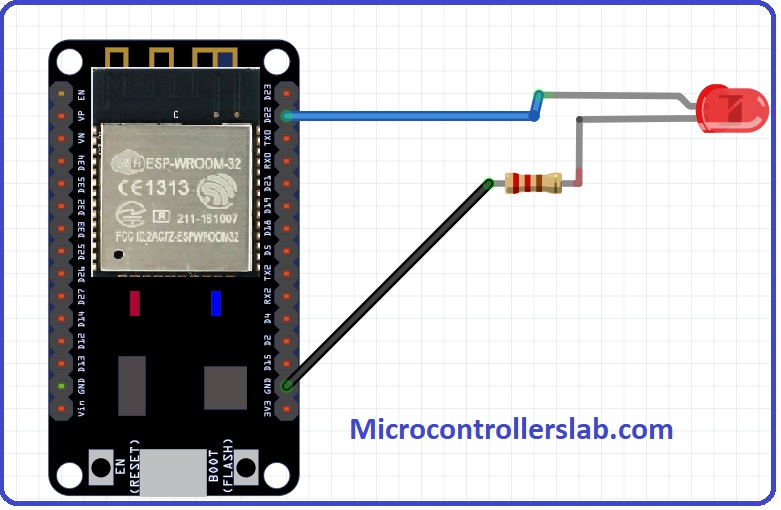
**Controlling LED with adafruit server with esp32.**

**Components required :**

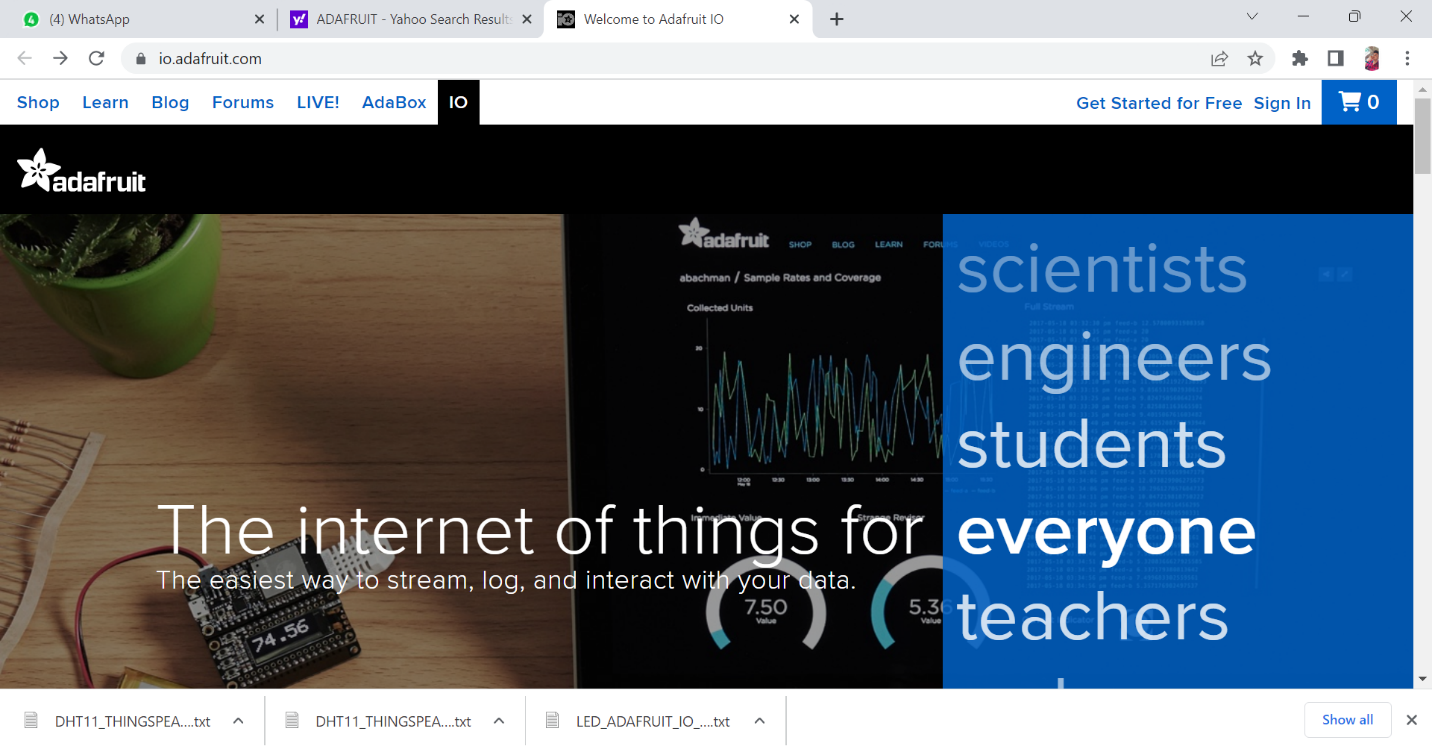
* Esp32
* Adafruit io server account
* Jumper wires
* Led

**Circuit diagram:**

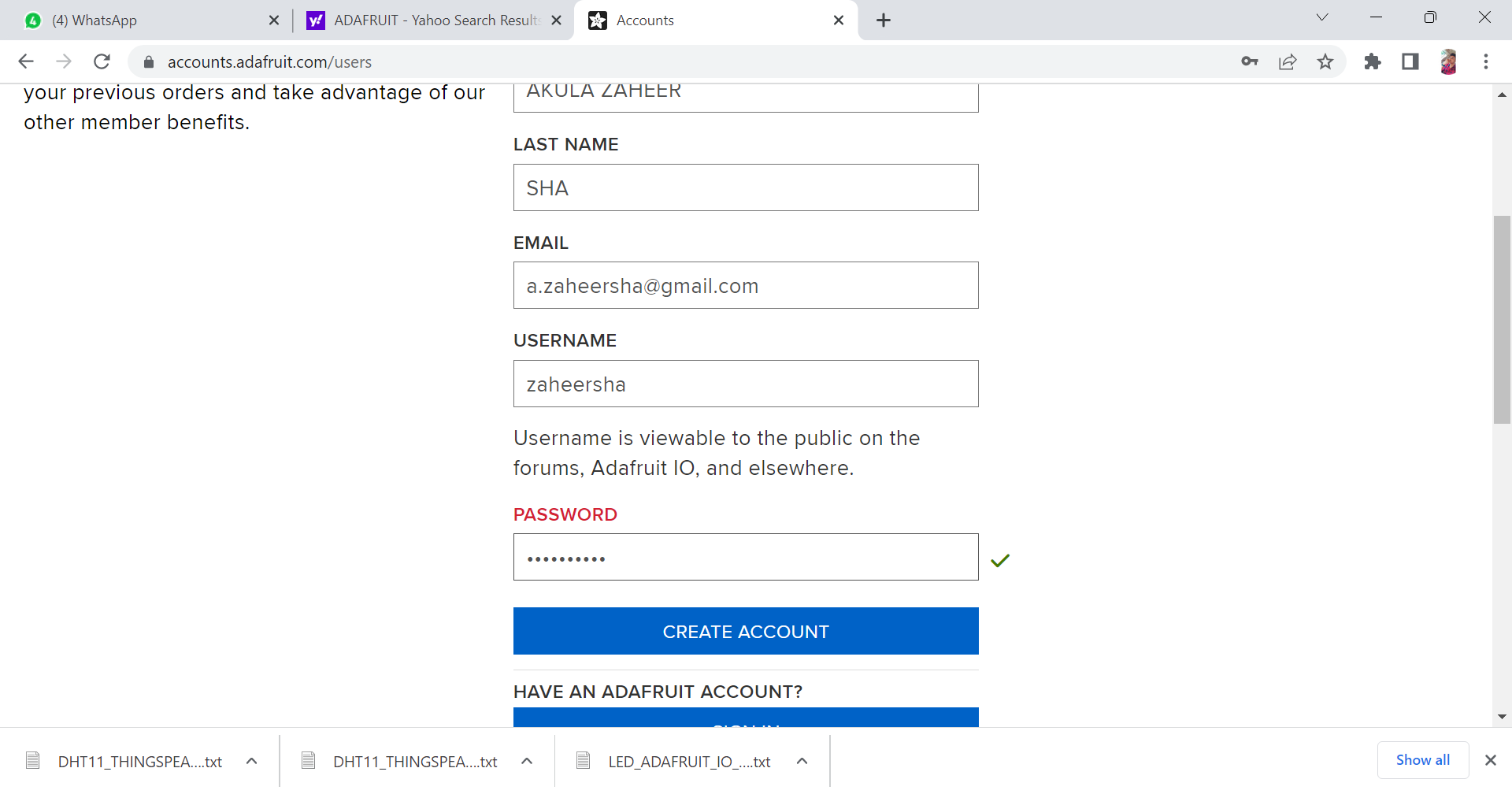


**Steps:**

Create an account In adafruit server.



Creating the account.

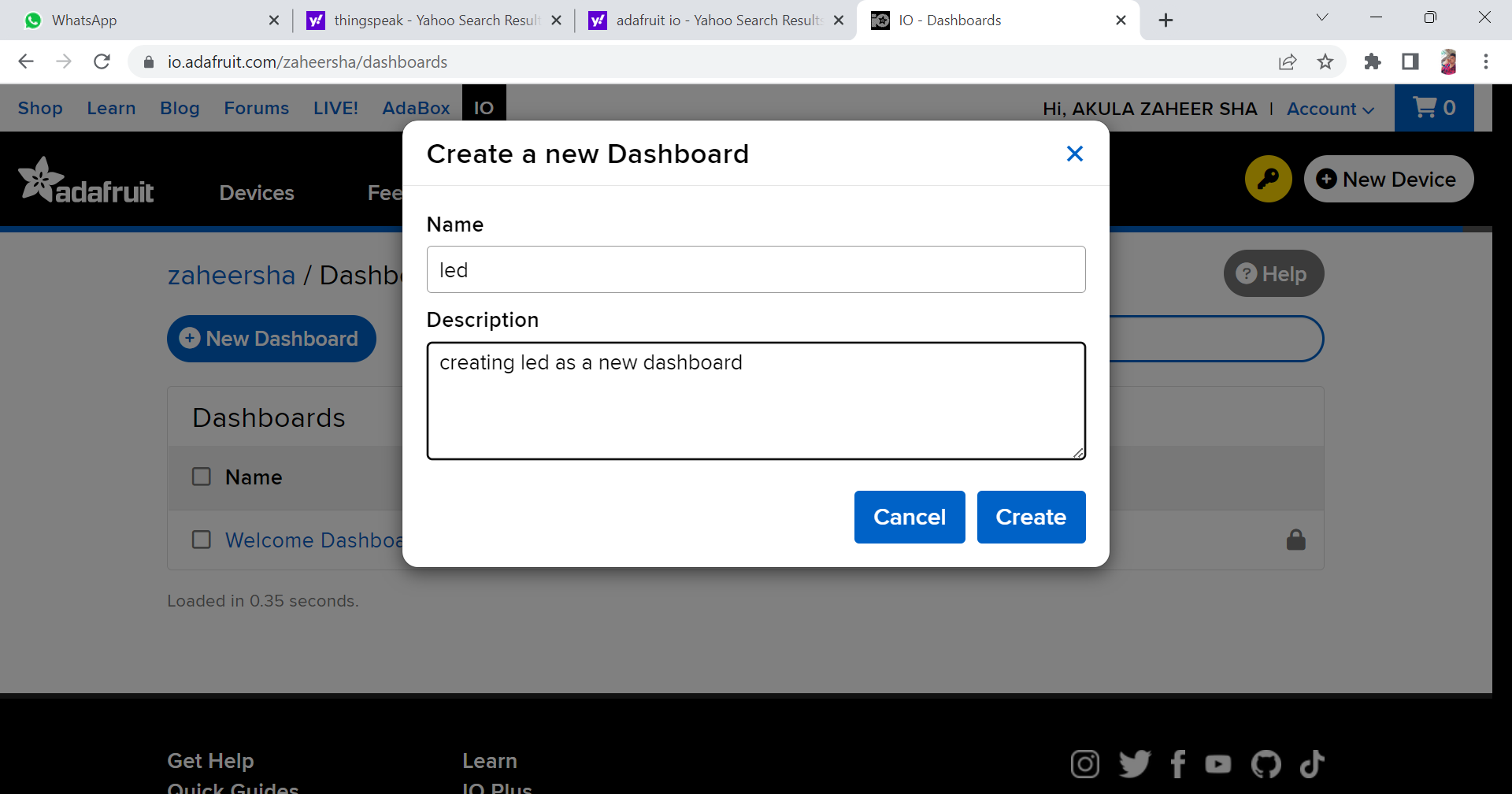


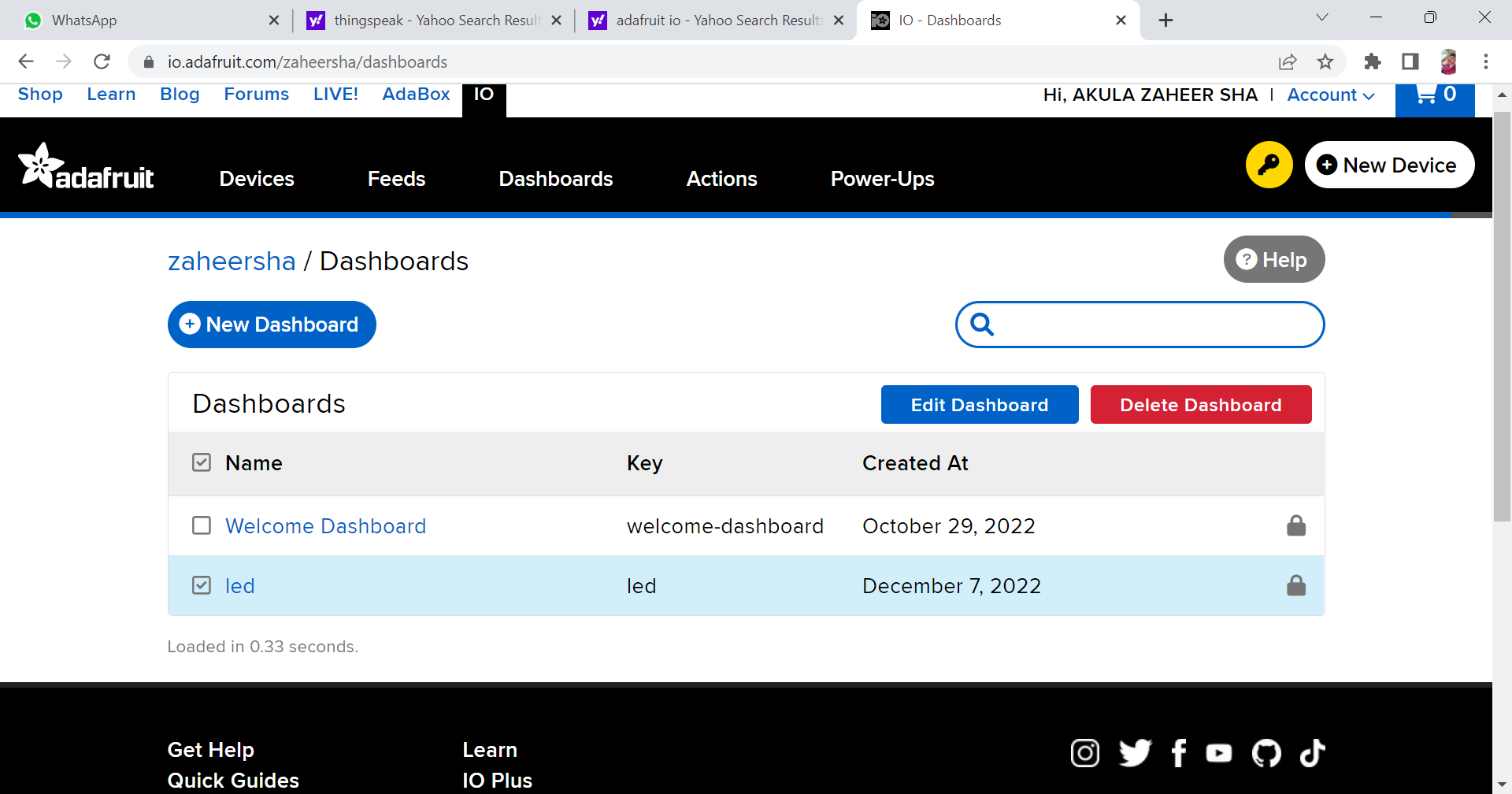
It looks like this, then go to dashboard and create a new dashboard as led.

A screenshot of a computer

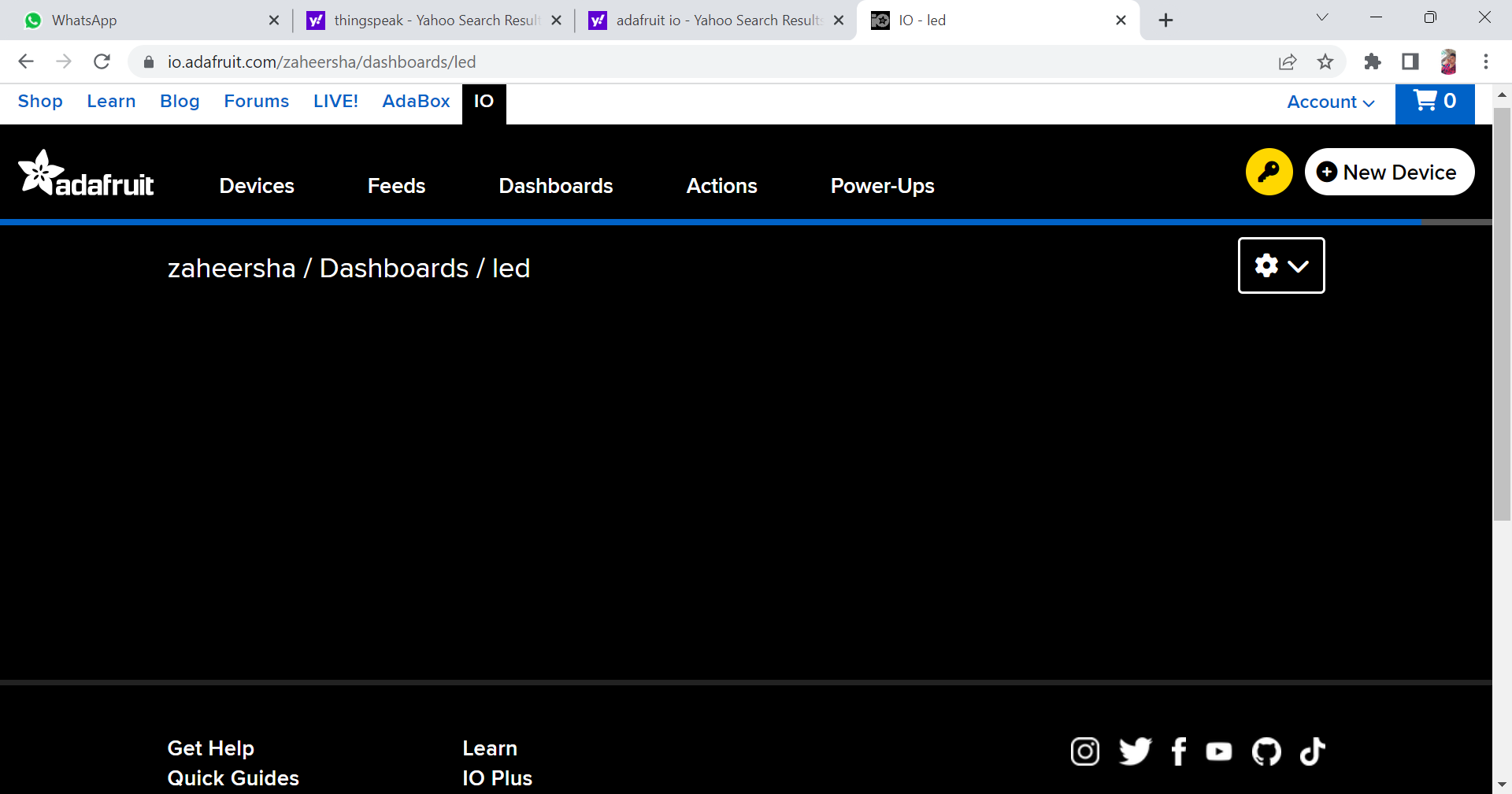
Description automatically generated

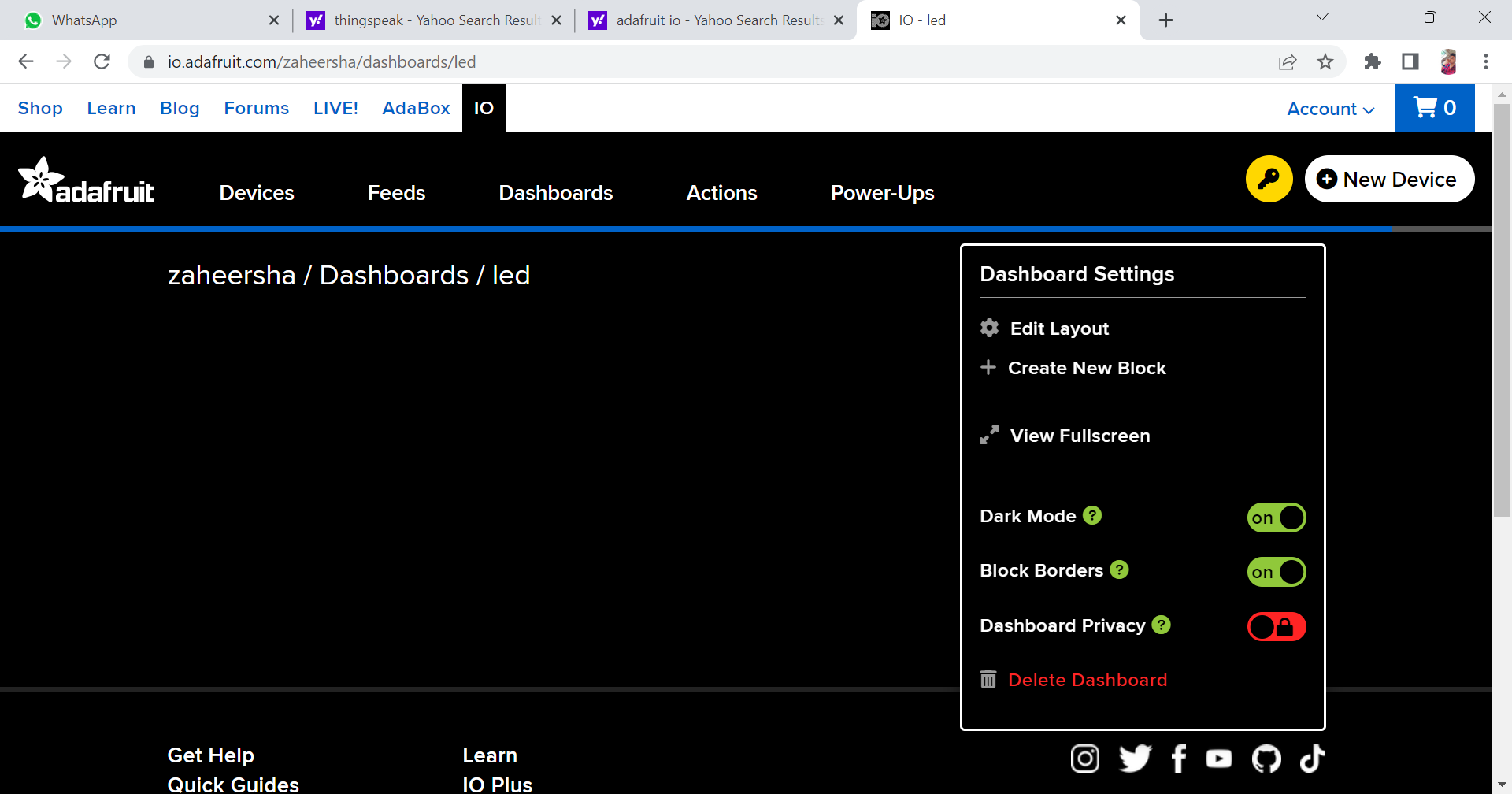
Dashboard creating;





After creating the dashboard of led, click on the led dashboard. Then we see the flg on screen.



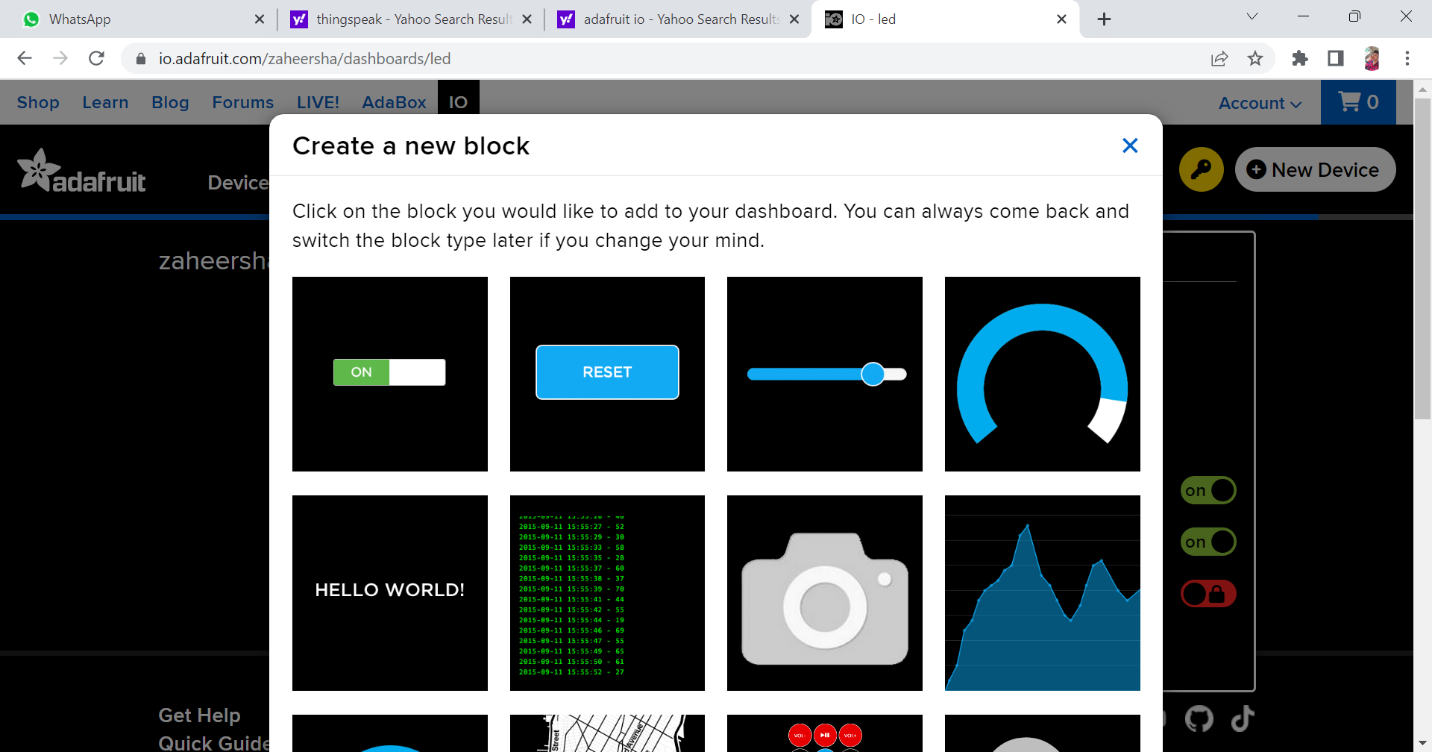
Click on setting icon, there we see create new block, click on that. 

Select feed name as led, as we have created led dashboard.

Graphical user interface, application

Description automatically generated

Select toggle button in order to control the led using button.



Give button on value as 1 and off value as 0

Graphical user interface, application

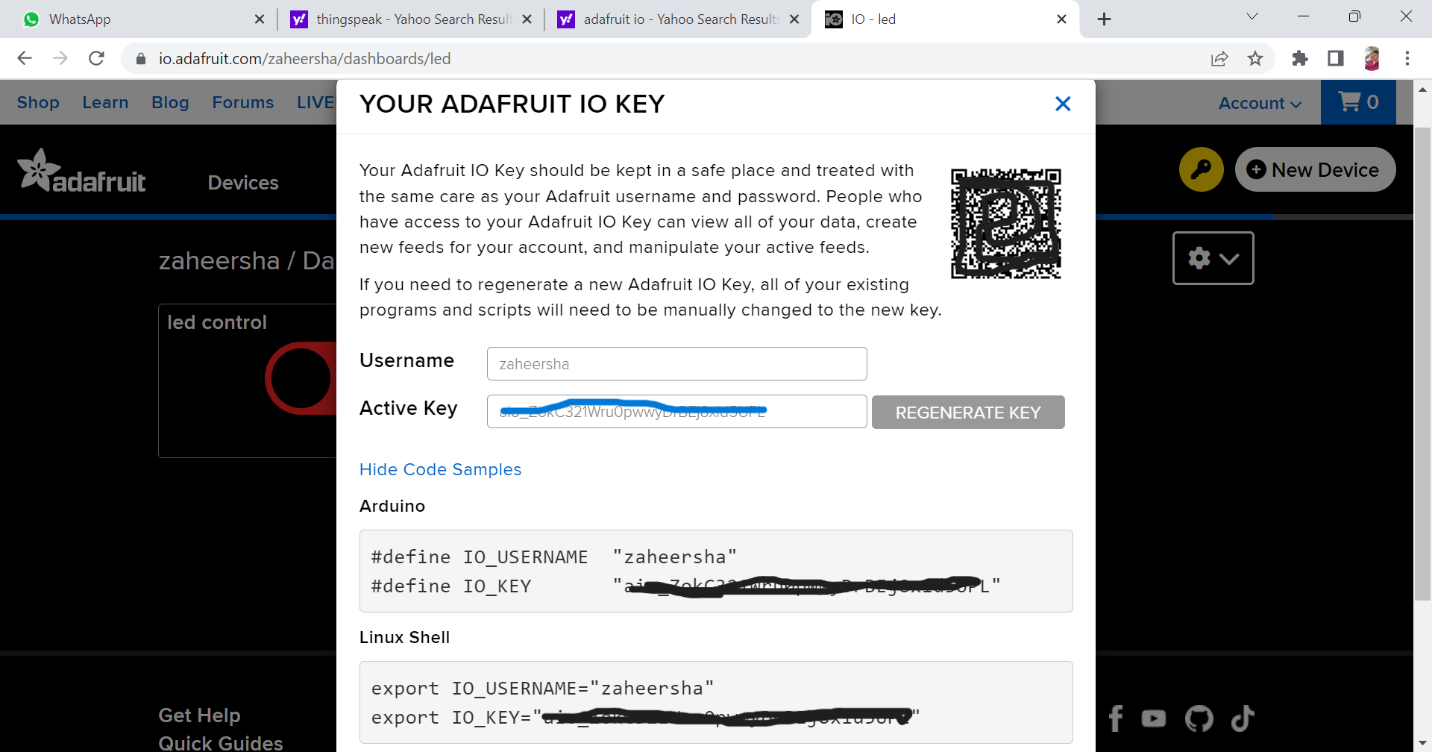
Description automatically generated

Th toggle button will be created. (with on as 1 and off as 0).

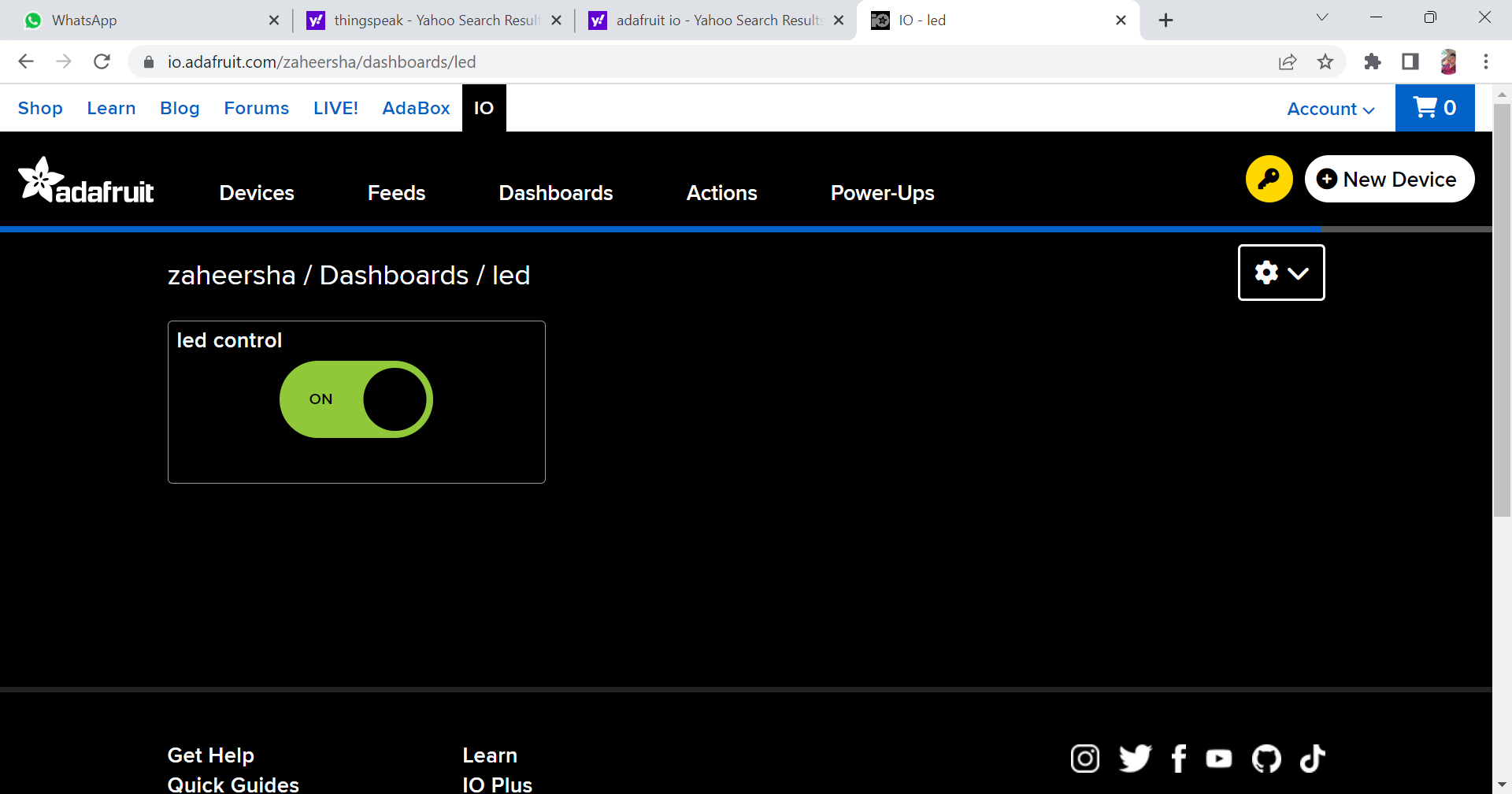
A screenshot of a computer

Description automatically generated with medium confidence

Click on the key icon on the top right corner of the screen. To get the username and key of the adafruit io server.

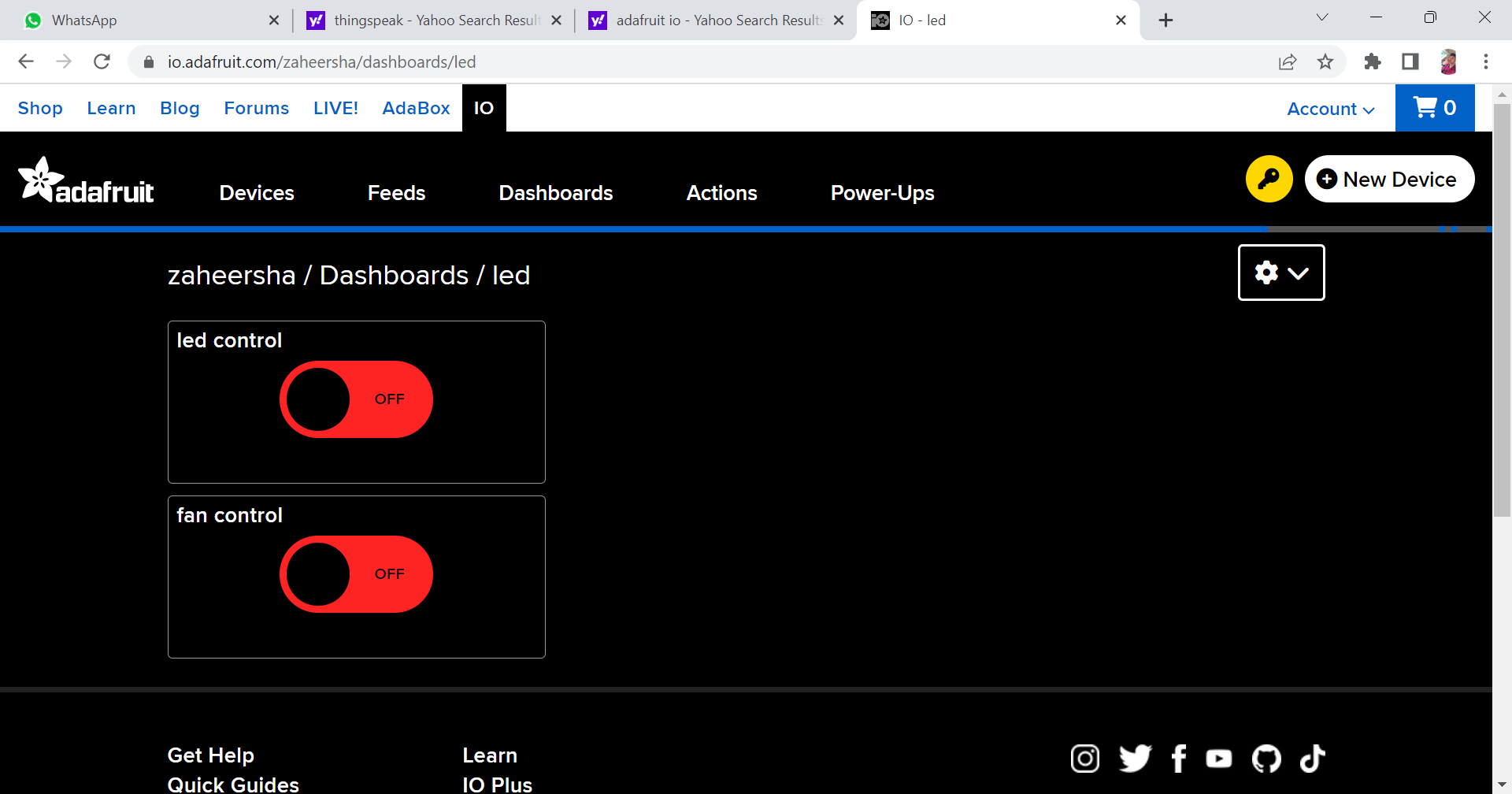


Use these keys in program to connect the board to server.



We can also add multiple toggle buttons i.e to control bulb, fan etc.

But we need to give button on/off values different. Here in fan control we have assigned button on value as A and off value as B.Graphical user interface, application

Description automatically generatedin this way the 2 toggles buttons will be showed. In order to control the led and fan.

Program: To control led

Note: this program is done by using MQTT .

from machine import Pin

import network

from time import sleep

import sys

from umqtt.simple import MQTTClient

LED = Pin(22,Pin.OUT)

#for building led use gpio pin 2

SSID = 'WiFi Name'

PASS = 'WiFi Password'

CLIENT\_ID = 'Random Client\_ID'

SERVER = 'io.adafruit.com'

USERNAME = 'Adafruit IO\_Username'

PASSWORD = 'Adafruit IO\_Key'

client = MQTTClient(client\_id = CLIENT\_ID,

                    server = SERVER,

                    user = USERNAME,

                    password = PASSWORD)

FEED\_KEY = 'led'

topic = USERNAME + '/feeds/'  + FEED\_KEY

topic = bytes(topic,'utf-8')

def cb(topic,msg):

    print('Topic=',topic, 'Msg=', msg)

    msg=str(msg,'utf-8')

    print(type(msg))

    if (msg=='1'):

        LED.value(1)

        print('LED ON')

    else:

        LED.value(0)

        print('LED OFF')

def connectWifi():

    wifi = network.WLAN(network.STA\_IF)

    wifi.active(False)

    sleep(0.5)

    wifi.active(True)

    wifi.connect(SSID, PASS)

    sleep(2)

    if (wifi.isconnected()):

        print('Connected')

    else:

        print('Not Connected')

        sys.exit()

connectWifi()

try:

    client.connect()

except:

    print('Not Connected to MQTT Broker')

    sys.exit()

client.set\_callback(cb)

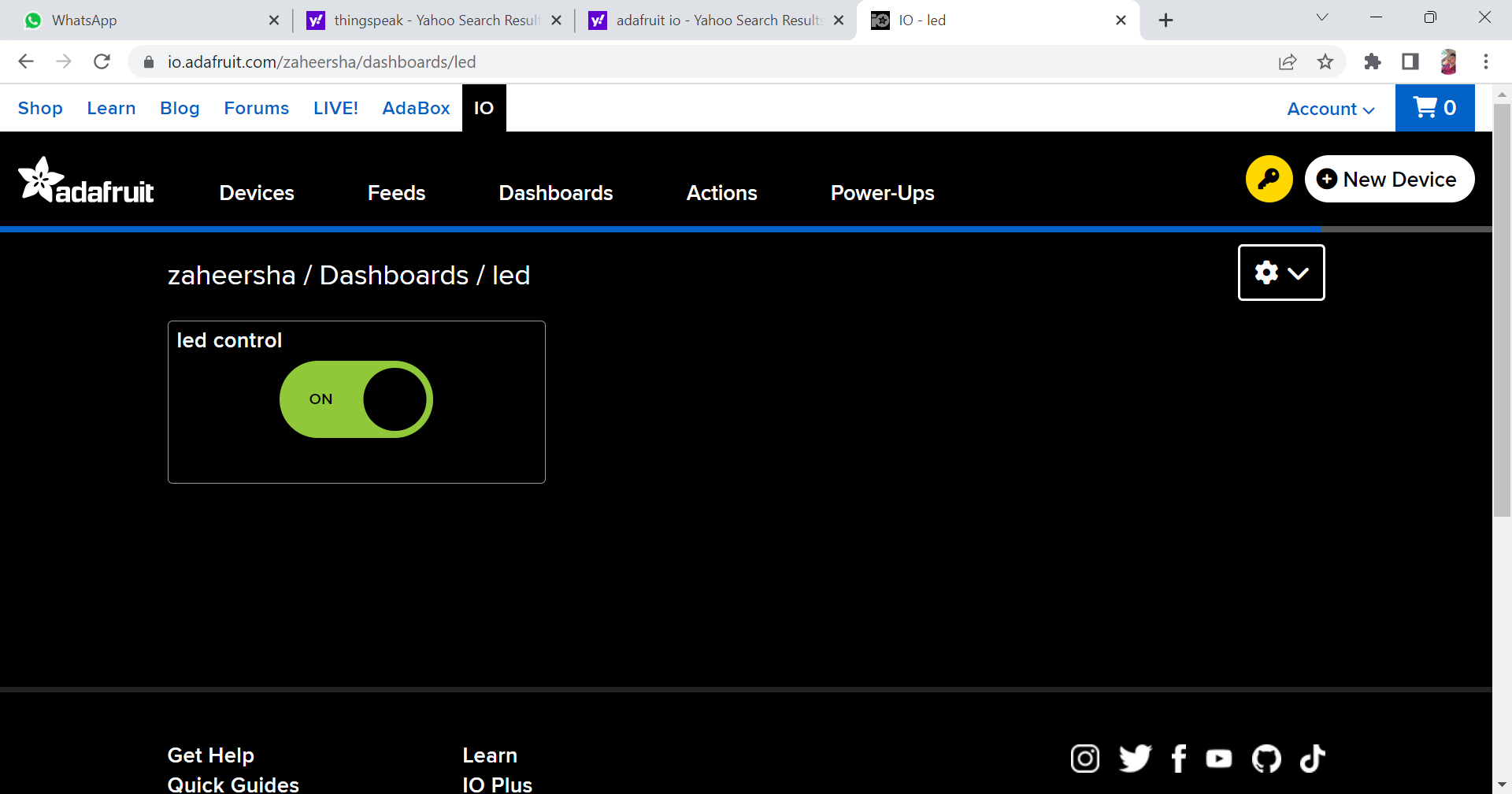
client.subscribe(topic)

while True:

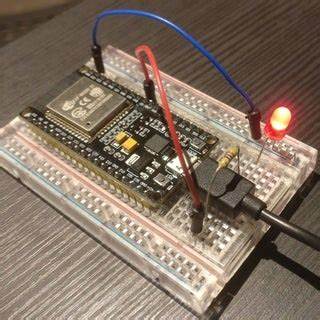
    client.check\_msg()

Output:

When button is on led will glows;



||



Program: To control multiple devices led, fan etc.…

from machine import Pin

import network

from time import sleep

import sys

from umqtt.simple import MQTTClient

LED = Pin(22,Pin.OUT)

#for building led use gpio pin 2

SSID = 'WiFi Name'

PASS = 'WiFi Password'

CLIENT\_ID = 'Random Client\_ID'

SERVER = 'io.adafruit.com'

USERNAME = 'Adafruit IO\_Username'

PASSWORD = 'Adafruit IO\_Key'

client = MQTTClient(client\_id = CLIENT\_ID,

                    server = SERVER,

                    user = USERNAME,

                    password = PASSWORD)

FEED\_KEY = 'led'

topic = USERNAME + '/feeds/'  + FEED\_KEY

topic = bytes(topic,'utf-8')

def cb(topic,msg):

    print('Topic=',topic, 'Msg=', msg)

    msg=str(msg,'utf-8')

    print(type(msg))

    if (msg=='1'):

        LED.value(1)

        print('LED ON')

    else if (msg=='0')::

        LED.value(0)

        print('LED OFF')

else if (msg=='A'):

        fan.value(1)

        print(‘Fan ON')

    else if(msg=='B'):

        fan.value(0)

        print(Fan OFF')

    else:

        fan.value(0)

        led.value(0)

        print('LED OFF')

print(fan OFF')

print(‘the message is not valid’)

def connectWifi():

    wifi = network.WLAN(network.STA\_IF)

    wifi.active(False)

    sleep(0.5)

    wifi.active(True)

    wifi.connect(SSID, PASS)

    sleep(2)

    if (wifi.isconnected()):

        print('Connected')

    else:

        print('Not Connected')

        sys.exit()

connectWifi()

try:

    client.connect()

except:

    print('Not Connected to MQTT Broker')

    sys.exit()

client.set\_callback(cb)

client.subscribe(topic)

while True:

    client.check\_msg()