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 Analog input, analog output, serial output

 Reads an analog input pin, maps the result to a range from 0 to 255

 and uses the result to set the pulsewidth modulation (PWM) of an output pin.

 Also prints the results to the serial monitor.

 The circuit:

 \* potentiometer connected to analog pin 0.

 Center pin of the potentiometer goes to the analog pin.

 side pins of the potentiometer go to +5V and ground

 \* LED connected from digital pin 9 to ground

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 modified 9 Apr 2012

 by Tom Igoe

 This example code is in the public domain.

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// These constants won't change. They're used to give names

// to the pins used:

const int analogInPin = A0; // Analog input pin that the potentiometer is attached to

const int analogOutPin = 9; // Analog output pin that the LED is attached to

int sensorValue = 0; // value read from the pot

int outputValue = 0; // value output to the PWM (analog out)

void setup() {

 // initialize serial communications at 9600 bps:

 Serial.begin(9600);

}

void loop() {

 // read the analog in value:

 sensorValue = analogRead(analogInPin);

 // map it to the range of the analog out:

 outputValue = map(sensorValue, 0, 1023, 0, 255);

 // change the analog out value:

 analogWrite(analogOutPin, outputValue);

 // print the results to the serial monitor:

 Serial.print("sensor = ");

 Serial.print(sensorValue);

 Serial.print("\t output = ");

 Serial.println(outputValue);

 // wait 2 milliseconds before the next loop

 // for the analog-to-digital converter to settle

 // after the last reading:

 delay(2);

}