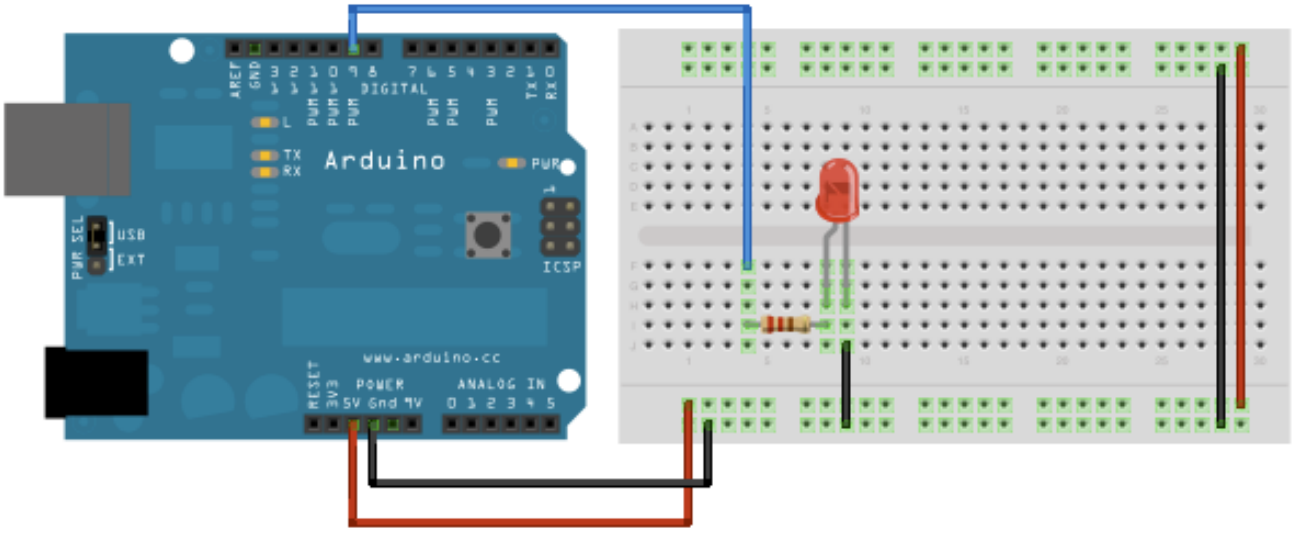
FADING AN LED

Setup the following circuit…



Now we will write a program that will allow us to make the LED fade in and fade out.
This might seem weird, since we can only either send power, or not send power.
But what we can do is send power at quick pulses or send power in slow pulses, this gives the illusion of a fade.

Add the following code.
Verify it, Upload it to the Arduino and see what happens!

```
int led = 9;           // the pin that the LED is attached to
int brightness = 0;    // how bright the LED is
int fadeAmount = 5;    // how many points to fade the LED by

// the setup routine runs once when you press reset:
void setup()  {
  // declare pin 9 to be an output:
  pinMode(led, OUTPUT);
}

// the loop routine runs over and over again forever:
void loop()  {
  // set the brightness of pin 9:
  analogWrite(led, brightness);

  // change the brightness for next time through the loop:
  brightness = brightness + fadeAmount;

  // reverse the direction of the fading at the ends of the fade:
  if (brightness == 0 || brightness == 255) {
    fadeAmount = -fadeAmount ;
  }
  // wait for 30 milliseconds to see the dimming effect
  delay(30);
}
```