IOT BaseTemperature and Humidity detector

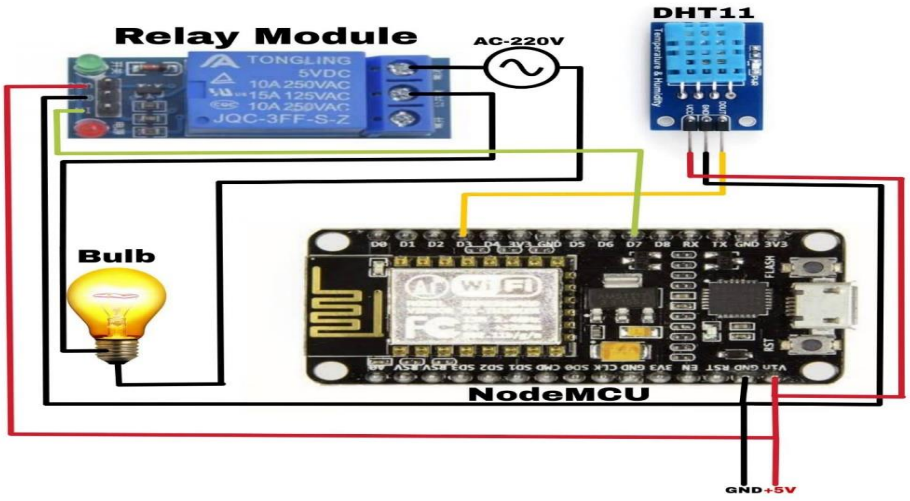
Aim:

Learn about the Nodemcu (esp8266), Temperature sensor (DHT11) and Relay etc... with the help of these components how we can detect the Temperature and Humidity from anywhere by using blynk IOT app.

Component Required:

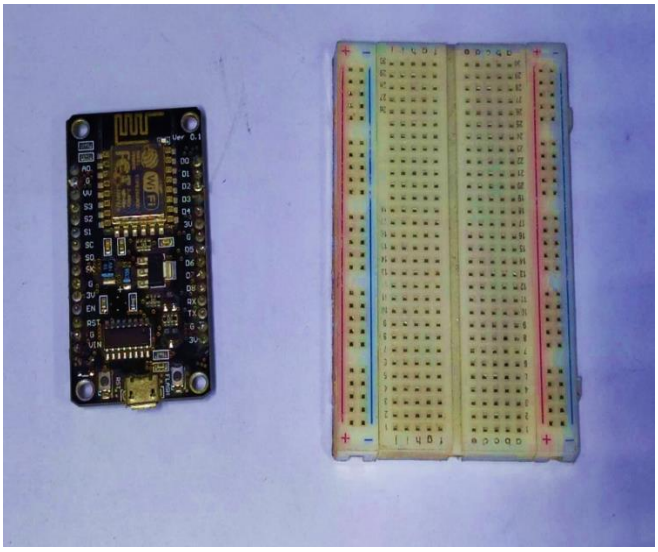
S no.	Components	Quantity
1	Nodemcu (esp8266)	**1**
2	Temperature sensor (DHT11)	**1**
3	Relay	**1**
4	Bulb and Bulb holder	**1**
5	Jumper wire	**few**
6	Breadboard	**1**
7	Battery (12v)	**1**

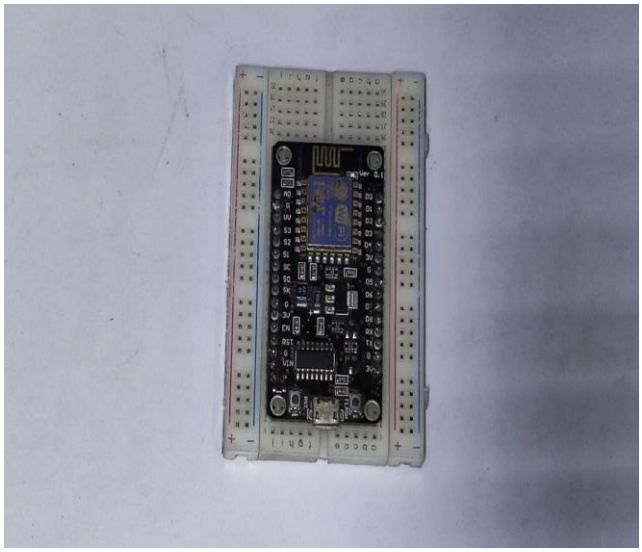
Schematic Diagram:



Steps of construction:

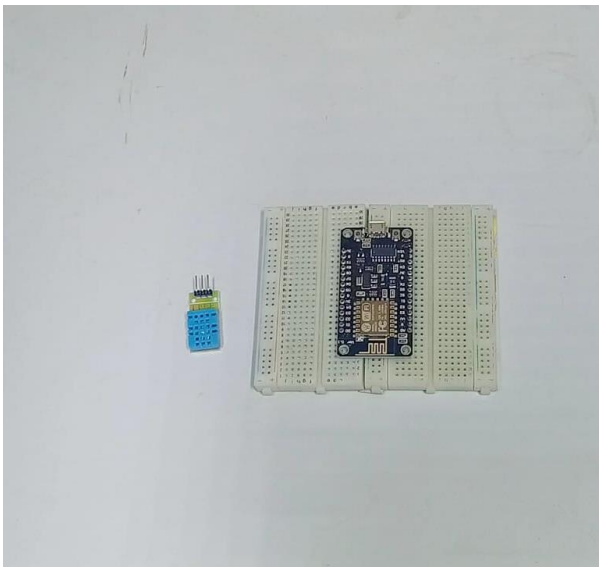
STEP 1- Take the Nodemcu board and put on the breadboard

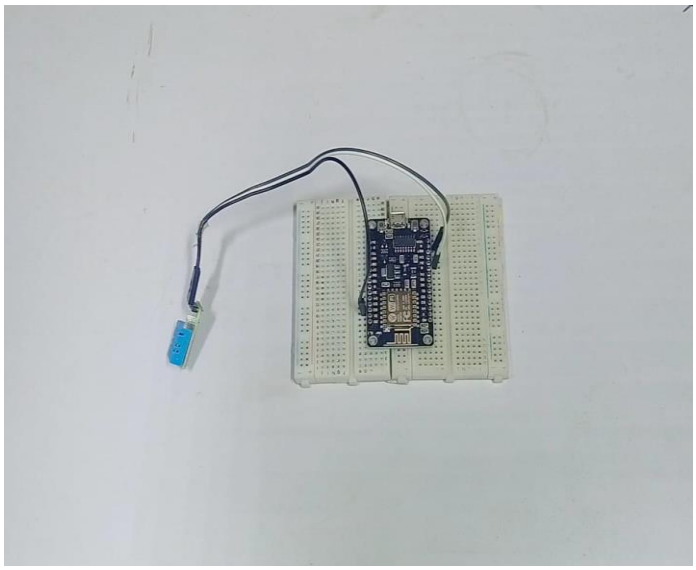




STEP 2- Take the DHT11 Sensor and connect with NodeMCU.

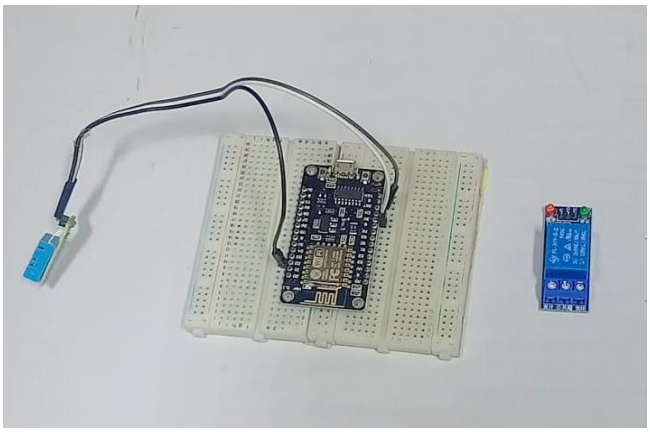
DATA <————-> D3
GND <————-> GND
VCC <————-> VIN

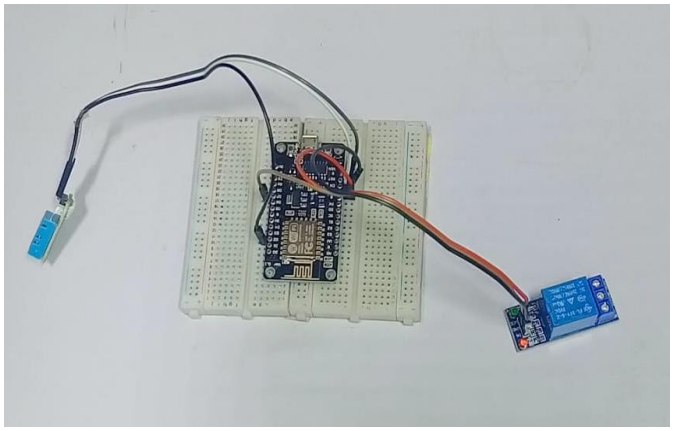




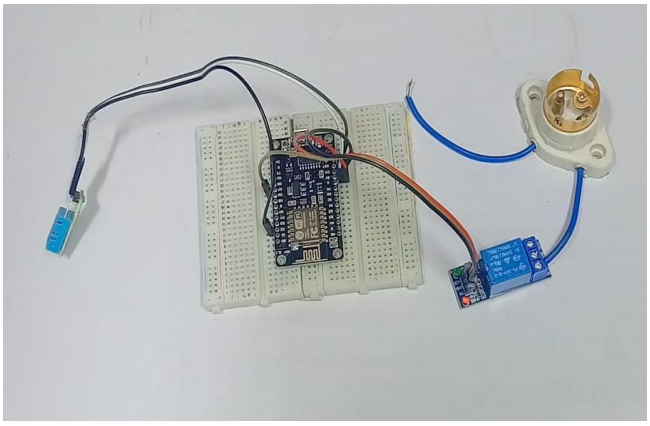
STEP 3- Take the Relay Module and connect with NodeMCU.

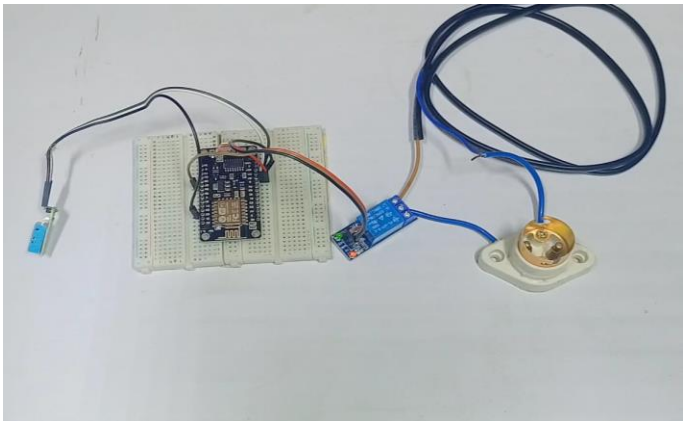
IN1 <————-> D7
GND <————-> GND
VCC <————-> VIN/+3V





STEP 4- Take the Bulb Holder and connect with Relay Module.





CODE OF THE PROJECT:

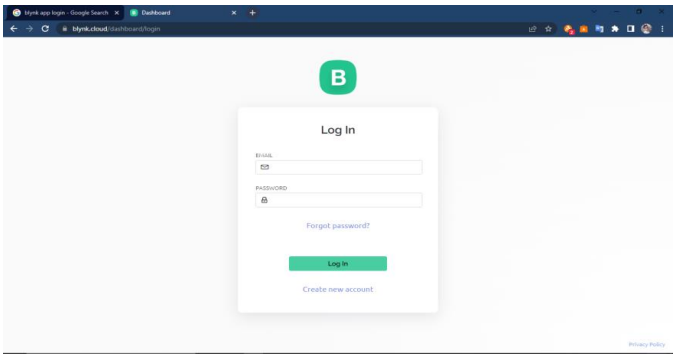
```
//Include the library files

 #define BLYNK_PRINT Serial

#include <ESP8266WiFi.h>
```

```
#include <BlynkSimpleEsp8266.h>
#include <DHT.h>
char auth[] = "---------";//Enter your Auth token
char ssid[] = "---------";//Enter your WIFI name
char pass[] = "---------";//Enter your WIFI password
DHT dht(D3, DHT11); //(sensor pin,sensor type)
BlynkTimer timer;

// Define component pins
 #define relay1 D7

void setup() {
  Serial.begin(9600);
  pinMode(relay1, OUTPUT);

  digitalWrite(relay1, HIGH);

  Blynk.begin(auth, ssid, pass, "blynk.cloud", 80);
  dht.begin();

 //Call the functions
 timer.setInterval(100L, DHT11sensor);
}
//Get the DHT11 sensor values
```

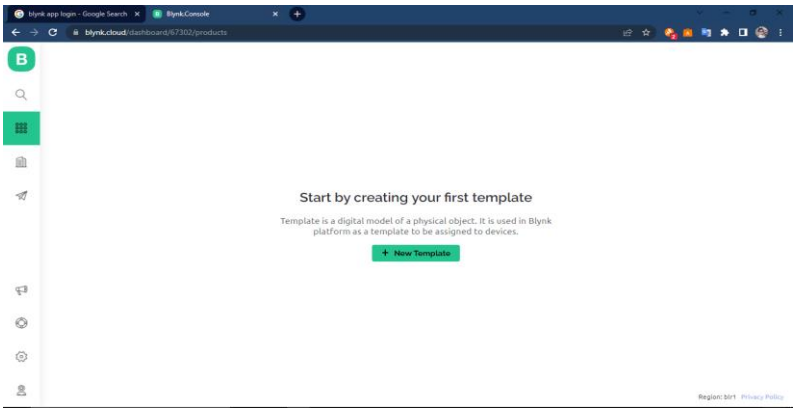
```
void DHT11sensor() {
  float h = dht.readHumidity();
  float t = dht.readTemperature();

  if (isnan(h) || isnan(t)) {
    Serial.println("Failed to read from DHT sensor!");
    return;
  }
  Blynk.virtualWrite(V0, t);
  Blynk.virtualWrite(V1, h);
}
//Get buttons values
BLYNK_WRITE(V2) {
 bool RelayOne = param.asInt();
  if (RelayOne == 1) {
    digitalWrite(relay1, LOW);
  } else {
    digitalWrite(relay1, HIGH);
  }
}
void loop() {
  Blynk.run();//Run the Blynk library
  timer.run();//Run the Blynk timer
}
```

Setup the blynk:

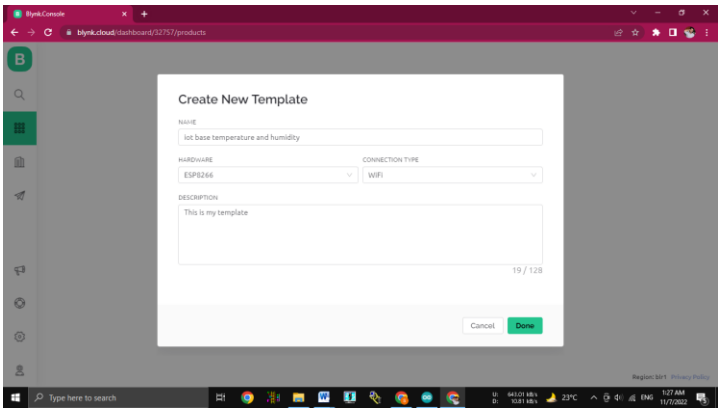
STEP 1– Open the blynk in the chrome and login the blynk page.



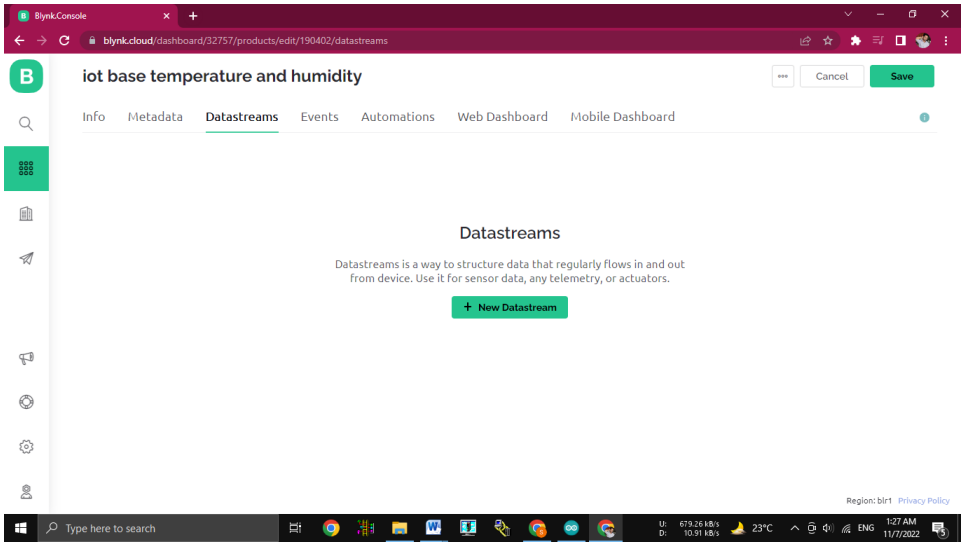
STEP 2 - After that click the new template.



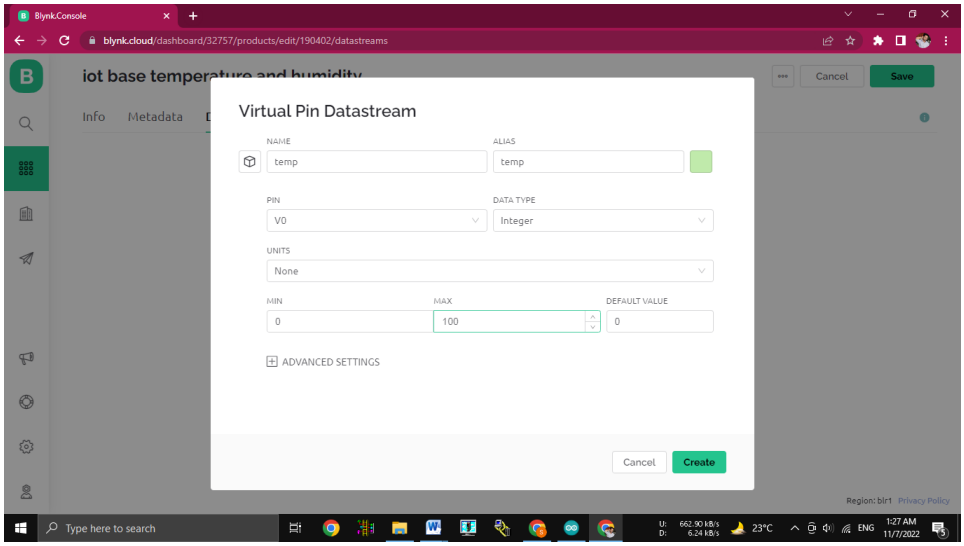
STEP 3– Give the project name and select the hardware esp8266 board.



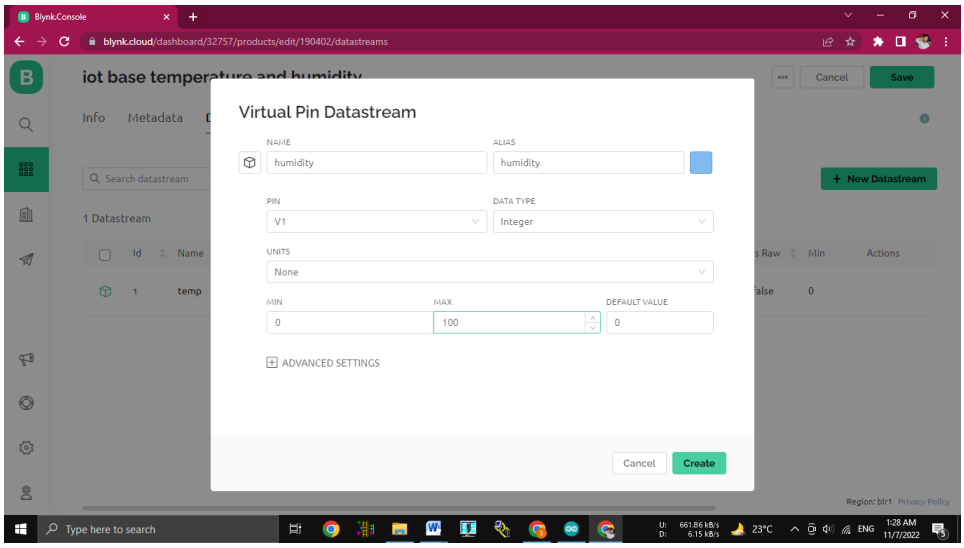
STEP 4 – select the datastreams and go to the new datastreams



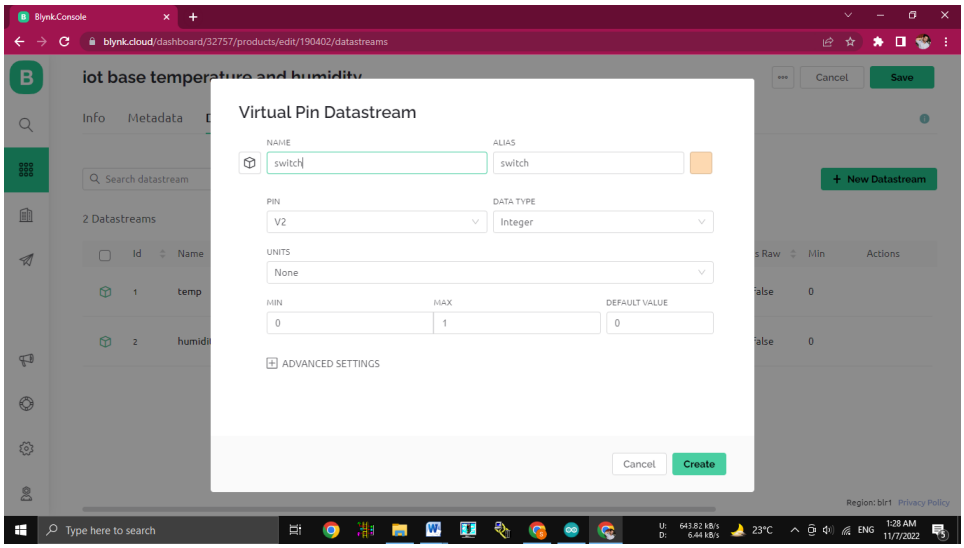
STEP 5 - Give the name and select pin V0 and hit the create button.



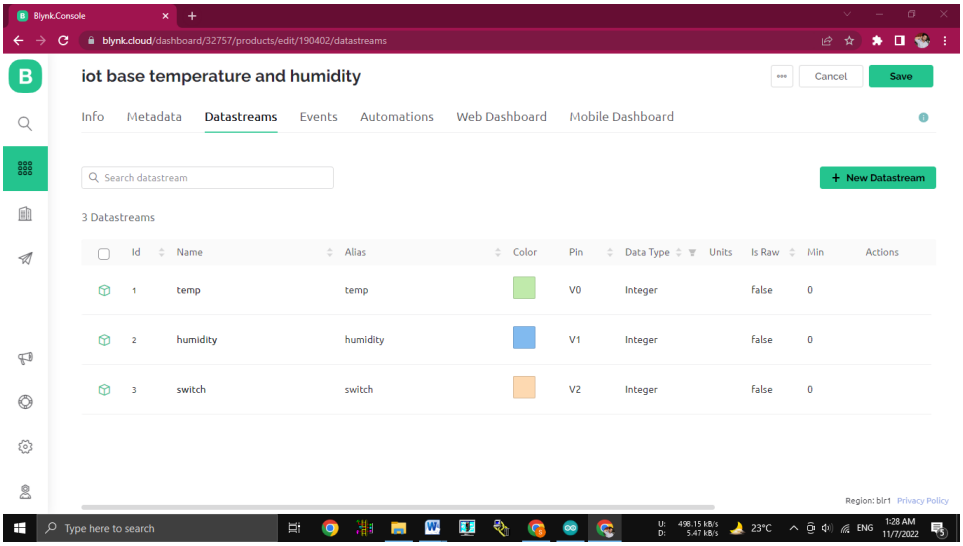
STEP 6 –After that click once again to the new datastream and give the name and select pin V1 and max value 100 then hit the create button.



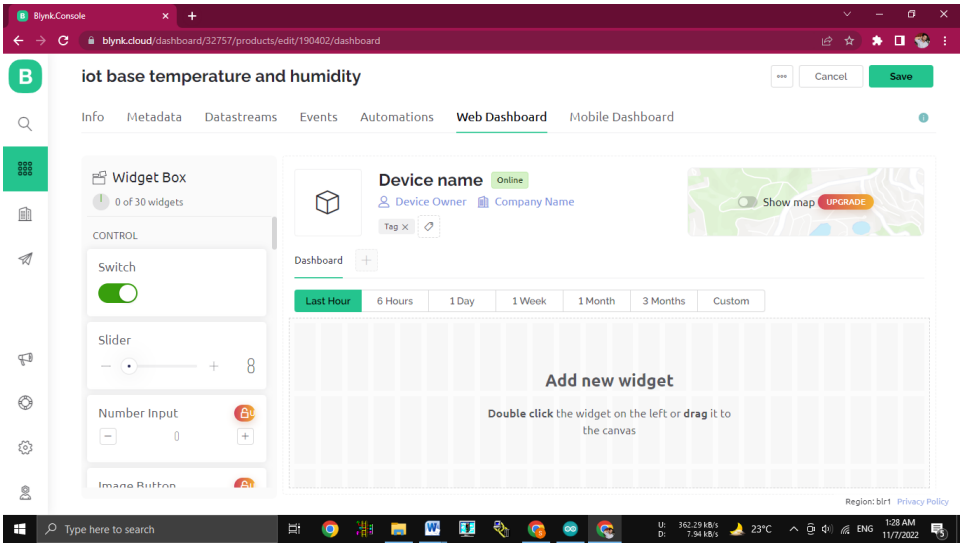
STEP 7 –After that click once again to the new datastream and Give the name and select pin V2 and hit the create button.



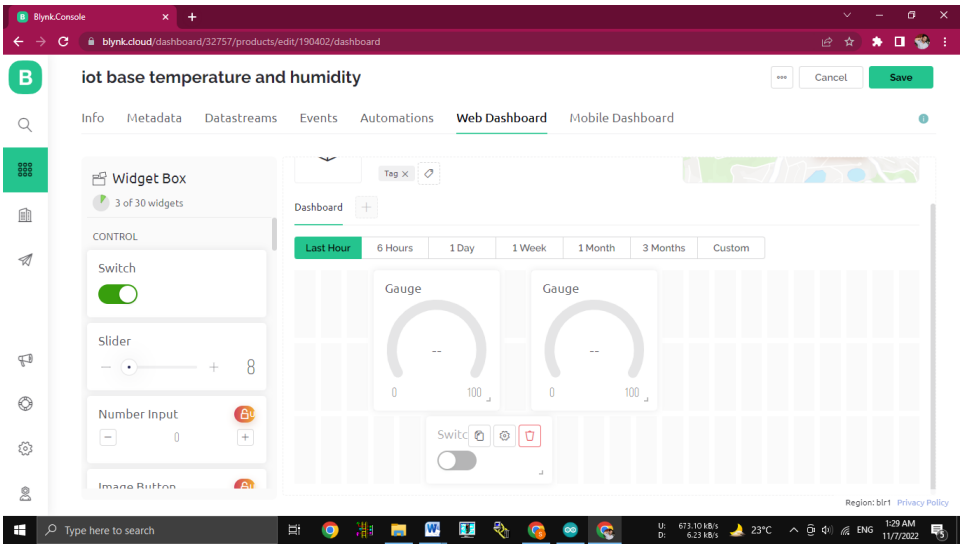
STEP 8 –Then show this type of window.



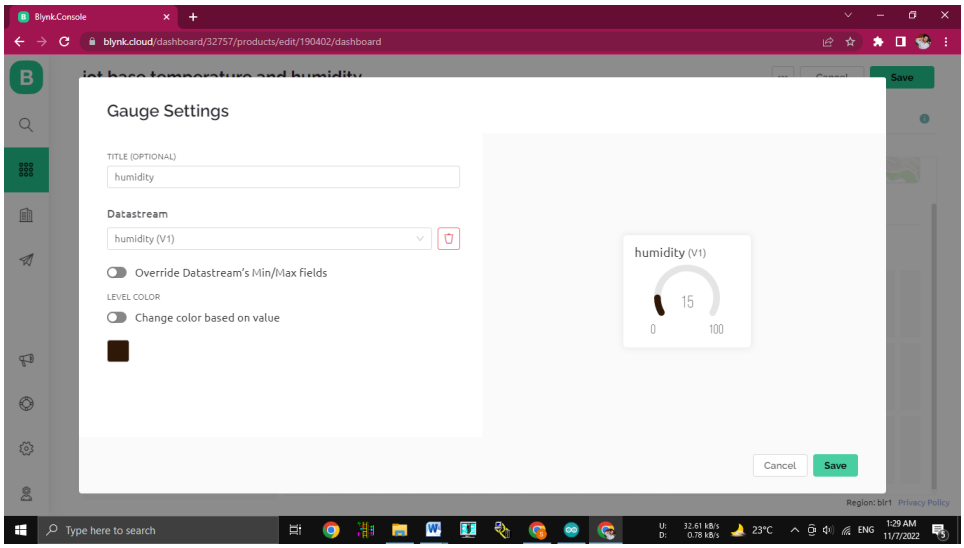
STEP 9– Select the web dashboard option.



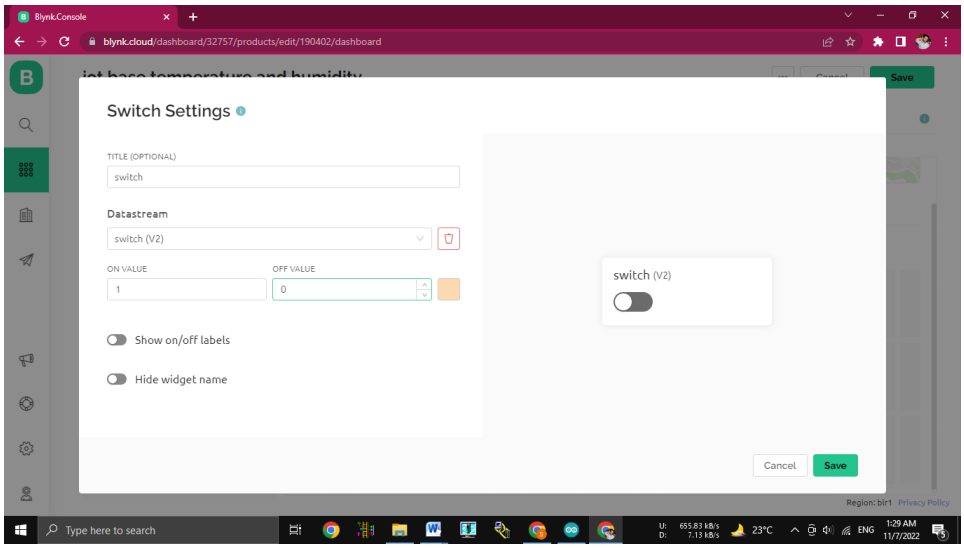
STEP 10– Drag the ‘Gauge’ & ’Switch’ option.



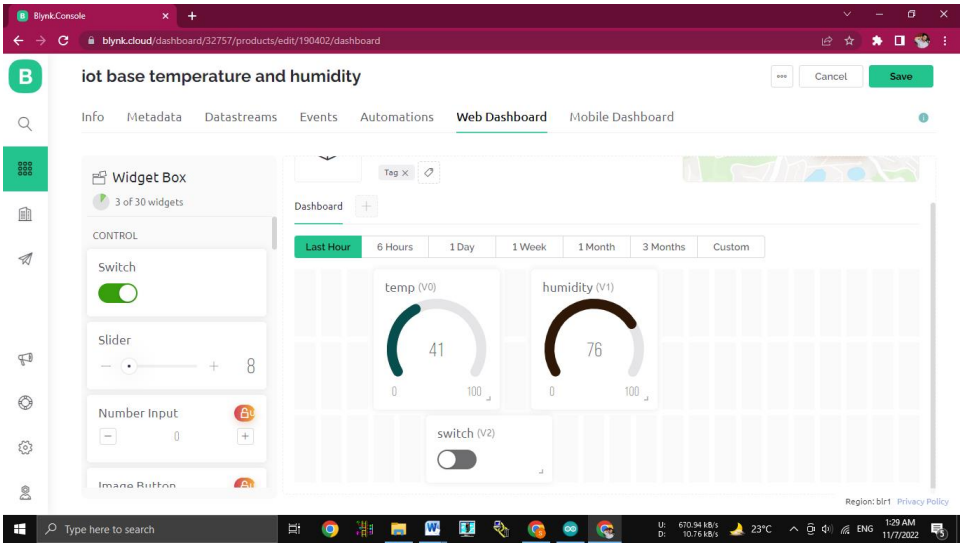
STEP 11– Go to Gauge setting and select V1.



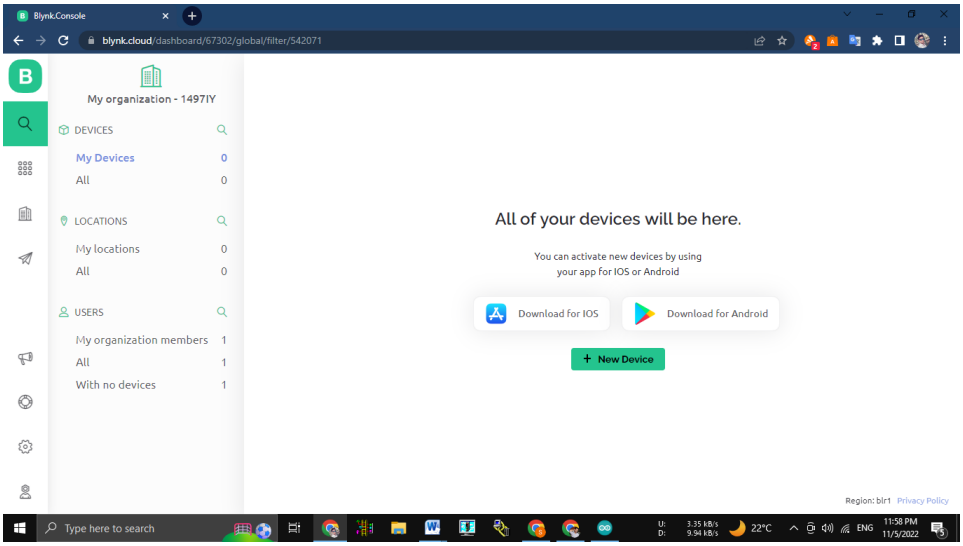
STEP 12– Go to Switch setting and select V2.



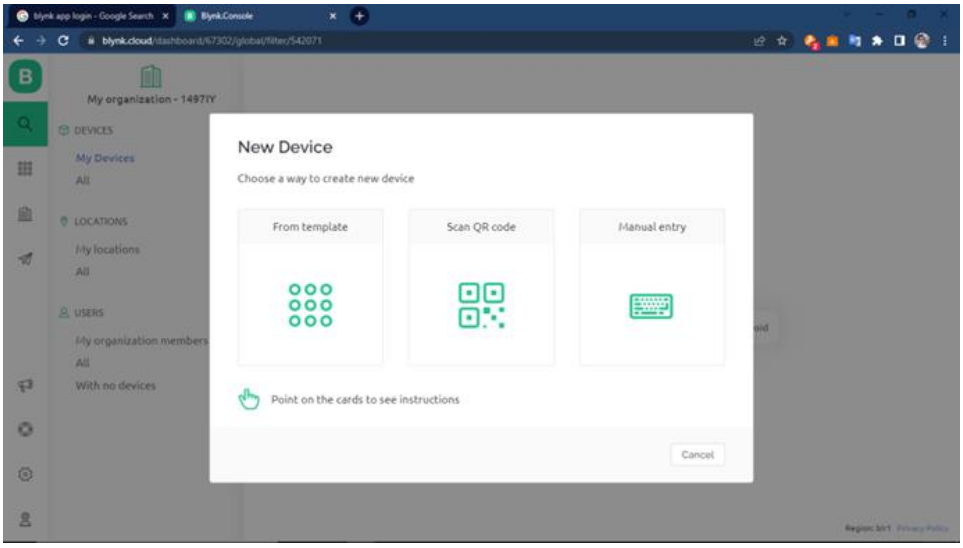
STEP 13– After that click the save button.



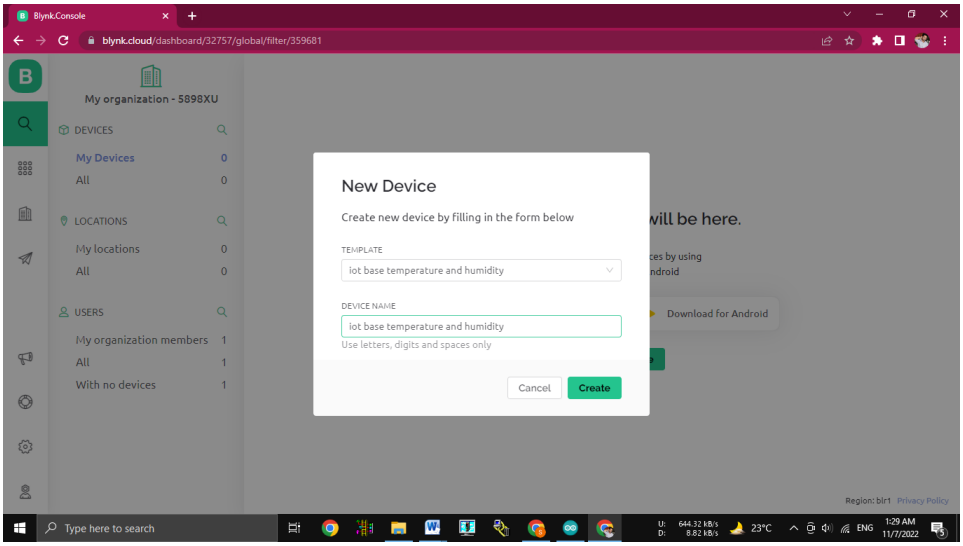
STEP 14 – After that click the search point. And select the new device option.



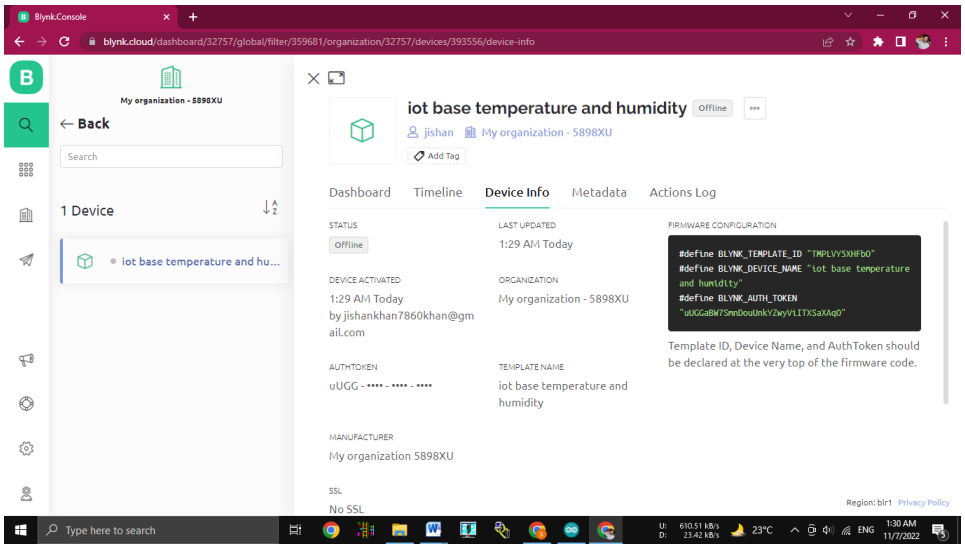
STEP 15 – Select the from template option.



STEP 16 - Give the template name and device name then click create.

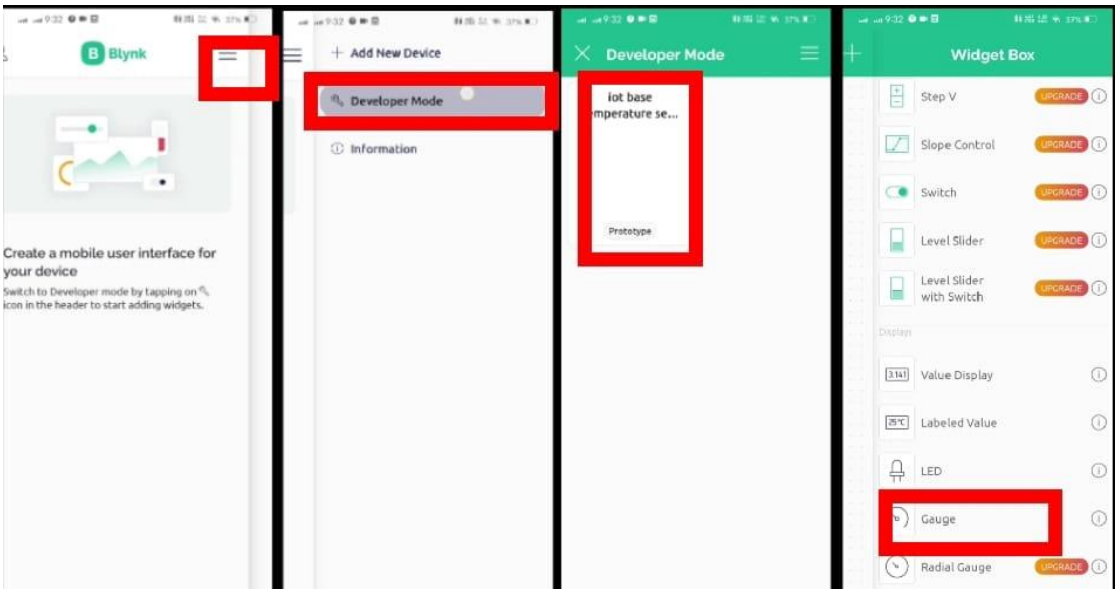


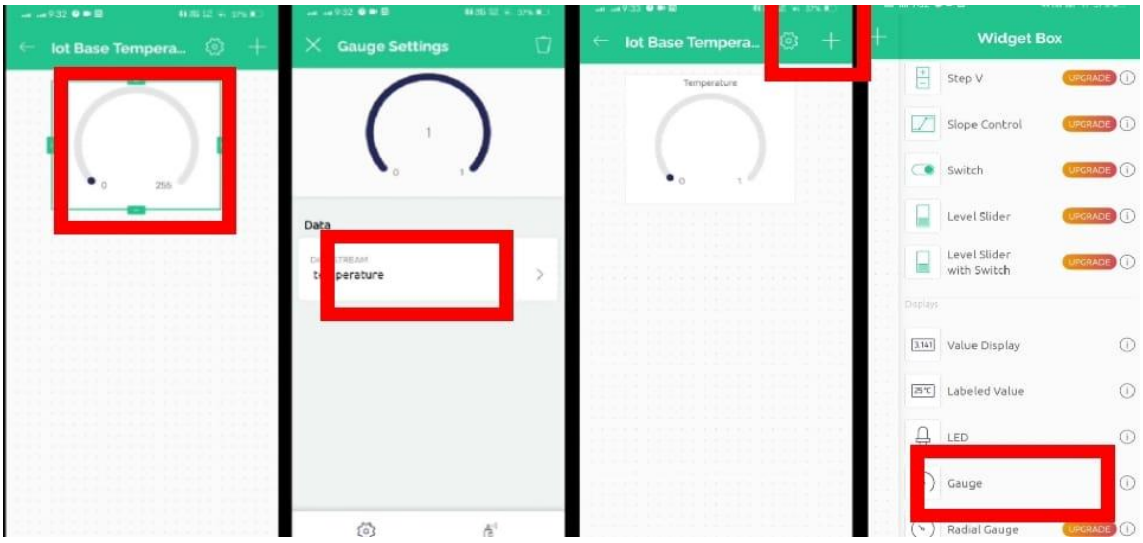
STEP 17 – Go to device info option and copy the FIRMWARE CONFIGURATION.This configuration is used in Arduino code.

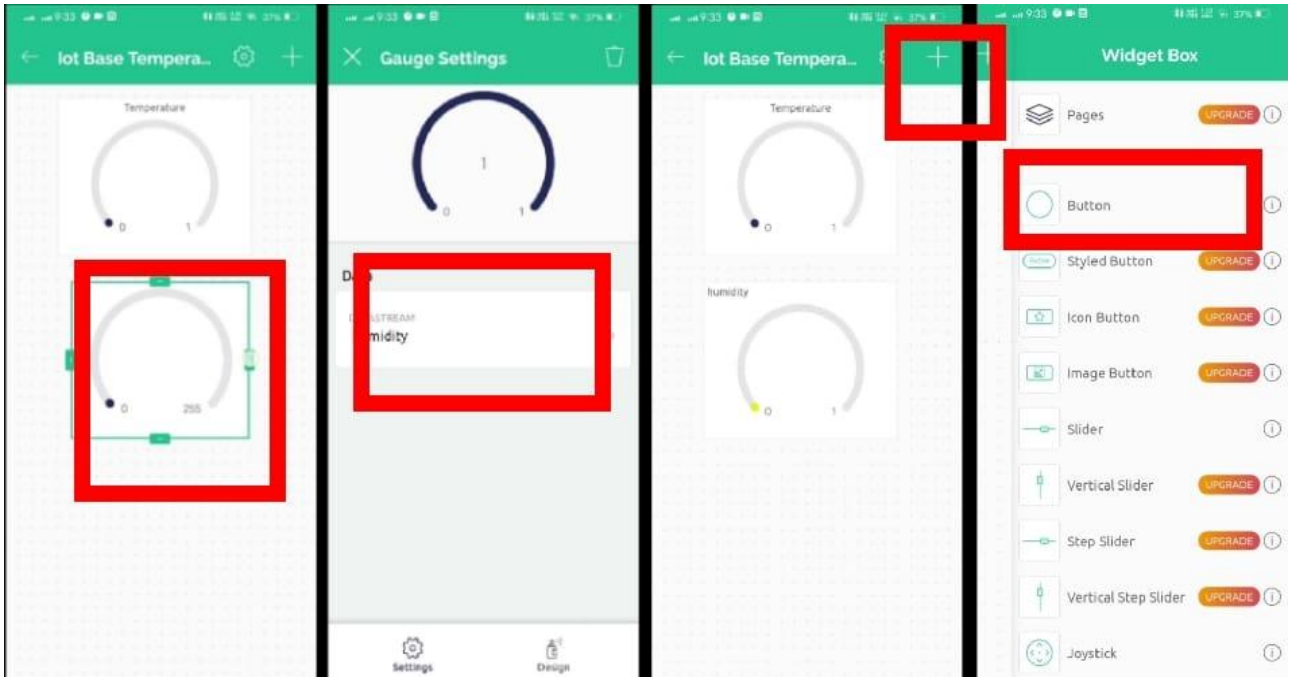


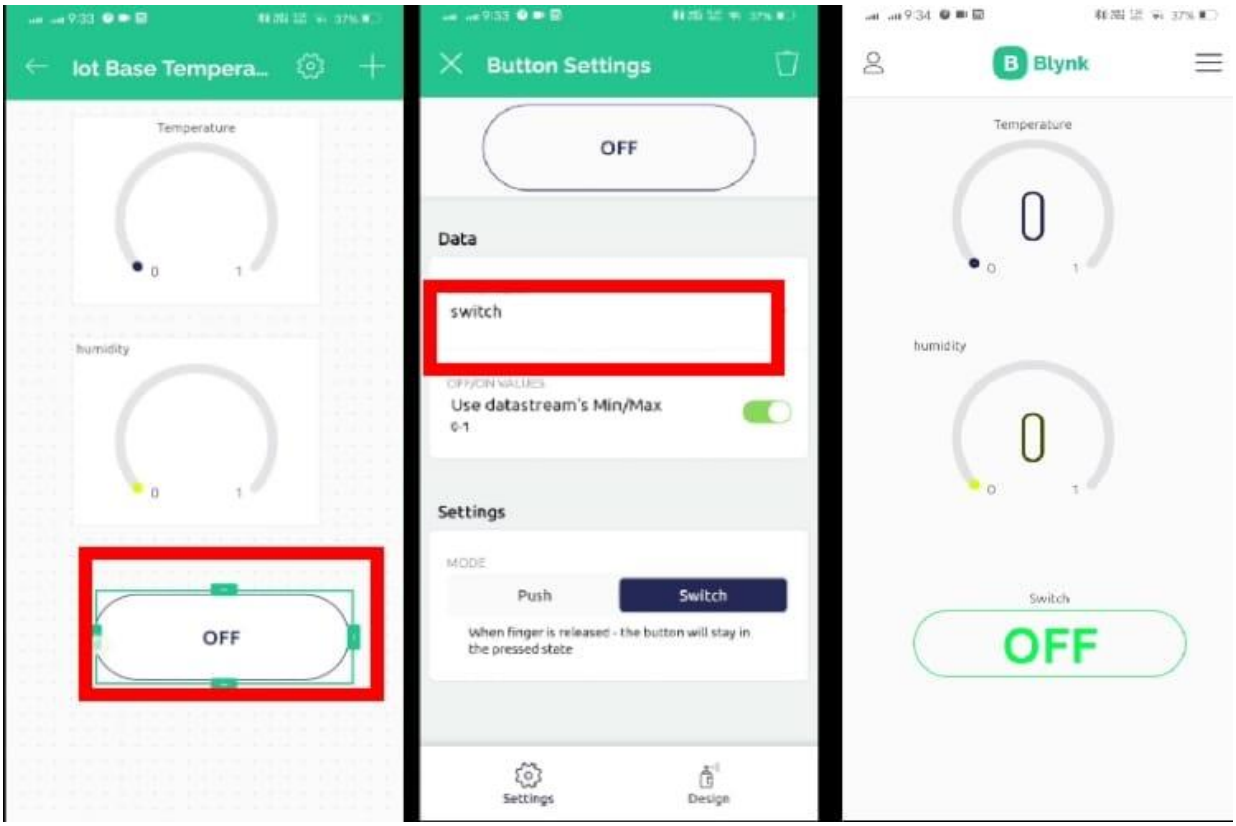
Setup the blynk app:

Install the new blynk app and login. After that follow the entire step which is given below in the picture.






Iot Base Tempera...
Temperature
Gauge Settings
Settings
Design
humidity
Widget Box
Pages
Button
Styled Button
Icon Button
Image Button
Slider
Vertical Slider
Step Slider
Vertical Step Slider
Joystick
UPGRADE


Iot Base Tempera...
Temperature
humidity
OFF
Button Settings
OFF
Data
switch
Use datastream's Min/Max
0-1
Settings
MODE
Push
Switch
When finger is released - the button will stay in the pressed state
Settings
Design
Blynk
Temperature
0
humidity
0
Switch
OFF

Conclusion/Learning Outcome

Precautions and troubleshoot:

- Correct selection of board and port is very important for uploading code properly.
- Always re check the WIFI credentials.
- Make sure proper drivers is installed.
- Always check the cables is case code is not uploading.
- Calibrate the sensors if faced any anomaly.