

Exercicis de maquinari lliure amb Arduino Nano

ArduBlock



Ubuntu 14.10
Utopic Unicorn



Jordi Binefa i Martínez

Responsable d'R+D+i a



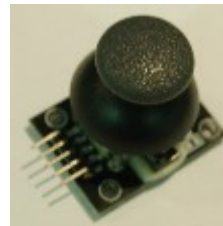
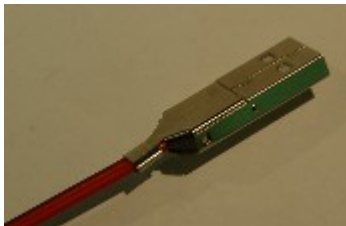
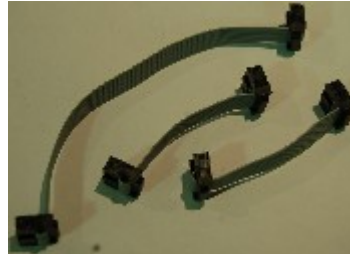
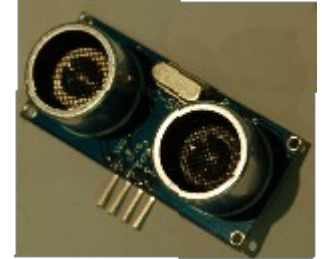
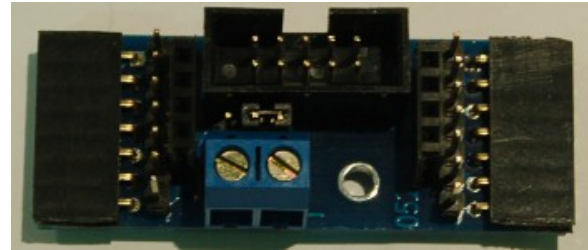
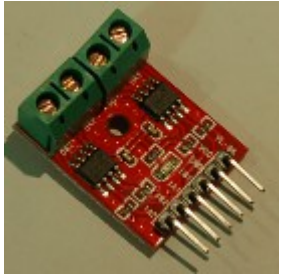
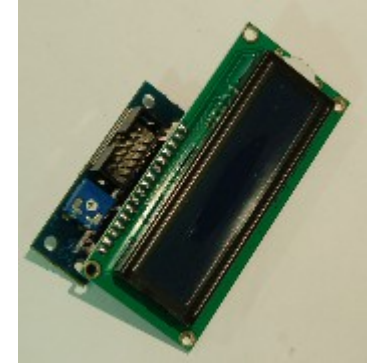
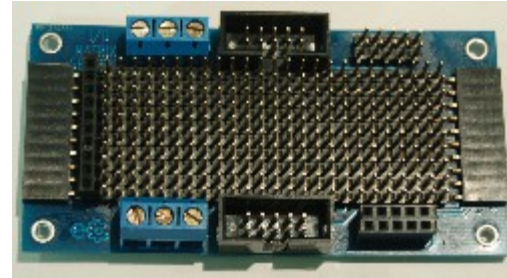
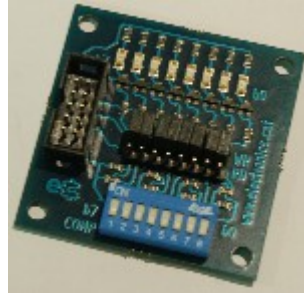
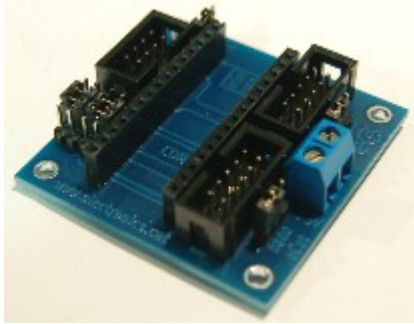
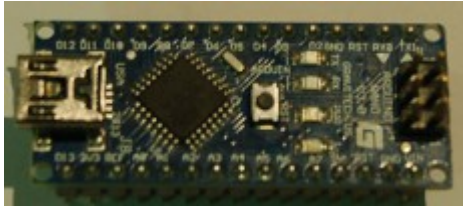
15 / novembre / 2014 Professor de cicles formatius a





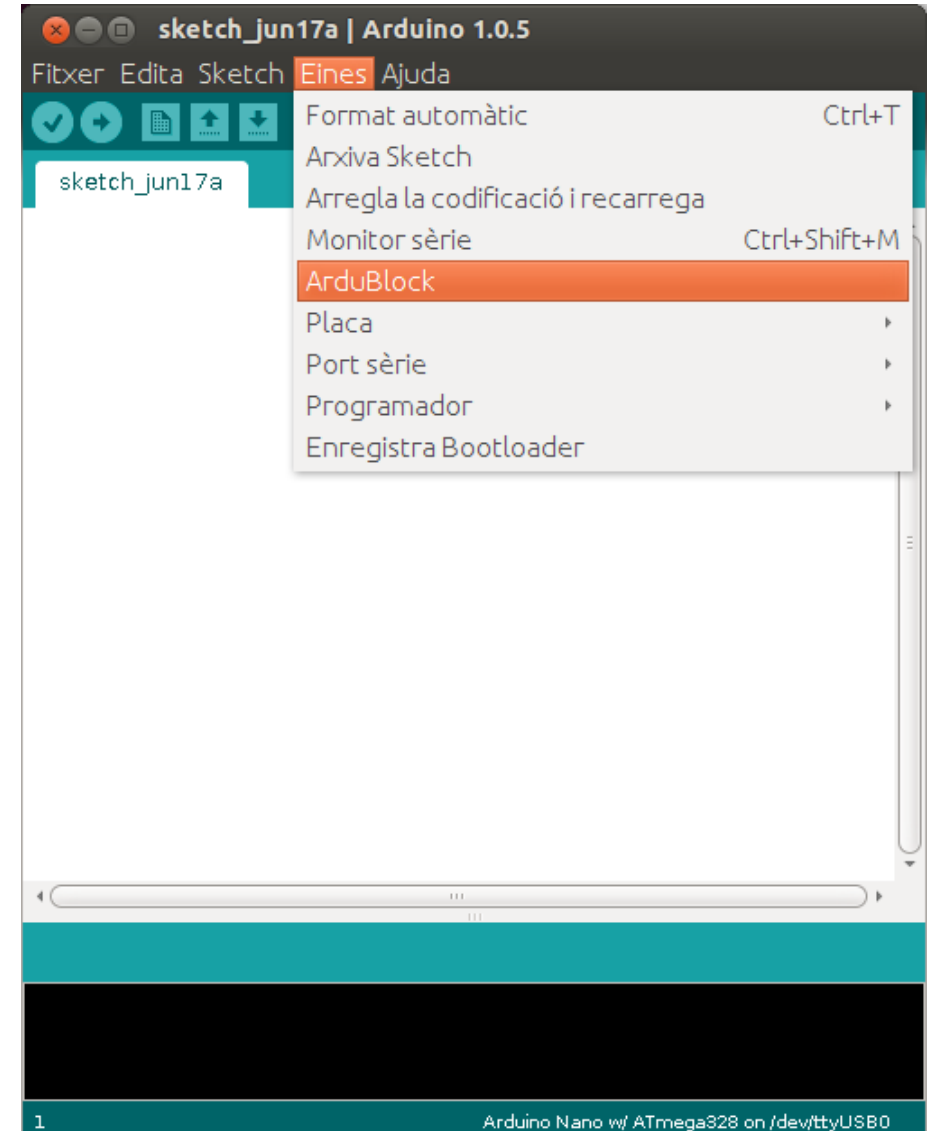
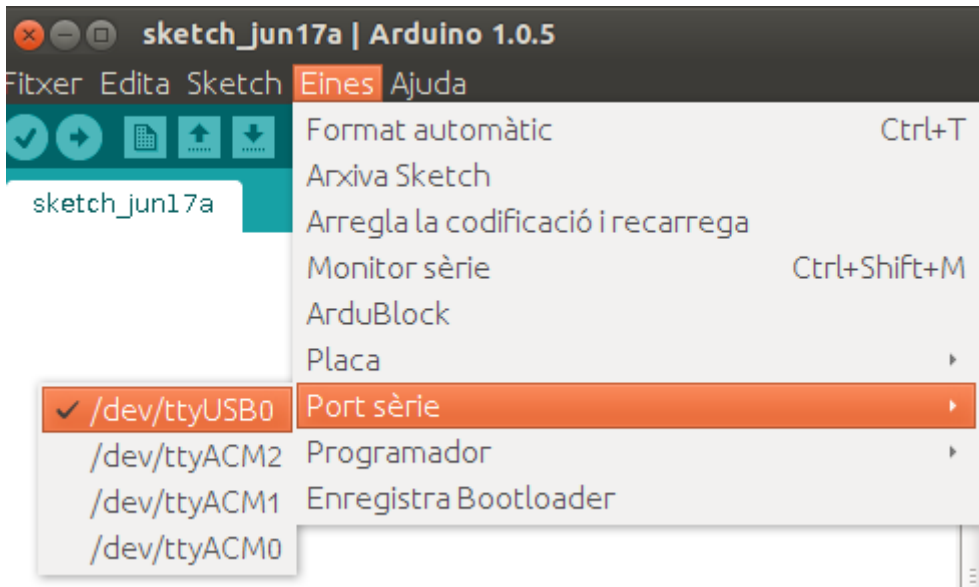
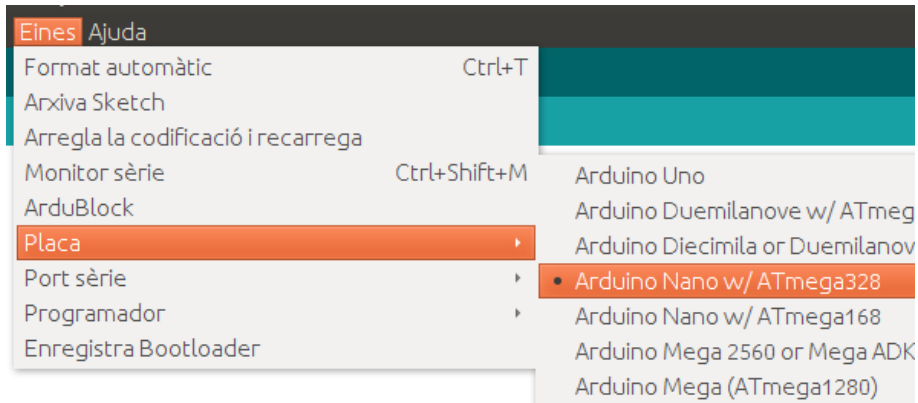
Material

Contingut de la caixa





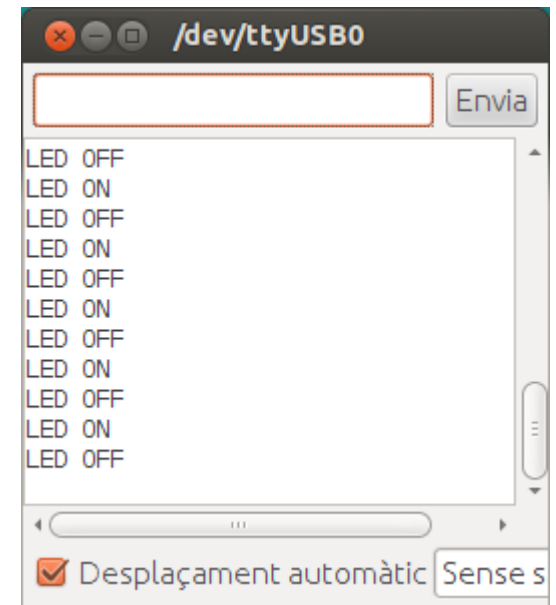
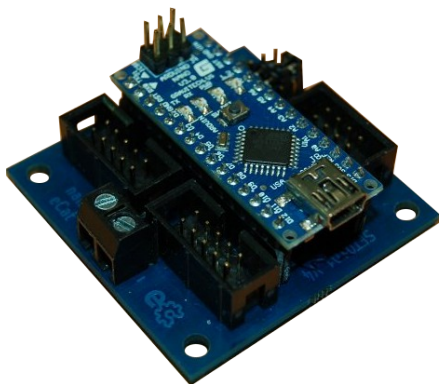
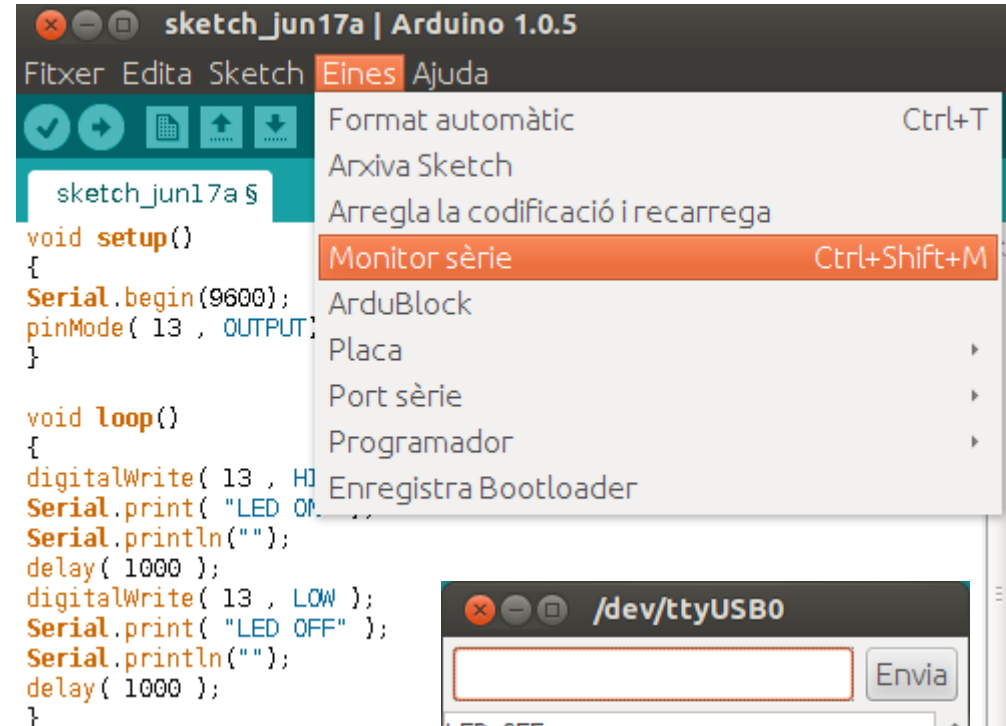
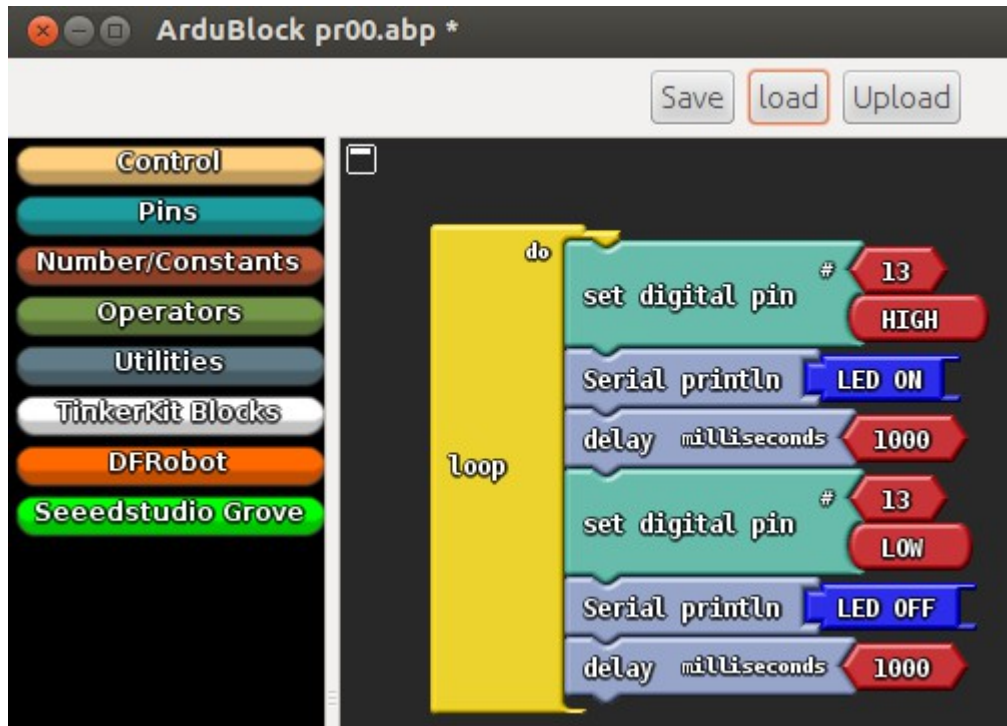
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pr00.abp - Sortides digitals

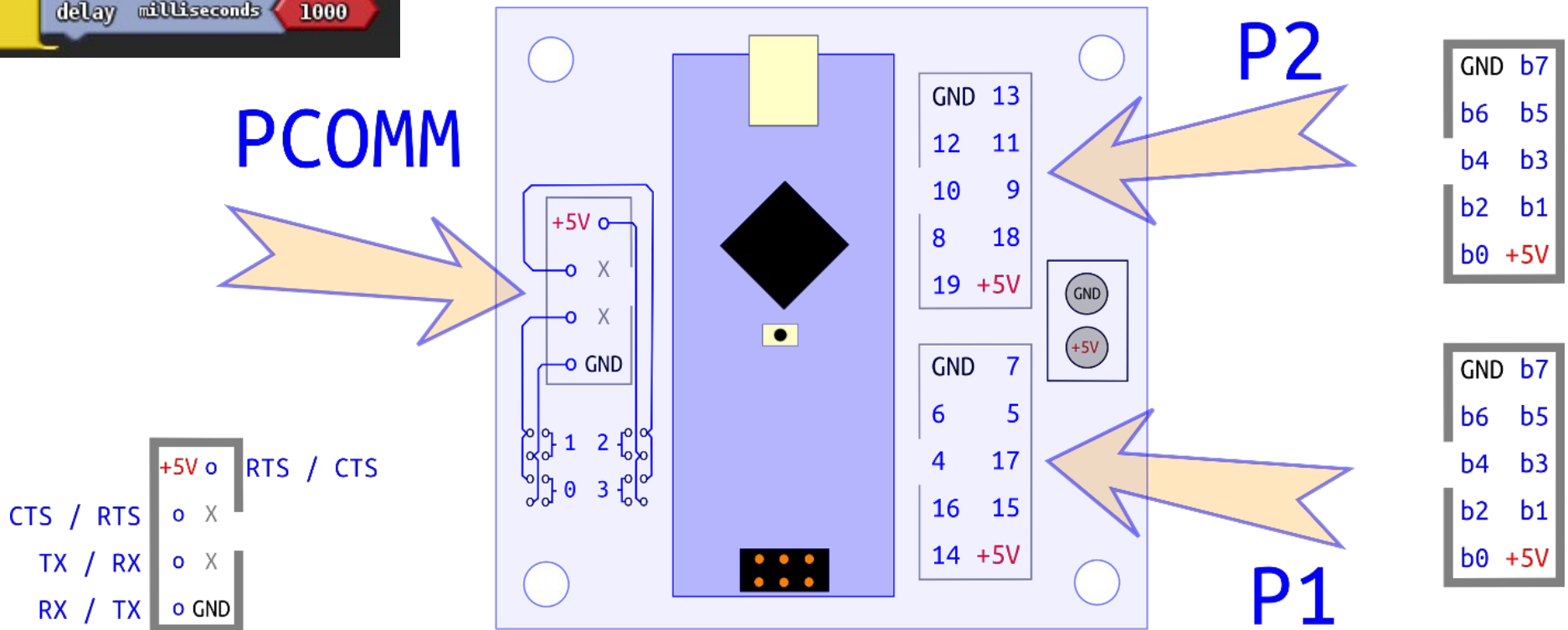
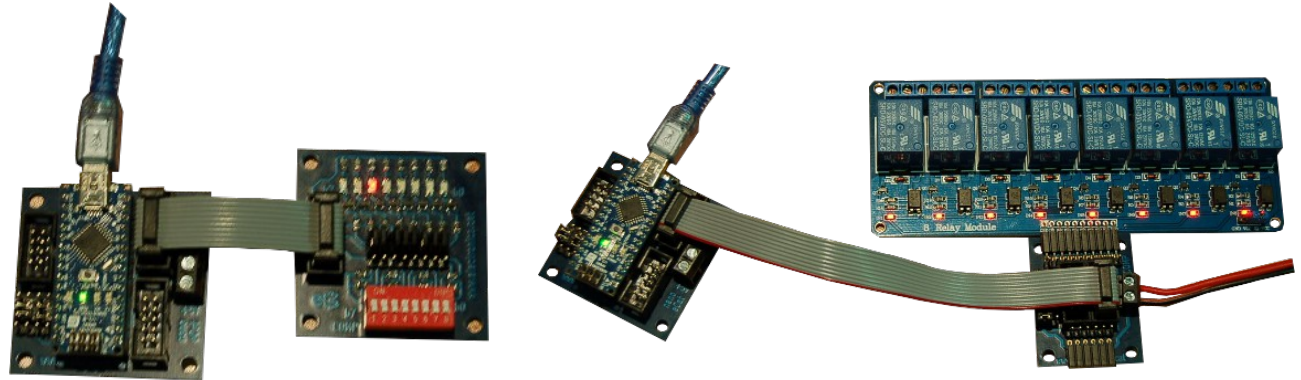


<http://www.binefa.cat/php/arduino/ardublock/pr00.abp>



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pr00.abp - Sortides digitals

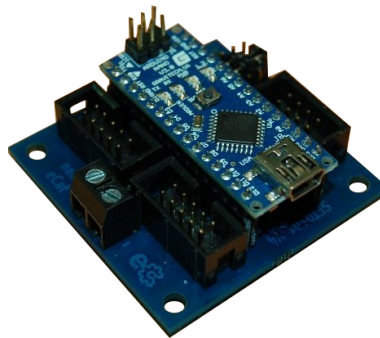




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minicom -b 9600 -o -D /dev/ttyUSB0

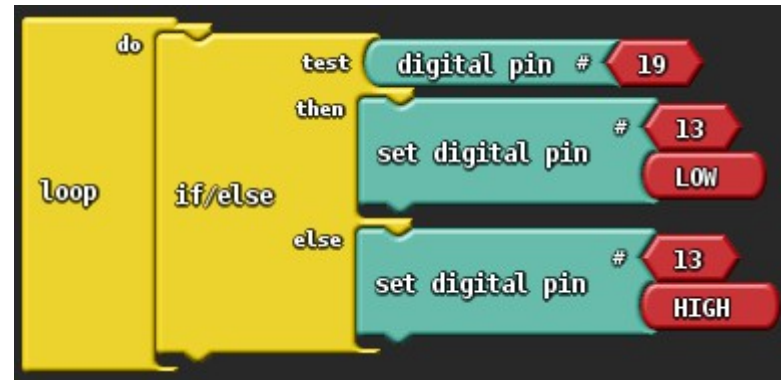
```
jordi@eCat:~/Documents/electronics.cat/projects/arduino/install/arduino-1.0.5$ minicom -b 9600 -o  
-D /dev/ttyUSB1  
  
Welcome to minicom 2.5  
  
OPTIONS: I18n  
Compiled on May  2 2011, 10:05:24.  
Port /dev/ttyUSB1  
  
Press CTRL-A Z for help on special keys  
  
LED OFF  
LED ON  
LED OFF  
LED ON  
LED OFF  
LED ON  
LED OFF  
LED ON  
LED OFF  
LED ON  
LED OFF  
LED ON  
LED OFF
```



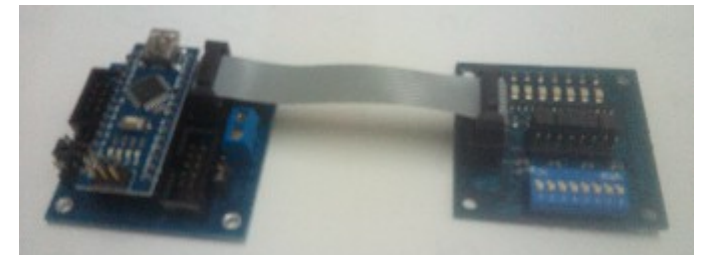
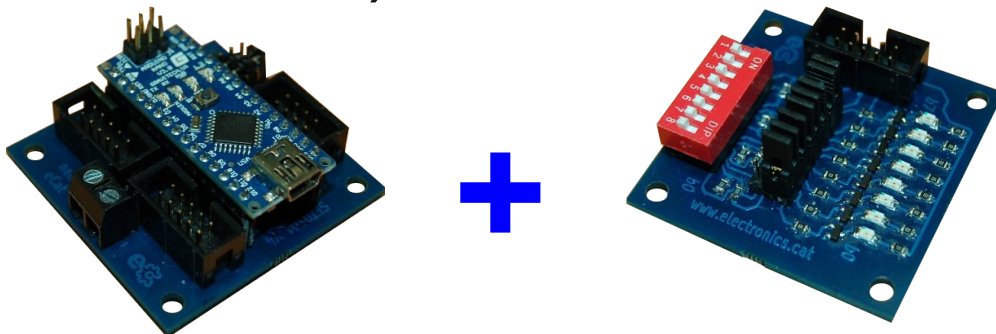


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pr01.abp - Entrades digitals



A la placa d'entrades i sortides, 01_04 v3, s'ha de configurar el pont del bit 7 de P2 (pin 13 d'Arduino) com a sortida i el bit 0 de P2 (pin 19 d'Arduino) com a entrada.



<http://www.binefa.cat/php/arduino/ardublock/pr01.abp>

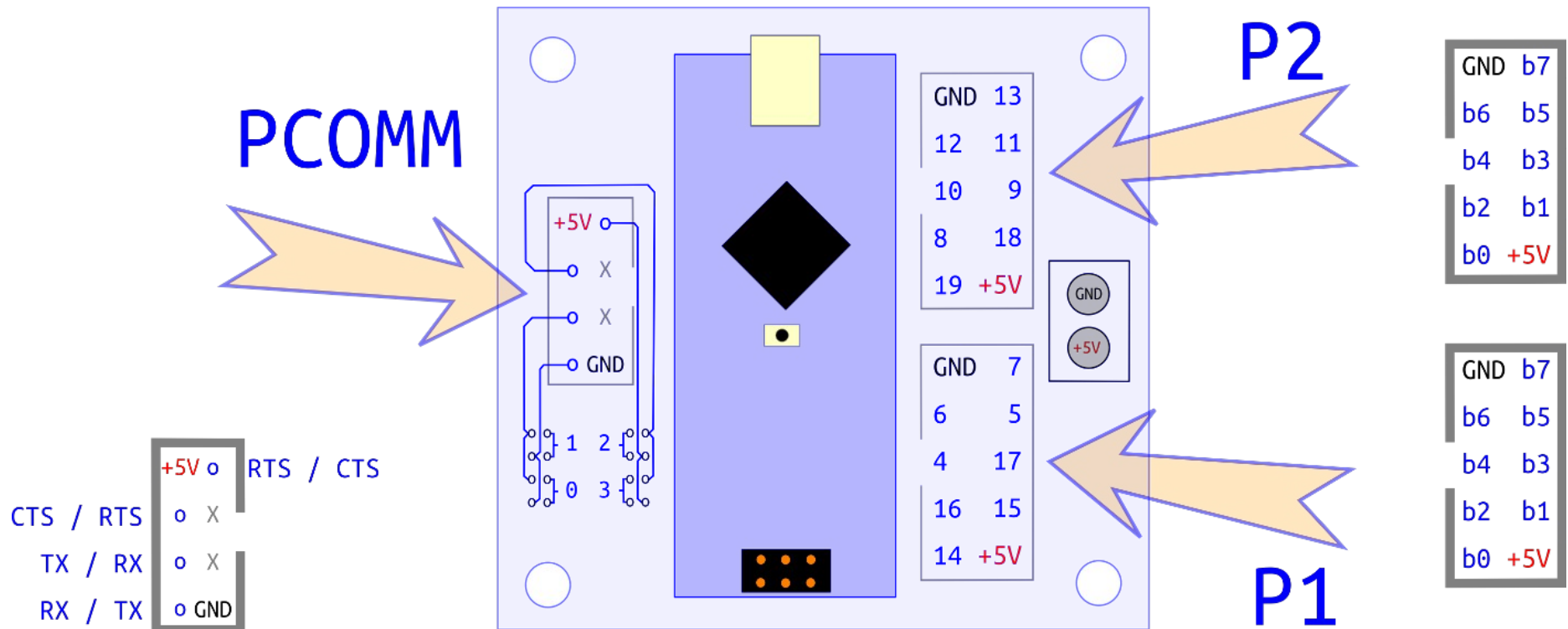


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pr02.abp - Exercici

- Desenvolpeu pr02_P2.abp per a crear una seqüència infinita des de b7 a b0 de P2 amb un interval de mig segon (500 ms):

1000000, 00000000, 01000000, 00000000, 00100000, ... , 00000000, 00000001, 00000000



http://www.binefa.cat/php/arduino/ardublock/pr02_P2.abp
http://www.binefa.cat/php/arduino/ardublock/pr02_P1.abp



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pr02.abp - Exercici

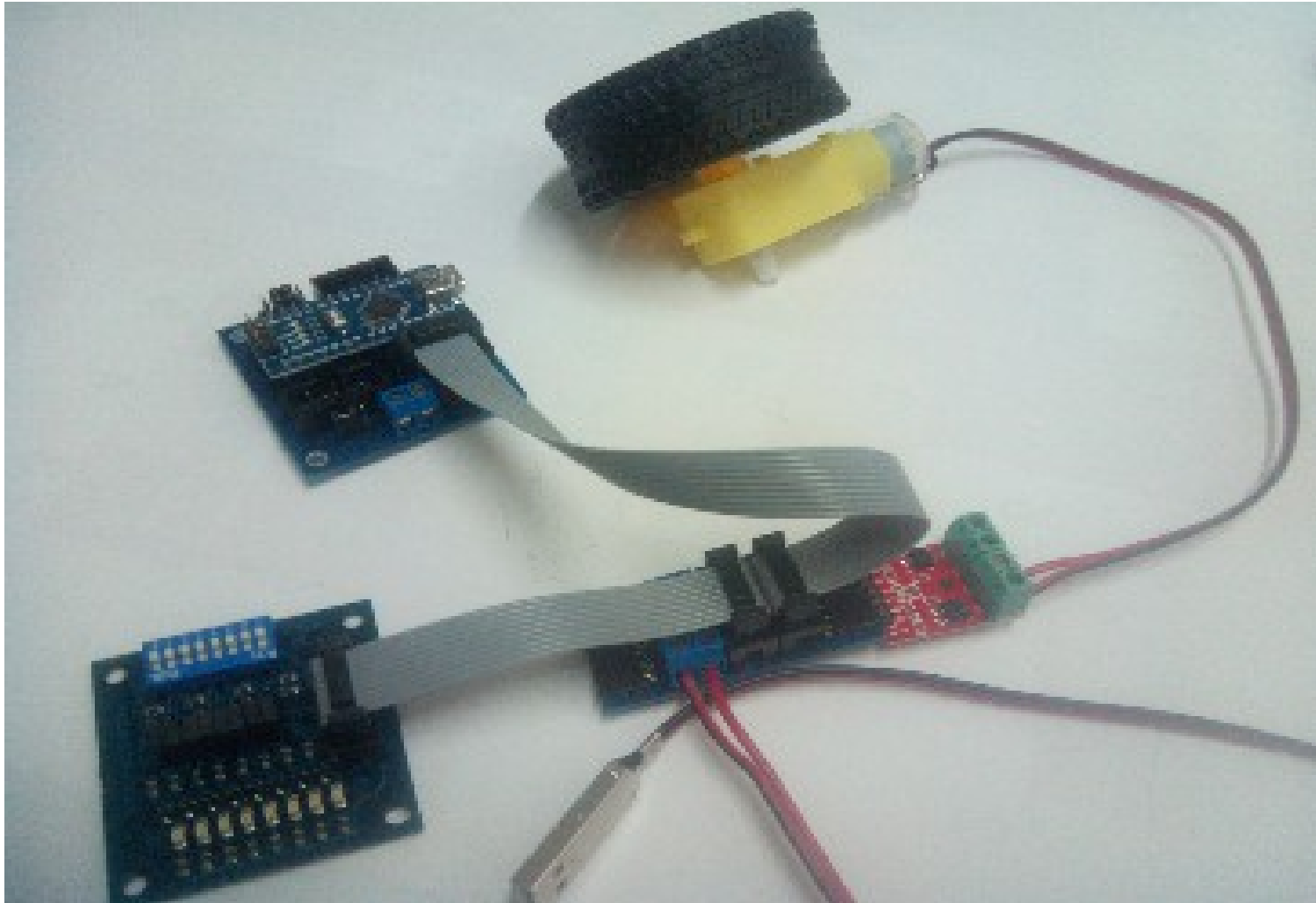


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pr02.abp - Exercici

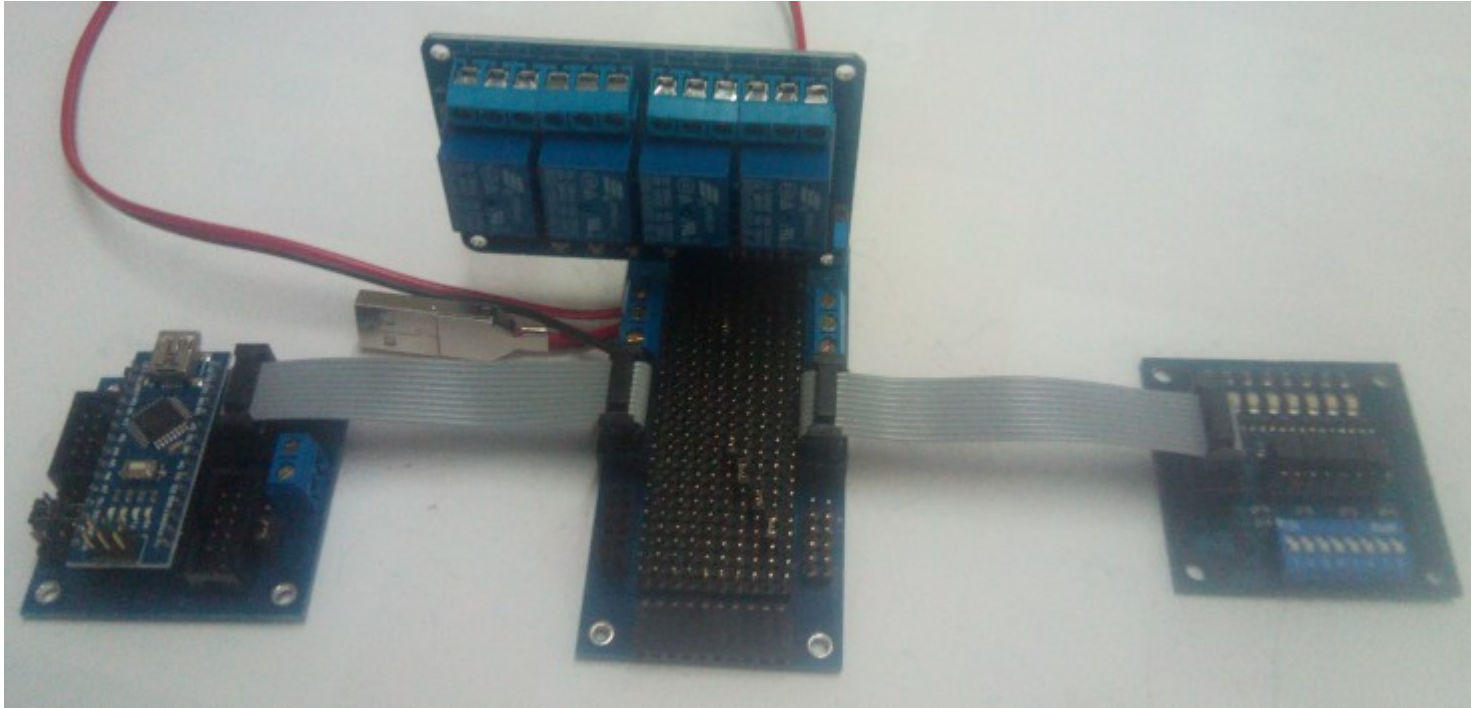


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http://www.binefa.cat/php/arduino/ardublock/pr02_P1.abp



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pr02.abp - Exercici

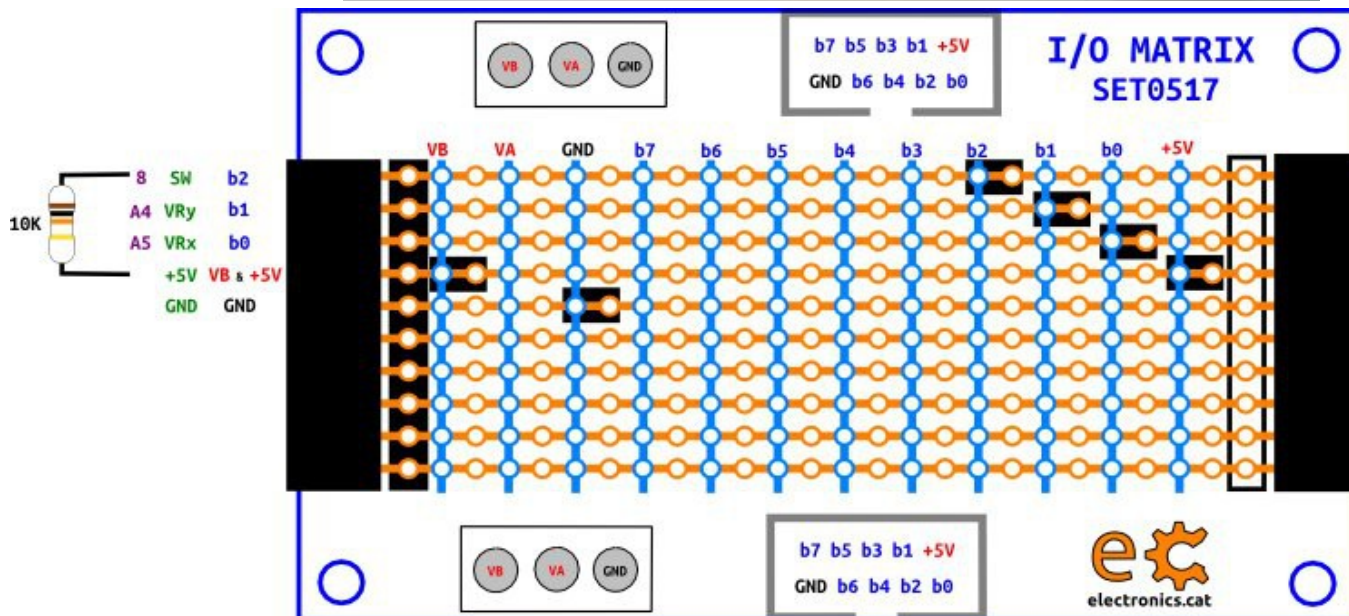
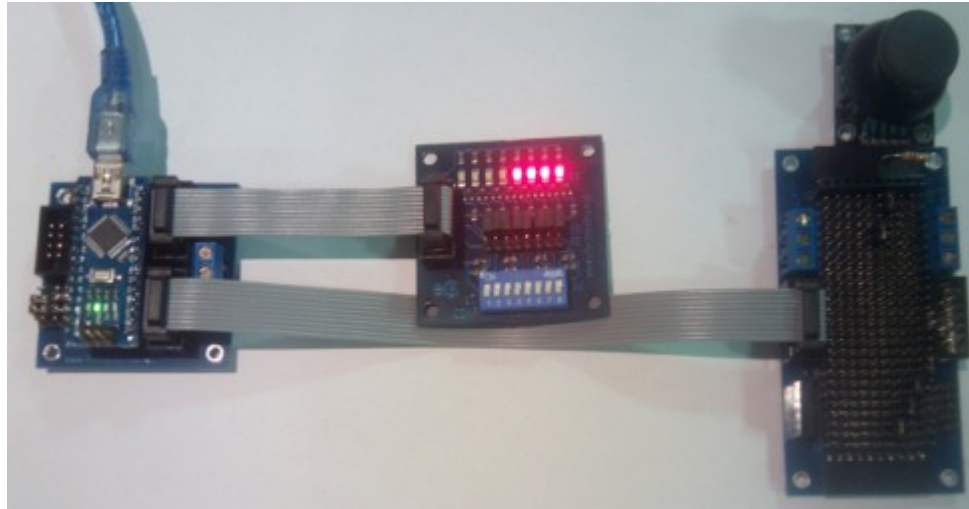


http://www.binefa.cat/php/arduino/ardublock/pr02_P2.abp
http://www.binefa.cat/php/arduino/ardublock/pr02_P1.abp



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pr03vuMeter.abp - Exercici



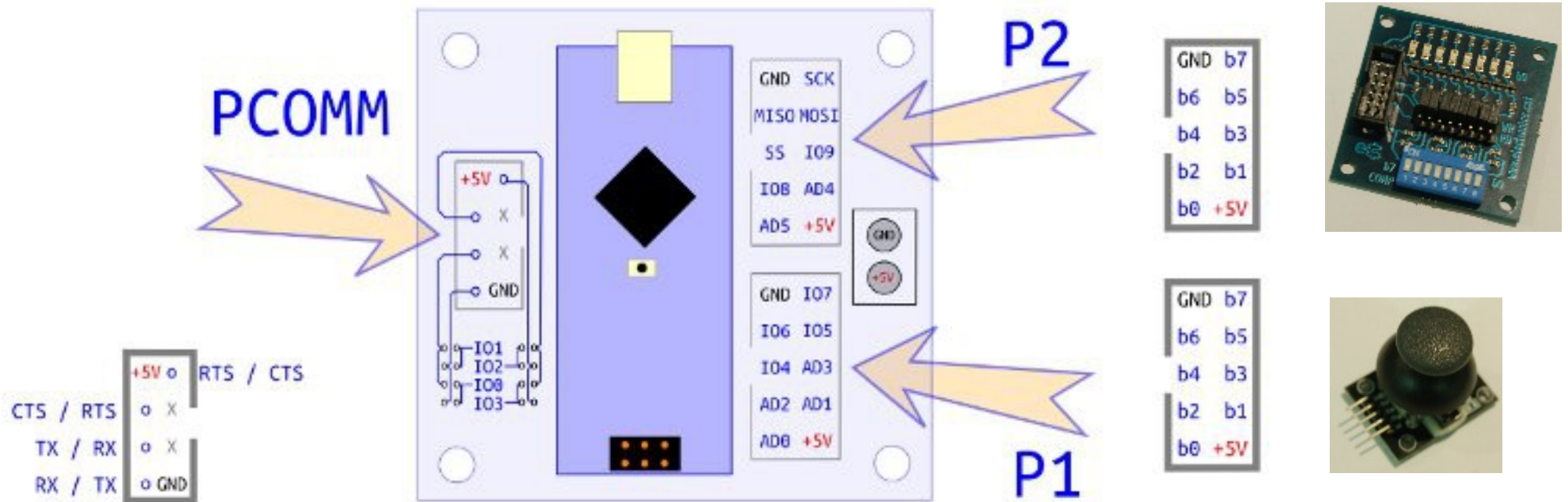
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<http://www.binefa.cat/php/arduino/ardublock/pr03vuMeter8bits.abp>



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pr03vuMeter.abp - Exercici



El valor analògic llegit màxim és 1023 i el mínim és 0

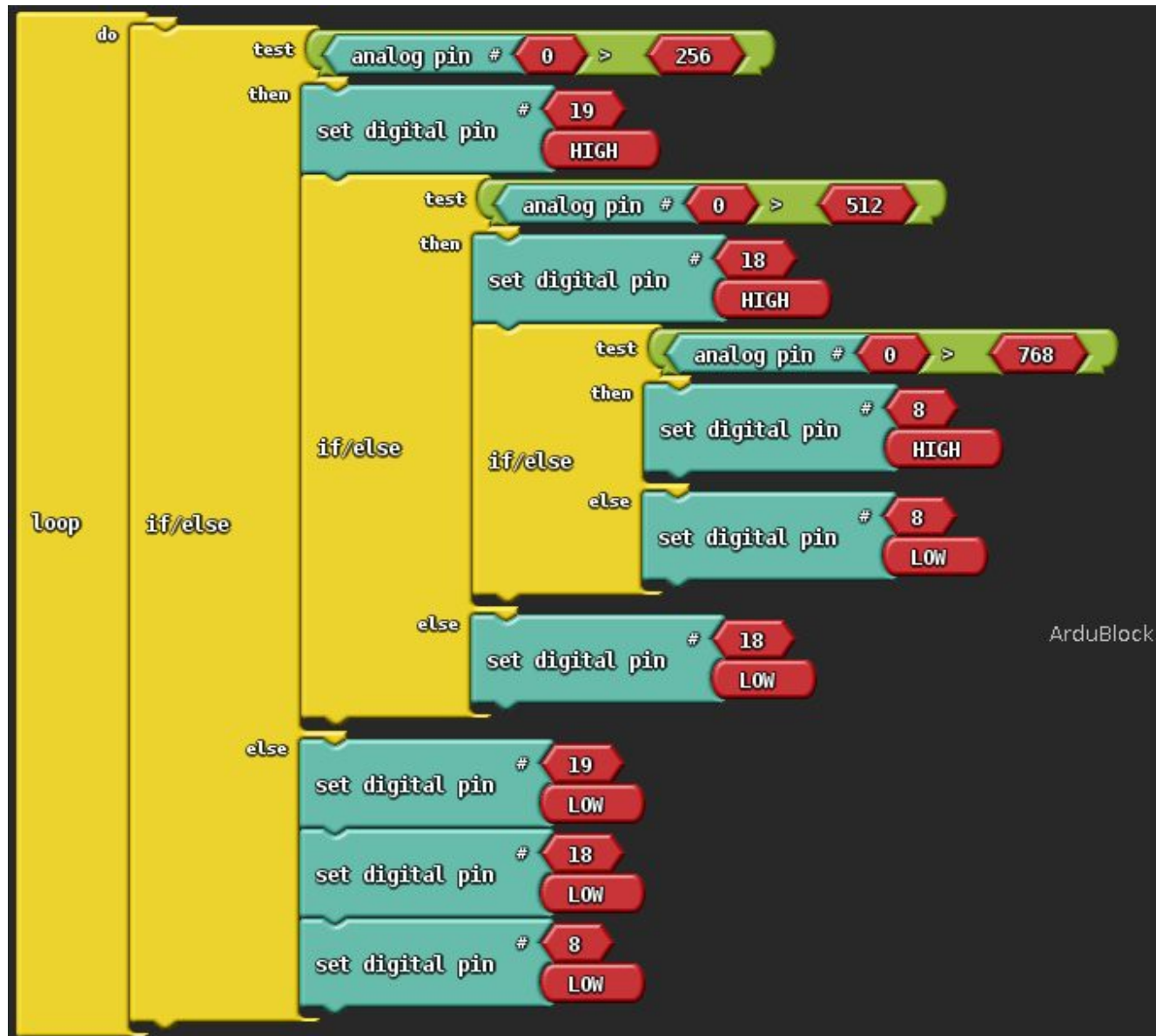
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<http://www.binefa.cat/php/arduino/ardublock/pr03vuMeter8bits.abp>



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pr03vuMeter3bits.abp - Exercici



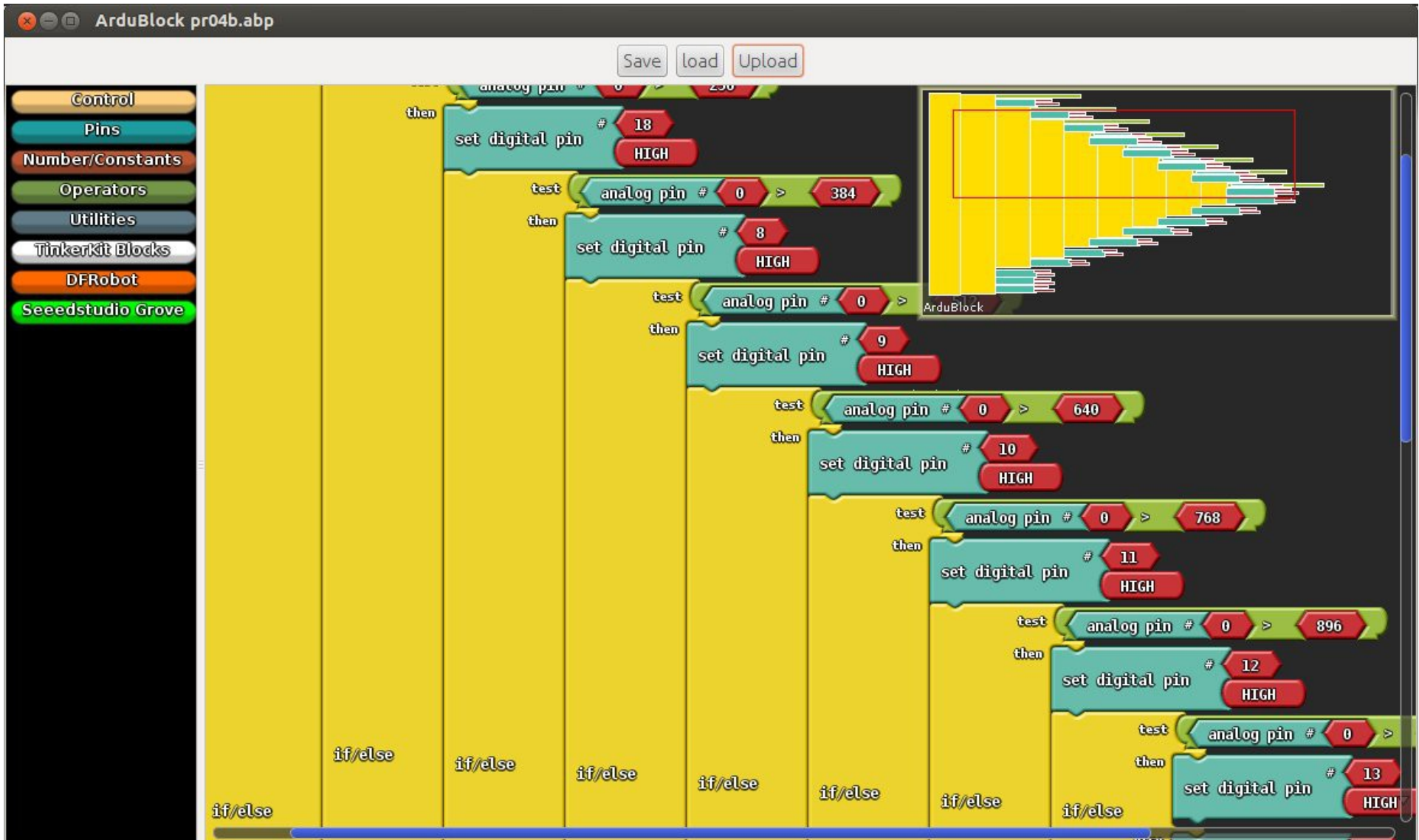
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pr03vuMeter8bits.abp - Exercici



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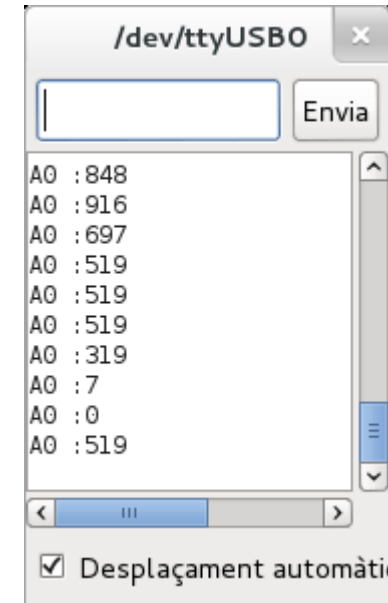


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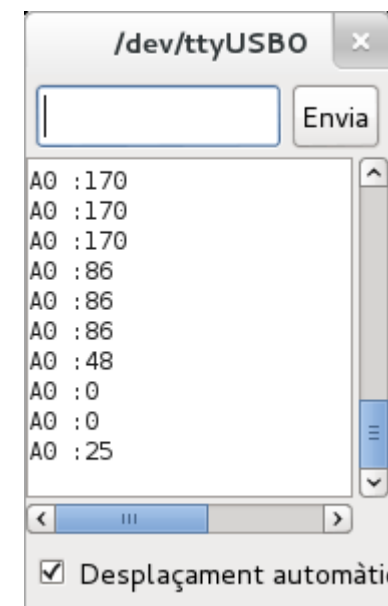
pr04joystick.abp - Exercici



<http://www.binefa.cat/php/arduino/ardublock/pr04joystick.abp>



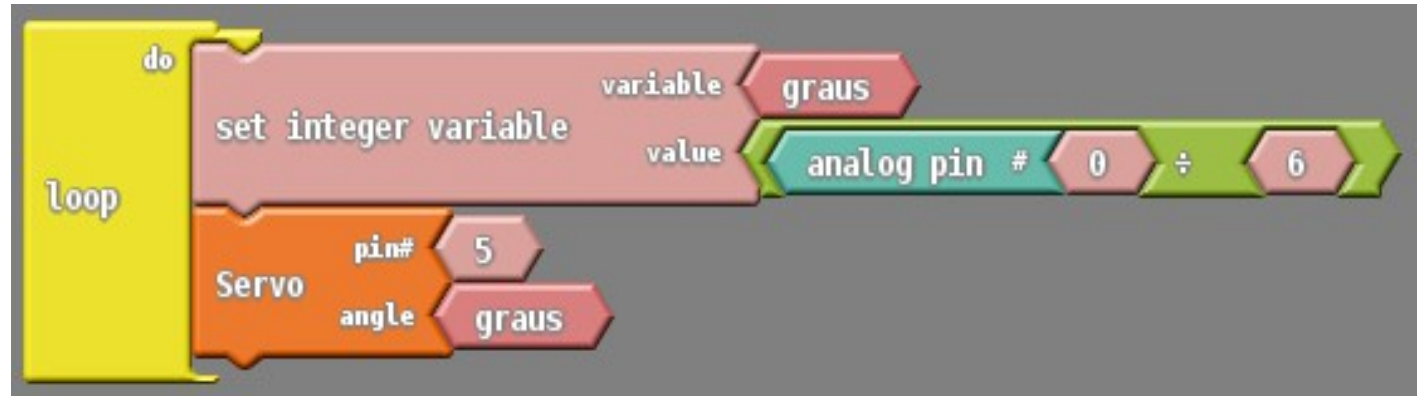
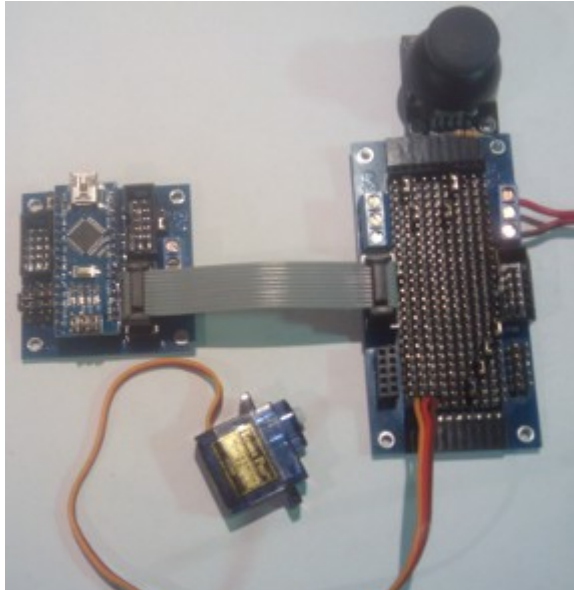
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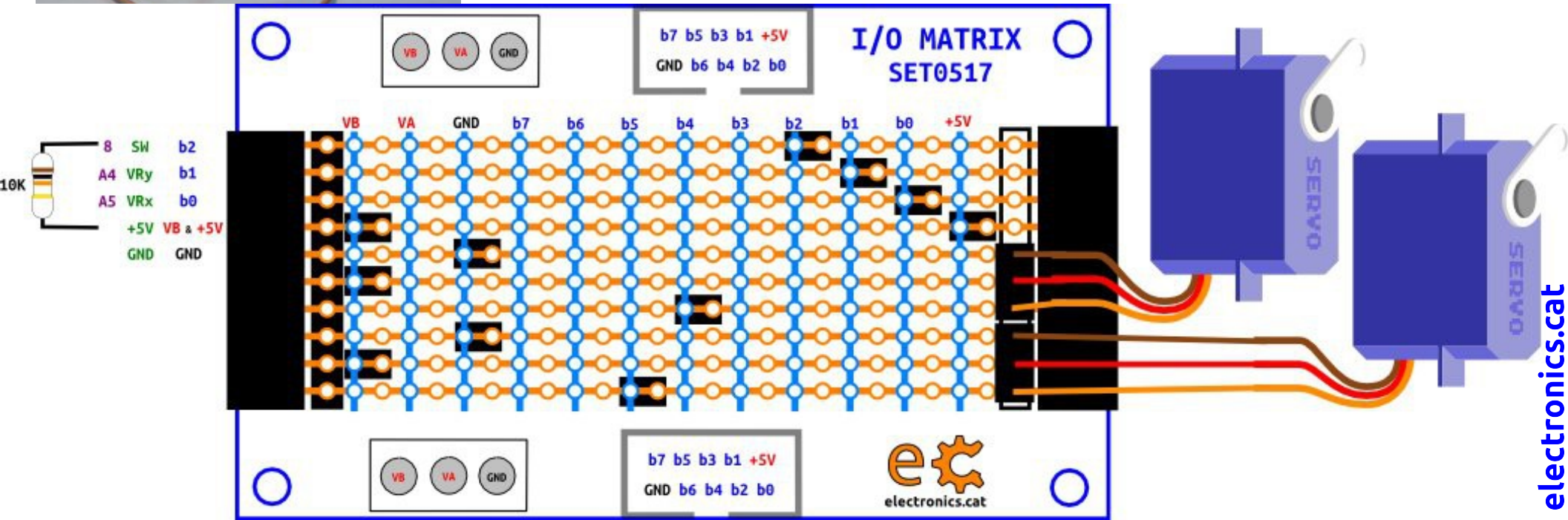


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pr04joystickServo.abp - Exercici



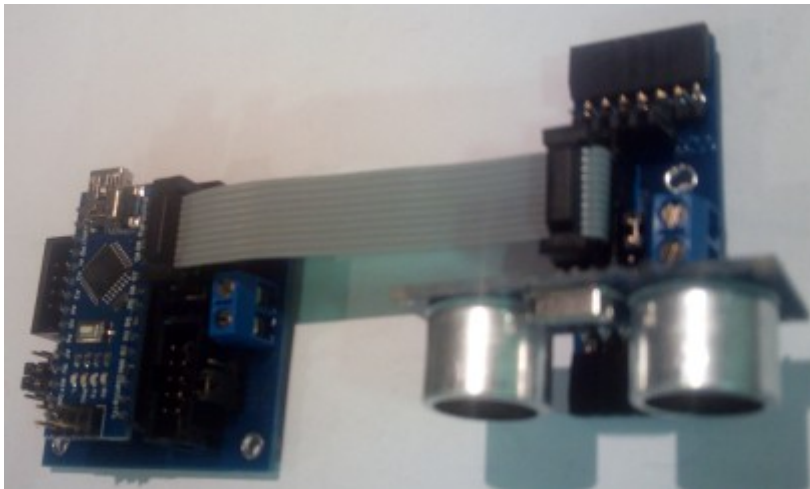
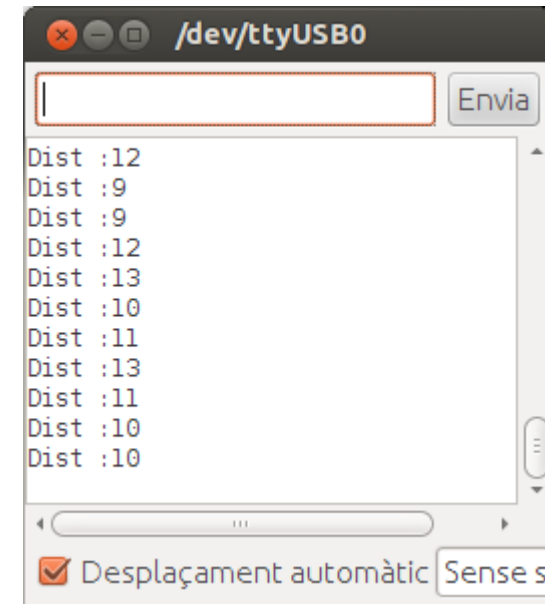
<http://www.binefa.cat/php/arduino/ardublock/pr04joystickServo.abp>





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pr05ultrasons.abp Mesura ultrasònica



<http://www.binefa.cat/php/arduino/ardublock/pr05ultrasons.abp>

<http://www.binefa.cat/php/doc/pr002/>

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Arduino Nano + LCD + Joystick + Servo

```
#include <LiquidCrystal.h>
#include <Servo.h>
```

```
LiquidCrystal lcd(16, 17, 4, 5, 6, 7); // P1
//LiquidCrystal lcd(8,9,10,11,12,13); // P2
Servo servo1; Servo servo2;
```

```
const int buttonPin = 8;
//const int buttonPin = 16;
int analogPinX = 5, analogPinY = 4;
//int analogPinX = 0, analogPinY = 1;
int buttonState = 0;
```

```
void setup() {
  // set up the LCD's number of columns and rows:
  lcd.begin(16, 2);
  lcd.print("electronics.cat");
  pinMode(buttonPin, INPUT);
  servo1.attach(10);
  servo2.attach(11);
  servo1.write(90);
  servo2.write(90);
}
```

```
unsigned long int nAnalogValue2Degrees(unsigned long int nAnalogValue){
  return (nAnalogValue * 180) / 1023;
}
```

```
void loop() {
  buttonState = digitalRead(buttonPin);
  unsigned long int degX = nAnalogValue2Degrees(analogRead(analogPinX));
  unsigned long int degY = nAnalogValue2Degrees(analogRead(analogPinY));
  // set the cursor to column 0, line 1 (note: line 1 is the second row, since counting begins from 0)
  lcd.setCursor(0, 1);
  if (buttonState == HIGH) {
    lcd.print("F ");
  }else{
    lcd.print("N ");
  }
  lcd.print("X:"); lcd.print(degX); lcd.print("d Y:"); lcd.print(degY); lcd.print("d ");
  servo1.write(degX);
  servo2.write(degY);
}
```



Presentació descarregable a : http://ves.cat/l_fF

Correu electrònic de contacte : jordibinefa@electronics.cat

twitter



<https://twitter.com/JordiBinefa>

<https://twitter.com/electronicscat>



<http://es.linkedin.com/pub/jordi-binefa/13/717/90b>

Blog : <http://www.binefa.cat/blog/>

Codis d'aquests exercicis : <http://www.binefa.cat/php/arduino/ardublock/>

Presentació d'aquestes i altres plaques : <http://ves.cat/lve3>

Plaques aviat disponibles a :

<http://www.electronics.cat>