physical computing .2 – Day 2

NCTU Taiwan
playaround workshop
microplayground

2008

kiilo ||| dusjagr

overview

Overview – Day 2

Digital Input / Output – Arduino

- control sound machine
- control voltage using a transistor
- control relais and 110 V stuff
- control hacked toys

Analog Input – Arduino

- pduino
- check serial

Programming Arduino

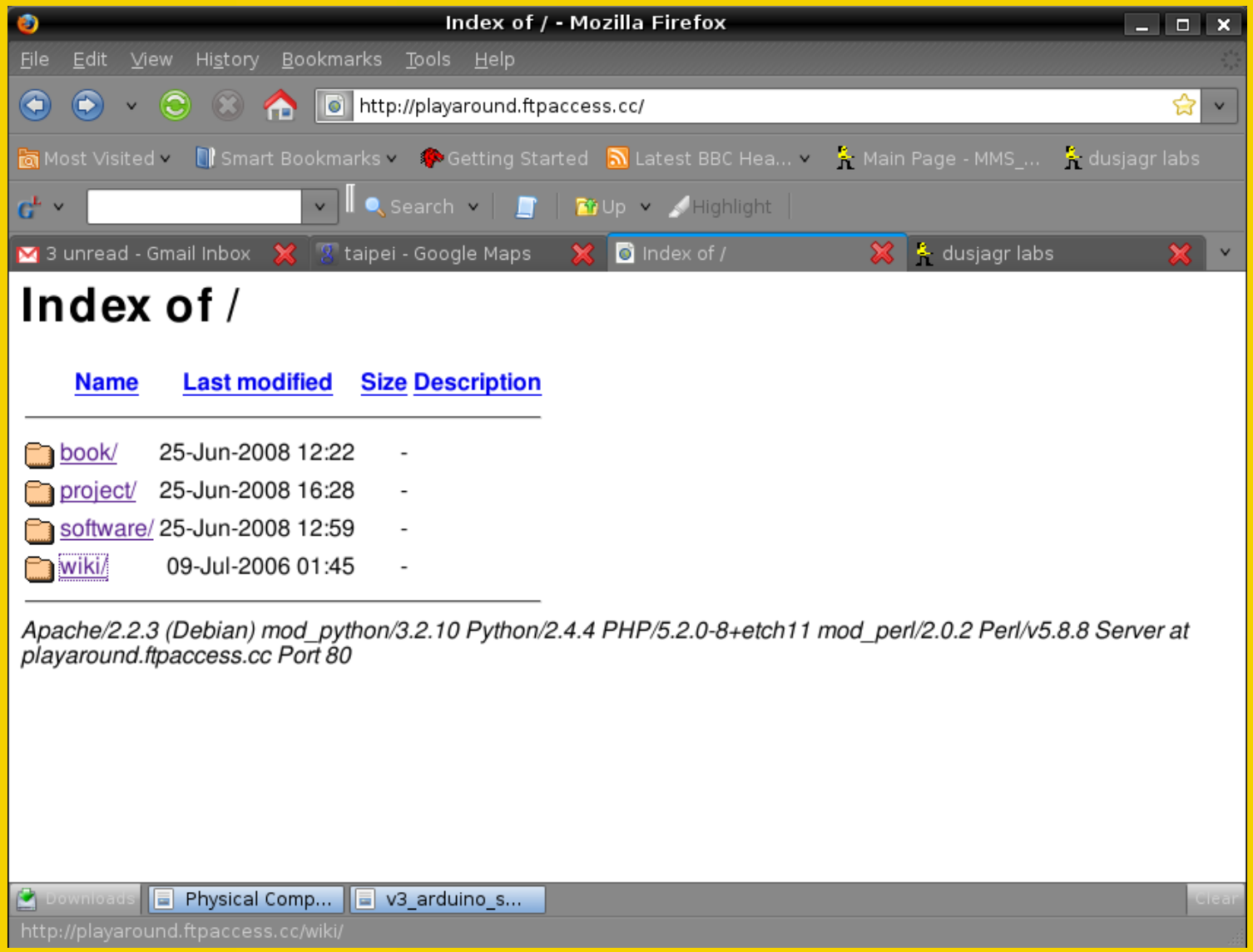
physical computing .2

let's start !

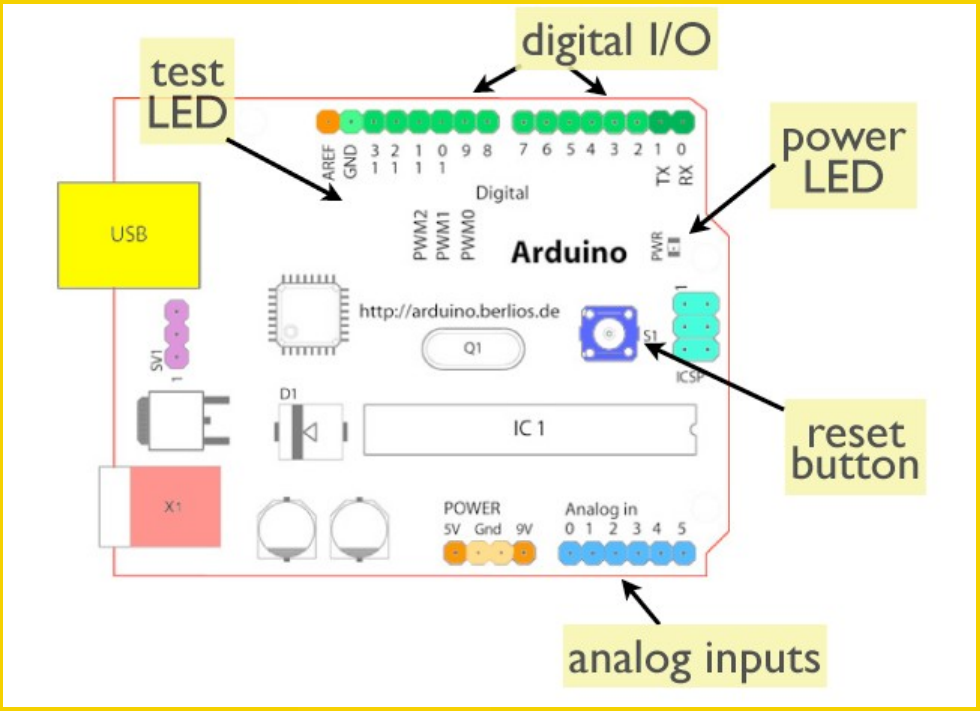
playaround fileserver

username: play
password: around

http://playaround.ftpaccess.cc/



physical computing



It is all about connection

HowTo connect to breadboard

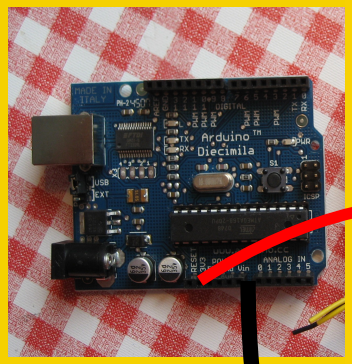
HowTo communicate with Computer

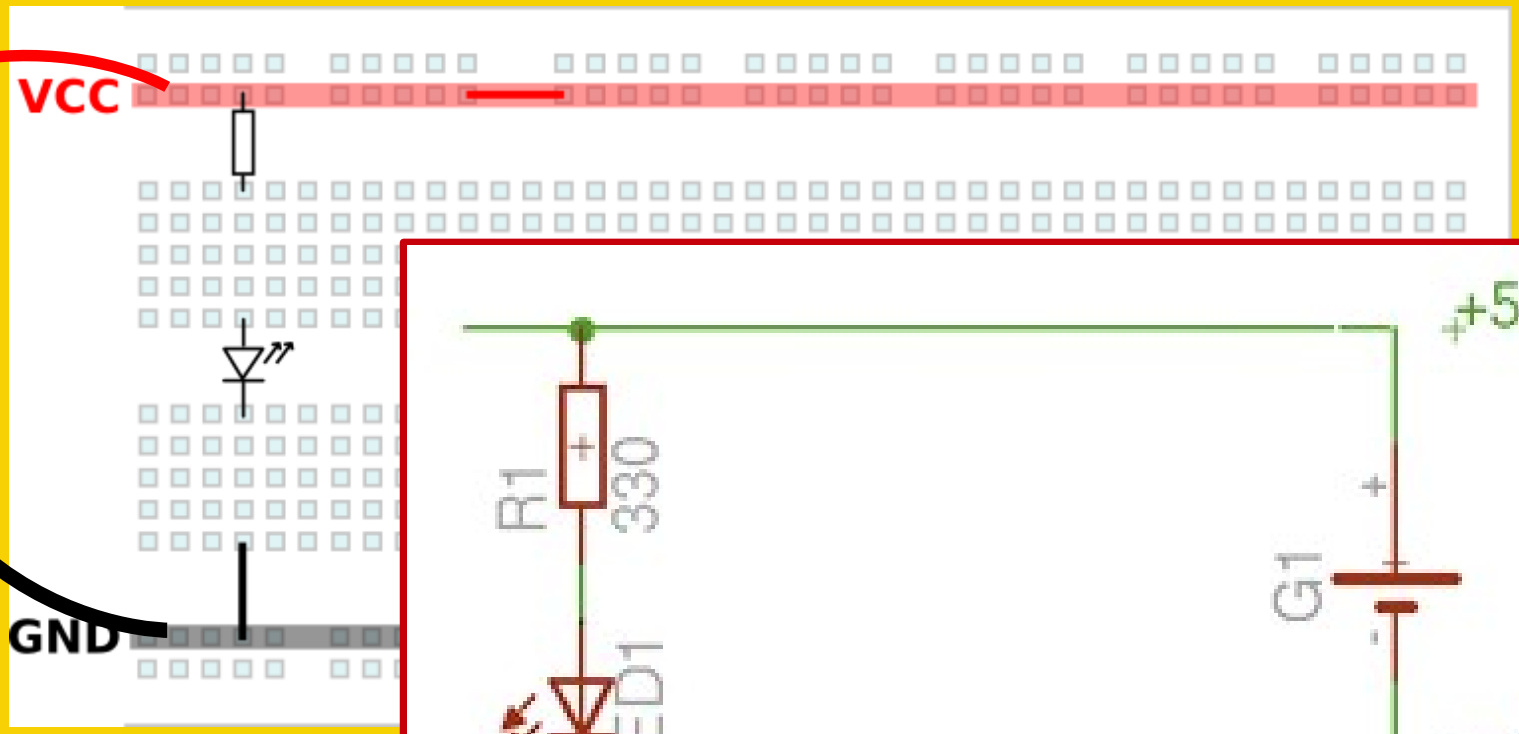
HowTo connect your creativity

HowTo not getting confused?

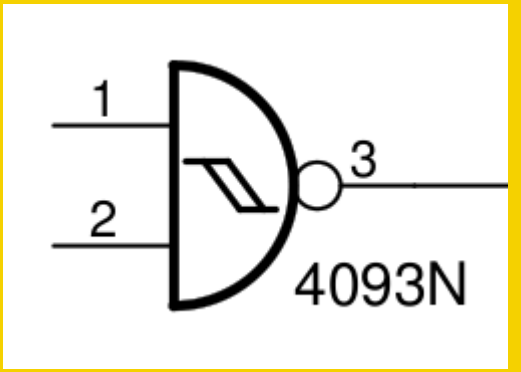
physical connecting – power from arduino

Bridge the big gap!

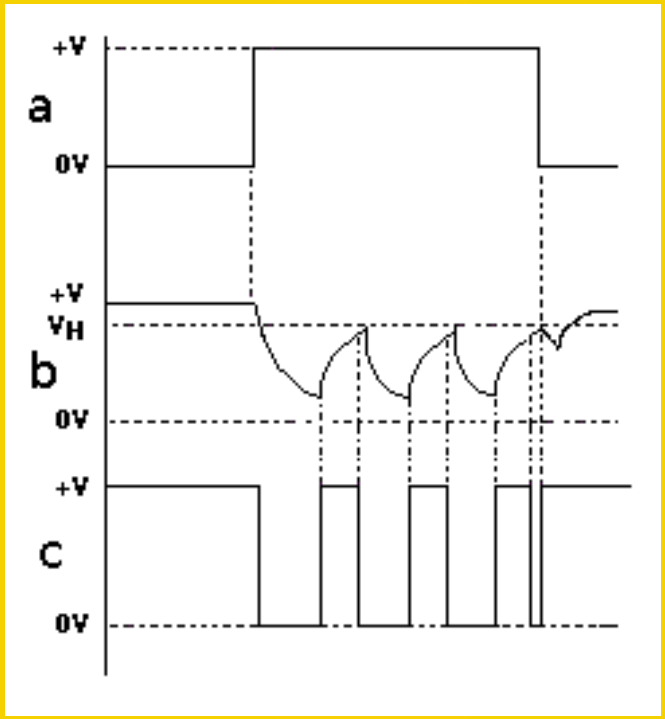


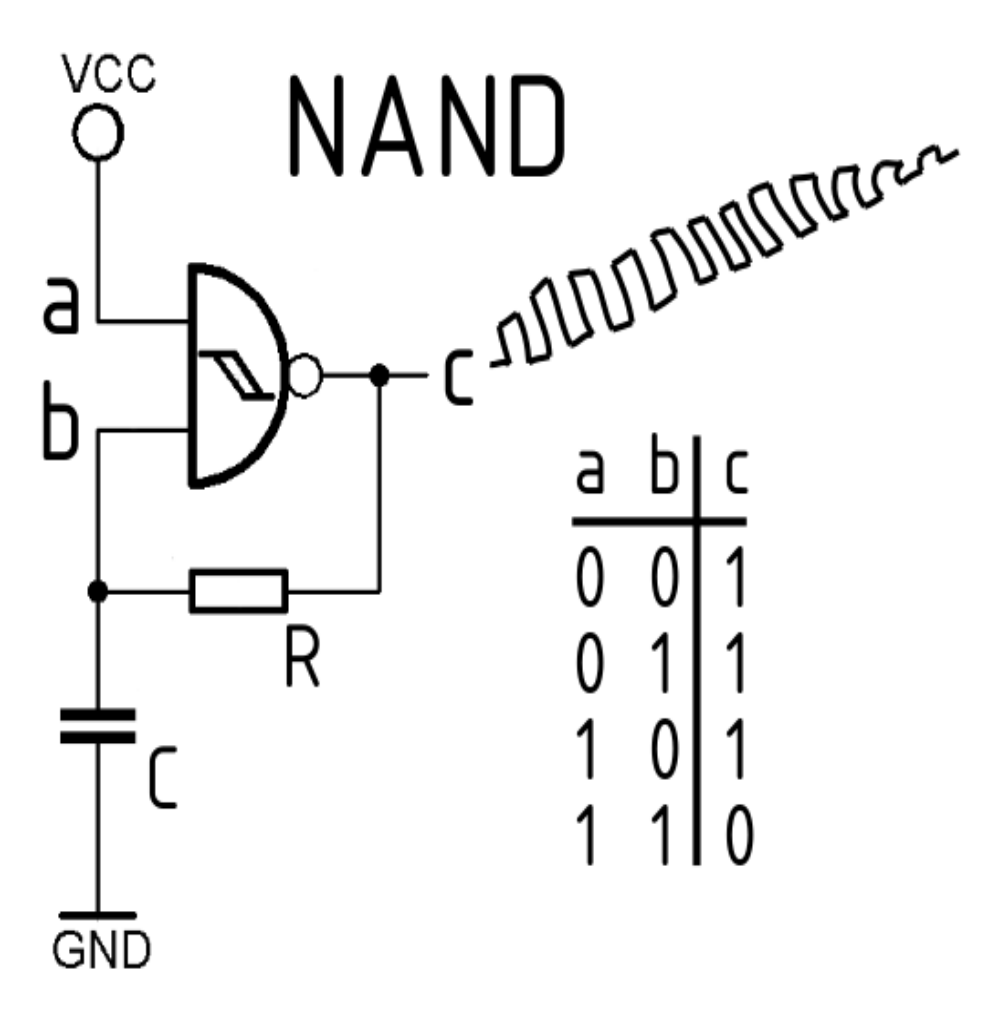


Simple NAND oscillator

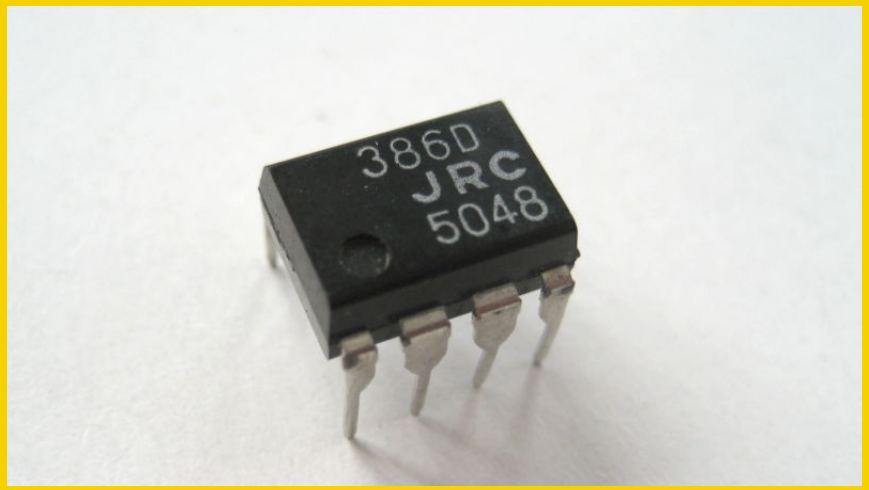


Control from Arduino

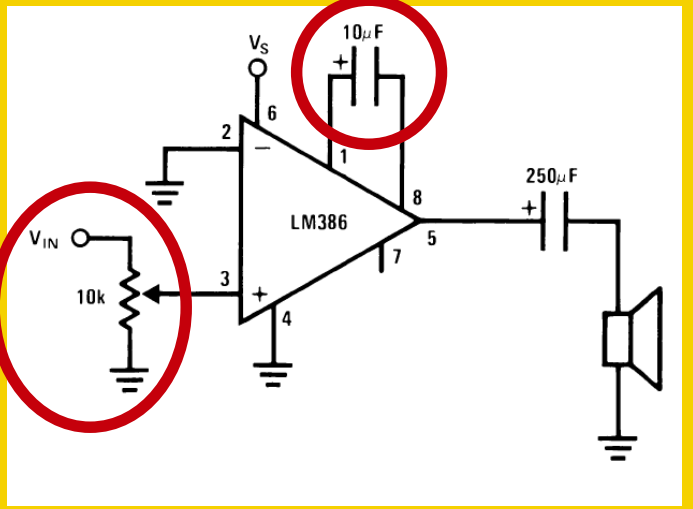




LM386 – Audio Amplifier Chip

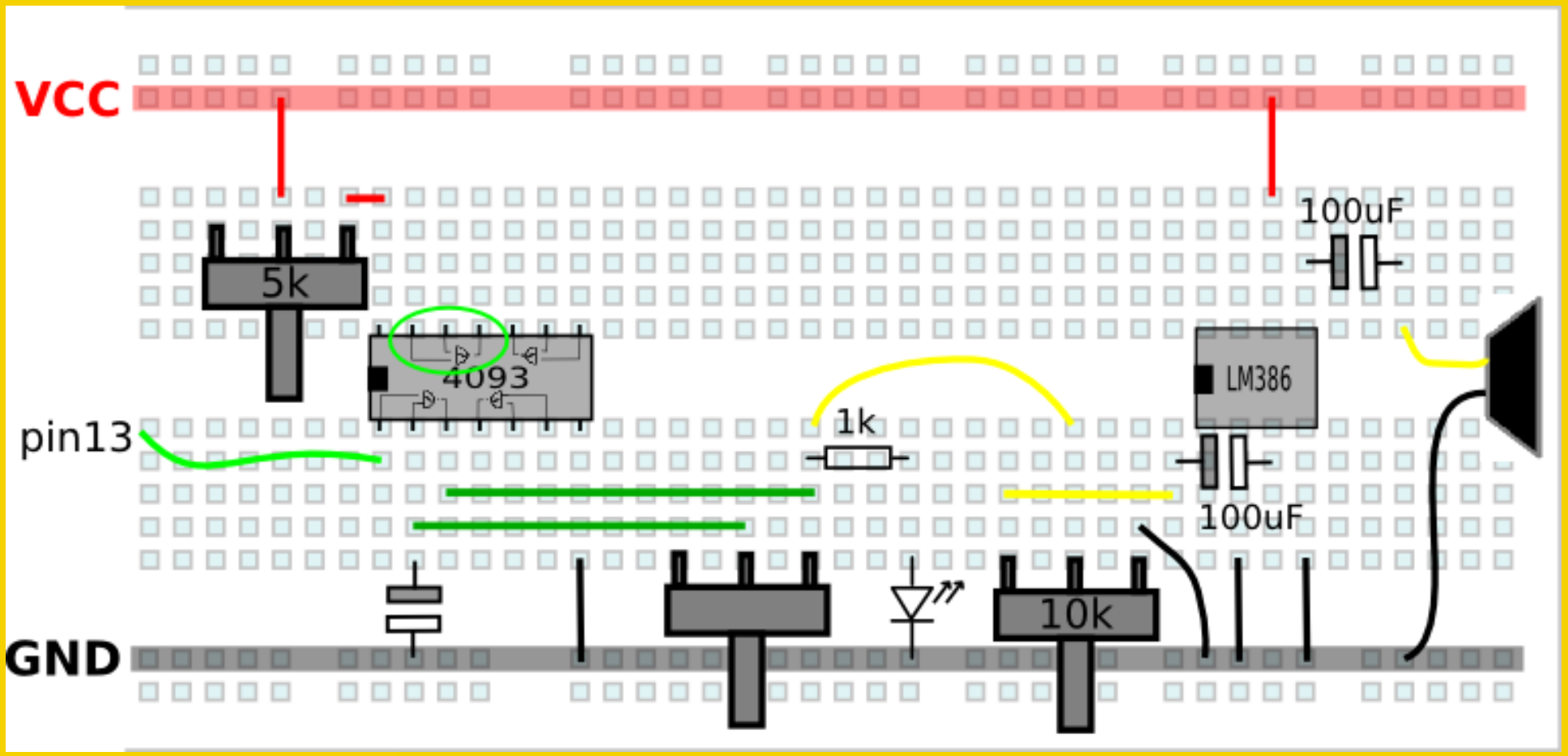


Gain

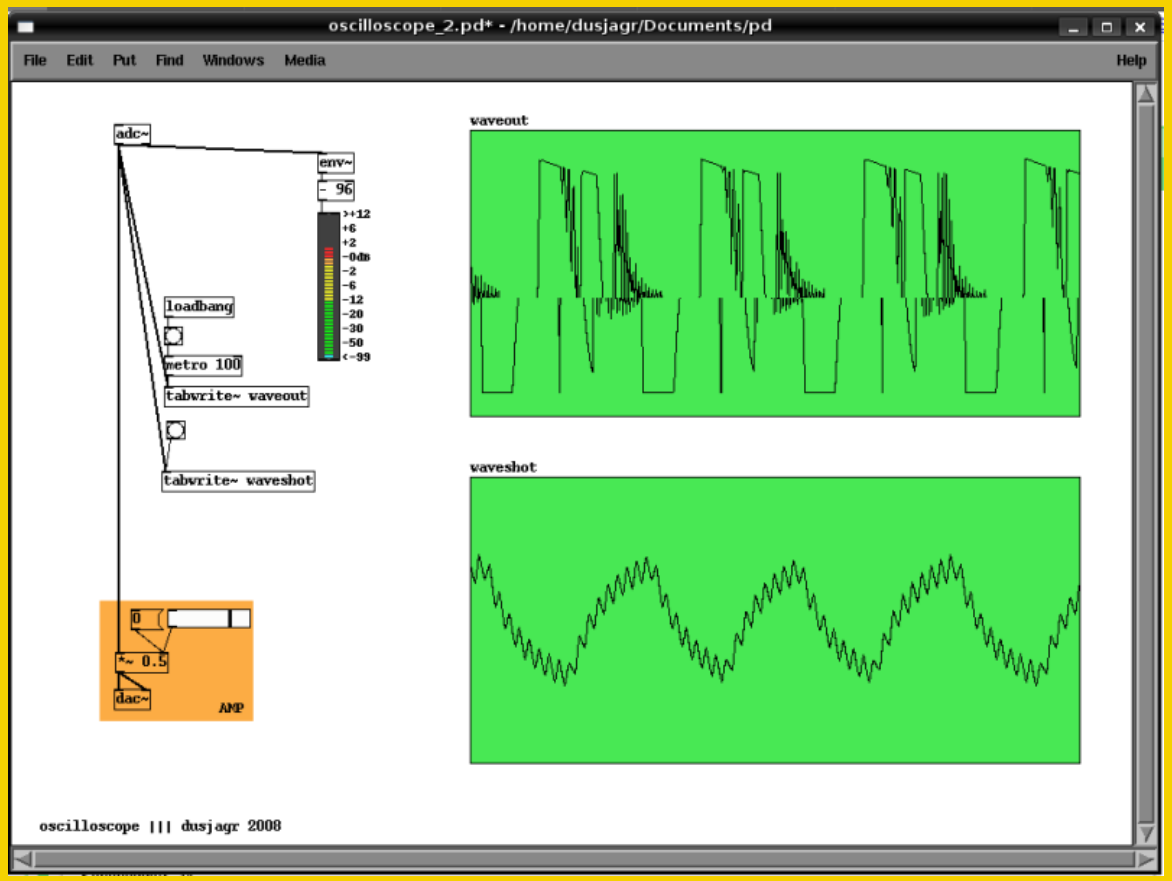


Volume Control

Make it a bit less loud

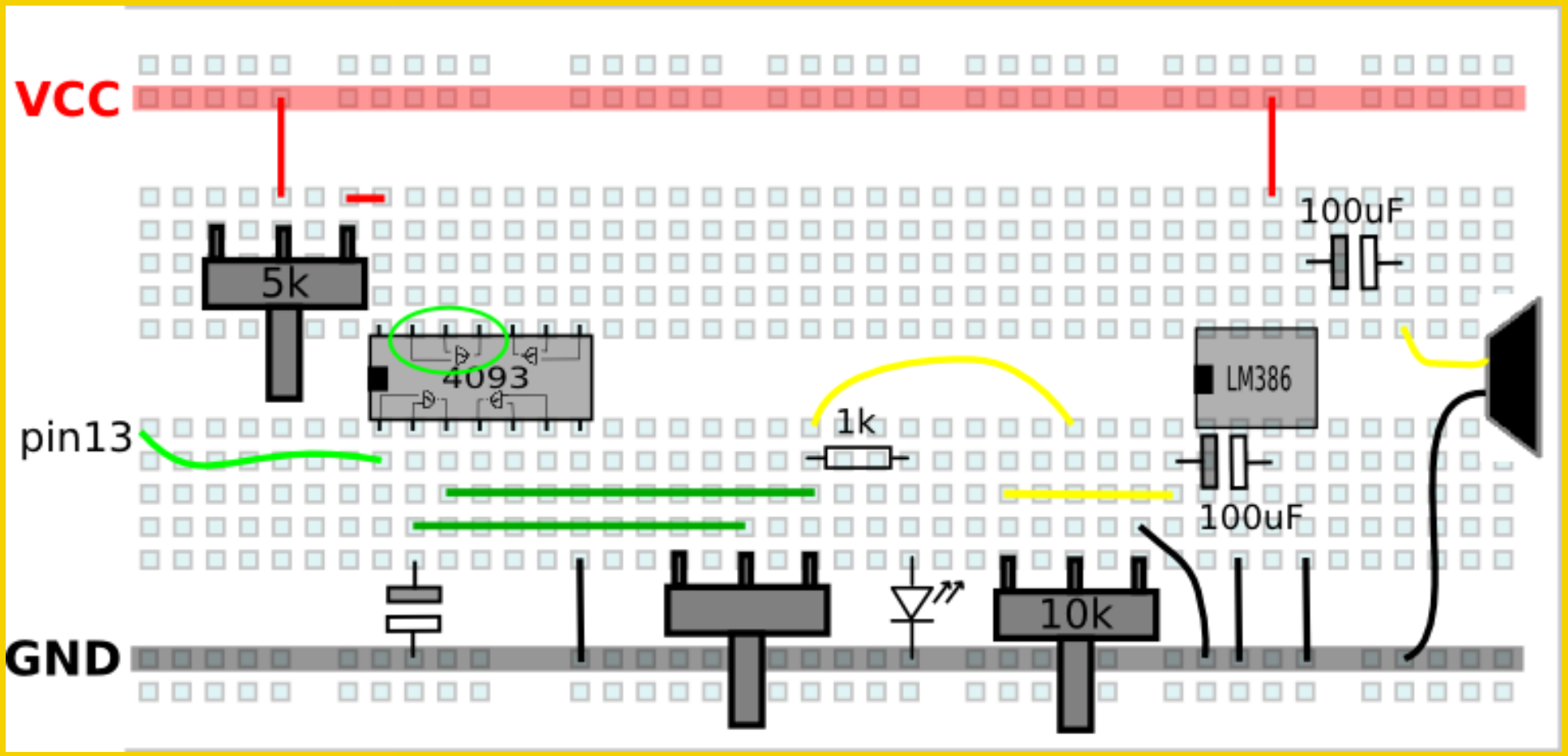


Use PureData as Oscilloscope

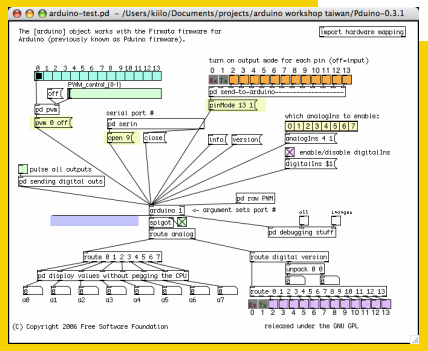


http://playaround.ftpaccess.cc/project/physical+computing+2/outline/1.day/ oscilloscope_2.pd

Control the Noise machine from Arduino



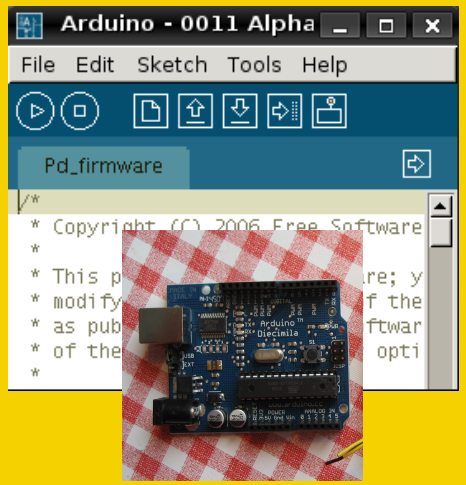
How to connect things – 2 different ways



Pduino-0.3.1/arduino-help.pd

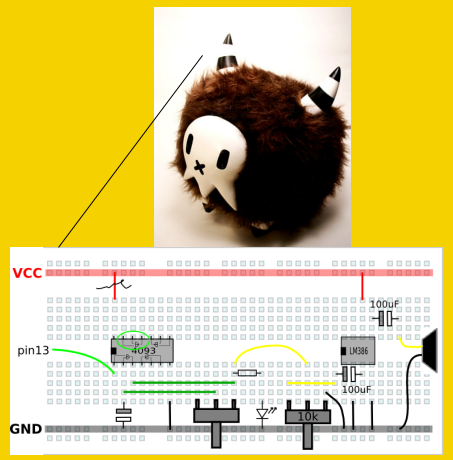
usb

Pd_firmware.pde

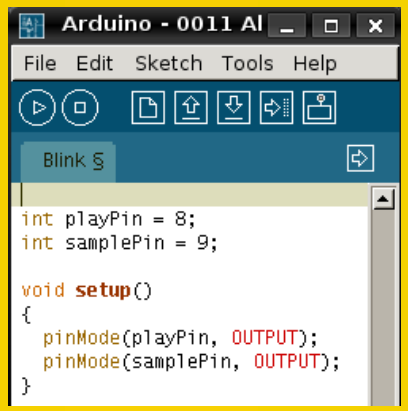


Power & cables

in/out

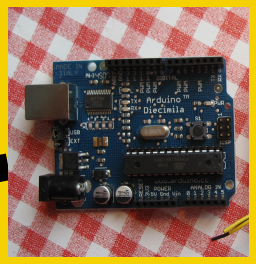


Blink.pde



Change and upload new code

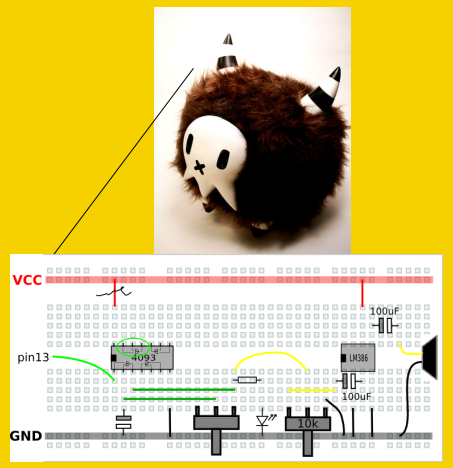
usb power



battery power

Power & cables

in/out



Analog In

```
/*
 *  AnalogInput
 *
 *  1-bit music
 *  attach a speaker to pin 7 and GND
 *
 *  dusjagr 2008
 */

int potPin = 0;        // select the input pin for the potentiometer
int speakerPin = 7;    // select the pin for the speaker
int val = 0;           // variable to store the value coming from the sensor

void setup() {
  pinMode(speakerPin, OUTPUT);  // declare the speakerPin as an OUTPUT
}

void loop() {
  val = analogRead(potPin);             // read the value from the sensor
  digitalWrite(speakerPin, HIGH);           // turn the speakerPin on
  delay(val);                               // stop the program for some
  digitalWrite(speakerPin, LOW);            // turn the speakerPin off
  delay(val);                               // stop the program for some
}
```