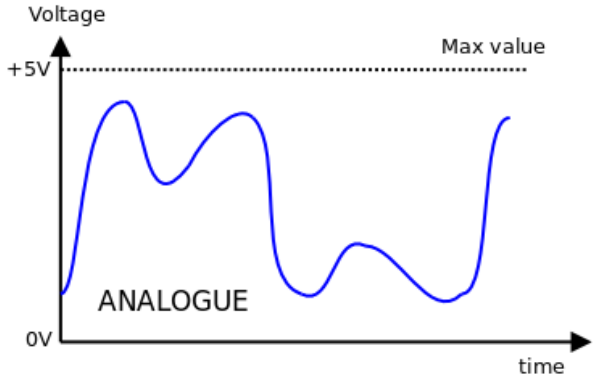
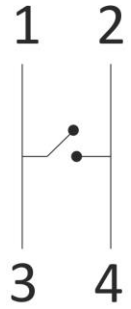
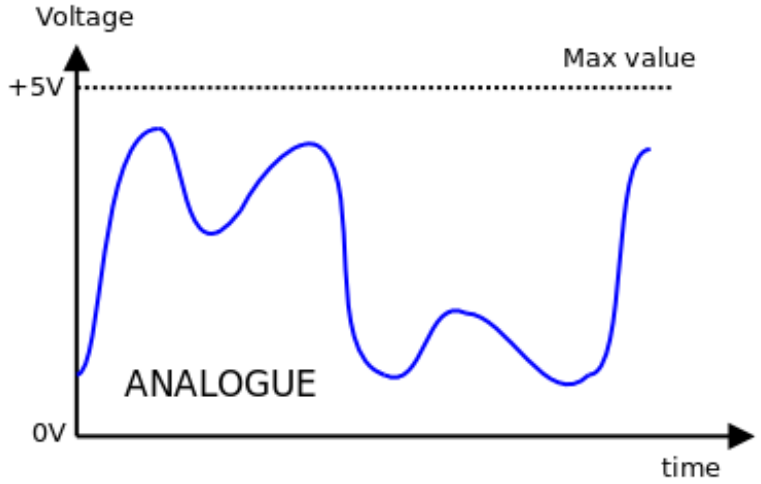


IoT Bootcamp #2

Pandega Abyan Zumarsyah

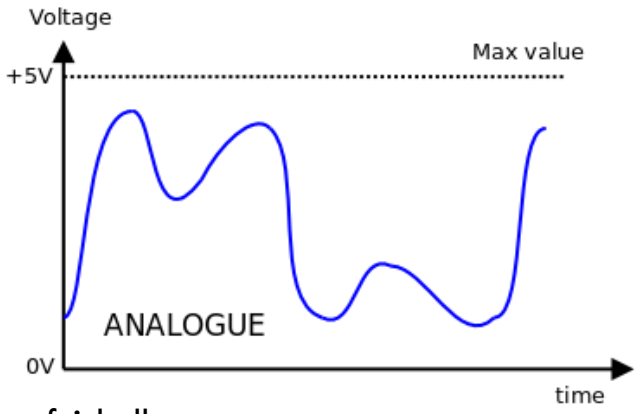


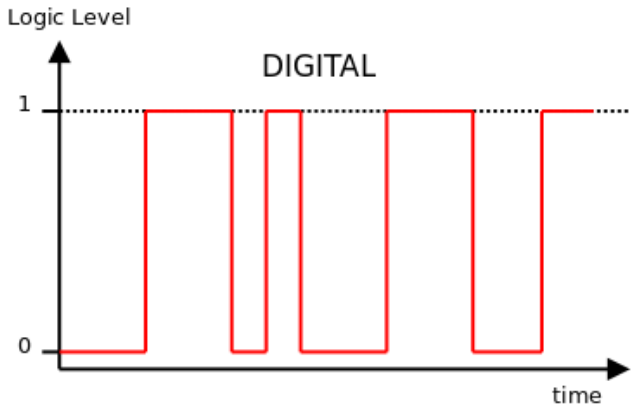


Concept of Button & Analog Signal

IoT Bootcamp – Pandega Abyan Z

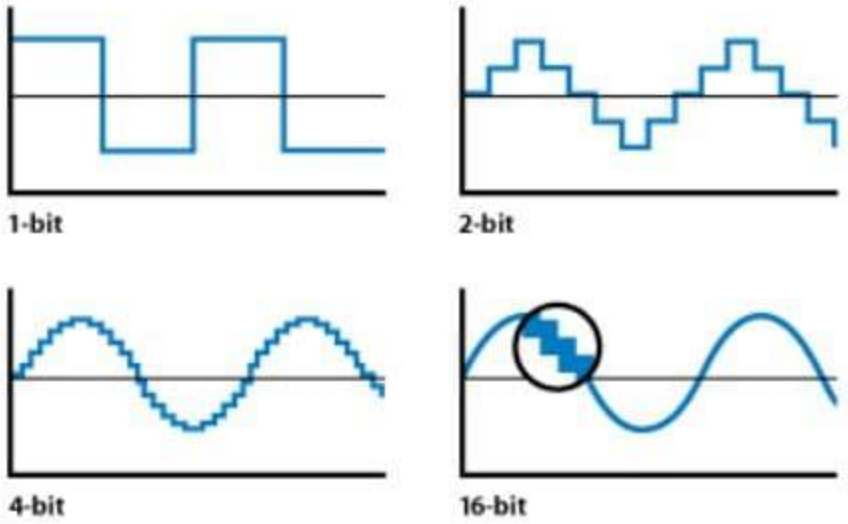
Sinyal Analog, analogRead, dan ADC





pfnicholls.com

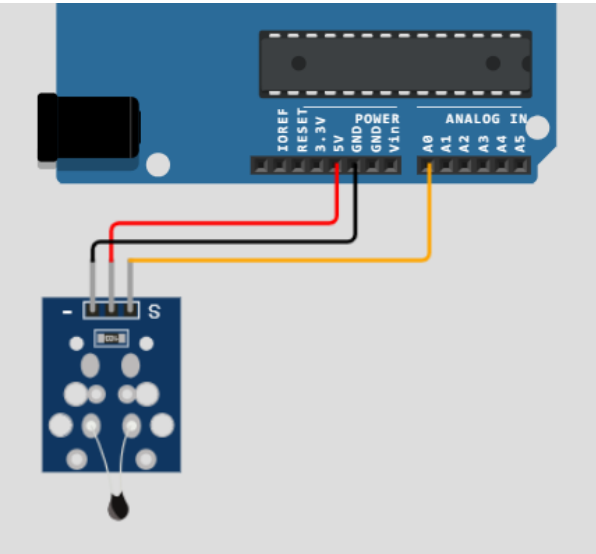
- Sinyal digital biasa hanya punya dua nilai, 0/LOW & 1/HIGH
- Sinyal analog punya tak terhingga nilai, meski pada rentang tertentu saja



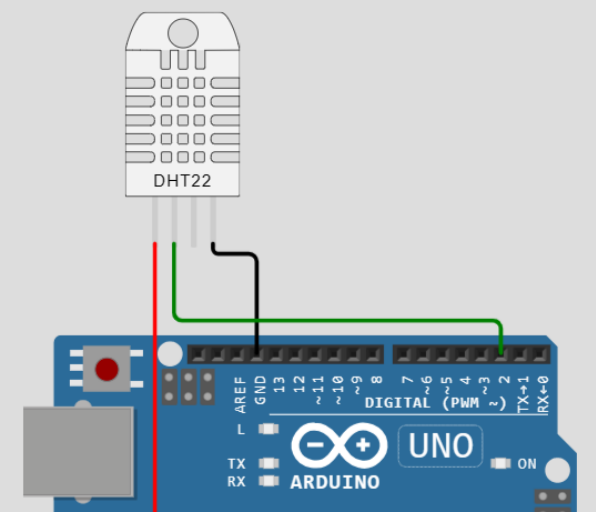
arrow.com

- analogRead() pada Arduino sebenarnya adalah ADC
- Sinyal input tegangan analog menjadi sinyal output integer digital
- Maka yang terbaca adalah sinyal digital, tapi 10-bit sehingga punya 2^10 nilai, dari 0 sampai 1023

Sinyal Analog dan Sensor

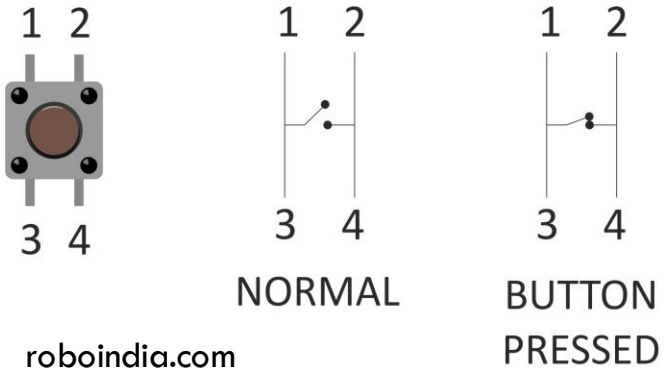


- Beberapa sensor perlu terhubung dengan pin analog atau pin ADC
- Nilai sensor itu perlu dibaca dengan analogRead()
- Sensor dengan sinyal analog: potensiometer, temperatur, cahaya, tekanan, dan lainnya

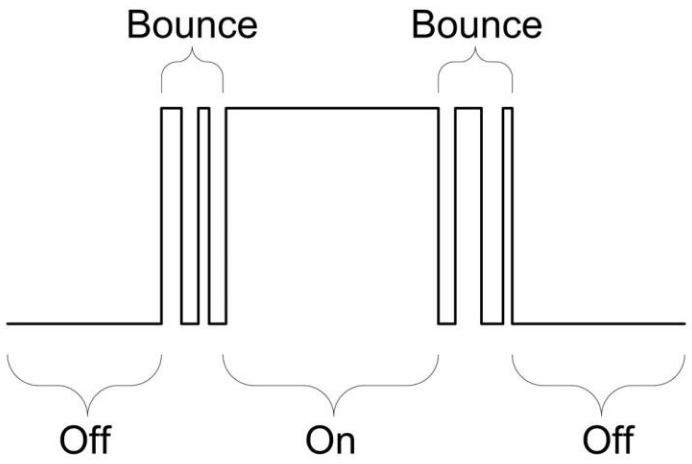


- Beberapa sensor sudah bersifat digital meski yang diukur adalah besaran analog
- Kemungkinan sensor itu sudah memiliki ADC sendiri
- Misalnya sensor DHT yang mengukur temperatur dan kelembapan dengan nilai float

Push Button dan Bounce



- Push Button pada umumnya
- Perhatikan bahwa 1 & 3 serta 2 & 4 itu saling terhubung

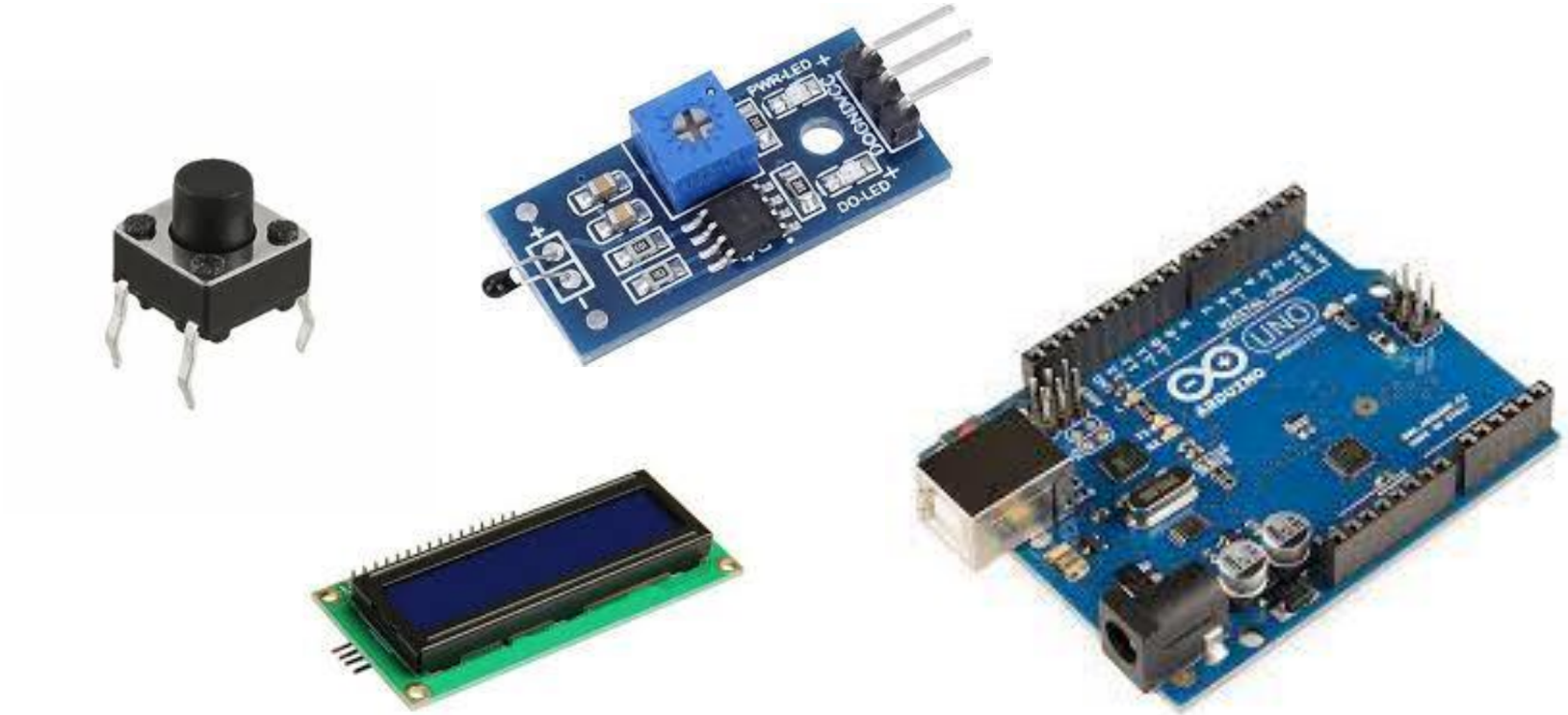


- Interaksi dengan button biasanya melibatkan side-effect bernama “bounce”
- Itu bisa menjadi masalah jika tidak diatasi

[Arduino Simple Bounce Button LED]

- Solusinya disebut “debounce”
- Ada banyak metode, bisa dengan handle itu di program, cara handle di program pun beragam

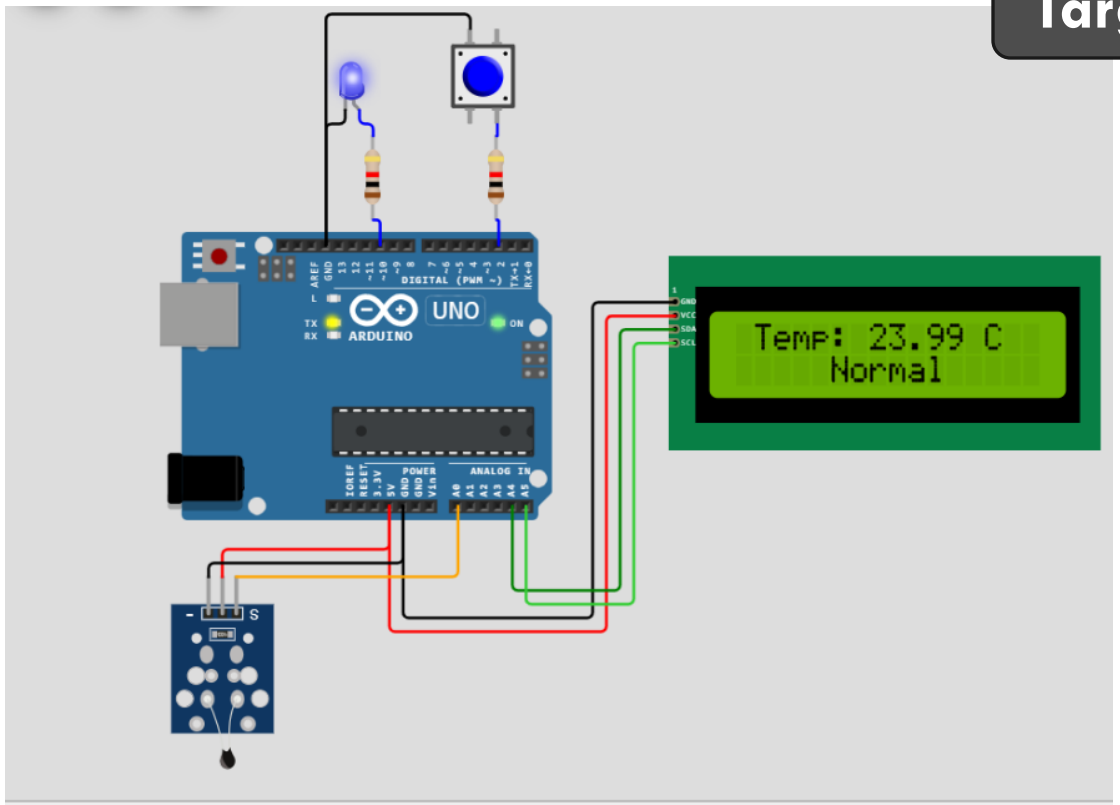
[Debounce on a Pushbutton]



Arduino with Button, LCD, and Temperature Sensor

IoT Bootcamp – Pandega Abyan Z

Target



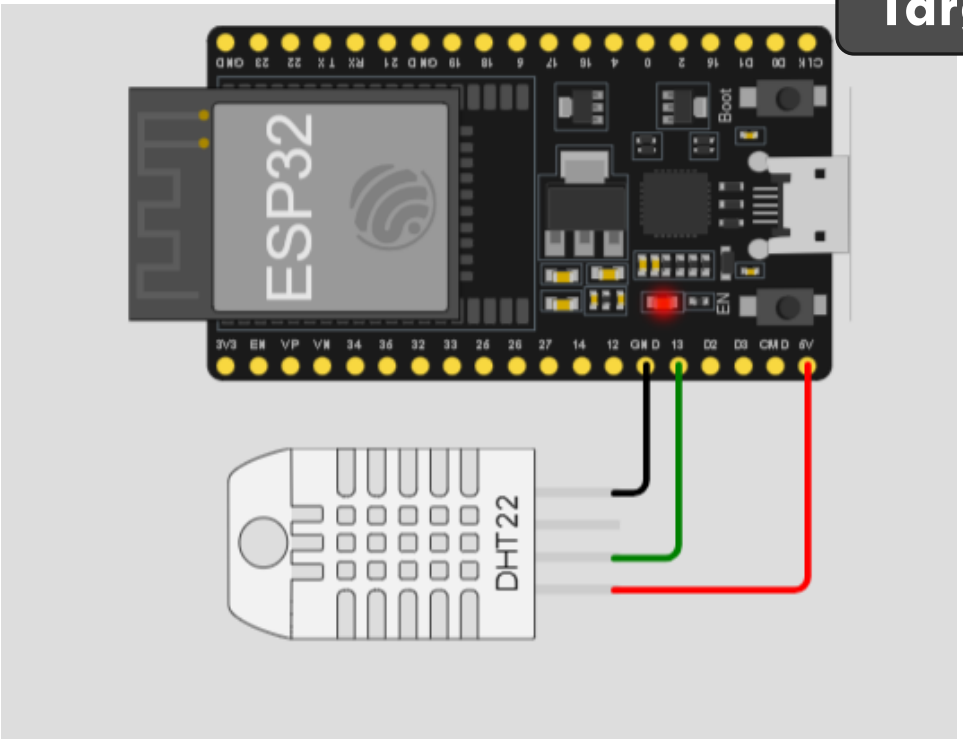

```
Status: ON
Temp: 23.99 C
Temp: 23.99 C
```

Let's Start in Wokwi

ESP32 with DHT Sensor

IoT Bootcamp – Pandega Abyan Z

Target

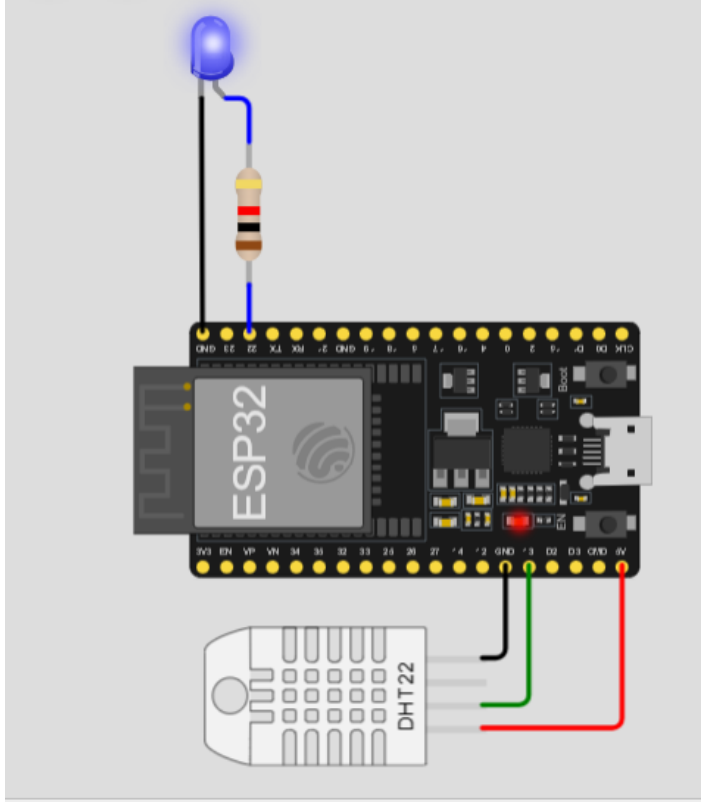



```
load:0x40080400,len:2972
entry 0x400805dc
Humidity: 40.000000 %, Temperature: 24.000000 C
Humidity: 40.000000 %, Temperature: 24.000000 C
```

Let's Start in Wokwi

Blynk for Control and Monitoring

IoT Bootcamp – Pandega Abyan Z




```
Control pin value: 1
Status: ON
Humidity: 40.000000 %, Temperature: 24.000000 C
Humidity: 40.000000 %, Temperature: 24.000000 C
```

Target

[Let's Start in Wokwi]

[Let's Create in Blynk]