

Touch Sensor

<http://playground.arduino.cc/Main/CapacitiveSensor>

The capacitiveSensor library turns two or more Arduino pins into a capacitive sensor, which can sense the electrical capacitance of the human body. All the sensor setup requires is a medium to high value resistor and a piece of wire and a small (to large) piece of aluminum foil on the end. At its most sensitive, the sensor will start to sense a hand or body inches away from the sensor.

Version 04 adds support for Arduino 1.0, and fixes an obscure possible race condition with Tone, Servo and other libraries that perform I/O in interrupt context.

Version 03 has been updated to C++ and supports multiple inputs. It also includes some utility functions to make it convenient to change timeout values.

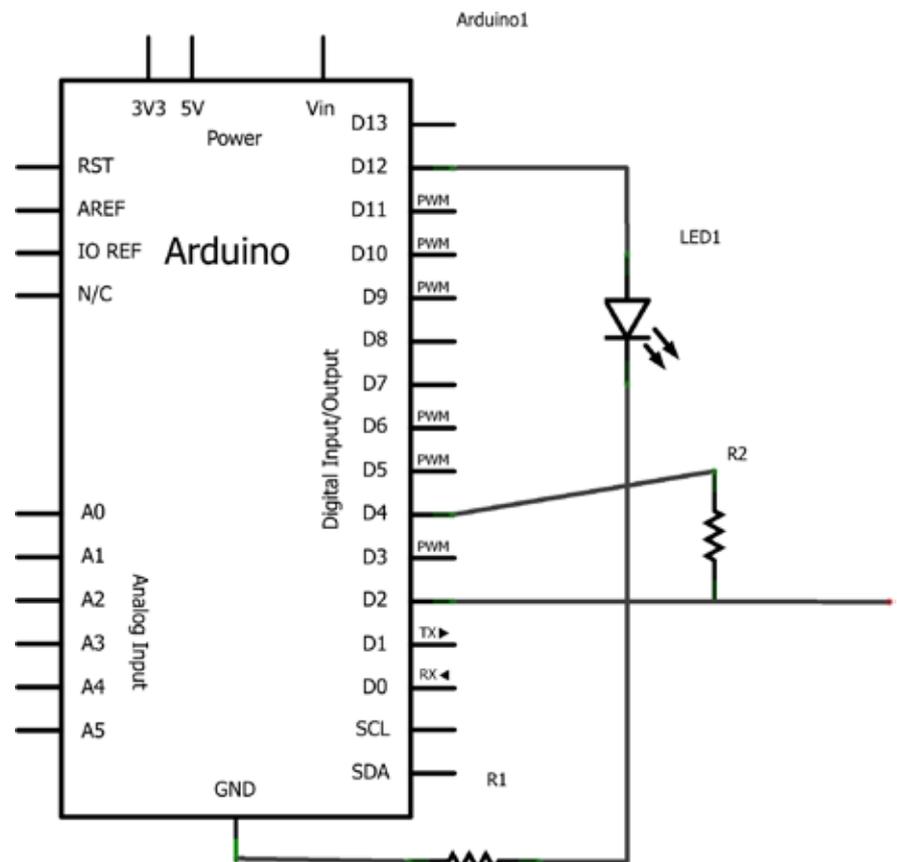
HARDWARE REQUIRED

Arduino Board
1 LED
1 470 Ω m Resistor
1 1M Ω m Resistor
breadboard
hook-up wire

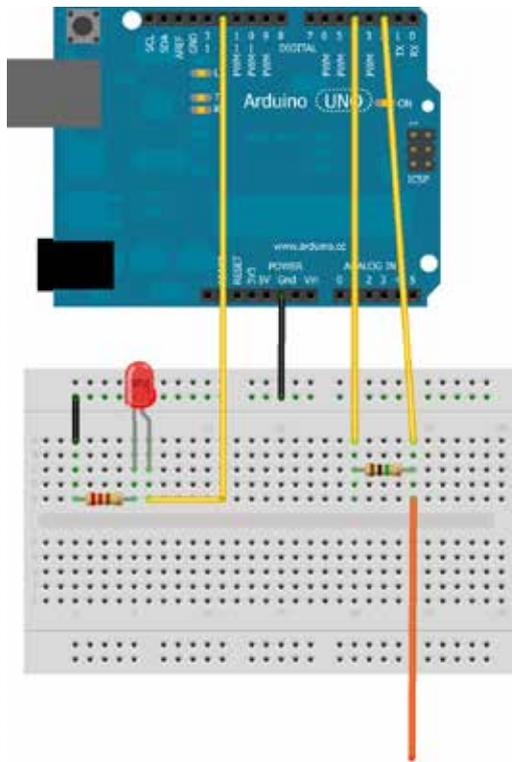
CIRCUIT

Here are some guidelines for resistors but be sure to experiment for a desired response. Use a 1 megohm resistor (or less maybe) for absolute touch to activate.

SCHEMATIC



IMAGE



CODE

```
// import the library (must be located in the
// Arduino/libraries directory)
#include <CapacitiveSensor.h>

// create an instance of the library
// pin 4 sends electrical energy
// pin 2 senses a change
CapacitiveSensor capSensor = CapacitiveSensor(4,2);

// threshold for turning the lamp on
int threshold = 1000;

// pin the LED is connected to
const int ledPin = 12;

void setup() {
  // open a serial connection
  Serial.begin(9600);
  // set the LED pin as an output
  pinMode(ledPin, OUTPUT);
}

void loop() {
  // store the value reported by the sensor in a variable
  int sensorValue = capSensor.capacitiveSensor(30);

  // print out the sensor value
  Serial.println(sensorValue);

  // if the value is greater than the threshold
  if(sensorValue > threshold) {
    // turn the LED on
    digitalWrite(ledPin, HIGH);
  }
  // if it's lower than the threshold
  else {
    // turn the LED off
    digitalWrite(ledPin, LOW);
  }

  delay(10);
}
```

/*
Arduino Starter Kit example
Project 13 - Touch Sensor Lamp

This sketch is written to accompany Project 13
in the
Arduino Starter Kit

Parts required:
1 Megohm resistor
metal foil or copper mesh
220 ohm resistor
LED

Software required :
CapacitiveSensor library by Paul Badger
[http://arduino.cc/playground/Main/
CapacitiveSensor](http://arduino.cc/playground/Main/CapacitiveSensor)

Created 18 September 2012
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<http://arduino.cc/starterKit>

This example code is part of the public domain
*/