Function Junction

Time required: 30 minutes

Please read all the directions carefully before beginning the assignment.

- Comment your code as shown in the tutorials and other code examples.
- Follow all directions carefully and accurately.
- Think of the directions as minimum requirements.

Understanding

Demonstrate understanding of:

light sensor, serial monitor

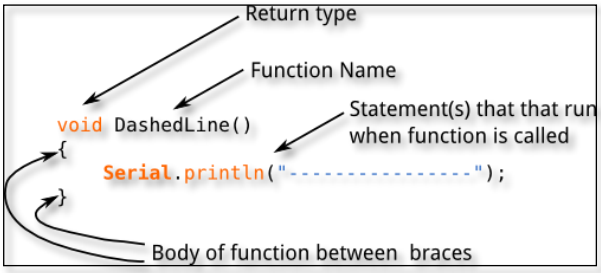
Knowledge Points

As our code gets longer and more complex, it can get difficult to follow. Functions allow for reusable and modular code. A function is a code block. It wraps up everything needed to provide a service to the program. You can easily reuse the code in another sketch or the same sketch.

We have used pre written functions, such as **led.setColorAt();** and **delay(500);**. We will start writing our own.

Please go to the following web site to learn more about functions.

https://startingelectronics.org/software/arduino/learn-to-program-course/15-functions/



Sample function

```
// Loop forever function
void loop() {
  // Call function
  simpleFunction();
}

void simpleFunction() {
  // Put the code here
}
```

Requirements

Break our code into smaller chunks by dividing our code into functions.

Tutorial Assignment

1. Start the Arduino IDE. Save the sketch as **FunctionJunction**.
2. Complete and test the program as shown.

Challenge

- Create a new function that does something with LED's and/or sound.
- Call the new function.

Assignment Submission

1. All students: Zip up the sketch folder. Attach the zip file to the assignment in Blackboard.
2. The assignment is demonstrated in class.
3. Online students: A link to a YouTube video recording showing your robot going through its motions is placed in the submission area in BlackBoard.

```
/**
   @file    FunctionJunction.ino
   @author  William A Loring
   @version V1.0.0
   @date revised 02/20/2018  created: 12/16/16
   @Description: Access the mBot onboard LED's with functions
*/
#include <MeMCore.h>          // Include mBot library
// Initialize global variables
MeRGBLed led(0, 30);          // Create LED object
const int BLINK_DELAY = 500;  // Initialize a constant for the delay time

// Initialization code, only runs once
void setup() {
  // Set the physical pin to access the onboard LED's
  led.setpin(13);
}

// Loop forever
void loop() {
  // Call function
  blinkLed();
  // Call new function here
}

//-----------------------------------------------------------------
// Function to blink on board LED's
//-----------------------------------------------------------------
void blinkLed() {
    led.setColorAt(0, 60, 0, 0);  // Set LED0 (RightSide) to Red
    led.setColorAt(1, 0, 0, 60);  // Set LED1 (LeftSide)  to Blue
    led.show();                   // Show the specified color
    delay(BLINK_DELAY);

    led.setColorAt(0, 0, 0, 60);  // Set LED0 (RightSide) to Blue
    led.setColorAt(1, 60, 0, 0);  // Set LED1 (LeftSide)  to Red
    led.show();                   // Show the specified color
    delay(BLINK_DELAY);
 }

// Create new function here
```