

# IoT Wireless Reed Switch

## Hardware Used

In this project, you needed these parts:

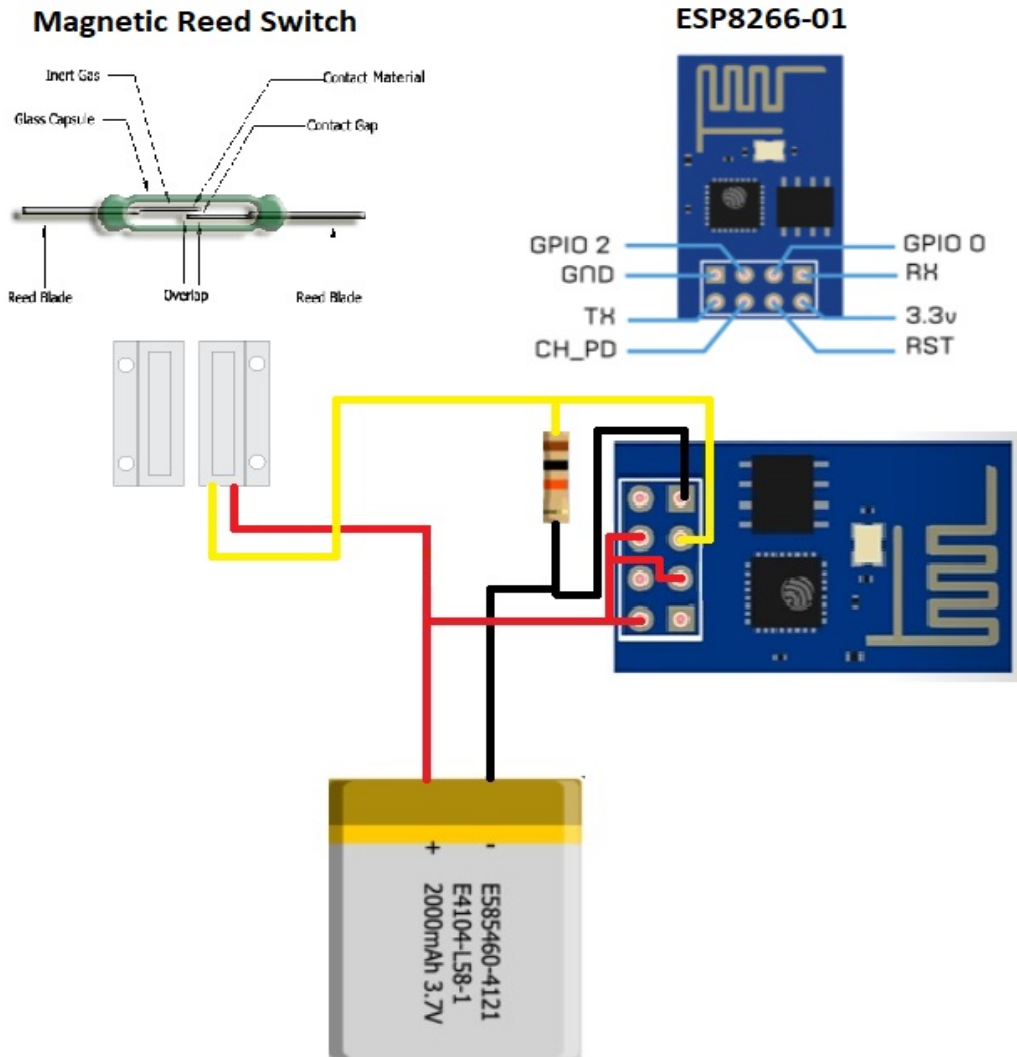
- Arduino IDE
- ESP8266 ESP-01 WI FI module 1pc
- Jumper cables
- 4.Resistor 10 KOhm 1 pc
- Breadboard 1pc
- Reed switch (magnetic door switch) 1 pc
- USB to TTL serial converter 1 pc
- USB mini cable 1 pc (optional)
- Any voltage regulator LD1117V33, AMS1117 3.3 V or 78R33 (to get 3.3V) or 1 pc

## Working Theory

We will learn how to use ESP8266 ESP-01 WiFi module and Reed switch with IFTTT. IFTTT is the free way to get all your apps and devices talking to each other. It is the free service which stands for “If This Then That.” You can make apps work together. For example, when you send a request to IFTTT, it triggers a recipe that sends you an email alert.

## Pin Out Diagrams

### Wireless Door Switch (Using Reed Switch)



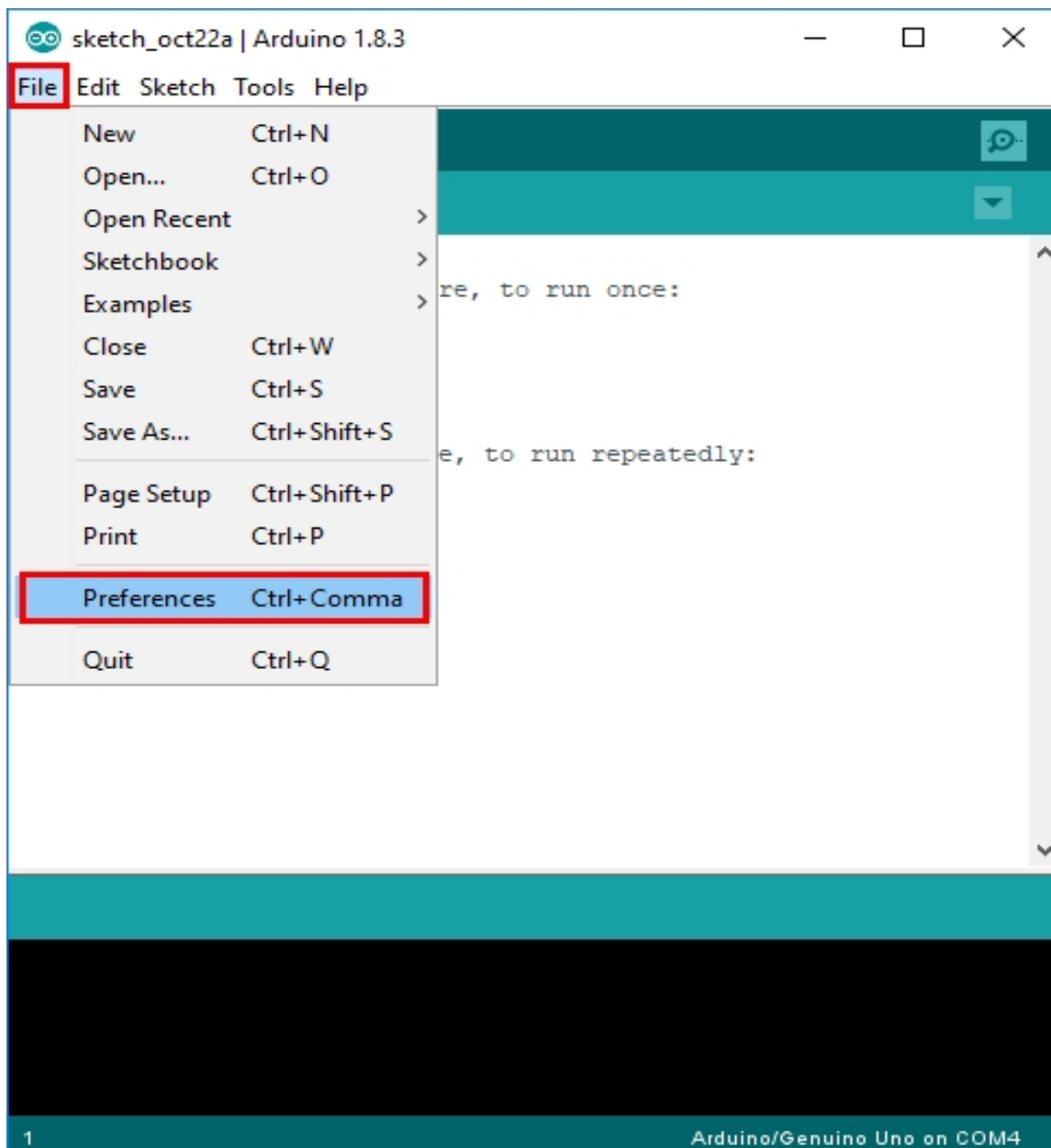
### Step by Step instruction

1. Programming (uploading sketch) to ESP8266 ESP-01 module
2. Adding ESP8266 platform to Arduino IDE

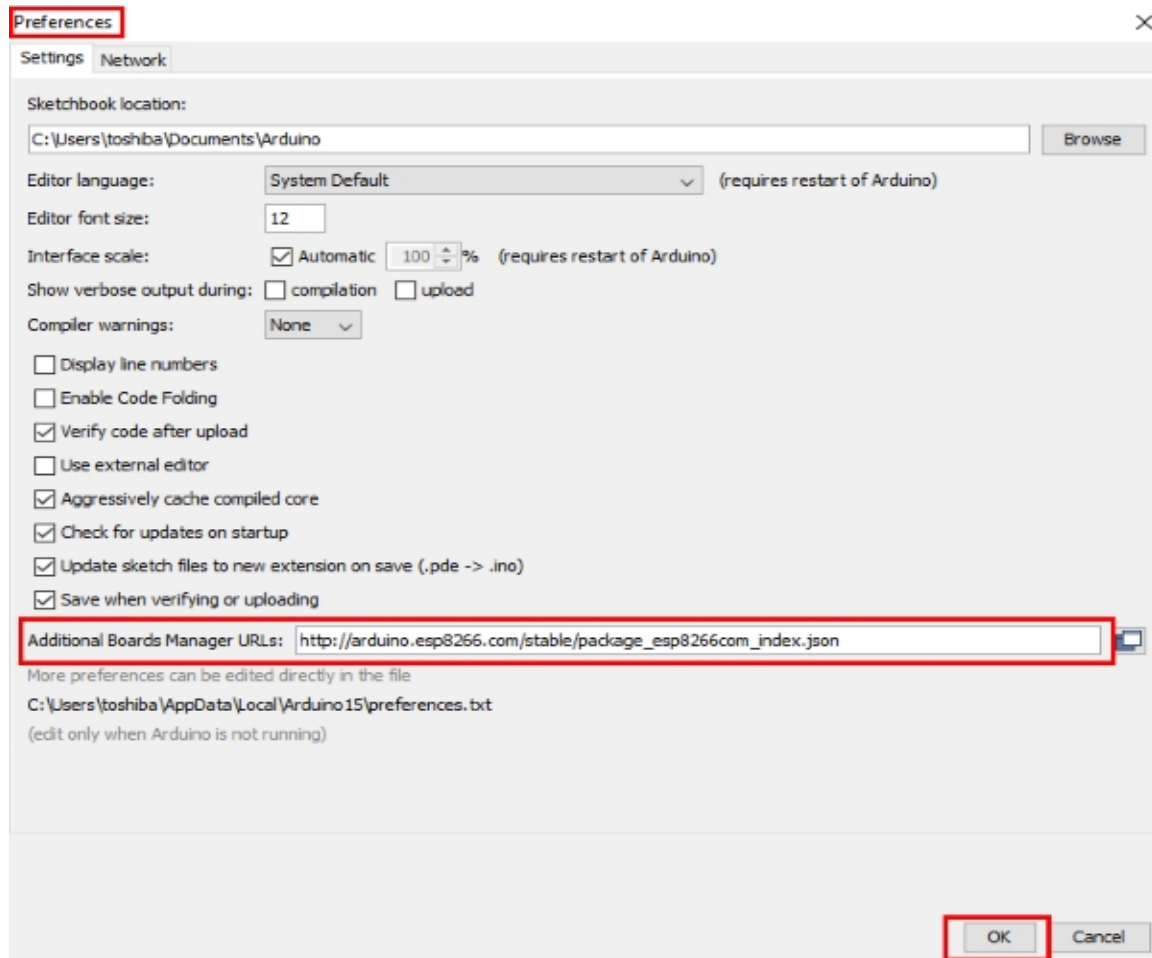
The Arduino environment must be set up to make it compatible with the ESP8266 ESP-12E module. We are using PC with **Windows 7 OS**. Download and install the **Arduino IDE**.

Open Arduino IDE.

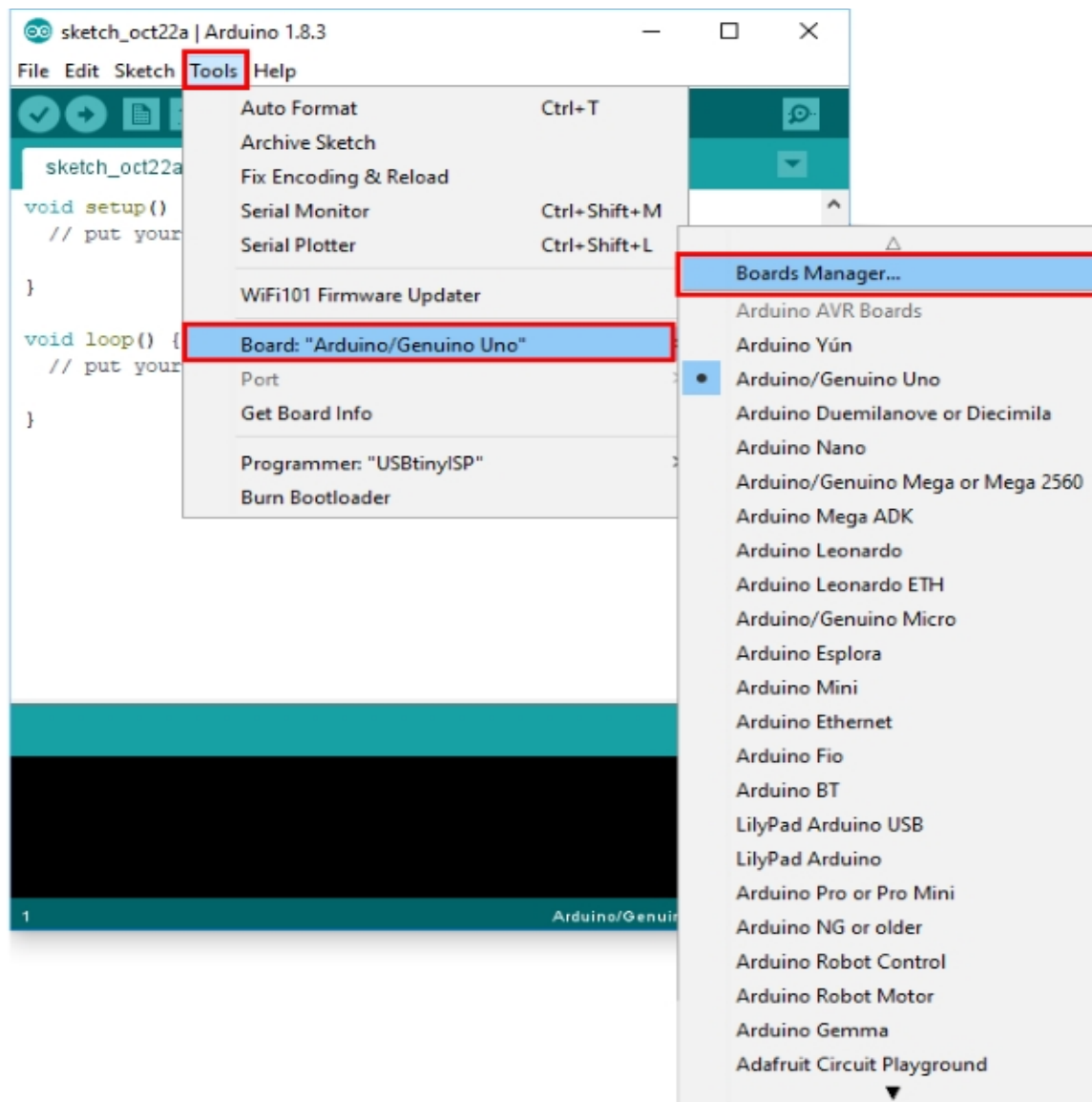
Open the Preferences window from the Arduino IDE. Go to **File -> Preferences**.



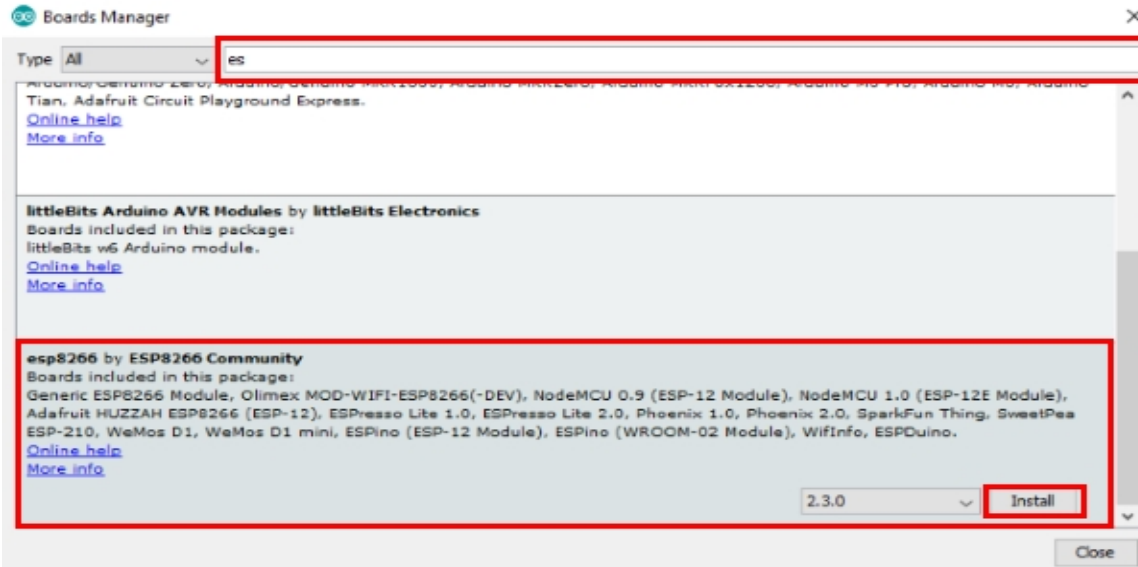
Enter [http://arduino.esp8266.com/stable/package\\_esp8266com\\_index.json](http://arduino.esp8266.com/stable/package_esp8266com_index.json) into Additional Board Manager URLs field and click the “OK” button. If you already have a URL in there, and want to keep it, you can separate multiple URLs by placing a comma between them. (Arduino 1.6.5 added an expanded text box, separate links in here by line.)



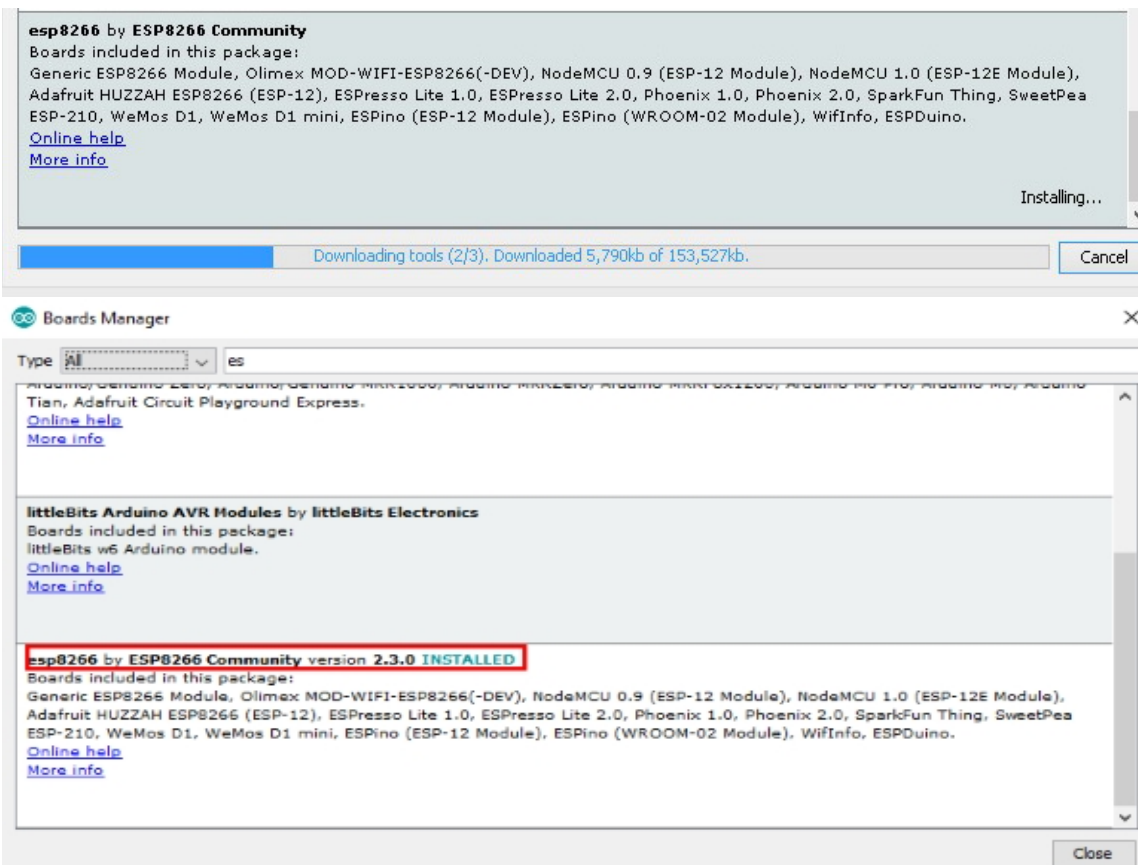
Open **Boards manager**. Go to **Tools -> Board -> Boards Manager...**



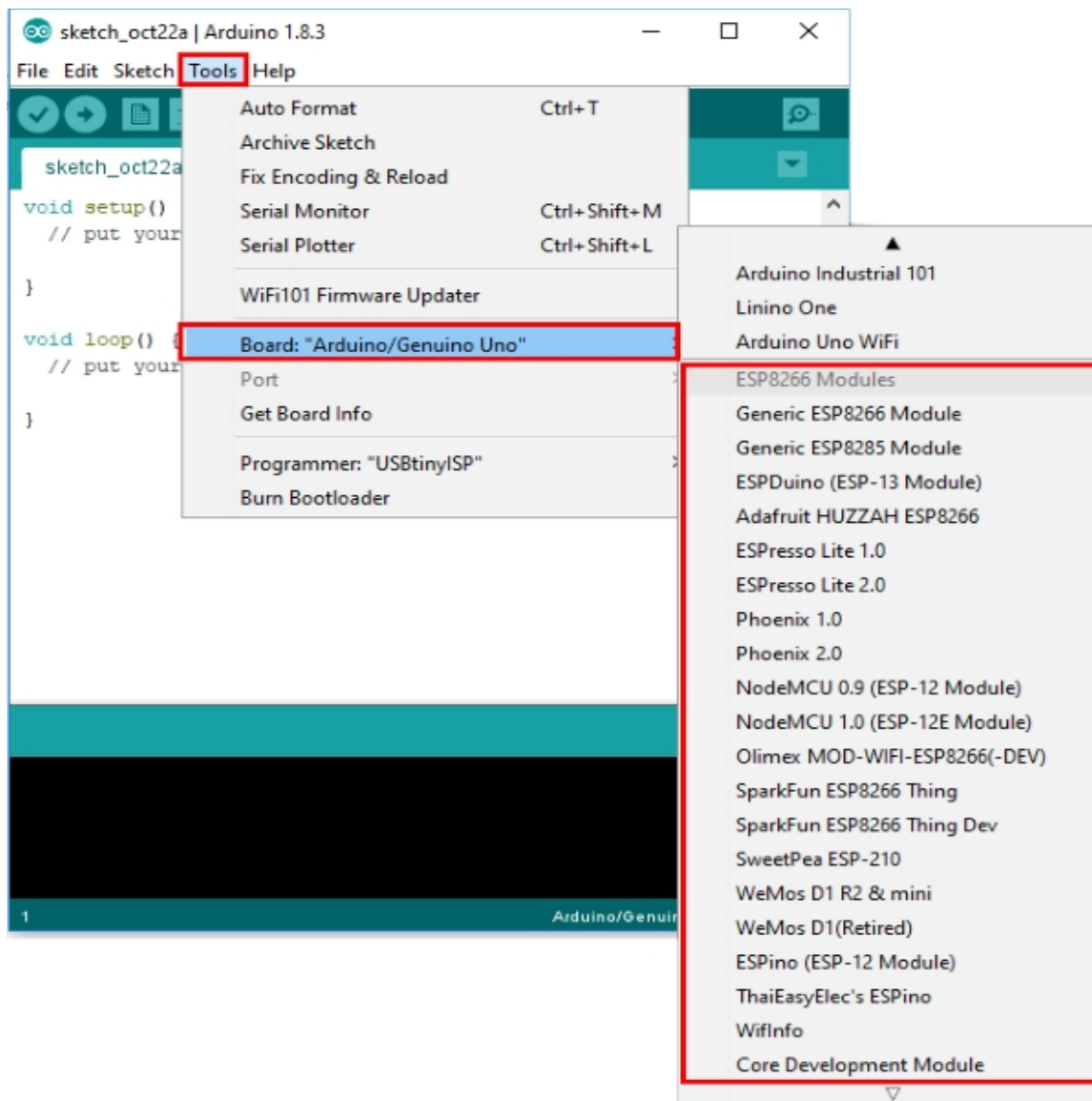
There should be a couple new entries in addition to the standard Arduino boards. Look for **esp8266**. or scroll down to the ESP8266 entry (usually at the bottom). Select the **ESP8266** entry. When do you click it an install option will appear? Select the latest version and click install.



The board definitions and tools for the ESP8266 include a whole new set of gcc, g++, and other large, compiled binaries, so it may take a few minutes to download and install (the archived file is ~110MB). Once the installation has completed, an Arduino-blue “INSTALLED” will appear next to the entry.



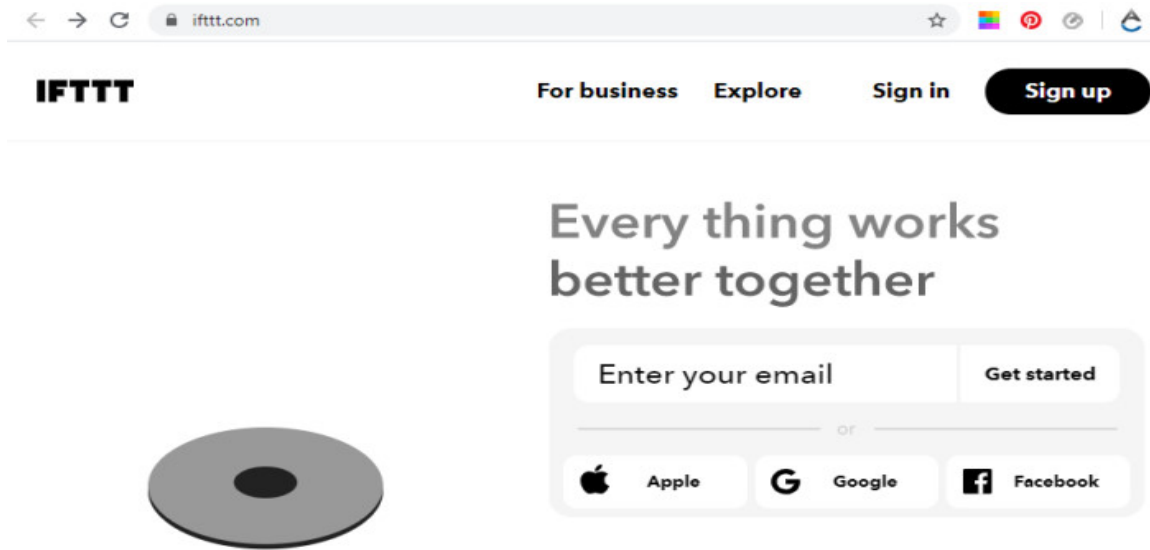
Choose your ESP8266 board. Go to **Tools -> Board -> Generic ESP8266 Module**



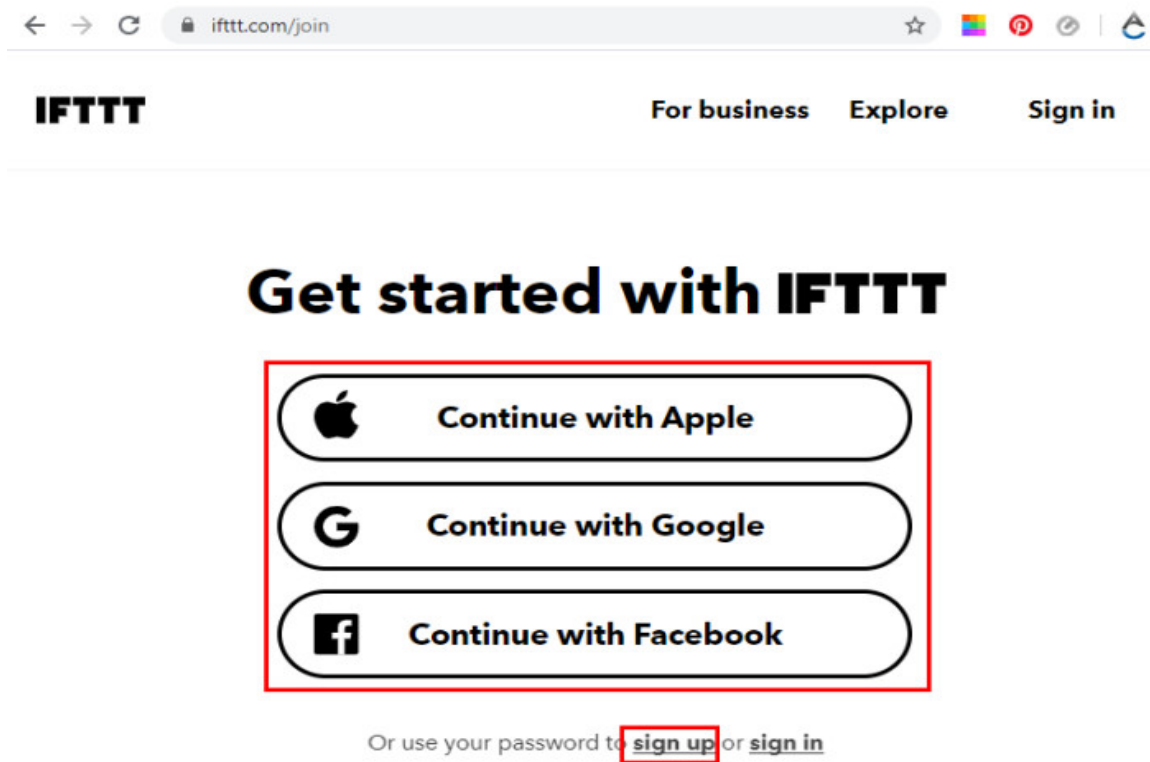
You will see **Generic ESP8266 Module** on the bottom of the Serial Monitor window.

### 3. Making IFTTT Account

1. Go [ifttt.com](https://ifttt.com) website and click on **Sign Up** button in top right corner of the page.



2. You can sign up with Apple, Facebook, Google or use password to sign up.



3. Type your email and password to make account and click on **Sign up** button.



← → ↻ ifttt.com/join

## Sign up

acoptex@gmail.com

.....

☐ Get updates for products available on IFTTT

**Sign up**

[Continue with Apple, Google, or Facebook](#)


4. Click on **Skip** button.

← → ↻ ifttt.com/applets/

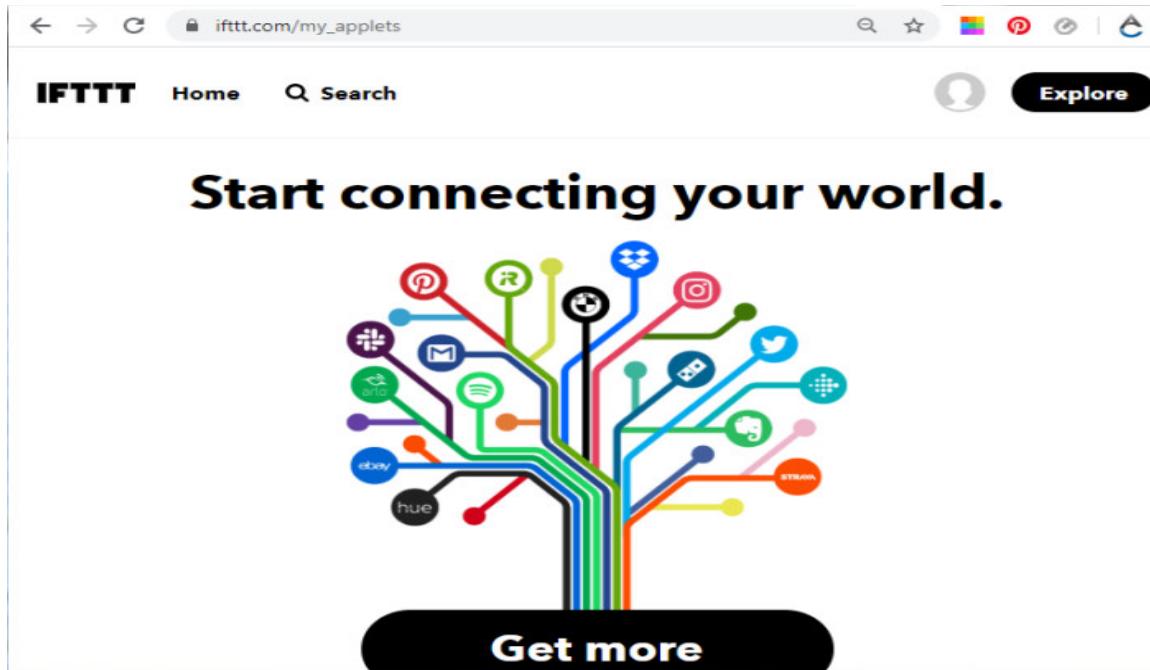
**Get started**  
Connect your apps and devices to enable them to work together in new ways. Give it a try!

**Skip**

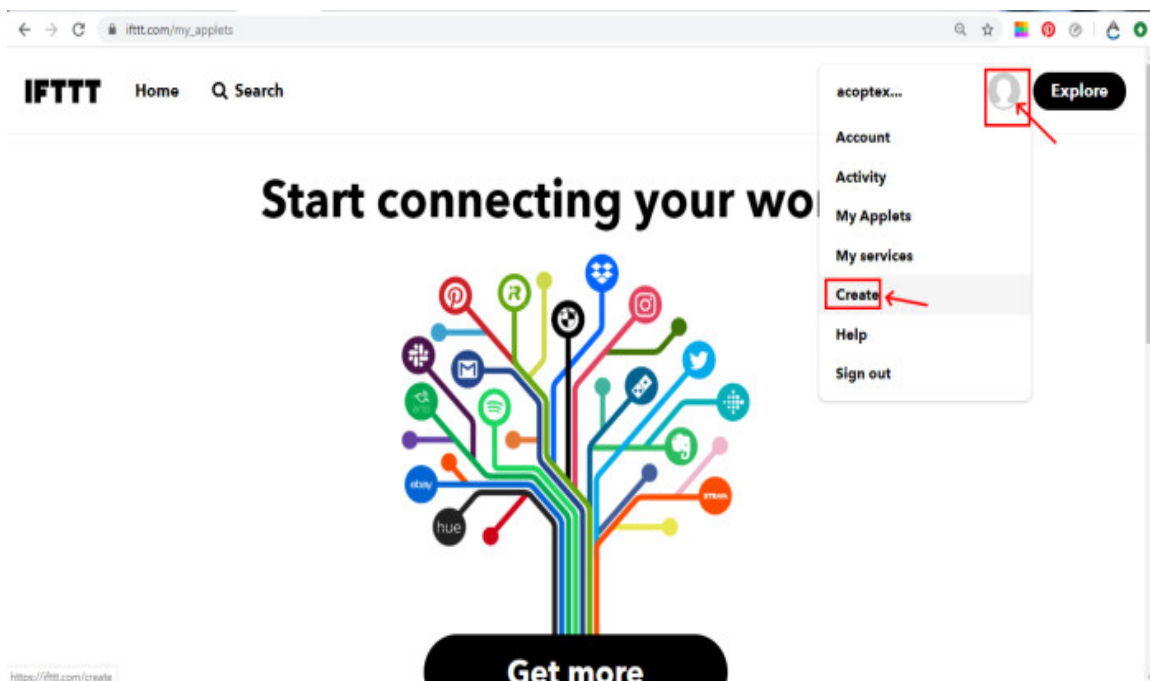
**Get a morning reminder about your first meeting of the day**

 Google

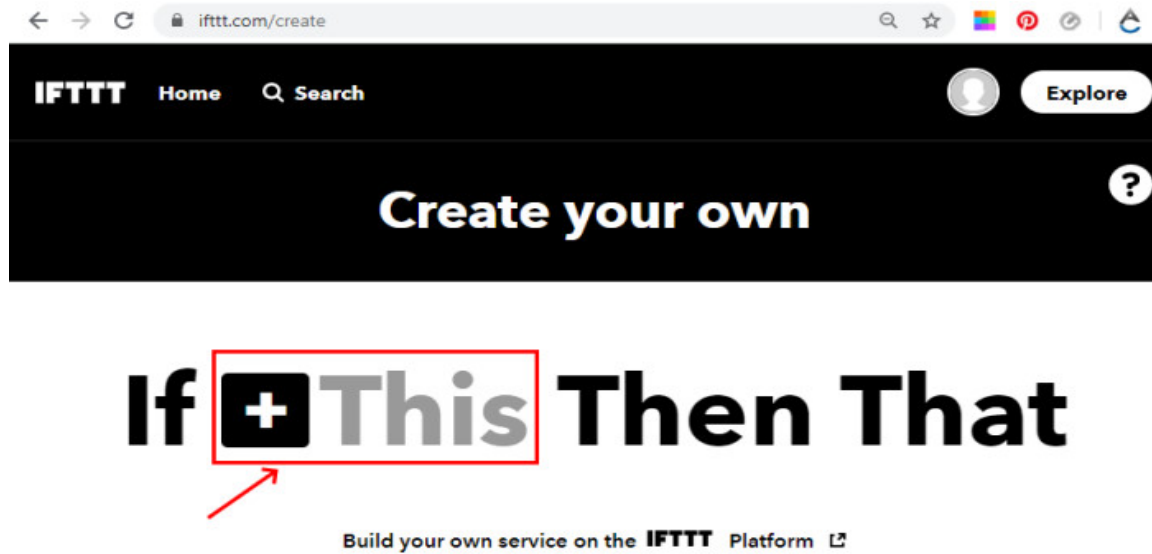
5. Click on **Icon** button.



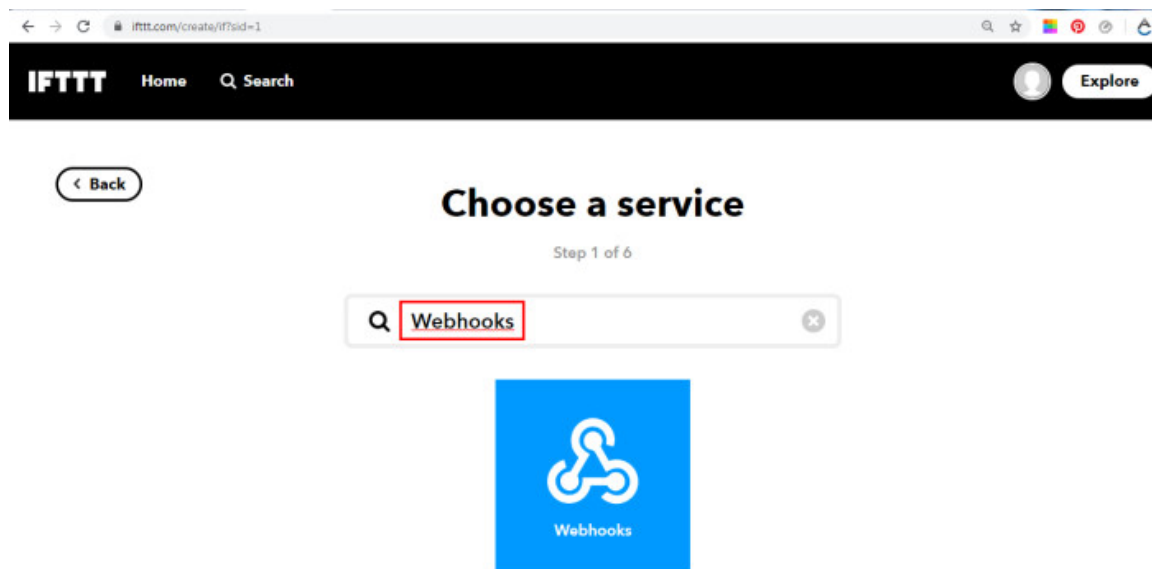
6. Select **Create** from the pop-up menu.



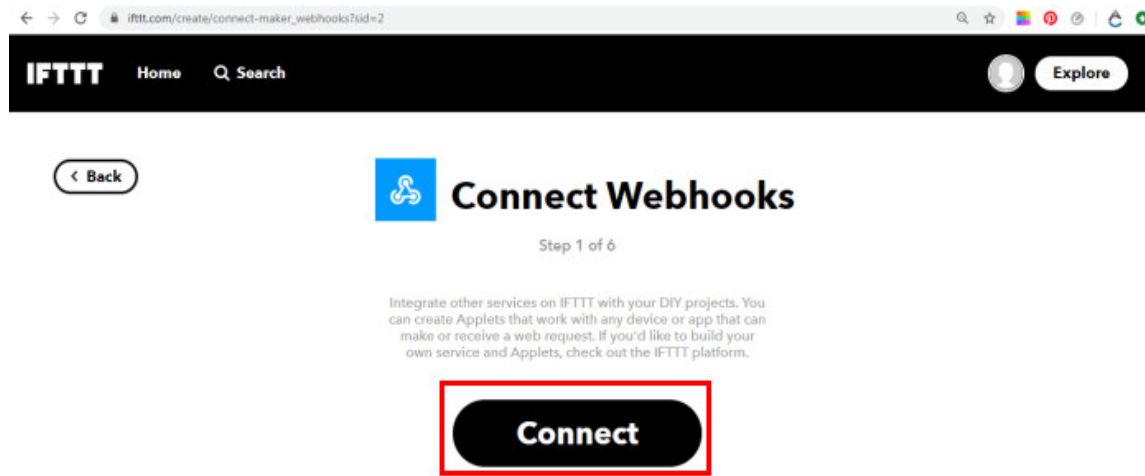
7. Click on **+This**.



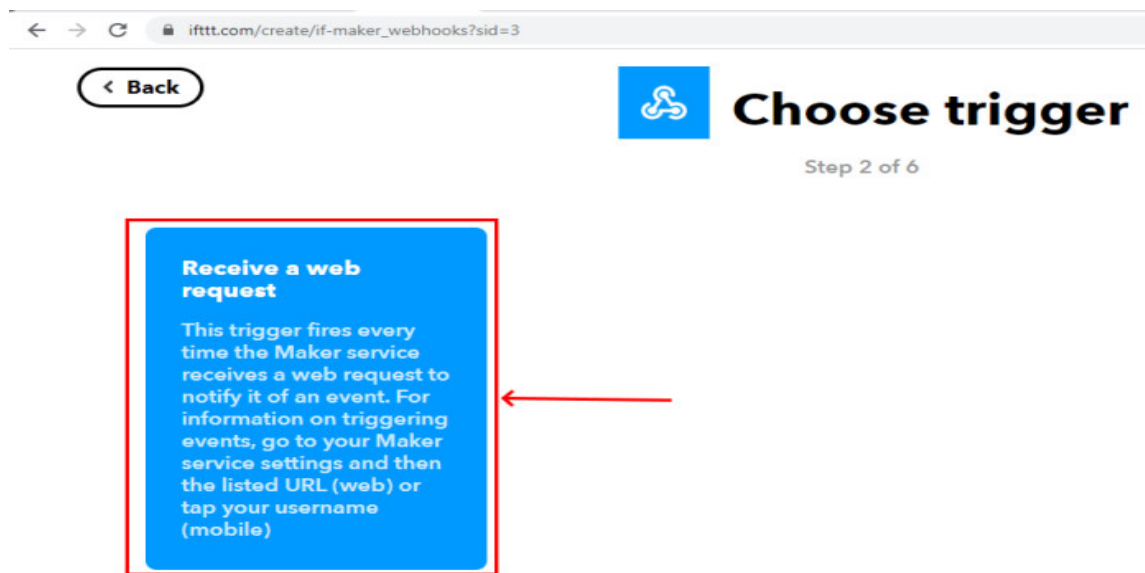
8. Choose a service. Type **Webhooks** and click on Webhooks blue square.



9. Click on **Connect** button.



10. Choose trigger – click on **receive web request**.



11. Type the event name – for example, **front\_door\_opened** and click on **Create trigger** button.

← → ↻ ifttt.com/create/if-receive-a-web-request?sid=4

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## Complete trigger fields

Step 2 of 6

Event Name

front\_door\_opened

The name of the event, like "button\_pressed" or "front\_door\_opened"

Create trigger

12. Click on +That.

← → ↻ ifttt.com/create/if-receive-a-web-request-then?sid=5

IFTTT Home 🔍 Search

Explore

< Back

## If Then That

13. Choose action service. Type **email** and click on Email blue square.

← → ↻ ifttt.com/create/if-receive-a-web-request-then?sid=16

IFTTT Home 🔍 Search


Explore

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## Choose action service

Step 3 of 6

🔍 Email

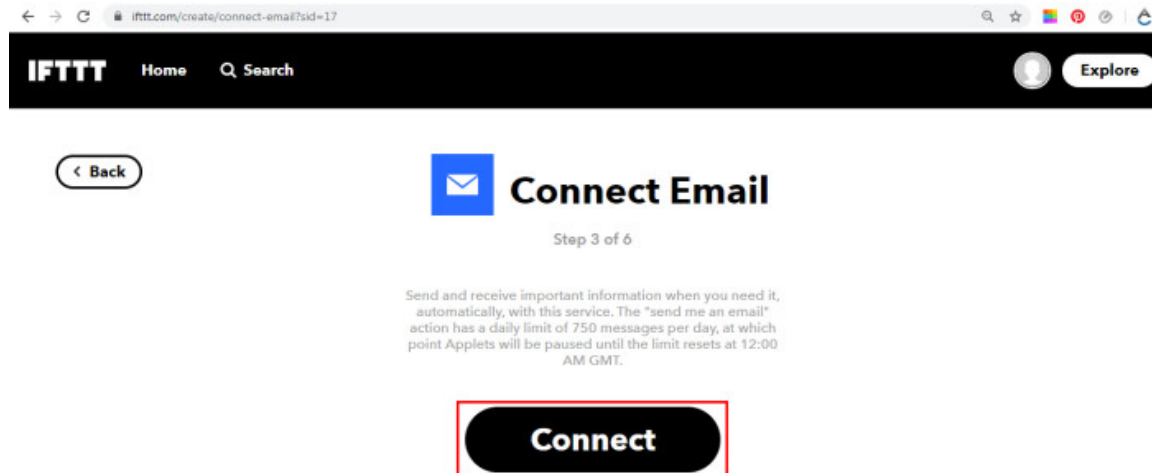


Email

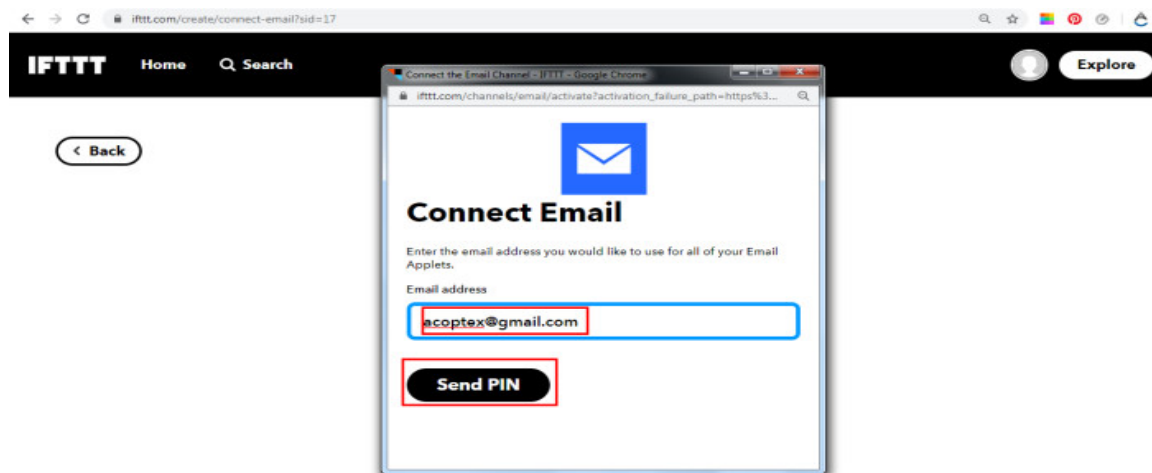


Email Digest

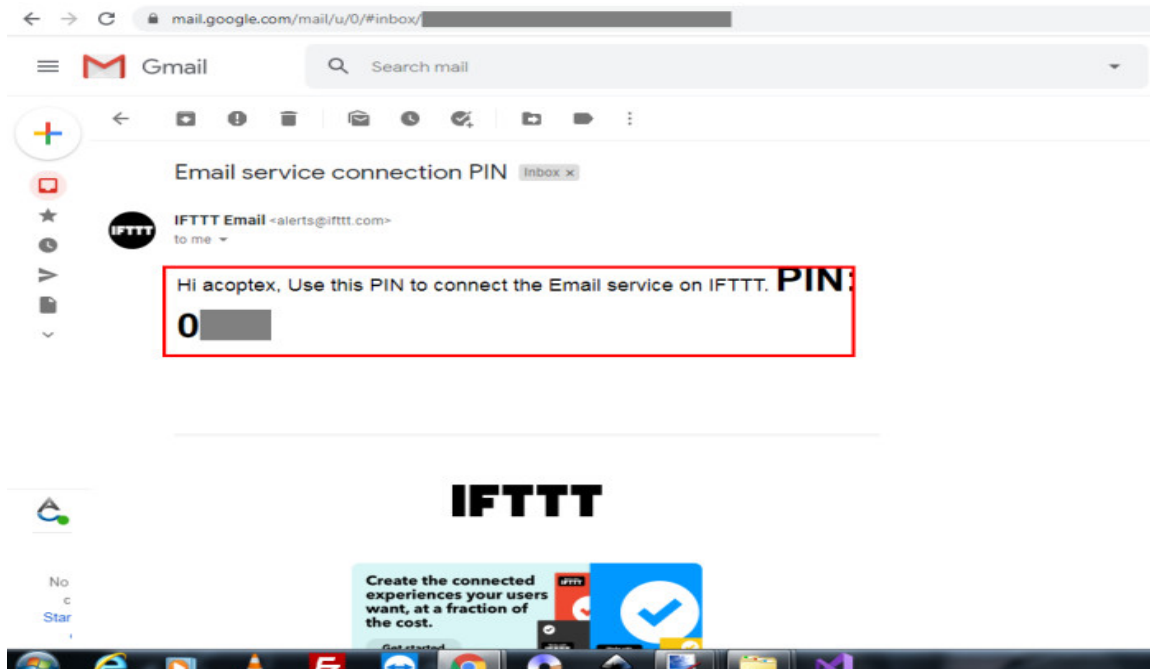
14. Click on **Connect** button.



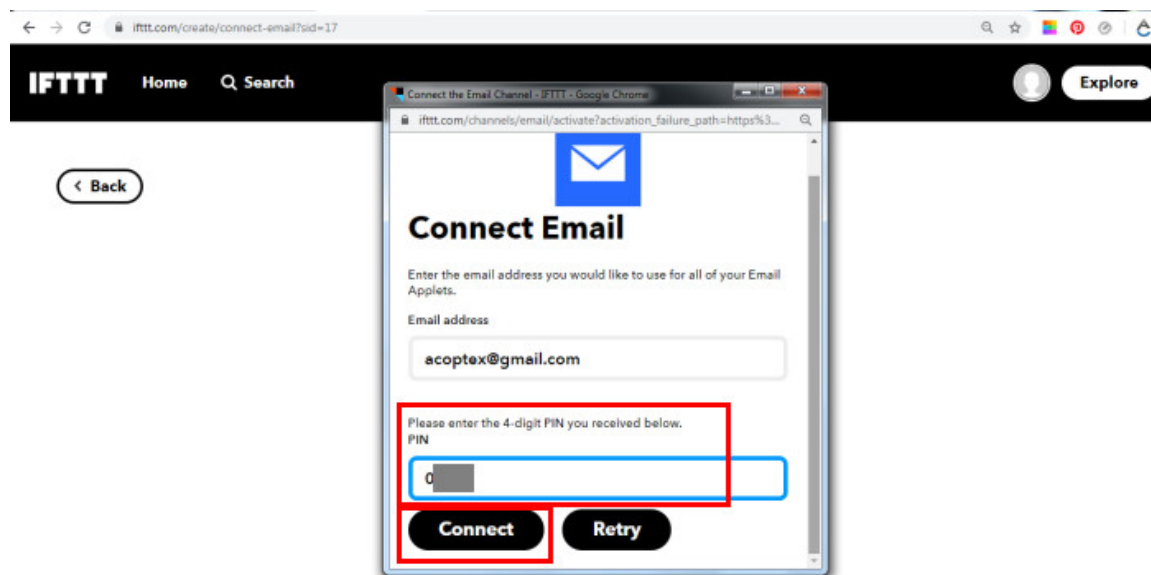
15. Type your email address and click on **Send PIN** button.



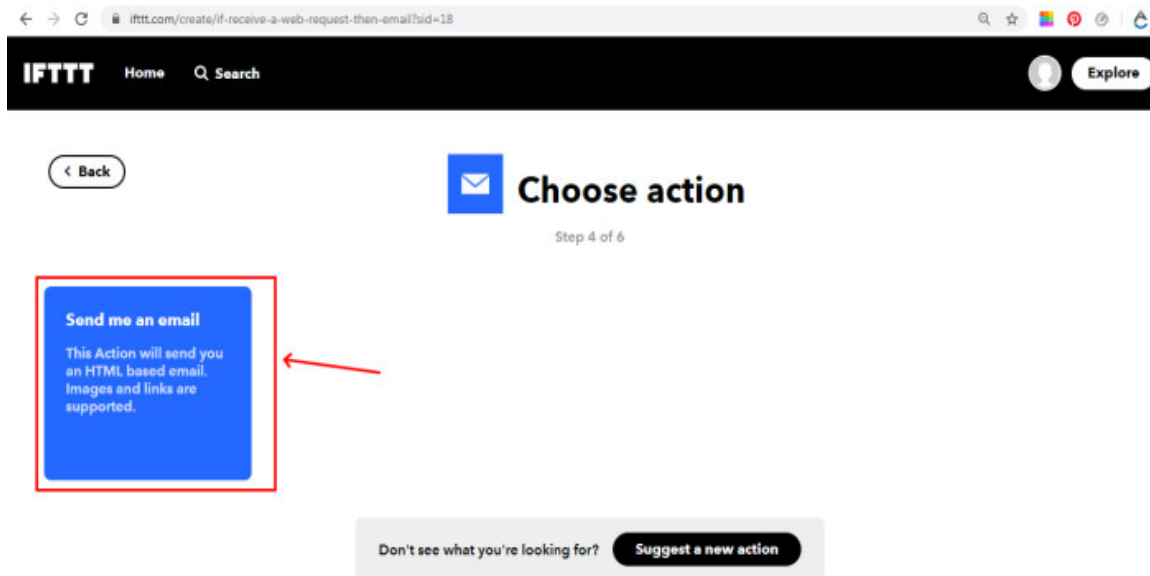
16. You will get PIN on your email address. Write it down as you will need it later.



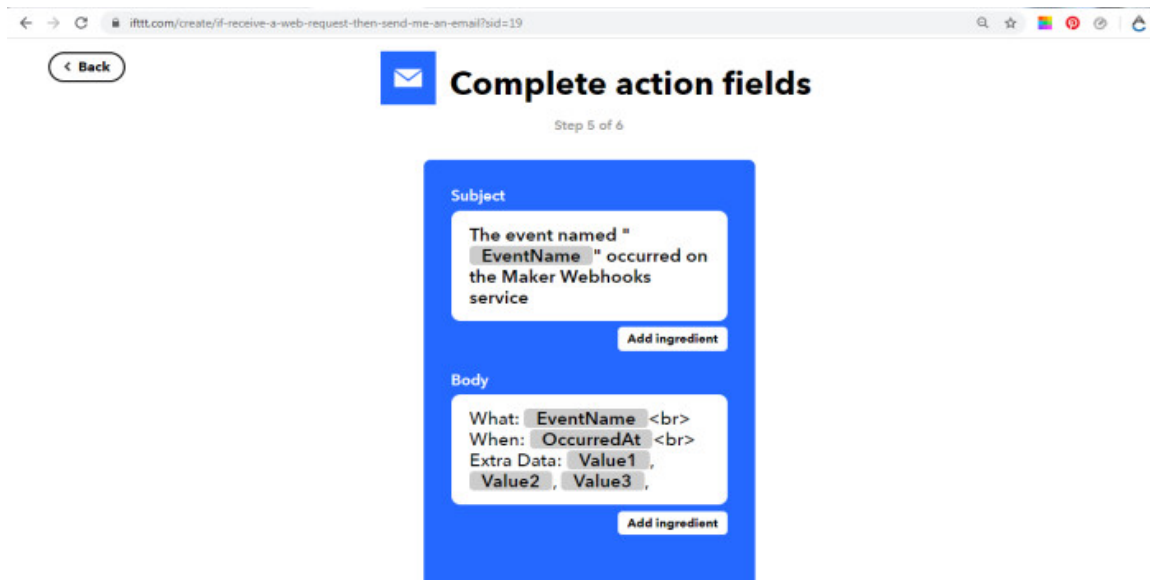
17. Type your PIN and click on **Connect** button.



18. Choose action. Click on **send me an email**.



19. In complete action fields modify text as shown below. Click on **Create action** button.





← → ↻ iftt.com/create/if-receive-a-web-request-then-send-me-an-email?sid=19

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## Complete action fields

Step 5 of 6

**Subject**

Your door has been  
Value1

Add ingredient

**Body**

Your door has been  
Value1 on OccurredAt

Add ingredient

Create action



20. Type the name of applet and click on **Finish** button.

← → ↻ iftt.com/create/if-receive-a-web-request-then-send-me-an-email?sid=20

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## Review and finish

Step 6 of 6



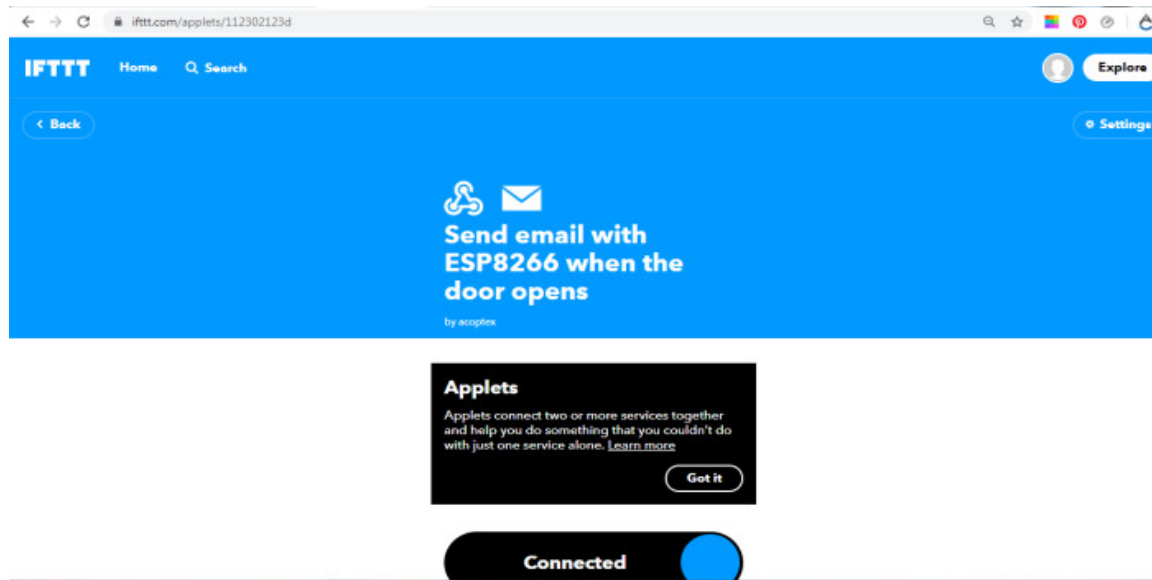
Send email with  
ESP8266 when the  
door opens

43/140

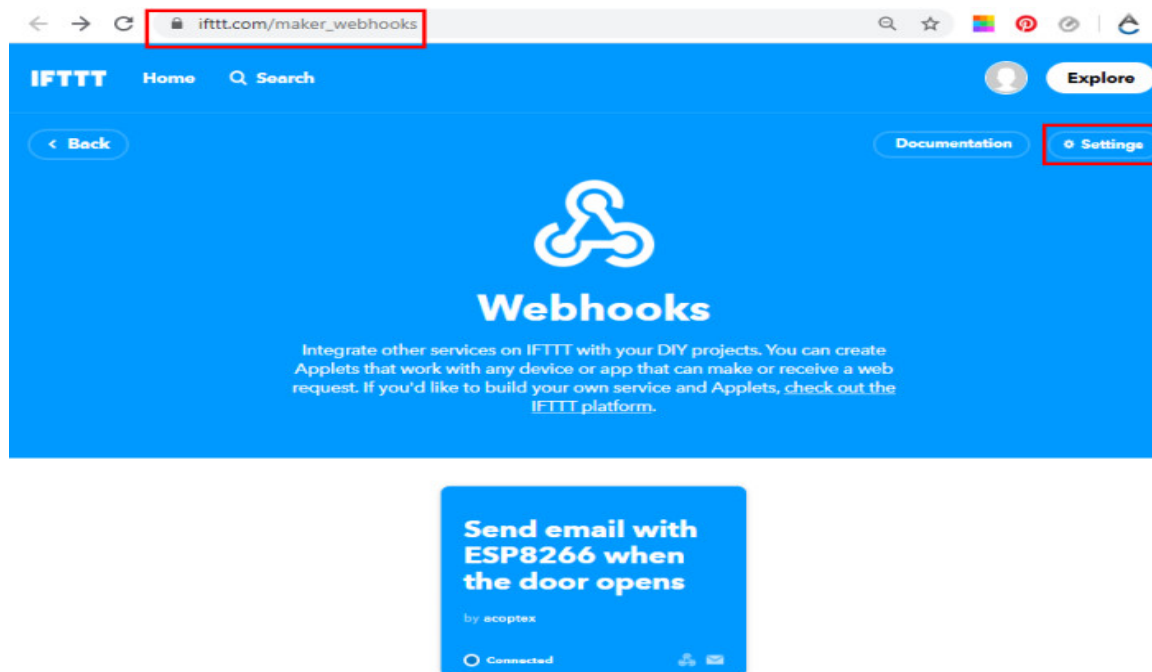
by acoptex

Receive notifications  
when this Applet runs ☐

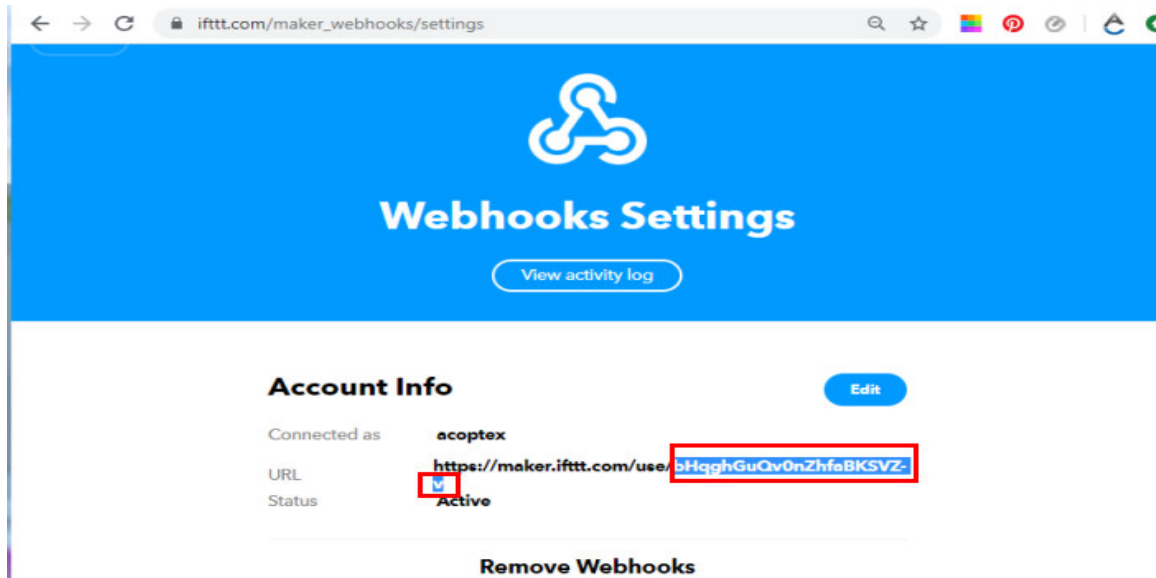
Finish



21. Go to [https://ifttt.com/maker\\_webhooks](https://ifttt.com/maker_webhooks) and open the **Settings** tab.



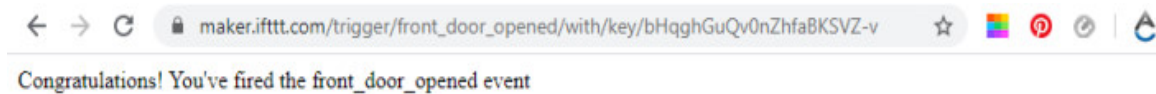
22. Copy your secret key to a safe place (you will need it later in this project). In our example secret key is: **bHqghGuQv0nZhfaBKSVZ-v**



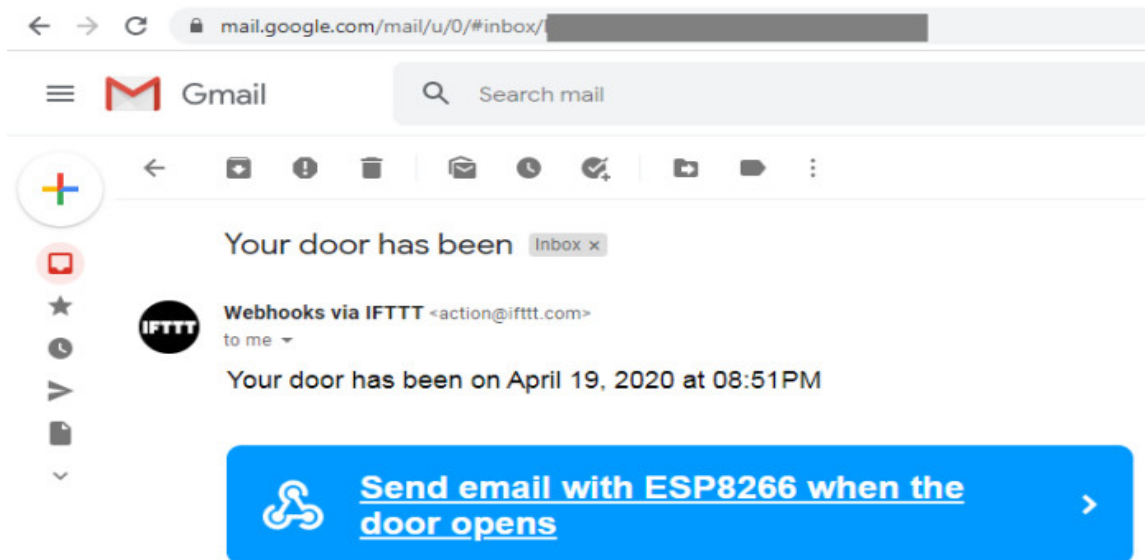
23. Let us evaluate if your request is working properly. Replace YOUR\_API\_KEY from the following URL: [https://maker.ifttt.com/trigger/front\\_door\\_opened/with/key/YOUR\\_API\\_KEY](https://maker.ifttt.com/trigger/front_door_opened/with/key/YOUR_API_KEY)

With your API KEY: [https://maker.ifttt.com/trigger/front\\_door\\_opened/with/key/bHqghGuQv0nZhfaBKSvZ-v](https://maker.ifttt.com/trigger/front_door_opened/with/key/bHqghGuQv0nZhfaBKSvZ-v)

Open your URL with your API KEY in your browser. You should see something similar:



24. Go to your email client and you will see the new email.



#### 4. Uploading sketch to ESP8266 ESP-12E development board

1. Do wiring.

2. Open Arduino IDE.

3. Plug your USB to TTL converter with DTR Pin or without DTR Pin or ESP01 programmer UART into your PC USB port.

4. Choose your ESP8266 board. Go to **Tools -> Board -> Generic ESP8266 Module**

5. Select the correct com port.

6. Modify (with your SSID, password, IFTTT secret key), verify and upload the sketch to your ESP8266 ESP-01 module. **AT commands will not work after that. You need to Flash the firmware to enable them again.**

7. You will get the email to your inbox when the door status changes – open or close (we have reed switch attached to GPIO 2).

#### Summary

We learnt how to use ESP8266 ESP-01 WiFi module and Reed switch with IFTTT.

#### Libraries:

**ESP8266WiFi** library included in Arduino IDE.

#### Project resources:

See attachments on the beginning of this project description