Code & Material

1. Stunde, 17. Okt. 2012

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Kunst

Lab3

- interface.khm.de

Projekte:

› loser Raum
› Meter Crawler
› Jellyfish
› Photofeedback
› His Master Voice
› SARoskop
› Rechnender Raum
› CONNECT
› decoy
› His master’s voice

Technische Sichtweisen

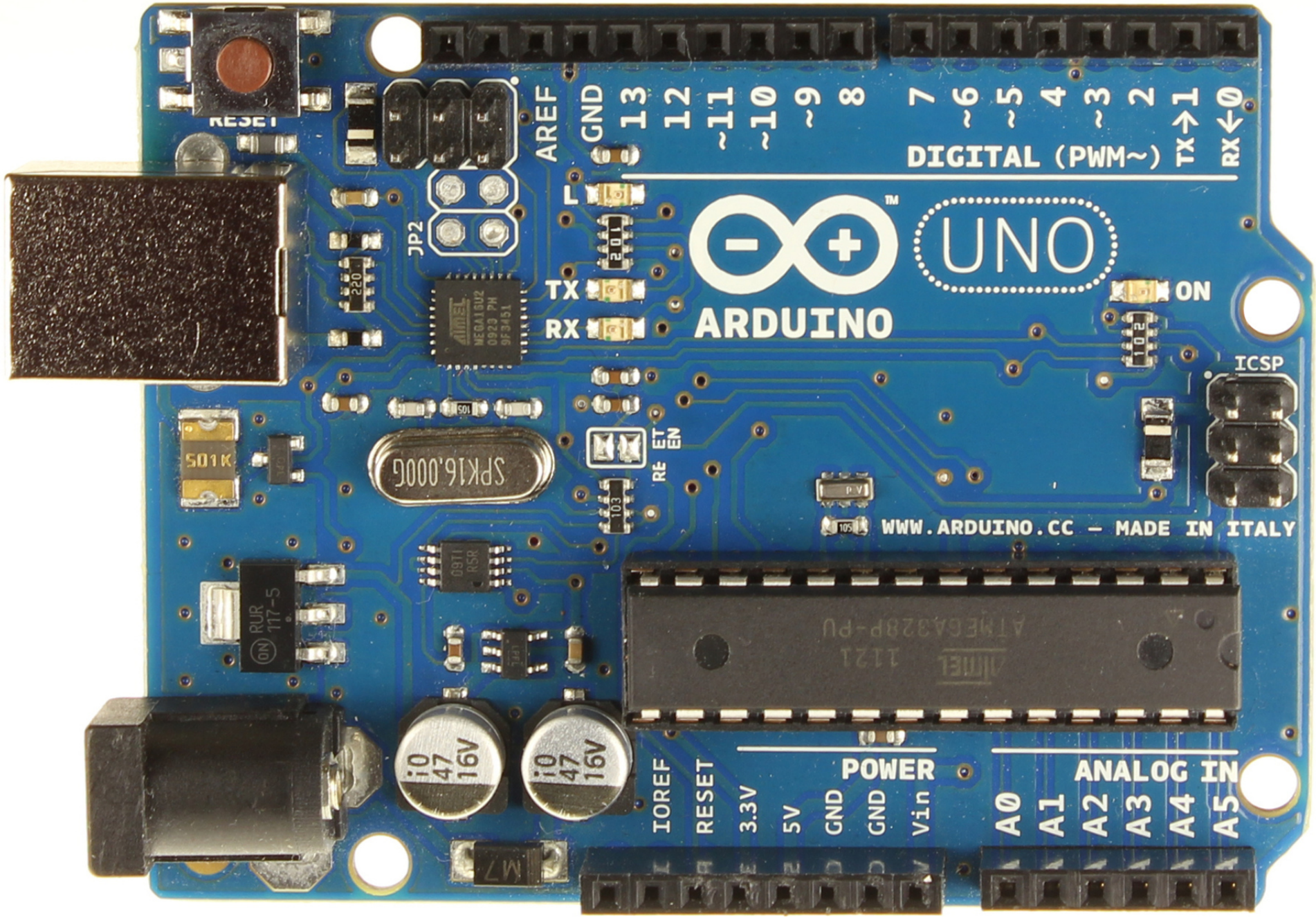
- Mikrokontroller sind kleine, billige Computer, die genutzt werden, um mit Hilfe von Sensoren Verhältnisse der Außenwelt einzulesen und über Effektoren Ausgaben zu generieren.

- Interfaces
  - Physikalisch (Material)
  - Programmtechnisch (Symbol)
  - Elektronisch (Signal)

Einige Daten zum Microcontroller ATmega328

- Operating Voltage5V
- Input Voltage 7-12V (limits) 6-20V
- Digital I/O Pins 14 (of which 6 provide PWM output)
- Analog Input Pins 6
- Flash Memory 32 KB of which 0.5 KB used by bootloader

  The program space, where the Arduino sketch is stored.
- SRAM (static random access memory) is where the sketch creates and manipulates variables when it runs. (2 KB)
- EEPROM is memory space that programmers can use to store long-term information. (1 KB)
- Clock Speed 16 MHz
- Reset Button
- USP Anschluss


RESET
AREF
GND
13
12
~11
~10
~9
8
7
~6
~5
4
~3
2
TX→1
RX←0
DIGITAL (PWM~)
UNO
ARDUINO
ON
TX
RX
ICSP
WWW.ARDUINO.CC – MADE IN ITALY
POWER
ANALOG IN
IOREF
RESET
3.3V
5V
GND
GND
Vin
A0
A1
A2
A3
A4
A5

Links

Arduino/Prcessing:

- http://www.arduino.cc/
- http://arduino.cc/en/Reference/HomePage
- http://arduino.cc/en/Tutorial/HomePage
- http://www.arduino.cc/playground/
- http://www.freeduino.org/index.html
- http://www.processing.org
- http://www.processing.org/reference/

Blogs:

- http://arduino.cc/blog/
- http://tinker.it/now/
- http://dailyduino.com/
- http://blog.makezine.com/

Arduino

- Arduino Homepage http://www.arduino.cc/
- Getting started http://arduino.cc/en/Guide/MacOSX
- Software Installation
  - Download Software
  - Entpacken
  - Starten

  - Unter *Tools->Board* das richtige Arduino board einstellen
  - Unter *Tools->SerialBoard* das serielle Board auswählen
  - Unter *File -> Examples -> 01.Basics -> Blink* erstes Programm auswählen

Erstes Beispiel

(im Arduino-Menu: File -> Examples -> 01.Basics -> Blink)

```
/*
  Blink
  Turns on an LED for one second, then off for one second, repeatedly.
  This example code is in the public domain.
 */
// Pin 13 has an LED connected on most Arduino boards.
// give it a name:
int led = 13;

// the setup routine runs once when you press reset:
void setup() {
  // initialize the digital pin as an output.
  pinMode(led, OUTPUT);
}

// the loop routine runs over and over again forever:
void loop() {
  digitalWrite(led, HIGH);   // turn the LED on (HIGH is the voltage level)
  delay(1000);               // wait for a second
  digitalWrite(led, LOW);    // turn the LED off by making the voltage LOW
  delay(1000);               // wait for a second
}
```