



IOT Lab Assignment 6

Phone app / UI

App Building tools





Login server

- Digital ocean server I've built for you to transfer your ngrok address from pi to app
- Register your own account with server by POST method

```
[dpivonka@dhcp-41-223 ~]$ curl -X POST -H "Content-Type: application/json" -d '{"username": "exampleuser", "password": "password", "password2": "password", "email": "example@email.com"}' http://104.248.57.252:5000/register
{
  "message": "Congratulations, you are now a registered user!",
  "status": true
}
[dpivonka@dhcp-41-223 ~]$ █
```

- Data required username, password, password2, email.
- password, password2 must match

Auto start ngrok from python script


- Start ngrok as a subprocess
- Query ngrok api for address
- Send address to login server
- This exact example assumes script and ngrok binary are in same directory

-->

```
1 import paho.mqtt.client as mqtt
2 import datetime
3 import time
4 from influxdb import InfluxDBClient
5 from flask import Flask, request, json
6 from flask_restful import Resource, Api
7 import subprocess
8 import requests
9
10 broker_address="192.168.1.33" #broker address (your pis ip address)
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12 > def on_connect(client, userdata, flags, rc):=
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16 > def on_message(client, userdata, msg):=
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48 # Set up a client for InfluxDB
49 dbclient = InfluxDBClient('0.0.0.0', 8086, 'root', 'root', 'sensordata')
50
51 # Initialize the MQTT client that should connect to the Mosquitto broker
52 client = mqtt.Client()
53
54 client.on_message = on_message
55 client.on_connect = on_connect
56 client.connect(broker_address) #connect to broker
57
58 app = Flask(__name__)
59 api = Api(app)
60
61 > led_state={'red':0,=
62
63
64 > class Led(Resource):=
65
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70
71
72 api.add_resource(Led, '/led')
73
74 #main
75
76 username = 'exampleuser'
77 password = 'password'
78 #start ngrok as subprocess
79 ngrok = subprocess.Popen(['./ngrok','http','5000'],stdout = subprocess.PIPE)
80 #ngrok api
81 localhost_url = "http://localhost:4040/api/tunnels"
82 tunnel_url = requests.get(localhost_url).text #Get the ngrok information
83 j = json.loads(tunnel_url)
84 #get ngrok url
85 tunnel_url = j['tunnels'][0]['public_url']
86 #send ngrok url to login server
87 url = 'http://104.248.57.252:5000/url'
88 headers = {'content-type': 'application/json'}
89 response = requests.post(url, json={"username": username,"password": password, 'url':tunnel_url})
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111 client.loop_start()
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App will request url from login server

```
request({
  url: "http://104.248.57.252:5000/login",
  method: "POST",
  headers: { "Content-Type": "application/json" },
  content: JSON.stringify({
    username: "dan",
    password: "pass",
  })
}).then((response) => {
  const result = response.content.toJSON();
  this.url = result.url.concat("/led");
}, (e) => {
  alert("User Login Post error");
});
```



App jeff demoed last week if u want an example

https://play.nativescript.org/?_ga=2.52360425.1970158181.1550586810-1900963684.1546978829&template=play-ng&id=i0n2To&v=31

If u download this pdf from github you can copy and paste this



Assignment

- Pick an app building tool
- Register with login server
- Have python script auto start ngrok and send ngrok url to login server
- Made a simple app that will get ngrok address from login server and then control the leds
- Use your restful api to interact with leds
- Your app will use the GET method to display the leds status
- Use your POST method to toggle the leds

Due next class email me a video dpivonka@redhat.com



Video demo

