



## 4.1

# ESP32 SIMULATOR

wokwi.com

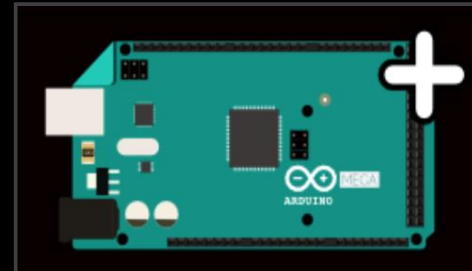
WOKWi

Simulate IoT Projects in Your Browser

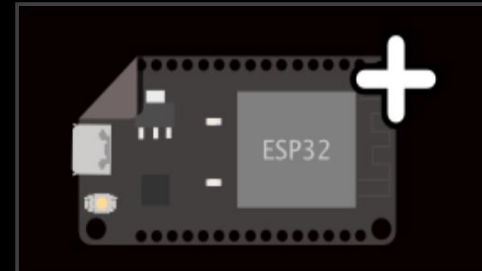
Start a New Project



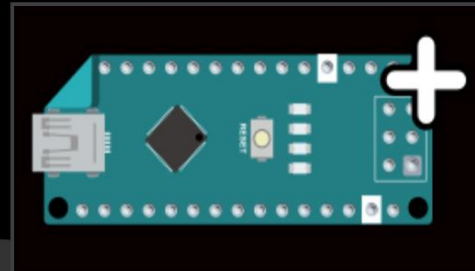
Arduino Uno



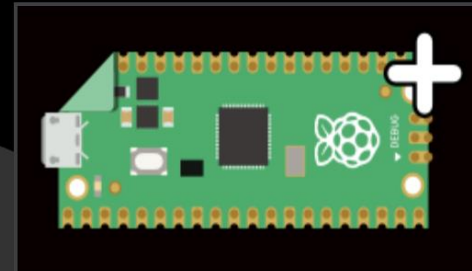
Arduino Mega



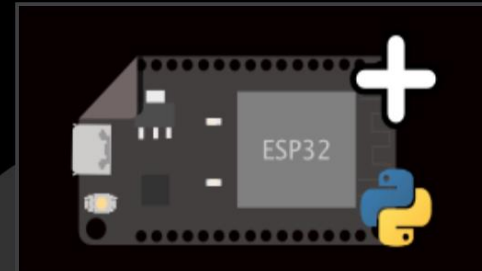
ESP32



Arduino Nano

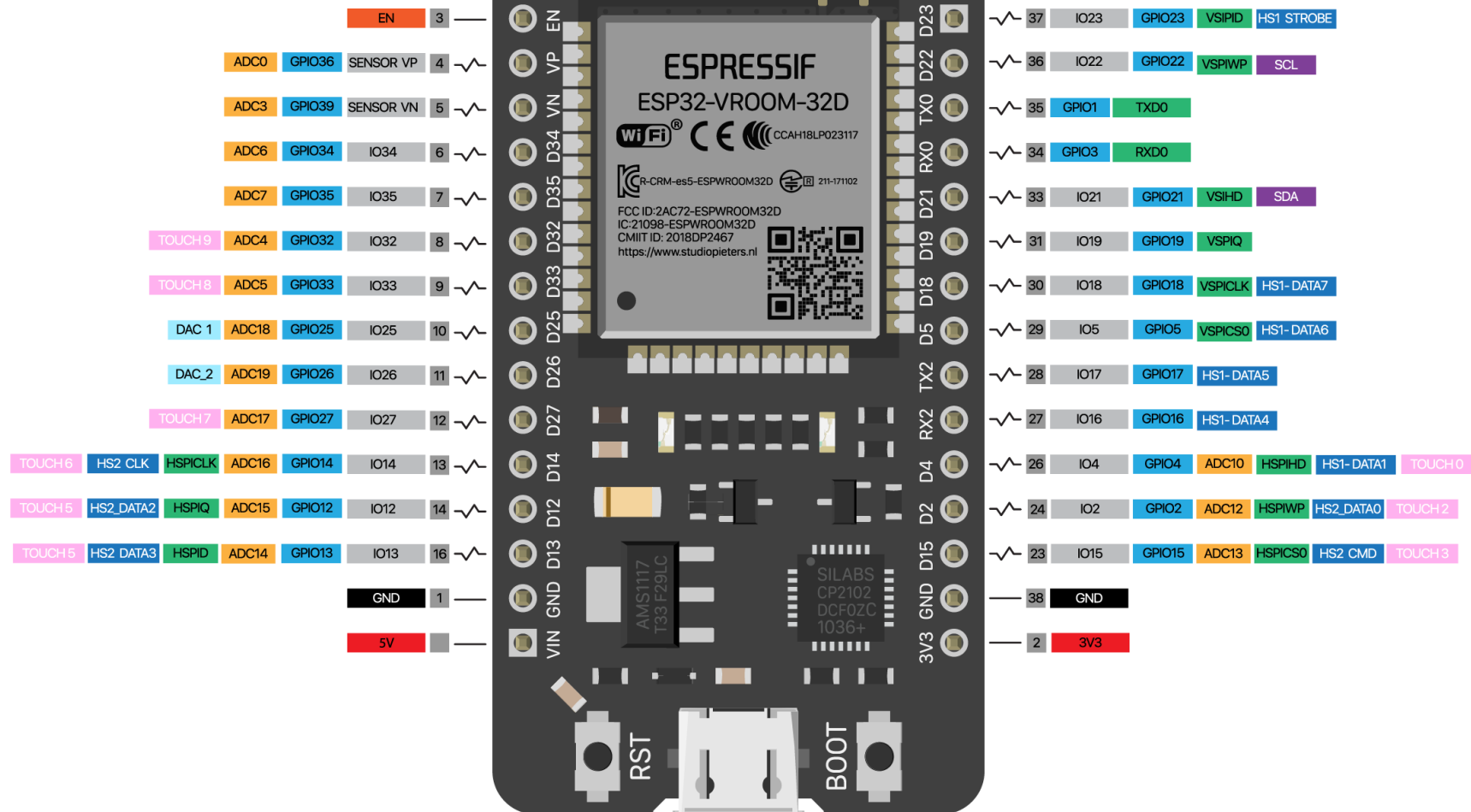


Raspberry Pi Pico

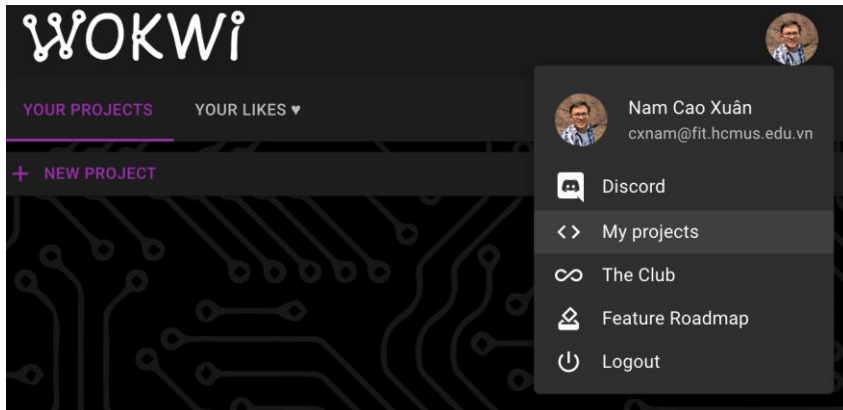


MicroPython on ESP32

-  PWM
-  PIN NUMBER
-  NAME
-  GROUND
-  POWER
-  CONTROL
-  I/O
-  ADC
-  COMM. INTERFACE
-  DAC
-  I2C
-  HS
-  TOUCH

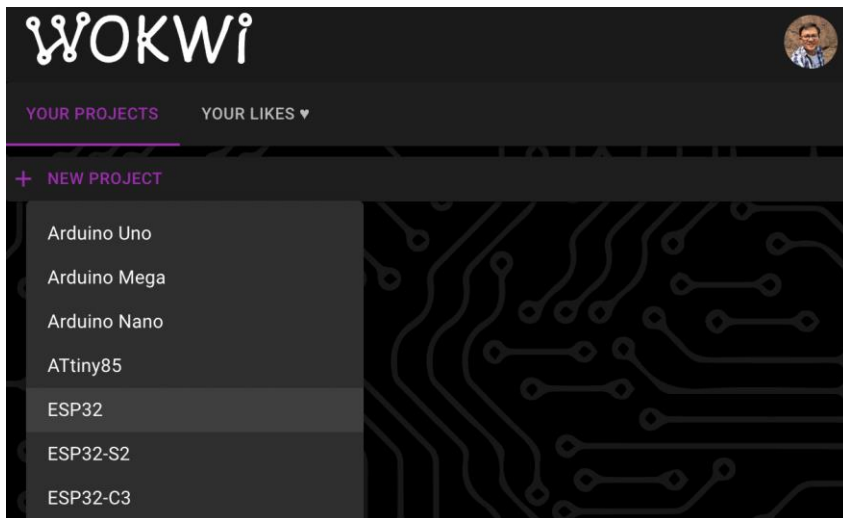


# Programming with ESP32 Simulator



# Create new project

- Login your account
- Select ***My projects > New Project > ESP32***





sketch.ino

diagram.json ●

Library Manager ▼

```
1 void setup() {
2   // put your setup code here, to run once:
3   Serial.begin(115200);
4   Serial.println("Hello, ESP32!");
5 }
6
7 void loop() {
8   // put your main code here, to run repeatedly:
9   delay(10); // this speeds up the simulation
10 }
11
```

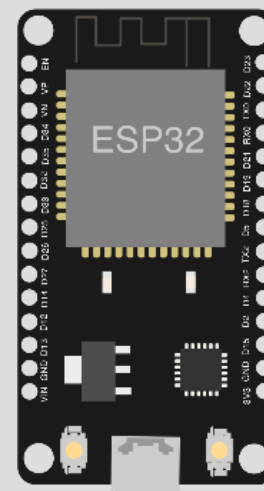
Code

Simulation



Start simulator

Insert devices



Hello, ESP32!

Serial Monitor

```
{  
  "type": "wokwi-resistor",  
  "id": "r1",  
  "top": 121.88,  
  "left": 102.99,  
  "rotate": 270,  
  "attrs": { "value": "220" }  
}
```

# Rotate devices

---

Method 1:

- Select device > Press **"R"** key

Method 2:

- Click on tab ***diagram.json***
- Insert "rotate" attribute of ***wokwi-resistor***

```
"type": "wokwi-resistor",  
"id": "r1",  
"top": 121.88,  
"left": 157.83,  
"attrs": { "value": "220" }
```

# Set resistance of a resistor

---

- Click on tab *diagram.json*
- Set resistance in “*value*” attribute of *wokwi-resistor*



Only use number

sketch.ino ●

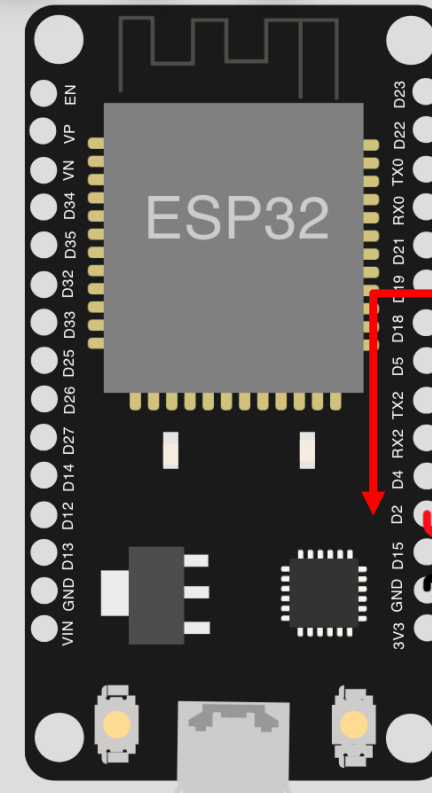
diagram.json ●

libraries.txt

Library Manager ▼

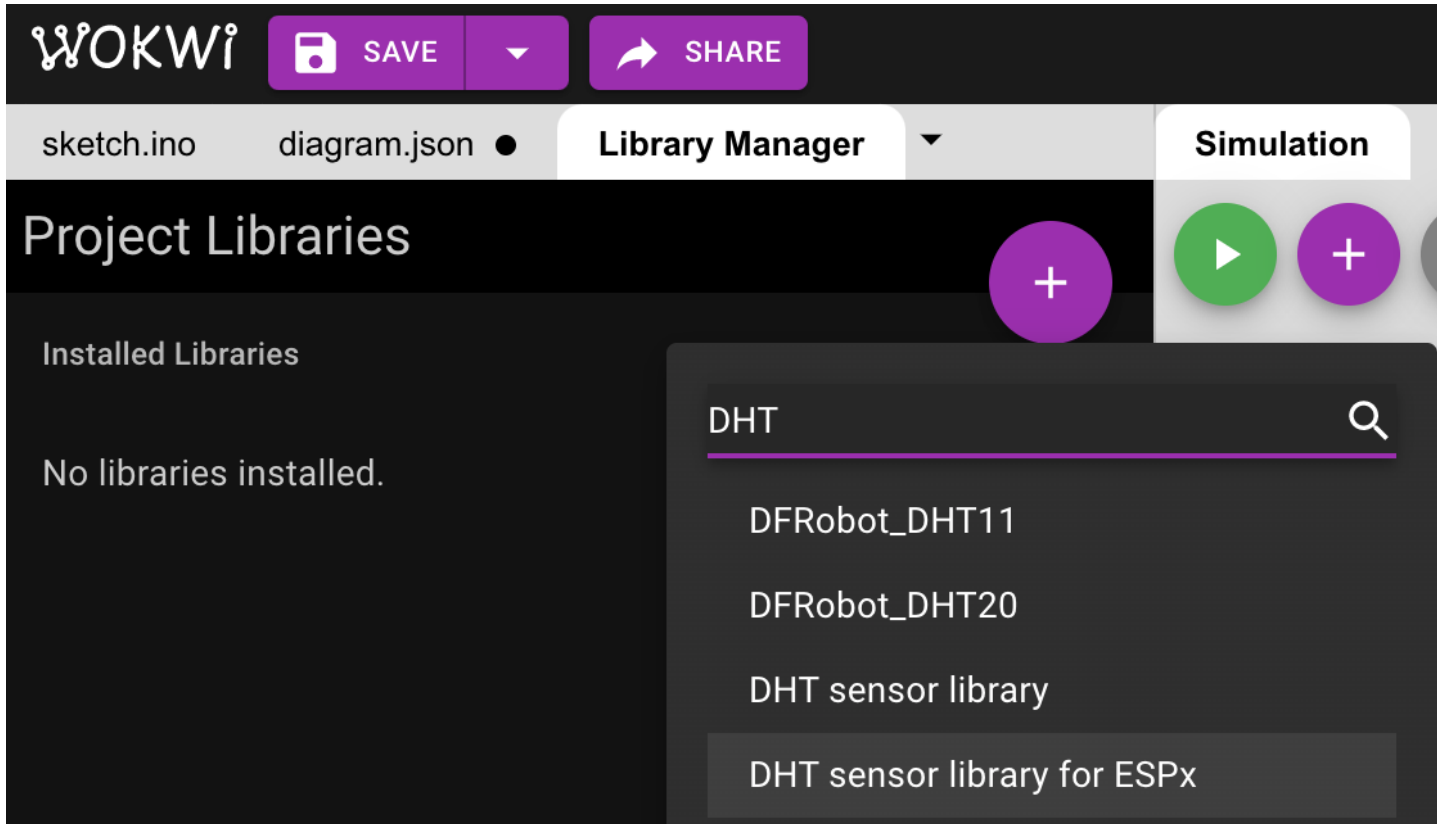
```
1 void setup() {  
2   // put your setup code here, to run  
3   pinMode(2, OUTPUT);  
4 }  
5  
6 void loop() {  
7   // put your main code here, to run r  
8   digitalWrite(2, HIGH);  
9   delay(1000);  
10  digitalWrite(2, LOW);  
11  delay(1000);  
12 }  
13
```

Simulation



# Blink

# DHT22

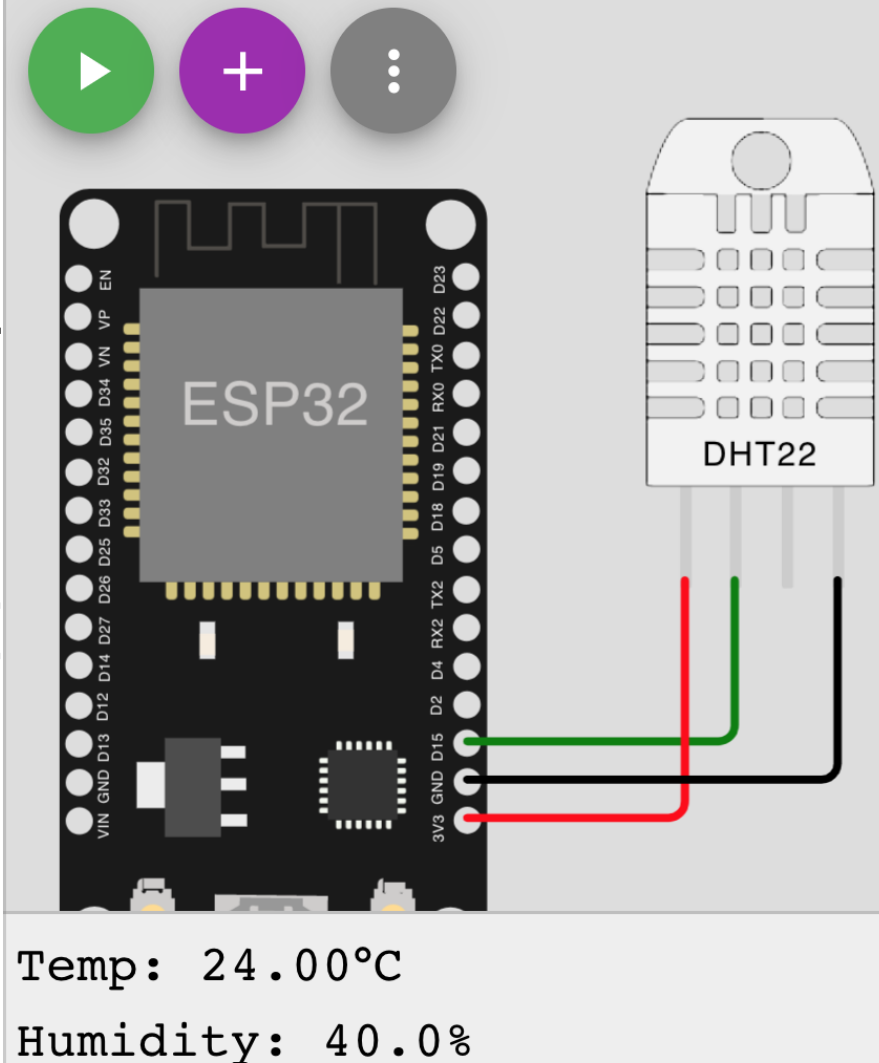


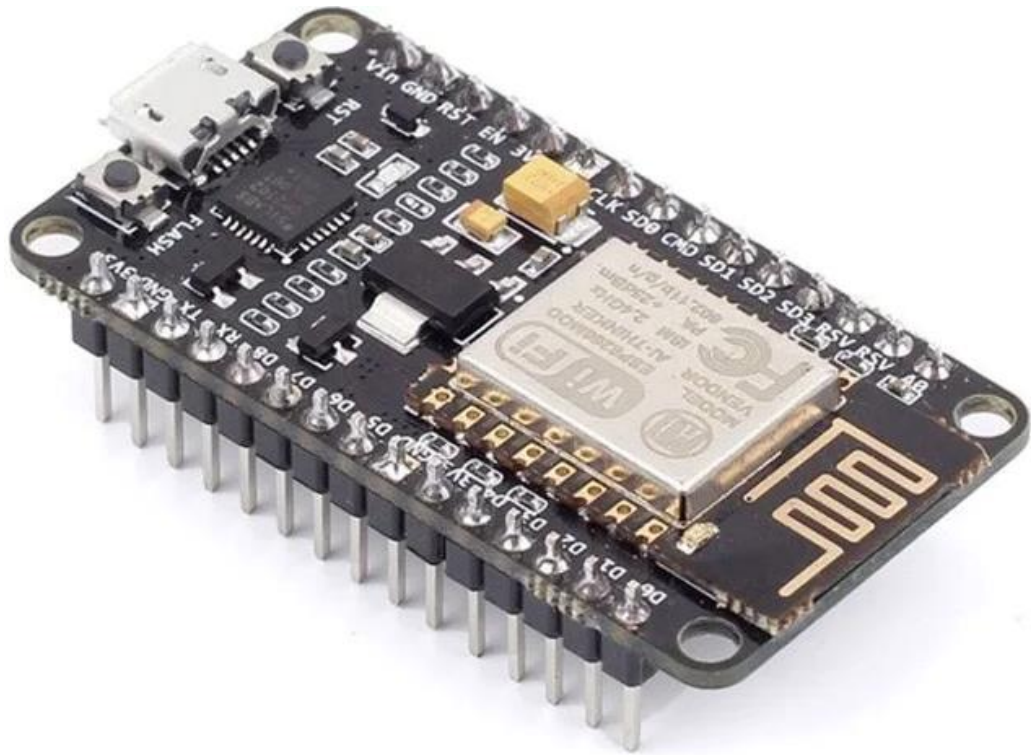
## Add library

- Click on tab **Library Manager**
- Click on **Add (+) Button**
- Search library that you would like to add > Select

```
1  #include "DHTesp.h"
2
3  const int DHT_PIN = 15;
4
5  DHTesp dhtSensor;
6
7  void setup() {
8      Serial.begin(115200);
9      dhtSensor.setup(DHT_PIN, DHTesp::DHT22);
10 }
11
12 void loop() {
13     TempAndHumidity data = dhtSensor.getTempAndHumidity();
14     Serial.println("Temp: " + String(data.temperature, 2) + "°C");
15     Serial.println("Humidity: " + String(data.humidity, 1) + "%");
16     Serial.println("---");
17     delay(1000);
18 }
```

# DHT22





# Connect to Wifi

---

# Connect to Wifi

```
#include <WiFi.h>
```

Default in Simulator



```
const char* ssid = "Wokwi-GUEST";  
const char* password = "";
```

```
void wifiConnect() {  
    WiFi.begin(ssid, password);  
    while (WiFi.status() != WL_CONNECTED) {  
        delay(500);  
        Serial.print(".");  
    }  
    Serial.println(" Connected!");  
}
```

```
void setup() {  
    Serial.begin(9600);  
    Serial.print("Connecting to WiFi");  
  
    wifiConnect();  
  
    Serial.println("IP address: ");  
    Serial.println(WiFi.localIP());  
}  
  
void loop() {  
    delay(100);  
}
```