

ARDUINO



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Mikroprosesor

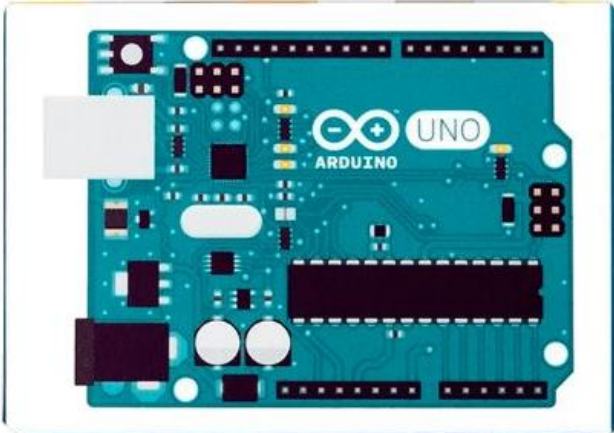


Arduino

<http://www.arduino.cc>

<http://www.arduino.org/products/boards/arduino-uno>


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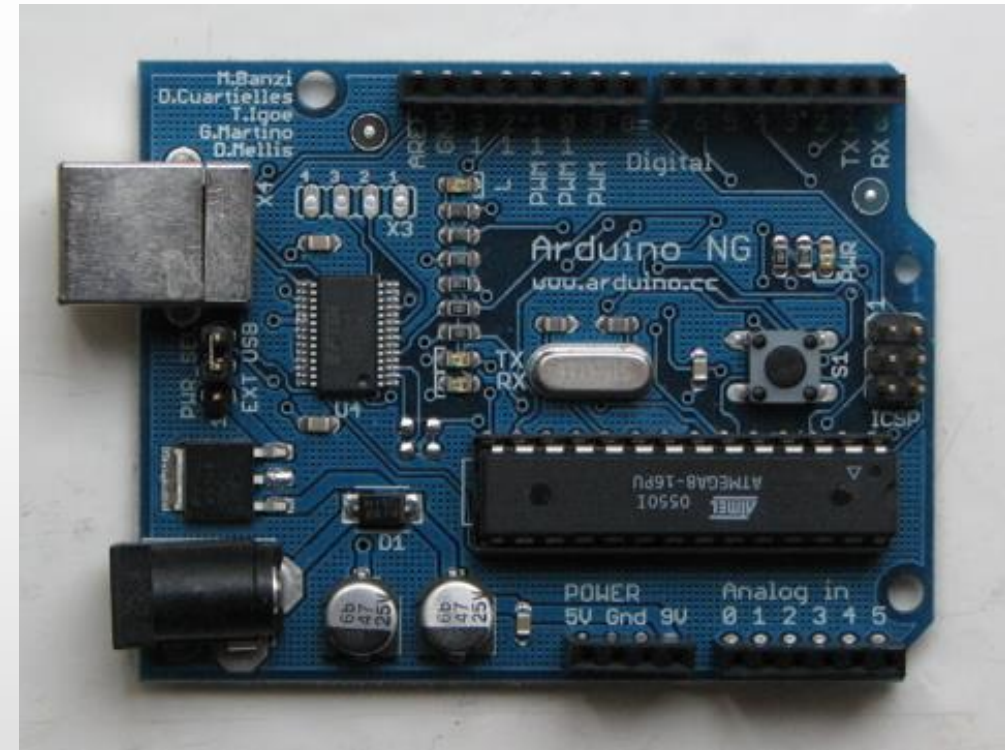


Filosofi Arduino

- Open source hardware/software prototyping platform
- Physical computing: computer that can sense and control physical world compared to ordinary computer (PC)

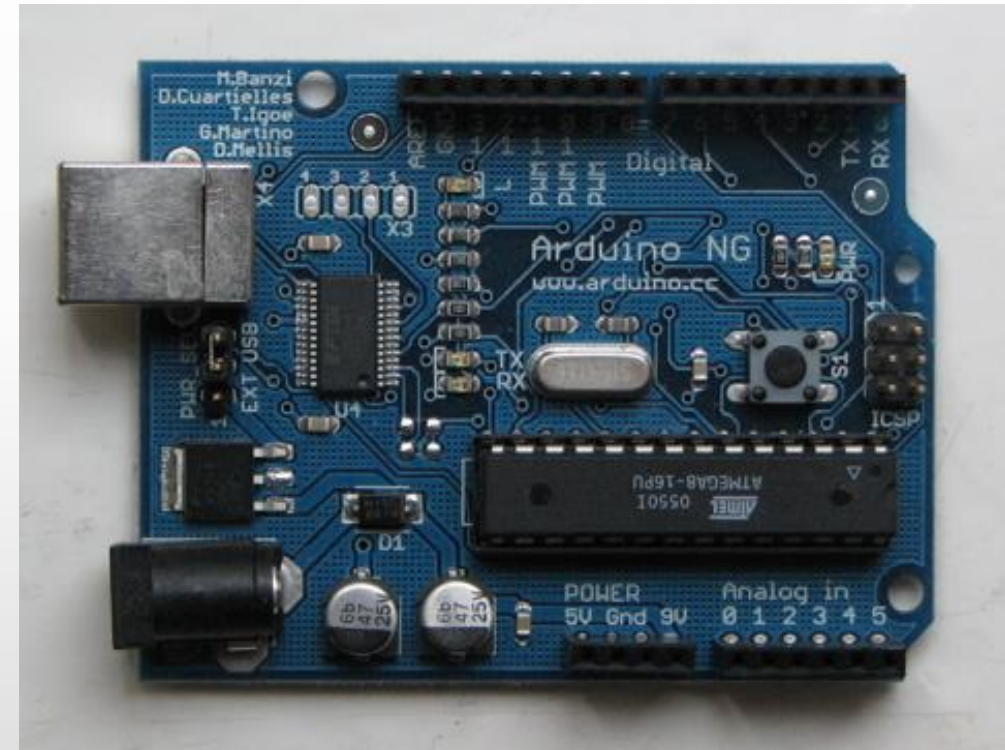
What is Arduino?

- Physical computing platform
- Open source
- “Hardware Abstracted”
Wiring Language
- USB programmable
- Large community
- Inexpensive (\$31.95 from Sparkfun)

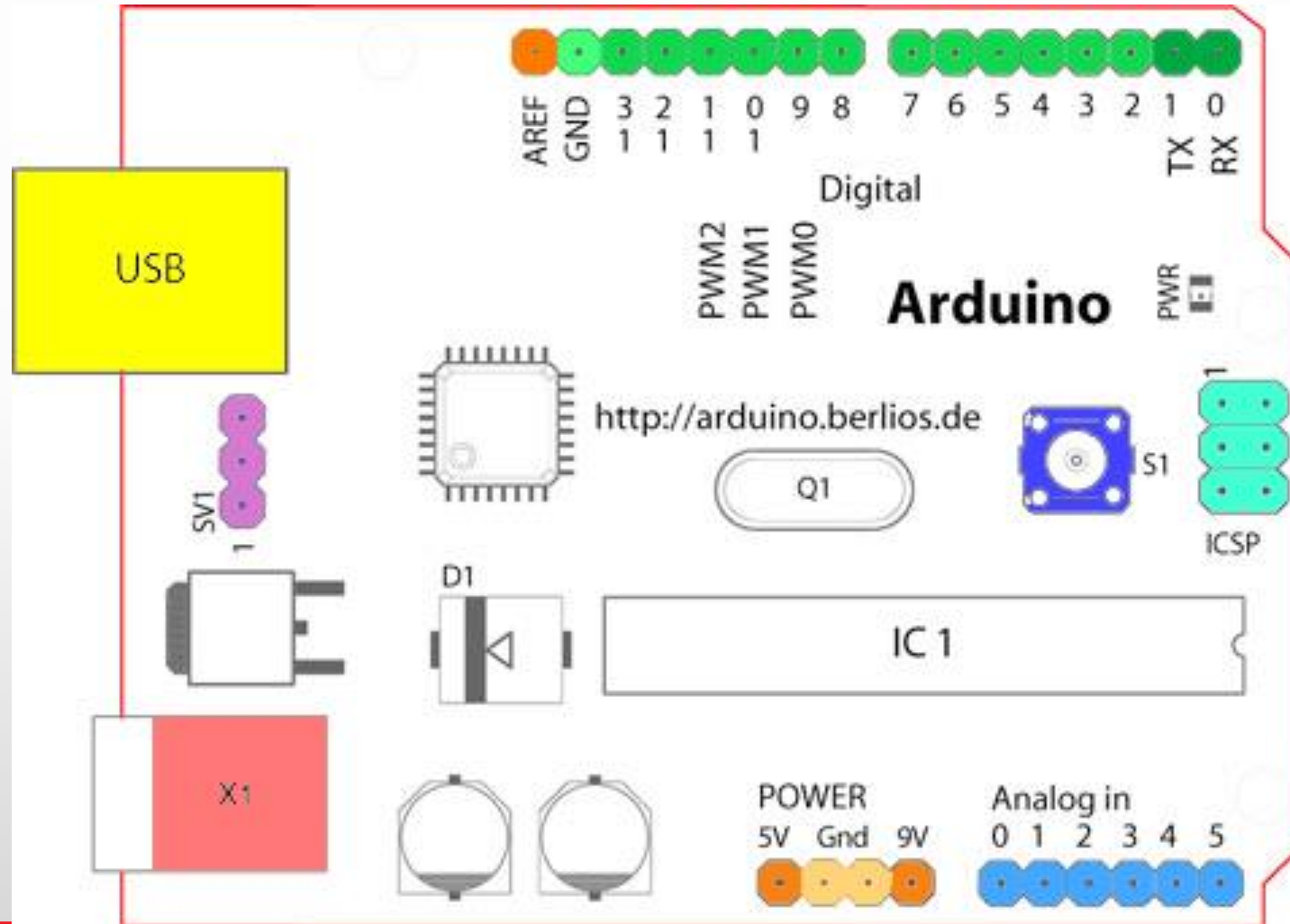


What is Arduino?

- Based on ATmega8
- w. USB interface
- Voltage regulator
- The “power” is in:
 - Standard board design
 - Wiring language
 - Open Source



Arduino Board Overview



“Official”

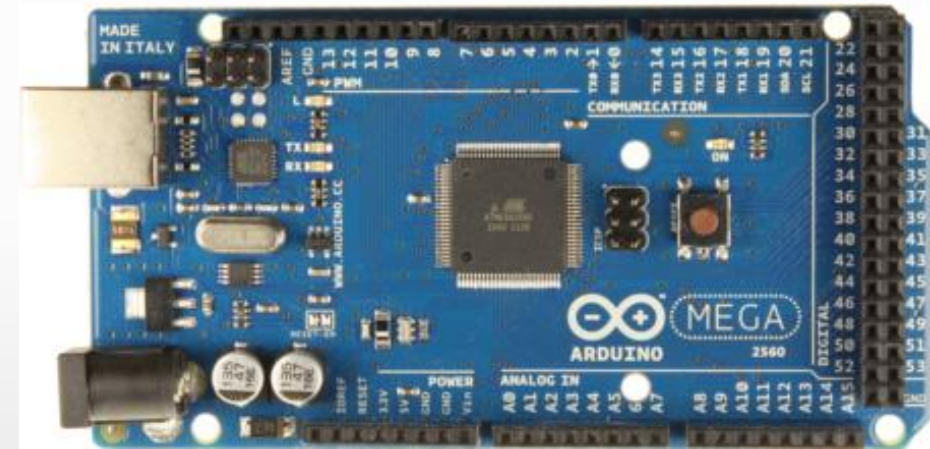
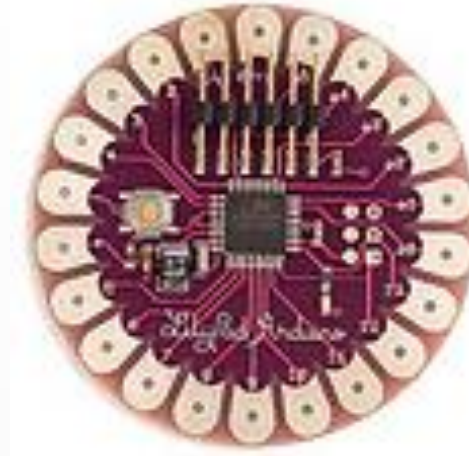
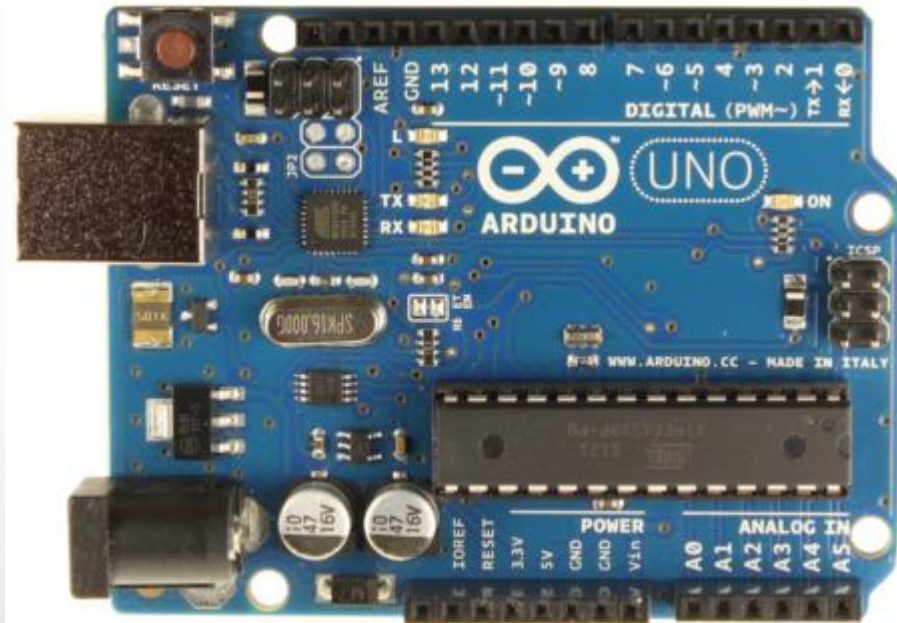
Arduino boards

- Uno
- Mega 2560
- Mega ADK
- Ethernet
- BT
- LilyPad
- Fio
- Pro
- Nano
- Mini
- Pro Mini

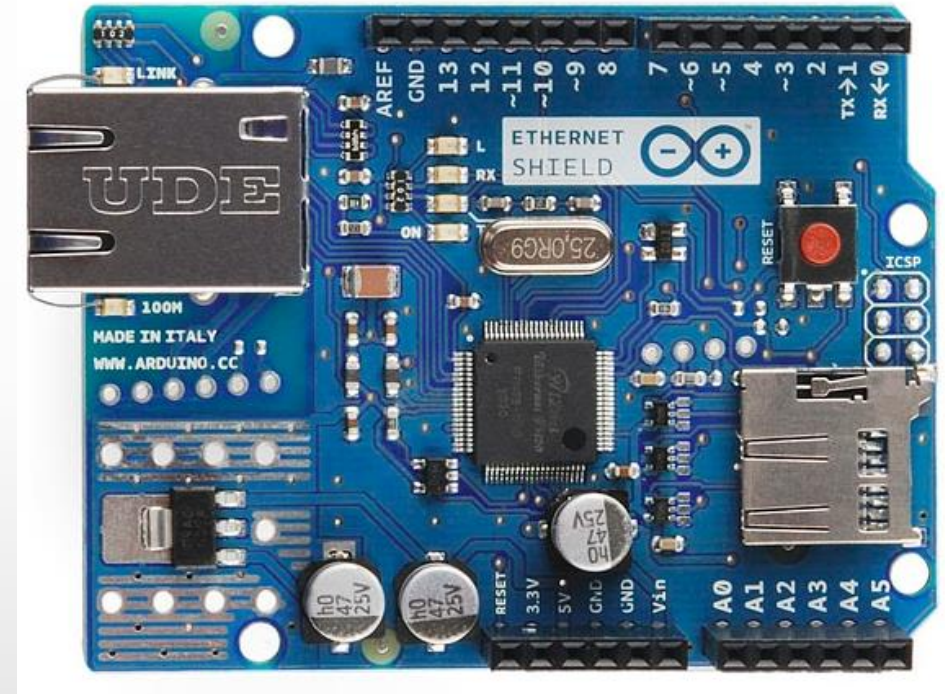
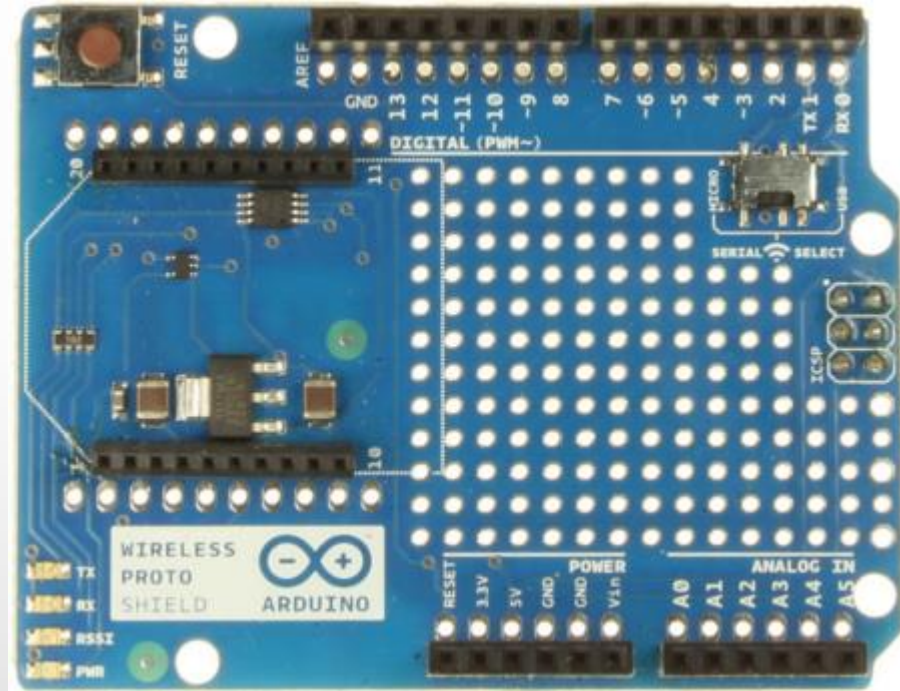
Arduino shields

- Ethernet
- Wireless SD
- Wireless Proto
- Motor
- Proto

Boards

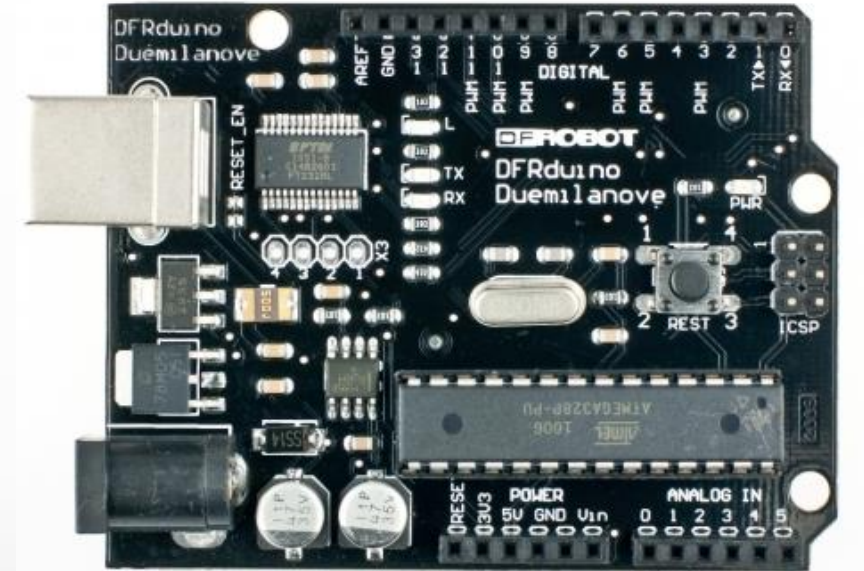


Shields



“Unofficial” Boards and Shields

- Adafruit
- Sparkfun
- DFRobot
- Itead Studio
- etc



Atmega168 Pin Mapping

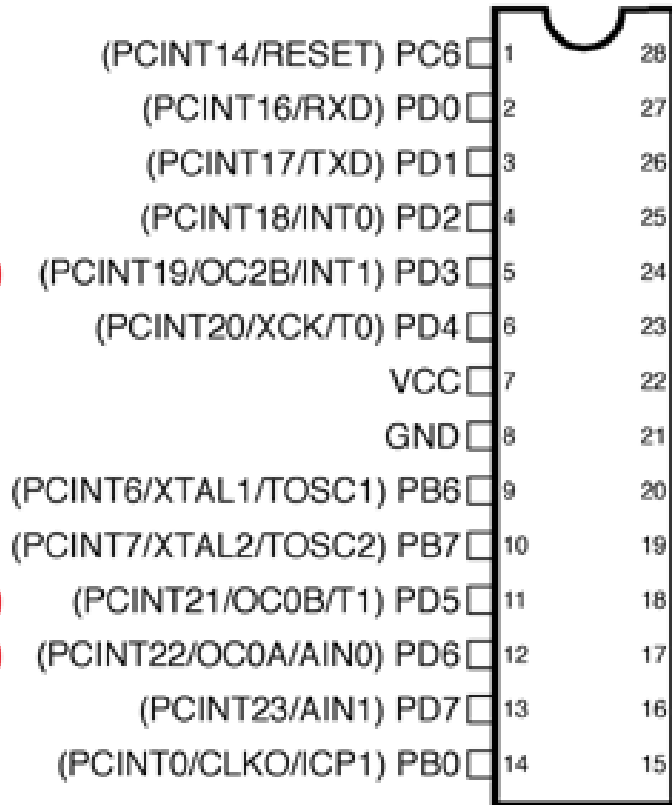
Peta pin

[Complete schematic](#)

[Atmel ATmega328P datasheet](#)

Arduino function

reset
 digital pin 0 (RX)
 digital pin 1 (TX)
 digital pin 2
 digital pin 3 (PWM)
 digital pin 4
 VCC
 GND
 crystal
 crystal
 digital pin 5 (PWM)
 digital pin 6 (PWM)
 digital pin 7
 digital pin 8



Arduino function

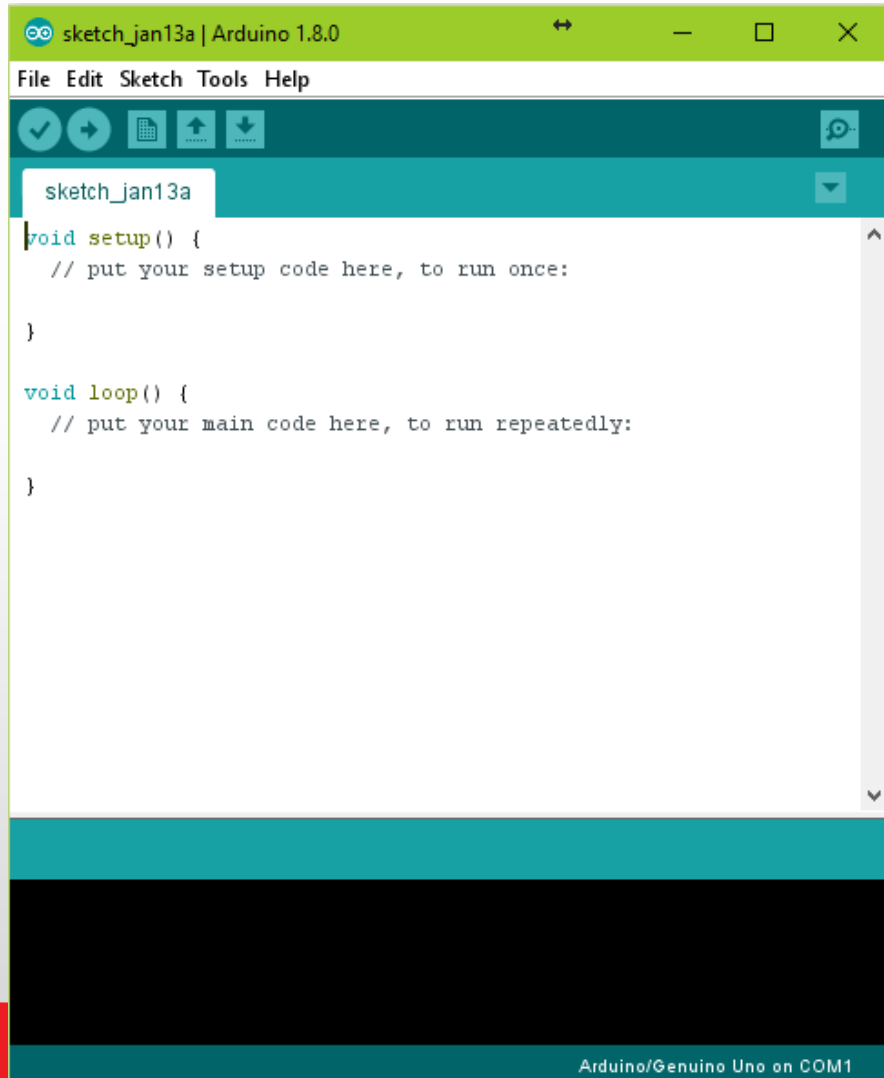
analog input 5
 analog input 4
 analog input 3
 analog input 2
 analog input 1
 analog input 0
 GND
 analog reference
 VCC
 digital pin 13
 digital pin 12
 digital pin 11 (PWM)
 digital pin 10 (PWM)
 digital pin 9 (PWM)

Digital Pins 11, 12 & 13 are used by the ICSP header for MISO, MOSI, SCK connections (Atmega168 pins 17, 18 & 19). Avoid low-impedance loads on these pins when using the ICSP header.

Physical layout



Lingkungan pengembangan



- Arduino programming language berdasarkan Wiring (<http://wiring.org.co>)
- Arduino development environment berdasarkan Processing (<http://www.processing.org>)
- Source code = Sketches
- [Sekilas introduksi](#)

“Official”

- Taman bermain (playground)

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

- Learning

<https://www.arduino.cc/en/Guide/HomePage>