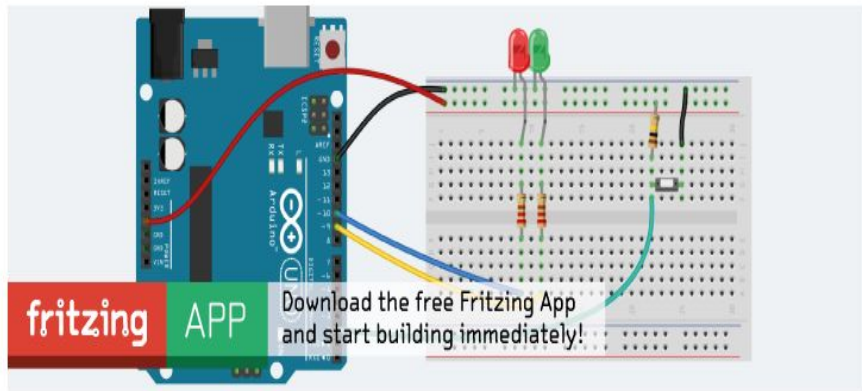


Embedded Workshop

Design and build your own PCB Shield

Rusty Cain
Oct-26-2016 DMS
Nov 8, 2016 Lab.MS



Download the free Fritzing App
and start building immediately!

Fritzing is an open-source hardware initiative that makes electronics accessible as a creative material for anyone. We offer a software tool, a community website and services in the spirit of Processing and Arduino, fostering a creative ecosystem that allows users to document their prototypes, share them with others, teach electronics in a classroom, and layout and manufacture professional pcbs.

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New fritzing release 0.9.3b!
Jun. 3, 2016

New Book: "Fritzing for Inventors"
Dec. 6, 2015

A new fritzing discussion forum
Nov. 8, 2015

More posts...

Projects

LEDthemes
JojoGamesDev

Solar Powered FONIA

Download and install Fritzing.

Update Parts library!

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No Donation

€ 10

€ 25

€ 50

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Version 0.9.3b was released on June 2, 2016.

PCB Project - Wemos D1 Weather Station



Welcome



Breadboard



Schematic

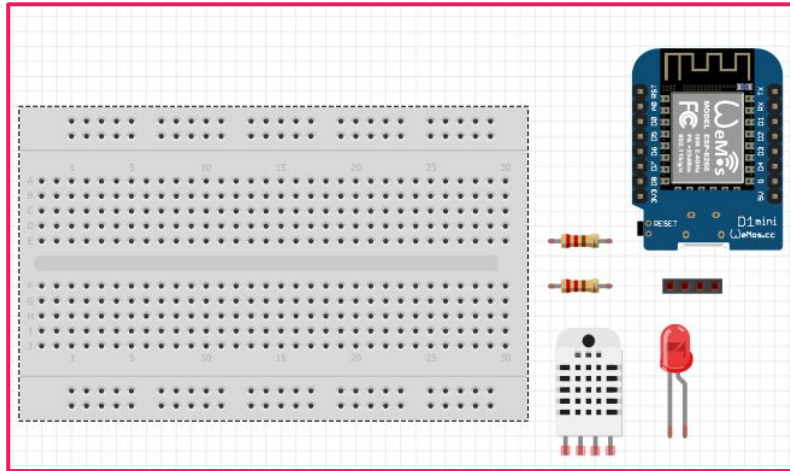


PCB



Code

- Select Breadboard: Set Breadboard1 to half.
- Select 2 Resistors from Core Parts. 330 & 4.7K Ohm
- Select 1 LED from Core Parts. 5mm LED Green
- Select DHT11 from Core Parts.
- Search:Generic Header-Then change it to 4 pin.
- Select WeMos D1 Mini



Parts

Core Parts

CORE Basic

MINE

Input

seed

intel

Output

Inspector

Breadboard1

v. 4

Breadboard1

Placement

location	0.000	0.000	in
rotation	0.0		degrees

Locked

Properties

family	breadboard
size	half
part #	

Tags

breadboard, fritzing core

Connections

conn.	
name	
type	

Build your Breadboard

Connect +5 to power rail
Connect GND to power rail

Connect DHT11

Pin	Name	Description
1	VDD	Power supply 3 - 5.5 V DC
2	DATA	Serial data output
3	NC	Not connected
4	GND	Ground

Pin 1 to +5 Red Wire

Pin 2 to D3 & R1 Yellow Wire

Pin 4 to GND Black Wire

Connect LED

Anode to D4 Orange Wire

Cathode to R2 and R2 to GND

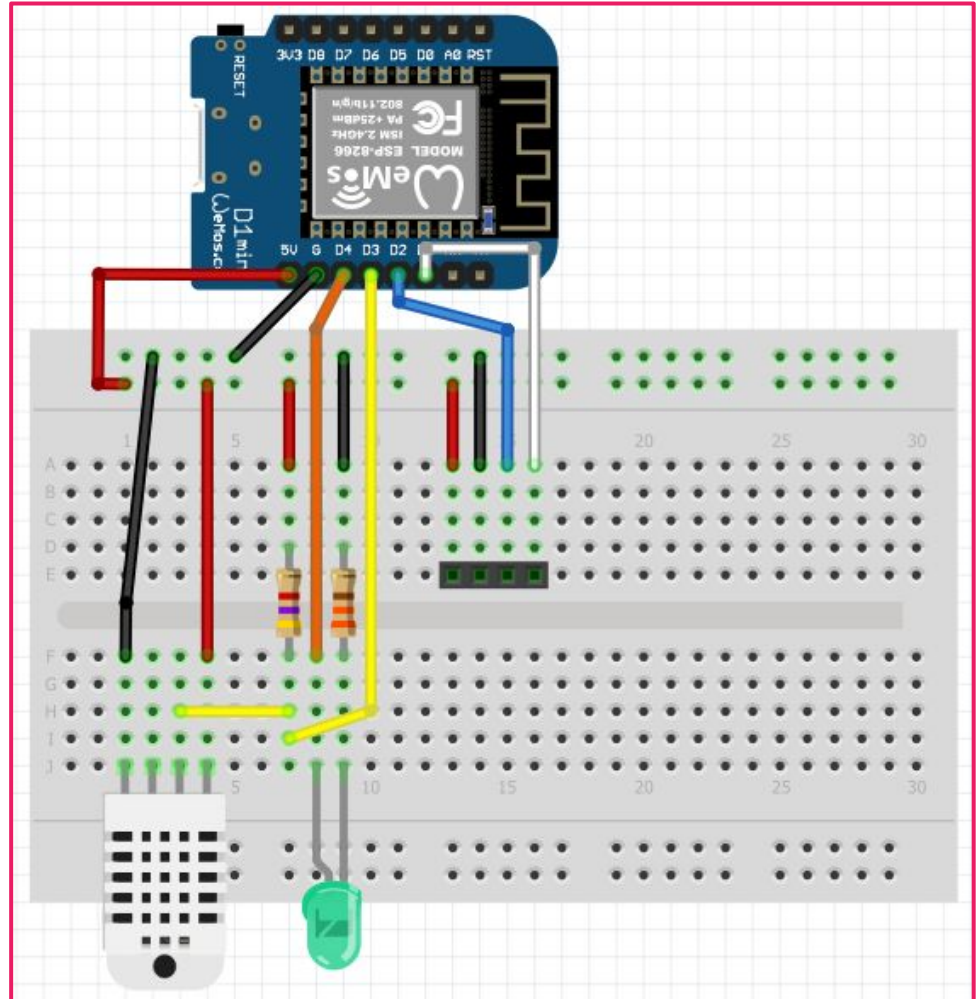
Connect Header 4 Pin (I2C)

Pin 1 to +5

Pin 2 to GND

Pin 3 to D2 -SDA I2C

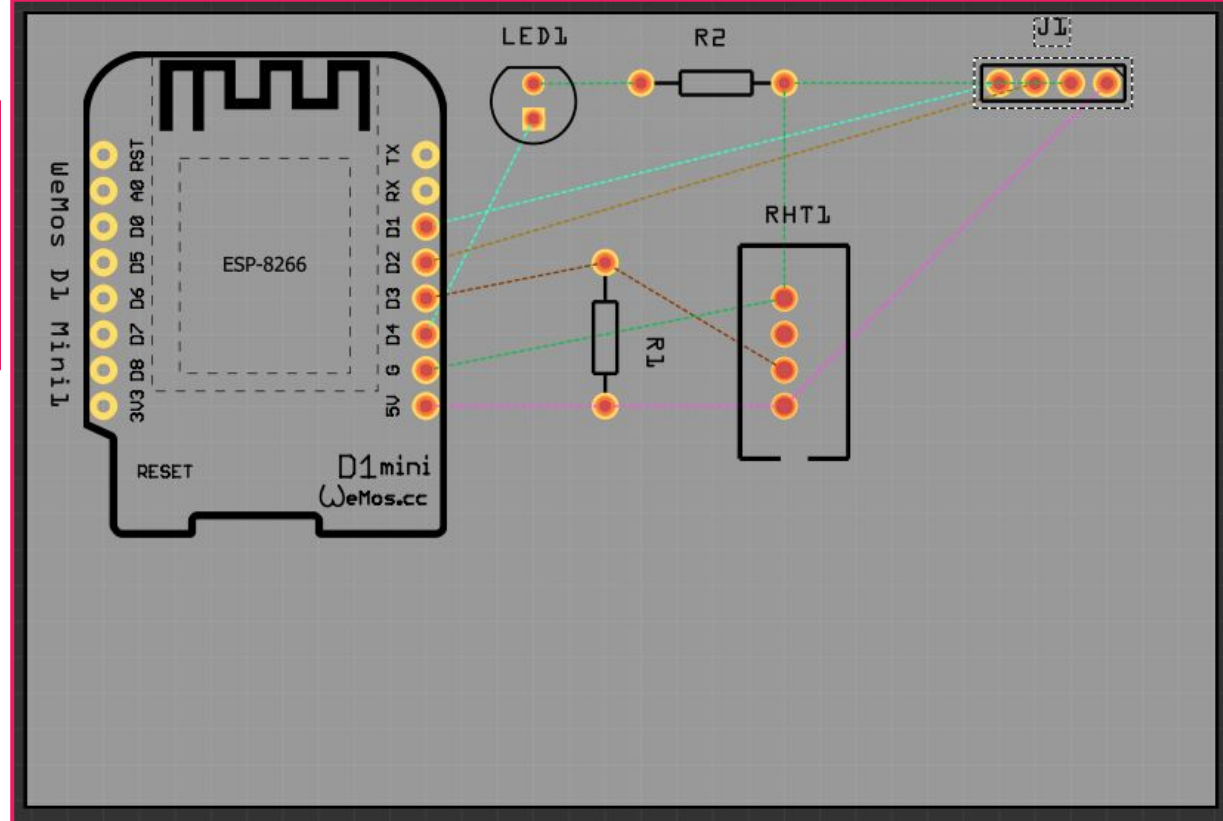
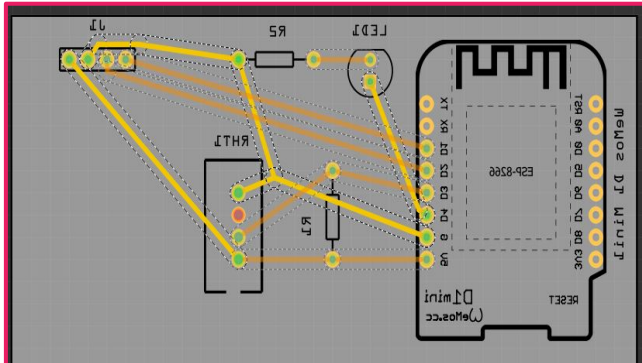
Pin 4 to D1 -SCL I2C



Arrange Components on PCB



Arrange all components.
Play around with:
Top Layer - Bottom layer.
View from Above - Below
Try Autoroute if you dare.
Control Z will undo the mess.



Run Traces on PCB

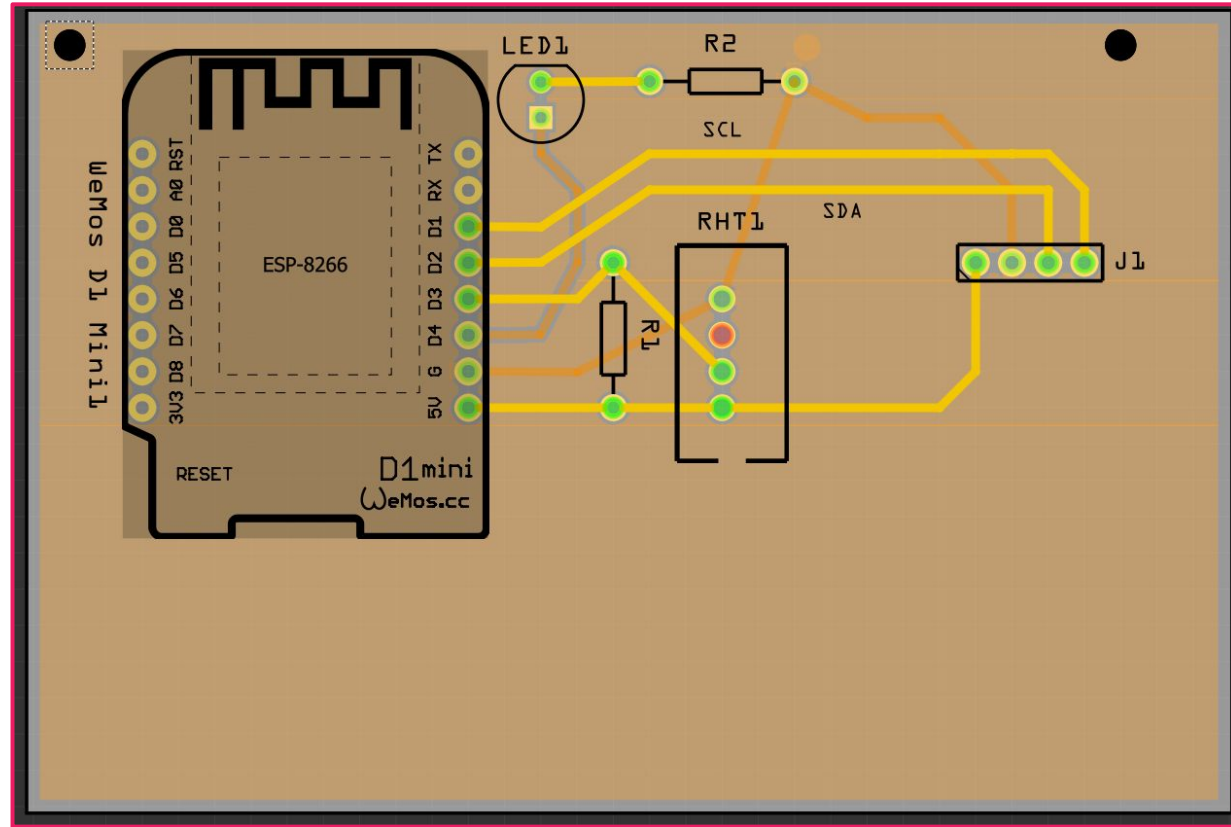
Yellow is the top layer.
Orange is the bottom layer.

It is better to put
Ground traces on bottom
Layer. Makes it easy for
creating a Ground Plane.

Run Design Rule Check.

Set Ground points.
Create Ground Fill on
bottom Layer.

Add Silkscreen logo



Rotate



View from Above



Both Layers



Autoroute



Export for PCB

Download Gerber files

Run Design Rule Check.

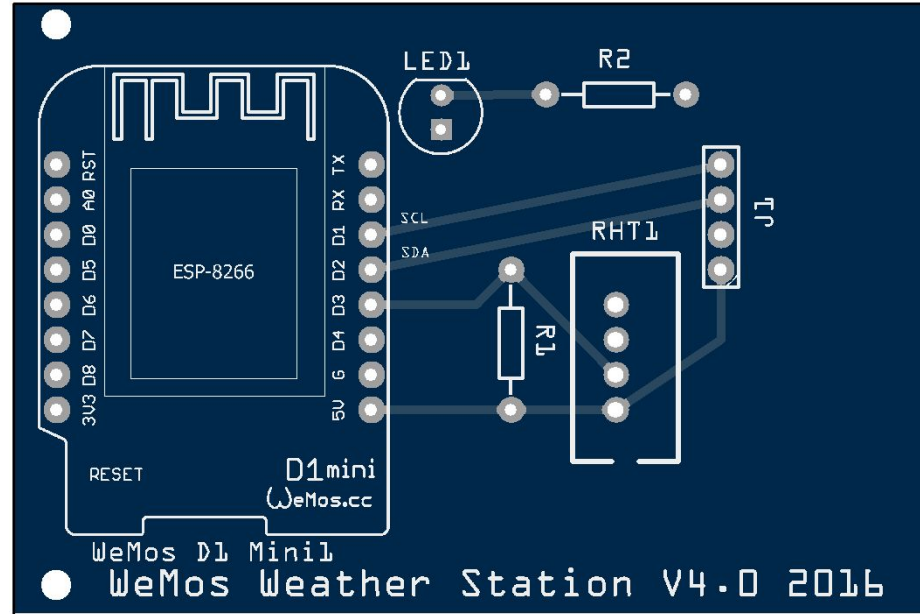
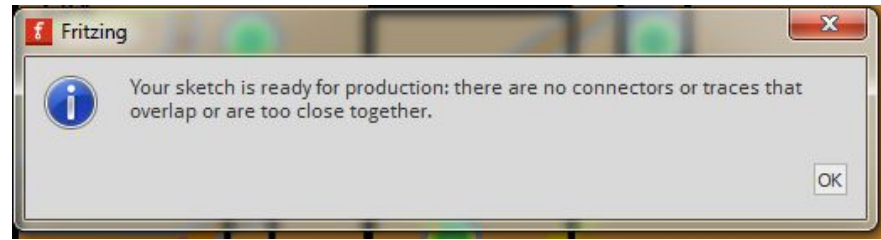
Create a Folder for Gerber Files.

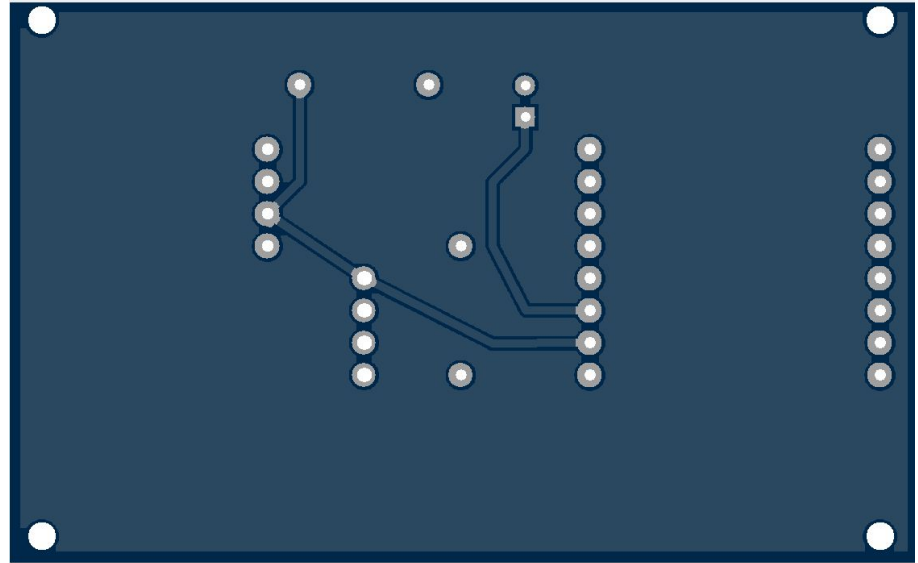
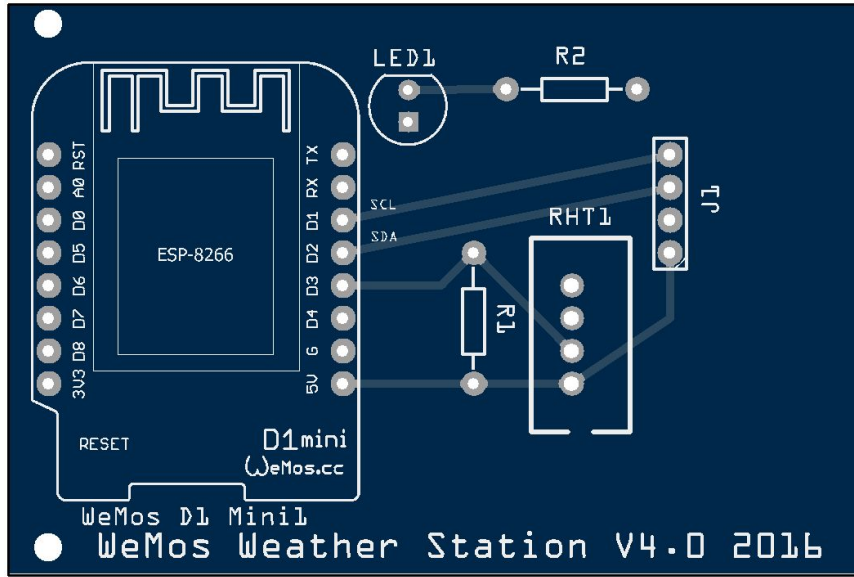
File - Export - For Production
Extended Gerber RS (274X)...

Zip Files in Folder.

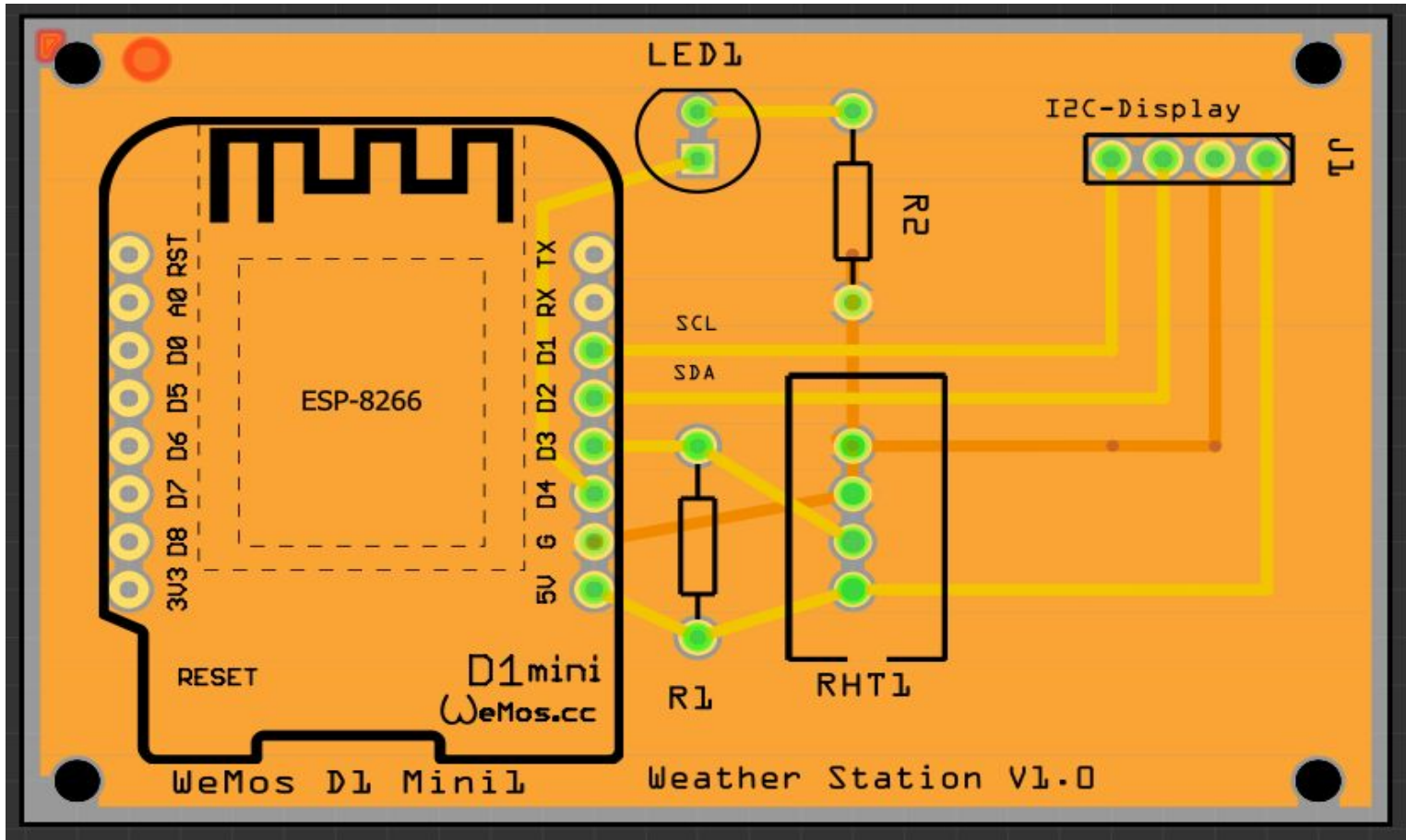
Download Gerber.Zip

<http://gerblook.org/>





Inspect your final design



Thank you for attending the workshop!