

```
#include <Wire.h> //Including necessary libraries to the function.
#include <LiquidCrystal_I2C.h>

// Set the LCD address to 0x27 for a 20 chars and 4 line display
LiquidCrystal_I2C lcd(0x27, 20, 4);

void setup()
{
    // initialize the LCD
    lcd.init();

    //initialize outputs
    pinMode(9, OUTPUT); //Red LED
    pinMode(10,OUTPUT); //Red LED
    pinMode(11, OUTPUT); //Green LED
    pinMode(12, OUTPUT); //Green LED

    Serial.begin(9600); // start serial monitor to get baseline light intensity.

    lcd.backlight(); // Turn on the backlight and print a message.

}

void loop()
{

    //defining local variable "sensorValue" as the value the photoresistor reads.
```

```
int sensorValue = analogRead(A0);

Serial.println(sensorValue); //Start serial monitor and read the photoresistor every 100 milliseconds

//Check serial monitor and see value outputted with the lights on and off.
//These on and off values will be the tolerances for the if statement.
//for example if the lights are on and the sensor is reading 35 then 35 is the minimum value for the on
screen.

if (sensorValue > 35) {
    lcd.setCursor(3, 0); //Setting the start point for the LCD on the first space in the top row.
    lcd.print("O'Dea MakerSpace"); //Printing the string inside the quote on indicated line.
    lcd.setCursor(2,0);
    lcd.print("Status: open");
    lcd.setCursor(1,0);
    lcd.print("Current Teacher:");
    lcd.setCursor(0,0);
    lcd.print("Dr. White");

    digitalWrite(11, HIGH); //Switching the green LEDs on to indicate room is open.
    digitalWrite(12, HIGH);
    digitalWrite(10, LOW); //Switching the red LEDs off.
    digitalWrite(9, LOW);
    delay(500); //Constant power intervals to the LEDs in half second intervals.
    //This is done to allow the LCD screen to keep a constant display and not blink.
}
```

```
else {  
    lcd.print("O'Dea MakerSpace"); //Printing the string inside the quote on indicated line.  
    lcd.setCursor(2,0);  
    lcd.print("Status: Closed");  
    lcd.setCursor(1,0);  
    lcd.print("No Teacher Present");  
    lcd.setCursor(0,0);  
    lcd.print("Roll Irish");  
  
    digitalWrite(9, HIGH); //Switching the red LEDs on to indicate room is closed.  
    digitalWrite(10, HIGH);  
    digitalWrite(11, LOW); //Switching the green LEDs off.  
    digitalWrite(12, LOW);  
    delay(500);  
}  
  
}
```