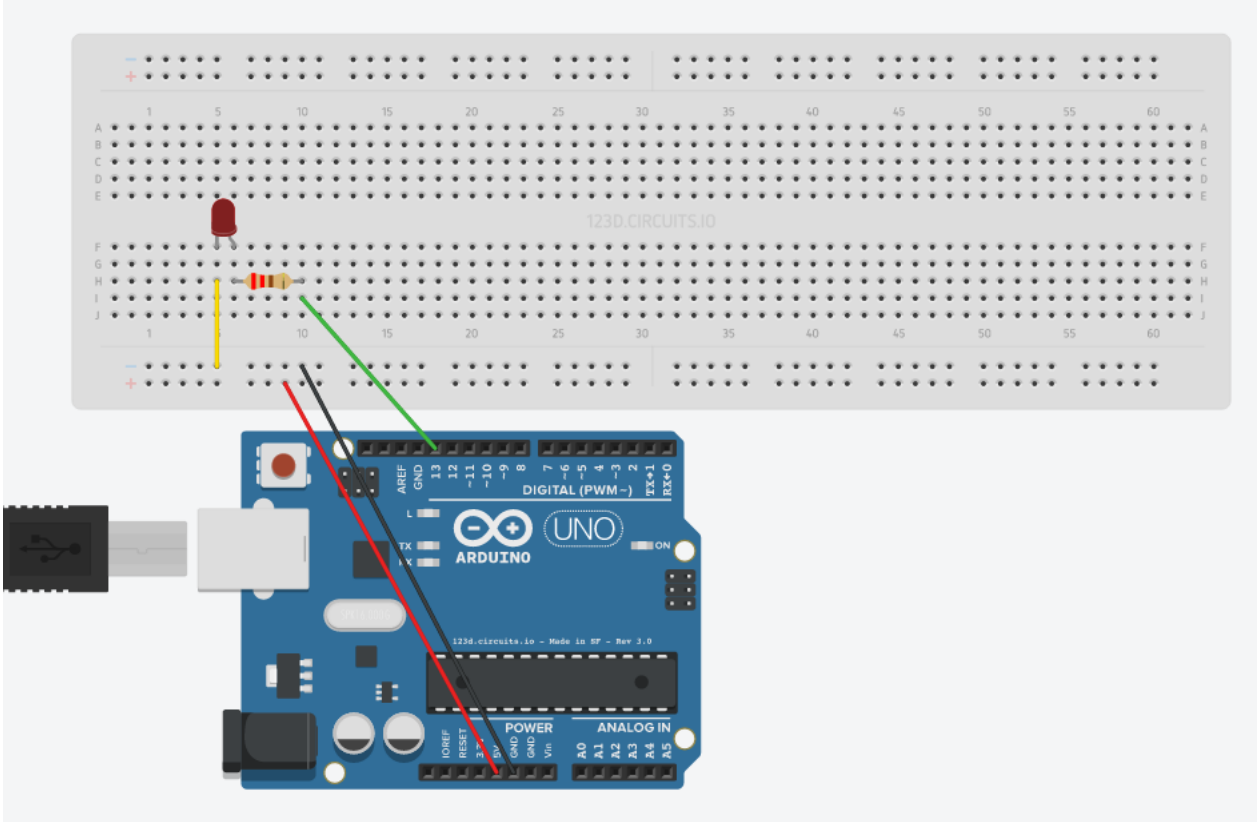


Figure 1: Wiring Diagram

# Submission

The student must submit the following file to canvas:

1. `Lab5.ino`

The file must be submitted through Canvas by 5pm February 24, 2017. The penalty for late submission is 10% for 1 day, 20% for 2 day, after which it will be zero. The grading rubric is given in Table 1.

Table 1: Grading rubric

| File | Aspects | Points |
|---|---|---|
| `Lab4.ino` | Correct implementation | 50 |
| | Correct `array` | 15 |
| | Correct `for` loop | 15 |
| | Correct function | 20 |