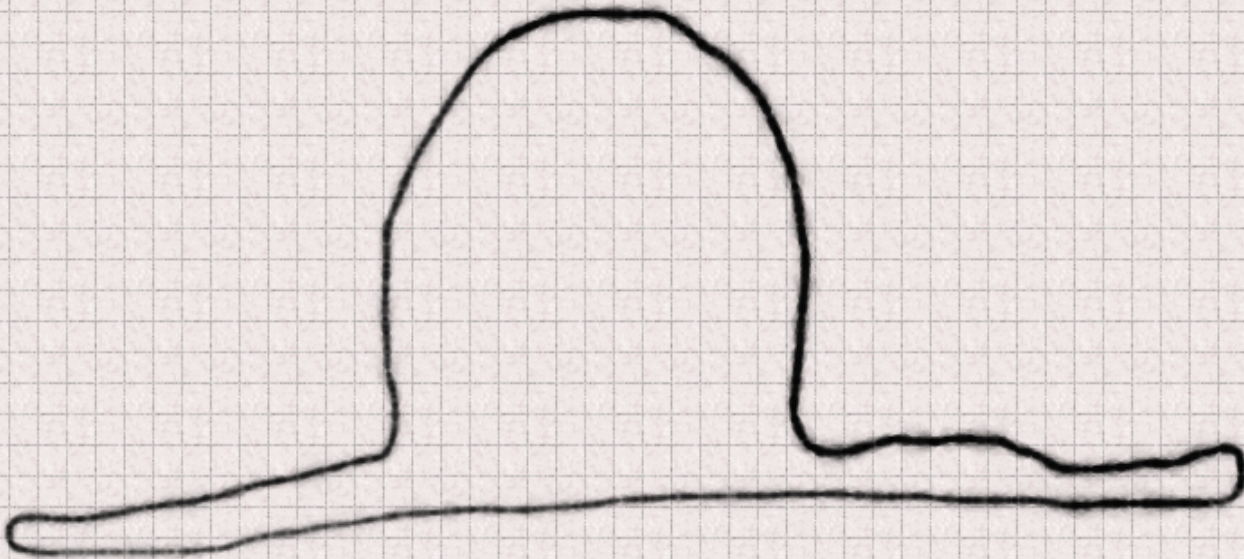




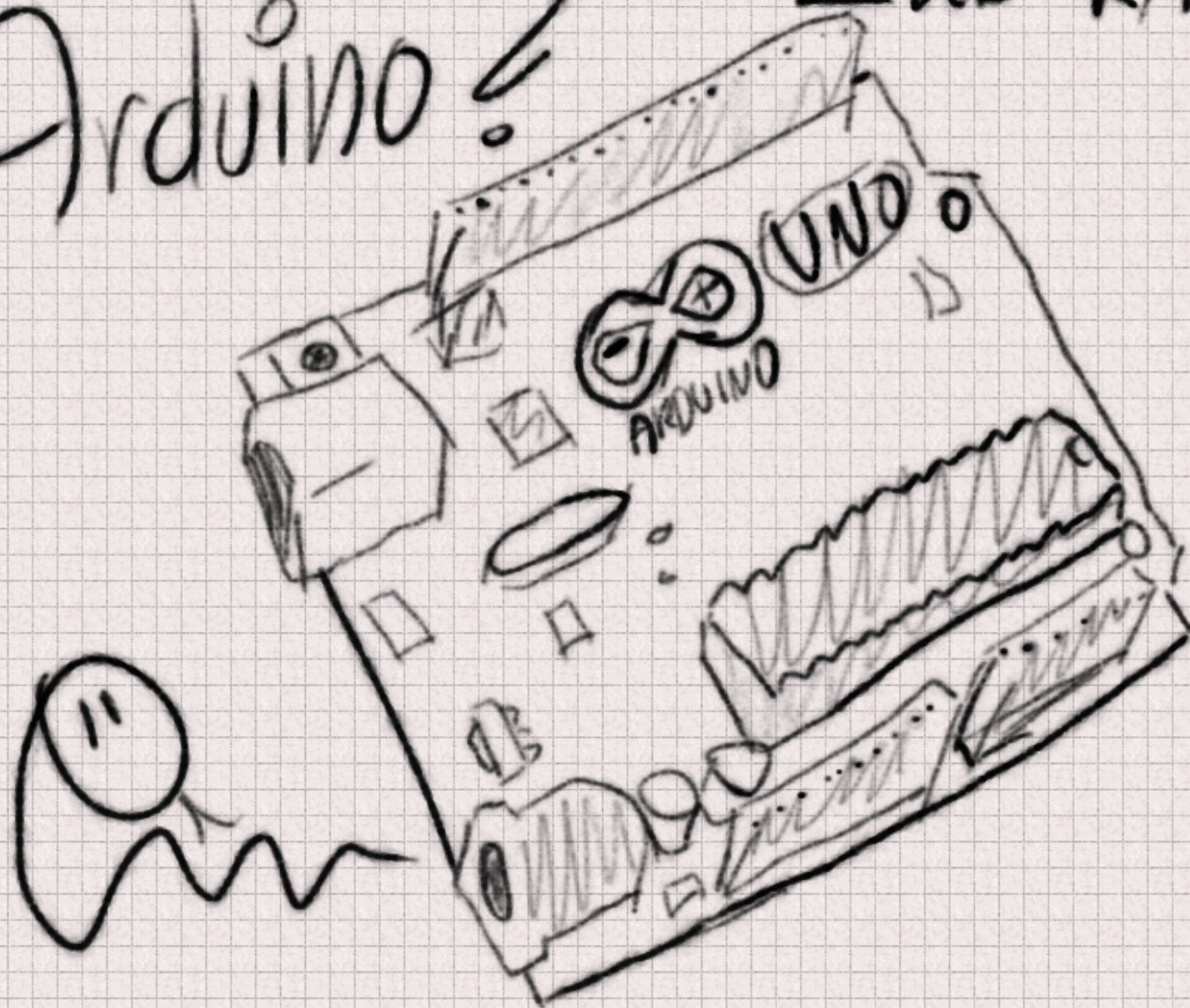
(Micro) Python
in hobby electronics

What is this?



Remember
Arduino?

16 MHz
32 kB Flash
2 kB RAM



Python III
+ operating system
16Mb disk
10Mb RAM

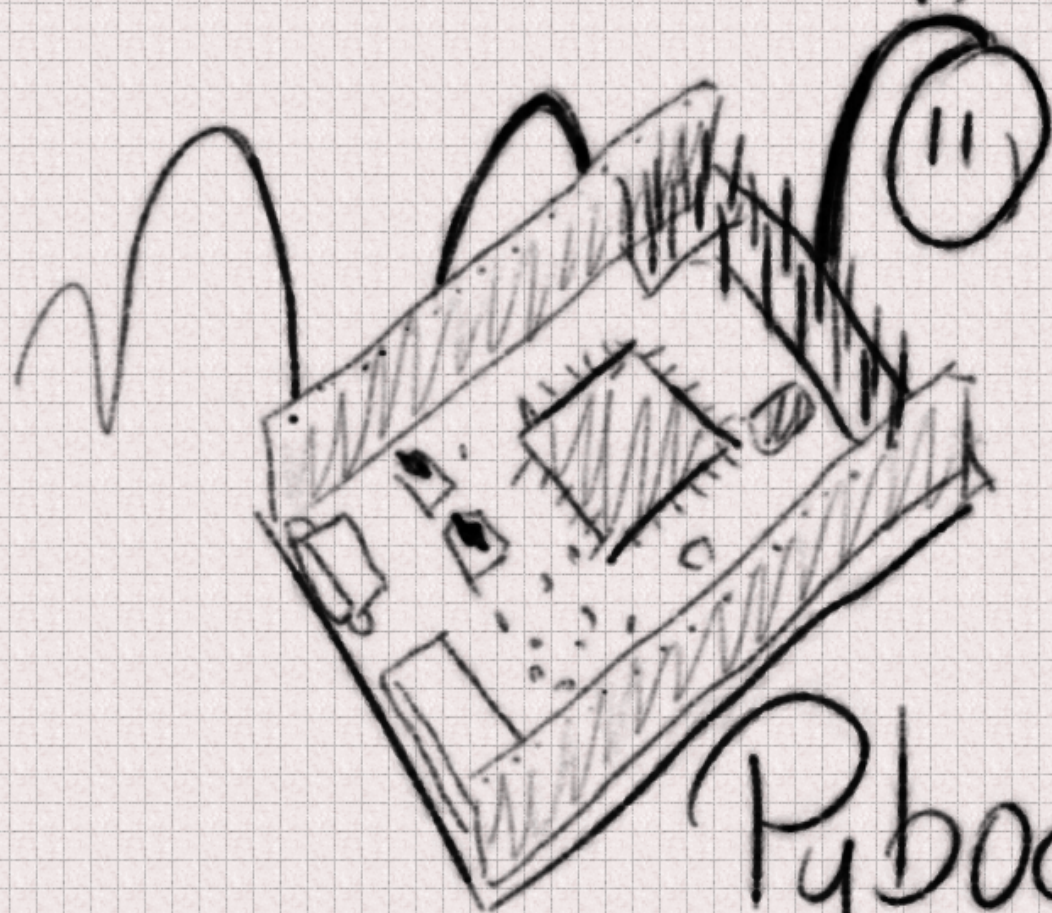


ARM CORTEX M4

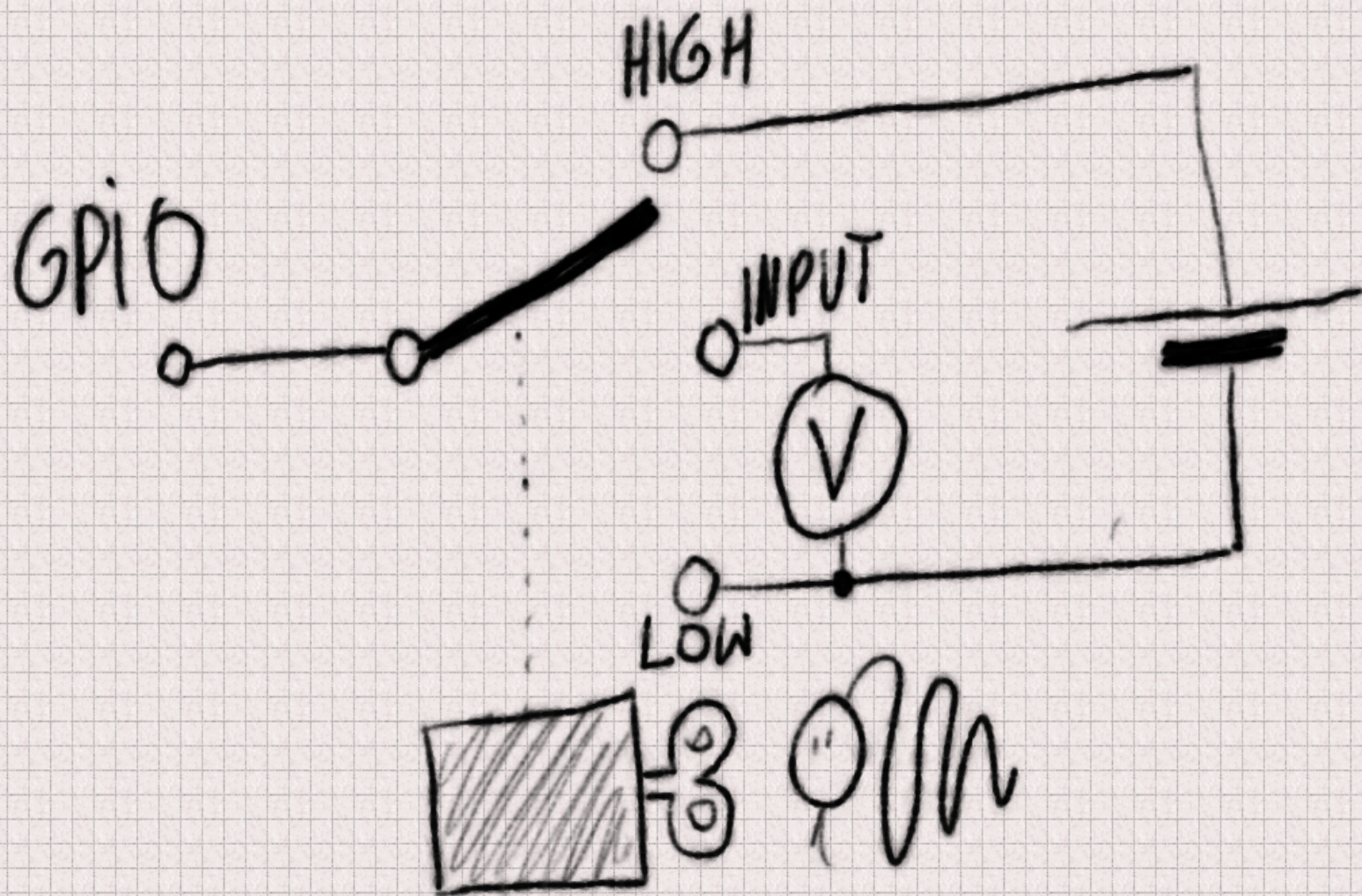
168MHz

1024KB Flash

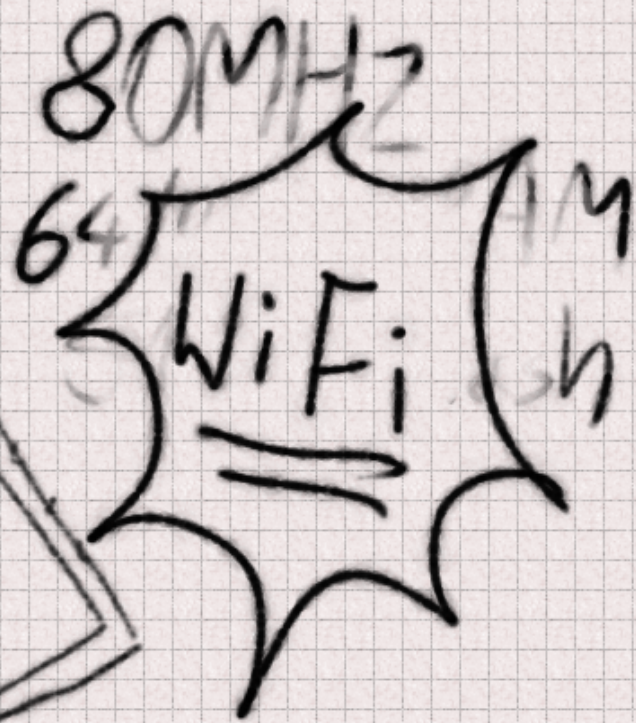
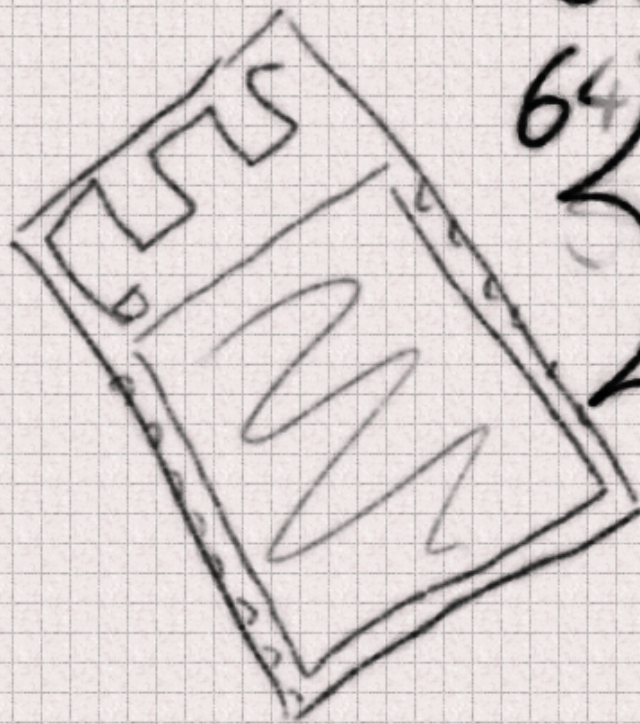
192KB RAM



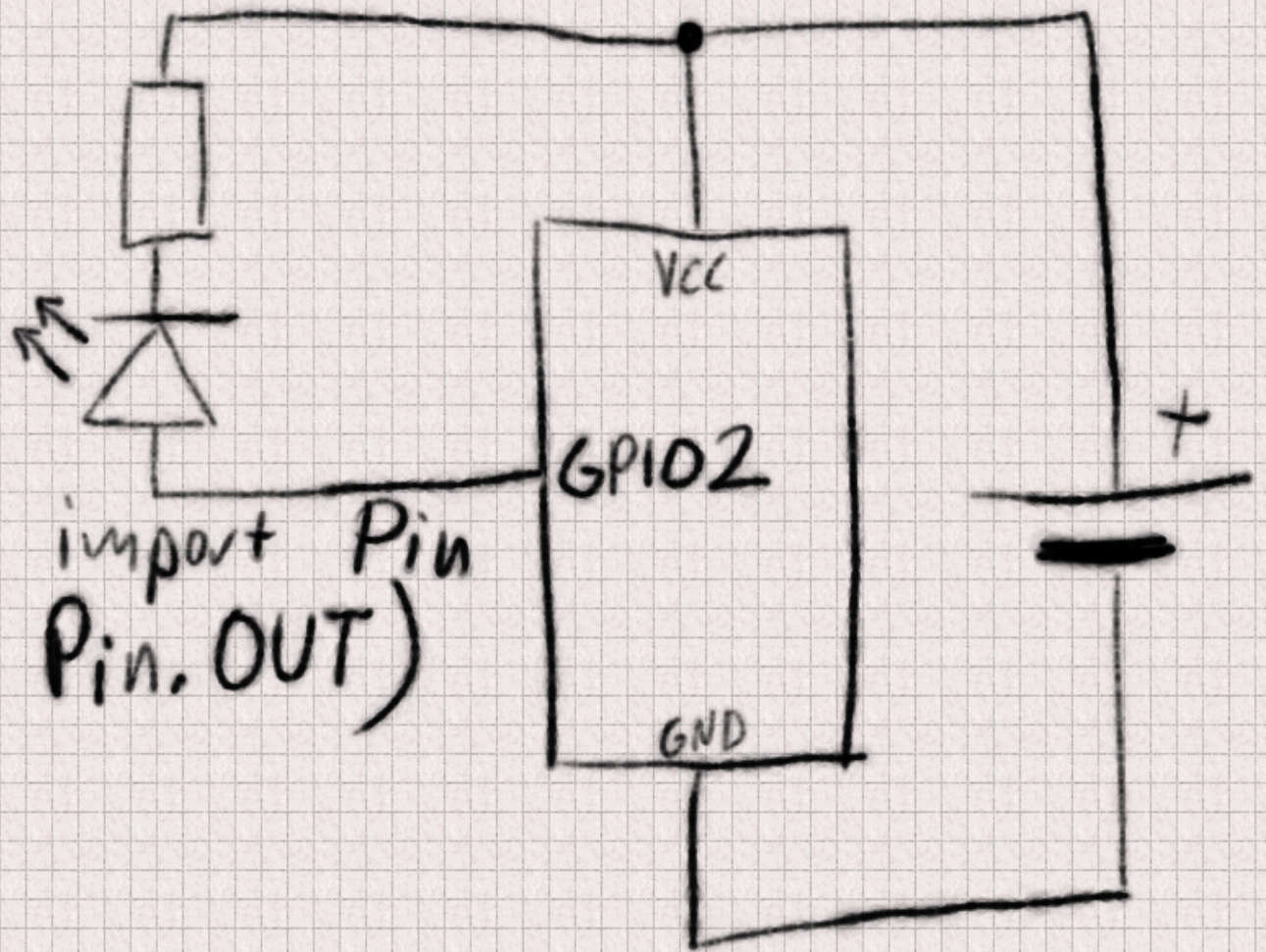
Pyboard



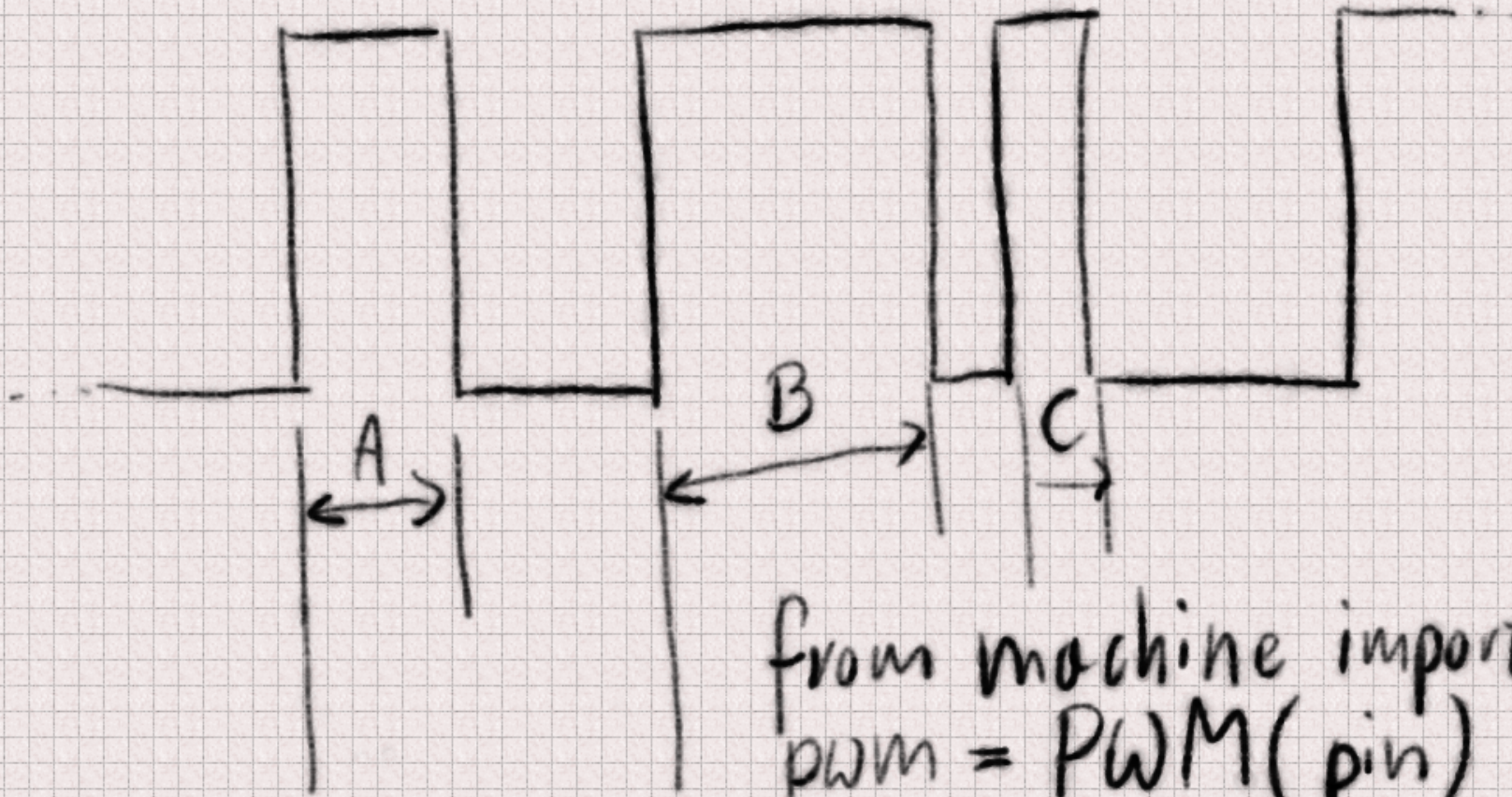
ESP8266



from machine import Pin
pin = Pin(2, Pin.OUT)
pin.low()
pin.high()

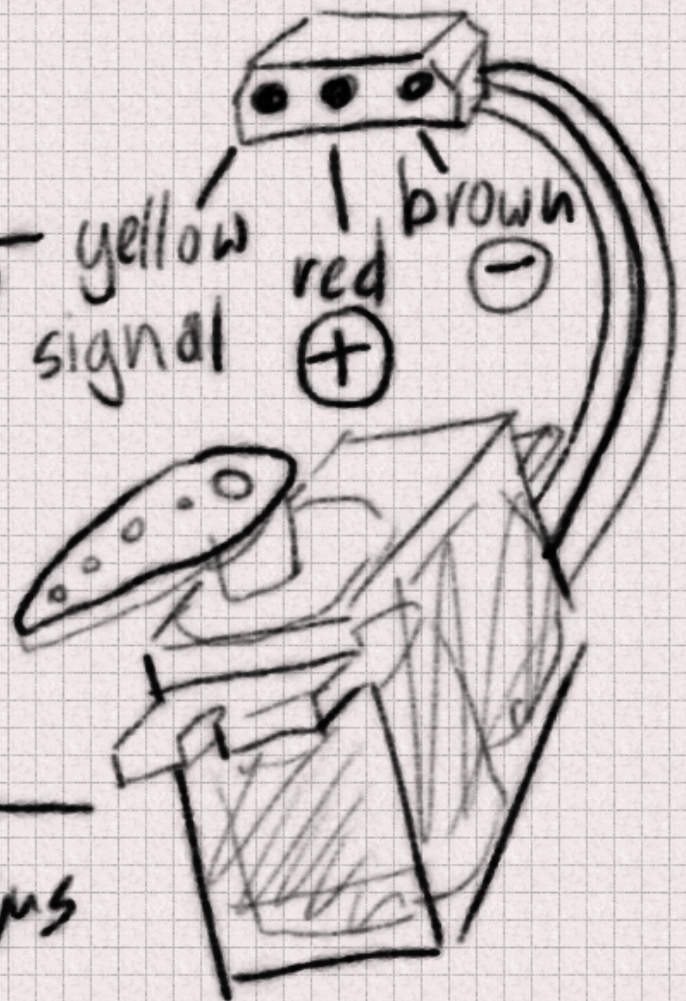
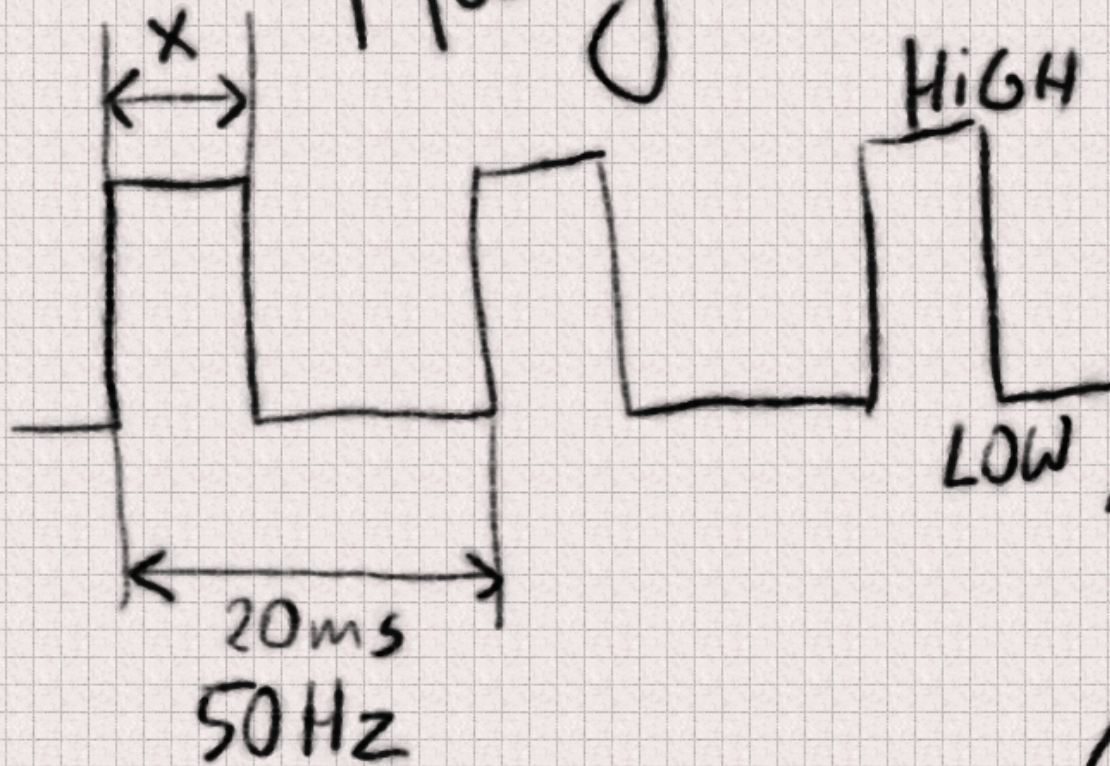


Pulse Width Modulation



from machine import PWM
pwm = PWM(pin)
pwm.duty(512)

Hobby Servo



| | -45° | 0° | 45° |
|---|-------------|-------------|-------------|
| x | $1000\mu s$ | $1500\mu s$ | $2000\mu s$ |

WiFi

```
import urequests
```

```
response = urequest.get("http://...")
```

```
json = response.json()
```

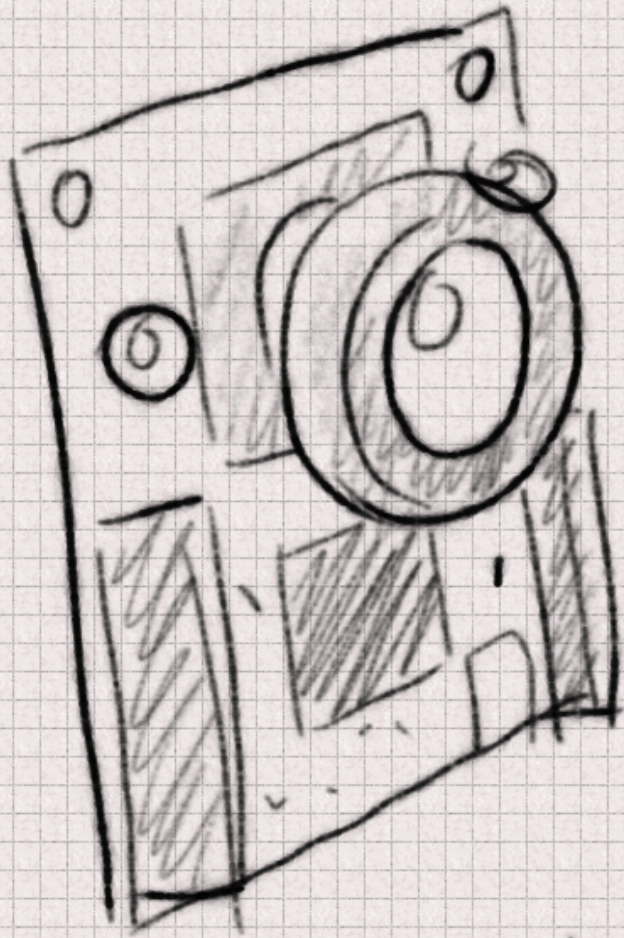
```
print(json['AbstractText'])
```

WebSockets HTTPS

UART I²C

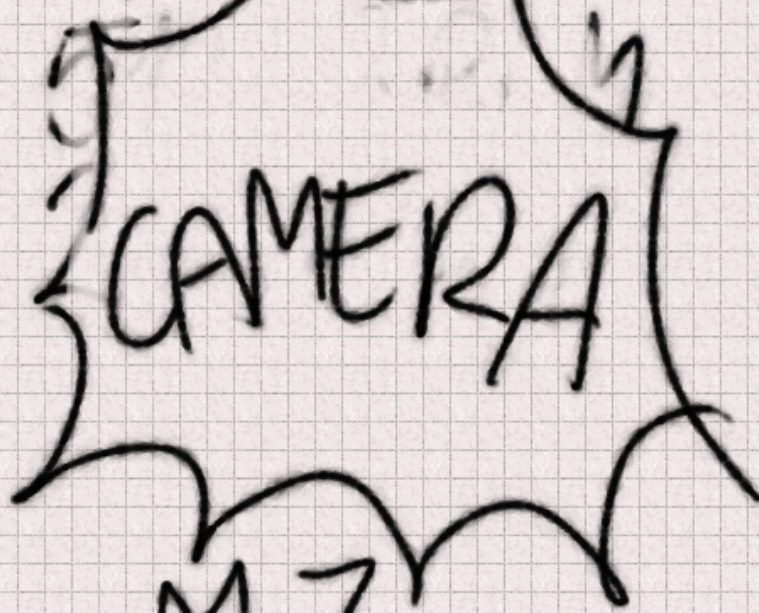
SPI 1-WIRE CAN BUS

WS2812^B MQTT



OpenMV

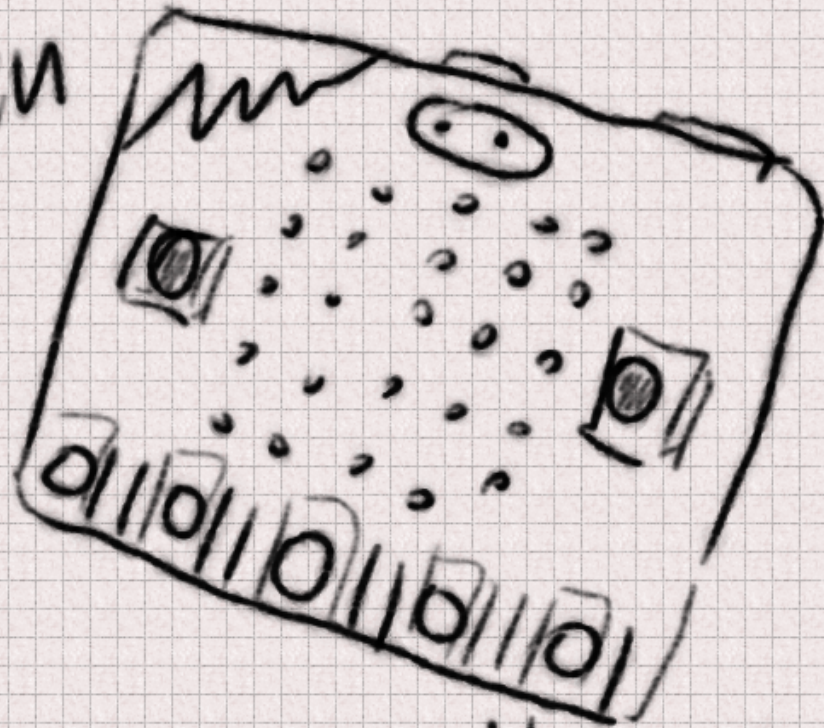
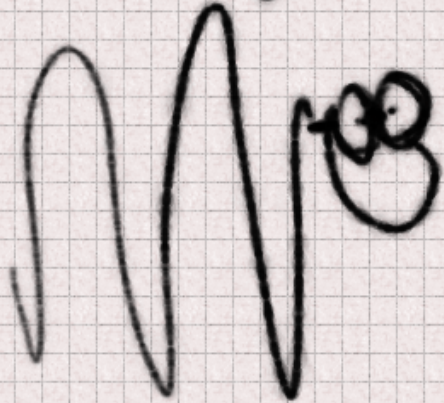
216MHz



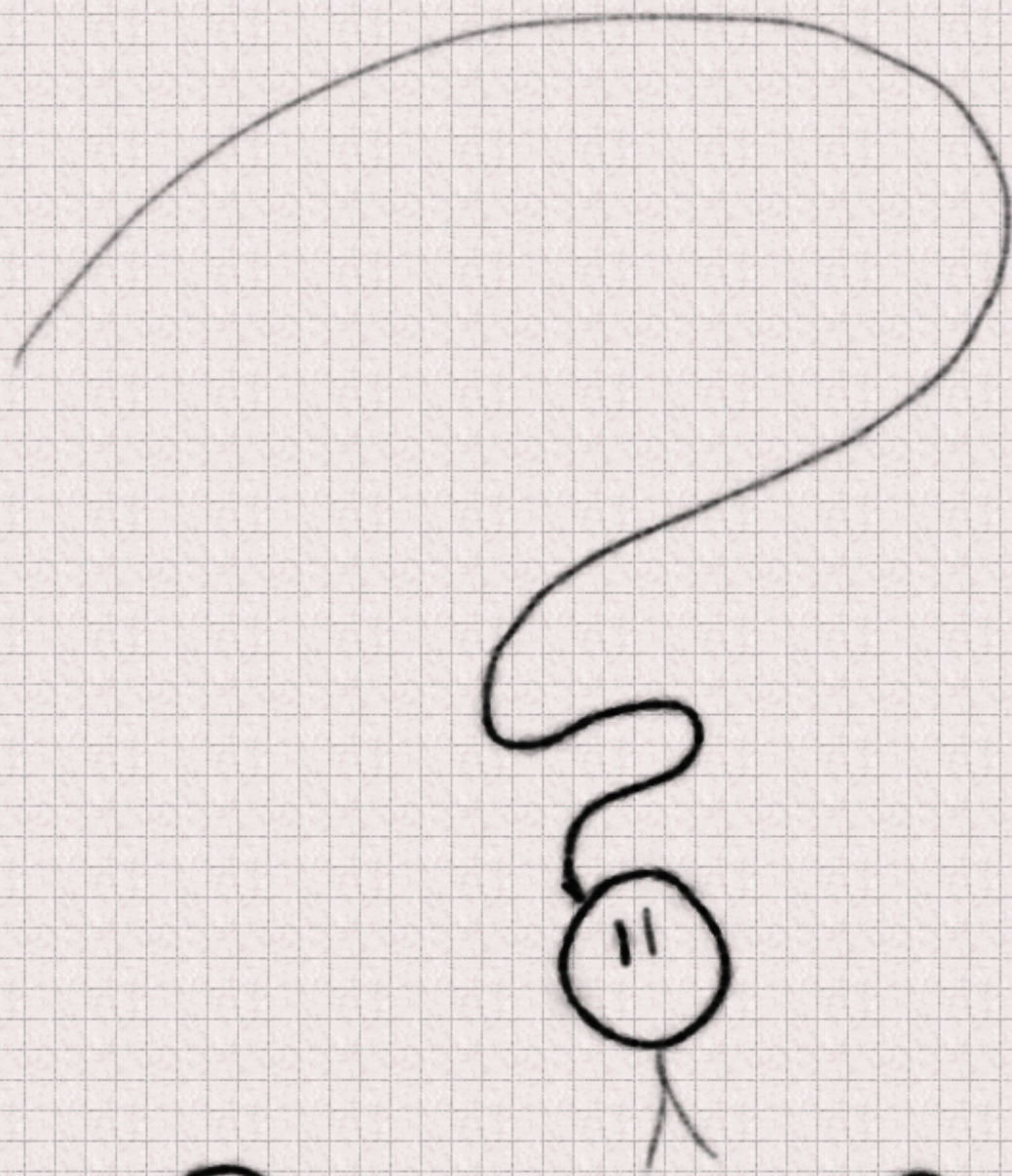
ARM Cortex M7

BBC Micro:Bit

1 million children



<http://codewith.mu>



Questions?