# Pocket-Sized Rust: ESP32

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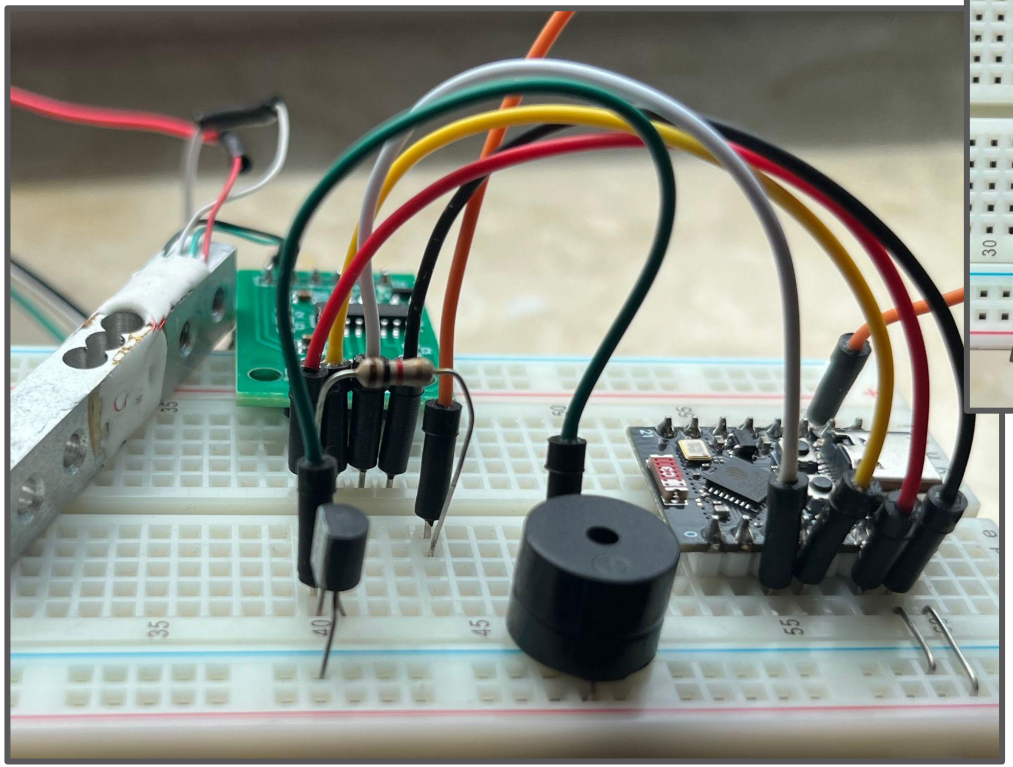
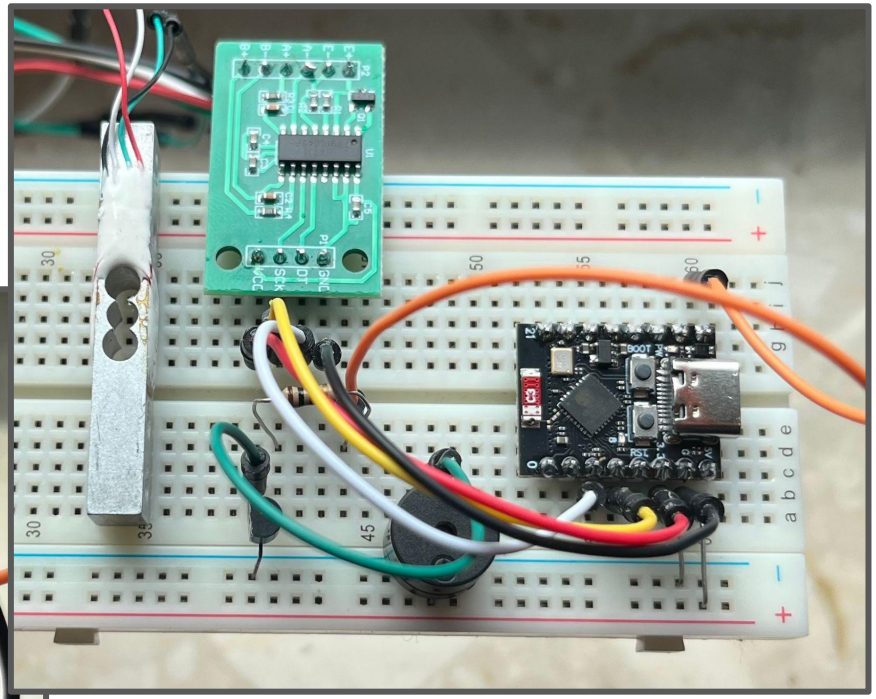
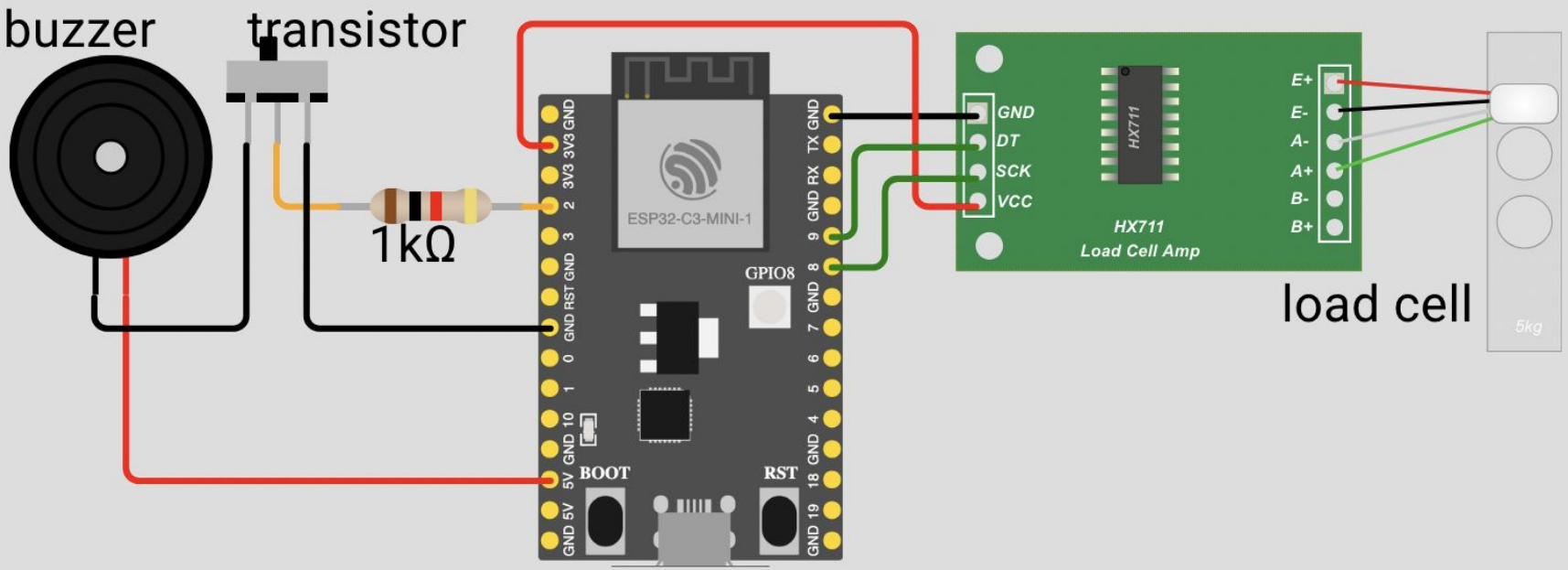


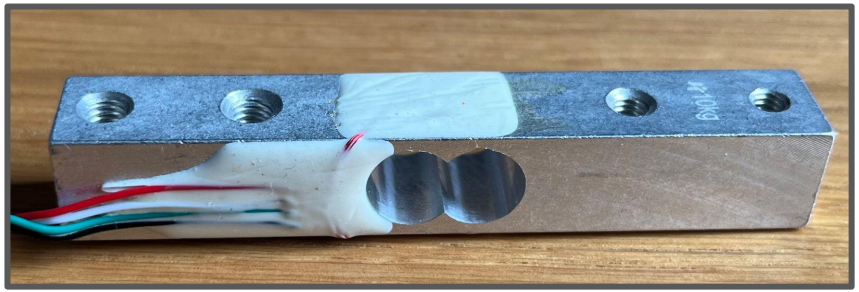


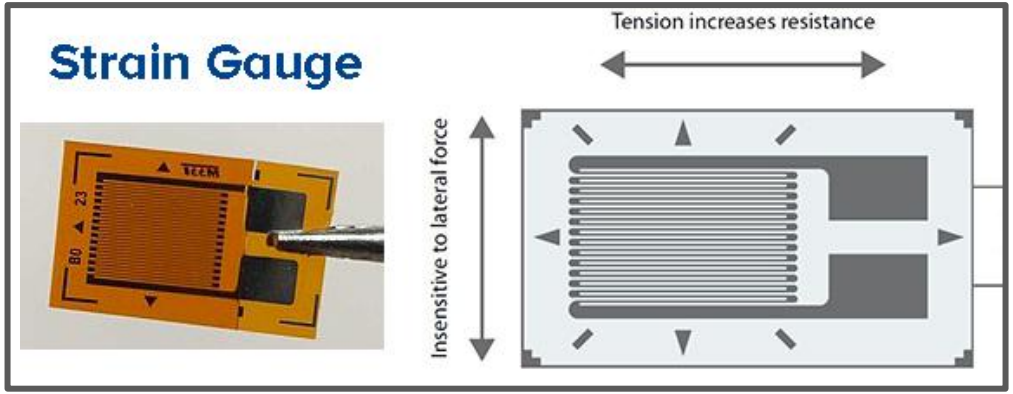

buzzer
transistor
1kΩ
ESP32-C3-MINI-1
GPIO8
BOOT
RST
GND
DT
SCK
VCC
HX711
HX711
Load Cell Amp
E+
E-
A-
A+
B-
B+
load cell
5kg

# What is ESP32?

- brain behind this project: ESP32 C3 supermini
- super tiny, very capable microcontroller
- WiFi and Bluetooth
- GPIO
- CPU 160 MHz / 400 KB RAM
- low power
- All for about $2!

# What's a Load Cell?






https://www.straightpoint.com/what-is-a-load-cell.html

# Rust on ESP32

- good support
- generate project with a command

  ```
  cargo generate --git https://github.com/esp-rs/esp-idf-template cargo
  ```
- FreeRTOS and esp-idf ecosystem
- Embassy
- no_std

```
loop {
        if load_sensor.is_ready() {
            let reading = load_sensor.read_scaled().unwrap();

            if reading.abs() > 20000.0 {
                buzzer.set_high().unwrap();
            } else {
                buzzer.set_low().unwrap();
            }
        }

        FreeRtos::delay_ms(1000u32);
    }
}
```

# Ideas

- ESP32 is very capable
- Http server
- display
- input
- smart coffee scale
- unlimited possibilities!