# Keyes KY-020 Mini Tilt Switch Sensor

These instructions will allow you to construct a sensor that can detect when it is tilted. The sensor contains a small metal ball that will complete a circuit depending on where it is in the sensor. Because the sensor is very basic, it can only detect large changes in its tilt, and cannot measure the angle of its tilt.

Construction

You will want to construct your sensor like this.
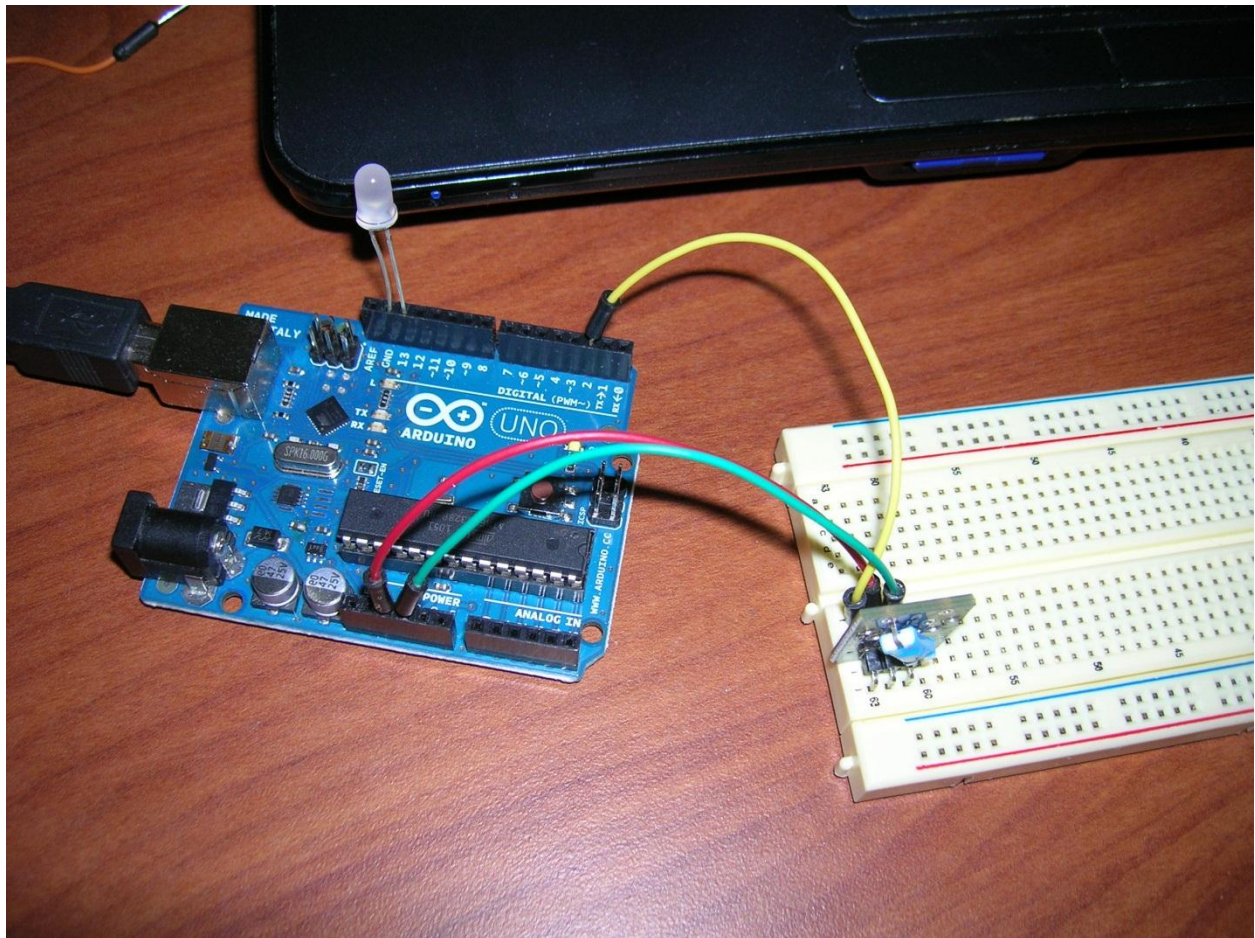
As always, take special care that you place the wires in the correct spots to avoid damaging the sensor. The ground wire should correspond with the pin near the – on the board. The Data wire should correspond with the pin near the S on the board. The 5V should correspond with the middle pin.

You will want to place your LED so the long wire is in pin 13, and the short wire is in the ground slot. If you place it backwards, the LED will not work. There is also an LED on the Arduino board that will automatically work if you don't have an LED, but that's not as fun.

Code

The code is quite basic. In a nutshell, all the code says is to detect whether the signal it is receiving is strong or weak. It will adjust the LED brightness accordingly, turning it on or off. There are several codes available online, but this one seems to work best.

Code found at http://arduino.cc/en/Tutorial/Button

```
/*

 Button

Turns on and off a light emitting diode(LED) connected to digital

pin 13, when pressing a pushbutton attached to pin 2.


The circuit:

* LED attached from pin 13 to ground

* pushbutton attached to pin 2 from +5V

* 10K resistor attached to pin 2 from ground


* Note: on most Arduinos there is already an LED on the board

attached to pin 13.


created 2005

by DojoDave <http://www.0j0.org>

modified 30 Aug 2011

by Tom Igoe
```

This example code is in the public domain.

http://www.arduino.cc/en/Tutorial/Button

```
*/

// constants won't change. They're used here to
// set pin numbers:
const int buttonPin = 2;    // the number of the pushbutton pin
const int ledPin =  13;     // the number of the LED pin

// variables will change:
int buttonState = 0;        // variable for reading the pushbutton status

void setup() {
 // initialize the LED pin as an output:
 pinMode(ledPin, OUTPUT);
 // initialize the pushbutton pin as an input:
 pinMode(buttonPin, INPUT);
}

void loop(){
 // read the state of the pushbutton value:
 buttonState = digitalRead(buttonPin);

 // check if the pushbutton is pressed.
 // if it is, the buttonState is HIGH:
 if (buttonState == HIGH) {
  // turn LED on:
  digitalWrite(ledPin, HIGH);
 }
```

```
  else {

    // turn LED off:

    digitalWrite(ledPin, LOW);

  }

}
```

This code is quite basic and should work for most digital Arduino switches like buttons or reed switches.