HO CHI MINH CITY, UNIVERSITY OF TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEER

Application Based Internet of Things Report - LAB 1

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Content

1 Introduction

In this first LAB, students are proposed to create a simple Thingsboard backend and Dashboard for an IoT application. Students are supposed to follow steps listed in the Implementation section to finish the first Lab.

2 Implementation

2.1 Step 1: Create account and a device

2.2 Step 2: Implement python source code

My link github for Lab1

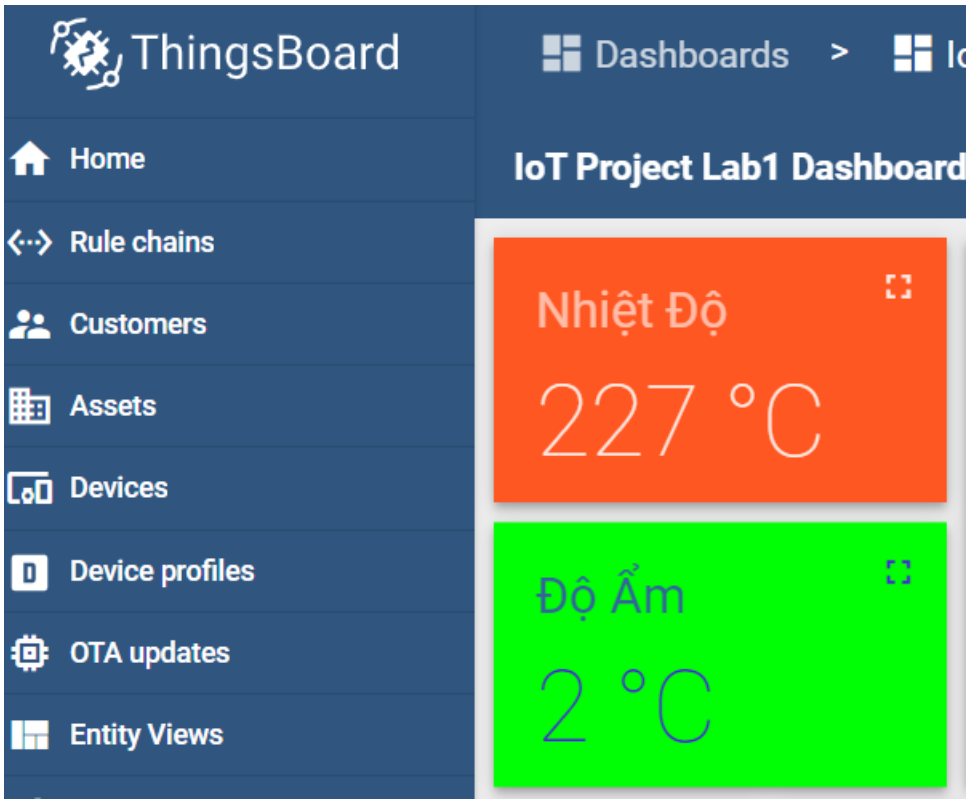
https://github.com/dinhan2411/IoT_Lab/tree/main/Lab1

To random temperature and humidity, I use library random in Python. This is a simple code to random from 100 to 200 in Python:

```
1 import random
2 humi = random.randrange(100, 200)
```

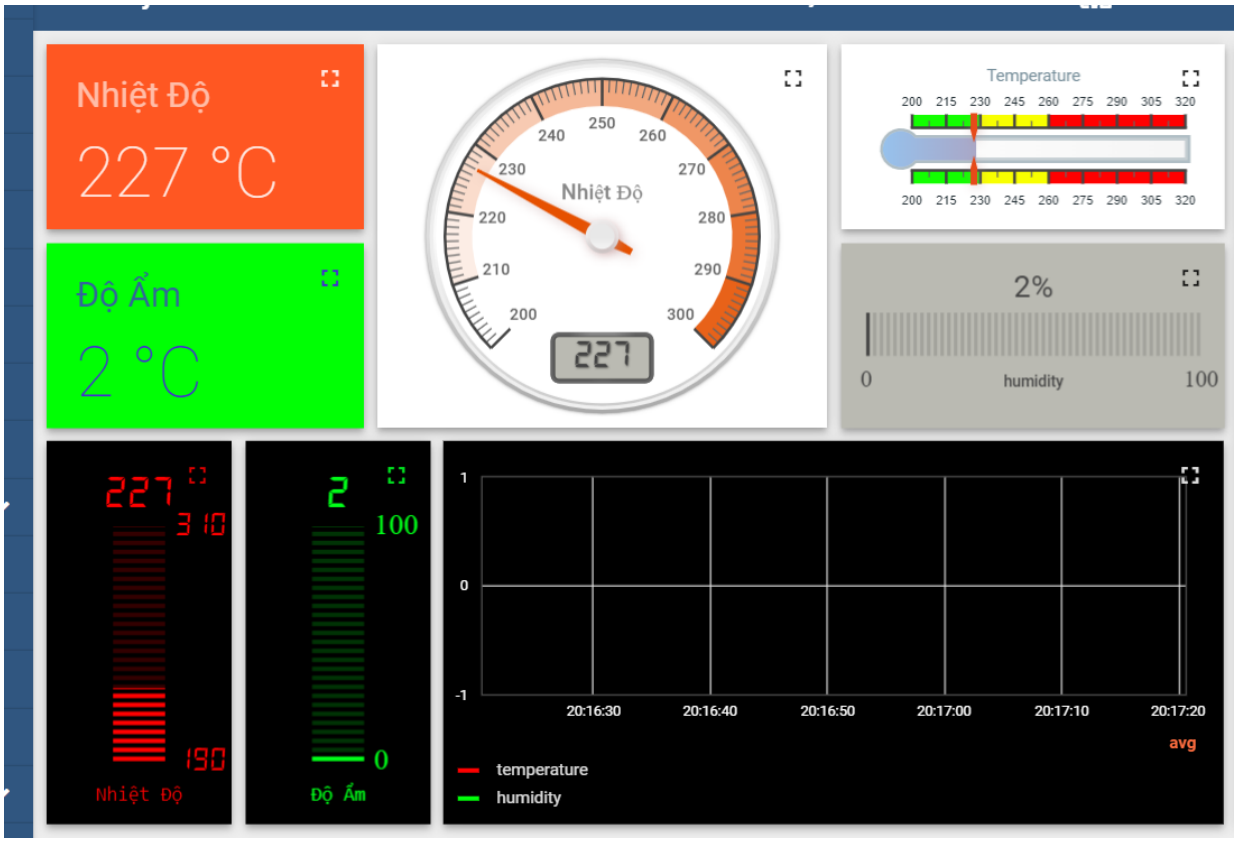
2.3 Step 3: Simple Thingsboard dashboard

https://demo.thingsboard.io/dashboard/41ce0770-7d80-11ec-b563-3701f12552b4?publicId=9af35cd0-6d34-11ec-928c-d16ac1689d62



2.4 Step 4: Use advanced UI in Thingsboard

https://demo.thingsboard.io/dashboard/41ce0770-7d80-11ec-b563-3701f12552b4?publicId=9af35cd0-6d34-11ec-928c-d16ac1689d62



2.5 Step 5: Add a map to the dashboard

3 Extra point (1 point)

Dynamic update the current longtitude and latitude. Explain your implementation in python source code such as the library which is used, some main python source code to get the value of longtitude and latitude.

To get longtitude and latitude, I use geocoder library in Python. Geocoder is a simple and consistent geocoding library written in Python.

```
1 import geocoder
2
3 # get current position by geocoder
4 g = geocoder.ip('me')
5
```

```
6  # get longtitude and latitude
7  latitude = g.latlng[0]
8  longitude = g.latlng[1]
9
10 print(latitude)  # 21.0245000
11 print(longitude) # 105.8412000
```

After get longtitude and latitude, I add it to JSON data and push it to server together with temperature and humidity.