Computer Science 305

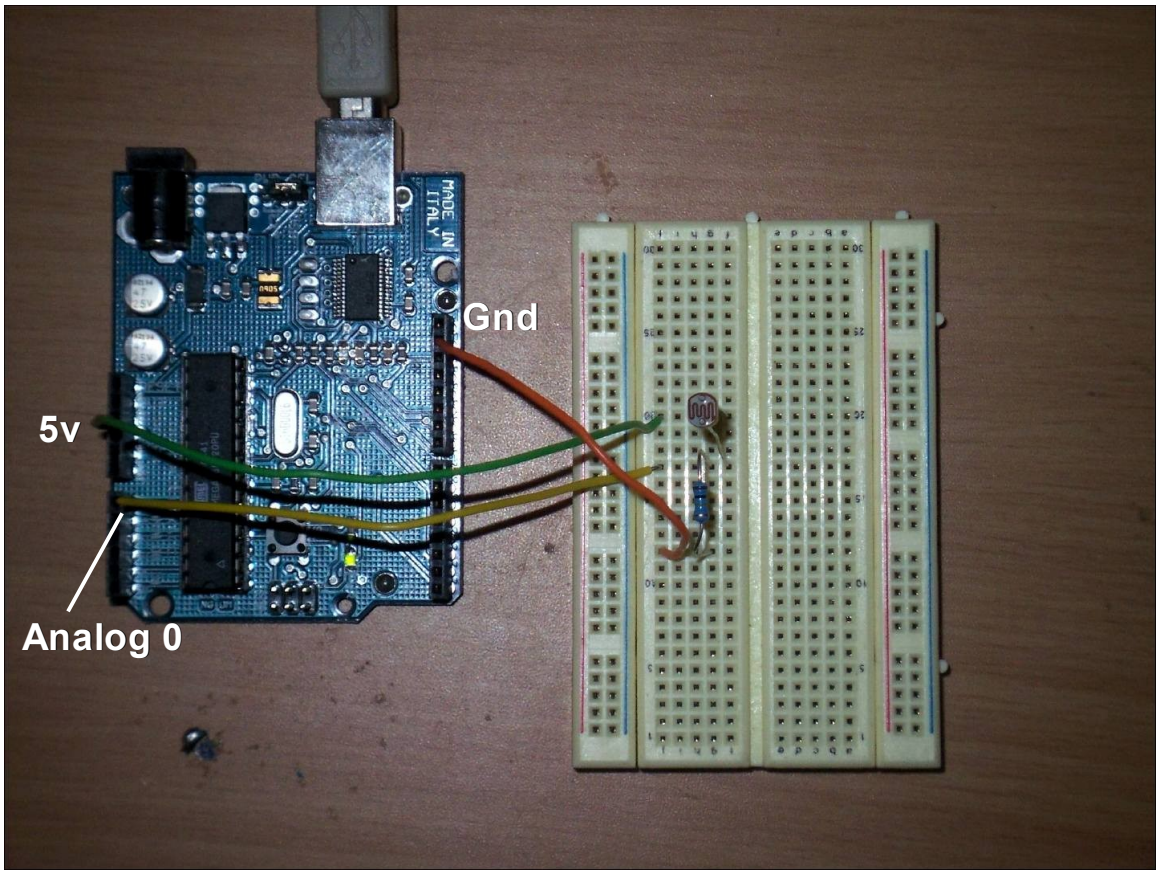
Arduino Lab 4: Basic Sensors

Name: _____ Signature _____

Light sensor

Your kit included a light sensor. In the absence of light the resistance of this light sensor (actually a Light Dependent Resistor) is very high. When you shine a light on it the resistance decreases. In a way, it is a light activated potentiometer. In the potentiometer lab we already learned about analogRead() and we will use that information here. Build the following circuit and run the provided code. The blinking of the onboard LED will be dependent on the amount of light the light sensor receives.

Circuit:



```
#define LED 13                    // pin for LED
#define SENSOR 0                  // light sensor
int value = 0;                    // variable to keep the sensor value

void setup()
{
  pinMode(LED, OUTPUT);
}

void loop()
{

      val = analogRead(SENSOR);
      digitalWrite(LED, HIGH);
      delay(val);
      digitalWrite(LED, LOW);
      delay(val);


}
```

Signed off by _____

Challenge 1

Design a circuit where the light sensor controls the brightness of an LED.

Signed off by _____

Take Home Challenge

Design a circuit that will determine whether a plant needs watering. If the plant has adequate water a lovely blue LED will glow. When the plant needs water the blue LED will turn off and a red LED will glow. The drier the plant the brighter the red LED.

This project will be demo'd in class on March 12th.