recap

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ACTIVITY

Smart Irrigation System

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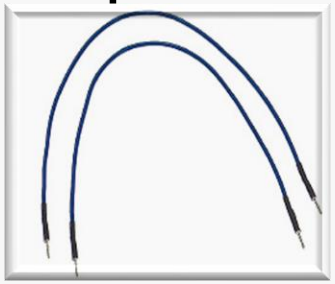
Components Required

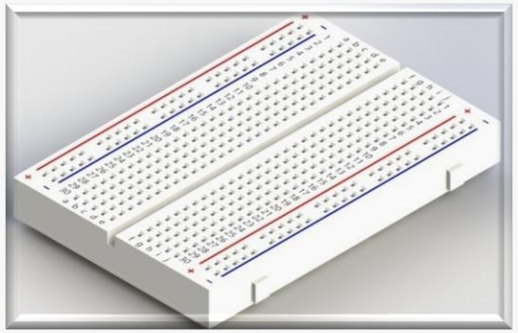
Esp32/Esp8266

Wi-Fi/hotspot

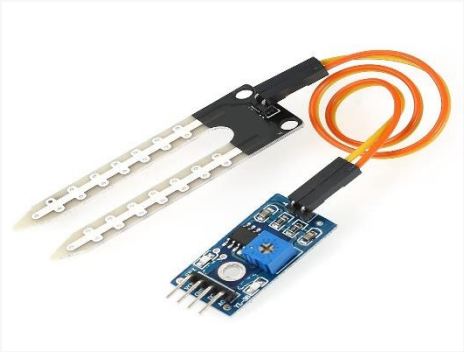
Jumper wire



Breadboard



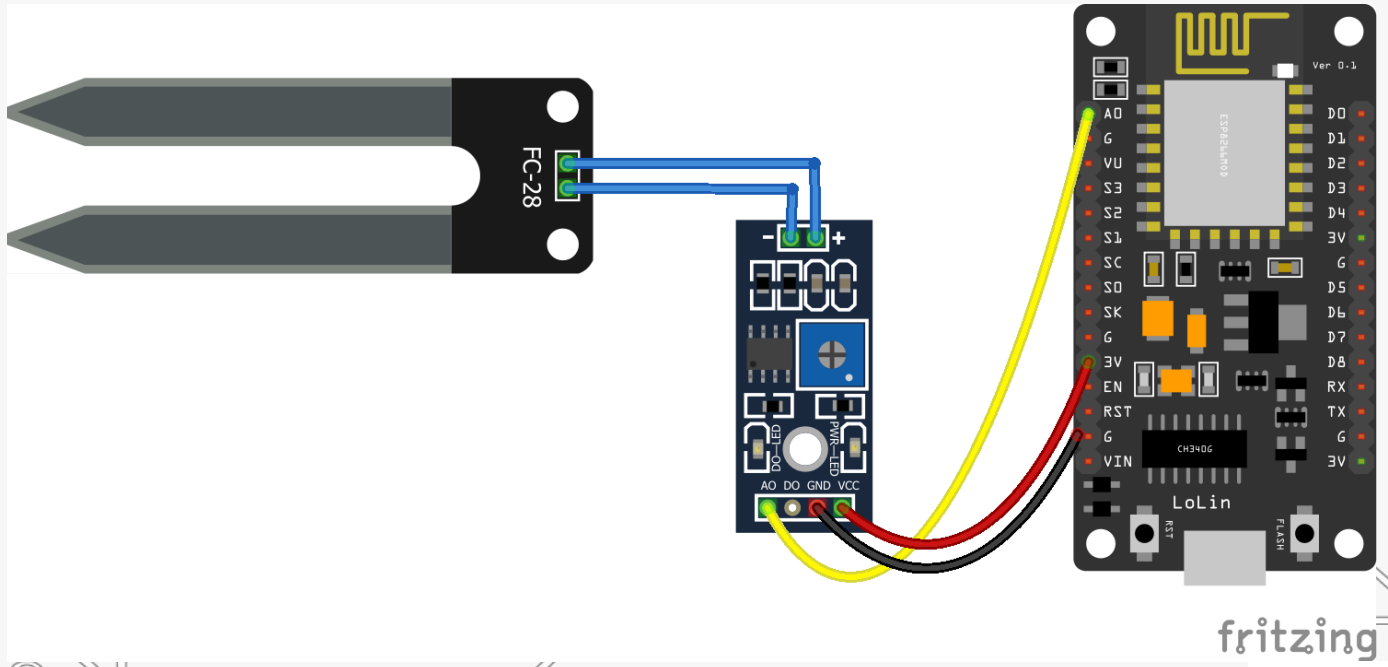
Soil moisture Sensor



thinger.io
platform

Steps for Connection

Connect ground and vcc pin of soil moisture sensor to ground and vin/3v3 pin of esp32 respectively. Now connect signal pin(a0) of soil moisture sensor to any Gpio pin of esp32.



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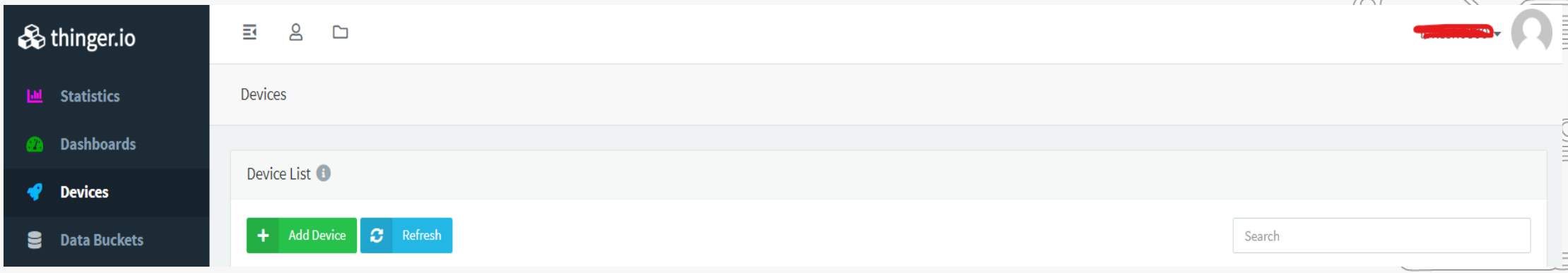
What is thinger.io?

thinger.io
platform

Thinger.io platform is an Open Source platform for the Internet of Things, it provides a **ready to use** scalable cloud infrastructure for connecting things. Makers and companies can start controlling their devices from the internet in minutes, without worrying about the required cloud infrastructure.

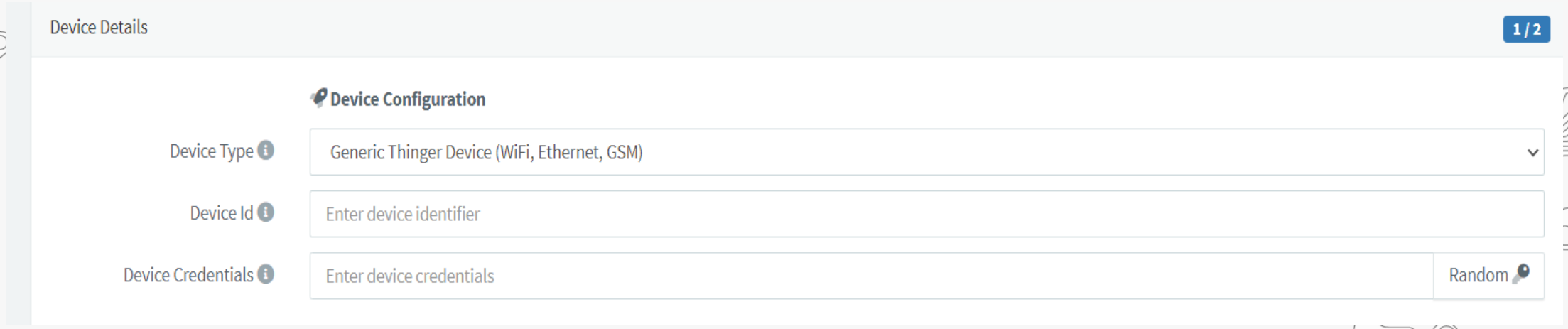
Steps to setup thinger.Io

- Goto https://thinger.io and create a thinger account by Signing up .
  (Note: Remember the user name)
- Goto: Devices → Add device

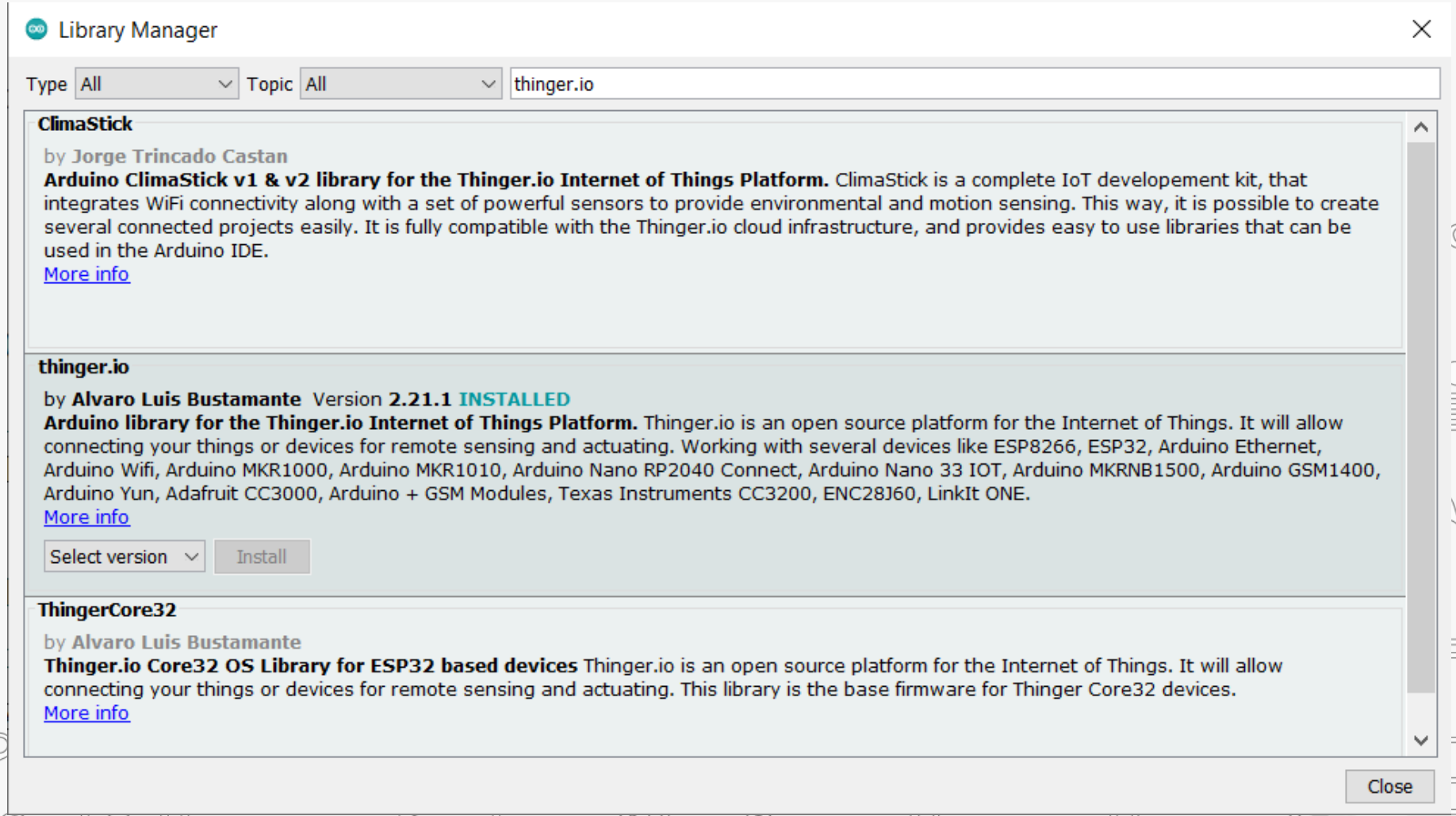


Steps to setup thinger.lo

- Now give Device Id & Device Credentials and Click on **Add Device**. (Note: Remember Device Id and Credentials)



- Open Arduino IDE and add thinger.io library. **Sketch → Include library**



- Write code as shown for project. In **Declaration section** give **USERNAME**, **DEVICE_ID** and **DEVICE_CREDENTIAL** within double quotation same as given in **thinger.io** account. Now write down your **ssid** and **password** (Wi-Fi name and password) within double quotation.

```
#include <ThingerESP32.h>
#include <WiFi.h>


#define USERNAME " "
#define DEVICE_ID " "
#define DEVICE_CREDENTIAL " "

const char* ssid = " ";
const char* password = " ";
ThingerESP32 thing(USERNAME, DEVICE_ID, DEVICE_CREDENTIAL);


int sensor = 34;
int val,percentage;
```

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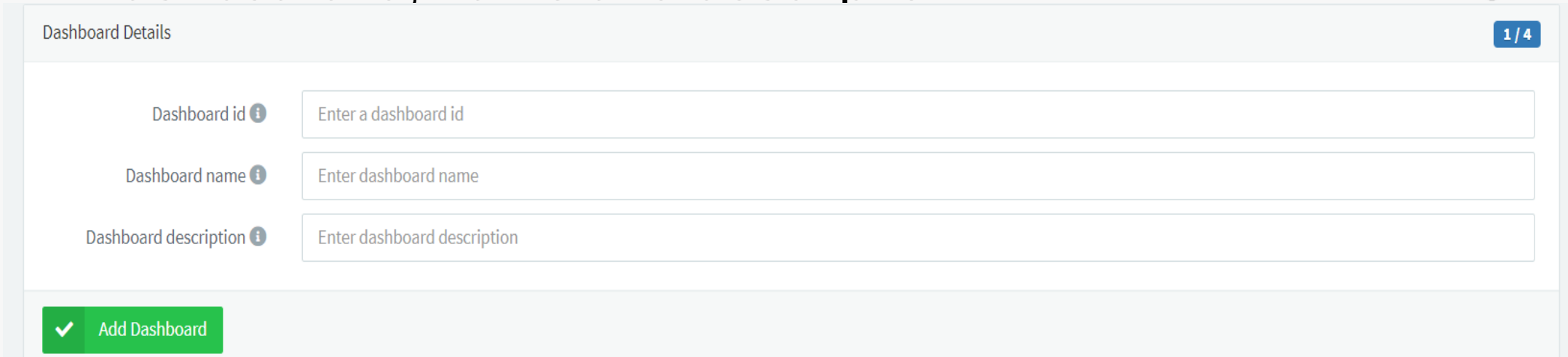
- **Initialization section**: Here to send signal from sensor to thinger.io platform “>>” symbol is used. Here, ”soil-moisture” is **Resource** name and “moisture” & “moist-percentage” are **Value** that is going to used in widget section in thinger.io. Resource and Value can be changed according to user.

```
void setup()
{
  Serial.begin(115200);
  pinMode(sensor,INPUT);
  WiFi.begin(ssid, password);
  thing.add_wifi(ssid, password);
  thing["soil-moisture"] >> [](pson& out)
  {
    out["moisture"] = val;
    out["moist-percentage"] = percentage;
  };
}
```

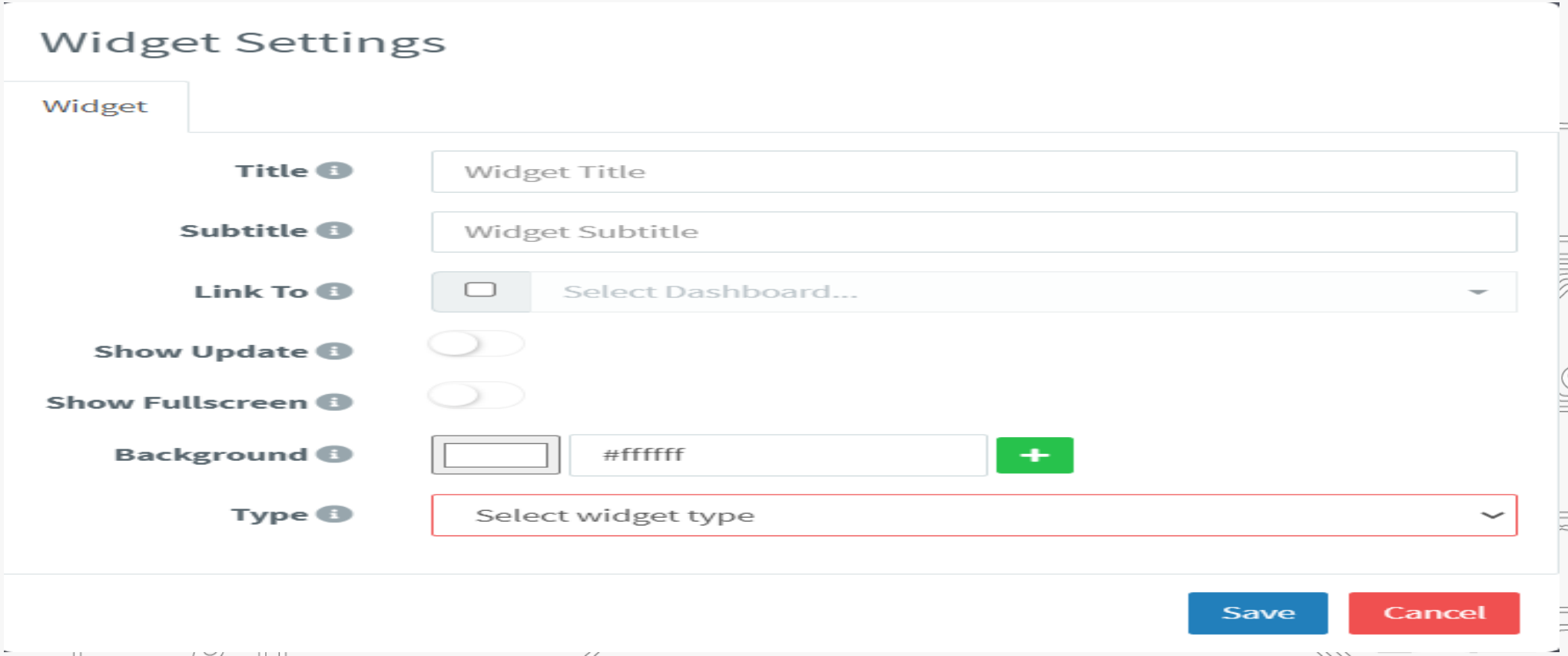
- Main loop:

```
void loop() {
  thing.handle();
  val = analogRead(sensor);
  percentage = 100 - ((val/1023)*100);
  delay(100);
}
```

- Now setup the dashboard in thinger.io platform. Goto thinger.io account and **Dashboards → Add dashboard.** Now give the Dashboard id, name and description.



- Click on Dashboards and then click on available dashboard id.
- Now to add widget turn ON the sliding switch and than click on add widget. Fill the widget settings box to get the desired output.



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ASSESSMENT TIME.....

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