

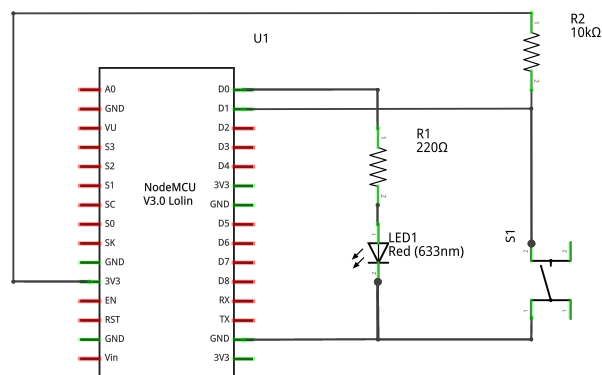
# Assignment: MQTT with button

## Goals

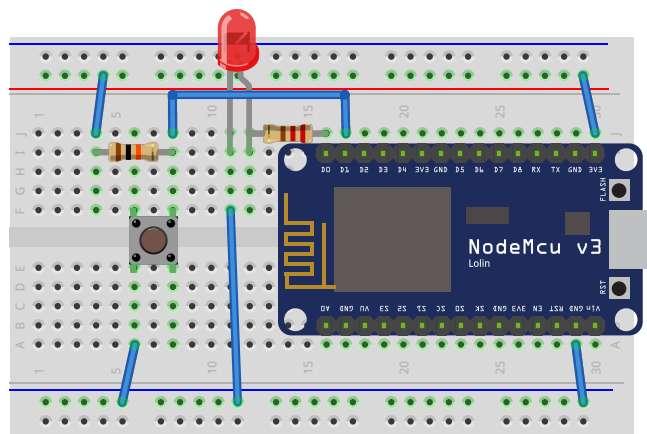
- Get acquainted with MQTT.
- Publish a message when a button is pressed.

## Step 1

Wire up this schematic on the bread board:



fritzing



fritzing

## Step 2

- Read button, print message on terminal

## Step 3

- Connect to the Wi-Fi network
  - Use `WiFi.localIP()`
- Connect to MQTT broker

## Step 4

- Publish a message on button press

## Tips

To generate a client id make something with `ESP.getChipId()`

Creating a `String` from a number:

- `String(123) => "123"`
- Hex formatted: `String(0x123abc, HEX) => "123abc"`

Some APIs require “plain C strings” aka a `char *`. They can be converted with `String::c_str()`:

```
char *cStr = myString.c_str();
```

## Bonus

- 1: Print the heap free size at regular intervals.
- 2: Implement min, max and average temperature over configured interval.

Suggested parameters:

- Sample interval: 2 seconds
- Publish interval: 10 seconds

3: Make sure the values are calculated even if we’re reconnecting to the Wi-Fi or MQTT server.