

SODAR: Iniciación a Arduino + Processing

Un taller BricoLabs

ctemes eukelade Milo salvati

Asociación BricoLabs

7 noviembre / OSHWDem - 2014



Agenda

1 Presentación

- ¿Quienes somos?
- Requisitos

2 Arduino

- Intro
- Montaje
- Movimiento
- Sensor



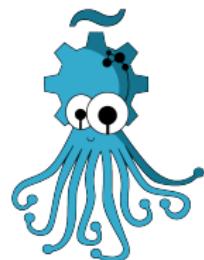
Agenda

1 Presentación

- ¿Quienes somos?
- Requisitos

2 Arduino

- Intro
- Montaje
- Movimiento
- Sensor

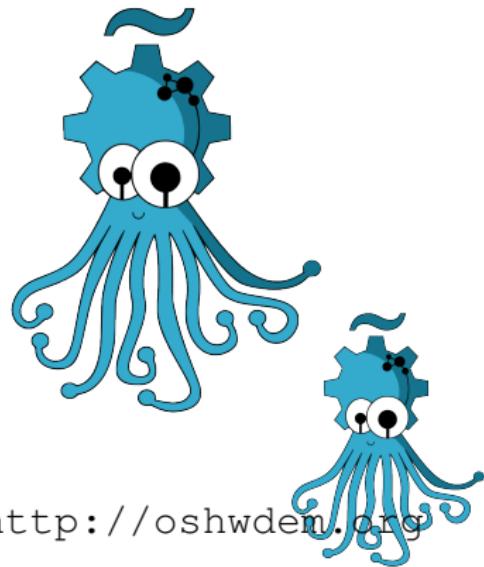


BricoLabs y la OSHWDem



BricoLabs

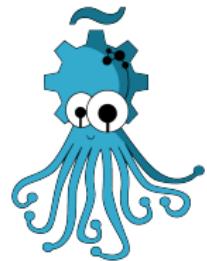
<http://bricolabs.cc/>



<http://oshwdem.org>

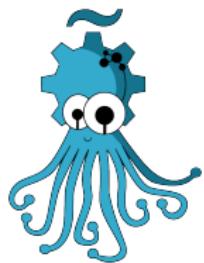
Ponentes

- @ctemes
- Eukelade @pepdiz
- Milo
- @salvari



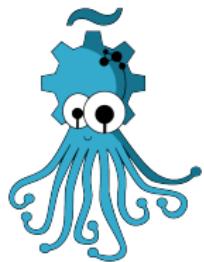
Asistentes

- ¿Quién conoce el Arduino?



Asistentes

- ¿Quién conoce el Arduino?
- ¿Quién conoce Processing?



Asistentes

- ¿Quién conoce el Arduino?
- ¿Quién conoce Processing?
- ¿Traéis los deberes hechos? ;)



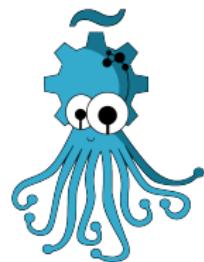
Agenda

1 Presentación

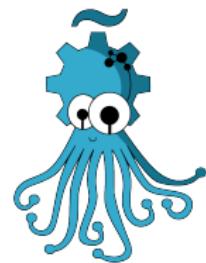
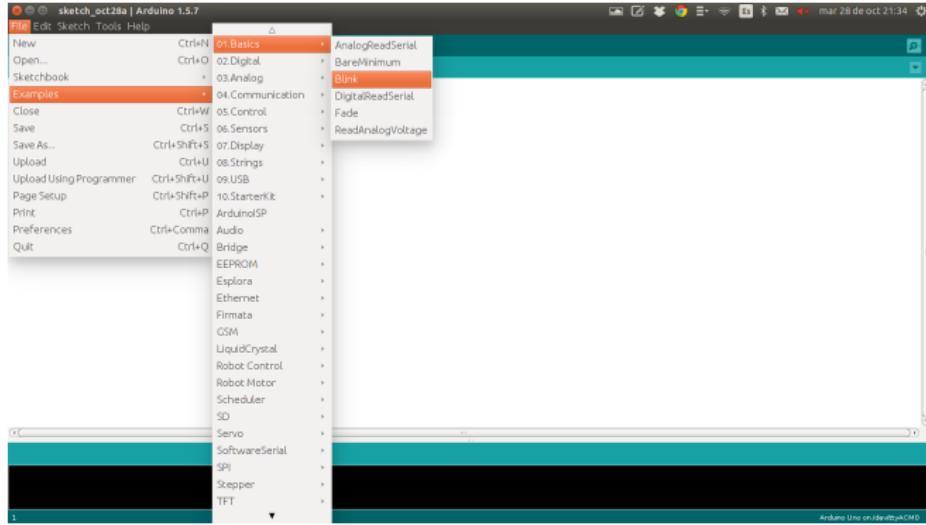
- ¿Quienes somos?
- Requisitos

2 Arduino

- Intro
- Montaje
- Movimiento
- Sensor



Revisar la instalación



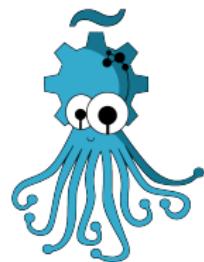
Agenda

1 Presentación

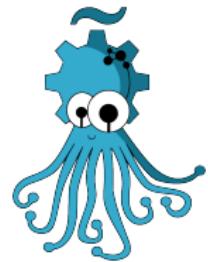
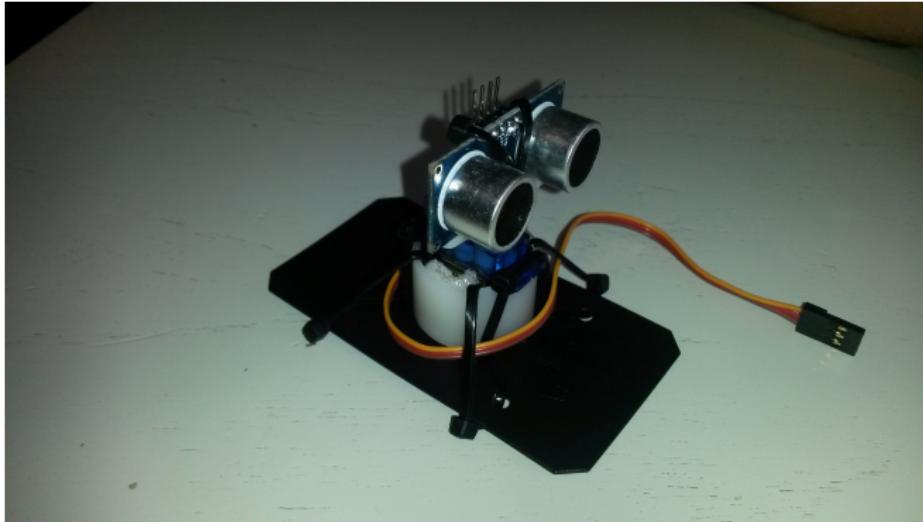
- ¿Quienes somos?
- Requisitos

2 Arduino

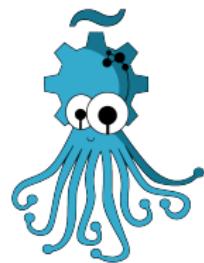
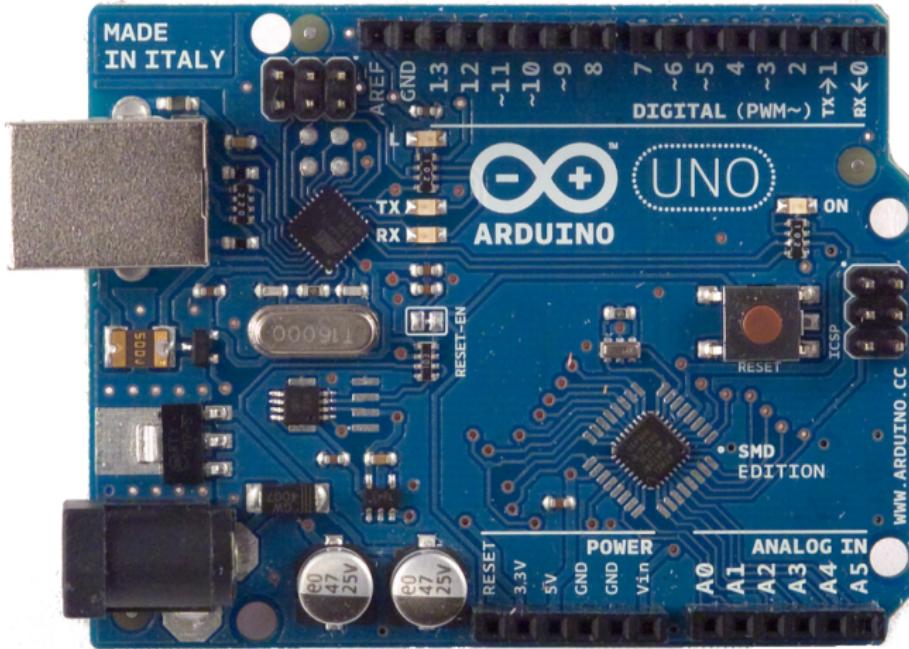
- Intro
- Montaje
- Movimiento
- Sensor



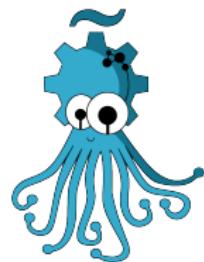
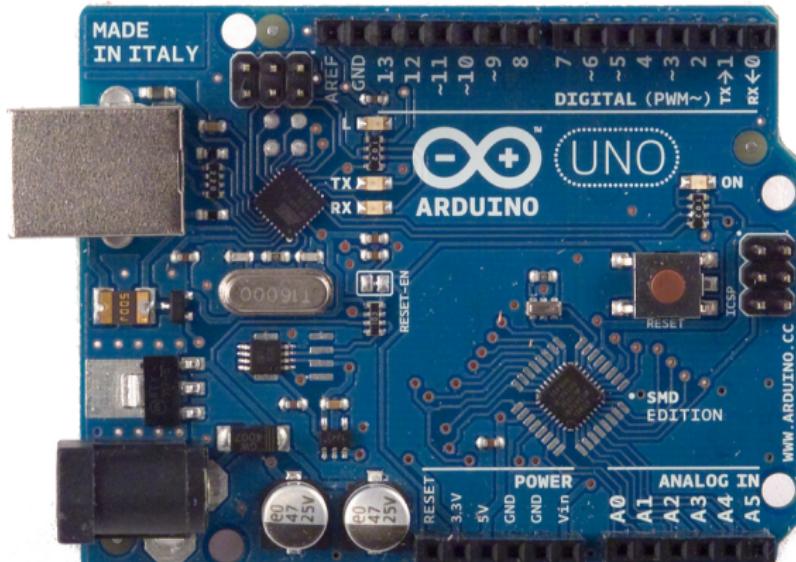
SODAR



SODAR



Arduino



Página Principal

Foto Familia

Agenda

1 Presentación

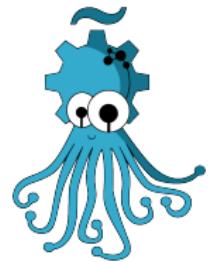
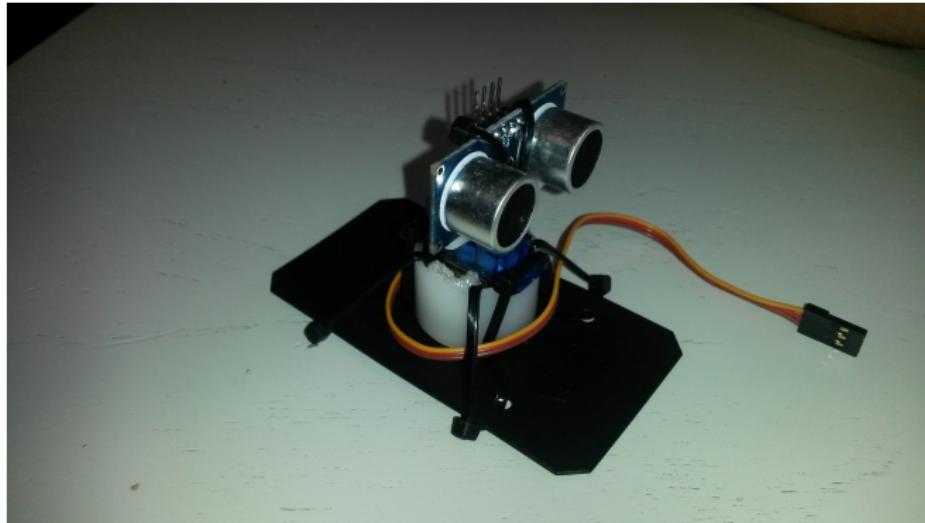
- ¿Quienes somos?
- Requisitos

2 Arduino

- Intro
- Montaje
- Movimiento
- Sensor

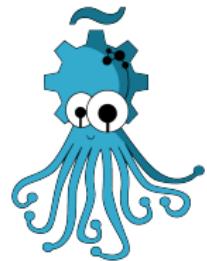


Montaje I



Montaje II

Esquema Fritzing



Agenda

1 Presentación

- ¿Quienes somos?
- Requisitos

2 Arduino

- Intro
- Montaje
- Movimiento
- Sensor



Estructura de un programa Arduino

```
#include <Servo.h>

#define SERVO_PWM_PIN 9

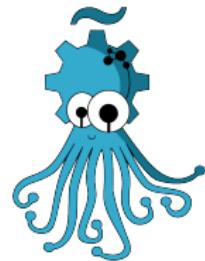
Servo myservo;

/*
 *-----*
 * setup
 * Se ejecuta una sola vez al principio del programa. O cuando el arduino
 * se resetea.
 *-----*/
void setup() {

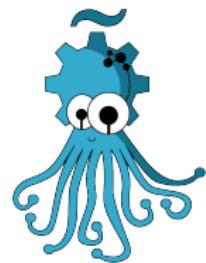
}

/*
 *-----*
 * loop
 * Se ejecuta siempre, hasta el fin de los tiempos :-)
 *-----*/
void loop() {

}
```



Servo



Servo

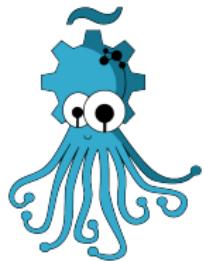
```
#include <Servo.h>

#define SERVO_PWM_PIN 9

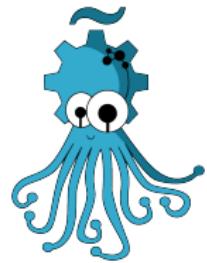
Servo myservo;

myservo.attach(SERVO_PWM_PIN);

myservo.write(angle);
```

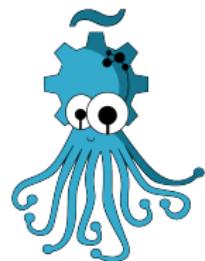


Barridos



Una solución

- Definimos un paso
- Controlamos el ángulo
- Usamos el propio loop del Arduino



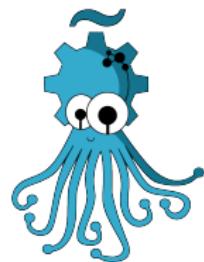
Agenda

1 Presentación

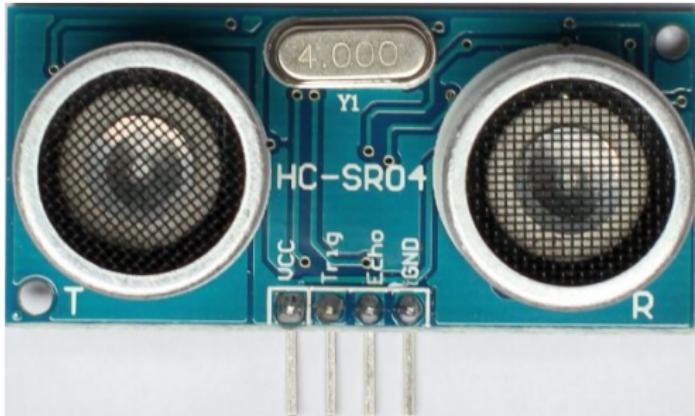
- ¿Quienes somos?
- Requisitos

2 Arduino

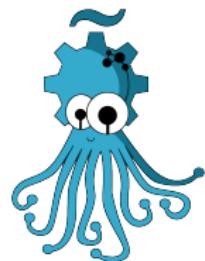
- Intro
- Montaje
- Movimiento
- Sensor



Sensor ultrasonidos



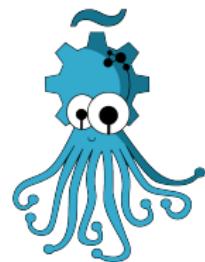
Sensor de distancia HC-SR04



Sensor ultrasonidos

Electric Parameter

Working Voltage	DC 5 V
Working Current	15mA
Working Frequency	40Hz
Max Range	4m
Min Range	2cm
MeasuringAngle	15 degree
Trigger Input Signal	10uS TTL pulse
Echo Output Signal	Input TTL lever signal and the range in proportion
Dimension	45*20*15mm



Protocolo

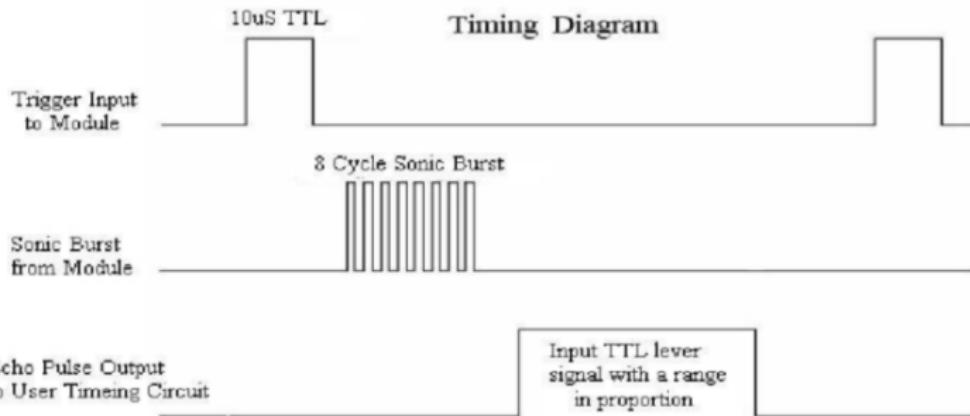


Diagrama de señales

