

Sistemas industriales



Universitat d'Alacant
Universidad de Alicante



Practica 3

Francisco Joaquín Murcia Gómez

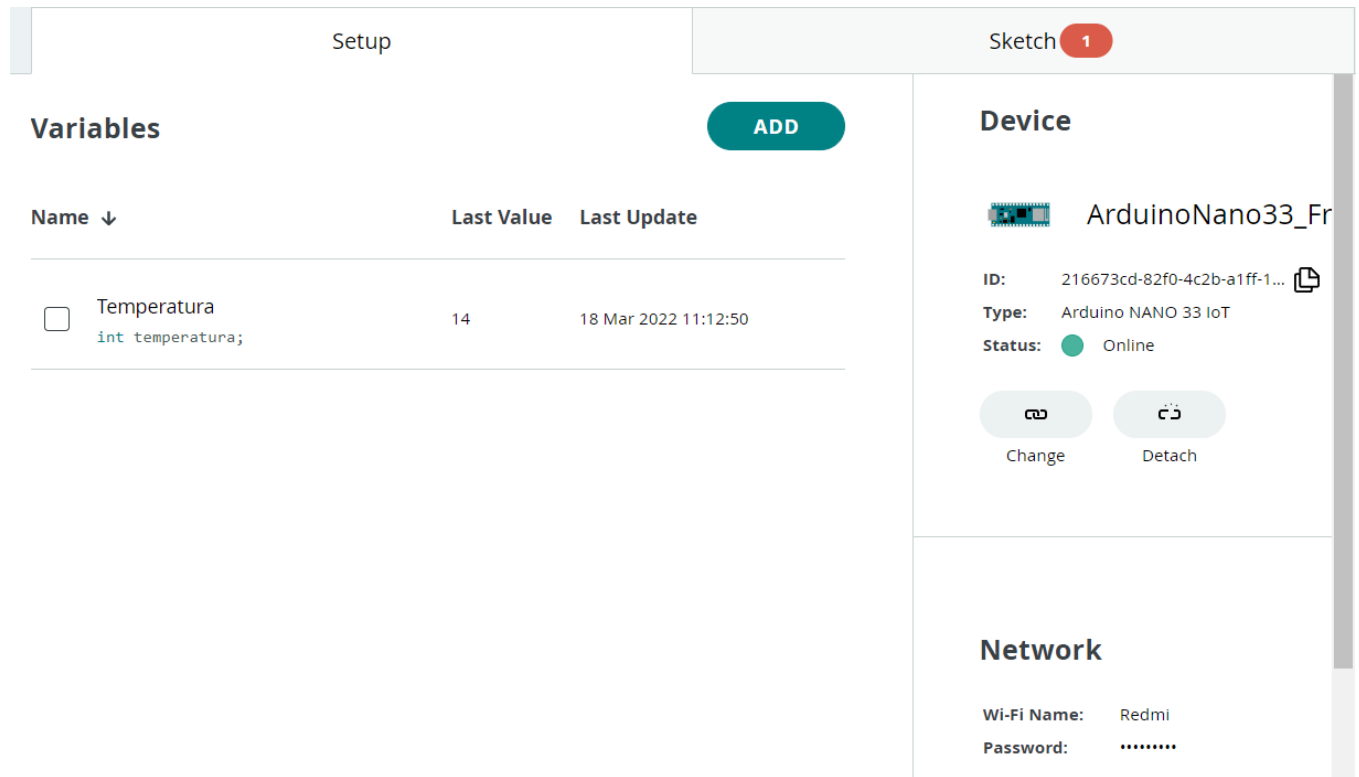
30 de abril de 2022

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1. Arduino Cloud


Para esta practica hemos conectado la placa arruino al sistema cloud de Arduino




The screenshot shows the Arduino Cloud interface. At the top, there are tabs for 'Setup' and 'Sketch' (with a red badge showing '1'). Below the 'Setup' tab, there is a 'Variables' section with an 'ADD' button. A table lists variables with columns 'Name', 'Last Value', and 'Last Update'. One variable, 'Temperatura', is listed with a value of '14' and a last update of '18 Mar 2022 11:12:50'. The 'Device' section on the right shows the device name 'ArduinoNano33_Fr', ID '216673cd-82f0-4c2b-a1ff-1...', Type 'Arduino NANO 33 IoT', and Status 'Online'. There are 'Change' and 'Detach' buttons. The 'Network' section shows 'Wi-Fi Name: Redmi' and 'Password:'. The 'Sketch' tab is active, showing a code editor with a generated sketch.

Name ↓	Last Value	Last Update
<input type="checkbox"/> Temperatura <code>int temperatura;</code>	14	18 Mar 2022 11:12:50



Device

 **ArduinoNano33_Fr**

ID: 216673cd-82f0-4c2b-a1ff-1... 

Type: Arduino NANO 33 IoT

Status: ● Online

Change Detach

Network

Wi-Fi Name: Redmi

Password:

Figura 1: Arduino enlazado a IoT Cloud

Una vez conectado se ha creado una variable temperatura de tipo numérica para simular un recepción de datos. Esta variable se ira actualizando de manera aleatoria entre 0º y 40º.

```
1  /*
2   Sketch generated by the Arduino IoT Cloud Thing "Untitled"
3   https://create.arduino.cc/cloud/things/e93a11e4-9738-45ad-8931-e059afaed50d
4
5   Arduino IoT Cloud Variables description
6
7   The following variables are automatically generated and updated when changes are made to the Thing
8
9   int temperatura;
10
11   Variables which are marked as READ/WRITE in the Cloud Thing will also have functions
12   which are called when their values are changed from the Dashboard.
13   These functions are generated with the Thing and added at the end of this sketch.
14  */
15
16  #include "thingProperties.h"
17
18  void setup() {
19    // Initialize serial and wait for port to open:
20    Serial.begin(9600);
```

```

21  // This delay gives the chance to wait for a Serial Monitor without blocking if none is found
22  delay(1500);
23
24  // Defined in thingProperties.h
25  initProperties();
26
27  // Connect to Arduino IoT Cloud
28  ArduinoCloud.begin(ArduinoIoTPreferredConnection);
29
30  /*
31   The following function allows you to obtain more information
32   related to the state of network and IoT Cloud connection and errors
33   the higher number the more granular information you'll get.
34   The default is 0 (only errors).
35   Maximum is 4
36  */
37  setDebugLogLevel(2);
38  ArduinoCloud.printDebugInfo();
39 }
40
41 void loop() {
42   ArduinoCloud.update();
43   // Your code here
44   temperatura = rand() % 40;
45   delay(3000);
46 }
47
48 /*
49  Since Temperatura is READ_WRITE variable, onTemperaturaChange() is
50  executed every time a new value is received from IoT Cloud.
51  */
52 void onTemperaturaChange() {
53   // Add your code here to act upon Temperatura change
54
55 }

```

2. Interfaz

Se ha creado una dashboard para la recepción y muestreo de la variable temperatura.

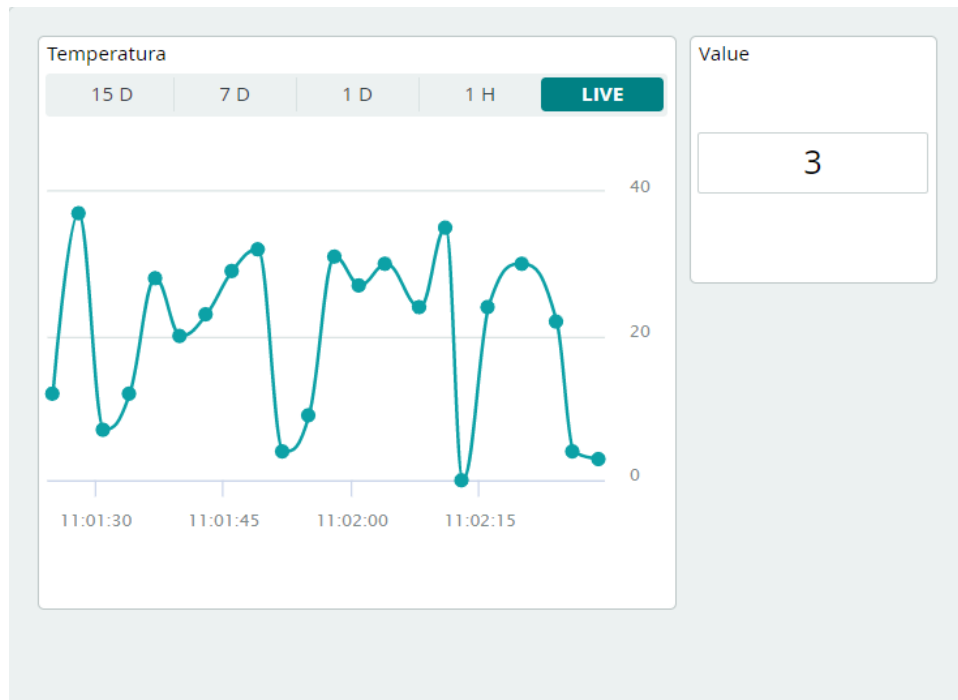


Figura 2: Grafica de temperatura

Finalmente si se descarga la app de Arduini IoT Cloud veremos como el arduino sigue mandando datos que se ven reflejado en el teléfono.

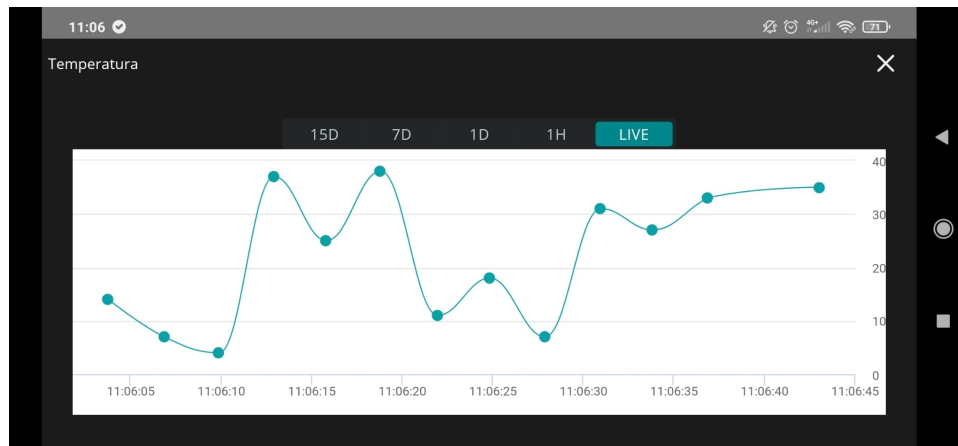


Figura 3: Grafica de temperatura desde android