```
1    /*
2     Fade
3
4     This example shows how to fade an LED on pin 9
5     using the analogWrite() function.
6
7     This example code is in the public domain.
8     */
9
10   int led = 9;           // the pin that the LED is attached to
11   int brightness = 0;    // how bright the LED is
12   int fadeAmount = 5;    // how many points to fade the LED by
13
14   // the setup routine runs once when you press reset:
15   void setup()  {
16     // declare pin 9 to be an output:
17     pinMode(led, OUTPUT);
18   }
19
20   // the loop routine runs over and over again forever:
21   void loop()  {
22     // set the brightness of pin 9:
23     analogWrite(led, brightness);
24
25     // change the brightness for next time through the loop:
26     brightness = brightness + fadeAmount;
27
28     // reverse the direction of the fading at the ends of the fade:
29     if (brightness == 0 || brightness == 255) {
30       fadeAmount = -fadeAmount ;
31     }
32     // wait for 30 milliseconds to see the dimming effect
33     delay(30);
34   }
35
```