```
// the setup function runs once when you press reset or power the board
void setup() {
  // initialize digital pin 13 as an output.
  pinMode(2, OUTPUT);
}

// the loop function runs over and over again forever
void loop() {
  digitalWrite(2, HIGH);   // turn the LED on (HIGH is the voltage level)
  delay(1000);             // wait for a second
  digitalWrite(2, LOW);    // turn the LED off by making the voltage LOW
  delay(1000);             // wait for a second
}
```
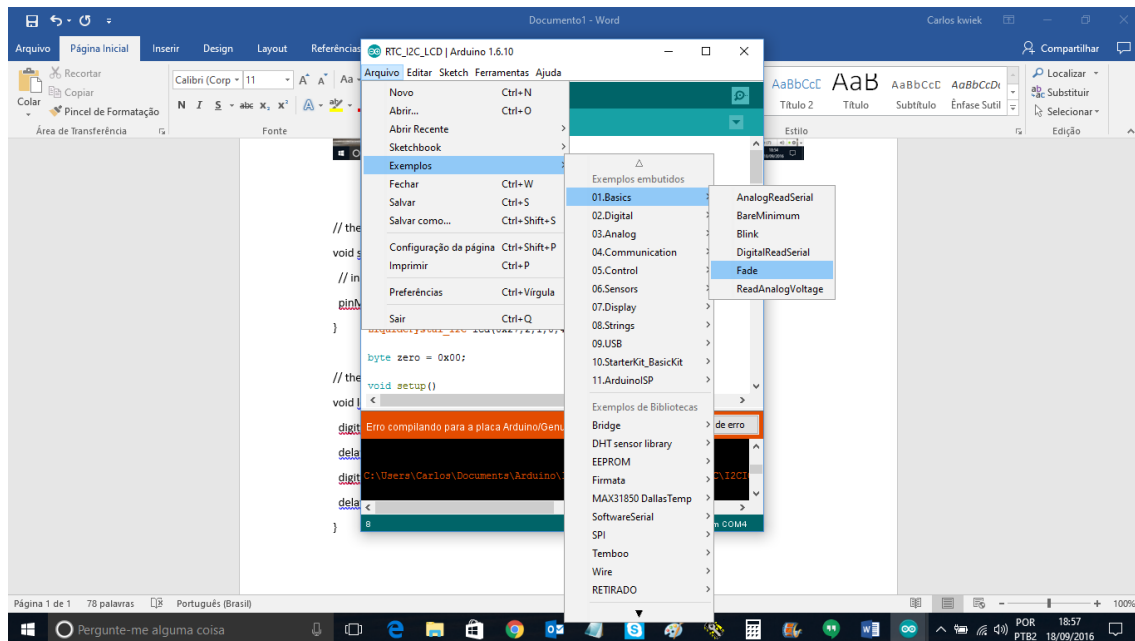
int led = 2;   // the PWM pin the LED is attached to

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);
}
```