

Projects (/projects?
ref=topnav)

Videos (/videos?
ref=topnav)

Contests (/contests?
ref=topnav)

Events (/events?
ref=topnav)

Feed (/feed?
ref=topnav)



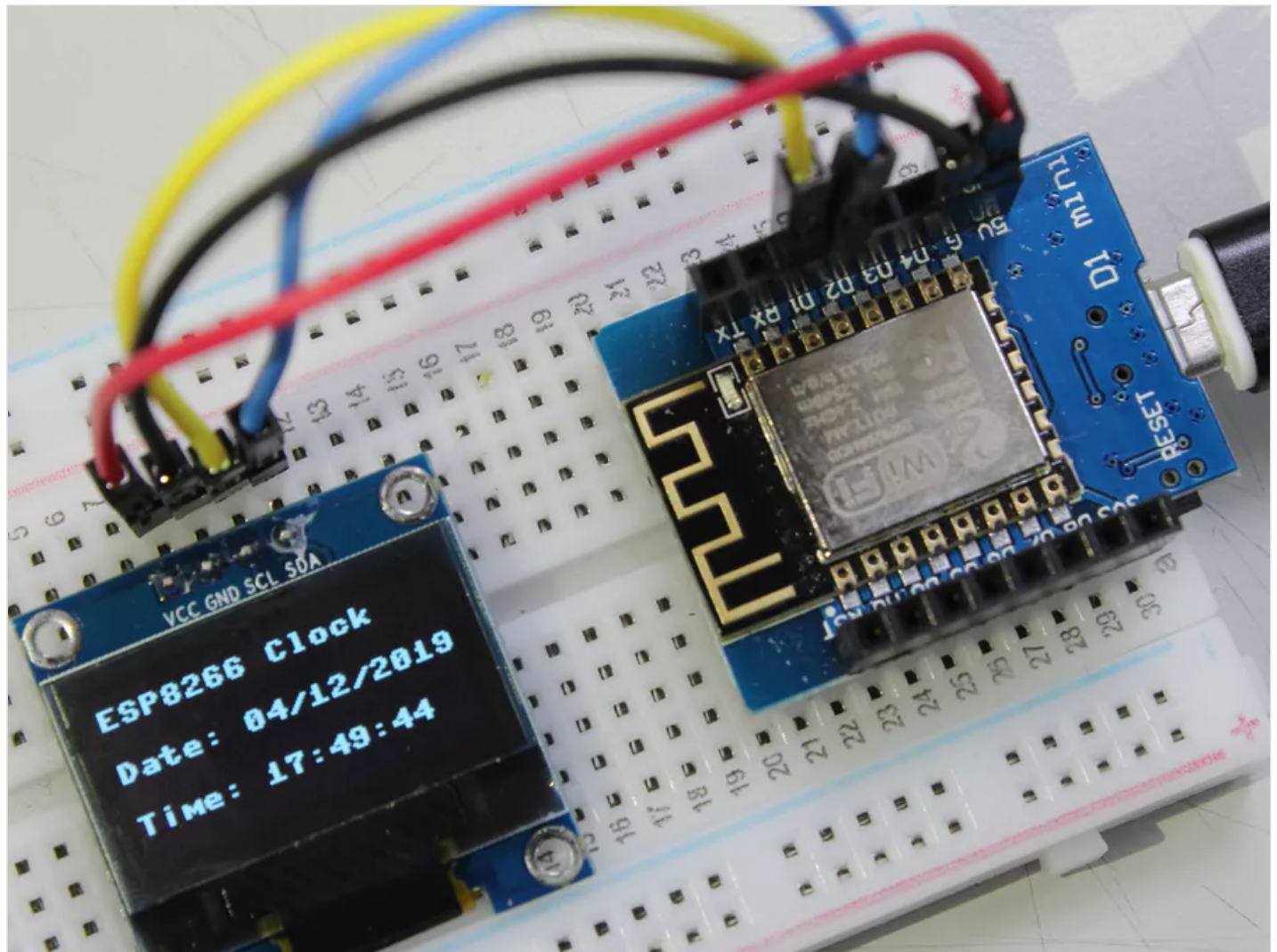
alankrantas (/alankrantas)

Published April 12, 2019 © CC BY-NC (<http://creativecommons.org/licenses/by-nc/4.0>)

Very Simple MicroPython ESP8266/ESP-12 Web Clock

A tutorial of building a web clock with only an ESP8266/ESP-12 board and an SSD1306 OLED display by using built-in modules of MicroPython.

🔗 Easy(/projects?difficulty=beginner) 💡 Protip 👁 5,237



(<https://groupgets.com/campaigns/506-nx4832t035-hmi-touch-display>)

NEXTION HMI
combines a touch
display with an
onboard processor and
memory,
(<https://groupgets.com/campaigns/506-nx4832t035-hmi-touch-display>)

ADVERTISEMENT
([HTTP://HELP.HACKSTER.IO/KNOWLEDGE-ARE-THese-ADS](http://help.hackster.io/knowledgebase-are-these-ads))

Things used in this project

Hardware components

Espressif Wemos D1 Mini

([/Espressif/products/wemos-d1-mini?ref=project-3c5c6f](https://Espressif/products/wemos-d1-mini?ref=project-3c5c6f))

× 1

You can use any ESP8266 boards, as long as they have two pins for I2C.

[s=BAhJIhcxNDcxNDksQmF2ZURydGJpGUGGgZ](https://products/buy/657?ref=project-3c5c6f)

Graphic OLED, 128 x 64

Any generic SSD1306 OLED display modules will do.

× 1

[s=BAhJIhcxNDcxNDksQmF2ZURydGJpGUGGgZ](https://products/buy/48344?ref=project-3c5c6f)

Jumper wires (generic)

× 1

[s=BAhJIhcxNDcxNDksQmF2ZURydGJpGUGGgZFF](https://products/buy/42742?ref=project-3c5c6f)

Breadboard (generic)

× 1

[s=BAhJIhcxNDcxNDksQmF2ZURydGJpGUGGgZFF](https://products/buy/42749?ref=project-3c5c6f)

Software apps and online services

MicroPython

([/micropython/products/micropython?ref=project-3c5c6f](https://micropython/products/micropython?ref=project-3c5c6f))

[↗ \(https://sto](https://store.hackster.io/nextion-hmi)

Story

This tutorial project is to create a very simple web clock on ESP8266/ESP-12 boards, by using only built-in modules (libraries) of **MicroPython** (<https://docs.micropython.org/en/latest/esp8266/quickref.html#>).

In short, the project does the following things:

- *Connect to a WiFi router;*
- *HTTP GET and parse web JSON data every minute, then update the internal RTC (real time clock) module; (this is to avoid DDoS-like query to the server. However since the software RTCs are incredibly inaccurate, we still have to update it within a minute or an hour, depends on the board you are using.)*
- *Display internal RTC date and time on SSD1306 OLED display.*
- *If the board lose WiFi connection it would reboot itself.*

All the functions above can be achieved without importing any third party libraries. Neat!

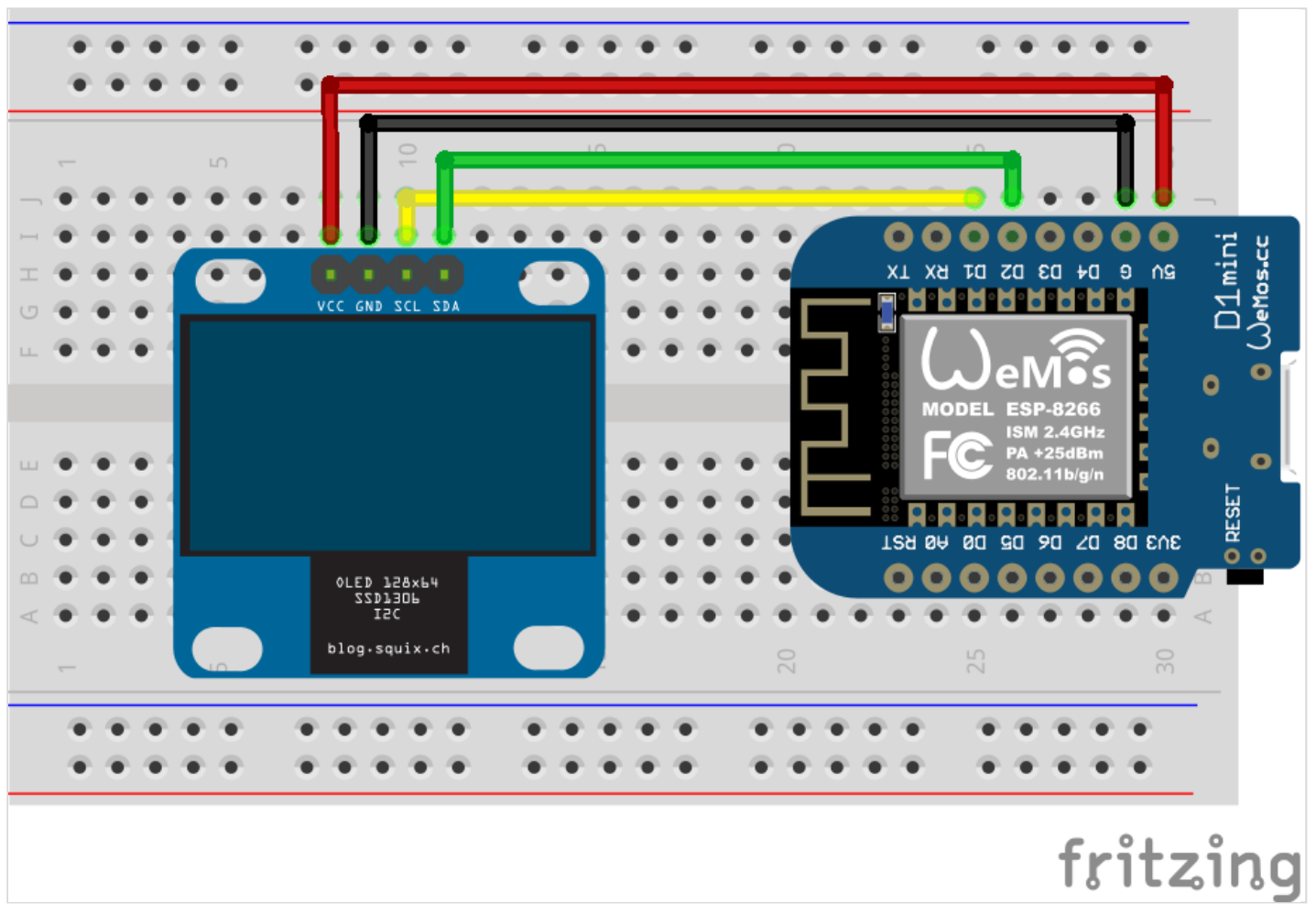
▼ Read more

Schematics

ESP8266

**Web
Clock**

(https://halckemy.s3.amazonaws.com/uploads/attachments/854869/web_clock_71oy)



Code

ESP8266 Web Clock MicroPython



[⬇ \(/code_files/249300/download\)](/code_files/249300/download)

```
# ESP8266 MicroPython Web Clock
# by Alan Wang
```

```
import network
import urequests
import ujson
import utime
import ssd1306
import machine
```

Credits



alankrantas (/alankrantas)

2 projects • 9 followers

(/alankrantas) micro:bit education material developer of Taiwan Coding Education Association. I make micro:bit/Arduino/ESP8266 stuffs.

[Follow](#)

[Contact \(/messages/new?recipient_id=510655\)](#)

Comments

Write



Preview

B

I

<>

≡

“

Share your thoughts! What do you like about this project? How could it be improved? Be respectful and constructive – most Hackster members create and share personal projects in their free time.

Post

Start the conversation!

Similar projects you might like

