

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



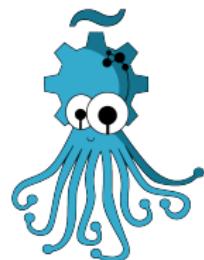
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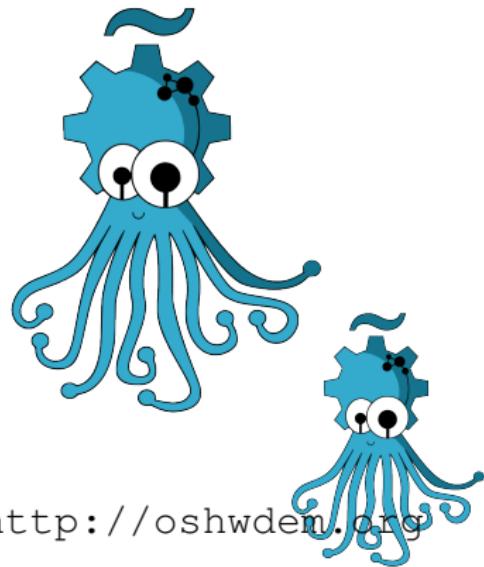


BricoLabs y la OSHWDem



BricoLabs

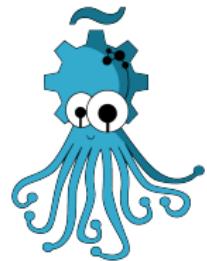
<http://bricolabs.cc/>



<http://oshwdem.org>

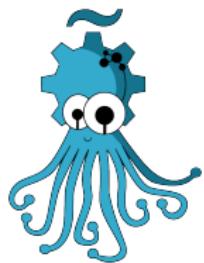
PONENTES

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



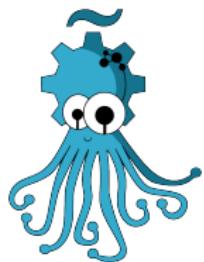
Asistentes

- ¿Quién conoce el Arduino?



Asistentes

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



Asistentes

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



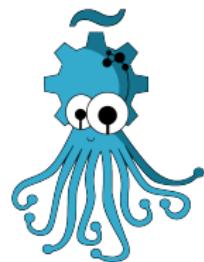
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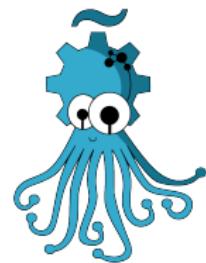
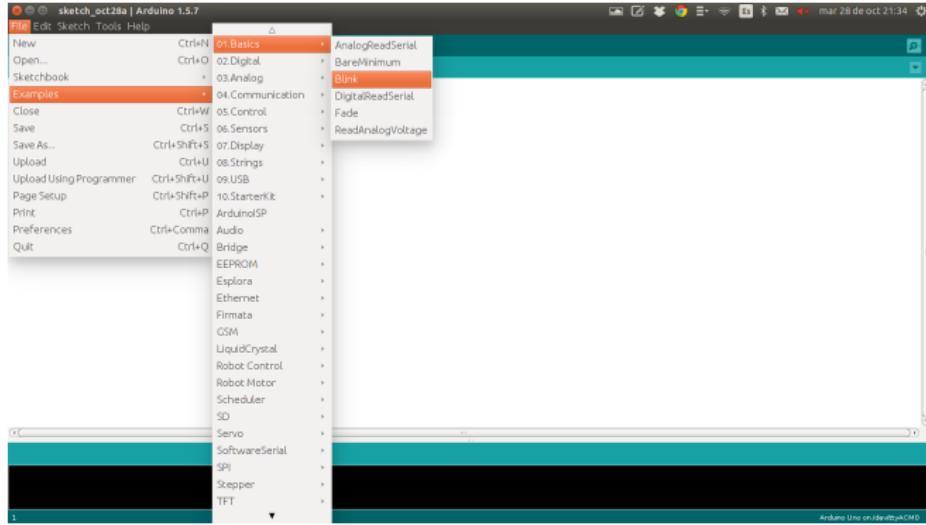
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Revisar la instalación



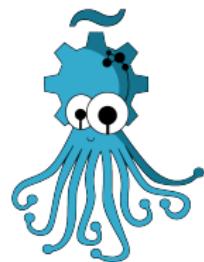
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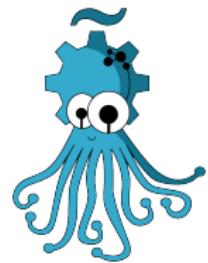
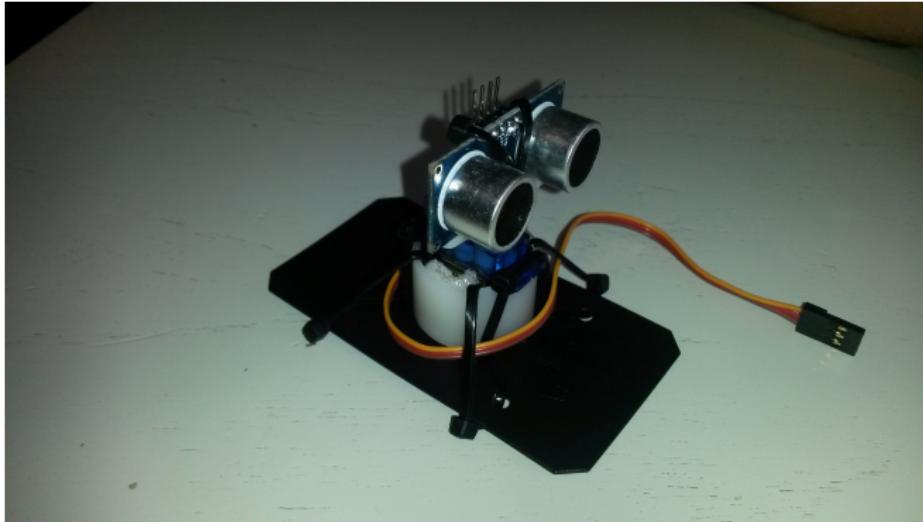
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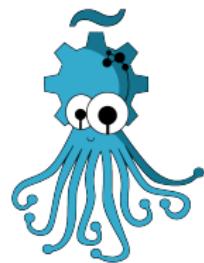
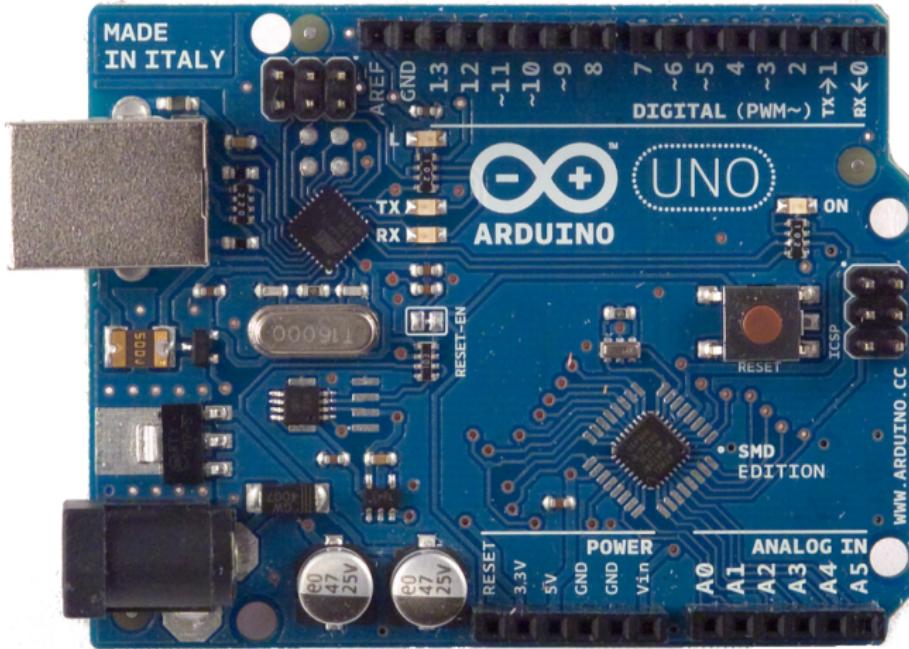
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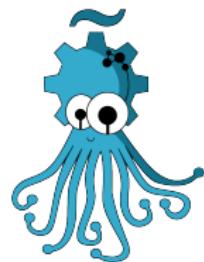
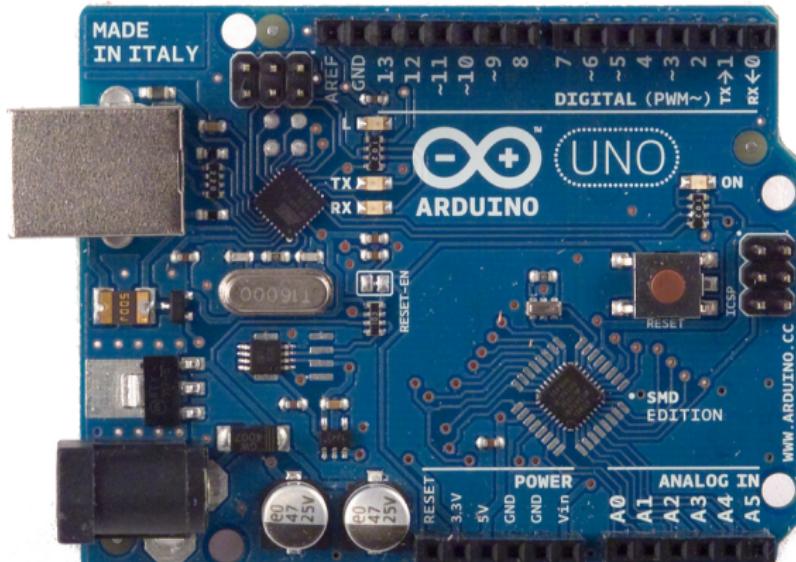
SODAR



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Arduino



Página Principal

Foto Familia

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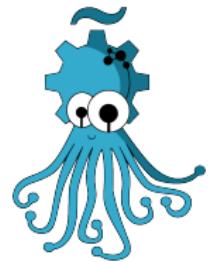
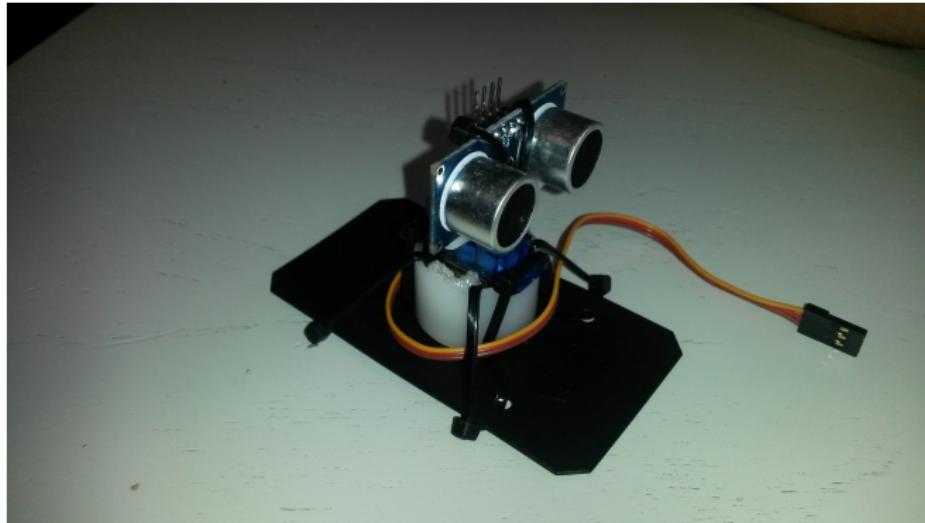
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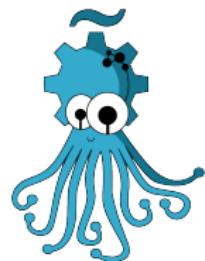


Montaje I



Montaje II

Esquema Fritzing



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Estructura de un programa Arduino

```
#include <Servo.h>

#define SERVO_PWM_PIN 9

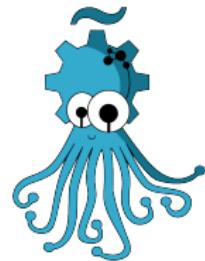
Servo myservo;

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

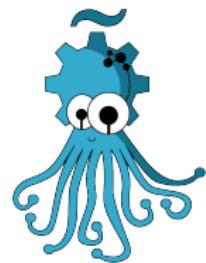
}

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

}
```



Servo



Servo

```
#include <Servo.h>

#define SERVO_PWM_PIN 9

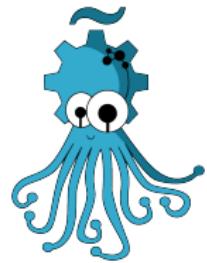
Servo myservo;

myservo.attach(SERVO_PWM_PIN);

myservo.write(angle);
```

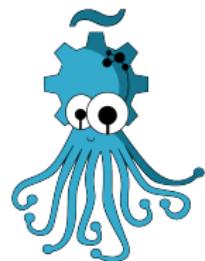


Barridos



Una solución

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



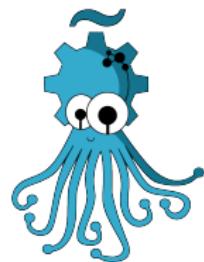
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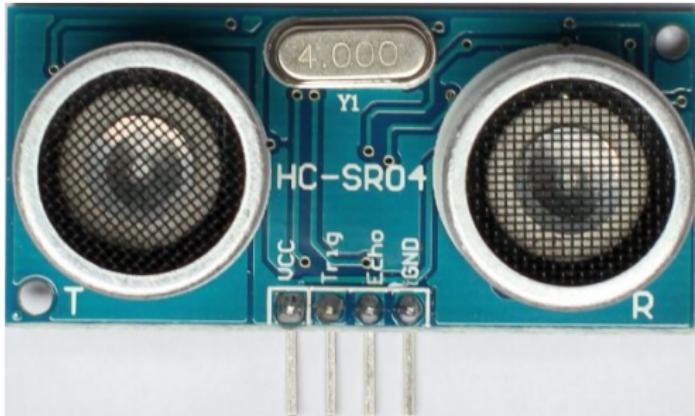
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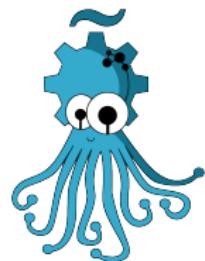
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Sensor ultrasonidos



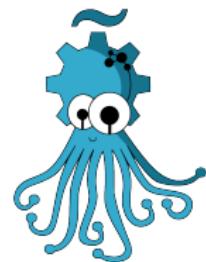
Sensor de distancia HC-SR04



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

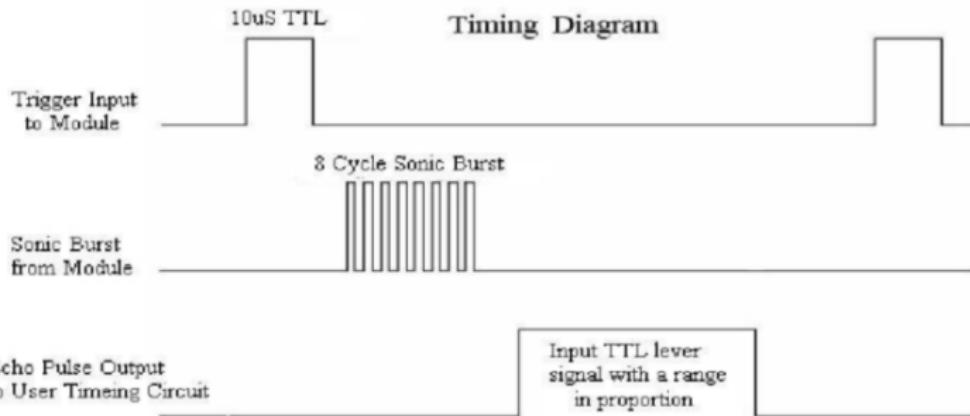


Diagrama de señales

